Planning Proposal
for a
Proposed Mixed-Use Development

10 Monash Road & 2 College Street, Gladesville

TRAFFIC AND PARKING ASSESSMENT REPORT

12 February 2015

Ref 15048

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants

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LIST OF ILLUSTRATIONS

1. INTRODUCTION

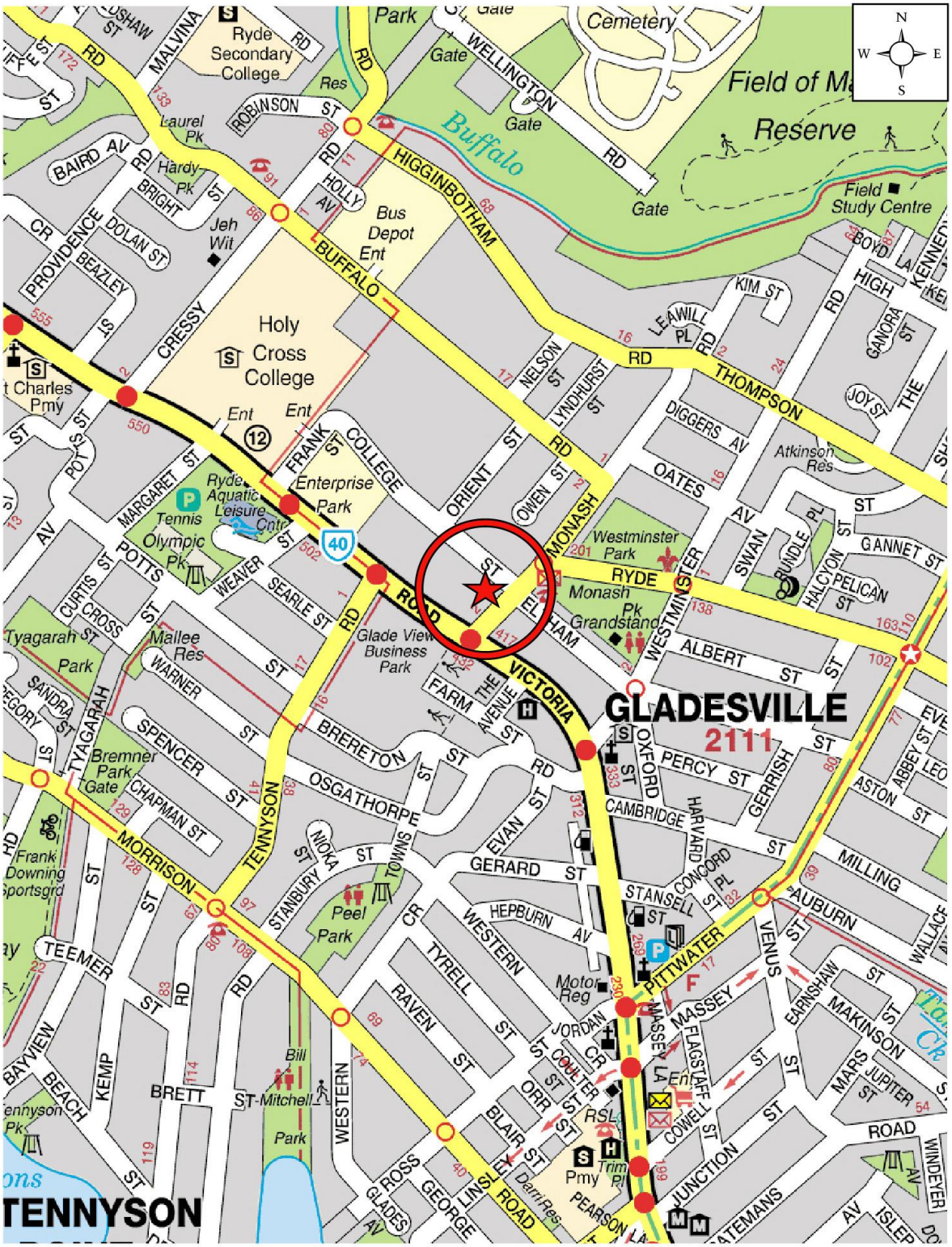
This report has been prepared to accompany a Planning Proposal for a mixed-use development to be located at 10 Monash Road and 2 College Street, Gladesville (Figures 1 and 2).

The development envisaged by the Planning Proposal comprises a new mixed-use residential/retail/commercial development with a 12m-15m height limit. Car parking and loading is to be provided in a new basement car parking area generally in accordance with Council's requirements.

Vehicular access to the site is to be provided via a new entry/exit driveway directly out onto College Street.

The purpose of this report is to assess the traffic and parking implications of the development proposal and to that end this report:

- describes the site and provides details of the Planning Proposal
- reviews the road network in the vicinity of the site, and the traffic conditions on that road network
- estimates the traffic generation potential of the Planning Proposal, and assigns that traffic generation to the road network serving the site
- assesses the traffic implications of the Planning Proposal in terms of road network capacity
- review the geometric design features of the proposed basement car parking and loading facilities for compliance with the relevant codes and standards
- assesses the parking and loading implications of the Planning Proposal.



VARGA TRAFFIC PLANNING Pty Ltd
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LOCATION
FIGURE 1

VARGA TRAFFIC PLANNING Pty Ltd
Traffic and Parking Consultants

SITE
FIGURE 2

2. PROPOSED DEVELOPMENT

Site

The subject site is located on the south-western corner of the Monash Road and College Street intersection. The site has a street frontage approximately 21m in length to Monash Road, 68m in length to College Street and occupies and area of approximately 1,355m^2.

The subject site comprises two adjacent sites; No.10 Monash Road and No.2 College Street.

No.10 Monash Road is currently occupied by a single-storey building which is used as a dental surgery, and has a floor area estimated to be approximately 200m^2. The site is zoned "B4 mixed-use" and has an allowable height limit of 13m.

Off-street parking for the dental surgery is currently provided at the rear of the site, with vehicular access provided via College Street.

No.2 College Street is currently occupied by a single-storey dwelling house. The site is zoned "R2 low density residential" and has an allowable height limit of 9.5m.

Off-street parking for the dwelling house is accessed via a vehicular access driveway also located in College Street.

Planning Proposal

The Planning Proposal involves the rezoning of No.2 College Street from "R2 low density residential" to "B4 mixed-use" (consistent with No.10 Monash Road), changes to the FSR for 2 College Street and raising the allowable height limit for both sites.

The Planning Proposal envisages the demolition of the two existing buildings on the site to facilitate the construction of a new mixed-use residential/retail/commercial building.

A total of 25 residential apartments are proposed in the new building as follows:

1 bedroom apartments:	7
2 bedroom apartments:	17
4 bedroom apartments:	1
TOTAL APARTMENTS:	**25**

A retail/commercial tenancy is also proposed on the ground floor level, with a floor area of approximately 167m^2.

Preliminary plans prepared for the purposes of this Planning Proposal assessment indicate that 34 off-street car parking spaces can be provided on the site. Vehicular access to the proposed off-street car parking facilities is to be provided via a driveway located in College Street, near the western boundary of the site.

Loading/servicing for the proposed development is expected to be undertaken by a variety of light commercial vehicles up to and including small rigid trucks such as garbage trucks and removalist trucks. All loading/unloading of trucks will take place on site. A separate vehicular entry/exit point is proposed for the loading bay area.

The preliminary plans have been prepared by *Olsson & Associates Architects Pty Ltd* and are reproduced in the following pages.

Bunnings Traffic Study

Council has commissioned *Bitzios Consulting* to develop traffic and parking strategies to manage the performance of the surrounding road network, with a particular focus on the immediate impacts and needs generated by the development of the Bunnings site. The *Bunnings Traffic Study* took into account the traffic and parking implications of the Bunnings development as well as *other developments* expected to occur in the defined study area by 2031.

The *other developments* are detailed on *Figure ES8: Assumed Development Sites* of the *Bunnings Traffic Study*, and included the subject Planning Proposal with 25 residential apartments above a ground floor retail component, consistent with the details provided above.

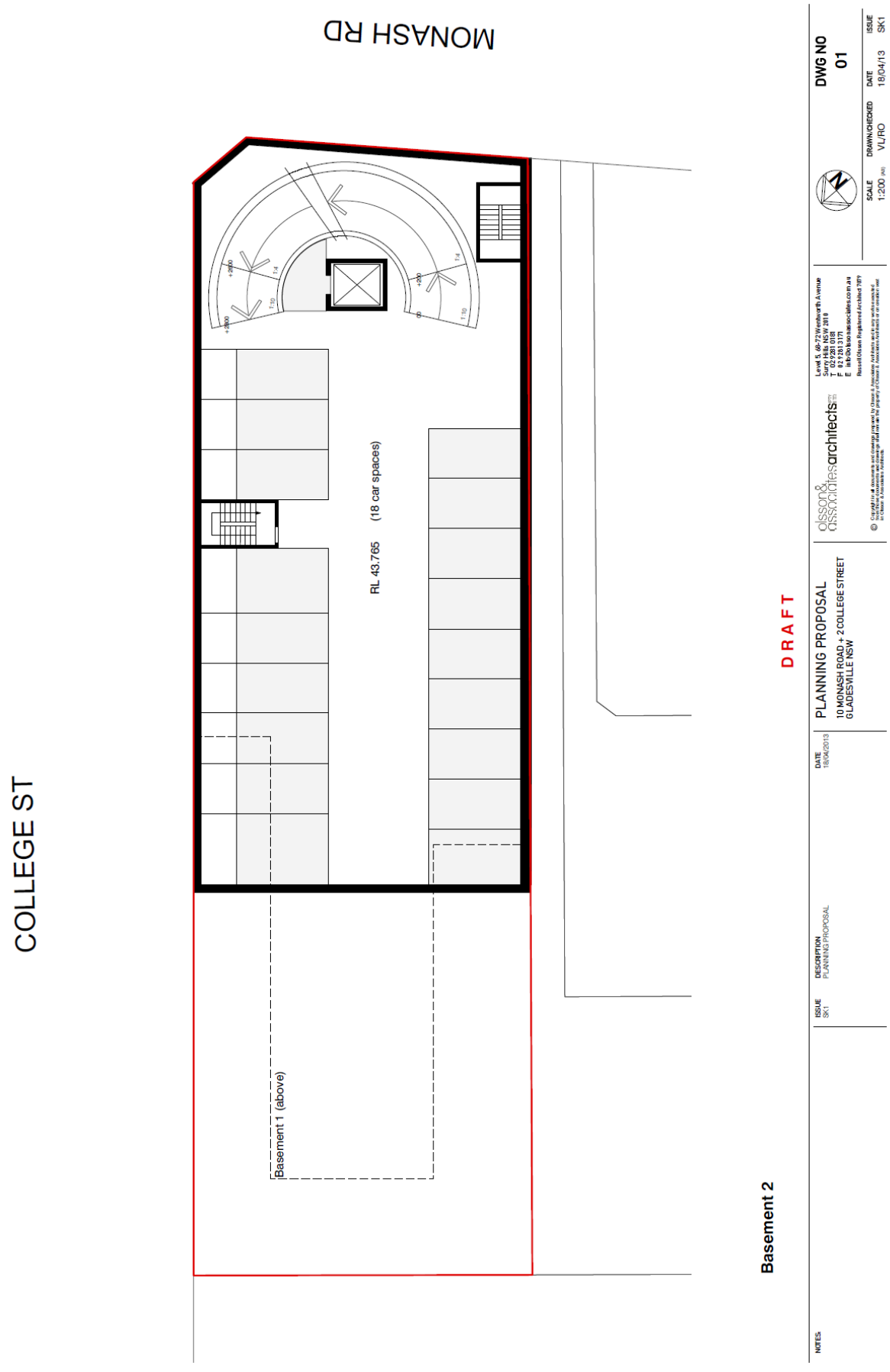
The *Bunnings Traffic Study* identified a number of measures in its "preferred network development" which included the following proposals in the vicinity of the subject site:

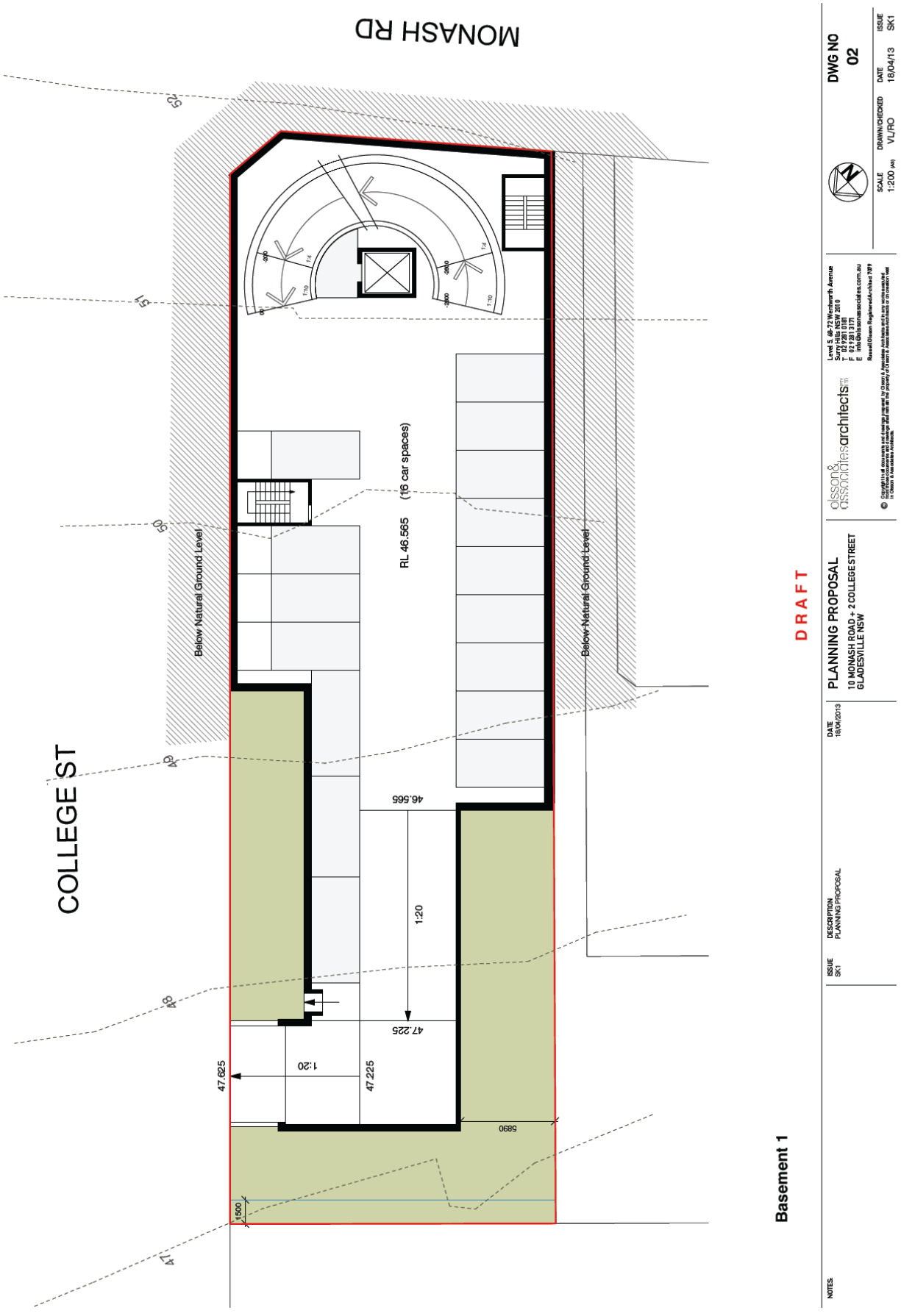
- a full or partial closure of College Street, west of Orient Street (dependent on community feedback)
- a new signalised intersection at Monash Road/College Street/Eltham Street
- Eltham Street one-way eastbound between Aldi and commercial development
- No Parking on Monash Road (eastern side) south of Eltham Street during all peaks.

The preferred network measures are illustrated on *Figure ES18: Preferred Network* of the *Bunnings Traffic Study* and is reproduced in the following pages.

The installation of traffic signals at the Monash Road/College Street/Eltham Street intersection is proposed primarily as a demand management tool to discourage through-traffic from using Orient Street as follows:

> ***"The new signalised intersection at Monash Road/College Street/Eltham Street (subject to RMS approval) allows side street traffic to turn into Monash Road on a green light. Also, by controlling the amount of "green time" provided to the College Road approach, the desirability of using the Orient-College route as a rat-run is reduced".***


MONASH RD
COLLEGE ST
RL 43.765
(18 car spaces)
Basement 1 (above)
Basement 2
DRAFT
PLANNING PROPOSAL
10 MONASH ROAD + 2 COLLEGE STREET
GLADESVILLE NSW
olsson & associates architects
DWG NO
01
SCALE
1:200
DRAWN/CHECKED
VL/RO
DATE
18/04/13
ISSUE
SK1
NOTES:


MONASH RD
COLLEGE ST
Below Natural Ground Level
Below Natural Ground Level
(16 car spaces)
RL 46.565
46.565
1:20
47.225
47.625
1:20
47.225
5890
1500
DRAFT
Basement 1
PLANNING PROPOSAL
10 MONASH ROAD + 2 COLLEGE STREET
GLADESVILLE NSW
DATE 18/04/2013
ISSUE SK1
DESCRIPTION PLANNING PROPOSAL
NOTES
olsson & associates architects
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Surry Hills NSW 2010
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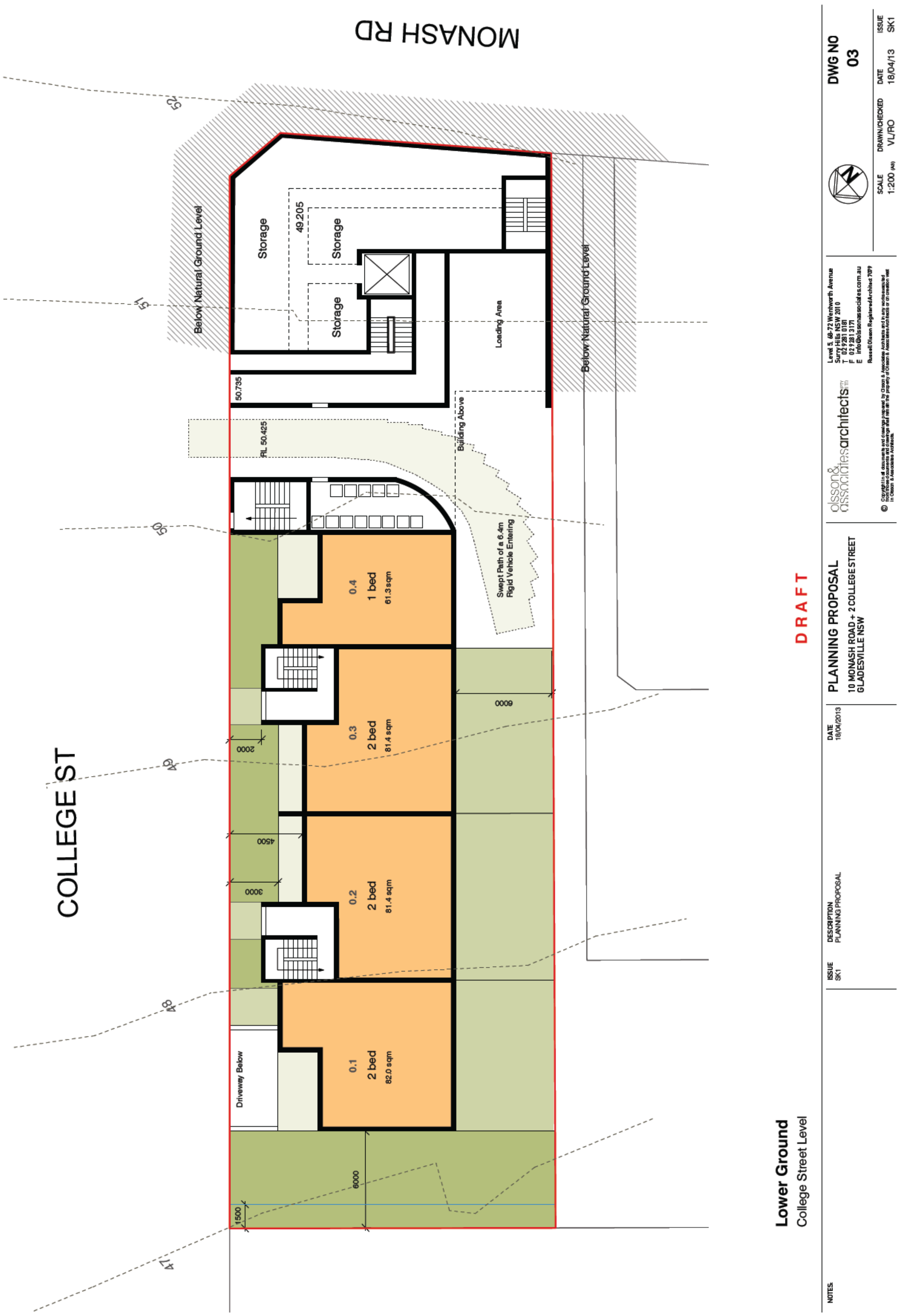
E info@olssonassociates.com.au
Russell Olsson Registered Architect 7079
SCALE 1:200 (A3)
DRAWN/CHECKED VL/RO
DATE 18/04/13
ISSUE SK1
DWG NO 02


MONASH RD
COLLEGE ST
Storage
Storage
Storage
Loading Area
Below Natural Ground Level
Below Natural Ground Level
Building Above
Swept Path of a 6.4m Rigid Vehicle Entering
RL 50.425
0.4
1 bed
61.3 sqm
0.3
2 bed
81.4 sqm
0.2
2 bed
81.4 sqm
0.1
2 bed
82.0 sqm
Driveway Below
Lower Ground
College Street Level
PLANNING PROPOSAL
10 MONASH ROAD + 2 COLLEGE STREET
GLADESVILLE NSW
DRAFT
DWG NO
03
SCALE
1:200
DRAWN/CHECKED
VL/RO
DATE
18/04/13
ISSUE
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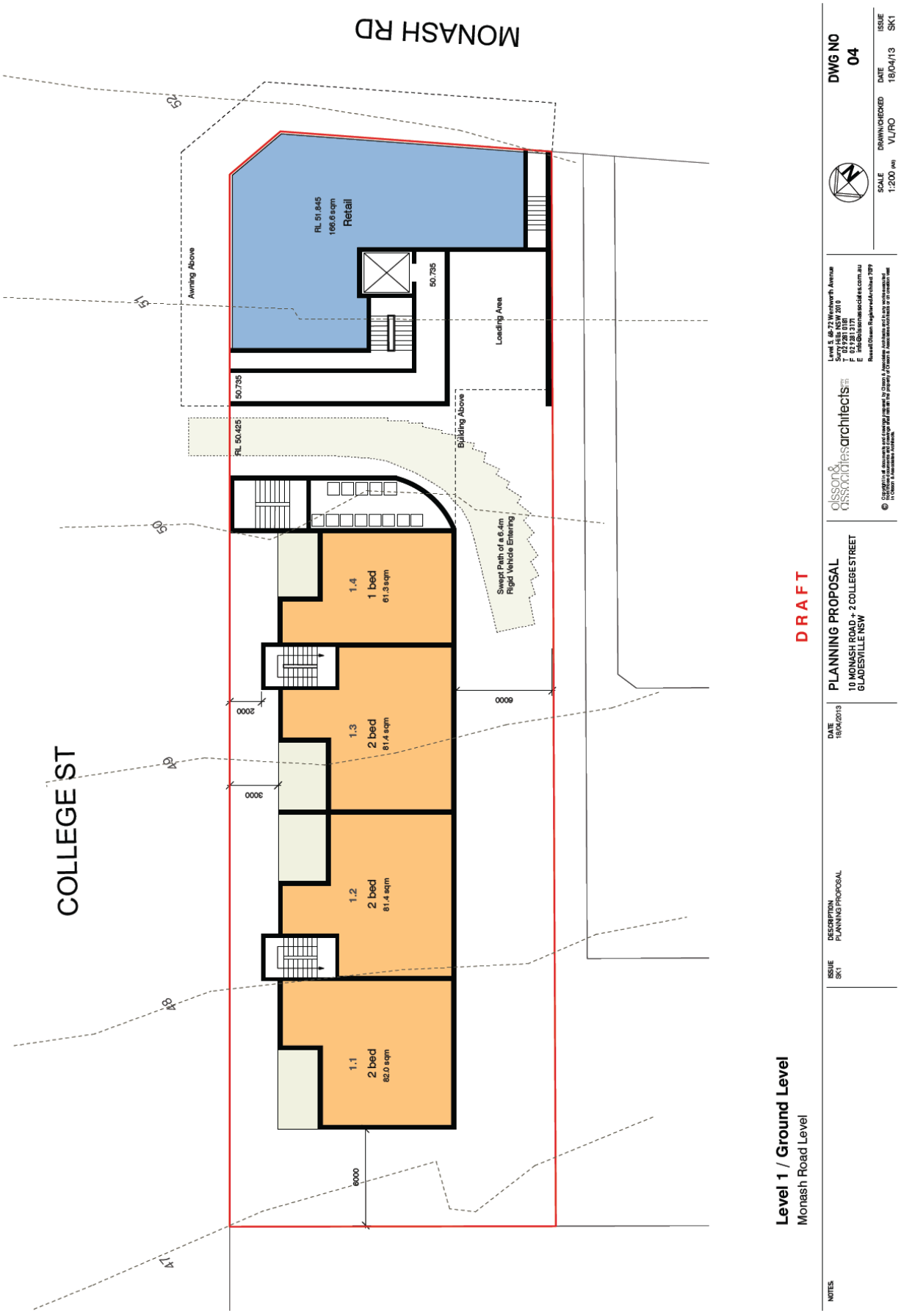
MONASH RD
COLLEGE ST
RL 51.845
166.6 sqm
Retail
Awning Above
50.735
Loading Area
Building Above
RL 50.425
Swept Path of a 6.4m Rigid Vehicle Entering
1.4
1 bed
61.3 sqm
1.3
2 bed
61.4 sqm
1.2
2 bed
61.4 sqm
1.1
2 bed
82.0 sqm
2000
3000
6000
6000
DRAFT
Level 1 / Ground Level
Monash Road Level
NOTES
ISSUE SK1
DESCRIPTION PLANNING PROPOSAL
DATE 18/04/2013
PLANNING PROPOSAL
10 MONASH ROAD + 2 COLLEGE STREET
GLADESVILLE NSW
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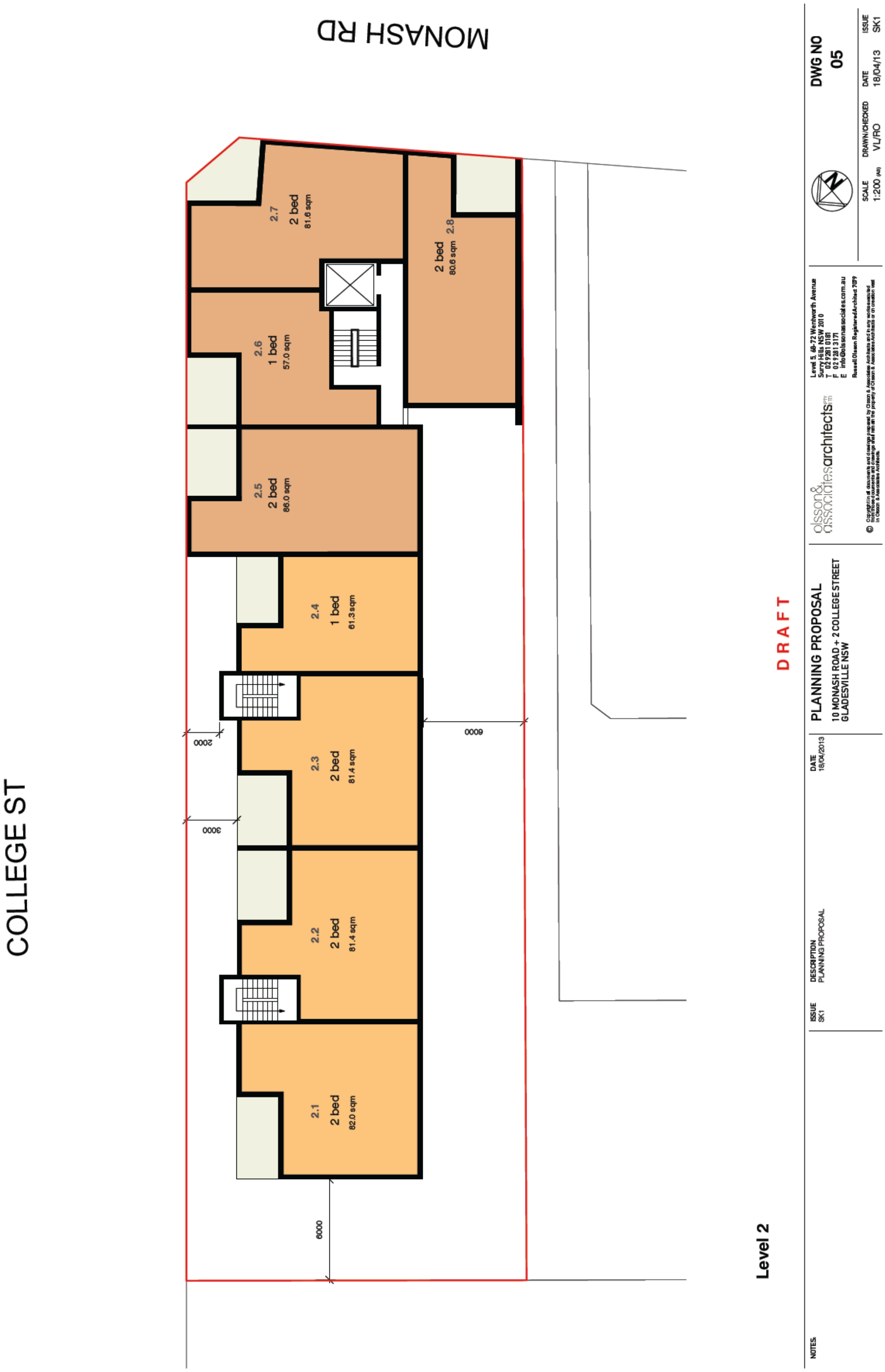
MONASH RD
COLLEGE ST
2.1
2 bed
82.0 sqm
2.2
2 bed
81.4 sqm
2.3
2 bed
81.4 sqm
2.4
1 bed
61.3 sqm
2.5
2 bed
86.0 sqm
2.6
1 bed
57.0 sqm
2.7
2 bed
81.6 sqm
2.8
2 bed
80.6 sqm
6000
3000
2000
6000
Level 2
DRAFT
PLANNING PROPOSAL
10 MONASH ROAD + 2 COLLEGE STREET
GLADESVILLE NSW
olsson&associatesarchitects
DWG NO
05
SCALE
1:200
DRAWN/CHECKED
VL/RO
DATE
18/04/13
ISSUE
SK1
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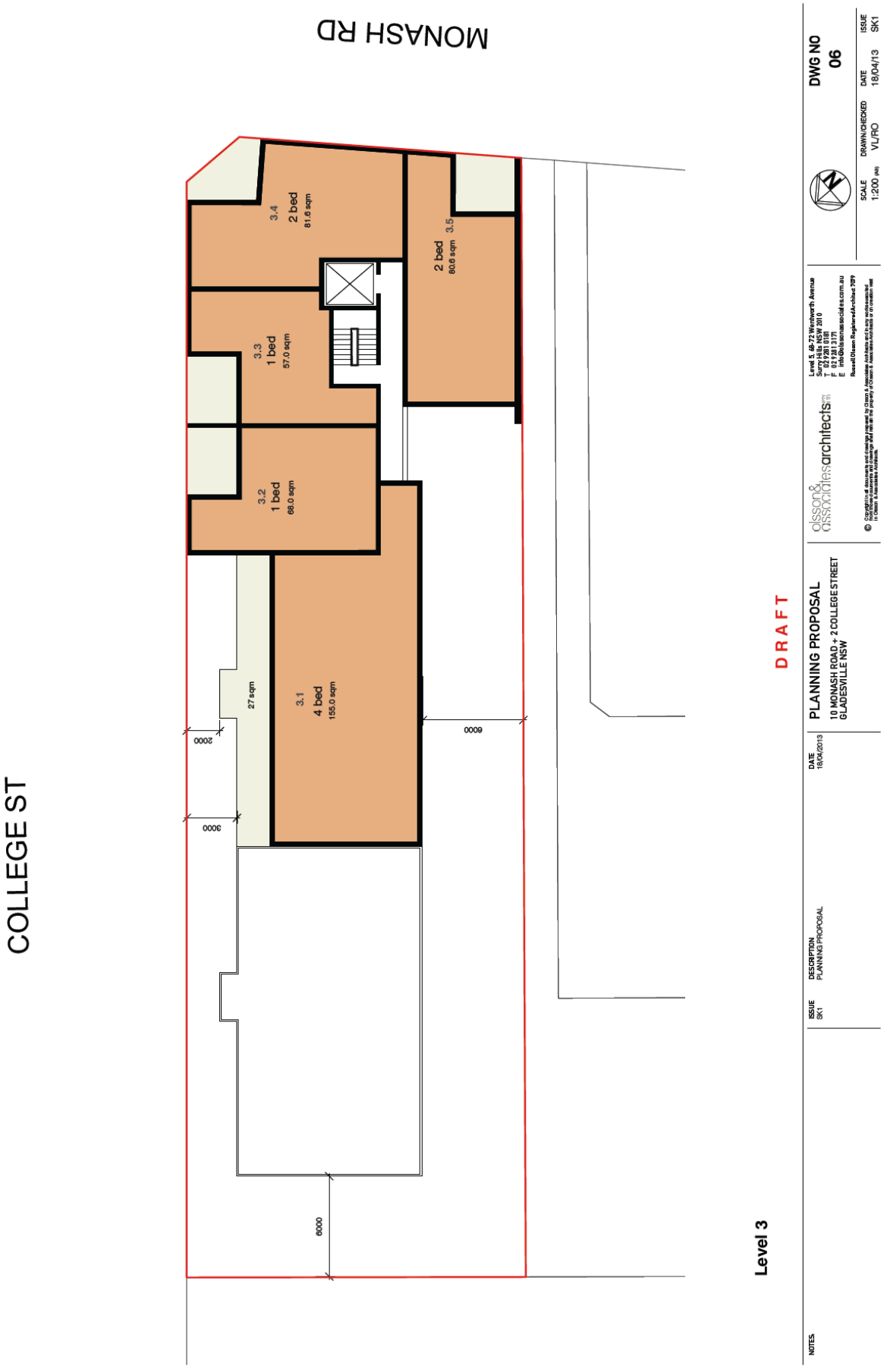
ISSUE
SK1
DESCRIPTION
PLANNING PROPOSAL
DATE
18/04/2013


MONASH RD
COLLEGE ST
3.4
2 bed
81.6 sqm
3.5
2 bed
80.6 sqm
3.3
1 bed
57.0 sqm
3.2
1 bed
68.0 sqm
3.1
4 bed
155.0 sqm
27 sqm
2000
3000
6000
6000
DRAFT
Level 3
NOTES:
ISSUE
SK1
DESCRIPTION
PLANNING PROPOSAL
DATE
18/04/2013
PLANNING PROPOSAL
10 MONASH ROAD + 2 COLLEGE STREET
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VL/RO
DATE
18/04/13
DWG NO
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ISSUE
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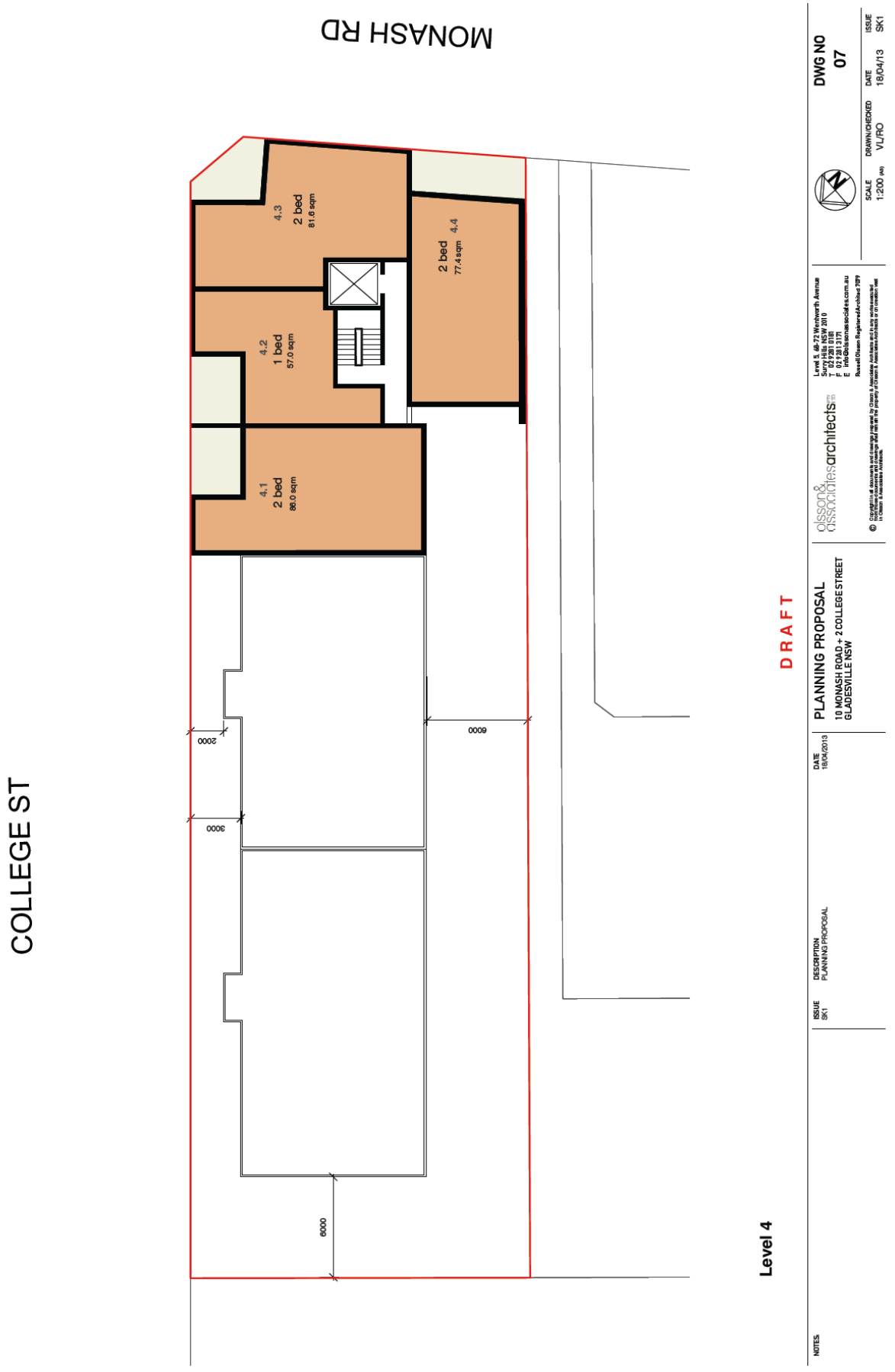
MONASH RD
COLLEGE ST
4.3
2 bed
81.6 sqm
4.4
2 bed
77.4 sqm
4.2
1 bed
57.0 sqm
4.1
2 bed
86.0 sqm
2000
3000
6000
6000
DRAFT
Level 4
PLANNING PROPOSAL
10 MONASH ROAD + 2 COLLEGE STREET
GLADESVILLE NSW
DATE 18/04/2013
ISSUE SK1
DESCRIPTION PLANNING PROPOSAL
NOTES
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Russell Olsson Registered Architect 7089
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DATE 18/04/13
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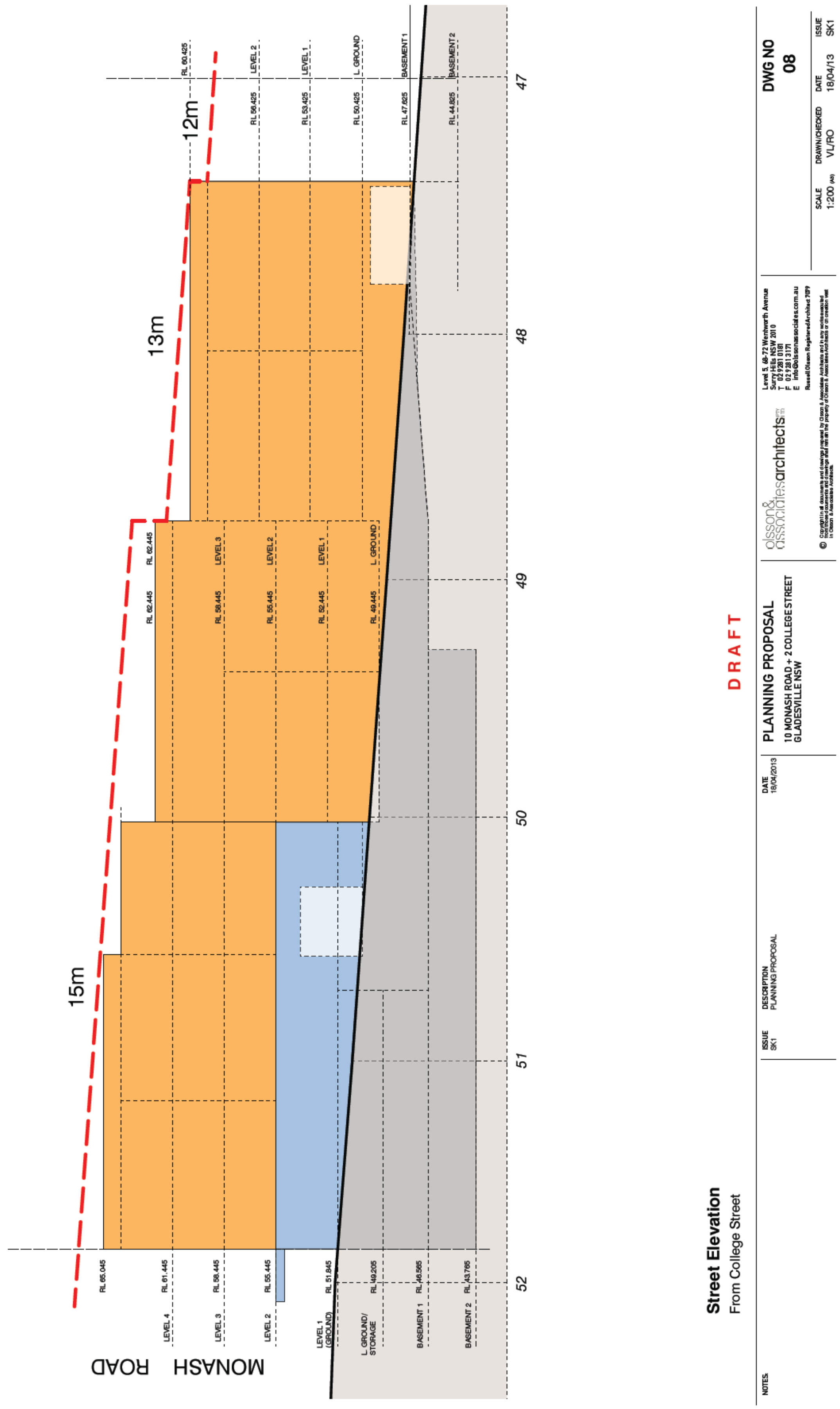
Street Elevation
From College Street
MONASH ROAD
15m
13m
12m
DRAFT
PLANNING PROPOSAL
10 MONASH ROAD + 2 COLLEGE STREET
GLADESVILLE NSW
DWG NO
08
SCALE
1:200
DRAWN/CHECKED
VL/RO
DATE
18/04/13
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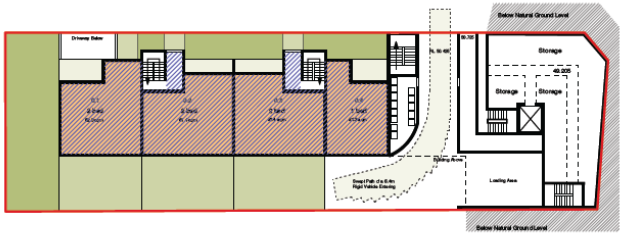
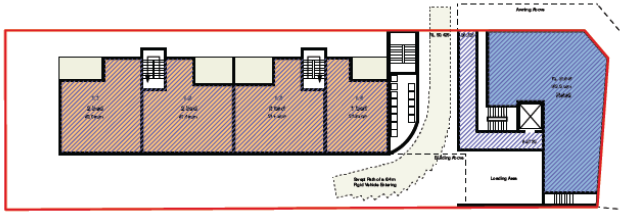
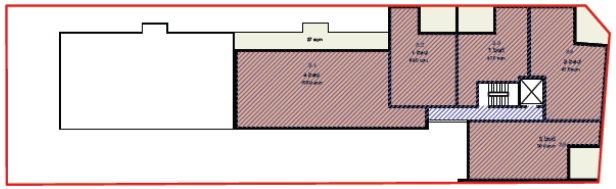


Lower Ground 332 sqm

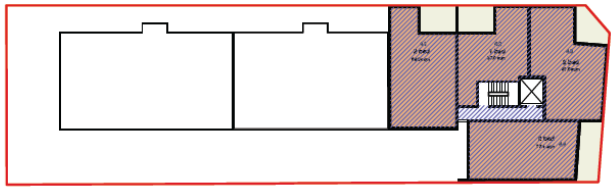


Ground / Level 1 524 sqm (incl. 204 sqm Retail & Foyer)

Level 2 654 sqm



Level 3 478 sqm



Level 4 329 sqm

Area Calculations

FSR = 2,317 / 1,359.5 = 1.70:1

Lower Ground:	3 X 2 Bedroom 1 X 1 Bedroom
Level 1 / Ground:	3 X 2 Bedroom 1 X 1 Bedroom Retail + Foyer
Level 2:	6 X 2 Bedroom 2 X 1 Bedroom
Level 3:	2 X 2 Bedroom 2 X 1 Bedroom 1 X 4 Bedroom
Level 4:	3 X 2 Bedroom 1 X 1 Bedroom
Total - 25 Units	**17 X 2 Bedroom** **7 X 1 Bedroom** **1 X 4 Bedroom**

DRAFT

NOTES.

ISSUE	DESCRIPTION	DATE
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PLANNING PROPOSAL

10 MONASH ROAD + 2 COLLEGE STREET
GLADESVILLE NSW

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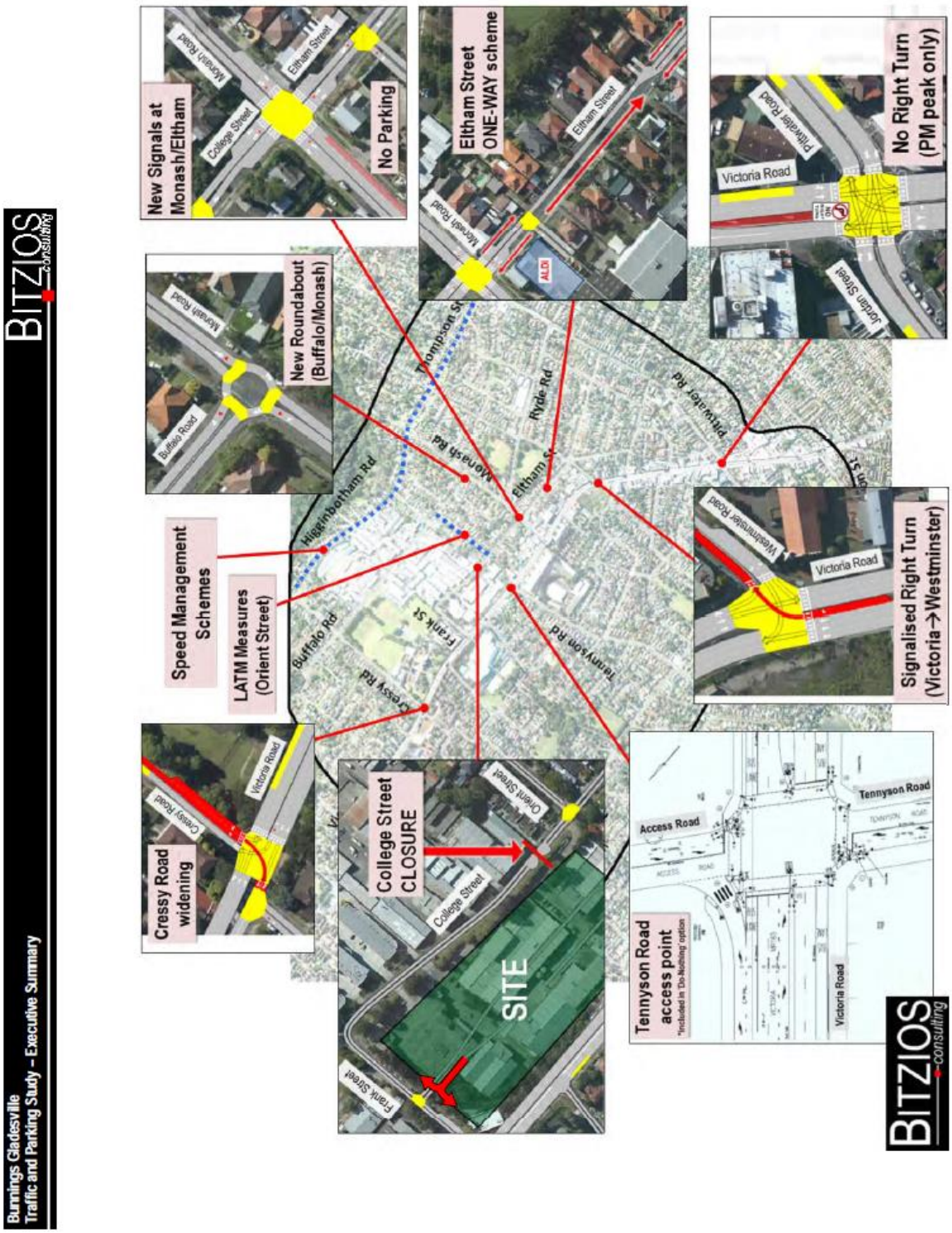


Figure ES18: Preferred Network

3. TRAFFIC ASSESSMENT

Road Hierarchy

The road hierarchy allocated to the surrounding road network by the Roads and Maritime Services is illustrated on Figure 3.

Victoria Road is classified by the RMS as a *State Road* and provides the key east-west road link in the area, linking North Parramatta to Rozelle. It typically carries three traffic lanes in each direction in the vicinity of the site with opposing traffic flows separated by a centre median island. Kerbside parking is permitted at selected locations outside of commuter peak periods.

Monash Road (south of Ryde Road) and Ryde Road are classified by the RMS as *Regional Roads* which follow an east-west alignment through the area, linking Victoria Road to Burns Bay Road. They typically carry one traffic lane in each direction in the vicinity of the site with kerbside parking generally permitted.

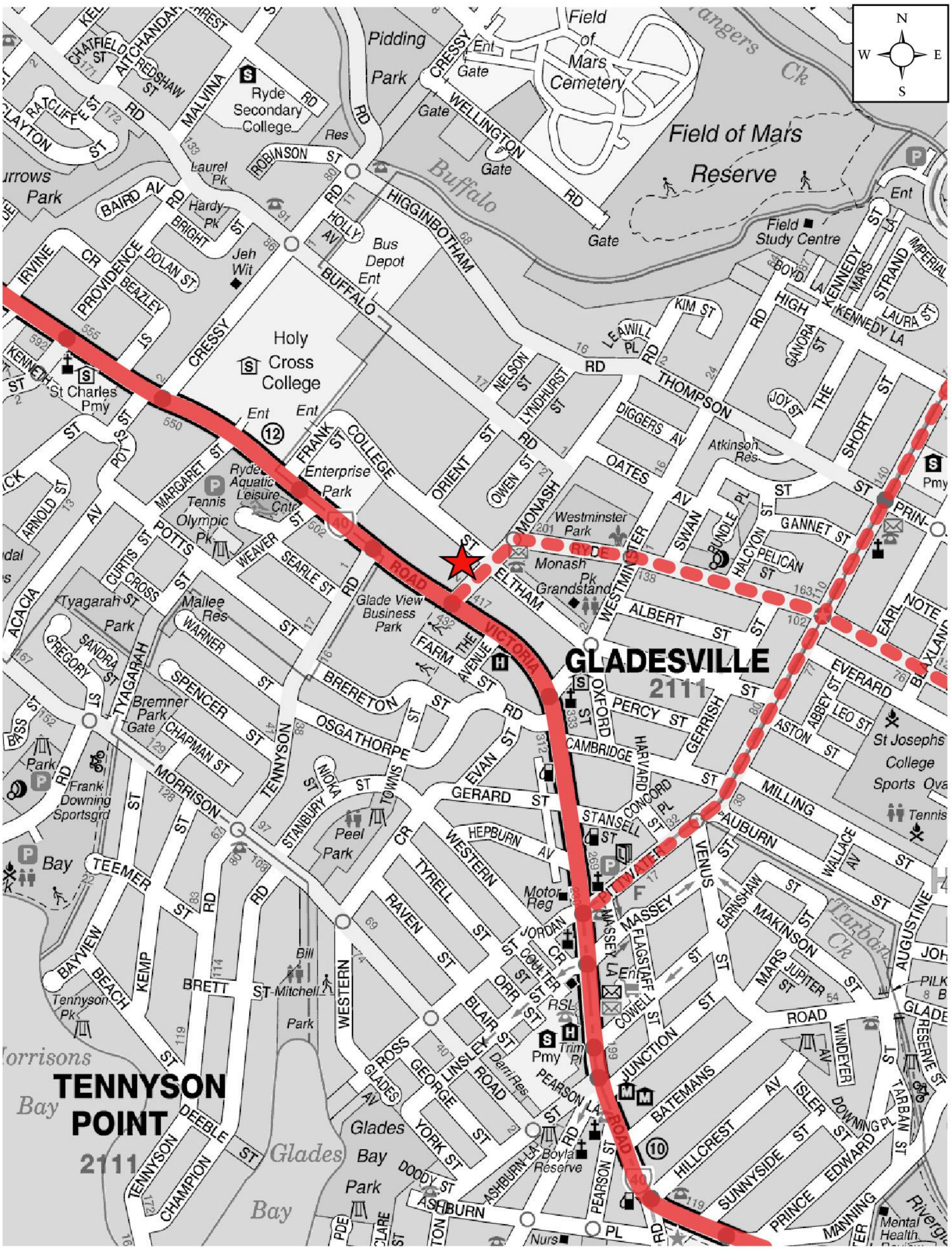
Pittwater Road is also classified by the RMS as a *Regional Road* which follow a north-south alignment through the area, linking Victoria Road to Epping Road. It also typically carries one traffic lane in each direction in the vicinity of the site with turning bays provided at key locations.

College Street is a local, unclassified road which is primarily used to provide vehicular and pedestrian access to frontage properties. Kerbside parking is generally permitted on both sides of the road.

Existing Traffic Controls

The existing traffic controls which apply to the road network in the vicinity of the site are illustrated on Figure 4. Key features of those traffic controls are:

- a 60 km/h SPEED LIMIT which applies to Victoria Road



Key:

State Road

Regional Road

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ROAD HIERARCHY

FIGURE 3


N
W
E
S
ORIENT ST
OWEN ST
COLLEGE ST
50
COLLEGE ST
RD
RYDE RD
MONASH
VICTORIA
60
ELTHAM ST
RD
FARM ST
THE AVENUE
Key:
Stop Sign
Roundabout
50
Speed Limit
Right-Turn Bay
Traffic Signal
VARGA TRAFFIC PLANNING Pty Ltd
Traffic and Parking Consultants
EXISTING TRAFFIC CONTROLS
FIGURE 4

- a 50 km/h SPEED LIMIT which applies to Monash Road, College Street and all other local roads in the area

- TRAFFIC SIGNALS in Victoria Road where it intersects with Monash Road and also Westminster Road

- a NO RIGHT-TURN westbound restriction in Victoria Road onto Westminster Road

- a RIGHT-TURN HOLDING BAY in Victoria Road turning onto Monash Road.

Existing Traffic Conditions

An indication of the existing traffic conditions on the road network in the vicinity of the site is provided by reference to the RMS's *Annual Average Daily Traffic* data. The relevant count stations nearest to the subject site are summarised below, revealing that the annual average daily traffic along this section of Victoria Road is in the order of 54,000 vehicles per day (eastbound and westbound).

Station No.	Location	1996	1999	2002	2005
00.335	Victoria Road & Monash Road (TCS)	55,364	56,695	51,690	57,164
51223	Victoria Road (east of Weaver Street)	52,614	53,606	55,417	53,898

A more detailed indication of the existing traffic conditions on the road network in the vicinity of the site is provided by peak period traffic surveys undertaken as part of a previous nearby traffic study. The traffic surveys were undertaken at the intersection of Victoria Road and Monash Road as well as the intersection of Monash Road and College Street/Eltham Street. The results of the traffic surveys are reproduced in full in Appendix A and reveal that:

- two-way traffic flows in Victoria Road are typically in the order of 3,900 vehicles per hour (vph) during the weekday *afternoon* peak period, reducing to 3,200 vph during the Saturday peak period

- two-way traffic flows in Monash Road past the site frontage are typically in the order of 950 vph during the weekday *afternoon* peak period, reducing to 800 vph during the Saturday peak period

- two-way traffic flows in College Street are typically in the order of 200 vph during the weekday *afternoon* peak period, reducing to 100 vph during the Saturday peak period

Projected Traffic Generation

An indication of the traffic generation potential of the proposed development is provided by reference to the Roads and Traffic Authority's publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002).*

The RTA *Guidelines* are based on extensive surveys of a wide range of land uses and nominate the following traffic generation rates which are applicable to the development proposal:

> **Commercial Premises**
> 2.0 peak hour vehicle trips per 100m^2 GFA
>
> **High Density Residential Flat Buildings in Sub-Regional Centres**
> Thursday PM: 0.29 peak hour vehicle trips per dwelling
> Saturday: 0.29 peak hour vehicle trips per dwelling (assumed)

The RTA Guidelines also make the following observation in respect of high density residential flat buildings:

> **Definition**
> A *high density residential flat building* refers to a building containing 20 or more dwellings. This does not include aged or disabled persons housing. *High density residential flat buildings* are usually more than 5 levels, have basement level car parking and are located in close proximity to public transport services. The building may contain a component of commercial use.
>
> **Factors**
> The above rates include visitors, staff, service/delivery and on-street movements such as taxis and pick-up/set-down activities.

It should be noted that the exact nature of the proposed retail/commercial component is not yet known, therefore the abovementioned traffic generation rate of "2.0 peak hour vehicle trips/100m^2 GFA" nominated in the RTA *Guidelines* for "commercial premises" has been adopted in respect of the retail/commercial component of the development proposal.

Application of the above traffic generation rates to the residential and retail/commercial components of the development proposal yields a traffic generation potential of approximately 11 vehicle trips per hour during commuter peak periods as set out below:

Projected Future Traffic Generation

Residential Apartments (25 Apartments):	7.3 peak hour vehicle trips
Retail/Commercial Premises (167m^2):	3.3 peak hour vehicle trips
TOTAL TRAFFIC GENERATION POTENTIAL:	**10.6 peak hour vehicle trips**

That projected future level of traffic generation potential should however, be offset or *discounted* by the volume of traffic which could reasonably be expected to be generated by the existing uses of the site, in order to determine the *nett increase (or decrease)* in traffic generation potential expected to occur as a consequence of the development proposal.

Application of the "dwelling house" and the abovementioned "commercial premises" traffic generation rates nominated in the RTA *Guidelines* to the existing dwelling house and dental surgery on the site yields a traffic generation potential of approximately 5 vehicle trips per hour during commuter peak periods as set out below:

Existing Traffic Generation Potential

No.10 Monash Rd Dental Surgery (200m^2):	4.0 peak hour vehicle trips
No.2 College St Dwelling House:	0.9 peak hour vehicle trips
TOTAL TRAFFIC GENERATION POTENTIAL:	**4.9 peak hour vehicle trips**

Accordingly, it is likely that the proposed development will result in a slight *increase* in the traffic generation potential the site of approximately 6 vph as set out below:

Projected Nett Increase in Peak Hour Traffic Generation Potential
as a consequence of the development proposal

Projected Future Traffic Generation Potential:	+10.6 vehicle trips
Existing Traffic Generation Potential:	-4.9 vehicle trips
NETT INCREASE IN TRAFFIC GENERATION POTENTIAL:	**+5.7 vehicle trips**

For the purposes of this assessment however, it has been assumed that *all* of the projected future traffic flows of 11 peak hour vehicle trips will be new or *additional* to the existing traffic flows currently using the adjacent road network.

That projected increase in traffic activity as a consequence of the development proposal is minimal and will clearly not have any unacceptable traffic implications in terms of road network capacity, as is demonstrated by the following section of this report.

Traffic Implications - Road Network Capacity

The traffic implications of development proposals primarily concern the effects that any *additional* traffic flows may have on the operational performance of the nearby road network. Those effects can be assessed using the SIDRA program which is widely used by the RTA and many LGA's for this purpose. Criteria for evaluating the results of SIDRA analysis are reproduced in the following pages.

In this regard, it is noted that the JRPP has previously approved a large mixed-use development directly opposite the site, at 1-9 Monash Road. For the purposes of assessing the Planning Proposal therefore, the traffic generation potential of that previously approved development has been added to the existing traffic volumes to create a new existing or "base case" scenario.

The results of the SIDRA analysis of the Victoria Road & Monash Road intersection are summarised on Table 3.1 below, revealing that:

- the Victoria Road & Monash Road intersection currently operates at *Level of Service "B"* under the existing traffic demands (including the 1-9 Monash Road development) with total average vehicle delays in the order of 19-20 seconds/vehicle

- under the projected future traffic demands expected to be generated by the development proposal, the Victoria Road & Monash Road intersection will continue to operate at *Level of Service "A",* with increases in average vehicle delays of ***less than*** 1 second/vehicle.

The results of the SIDRA analysis of the Monash Road/Eltham Street intersection are summarised in Table 3.2 below, revealing that:

- the Monash Road/Eltham Street intersection currently operates at *Level of Service "A"* under existing traffic demands (including the 1-9 Monash Road development), with total average vehicle delays in the order of 5-6 seconds per vehicle

- under the projected future traffic demands expected to be generated by the development proposal, the Monash Road/Eltham Street intersection will continue to operate at *Level of Service "A"*, with increases in the average vehicle delays of ***less than*** 1 second per vehicle.

In the circumstances, it is clear that the development envisaged by the Planning Proposal will not have any unacceptable traffic implications in terms of road network capacity. In particular, it is confirmed that no intersection upgrades or improvements will be required as a consequence of the Planning Proposal.

The above results are generally consistent with the findings of the *Bunnings Traffic Study* under "sign control" although the study notes that:

- *"the Monash Road approach at Victoria Road experiences similar, or at times longer delays in the PM peak (up to 158 seconds delay and LOS "F" than the base case due to the closure at College Street)*

- *similarly in the PM peak, delays along Monash Road and Eltham Street southbound seem to increase later in the PM peak period (6pm-7pm)."*

The *Bunnings Traffic Study* also notes that these delays can be alleviated by increasing the *"green time"* for the Monash Road phase *"by a few seconds"* which isolated queues and delays to only this intersection on Monash Road.

As noted in the foregoing, the *Bunnings Traffic Study* recommended the installation of traffic signals at the Monash Road/College Street/Eltham Street intersection to discourage through-

traffic movements via Orient Street, however it did not mention a time frame for the installation of those traffic signals.

TABLE 3.1 - RESULTS OF SIDRA ANALYSIS OF VICTORIA ROAD & MONASH ROAD

Key Indicators	Existing Traffic Demand		Projected Development Traffic Demand	
	PM	SAT	PM	SAT
Level of Service	B	B	B	B
Degree of Saturation	0.646	0.654	0.686	0.696
Average Vehicle Delay (secs/veh)	**17.6**	**17.3**	**19.1**	**19.6**
	VIC_MONX		VIC_MONP	

TABLE 3.2 - RESULTS OF SIDRA ANALYSIS OF MONASH ROAD & ELTHAM STREET & COLLEGE ST

Key Indicators	Existing Traffic Demand		Projected Development Traffic Demand	
	PM	SAT	PM	SAT
Level of Service	A	A	A	A
Degree of Saturation	0.234	0.155	0.354	0.401
Average Vehicle Delay (secs/veh)	**5.5**	**4.2**	**7.9**	**7.3**
	MON_ELTX		MON_ELTP	

Criteria for Interpreting Results of Sidra Analysis

1. Level of Service (LOS)

LOS	Traffic Signals and Roundabouts	Give Way and Stop Signs
'A'	Good operation.	Good operation.
'B'	Good with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
'C'	Satisfactory.	Satisfactory but accident study required.
'D'	Operating near capacity.	Near capacity and accident study required.
'E'	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode.	At capacity and requires other control mode.
'F'	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode.

2. Average Vehicle Delay (AVD)

The AVD provides a measure of the operational performance of an intersection as indicated on the table below which relates AVD to LOS. The AVD's listed in the table should be taken as a guide only as longer delays could be tolerated in some locations (ie inner city conditions) and on some roads (ie minor side street intersecting with a major arterial route).

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	less than 14	Good operation.	Good operation.
B	15 to 28	Good with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
C	29 to 42	Satisfactory.	Satisfactory but accident study required.
D	43 to 56	Operating near capacity.	Near capacity and accident study required.
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode.	At capacity and requires other control mode.

3. Degree of Saturation (DS)

The DS is another measure of the operational performance of individual intersections.

For intersections controlled by traffic signals[1] both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

For intersections controlled by a roundabout or GIVE WAY or STOP signs, satisfactory intersection operation is indicated by a DS of 0.8 or less.

[1] *The values of DS for intersections under traffic signal control are only valid for cycle length of 120 secs.*

4. PARKING IMPLICATIONS

Existing Parking Restrictions

The existing kerbside parking restrictions which apply to the road network in the vicinity of the site comprise:

- NO STOPPING restrictions in the vicinity of the Monash Road and College Street/Eltham Street intersection including along the entire Monash Road site frontage

- Generally NO STOPPING / NO PARKING restrictions along the eastern side of Monash Road

- 1 HOUR PARKING restrictions along the western side of Monash Road south of the site

- generally UNRESTRICTED kerbside parking along both sides of College Street, including along the site frontage, and throughout the local area

- BUS ZONES at regular intervals along both sides of Victoria Road and Monash Road.

Off-Street Parking Provisions

The off-street parking requirements applicable to the development proposal are specified in Council's *Development Control Plan 2010, Chapter 9.3 – Car Parking (Adopted 22.11.2011)* document in the following terms:

Residential Flat Buildings – High Density

1 Bedroom Apartment:	0.6 spaces per dwelling (min)	1.0 spaces per dwelling (max)
2 Bedroom Apartment:	0.9 spaces per dwelling (min)	1.2 spaces per dwelling (max)
3 Bedroom Apartment:	1.4 spaces per dwelling (min)	1.6 spaces per dwelling (max)
Visitors:	1.0 space per 5 dwellings	

Retail Premises

1 space per 25m^2 GFA


N
W
E
S
COLLEGE ST
RD
1/2P
1/2P
ELTHAM ST
1P
MONASH
BZ
MZ
BZ
CLEARWAY PM/T3 AM
VICTORIA RD
Key:
No Stopping
No Parking
Restricted Parking
BZ Bus Zone
MZ Mail Zone
VARGA TRAFFIC PLANNING Pty Ltd
Traffic and Parking Consultants
EXISTING PARKING RESTRICTIONS
FIGURE 5

Office & Business Premises

1 space per 40m^2 GFA

Application of the above parking requirements to the various components of the Planning Proposal yields an off-street car parking requirement of between 30 and 41 spaces as set out in the table below:

DCP 2010 - Off-Street Parking Requirements

	Minimum	**Maximum**
Residential (25 Apartments):	20.9 spaces	29.0 spaces
Visitors:	5.0 spaces	5.0 spaces
Retail/Commercial (167m^2):	4.2 spaces	6.7 spaces
TOTAL PARKING REQUIREMENT:	**30.1 spaces**	**40.7 spaces**

The preliminary plans prepared for the purposes of the Planning Proposal indicate that 34 off-street car parking spaces can be provided on the site, thereby satisfying the number of parking spaces required under Council's *DCP 2010* will be satisfied.

The geometric design layout of the proposed vehicular access and car parking arrangements will ultimately be designed to comply with the relevant aspects specified in the Standards Australia publication *Parking Facilities Part 1: Off-Street Car Parking AS2890.1 - 2004* in respect of parking bay dimensions, aisle widths and ramp grades.

Loading/Servicing Provisions

The proposed development is expected to be serviced by a variety of commercial vehicles up to and including small rigid garbage and removalist trucks. The loading bay and manoeuvring area will be designed to accommodate the swept turning path requirements of these small rigid trucks, allowing them to enter and exit the site in a forward direction at all times.

Conclusion

The foregoing assessment has found that:

- the Planning Proposal would result in a *nett increase* of less than 6 vph in the traffic generation potential of the site

- that projected increase in traffic activity is *statistically insignificant* and would not require any road improvements or upgrades

- the number of parking spaces required by Council's DCP 2010 can be satisfied

- the layout of the proposed off-street car parking facilities is capable of achieving compliance with *AS2890.1 – 2004*.

In summary, it is clear that the Planning Proposal would not have any unacceptable traffic and parking implications, and is therefore recommended for approval.

APPENDIX A

TRAFFIC SURVEY DATA

R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849.
Mobile.0418239019

Client : Varga Traffic Planning
Job No/Name : 3704 GLADESVILLE Monash Rd
Day/Date : Thursday 4th August 2011

PEDS	WEST	NORTH	EAST	
Time Per	*Victoria Rd*	*Monash Rd*	*Victoria Rd*	TOT
1530 - 1545	0	10	6	**16**
1545 - 1600	0	4	4	**8**
1600 - 1615	0	4	3	**7**
1615 - 1630	0	2	4	**6**
1630 - 1645	0	3	5	**8**
1645 - 1700	0	1	4	**5**
1700 - 1715	0	1	7	**8**
1715 - 1730	0	2	5	**7**
1730 - 1745	0	0	6	**6**
1745 - 1800	0	2	5	**7**
1800 - 1815	0	4	2	**6**
1815 - 1830	0	1	5	**6**
Per End	**0**	**34**	**56**	**90**

PEDS	WEST	NORTH	EAST	
Peak Per	*Victoria Rd*	*Monash Rd*	*Victoria Rd*	TOT
1530 - 1630	0	20	17	**37**
1545 - 1645	0	13	16	**29**
1600 - 1700	0	10	16	**26**
1615 - 1715	0	7	20	**27**
1630 - 1730	0	7	21	**28**
1645 - 1745	0	4	22	**26**
1700 - 1800	0	5	23	**28**
1715 - 1815	0	8	18	**26**
1730 - 1830	0	7	18	**25**
PEAK HR	**0**	**8**	**18**	**26**

Lights	WEST		NORTH		EAST		
	Victoria Rd		*Monash Rd*		*Victoria Rd*		
Time Per	T	L	R	L	R	T	TOT
1530 - 1545	329	73	74	26	28	330	**860**
1545 - 1600	290	53	73	22	33	362	**833**
1600 - 1615	357	77	95	24	17	350	**920**
1615 - 1630	346	72	85	22	28	361	**914**
1630 - 1645	394	103	74	24	23	419	**1037**
1645 - 1700	423	105	79	17	32	431	**1087**
1700 - 1715	435	109	72	29	29	410	**1084**
1715 - 1730	477	117	78	17	23	448	**1160**
1730 - 1745	478	116	83	30	30	505	**1242**
1745 - 1800	412	97	73	16	16	449	**1063**
1800 - 1815	492	113	79	26	21	395	**1126**
1815 - 1830	412	91	95	19	12	407	**1036**
Per End	**4845**	**1126**	**960**	**272**	**292**	**4867**	**12362**

Heavies	WEST		NORTH		EAST		
	Victoria Rd		*Monash Rd*		*Victoria Rd*		
Time Per	T	L	R	L	R	T	TOT
1530 - 1545	6	1	1	0	2	7	**17**
1545 - 1600	10	1	0	0	0	12	**23**
1600 - 1615	10	1	0	0	2	8	**21**
1615 - 1630	4	0	0	1	0	7	**12**
1630 - 1645	9	0	0	2	0	5	**16**
1645 - 1700	9	0	0	1	0	8	**18**
1700 - 1715	3	0	1	1	1	6	**12**
1715 - 1730	4	0	0	0	1	5	**10**
1730 - 1745	4	0	1	1	0	6	**12**
1745 - 1800	5	0	0	0	1	5	**11**
1800 - 1815	8	1	0	0	1	7	**17**
1815 - 1830	2	0	0	1	1	8	**12**
Per End	**74**	**4**	**3**	**7**	**9**	**84**	**181**

Combined	WEST		NORTH		EAST		
	Victoria Rd		*Monash Rd*		*Victoria Rd*		
Time Per	T	L	R	L	R	T	TOT
1530 - 1545	335	74	75	26	30	337	**877**
1545 - 1600	300	54	73	22	33	374	**856**
1600 - 1615	367	78	95	24	19	358	**941**
1615 - 1630	350	72	85	23	28	368	**926**
1630 - 1645	403	103	74	26	23	424	**1053**
1645 - 1700	432	105	79	18	32	439	**1105**
1700 - 1715	438	109	73	30	30	416	**1096**
1715 - 1730	481	117	78	17	24	453	**1170**
1730 - 1745	482	116	84	31	30	511	**1254**
1745 - 1800	417	97	73	16	17	454	**1074**
1800 - 1815	500	114	79	26	22	402	**1143**
1815 - 1830	414	91	95	20	13	415	**1048**
Per End	**4919**	**1130**	**963**	**279**	**301**	**4951**	**12543**

Lights	WEST		NORTH		EAST		
	Victoria Rd		*Monash Rd*		*Victoria Rd*		
Peak Per	T	L	R	L	R	T	TOT
1530 - 1630	1322	275	327	94	106	1403	**3527**
1545 - 1645	1387	305	327	92	101	1492	**3704**
1600 - 1700	1520	357	333	87	100	1561	**3958**
1615 - 1715	1598	389	310	92	112	1621	**4122**
1630 - 1730	1729	434	303	87	107	1708	**4368**
1645 - 1745	1813	447	312	93	114	1794	**4573**
1700 - 1800	1802	439	306	92	98	1812	**4549**
1715 - 1815	1859	443	313	89	90	1797	**4591**
1730 - 1830	1794	417	330	91	79	1756	**4467**
PEAK HR	**1859**	**443**	**313**	**89**	**90**	**1797**	**4591**

Heavies	WEST		NORTH		EAST		
	Victoria Rd		*Monash Rd*		*Victoria Rd*		
Peak Per	T	L	R	L	R	T	TOT
1530 - 1630	30	3	1	1	4	34	**73**
1545 - 1645	33	2	0	3	2	32	**72**
1600 - 1700	32	1	0	4	2	28	**67**
1615 - 1715	25	0	1	5	1	26	**58**
1630 - 1730	25	0	1	4	2	24	**56**
1645 - 1745	20	0	2	3	2	25	**52**
1700 - 1800	16	0	2	2	3	22	**45**
1715 - 1815	21	1	1	1	3	23	**50**
1730 - 1830	19	1	1	2	3	26	**52**
PEAK HR	**21**	**1**	**1**	**1**	**3**	**23**	**50**

Combined	WEST		NORTH		EAST		
	Victoria Rd		*Monash Rd*		*Victoria Rd*		
Peak Per	T	L	R	L	R	T	TOT
1530 - 1630	1352	278	328	95	110	1437	**3600**
1545 - 1645	1420	307	327	95	103	1524	**3776**
1600 - 1700	1552	358	333	91	102	1589	**4025**
1615 - 1715	1623	389	311	97	113	1647	**4180**
1630 - 1730	1754	434	304	91	109	1732	**4424**
1645 - 1745	1833	447	314	96	116	1819	**4625**
1700 - 1800	1818	439	308	94	101	1834	**4594**
1715 - 1815	1880	444	314	90	93	1820	**4641**
1730 - 1830	1813	418	331	93	82	1782	**4519**
PEAK HR	**1880**	**444**	**314**	**90**	**93**	**1820**	**4641**

R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client	: Varga Traffic Planning
Job No/Name	: 3704 GLADESVILLE Monash Rd
Day/Date	: Thursday 4th August 2011

1 2 3

4 5 6

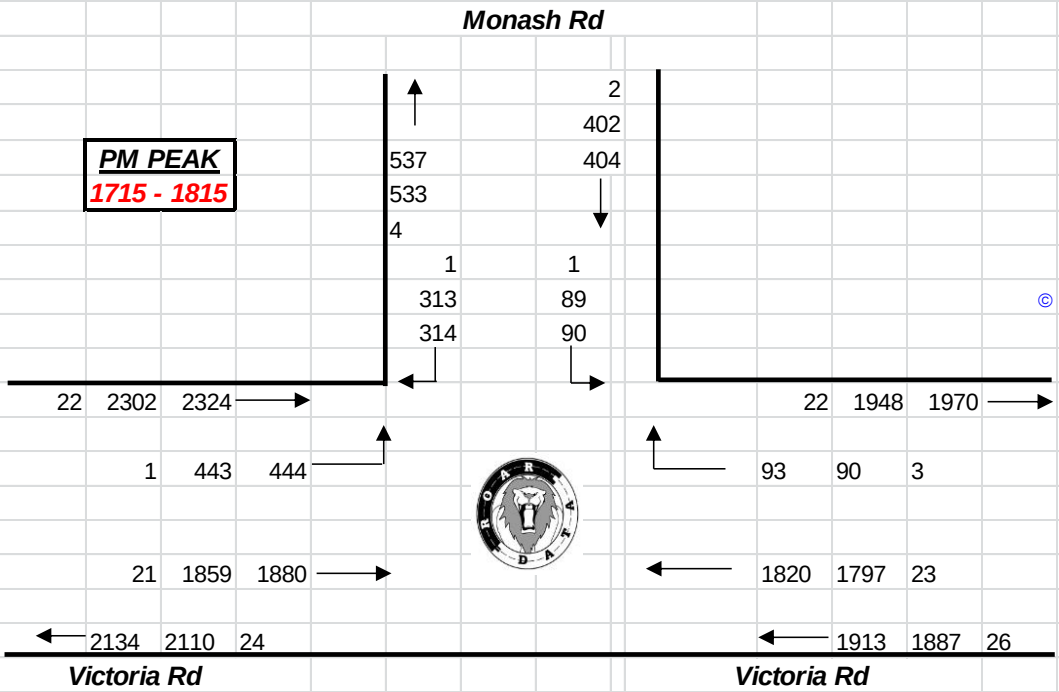
7 8 9

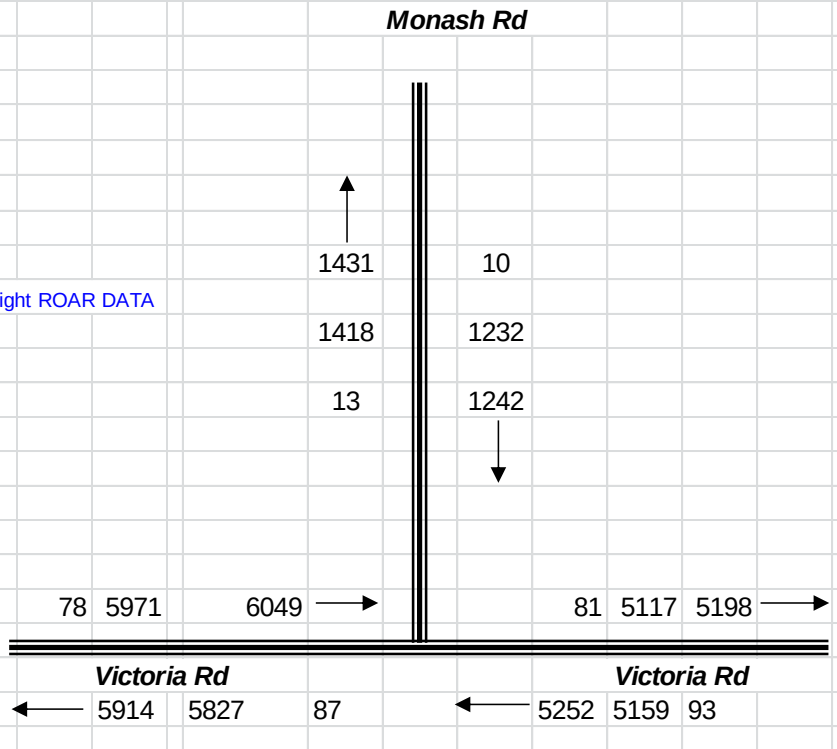
N

TOTAL VOLUMES FOR COUNT PERIOD

PM PEAK

1715 - 1815



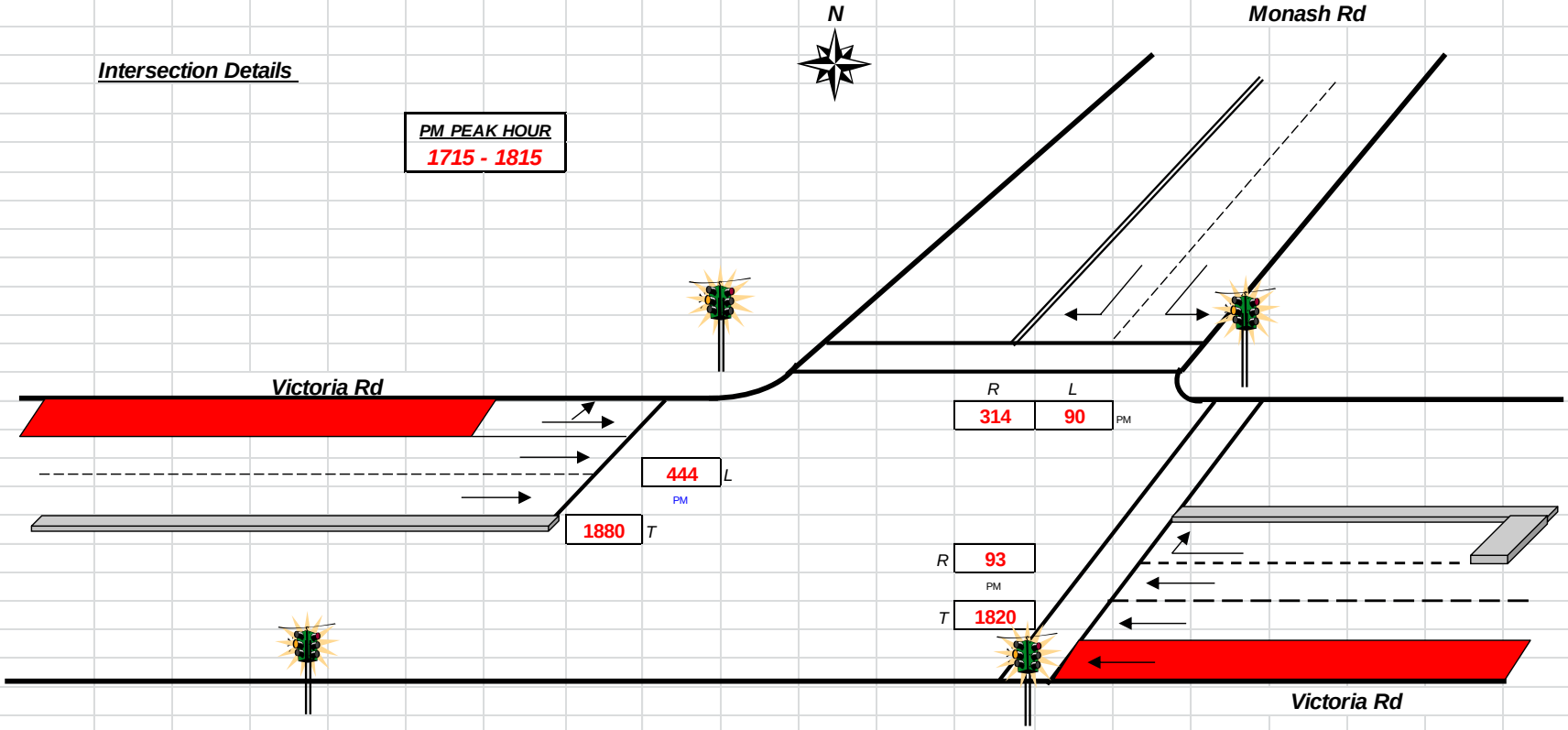


R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

Client	: Varga Traffic Planning
Job No/Name	: 3704 GLADESVILLE Monash Rd
Day/Date	: Thursday 4th August 2011

Intersection Details

PM PEAK HOUR
1715 - 1815



Combined figures only

Weather >>>

R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 3704 GLADESVILLE Monash Rd
Day/Date : Saturday 6th August 2011

Lights	WEST		NORTH		EAST		
	Victoria Rd		*Monash Rd*		*Victoria Rd*		
Time Per	**T**	**L**	**R**	**L**	**R**	**T**	**TOT**
1000 - 1015	384	62	53	13	15	292	**819**
1015 - 1030	381	76	81	21	15	289	**863**
1030 - 1045	416	74	113	26	14	284	**927**
1045 - 1100	399	80	92	17	14	299	**901**
1100 - 1115	336	56	78	26	18	269	**783**
1115 - 1130	330	78	80	25	9	250	**772**
1130 - 1145	371	73	86	27	16	309	**882**
1145 - 1200	324	64	92	38	8	301	**827**
1200 - 1215	356	73	80	33	21	291	**854**
1215 - 1230	389	76	96	35	12	314	**922**
1230 - 1245	396	68	71	34	17	311	**897**
1245 - 1300	419	65	64	39	17	353	**957**
1300 - 1315	382	82	85	18	15	339	**921**
1315 - 1330	386	78	66	26	16	369	**941**
1330 - 1345	391	60	95	27	16	315	**904**
1345 - 1400	353	67	84	26	12	305	**847**
Per End	**6013**	**1132**	**1316**	**431**	**235**	**4890**	**14017**

Heavies	WEST		NORTH		EAST		
	Victoria Rd		*Monash Rd*		*Victoria Rd*		
Time Per	**T**	**L**	**R**	**L**	**R**	**T**	**TOT**
1000 - 1015	3	1	0	0	1	3	**8**
1015 - 1030	4	0	1	0	1	1	**7**
1030 - 1045	2	0	1	0	0	4	**7**
1045 - 1100	4	1	0	0	1	5	**11**
1100 - 1115	4	1	0	3	2	2	**12**
1115 - 1130	3	0	1	0	0	1	**5**
1130 - 1145	2	0	0	0	0	5	**7**
1145 - 1200	4	0	0	1	1	3	**9**
1200 - 1215	3	1	0	0	0	5	**9**
1215 - 1230		0	0	0	0	1	**1**
1230 - 1245	4	1	0	0	0	6	**11**
1245 - 1300	1	2	0	1	0	6	**10**
1300 - 1315	6	0	1	0	0	3	**10**
1315 - 1330	1	0	1	0	0	2	**4**
1330 - 1345	4	0	1	0	2	3	**10**
1345 - 1400	5	0	0	0	0	1	**6**
Per End	**50**	**7**	**6**	**5**	**8**	**51**	**127**

Combined	WEST		NORTH		EAST		
	Victoria Rd		*Monash Rd*		*Victoria Rd*		
Time Per	**T**	**L**	**R**	**L**	**R**	**T**	**TOT**
1000 - 1015	387	63	53	13	16	295	**827**
1015 - 1030	385	76	82	21	16	290	**870**
1030 - 1045	418	74	114	26	14	288	**934**
1045 - 1100	403	81	92	17	15	304	**912**
1100 - 1115	340	57	78	29	20	271	**795**
1115 - 1130	333	78	81	25	9	251	**777**
1130 - 1145	373	73	86	27	16	314	**889**
1145 - 1200	328	64	92	39	9	304	**836**
1200 - 1215	359	74	80	33	21	296	**863**
1215 - 1230	389	76	96	35	12	315	**923**
1230 - 1245	400	69	71	34	17	317	**908**
1245 - 1300	420	67	64	40	17	359	**967**
1300 - 1315	388	82	86	18	15	342	**931**
1315 - 1330	387	78	67	26	16	371	**945**
1330 - 1345	395	60	96	27	18	318	**914**
1345 - 1400	358	67	84	26	12	306	**853**
Per End	**6063**	**1139**	**1322**	**436**	**243**	**4941**	**14144**

Lights	WEST		NORTH		EAST		
	Victoria Rd		*Monash Rd*		*Victoria Rd*		
Peak Per	**T**	**L**	**R**	**L**	**R**	**T**	**TOT**
1000 - 1100	1580	292	339	77	58	1164	**3510**
1015 - 1115	1532	286	364	90	61	1141	**3474**
1030 - 1130	1481	288	363	94	55	1102	**3383**
1045 - 1145	1436	287	336	95	57	1127	**3338**
1100 - 1200	1361	271	336	116	51	1129	**3264**
1115 - 1215	1381	288	338	123	54	1151	**3335**
1130 - 1230	1440	286	354	133	57	1215	**3485**
1145 - 1245	1465	281	339	140	58	1217	**3500**
1200 - 1300	1560	282	311	141	67	1269	**3630**
1215 - 1315	1586	291	316	126	61	1317	**3697**
1230 - 1330	1583	293	286	117	65	1372	**3716**
1245 - 1345	1578	285	310	110	64	1376	**3723**
1300 - 1400	1512	287	330	97	59	1328	**3613**
PEAK HR	**1578**	**285**	**310**	**110**	**64**	**1376**	**3723**

Heavies	WEST		NORTH		EAST		
	Victoria Rd		*Monash Rd*		*Victoria Rd*		
Peak Per	**T**	**L**	**R**	**L**	**R**	**T**	**TOT**
1000 - 1100	13	2	2	0	3	13	**33**
1015 - 1115	14	2	2	3	4	12	**37**
1030 - 1130	13	2	2	3	3	12	**35**
1045 - 1145	13	2	1	3	3	13	**35**
1100 - 1200	13	1	1	4	3	11	**33**
1115 - 1215	12	1	1	1	1	14	**30**
1130 - 1230	9	1	0	1	1	14	**26**
1145 - 1245	11	2	0	1	1	15	**30**
1200 - 1300	8	4	0	1	0	18	**31**
1215 - 1315	11	3	1	1	0	16	**32**
1230 - 1330	12	3	2	1	0	17	**35**
1245 - 1345	12	2	3	1	2	14	**34**
1300 - 1400	16	0	3	0	2	9	**30**
PEAK HR	**12**	**2**	**3**	**1**	**2**	**14**	**34**

Combined	WEST		NORTH		EAST		
	Victoria Rd		*Monash Rd*		*Victoria Rd*		
Peak Per	**T**	**L**	**R**	**L**	**R**	**T**	**TOT**
1000 - 1100	1593	294	341	77	61	1177	**3543**
1015 - 1115	1546	288	366	93	65	1153	**3511**
1030 - 1130	1494	290	365	97	58	1114	**3418**
1045 - 1145	1449	289	337	98	60	1140	**3373**
1100 - 1200	1374	272	337	120	54	1140	**3297**
1115 - 1215	1393	289	339	124	55	1165	**3365**
1130 - 1230	1449	287	354	134	58	1229	**3511**
1145 - 1245	1476	283	339	141	59	1232	**3530**
1200 - 1300	1568	286	311	142	67	1287	**3661**
1215 - 1315	1597	294	317	127	61	1333	**3729**
1230 - 1330	1595	296	288	118	65	1389	**3751**
1245 - 1345	1590	287	313	111	66	1390	**3757**
1300 - 1400	1528	287	333	97	61	1337	**3643**
PEAK HR	**1590**	**287**	**313**	**111**	**66**	**1390**	**3757**

R.O.A.R. DATA

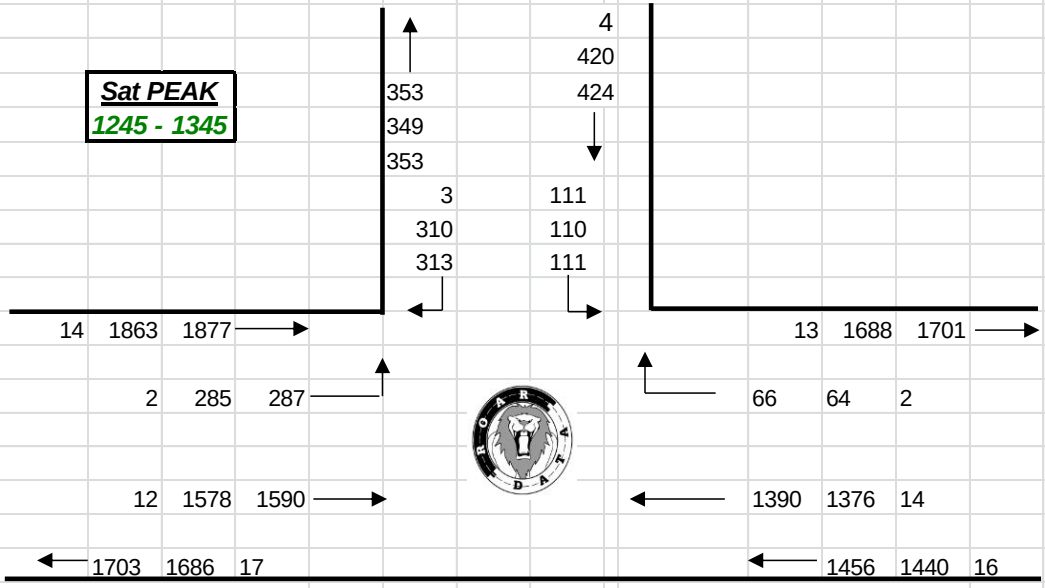
Reliable, Original & Authentic Results

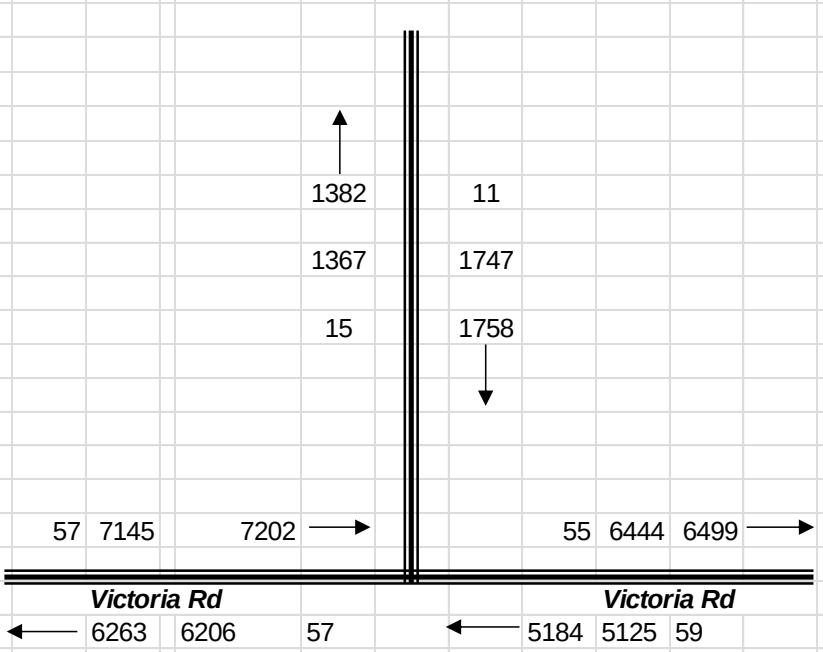
Ph.88196847, Fax 88196849, Mob.0418-239019

Client	: Varga Traffic Planning
Job No/Name	: 3704 GLADESVILLE Monash Rd
Day/Date	: Saturday 6th August 2011

TOTAL VOLUMES FOR COUNT PERIOD

N





R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client	: Varga Traffic Planning
Job No/Name	: 3704 GLADESVILLE Monash Rd
Day/Date	: Saturday 6th August 2011

Peds	**WEST**	**NORTH**	**EAST**	
	Victoria Rd	***Monash Rd***	***Victoria Rd***	
Time Per	**UNCLASSIFIED**	**UNCLASSIFIED**	**UNCLASSIFIED**	**TOT**
1000 - 1015	0	8	2	**10**
1015 - 1030	0	3	1	**4**
1030 - 1045	0	3	3	**6**
1045 - 1100	0	3	5	**8**
1100 - 1115	0	2	0	**2**
1115 - 1130	0	2	5	**7**
1130 - 1145	0	2	2	**4**
1145 - 1200	0	5	6	**11**
1200 - 1215	0	0	4	**4**
1215 - 1230	0	2	2	**4**
1230 - 1245	0	5	4	**9**
1245 - 1300	0	1	2	**3**
1300 - 1315	0	0	3	**3**
1315 - 1330	1	0	0	**1**
1330 - 1345	0	0	0	**0**
1345 - 1400	1	0	2	**3**
Period End	**2**	**36**	**41**	**79**

Peds	**WEST**	**NORTH**	**EAST**	
	Victoria Rd	***Monash Rd***	***Victoria Rd***	
Peak Per	**UNCLASSIFIED**	**UNCLASSIFIED**	**UNCLASSIFIED**	**TOT**
1000 - 1100	0	17	11	**28**
1015 - 1115	0	11	9	**20**
1030 - 1130	0	10	13	**23**
1045 - 1145	0	9	12	**21**
1100 - 1200	0	11	13	**24**
1115 - 1215	0	9	17	**26**
1130 - 1230	0	9	14	**23**
1145 - 1245	0	12	16	**28**
1200 - 1300	0	8	12	**20**
1215 - 1315	0	8	11	**19**
1230 - 1330	1	6	9	**16**
1245 - 1345	1	1	5	**7**
1300 - 1400	2	0	5	**7**
PEAK HR	**1**	**1**	**5**	**7**

R.O.A.R. DATA

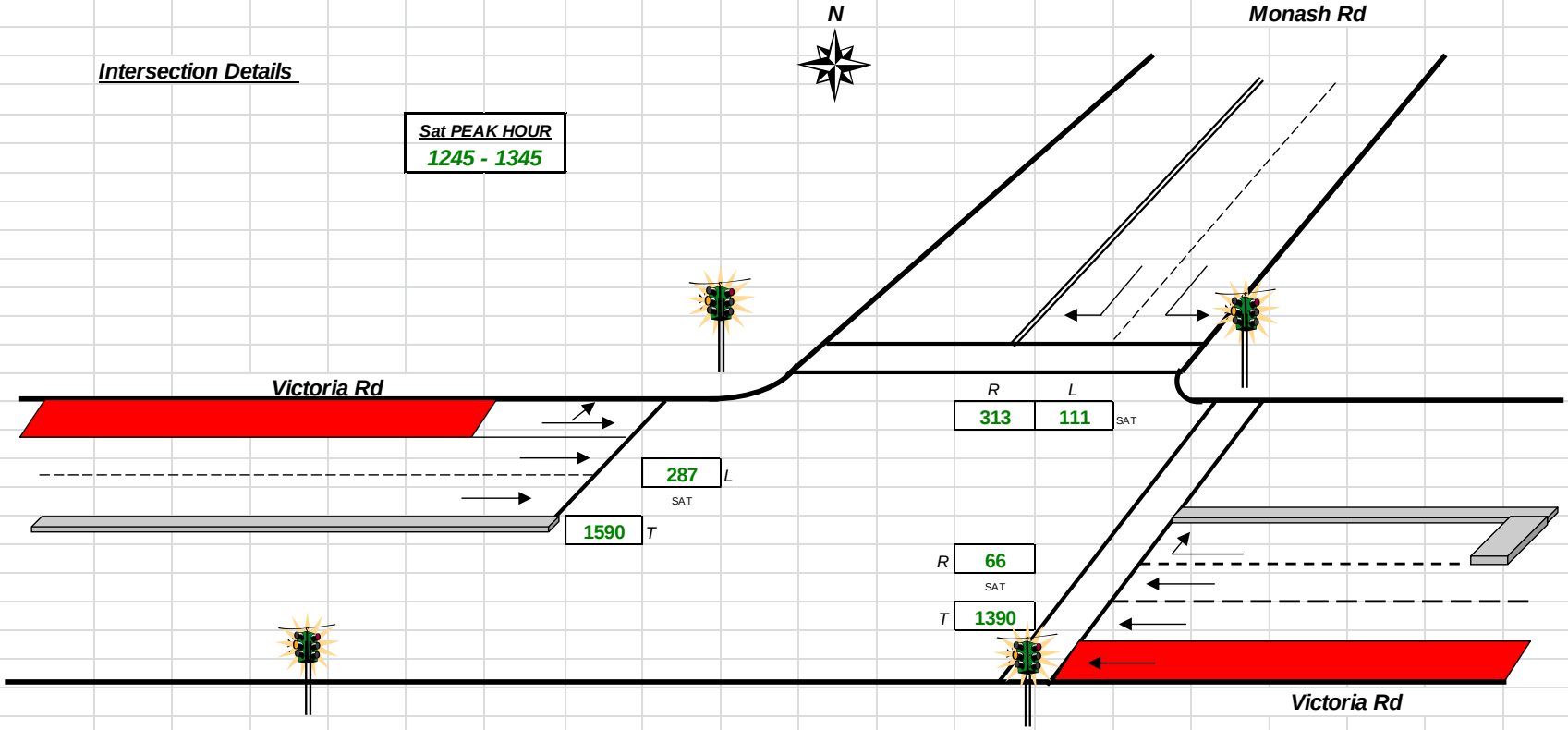
Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client	: Varga Traffic Planning
Job No/Name	: 3704 GLADESVILLE Monash Rd
Day/Date	: Saturday 6th August 2011

Intersection Details

Sat PEAK HOUR
1245 - 1345



Combined figures only

Weather >>>

R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 3704 GLADESVILLE Monash Rd
Day/Date : Thursday 4th August 2011

Lights	NORTH			WEST			SOUTH			EAST			
	Monash Rd			*College St*			*Monash Rd*			*Eltham St*			
Time Per	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**TOT**
1530 - 1545	4	83	15	10	3	3	8	80	4	10	3	1	**224**
1545 - 1600	9	78	19	12	6	3	3	67	9	12	4	1	**223**
1600 - 1615	7	96	13	18	4	4	7	76	7	14	8	3	**257**
1615 - 1630	8	83	7	20	10	7	3	100	5	15	4	7	**269**
1630 - 1645	3	79	13	23	6	7	10	99	8	13	7	2	**270**
1645 - 1700	9	72	17	14	6	5	3	115	7	12	2	2	**264**
1700 - 1715	9	74	10	19	3	4	12	104	8	17	6	4	**270**
1715 - 1730	17	77	9	22	3	5	4	115	9	11	5	1	**278**
1730 - 1745	9	74	14	20	10	6	5	123	8	18	4	4	**295**
1745 - 1800	12	86	11	21	7	6	13	108	5	14	2	1	**286**
1800 - 1815	4	81	7	11	3	4	12	98	11	11	3	4	**249**
1815 - 1830	5	85	6	8	4	2	5	91	8	17	8	1	**240**
Period End	**96**	**968**	**141**	**198**	**65**	**56**	**85**	**1176**	**89**	**164**	**56**	**31**	**3125**

Lights	NORTH			WEST			SOUTH			EAST			
	Monash Rd			*College St*			*Monash Rd*			*Eltham St*			
Peak Time	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**TOT**
1530 - 1630	28	340	54	60	23	17	21	323	25	51	19	12	**973**
1545 - 1645	27	336	52	73	26	21	23	342	29	54	23	13	**1019**
1600 - 1700	27	330	50	75	26	23	23	390	27	54	21	14	**1060**
1615 - 1715	29	308	47	76	25	23	28	418	28	57	19	15	**1073**
1630 - 1730	38	302	49	78	18	21	29	433	32	53	20	9	**1082**
1645 - 1745	44	297	50	75	22	20	24	457	32	58	17	11	**1107**
1700 - 1800	47	311	44	82	23	21	34	450	30	60	17	10	**1129**
1715 - 1815	42	318	41	74	23	21	34	444	33	54	14	10	**1108**
1730 - 1830	30	326	38	60	24	18	35	420	32	60	17	10	**1070**
PEAK HOUR	**47**	**311**	**44**	**82**	**23**	**21**	**34**	**450**	**30**	**60**	**17**	**10**	**1129**

Heavies	NORTH			WEST			SOUTH			EAST			
	Monash Rd			*College St*			*Monash Rd*			*Eltham St*			
Time Per	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**TOT**
1530 - 1545	0	1	0	0	0	0	0	3	0	0	0	0	**4**
1545 - 1600	0	0	0	0	0	0	0	1	0	0	0	0	**1**
1600 - 1615	0	1	0	0	0	0	0	2	0	0	0	0	**3**
1615 - 1630	0	1	0	0	0	0	0	1	0	0	0	0	**2**
1630 - 1645	0	2	0	0	0	0	0	0	0	0	0	0	**2**
1645 - 1700	0	1	0	0	0	0	0	0	0	0	0	0	**1**
1700 - 1715	0	1	0	0	0	0	0	0	0	0	0	0	**1**
1715 - 1730	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1730 - 1745	0	1	0	0	0	0	0	0	0	0	0	0	**1**
1745 - 1800	0	1	0	0	0	0	0	2	0	0	0	0	**3**
1800 - 1815	0	0	0	0	0	0	0	1	0	0	0	0	**1**
1815 - 1830	0	1	0	0	0	0	0	2	0	0	0	0	**3**
Period End	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**22**

Heavies	NORTH			WEST			SOUTH			EAST			
	Monash Rd			*College St*			*Monash Rd*			*Eltham St*			
Peak Per	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**TOT**
1530 - 1630	0	3	0	0	0	0	0	7	0	0	0	0	**10**
1545 - 1645	0	4	0	0	0	0	0	4	0	0	0	0	**8**
1600 - 1700	0	5	0	0	0	0	0	3	0	0	0	0	**8**
1615 - 1715	0	5	0	0	0	0	0	1	0	0	0	0	**6**
1630 - 1730	0	4	0	0	0	0	0	0	0	0	0	0	**4**
1645 - 1745	0	3	0	0	0	0	0	0	0	0	0	0	**3**
1700 - 1800	0	3	0	0	0	0	0	2	0	0	0	0	**5**
1715 - 1815	0	2	0	0	0	0	0	3	0	0	0	0	**5**
1730 - 1830	0	3	0	0	0	0	0	5	0	0	0	0	**8**
PEAK HOUR	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**5**

Combined	NORTH			WEST			SOUTH			EAST			
	Monash Rd			*College St*			*Monash Rd*			*Eltham St*			
Time Per	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**TOT**
1530 - 1545	4	84	15	10	3	3	8	83	4	10	3	1	**228**
1545 - 1600	9	78	19	12	6	3	3	68	9	12	4	1	**224**
1600 - 1615	7	97	13	18	4	4	7	78	7	14	8	3	**260**
1615 - 1630	8	84	7	20	10	7	3	101	5	15	4	7	**271**
1630 - 1645	3	81	13	23	6	7	10	99	8	13	7	2	**272**
1645 - 1700	9	73	17	14	6	5	3	115	7	12	2	2	**265**
1700 - 1715	9	75	10	19	3	4	12	104	8	17	6	4	**271**
1715 - 1730	17	77	9	22	3	5	4	115	9	11	5	1	**278**
1730 - 1745	9	75	14	20	10	6	5	123	8	18	4	4	**296**
1745 - 1800	12	87	11	21	7	6	13	110	5	14	2	1	**289**
1800 - 1815	4	81	7	11	3	4	12	99	11	11	3	4	**250**
1815 - 1830	5	86	6	8	4	2	5	93	8	17	8	1	**243**
Period End	**96**	**978**	**141**	**198**	**65**	**56**	**85**	**1188**	**89**	**164**	**56**	**31**	**3147**

Combined	NORTH			WEST			SOUTH			EAST			
	Monash Rd			*College St*			*Monash Rd*			*Eltham St*			
Peak Per	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**TOT**
1530 - 1630	28	343	54	60	23	17	21	330	25	51	19	12	**983**
1545 - 1645	27	340	52	73	26	21	23	346	29	54	23	13	**1027**
1600 - 1700	27	335	50	75	26	23	23	393	27	54	21	14	**1068**
1615 - 1715	29	313	47	76	25	23	28	419	28	57	19	15	**1079**
1630 - 1730	38	306	49	78	18	21	29	433	32	53	20	9	**1086**
1645 - 1745	44	300	50	75	22	20	24	457	32	58	17	11	**1110**
1700 - 1800	47	314	44	82	23	21	34	452	30	60	17	10	**1134**
1715 - 1815	42	320	41	74	23	21	34	447	33	54	14	10	**1113**
1730 - 1830	30	329	38	60	24	18	35	425	32	60	17	10	**1078**
PEAK HOUR	**47**	**314**	**44**	**82**	**23**	**21**	**34**	**452**	**30**	**60**	**17**	**10**	**1134**

R.O.A.R DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : GLADESVILLE Monash Rd
Day/Date : Thursday 29th September 2011

Peds	NORTH	WEST	SOUTH	EAST	
	Monash Rd	*College St*	*Monash Rd*	*Eltham St*	
Time Per	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	TOT
1530 - 1545	0	0	0	1	**1**
1545 - 1600	0	0	1	4	**5**
1600 - 1615	1	1	3	1	**6**
1615 - 1630	2	0	1	3	**6**
1630 - 1645	2	1	5	3	**11**
1645 - 1700	1	6	0	1	**8**
1700 - 1715	1	0	1	4	**6**
1715 - 1730	2	0	0	0	**2**
1730 - 1745	1	0	1	0	**2**
1745 - 1800	2	0	2	2	**6**
1800 - 1815	0	2	4	2	**8**
1815 - 1830	0	0	3	2	**5**
Period End	**12**	**10**	**21**	**23**	**66**

Peds	NORTH	WEST	SOUTH	EAST	
	Monash Rd	*College St*	*Monash Rd*	*Eltham St*	
Peak Per	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	TOT
1530 - 1630	3	1	5	9	**18**
1545 - 1645	5	2	10	11	**28**
1600 - 1700	6	8	9	8	**31**
1615 - 1715	6	7	7	11	**31**
1630 - 1730	6	7	6	8	**27**
1645 - 1745	5	6	2	5	**18**
1700 - 1800	6	0	4	6	**16**
1715 - 1815	5	2	7	4	**18**
1730 - 1830	3	2	10	6	**21**
PEAK HR	**6**	**0**	**4**	**6**	**16**

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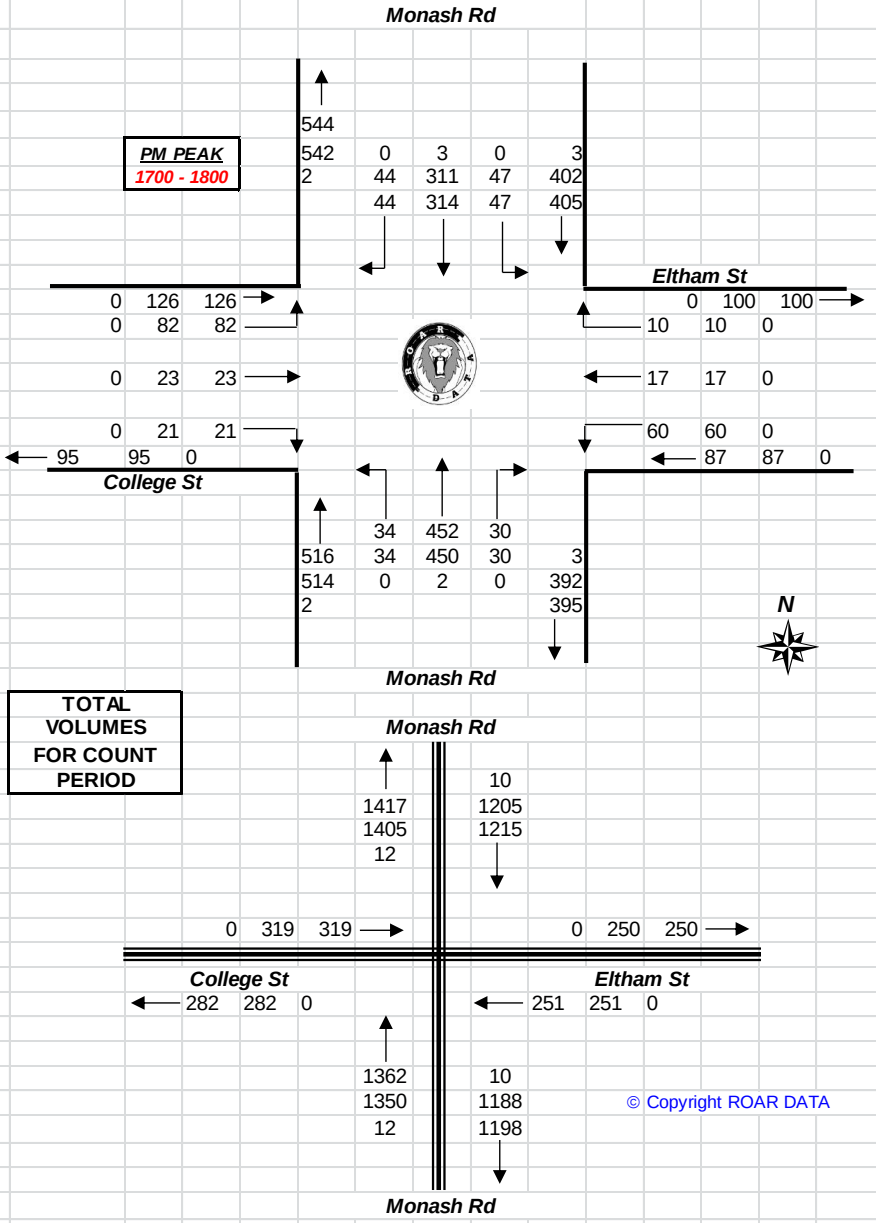


R.O.A.R. DATA

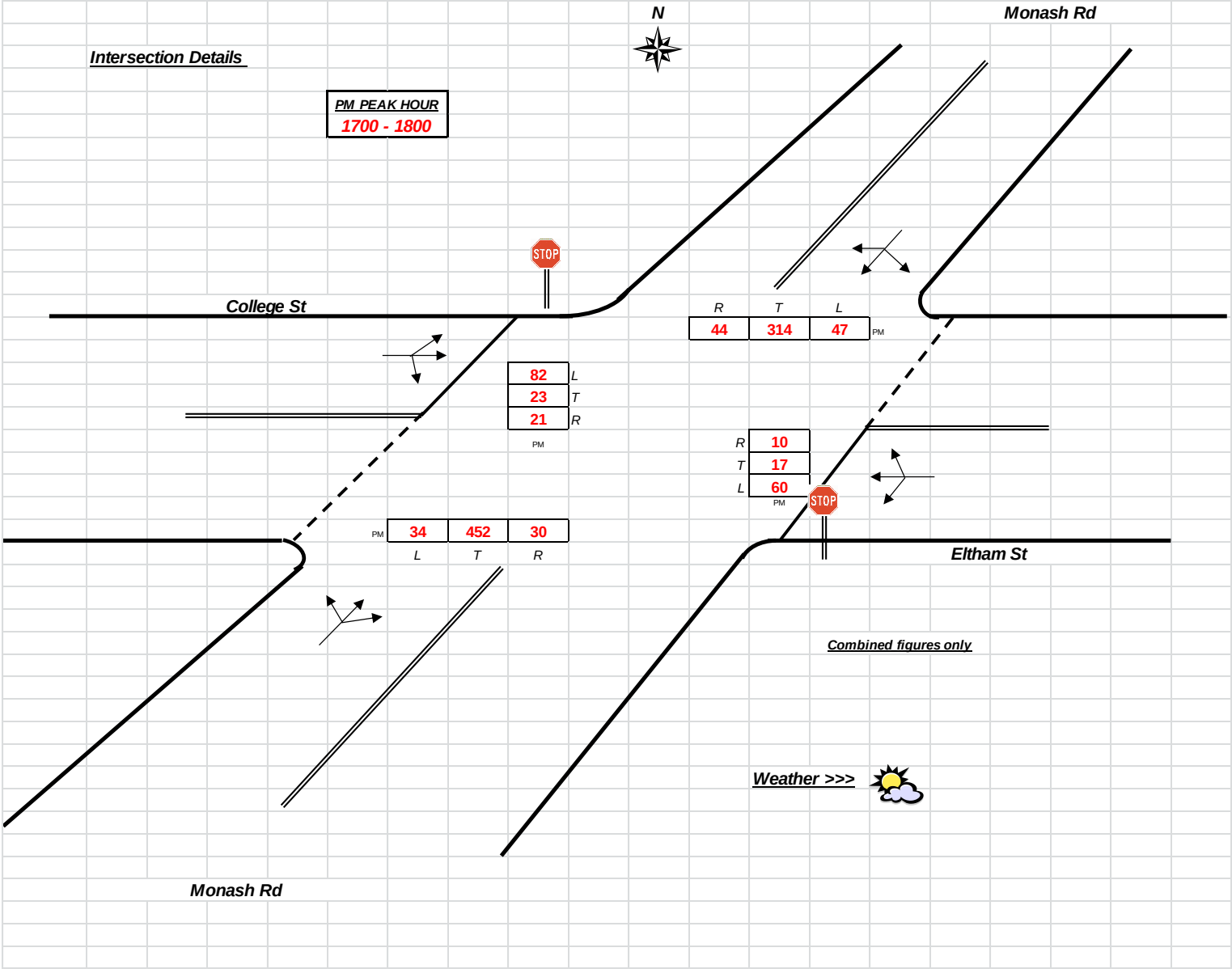
Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client	: Varga Traffic Planning
Job No/Name	: 3704 GLADESVILLE Monash Rd
Day/Date	: Thursday 4th August 2011

Intersection Details

PM PEAK HOUR
1700 - 1800



Combined figures only

Weather >>>

R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 3704 GLADESVILLE Monash Rd
Day/Date : Saturday 6th August 2011

Lights	NORTH			WEST			SOUTH			EAST			
	Monash Rd			*College St*			*Monash Rd*			*Eltham St*			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1000 - 1015	6	42	8	6	2	9	3	65	8	20	4	1	**174**
1015 - 1030	7	83	4	3	1	3	8	73	5	14	2	4	**207**
1030 - 1045	2	113	9	5	4	4	8	72	3	11	2	2	**235**
1045 - 1100	4	86	7	9	3	4	2	75	12	15	3	1	**221**
1100 - 1115	7	80	6	7	2	6	10	56	14	13	4	6	**211**
1115 - 1130	10	82	4	5	1	3	8	69	6	17	5	2	**212**
1130 - 1145	4	79	8	9	2	10	4	64	2	23	5	6	**216**
1145 - 1200	7	100	3	3	3	6	7	65	3	15	3	2	**217**
1200 - 1215	7	85	2	6	1	5	5	77	7	19	1	3	**218**
1215 - 1230	4	102	2	6	6	5	6	77	2	19	3	4	**236**
1230 - 1245	6	79	4	5	1	5	5	75	3	20	0	4	**207**
1245 - 1300	2	76	4	7	3	4	4	74	3	20	2	1	**200**
1300 - 1315	4	68	7	4	2	5	5	75	4	26	4	2	**206**
1315 - 1330	8	63	10	5	6	4	7	78	5	21	2	3	**212**
1330 - 1345	4	99	3	2	1	3	2	63	6	12	4	3	**202**
1345 - 1400	4	90	3	5	1	4	4	70	4	11	2	0	**198**
Period End	86	1327	84	87	39	80	88	1128	87	276	46	44	**3372**

Lights	NORTH			WEST			SOUTH			EAST			
	Monash Rd			*College St*			*Monash Rd*			*Eltham St*			
Peak Period	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1000 - 1100	19	324	28	23	10	20	21	285	28	60	11	8	**837**
1015 - 1115	20	362	26	24	10	17	28	276	34	53	11	13	**874**
1030 - 1130	23	361	26	26	10	17	28	272	35	56	14	11	**879**
1045 - 1145	25	327	25	30	8	23	24	264	34	68	17	15	**860**
1100 - 1200	28	341	21	24	8	25	29	254	25	68	17	16	**856**
1115 - 1215	28	346	17	23	7	24	24	275	18	74	14	13	**863**
1130 - 1230	22	366	15	24	12	26	22	283	14	76	12	15	**887**
1145 - 1245	24	366	11	20	11	21	23	294	15	73	7	13	**878**
1200 - 1300	19	342	12	24	11	19	20	303	15	78	6	12	**861**
1215 - 1315	16	325	17	22	12	19	20	301	12	85	9	11	**849**
1230 - 1330	20	286	25	21	12	18	21	302	15	87	8	10	**825**
1245 - 1345	18	306	24	18	12	16	18	290	18	79	12	9	**820**
1300 - 1400	20	320	23	16	10	16	18	286	19	70	12	8	**818**
PEAK HOUR	**22**	**366**	**15**	**24**	**12**	**26**	**22**	**283**	**14**	**76**	**12**	**15**	**887**

Heavies	NORTH			WEST			SOUTH			EAST			
	Monash Rd			*College St*			*Monash Rd*			*Eltham St*			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1000 - 1015	0	0	0	0	0	0	0	1	0	0	0	0	**1**
1015 - 1030	0	1	0	1	0	0	0	2	0	0	0	0	**4**
1030 - 1045	0	1	0	0	0	0	0	0	0	0	0	0	**1**
1045 - 1100	0	0	0	0	0	0	0	1	0	0	0	0	**1**
1100 - 1115	0	2	0	0	0	0	0	4	0	0	0	0	**6**
1115 - 1130	0	1	0	0	0	0	0	0	0	0	0	0	**1**
1130 - 1145	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1145 - 1200	0	1	0	0	0	0	0	1	0	0	0	0	**2**
1200 - 1215	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1215 - 1230	0	0	0	0	0	0	0	1	0	0	0	0	**1**
1230 - 1245	0	0	0	0	0	0	0	0	0	0	0	0	**0**
1245 - 1300	0	1	0	0	0	0	0	2	0	0	0	0	**3**
1300 - 1315	0	1	0	0	0	0	0	0	0	0	0	0	**1**
1315 - 1330	0	1	0	0	0	0	0	0	0	0	0	0	**1**
1330 - 1345	0	1	0	0	0	0	0	2	0	0	0	0	**3**
1345 - 1400	0	0	0	0	0	0	0	1	0	0	0	0	**1**
Period End	**0**	**10**	**0**	**1**	**0**	**0**	**0**	**15**	**0**	**0**	**0**	**0**	**26**

Heavies	NORTH			WEST			SOUTH			EAST			
	Monash Rd			*College St*			*Monash Rd*			*Eltham St*			
Peak Period	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1000 - 1100	0	2	0	1	0	0	0	4	0	0	0	0	**7**
1015 - 1115	0	4	0	1	0	0	0	7	0	0	0	0	**12**
1030 - 1130	0	4	0	0	0	0	0	5	0	0	0	0	**9**
1045 - 1145	0	3	0	0	0	0	0	5	0	0	0	0	**8**
1100 - 1200	0	4	0	0	0	0	0	5	0	0	0	0	**9**
1115 - 1215	0	2	0	0	0	0	0	1	0	0	0	0	**3**
1130 - 1230	0	1	0	0	0	0	0	2	0	0	0	0	**3**
1145 - 1245	0	1	0	0	0	0	0	2	0	0	0	0	**3**
1200 - 1300	0	1	0	0	0	0	0	3	0	0	0	0	**4**
1215 - 1315	0	2	0	0	0	0	0	3	0	0	0	0	**5**
1230 - 1330	0	3	0	0	0	0	0	2	0	0	0	0	**5**
1245 - 1345	0	4	0	0	0	0	0	4	0	0	0	0	**8**
1300 - 1400	0	3	0	0	0	0	0	3	0	0	0	0	**6**
PEAK HOUR	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**3**

R.O.A.R. DATA

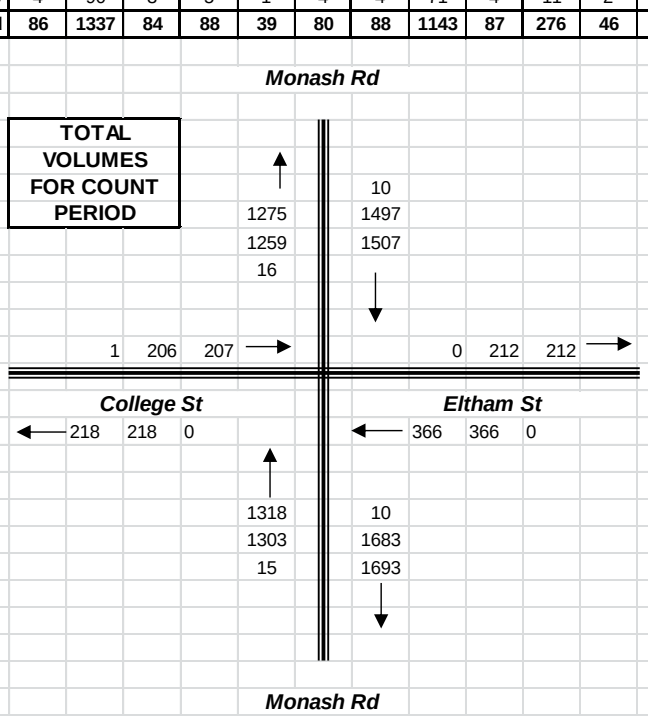
Reliable, Original & Authentic Results

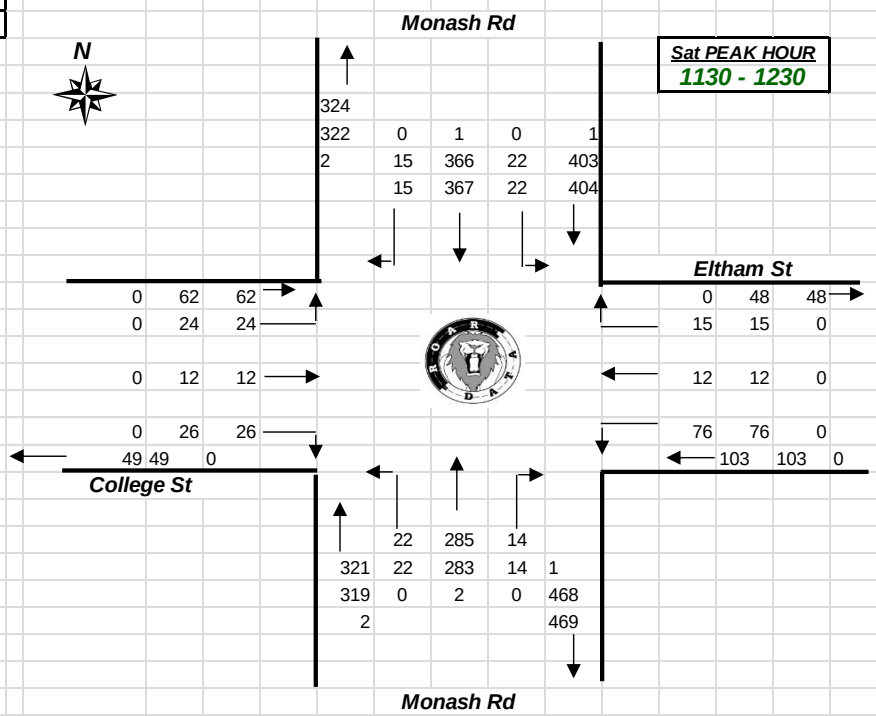
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 3704 GLADESVILLE Monash Rd
Day/Date : Saturday 6th August 2011

COMBINED	NORTH Monash Rd			WEST College St			SOUTH Monash Rd			EAST Eltham St			
Time Period	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1000 - 1015	6	42	8	6	2	9	3	66	8	20	4	1	**175**
1015 - 1030	7	84	4	4	1	3	8	75	5	14	2	4	**211**
1030 - 1045	2	114	9	5	4	4	8	72	3	11	2	2	**236**
1045 - 1100	4	86	7	9	3	4	2	76	12	15	3	1	**222**
1100 - 1115	7	82	6	7	2	6	10	60	14	13	4	6	**217**
1115 - 1130	10	83	4	5	1	3	8	69	6	17	5	2	**213**
1130 - 1145	4	79	8	9	2	10	4	64	2	23	5	6	**216**
1145 - 1200	7	101	3	3	3	6	7	66	3	15	3	2	**219**
1200 - 1215	7	85	2	6	1	5	5	77	7	19	1	3	**218**
1215 - 1230	4	102	2	6	6	5	6	78	2	19	3	4	**237**
1230 - 1245	6	79	4	5	1	5	5	75	3	20	0	4	**207**
1245 - 1300	2	77	4	7	3	4	4	76	3	20	2	1	**203**
1300 - 1315	4	69	7	4	2	5	5	75	4	26	4	2	**207**
1315 - 1330	8	64	10	5	6	4	7	78	5	21	2	3	**213**
1330 - 1345	4	100	3	2	1	3	2	65	6	12	4	3	**205**
1345 - 1400	4	90	3	5	1	4	4	71	4	11	2	0	**199**
Period End	**86**	**1337**	**84**	**88**	**39**	**80**	**88**	**1143**	**87**	**276**	**46**	**44**	**3398**

COMBINED	NORTH Monash Rd			WEST College St			SOUTH Monash Rd			EAST Eltham St			
Peak Period	L	T	R	L	T	R	L	T	R	L	T	R	TOT
1000 - 1100	19	326	28	24	10	20	21	289	28	60	11	8	**844**
1015 - 1115	20	366	26	25	10	17	28	283	34	53	11	13	**886**
1030 - 1130	23	365	26	26	10	17	28	277	35	56	14	11	**888**
1045 - 1145	25	330	25	30	8	23	24	269	34	68	17	15	**868**
1100 - 1200	28	345	21	24	8	25	29	259	25	68	17	16	**865**
1115 - 1215	28	348	17	23	7	24	24	276	18	74	14	13	**866**
1130 - 1230	22	367	15	24	12	26	22	285	14	76	12	15	**890**
1145 - 1245	24	367	11	20	11	21	23	296	15	73	7	13	**881**
1200 - 1300	19	343	12	24	11	19	20	306	15	78	6	12	**865**
1215 - 1315	16	327	17	22	12	19	20	304	12	85	9	11	**854**
1230 - 1330	20	289	25	21	12	18	21	304	15	87	8	10	**830**
1245 - 1345	18	310	24	18	12	16	18	294	18	79	12	9	**828**
1300 - 1400	20	323	23	16	10	16	18	289	19	70	12	8	**824**
PEAK HOUR	**22**	**367**	**15**	**24**	**12**	**26**	**22**	**285**	**14**	**76**	**12**	**15**	**890**





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Reliable, Original & Authentic Results

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Client	: Varga Traffic Planning
Job No/Name	: 3704 GLADESVILLE Monash Rd
Day/Date	: Saturday 6th August 2011

Peds	NORTH	WEST	SOUTH	EAST	
	Monash Rd	*College St*	*Monash Rd*	*Eltham St*	
Time Period	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	TOT
1000 - 1015	0	1	0	5	**6**
1015 - 1030	1	3	1	3	**8**
1030 - 1045	0	2	0	4	**6**
1045 - 1100	0	2	0	0	**2**
1100 - 1115	0	0	0	4	**4**
1115 - 1130	0	0	0	6	**6**
1130 - 1145	2	0	0	1	**3**
1145 - 1200	0	0	0	0	**0**
1200 - 1215	0	0	1	1	**2**
1215 - 1230	0	1	0	2	**3**
1230 - 1245	0	0	0	7	**7**
1245 - 1300	0	0	0	5	**5**
1300 - 1315	0	0	0	3	**3**
1315 - 1330	0	1	1	2	**4**
1330 - 1345	0	0	0	3	**3**
1345 - 1400	1	1	0	2	**4**
Period End	**4**	**11**	**3**	**48**	**66**

Peds	NORTH	WEST	SOUTH	EAST	
	Monash Rd	*College St*	*Monash Rd*	*Eltham St*	
Peak Period	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	TOT
1000 - 1100	1	8	1	12	**22**
1015 - 1115	1	7	1	11	**20**
1030 - 1130	0	4	0	14	**18**
1045 - 1145	2	2	0	11	**15**
1100 - 1200	2	0	0	11	**13**
1115 - 1215	2	0	1	8	**11**
1130 - 1230	2	1	1	4	**8**
1145 - 1245	0	1	1	10	**12**
1200 - 1300	0	1	1	15	**17**
1215 - 1315	0	1	0	17	**18**
1230 - 1330	0	1	1	17	**19**
1245 - 1345	0	1	1	13	**15**
1300 - 1400	1	2	1	10	**14**
PEAK HOUR	**2**	**1**	**1**	**4**	**8**