

Issue History

File Name	Prepared by	Reviewed by	Issued by	Date	Issued to
P2588.001T 230 Victoria Road, Gladesville TIA Review	C. Wills	SP. Power	SP. Power	27/05/2016	Sandra McCarry, City of Ryde

230 Victoria Road, Gladesville TIA Review

1. INTRODUCTION

Bitzios Consulting has been engaged by the City of Ryde to undertake an independent peer review of the traffic and parking components of a proposed mixed use development located at 230 Victoria Road, Gladesville. The development site is shown in Figure 1.1. The proposal includes:

- 88 residential units, comprising 24 1-bedroom and 64 2-bedroom units; and
- 2 commercial tenancies totalling 306m²; and
- Off-street basement car-parking including 113 spaces, with access from Gerard Lane.

This technical note summarises our review of the traffic and transport aspects, including:

- the development application material;
- the proposed access locations;
- safety issues;
- traffic generation and distribution;
- parking demand and provision;
- parking layout and any potential traffic circulation issues;
- the impact of the developments on the external road system; and
- a review of recent submissions made to Council in relation to traffic, parking, access, and related safety issues for the application for 230 Victoria Road.



Image Source: Google Maps

Figure 1.1: Site Location

1.1 DOCUMENTS REVIEWED

The following documents in relation to the development application were received:

- Traffic and Parking Assessment Report (for 230 Victoria Road) by Varga Traffic Planning, 11 March 2016;
- Statement of Environmental Effects (for 230 Victoria Road) by Planning Ingenuity, March 2015;
- Development Plans DA2100 Issue A, DA2101 Issue A and DA2102 Issue A (for 230 Victoria Road) by Urban Link Architecture 1 April 2016;
- Development Application form LDA2015/0433 (for 230 Victoria Road) received by City of Ryde 8 September 2015;

Of these, a traffic and parking report by Varga Traffic Planning assessed the traffic and parking implications of the development and is the focus of our review. This technical note provides a review of the traffic and parking report, based on RMS *Technical Direction* TDT 2013/04a (Guide to Traffic Generating Developments - Updated Traffic Surveys).

Reference has been made to the following relevant standards and guidelines while reviewing the application:

- Ryde Development Control Plan 2014 (DCP);
- RMS Guide to Traffic Generating Developments 2002;
- RMS *Technical Direction* (TDT 2013/04a)
- Australian Standard AS2890.1-2004 Off-street Car Parking;
- Australian Standard AS2890.3-2015 Bicycle Parking Facilities; and
- Australian Standard AS2890.6-2009 Off-Street Parking for People with Disabilities.

1.2 SITE VISIT

Bitzios Consulting conducted a site visit on Thursday 28 April between 4:30 p.m. and 6:00 p.m. to assess the existing traffic conditions in the vicinity of 230 Victoria Road, Gladesville. A spot count was undertaken to quantify the volumes of traffic through the Hepburn Avenue / Gerard Lane intersection and evaluate the traffic generated from 230 Victoria Road. Additionally, analysis of the queueing experienced by vehicles accessing Victoria Road from Hepburn Avenue and Jordan Street was observed as was the type and availability of kerbside parking on Hepburn Avenue and Western Crescent. Further details are provided in Appendix A.

2. REVIEW FINDINGS: 230 VICTORIA ROAD DEVELOPMENT

2.1 PARKING REVIEW

2.1.1 Parking Provision

The parking rates used in the traffic report are in accordance with the Ryde DCP 2014 Part 9.2 and 9.3, which are:

- 1-bedroom: minimum 0.6 spaces per dwelling, maximum 1 space per dwelling;
- 2-bedroom: minimum 0.9 spaces per dwelling, maximum 1.2 spaces per dwelling;
- 3-bedroom: minimum 1.4 spaces per dwelling, maximum 1.6 spaces per dwelling;
- Visitor Parking: minimum 1 space per 5 dwellings;
- Disabled Parking: 1 space per accessible unit;
- Commercial Parking: 1 space per 40m² Gross Floor Area (GFA);
- Motorcycle Parking: No specific requirement; and
- Bicycle Parking: 10% of total number of parking spaces for cars.

Based on this, the applicant is required to provide a minimum of 72 and maximum of 101 residential parking spaces with 18 visitor spaces, 8 commercial spaces, and a minimum of 10 bicycle spaces.

The development provides a total of 113 off-street parking spaces, which comprises of the following:

- 88 residential spaces including 9 disabled spaces;
- 7 commercial spaces;
- 18 visitor spaces;
- 7 Motorcycle spaces; and
- 23 bicycle spaces (6 are outside the property boundary on the Victoria Road frontage).

Additionally, substantial on-street parking availability was observed during the PM Peak site visit along Hepburn Avenue and Western Crescent, with the vast majority unrestricted. This indicates that should overflow parking occur from the proposed basement car park, there is sufficient on-street parking capacity to absorb the excess demand without exacerbating issues for existing residents. More detail is provided in Attachment A – Site Visit Observations.

Compliance with City of Ryde DCP 2014

The proposal meets the requirements of the *Ryde DCP 2014* in relation to residential, disabled, visitor and bicycle parking spaces. However, the parking layout shown in the architectural drawings *DA2100*, *DA2101* and *DA2102 Issue A* shows 7 commercial spaces, which does not fulfil the requirement of 8 spaces derived from 1 parking space per 40m² GFA (*Ryde DCP 2014 Section 9.3 Clause 2.3*).

Consistency with Varga Traffic Planning Traffic and Parking Assessment Report

The parking calculations for the maximum residential parking rates in the Traffic and Parking Assessment Report compiled by Varga Traffic Planning are inconsistent with the calculations undertaken by Bitzios Consulting. The minimum residential parking provision of 72 spaces stated by Varga Traffic Plan is correct, however their maximum of 118.5 spaces is incorrect. Bitzios Consulting calculated the maximum residential parking requirement at 100.8 spaces, as per Table 2.2.

Consistency with Statement of Environmental Effects by Planning Ingenuity

The dwelling composition and commercial tenancy sizes used to calculate the parking controls in the *Statement of Environmental Effects (Planning Ingenuity, 2015) Annexure B page 8* was noted to be

inconsistent with the received architectural drawings (and subsequently, the Varga Traffic Planning and Bitzios Consulting parking control calculations) as show in Table 2.1.

Table 2.1: Dwelling and Commercial Tenancy Comparison: SEE and Architectural Drawings

	SEE	Architectural Drawings
1-bedroom	30	24
2-bedroom	53	64
3-bedroom	5	0
Commercial Tenancy 1	127m ²	127m ²
Commercial Tenancy 2	175m ²	179m ²

The difference in commercial GFA is considered minor.

The Statement of Environmental Effects should be updated to reflect the most recent architectural plans and traffic advice provided by Varga Traffic Planning.

Table 2.2: Parking Space Calculation Comparison: Varga (V) and Bitzios (B)

	Dwellings	Spaces	Dwellings	Spaces (V)	Spaces (B)
1-bedroom	30	18	24	72-118.5	72 - 101
2-bedroom	53	48	64		
3-bedroom	5	7	0		
Visitors		18		17.6	18
Commercial	305m ² (1/25m ²)	13	306 (1/40m ²)	7.6 ≈ 7	7.6 ≈ 8
Requirement		104		97.2 – 143.7	98 - 127
Proposed		113		114	

2.1.2 Parking Layout

The parking layout was assessed based on Australian Standards AS2890.1: *Off-street Car Parking*, AS2890.3: *Bicycle Parking Facilities* and AS2890.6: *Off-Street Parking for People with Disabilities*. A compliance checklist is shown in Table 2.3 below.

Table 2.3: Parking Compliance Check for 230 Victoria Road

AS2890.1 Section	Criteria	Requirements	Compliance	Comments
1.0	User Class	Class 1A	-	
2.4	Parking Dimensions and Aisle Width	2.4m x 5.4m 5.8m aisle width	It appears that all parking spaces are correctly dimensioned (scaled from drawing). Aisle width for two of the parking spaces is non-compliant i.e. less than the required 5800mm (and is shown by dimensions in the drawing).	The dimensions are not labelled on the plans, and as such, cannot be confirmed. Plans should show dimensions. See Section 4.1.3 Bullet 1 for details of non-compliance.

AS2890.1 Section	Criteria	Requirements	Compliance	Comments
2.4	Vertical Obstruction	300mm clearance	Appears so (scaled from drawing)	The dimensions are not labelled on the plans, and as such, cannot be confirmed. Plans should show dimensions.
AS2890.6 Section 2.2 (Figure 2.2 & 2.3)	Bollard Location in Shared Space	Centrally located 800mm ($\pm$ 50mm) from entry to shared space	Not shown on drawing	Bollard locations and dimensions will be required to be shown in relevant shared spaces.
AS2890.6 Section 2.4	Disabled Parking Dimensions	4.8m x 5.4m x 2.5m (head height)	Appears so (scaled from drawing) No head height shown	The dimensions are not labelled on the plans, and as such, cannot be confirmed. Plans should show dimensions.
2.5	Ramp Grades	No more than 1 in 5 (longer than 20m) No more than 1 in 4 (up to 20m)	Yes	
2.5	Grade Transitions	12.5% for summit 15% for sag	Yes	
3.2	Access Driveway Width	6m – 9m combined	Yes (scaled from drawing)	The dimensions are not labelled on the plans, and as such, cannot be confirmed. Plans should show dimensions.
3.2	Sight Distance	2.5m x 2.0m splay area	Yes, driveway extends directly onto Gerard Lane.	
3.3	Access Driveway Grades	No more than 1 in 8 No more than 1 in 20 (over property line)	Yes	
5.2	Clearance from Columns, Walls and Obstructions	Allowance of design envelope into parking space	No. All columns appear to have 300mm clearance from the entry of parking space however a number of walls and obstructions impede the allowance of the design envelope to fit in parking spaces.	See Section 2.1.3 Non-Compliances bullet point 2 below for further detail.
Appendix B	Manoeuvrability	Turning paths should include ingress/egress manoeuvrability for applicable vehicle types	No. Compliant turning paths are not shown for a B85 vehicle entering and exiting parking spaces. Compliant swept paths are shown for a service vehicle entering and exiting loading zone. The service vehicle and its dimensions are not shown and are required to be.	No swept path analysis provided for awkwardly positioned parking spaces. See Section 2.1.3 Non-Compliances bullet point 3 below for further detail.

2.1.3 Non-Compliances

The following non compliances, as outlined in Table 2.3, are described below in detail:

- Fifteen parking spaces have been found to have walls or obstructions that impede the opening of doors, estimated by the placement of the design envelope specified AS2890.1 Figure 5.2. This design envelope requires a 300mm clearance either side of the vehicle where the doors are. Examples of this type of non-compliance are shown in Figure 2.1Error! Reference source not found.. A number of walls, lift-shafts and columns breached this envelope on the following spaces which require alteration:

DA2102 Issue A (Ground Floor):

- | | |
|---------------------|-------------------------|
| - Space 1 (Visitor) | - Space 20 (Commercial) |
| - Space 8 (Visitor) | - Space 25 (Visitor) |

DA2101 Issue A (Basement 01):

- | | |
|--------------------------|--------------------------|
| - Space 1 (Residential) | - Space 53 (Residential) |
| - Space 38 (Residential) | - Space 72 (Residential) |
| - Space 39 (Residential) | - Space 73 (Residential) |

DA2100 Issue A (Basement 02):

- Space 1 (Residential)
- Space 8 (Residential)
- Space 9 (Residential)
- Space 10 (Residential)
- Space 16 (Residential).

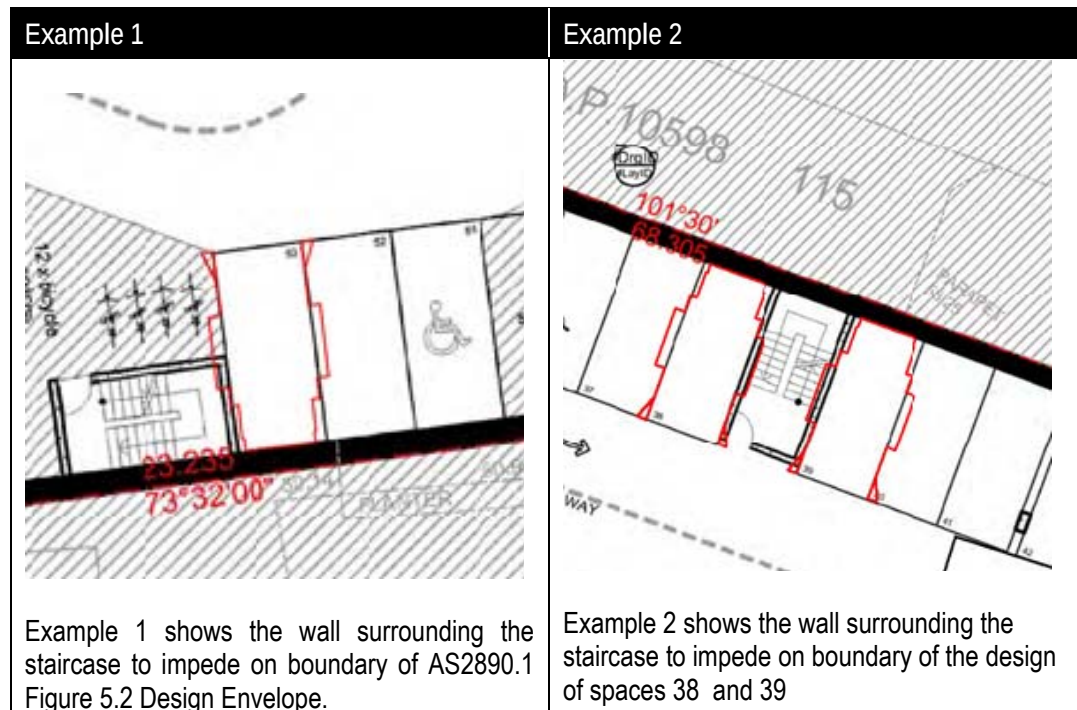


Figure 2.1: Examples of Obstructions Located Too Close to Parking Spaces

- Three parking spaces in *DA2102 Issue A* have been identified as difficult to access, requiring swept path analysis for a B85 vehicle. These spaces are shown in Figure 2.2 and described below:
 - Parking space 14 (commercial) and 15 (visitor/car wash): The architectural drawings show an aisle width of 4346mm, below the required 5800mm. Egress from these spaces would require a reverse manoeuvre into an oncoming traffic stream.
 - Parking Space 19 (Commercial): access to the parking space will require a reverse parallel park manoeuvre, impeded by a bollard (400mm to the east) and the walls of the adjoining storage. It would also block pedestrian access to the stairs at the exterior wall.

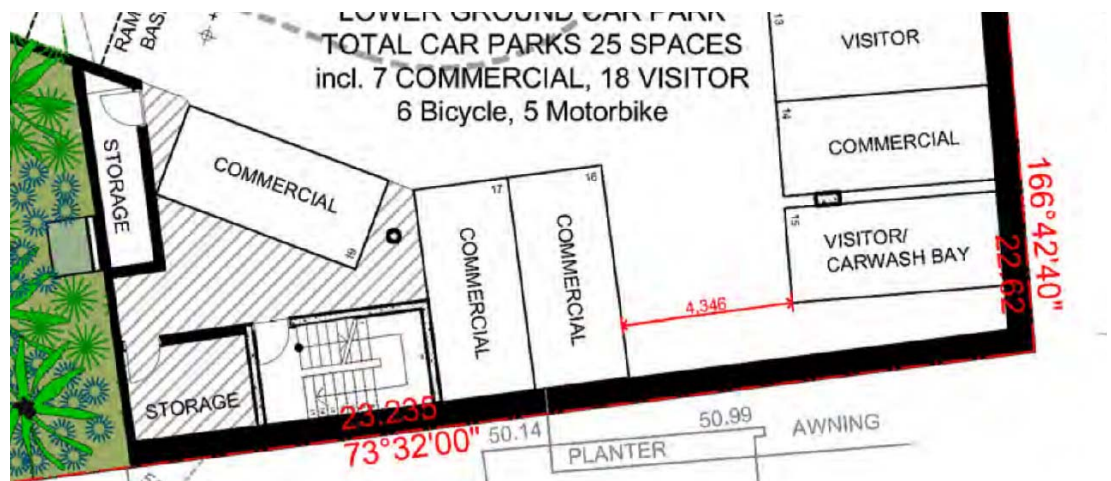


Figure 2.2: Location of Parking Spaces Requiring Swept Path Analysis to Confirm Compliance

- It appears to be physically impossible to access the motorcycle parking spaces if there is a vehicle parked in visitor spaces 8 and 9, as shown in Figure 2.3. These spaces should be relocated.



Figure 2.3: Insufficient Access to Motorcycle Parking Spaces

- The vehicle circulation of the car park is inconsistent in sections of the drawing with the arrows in the opposite direction, as shown Figure 2.4. The architectural plans should be altered to consistently show left-hand traffic;

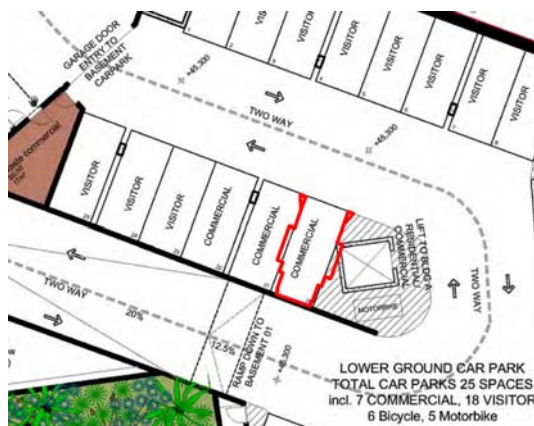


Figure 2.4: Conflicting Line Marking (bottom left)

- The aisle width shown for the commercial parking space #14 and visitor/carwash bay #15 is short of the required 5800mm as shown in Figure 2.5. This is required to be amended to comply with AS2890.1.

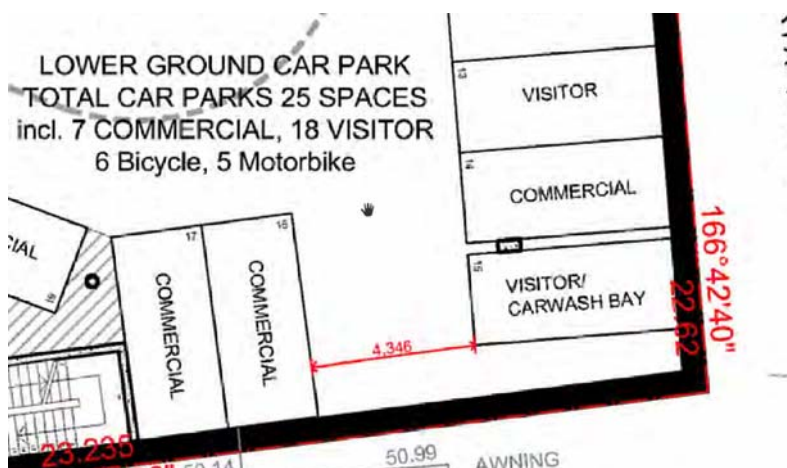


Figure 2.5: Non-Compliant Aisle Width

2.1.4 Disabled Parking Location and Access

Parking spaces for people with disabilities should generally be located close to the exits of the parking area or as close as possible to the entrances to premises (especially to lifts, ramps or walkways). There must be a continuous accessible path of travel from all disabled-parking spaces to the entrances to the premises. Based on the parking layout provided in the car park, the disabled parking spaces are positioned appropriately or even optimally in relation to the premises and exits.

2.2 TRAFFIC REVIEW

2.2.1 Traffic Generation

The traffic generation rates used in the traffic report are in accordance with the *RMS Guide to Traffic Generating Developments 2002* and *RMS Technical Direction (TDT 2013/04a)*, as follows:

- For high density residential flat buildings
 - AM Peak: 0.19 peak hour vehicle trips per dwelling; and
 - PM Peak: 0.15 peak hour vehicle trips per dwelling.
- For commercial premises:
 - AM Peak: 1.6 peak hour vehicle trips per 100m² GFA; and
 - PM Peak: 1.2 peak hour vehicle trips per 100m² GFA.

The traffic generated from the proposed site using these rates would be ≈22 trips per hour in the AM Peak and ≈18 trips per hour in the PM Peak. Varga Traffic Planning identified the AM Peak as critical and only presented it. The proposed traffic generation was then contrasted with the theoretical existing traffic generation using the commercial premises rate (≈62 trips per hour in the AM Peak. 47 trips in the PM Peak), for a net decrease in generated traffic of 40 vehicles in the AM Peak. This is an industry standard set of traffic generation rates and comparing existing and future theoretical rates is acceptable.

The spot counts conducted during the site visit PM Peak showed a traffic generation from existing the Gerard Lane exit to be 23 vehicles per hour. This figure is less than half the theoretical traffic generated by the rates in the *RMS Technical Direction (TDT 2013/04a)* (47 trips in the PM Peak). Employees were also observed walking from the site to their vehicles parked on Hepburn Avenue, indicating that the spot count may have underestimated the existing trip generation. This supports the notion that the proposed land use will reduce the peak hour vehicle trips, although marginally in comparison to the estimates of the two RMS documents.

Comparing the Traffic Generation Using Rates from 2002 and Rates from 2013

A common theme in the community submissions that the study was based on “out of date and irrelevant” traffic generation rates from the *RMS Guide 2002*. Actually, Varga has used the more up to date *RMS Technical Direction 2013*, where appropriate, which are generally lower. It is actually more conservative to apply the 2002 rate, which are as follows:

- For high density residential flat buildings
 - Peak Periods: 0.24 peak hour vehicle trips per dwelling.
- For commercial premises:
 - PM Peak: 2 peak hour vehicle trips per 100m² GFA.

These results of these rates are compared with the previous results in Table 2.4.

Table 2.4: AM Peak Traffic Generation Source Comparison

	RMS Guide 2002		RMS Technical Direction 2013	
	Rate	Volume	Rate	Volume
Residential	0.24	27	0.19	22
Commercial	2 / 100m ² GFA		1.6 / 100m ² GFA	
Existing Land Use	2 / 100m ² GFA	76	1.6 / 100m ² GFA	62
Net Change		-49		-40

Evidently, either rate results in a heavy reduction in generated traffic when comparing the existing and future traffic generation. The spot count traffic volumes and projected traffic generation for the proposed development are similar with the likelihood of a slight decrease in vehicle trip generation due to the proposed development at 230 Victoria Road.

2.2.2 Traffic Impact

The Traffic and Parking Assessment Report states that net decreases are likely as a result of the proposed development and that the development will not create any unacceptable traffic implications which is a reasonable assessment. The report provided no explanation of traffic distribution. However, this is acceptable due to the calculated reduction in net trips on the existing network.

As the net traffic change as a result of the proposed development is positive or zero

2.3 REFUSE AND SERVICE VEHICLE ACCESS

Based on the City of Ryde's DCP 2014 Section 7.2, for a development of 4-storeys or more the following applies:

Adequate access must be provided for the users, waste collection staff and collection vehicles. Where collection vehicles are required to drive into a property to collect waste and recycling, the site must be designed to allow collection vehicles to enter and exit the property in a forward direction with minimal need for reversing and to be operated with adequate clearances

It is proposed for council service vehicles, up to and including the council's 7.5m garbage truck, to enter the site and access the sites waste and loading areas located on the lower ground floor level (DA 2101 Issue A). The manoeuvring of a truck is shown below in Figure 2.6, and although Varga Traffic Planning state that this vehicle is the councils 7.5m garbage truck the vehicle is not labelled and cannot be confirmed.

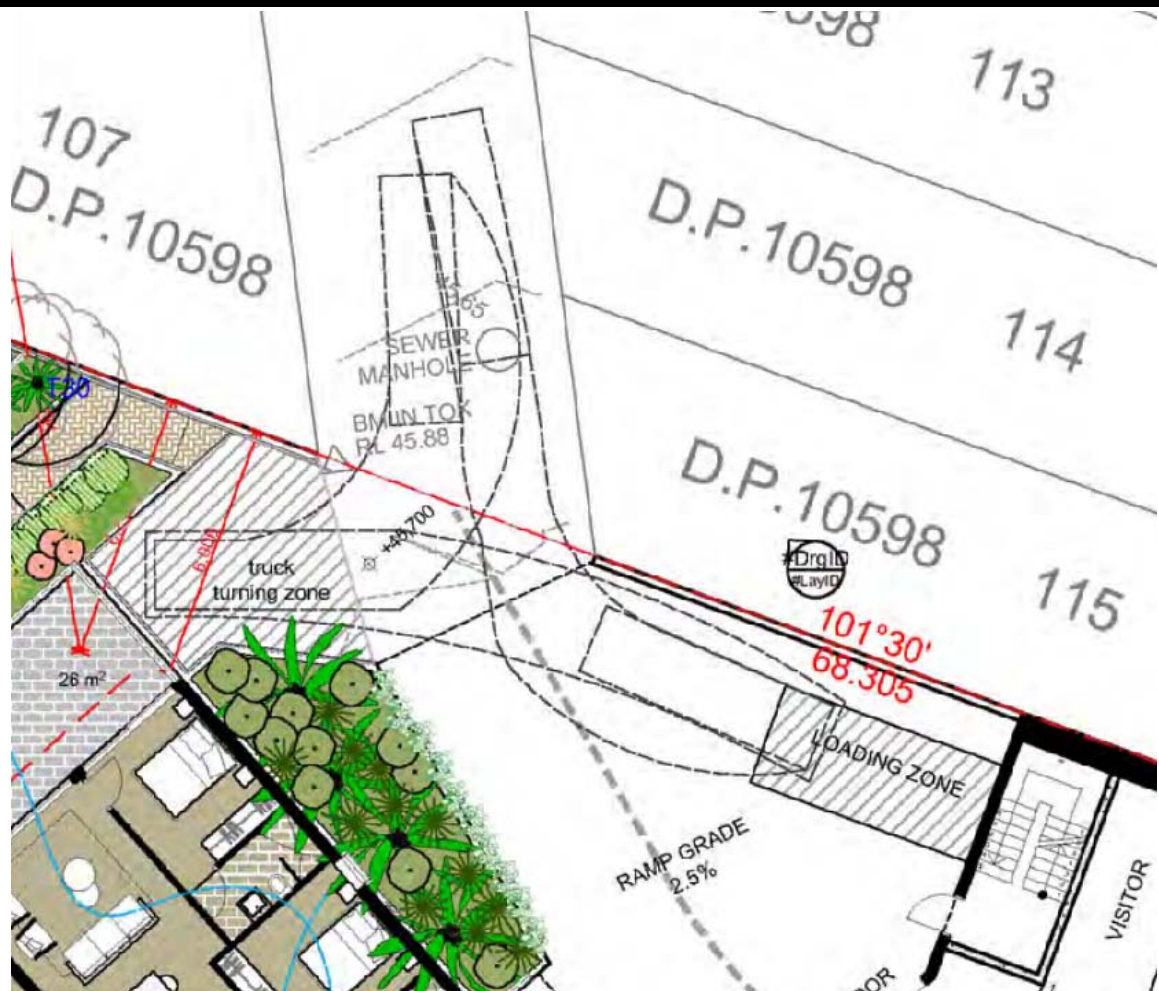


Figure 2.6: Service Truck Maneuvering

2.4 PUBLIC TRANSPORT

Public transport was not considered in the *Traffic and Parking Assessment*. For high density residential developments the connectivity of the site to major employment centres via public transport is important in justifying the application of the RMS high-density residential traffic generation rate. It is recommended that the public transport amenity to 230 Gladesville is assessed within the *Traffic and Parking Assessment*, along with estimations of likely public transport trips.

2.5 ACTIVE TRANSPORT

Cycling and walking access to and from the site was not considered in *Traffic and Parking Assessment*. The connectivity of the site to shopping centres, general services, and walking and bicycle routes can be fundamental in assessing the distribution and type of trips generated from the proposed development. It is recommended that active transport be included in the *Traffic and Parking Assessment*.

3. REVIEW OF COMMUNITY SUBMISSIONS

The City of Ryde received a number of submissions from members of the community raising several traffic and parking issues relating to the new developments. A total of fifty-four submissions were received, including three petitions with multiple signatures. These submissions were reviewed in relation to traffic and parking, with the results of our review presented in Table 3.1.

Table 3.1: Summary and Review of Submissions

Issue Raised	Response
The traffic generation rates used in the Traffic and Parking Assessment Report is a generic rate based on 2002 non local guideline statistics and no local independent surveys were conducted.	The traffic generation rates used in the Traffic and Parking Assessment Report are referenced from the RMS <i>Technical Direction 2013/04a</i> , revising the RMS <i>Guide to Traffic Generating Developments 2002</i> . Both rates are empirically derived. Although the 2013 Technical Direction is more recent, the 2002 Guide is more conservative (higher generation rate). As demonstrated above, both of these rates show a net traffic reduction into the future.
Peak time traffic will be exacerbated and weekend traffic will be increased.	The traffic generation rates project a reduction in the traffic generated by the site for both the AM and PM Peaks. Weekend traffic generation was not considered as part of the Traffic and Parking Assessment Report.
The cumulative impact of proposed developments in the Gladesville area, including 260-274 Victoria Road, is not taken into consideration.	The calculated traffic generation rates of the proposed development are projected to be a net decrease from the existing land use.
Residential parking along Hepburn Avenue is at capacity and the development does not provide sufficient parking.	The proposed development provides is in accordance with City of Ryde's DCP parking controls and is expected to provide sufficient parking, while discouraging car-dependence and multiple vehicle households. Additionally, 20% of the on-street parking in Hepburn Avenue was observed on-site to be available at 17:00 Thursday 28 April, increasing to 50% at 18:00. Ample on-street parking was also available in the immediate vicinity of the Western Crescent / Hepburn Avenue intersection on Western Crescent (approx. 300m from 230 Victoria Road).
Concerns of pedestrian safety on Hepburn Avenue, due to parking on both sides of the street, speeding vehicles and increased traffic.	The difficulty of pedestrians crossing Hepburn Avenue and Western Crescent is not directly related to the proposed development, rather this is a broad safety concern for the street. Footpaths are provided along both sides of Hepburn Avenue and Western Crescent with kerb ramps to allow pedestrian movement across Gerard Lane. Similarly speeding vehicles along Hepburn Avenue are not directly related to the proposed development; conversely, increasing traffic congestion would reduce speeding.
Gerard Lane is non-compliant as a laneway access as it is too narrow according to City of Ryde Council's compliance checklist 3.2.2.b. Additionally emergency vehicles may experience difficulties in accessing the site via Gerard Lane.	No changes are proposed to the configuration of Gerard Lane which is currently used as the access to 230 Victoria Road. No difficulties of vehicle movement were observed on site (Thursday 28 April between 4:30 p.m. and 6:00 p.m.). Emergency vehicle access procedures would remain consistent with the protocols currently in place for the existing building.

Issue Raised	Response
Hepburn Avenue is narrow and vehicles are required to stop to pass each other, which will be exacerbated with additional traffic.	This was not observed on site (Thursday 28 April between 4:30 p.m. and 6:00 p.m.).
Congestion in Jordan Street is likely to be increased due to the development.	The distribution of vehicles from the site was not commented on in the Traffic and Parking Assessment Report. However, with the assessment of traffic generation showing a reduction in traffic it is unlikely that the congestion on Jordan Street will be negatively impacted by the development at 230 Victoria Road.
Jordan Street should be used as the access point to the property as Gerard Lane is not suitable.	The configuration of Jordan Street combined with the queueing and congestion currently experienced does not allow a feasible entry and egress point for the development.

4. ASSESSMENT SUMMARY

The key issues identified in the traffic component review are provided in Table 4.1.

Table 4.1: Assessment Summary

Item	Issue
Traffic analysis	- the traffic generation assumed in the traffic report are in accordance with <i>RMS Guide to Traffic Generating Developments 2002</i> and <i>RMS Technical Direction (TDT 2013/04a)</i>; and - No traffic distribution assumptions were provided. Despite the predicted reduction in traffic generated by the proposed development an analysis of the traffic distribution would be preferable due to the existing queueing and delays at the Victoria Road / Jordan Street signalised intersection.
Parking Provision	The development parking plans shown in DA2100-DA2102 Issue A provide adequate residential, visitor, accessible, bicycle and motorcycle parking. However, the plans show only seven commercial parking spaces and the development requires 8 commercial parking spaces to be in accordance with City of Ryde DCP 2014.
Parking layout	230 Victoria Road development architectural plans have no parking and aisle dimensions labelled on the plans (except for grades). Plans need to be amended to show this; - Fifteen parking spaces were found to have unacceptable obstructions to door-opening (as demonstrated by a design envelope in <i>AS2890.1 Figure 5.2</i>). This must be resolved; and - The aisle dimensions shown behind parking space 14 and 15 in DA2102 Issue A are less than the required 5800mm. A new arrangement of parking spaces must be developed to create a compliant aisle width.
Swept paths	- No swept paths for vehicles accessing and egressing awkward parking spaces, as highlighted in Section 4.1.3, were provided; - A swept path for an unlabelled service truck was shown on DA2102 Issue A. The swept path is compliant but the vehicle should be labelled.
Access location and safety	Access driveways comply with relevant standards.
Public Transport	No explanation or discussion of public transport was provided.
Active transport	No explanation or discussion of active transport was provided.

5. CONCLUSION

As part of the independent peer review, Bitzios Consulting has reviewed the impact of the proposed commercial and residential development at 230 Victoria Road, Gladesville in relation to traffic, parking, vehicular access, and related safety issues. In general, the development is not likely to have a negative impact on the existing traffic network. A summary of the cumulative impacts are summarised as follows:

- There is likely to be a net decrease in traffic generated by the proposed development shown by the RMS Traffic Generation publications and spot counts conducted by Bitzios Consulting. However, the theoretical decrease of 40 vehicle trips per hour in the AM Peak and 30 vehicle trips per hour in the PM Peak is likely overstated as shown by the spot count data. A reduction in the order of 10 vehicle trips per hour would be a more reasonable assumption;
- Even when using a conservative approach of assuming a higher trip generation rate for the residential units and applying an indicative existing trip generation based on the spot count conducted by Bitzios Consulting a slight reduction in generated traffic is likely. This results in a minimal impact on the surrounding road network;
- Vehicular access is currently provided directly onto Gerard Lane. Despite the narrow geometry of the road, the existing layout satisfies the current volume originating from the site. Gerard Lane is likely to cater the future decreased traffic volume at much the same level to its existing performance;
- The impact on pedestrian safety is not likely to be altered as pedestrian access to 230 Victoria Road is encouraged by the Victoria Road property frontage and not the vehicular access from Gerard Lane. Additionally, footpaths are provided on both sides of Hepburn Avenue to Victoria Road with satisfactory kerb ramps in place to cross Gerard Lane; and
- Ample available unrestricted kerbside parking along both sides of Hepburn Avenue and Western Crescent was observed during the site visit. This shows that in the case that the basement car parks provide insufficient parking rates at any point that kerbside parking on local streets can cater for the additionally required parking without exhausting all kerbside parking.

However, the review has revealed that the following deficiencies within the parking design and the traffic impact assessment report:

- Development plans need to show all parking dimensions, including parking bay dimensions, gradients (provided), aisle widths, and any obstruction clearances;
- Swept path analysis of ingress and egress for a B85 vehicle for parking spaces identified in Section 2.1.3;
- The vehicle used for the swept path analysis for a service vehicle entering and exiting the loading zone is not named;
- Non-compliant aisle width, line marking conflicts, parking space arrangement and parking space access should be addressed;
- The addition of one commercial parking space; and
- The consideration of active and public transport to and from 230 Victoria Road, Gladesville.

ATTACHMENT A

SITE VISIT OBSERVATIONS

230 Victoria Road Gladesville TIA Review – Site Notes

1. BACKGROUND

Bitzios Consulting has been engaged by City of Ryde to undertake an independent review of the traffic impacts assessment created by Varga Transport Planning for the proposed development at 230 Victoria Road Gladesville. The proposal details the demolition of an existing commercial building at 230 Victoria Road, Gladesville, and construction of a seven storey mixed use development. The development comprises two commercial tenancies at ground level fronting Victoria Road with a total commercial floor area of 306 m². In addition to the commercial spaces, 88 residential apartments are also proposed to be constructed, broken down into 24 x 1 bedroom and 64 x 2 bedroom apartments.

Vehicular access to the site is proposed to make use of the existing vehicle access from Gerard Lane with one and half levels of basement car parking provided. Basement 1 contains 88 car parking spaces and lower ground floor provides 25 parking spaces. A total of 113 parking spaces are accommodated within the basement and lower ground floor levels, including 10 accessible spaces. Additionally, motorbike and bicycle spaces are also provided.

As part of the independent review process Bitzios Consulting undertook a site visit to assess the existing layout of the surrounding road network, parking layout and access to the site in addition to performing traffic counts at the Hepburn Avenue / Gerard Lane intersection. A site inspection occurred on Thursday 28 April 2016 between 4:30 p.m. and 6:00 p.m. to observe the road network in PM Peak conditions.

2. SITE

The proposed site is located in Gladesville which is approximately 12 kilometres from Sydney CBD. The site has property frontage on Victoria Road with access obtained via Gerard Lane. Gerard lane is a narrow two way no through road with north-south orientation and an approximate width of 5m that connects 230 Victoria Road to Hepburn Avenue. Off street parking for other small businesses is also accessible from Gerard Lane in the vicinity of the site. Gerard Lane has no stopping restrictions applied for the entire length between the site access and Hepburn Avenue.

Hepburn Avenue provides the closest cross road to the site access from Gerard Lane with all motorists entering and entering the site having to use the Hepburn Avenue / Gerard Lane intersection. Hepburn Avenue is a two-way single lane local road with no line markings apparent and an east-west orientation. Time dependant 1-hour parking restrictions apply on Hepburn Avenue in the section between Victoria Road and Gerard Lane on both sides of the road. All other parking along Hepburn Avenue between Gerard Lane and Western Crescent is unrestricted.

Access onto Victoria Road from Gerard Lane is obtained in two manners due to movement restrictions applied at the Victoria Road / Hepburn Avenue intersection. Motorists wishing to travel west from the site are able to access Victoria Road from a left turn only from Hepburn Avenue whilst motorists travelling east are required to access Victoria Road via a signalised right turn movement at the Victoria Road / Jordan Street intersection.

The location of the site is shown in Figure 2.1.



Image Source: Google Maps

Figure 2.1: Site Location

3. TRAFFIC VOLUMES

A traffic count was performed at the intersection of Hepburn Avenue and Gerard Lane to gain an understanding of the existing traffic volumes near 230 Victoria Road. Two 20 minute traffic counts were undertaken, one before 5:00 p.m. and the other after 5:00 p.m., to provide an indicative representation of traffic volumes in the peak period. The traffic counts observed all through and turning vehicle movements with the combined counts converted to vehicle movement volumes per PM Peak hour.

Overall the traffic counts show that volumes for all movements at the Hepburn Avenue / Gerard Lane intersection are very low. An increase was noticed in the movements from Gerard Lane South after 5:00 p.m. with workers leaving the commercial premises at 230 Victoria Road. A number of workers also walked from nearby premises to their vehicles parked on Hepburn Avenue before travelling through this intersection, predominantly to turn left onto Victoria Road.

The data from the first traffic count, conducted between 4:38 p.m. and 4:58 p.m. is shown in Figure 3.1.

Thursday 28 April 2016

4:38 p.m - 4:58 p.m

Traffic Volume Count

Hepburn Avenue / Gerard Lane, Gladesville

Total Vehicles 22

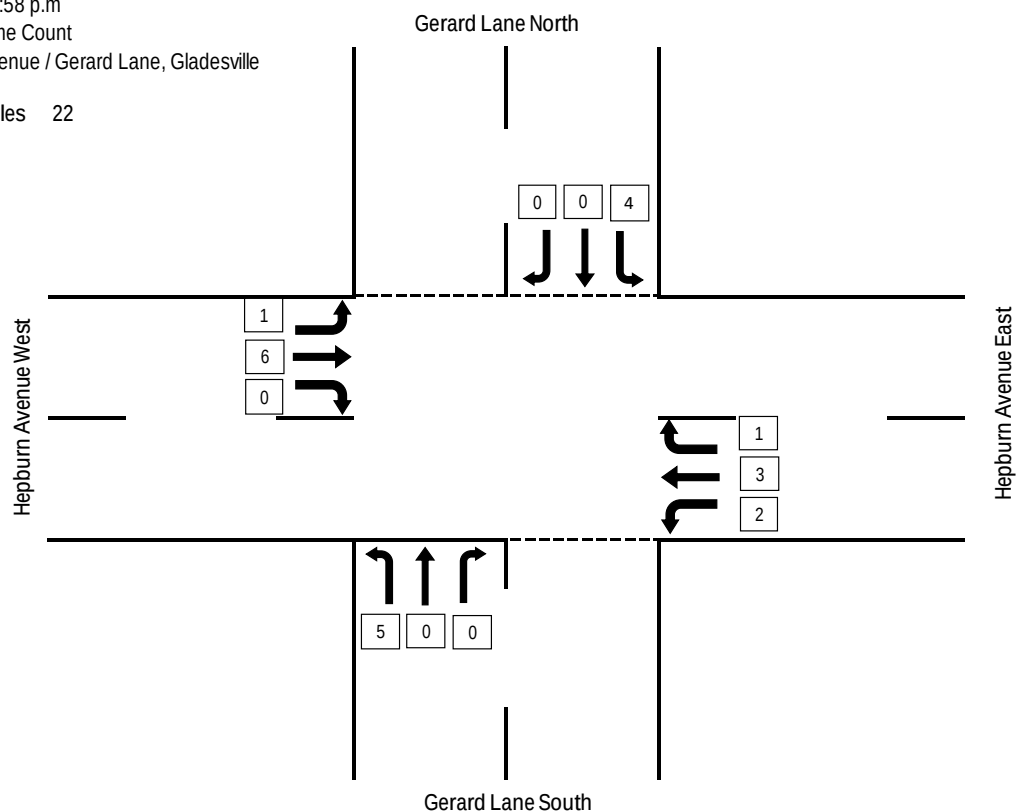


Figure 3.1: Traffic Count Number 1

It should be noted the left turn movement from Gerard Lane North onto Hepburn Avenue had four vehicles movements but only two vehicles made this movement as one vehicle made the movement three times within the 20 minute period.

The data from the second traffic count, conducted between 5:21 p.m. and 5:41 p.m. is shown in Figure 3.2.

Thursday 28 April 2016

5:21 p.m - 5:41 p.m

Traffic Volume Count

Hepburn Avenue / Gerard Lane, Gladesville

Total Vehicles 26

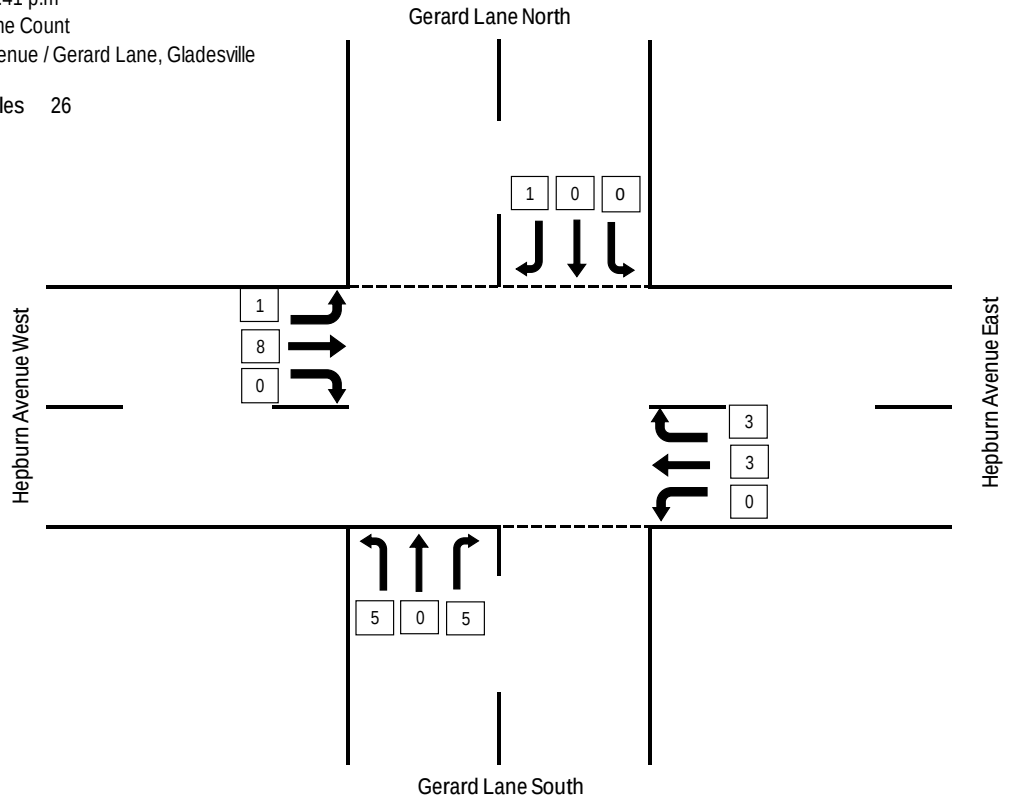


Figure 3.2: Traffic Count Number 2

The data from both traffic counts were combined before the findings were applied to represent one hour of the PM Peak. The results are shown in Figure 3.3.

Thursday 28 April 2016

1 PM Peak Hour

Traffic Volume Count

Hepburn Avenue / Gerard Lane, Gladesville

Total Vehicles 72

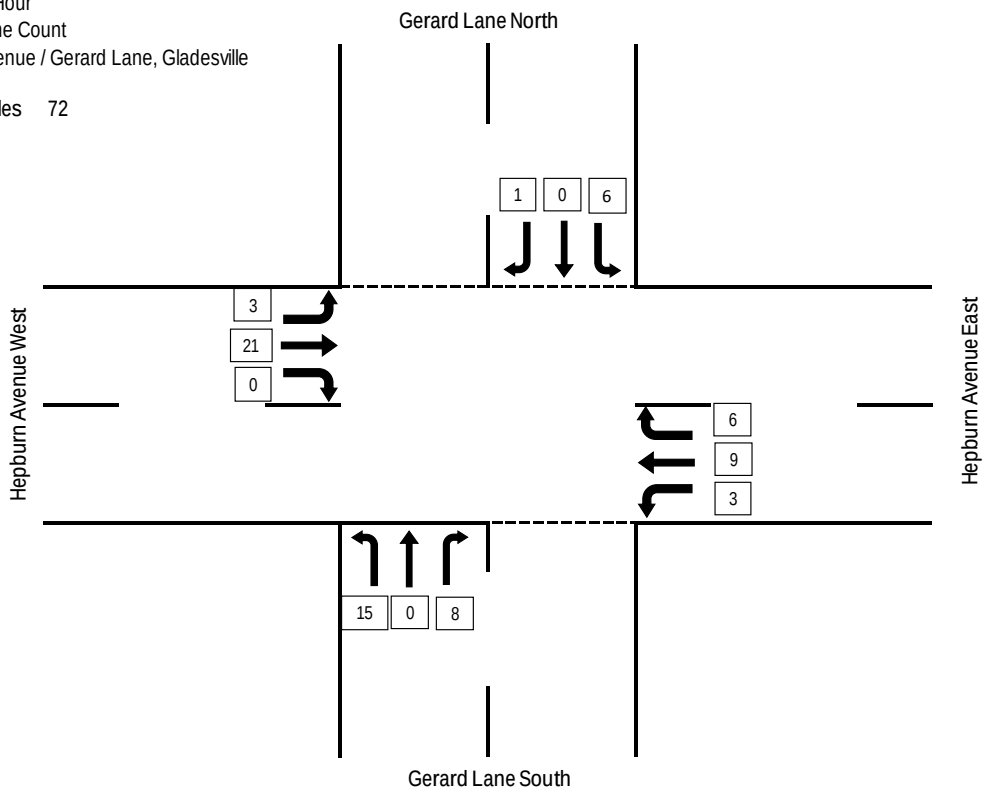


Figure 3.3: Traffic Volumes for One PM Peak Hour

4. QUEUE LENGTHS

Queue lengths were observed for a period of approximately 45 minutes at the Victoria Road / Hepburn Avenue intersection and approximately 15 minutes at the Victoria Road / Jordan Street Intersection.

4.1 VICTORIA ROAD / HEPBURN AVENUE

Hepburn Avenue joins Victoria Road in a three-way intersection with only two turning movement allowed. Victoria Road has a median which disallows right turn movements from Victoria Road and from Hepburn Avenue. The turning movements allowed are left from Victoria Road on Hepburn Avenue and left from Hepburn Avenue onto Victoria Road. The maximum queue length at this intersection was 3 car lengths with an approximate distance of 20m and a delay of approximately 30 seconds. The queue length as observed onsite is shown in Figure 4.1.



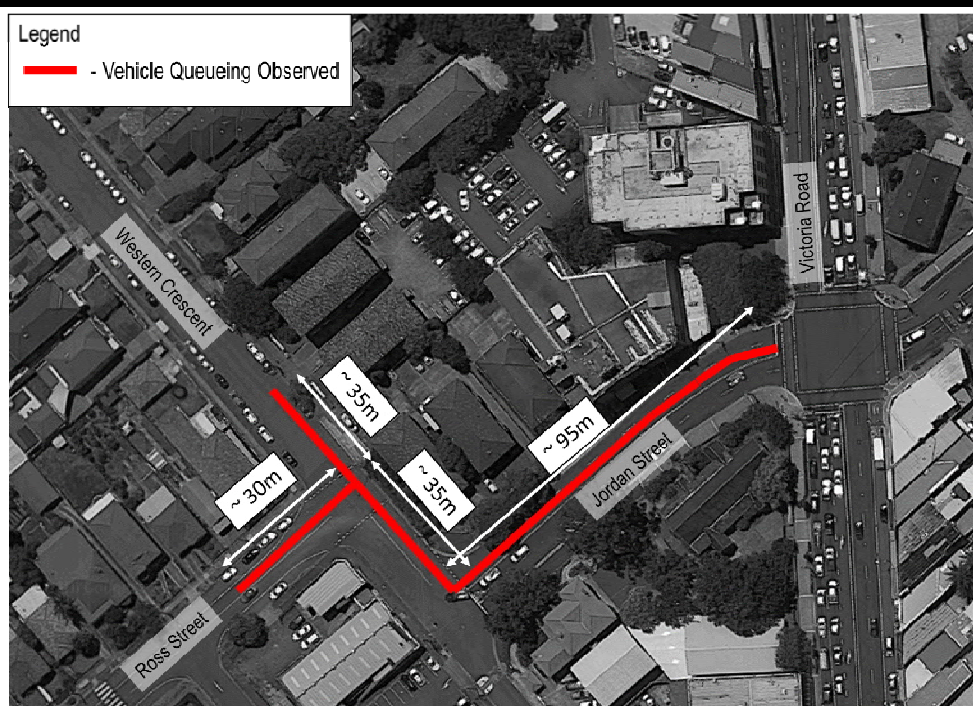
Figure 4.1: Queueing Observed at Victoria Road / Hepburn Avenue Looking East

4.2 VICTORIA ROAD / JORDAN STREET

Jordan Street joins Victoria Road and Pittwater Road at a four-way signalised intersection. The Jordan Street approach consists of two lanes with through and right movement allowed from the right hand lane and left and through movement allowed from the left hand lane. The approach receives its own split phase allowing all movements at once and the left turn movement is also allowed during the diamond phase.

Extensive queueing and delays were experienced on the Jordan Street approach consistently for during the observation period of approximately 5:03 p.m. to 5:18 p.m. Vehicles did not clear the intersection in one signal phase and experienced extensive time delays. The extent of the queueing was approximately 150m in length extending onto Western Crescent and Ross Street, queueing through the Jordan Street / Western Crescent intersection and the Western Crescent / Ross Street intersection.

The extent of the queueing is shown in Figure 4.2, and as observed onsite in Table 4.1.



Source Image: Google Maps

Figure 4.2: Queue Lengths Observed at Victoria Road / Jordan Street Intersection

Table 4.1: Photographs of Queueing Observed During Site Visit

Photograph	Location and Observation
	Jordan Street (taken from Jordan Street / Western Crescent intersection looking north-east) 5:10 p.m. (approximately) Significant queueing was observed from the Victoria Road / Jordan Street intersection during each signal phase. Queueing was observed to stretch back past the Jordan Street / Western Crescent intersection.
	Western Crescent / Ross Street Intersection (looking west) 5:10 p.m. (approximately) Queueing from the Victoria Road / Jordan Street intersection was observed to extend through the Western Crescent / Ross Street intersection along Western Crescent and Ross Street during each signal phase

5. PARKING AVAILABILITY

On street unrestricted and restricted parking is available in the immediate vicinity of the site on Hepburn Avenue and Gerard Lane on the northern side of Hepburn Avenue. Hepburn Avenue has time dependent one-hour parking restrictions in the section between Gerard Lane and Victoria Road with the remainder of the street unrestricted parking. Western Crescent also contains unrestricted parking between Hepburn Avenue and Ross Street which is within a reasonable walking distance of the site at 230 Victoria Road.

A summary of the parking spaces occupied and available between approximately 4:58 p.m. to 5:03.p.m and 5:18 p.m. to 5:21 p.m are shown in Table 5.1. It should also be noted that at 6:00 p.m. most of the on street unrestricted parking was available and additional parking was available throughout the site inspection, but not included in the study, on Western Crescent between Hepburn Avenue and Gerard Street.

Table 5.1: Occupied and Available Parking in the Vicinity of 230 Victoria Road

	Hepburn Avenue		Western Crescent	
	Occupied	Available	Occupied	Available
Total	33	8	38	26
Percentage	80%	20%	59%	41%

Observations from the site visit are shown in Table 5.2.

Table 5.2: Observations of Available Parking during Site Visit

Photograph	Location and Observation
	Hepburn Avenue just west of Gerard Lane (looking north-west) 4:45 p.m. (approximately). Hepburn Avenue has a number of vehicles utilising the unrestricted kerbside parking. A small number of parking spaces are available and Bitzios Consulting staff had no issue finding a parking spot. Parking spots became more available after 5:00 p.m.
	Western Crescent just north of Hepburn Avenue (looking north-west) 5:00 p.m. (approximately) Western Crescent has a large quantity and proportion of unrestricted kerb side parking available in the vicinity of Western Crescent / Hepburn Avenue intersection.

Overall the site visit demonstrated that there is sufficient and available unrestricted parking within a reasonable distance of the site of the proposed development at 230 Victoria Road, Gladesville.