Bronte RSL Redevelopment
113 Macpherson Street
Bronte NSW
Traffic and Parking Peer Review

transportation planning, design and delivery

13S1083000 03/12/12

GTAconsultants

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113 Macpherson Street, Bronte NSW

Traffic and Parking Peer Review

Issue: A 03/12/12

Client: Waverley Council
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Executive Summary

GTA Consultants has been engaged by Waverley Council to undertake a peer review of the Traffic and Parking Study supporting the proposed development of the Bronte RSL site at 113 Macpherson Street, Bronte. The Traffic and Parking Study was prepared by Varga Traffic Planning Pty Ltd in September 2012 for Winston Langley Burlington.

In addition, a high-level Economic Impact Assessment Review was undertaken by Urbis Pty Ltd on the appropriateness of assumptions and conclusions discussed in the *Bronte RSL Redevelopment Economic Impact Assessment* prepared by Location IQ for Winston Langley Pty Ltd in August 2012.

The peer review is comprised of a transport impact review of the proposal, safety and amenity impacts of site access from Chesterfield Lane, parking review, a review of loading and servicing, and a high-level review of the Economic Impact Assessment for the proposed development, which was prepared by Urbis.

Traffic and Parking Review

Based on the Traffic and Parking Review undertaken by GTA, the following items are noted:

- **Traffic generation**: The Varga Report nominated average shopping centre traffic generation rates, instead of higher supermarket rates. In this regard, traffic generation for the proposed development alone would likely be higher than what was estimated in the Varga Report. However, there is also the possibility of discounting the total traffic generated due to passing trade, or linked trips (i.e. traffic generated by the proposal but which are already on the network).
- **Passing trade**: The Varga Report did not apply discounts on traffic generation due to passing trade, i.e. traffic already on the network. This would have the effect of reducing traffic generation.
- **Traffic distribution**: The Varga SIDRA INTERSECTION assessment assumed an even split of traffic between eastbound and westbound Macpherson Street. Given the land uses, the transport network configuration and competitive offerings in the surrounding areas, GTA adjusted the traffic distribution to favour movement to/from the west compared with those to/from the east.
- **RSL Traffic**: The Varga Report did not sufficiently cover traffic generation of the development relating to the RSL component. It based its analysis of the RSL component on parking occupancy.
- **Schedule of traffic surveys**: The traffic counts were undertaken for the weekday PM peak and Saturday peak periods, which would correspond to the typical peaks of the proposed development. The surveys did not cover the peak drop-off/pick-up periods of the nearby primary school and pre-school child care centre.
- **Seasonality of traffic flows**: The Varga Report made use of traffic counts undertaken in August 2012, but did not consider potentially higher through traffic volumes during the summer period. GTA adopted a seasonal peak of through traffic during the summer period that would be higher than winter traffic volumes by about 14%, based on information

provided by Waverley Council. This was done to illustrate seasonal variations, although GTA notes that adopted methods of designing for traffic facilities are not based on the annual peak traffic.

- **Traffic impact assessment**: The Varga Report did not include an assessment of the other access intersections to the site, including the Macpherson Street/St Thomas Street, the Arden Street/Chesterfield Parade and the Chesterfield Parade/St Thomas Street intersections.
- **Traffic impacts**: An updated Traffic Impact Assessment (TIA) for the proposed development would need to look into more detail updated traffic generation rates and background traffic growth, as well as coverage of school/pre-school peak activity (drop-off/pick-up). Discounts based on passing trade could also be applied.
- **Contribution**: Where it would be determined that the proposed development generates traffic that require further investments in traffic facility upgrades in order to maintain acceptable levels of service, there would need to be a fair contribution from the developer towards the cost of these traffic improvements. This would need to be negotiated with Council, the Roads and Maritime Services and/or Transport for NSW, and determined from an appropriate apportionment methodology.
- **Site access**: Based on the established road hierarchy in the precinct, site access for the retail and RSL components would be more suitable on Macpherson Street rather than on Chesterfield Lane.
- **Loading dock location and access**: The Varga Report states that "the use of Macpherson Street to access the commercial components of the development proposal will ensure that the level of traffic activity in Chesterfield Parade and Chesterfield Lane is minimised." However, having the loading dock access off Chesterfield Parade, although likely to have low volumes in terms of vehicle movements, could have more significant impacts on residential amenity in terms of vehicle sizes, manoeuvres and potential safety issues. This needs further consideration in the updated TIA.
- **Loading dock capacity**: the provision of a single loading dock does not meet Waverley DCP 2012 requirements. Current controls require a minimum of 3 bays for the supermarket, 1 for the RSL and another for the residential apartments. It is possible for the RSL and the residential apartments to share loading bays, which could also even be shared with one of the supermarket loading bays. However, providing for only one loading dock for the entire development would likely cause truck queuing, which would have more significant impacts given that loading dock access is off Chesterfield Lane.
- **Chesterfield Lane pavement condition:** the proponent would need to provide information from a suitably-qualified pavement engineer to identify remedial work that is required to be undertaken on the existing pavement of Chesterfield Lane, and outline potential pavement impacts of increased vehicle movements, particularly delivery trucks.
- **Truck manoeuvres**: There would be potential issues with truck swept paths on the Chesterfield Lane/Chesterfield Parade egress intersection (east), as well as egress from the loading dock onto Chesterfield Parade. The Varga Report did not provide an assessment of

potential issues with truck left-turn manoeuvres from southbound Arden Street into Chesterfield Parade. These manoeuvres could have potential safety impacts, and these need to be considered in the assessment. It is recommended that a full-scale swept path analysis be undertaken by the proponent to identify these potential impacts more definitively.

- **Truck vertical clearances**: There is no discussion in the Varga Report about the likely heights of delivery trucks. The existing tree canopy along Chesterfield Parade could pose a constraint to truck heights accessing/egressing from the loading dock.
- **Parking provision**: There is an over-provision of off-street car parking for the development, based on the parking requirements within Waverley DCP 2012. On the other hand, the requirements for staff parking were not included in the calculations. It is noted that the previous parking DCP (2006) provided for maximum parking provision for the residential component, and the current DCP expanded the maximum provision to cover the retail component as well. The report would need to provide a definitive calculation of the breakdown of car parking per land use, as prescribed in the parking section of the Waverley DCP 2012. It should also identify potential losses to kerbside car parking with the access driveway and required No Stopping zone on Macpherson Street.
- **Parking layout**: No parking spaces for people with disabilities are identified in the drawings provided. There are a number of designated car parking spaces that may need to be removed to allow for vehicle manoeuvres, particularly in accessing the ramps within the basement parking levels. There needs to be a clearer delineation of how residential parking could be segregated from retail/public car parking.
- **Bicycle parking**: Overall bicycle parking provision meets requirements. However, the location of some bicycle parking spaces could be inaccessible. It is recommended that part of the bicycle parking to be provided on street level, with direct access to the shopfronts.
- **Pedestrian facilities**: No assessment of the required improvements to pedestrian facilities has been undertaken. The development will generate additional pedestrian traffic on Macpherson Street, and an assessment of the adequacy of existing footpaths and crossings would need to be included in an updated TIA.

Further investigation on these key issues would need to be undertaken as part of the on-going approval assessment process for the development proposal. Appropriate management plans for off-street car parking and the loading dock would also need to be prepared by the proponent and submitted together with the development application.

Economic Impact Review

The assumptions and forecasts that have been used in the Economic Impact Assessment are reasonable, specifically:

- The Main Trade Area appears reasonable for a relatively small scale retail provision such as that proposed. Within the Main Trade Area the majority of spend is likely to come from residents closest to the subject site, as the steep gradients in the locality may be a disincentive to broader walk-in trade. The provision of additional car parking will enhance the attractiveness of the development for top-up retailing.

- The report uses Marketinfo MDS spending data by key commodity groups. This is the industry standard spending data, assuming that the latest 2010 MDS figures are used.
- The Competitive Environment review identifies all relevant Regional and Supermarket Centres that are likely to compete for Main Trade Area spending. The analysis of Bronte Village Centre is thorough. However, it may also have been helpful to consider the strip retailing along Bronte Road around the intersection with Carrington Road as this is also within the Main Trade Area.
- The forecast sales uses fairly high turnover per square metre rates relative to other developments, which as Location IQ confirms, reflects the surrounding high density and affluent population and the convenience that the proposed development offers to Main Trade Area residents. As high turnover per square metre rates have been adopted, this means that the competitive impacts would reflect the likely upper end of a reasonable range.
- The identified impacts (in Table 4.3) appear reasonable, noting that:

  i Year on year spending growth should allow any competitive impacts to be absorbed within a short period.

  ii The turnover estimate for the proposed development reflects the likely upper end of a reasonable range.

  iii The proposed development is focused on convenience grocery shopping, and we understand that supermarkets close to the Main Trade Area achieve strong sales at present.

  iv The employment figures are consistent with employment numbers that Urbis' modelling generates based on the same size and construction cost inputs.

More broadly, having regard to the EIA and the plans contained, the following observations are made:

- The proposed development at 1,246 m^2 is relatively modest in scale and is located on the edge of an existing retail strip.
- This scale of grocery retailing is likely to be highly convenient for Main Trade Area residents undertaking top-up food shopping.
- Although there may be some minor competitive impacts on individual retailers within the Main Trade Area, the development should strengthen the overall retail offer on Macpherson Street. The specialty shops are oriented to the street and should therefore complement the existing retail strip.

Urbis notes that the information contained in the *Bronte RSL Redevelopment Economic Impact Assessment* demonstrates that there are no economics grounds on which the proposed development should be refused planning consent.

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1. Introduction

1.1 Background

GTA Consultants has been engaged by Waverley Council to undertake a peer review of the Traffic and Parking Study supporting the proposed development of the Bronte RSL site at 113 Macpherson Street, Bronte. This study was prepared by Varga Traffic Planning Pty Ltd in September 2012 for Winston Langley Burlington.

In addition, a high-level Economic Impact Assessment Review was undertaken by Urbis Pty Ltd on the appropriateness of assumptions and conclusions discussed in the *Bronte RSL Redevelopment Economic Impact Assessment* prepared by Location IQ for Winston Langley Pty Ltd in August 2012.

1.2 Scope of Review

The peer review is comprised of the following:

- Transport impact review of the proposal, including traffic generation, distribution, intersection operation, location of vehicular access and the appropriateness of the times of day traffic counts were undertaken.
- Safety and amenity impacts of site access from Chesterfield Lane, particularly on Clovelly Public School, Bronte Childcare Centre, and Chesterfield Parade residents.
- Parking review, including parking demand assessment, the adequacy of proposed parking provision, the benefits of providing off-street car parking on the Macpherson Street retail precinct, and the general impacts of the design of the proposed off-street car parking layout.
- Review of loading and servicing, including an assessment of the traffic and safety impacts of using Chesterfield Lane as a service corridor, required design improvements, operating hours, turning manoeuvres and commentary on the design implications of additional truck movements would have on the maintenance requirements for the laneway.
- High-level review of the Economic Impact Assessment for the proposed development.

1.3 Documents Reviewed

The following documents were reviewed:

- *Traffic and Parking Assessment Report for Proposed Mixed-Use Development, Bronte RSL Club Site, 113 Macpherson St., Bronte* (Varga Traffic Planning Pty Ltd, 25 September 2012) – refer to Appendix A.
- Bronte RSL Redevelopment, Sydney – Economic Impact Assessment (Location IQ for Winston Langley Pty Ltd, August 2012) – refer to Appendix B.
- Design drawings for the proposed Bronte RSL Redevelopment, prepared by Aleksandar Design Group.

1.4 Assumptions

The following assumptions were taken in this Review:

- Revised traffic generation rates for shopping centres and supermarkets were derived from the *Trip Generation and Parking Demand Surveys of Shopping Centre – Analysis Report*, prepared by Halcrow for the Roads and Traffic Authority (now Roads and Maritime Services) in September 2011.
- Background traffic calculations, including seasonal variability, were estimated based on traffic count data provided by Waverley Council.
- Base SIDRA INTERSECTION files were prepared by Varga Traffic Planning Pty Ltd and provided to GTA Consultants by Waverley Council. These base files were updated to reflect the revised traffic generated by the site, and the increase in assumed background traffic.
- Traffic distribution assumptions were based on a broad assessment of local site conditions, including geography, topography, land use and road network structure.

1.5 References

The Peer Review referenced the following documents:

- Draft Waverley Comprehensive Local Environmental Plan (LEP) 2011
- Waverley Development Control Plan 2006 (Amendment No. 4)
- Waverley Development Control Plan 2012
- *Public Domain Improvement Plan 2006 – Local Village Centres* (Waverley Council, 2006)
- Traffic count information provided by Waverley Council
- *Trip Generation and Parking Demand Surveys of Shopping Centre – Analysis Report* (Halcrow, September 2011)
- *Bronte RSL Project – Frequently Asked Questions* (Winston Langley Burlington, 10 October 2012), accessed via www.brontersIproject.com.au/Bronte-RSL-Project-FAQs.html, accessed on 11 October 2012
- Australian Standards *AS 1428.1:2009 Design for Access and Mobility Part 1: General requirements for access—New building work*
- Australian Standards *AS 2890.1:2004 Parking facilities Part 1: Off-street car parking*
- Australian Standards *AS 2890.6:2009 Parking facilities, Part 6: Off-Street Parking for People with Disabilities*
- Pneumatic tube counts along Chesterfield Lane, conducted by R.O.A.R. Data between 22 and 28 November 2012.

2. Existing Conditions

This section provides a context to the site, including the transport network within the precinct.

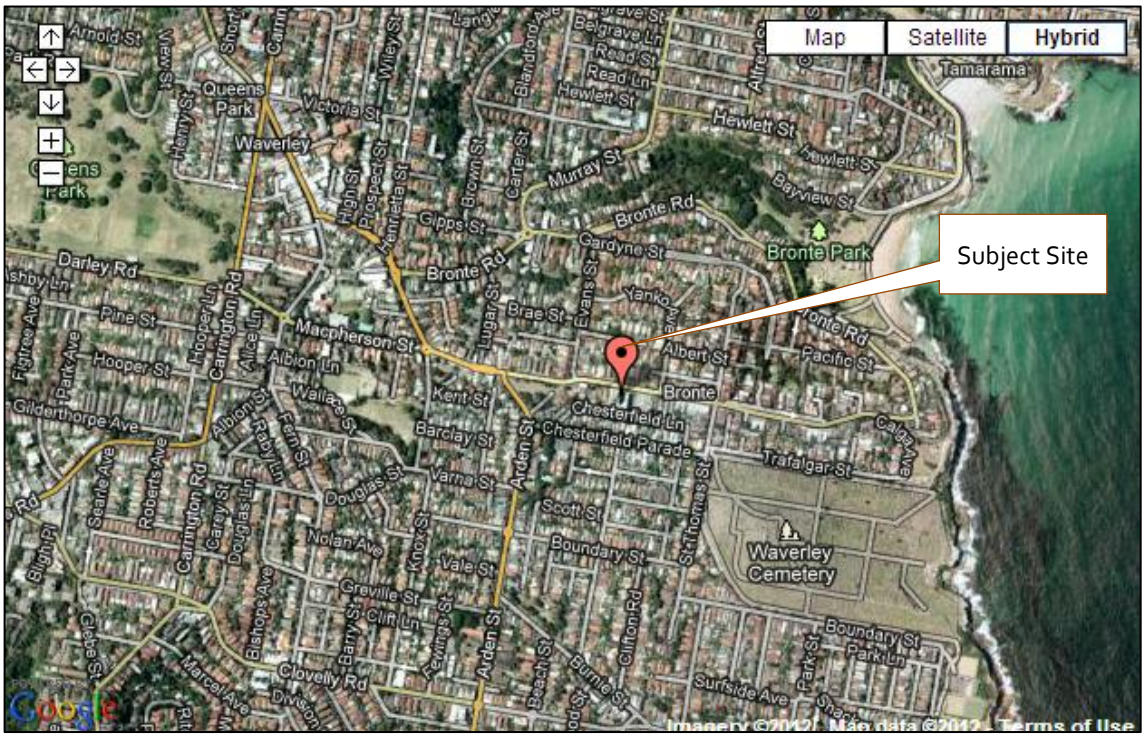
2.1 Site Location

The site is located at 113 Macpherson Street, Bronte. The block containing the site is bounded by Macpherson Street to the north with a frontage of approximately 49m, Baglin Street to the west, St. Thomas Street to the west and Chesterfield Lane to the south. The site is located within a B1 Neighbourhood Centre zone, and is approximately 2,225 square metres in area. The surrounding properties include a mix of residential and retail land uses.

The topography in the area generally falls from north to south, with Macpherson Street approximately 6 metres higher than Chesterfield Lane in the vicinity of the site.

The site location is shown in Figure 2.1.

Figure 2.1: Site Location



Map source: Google maps

2.2 Road Network

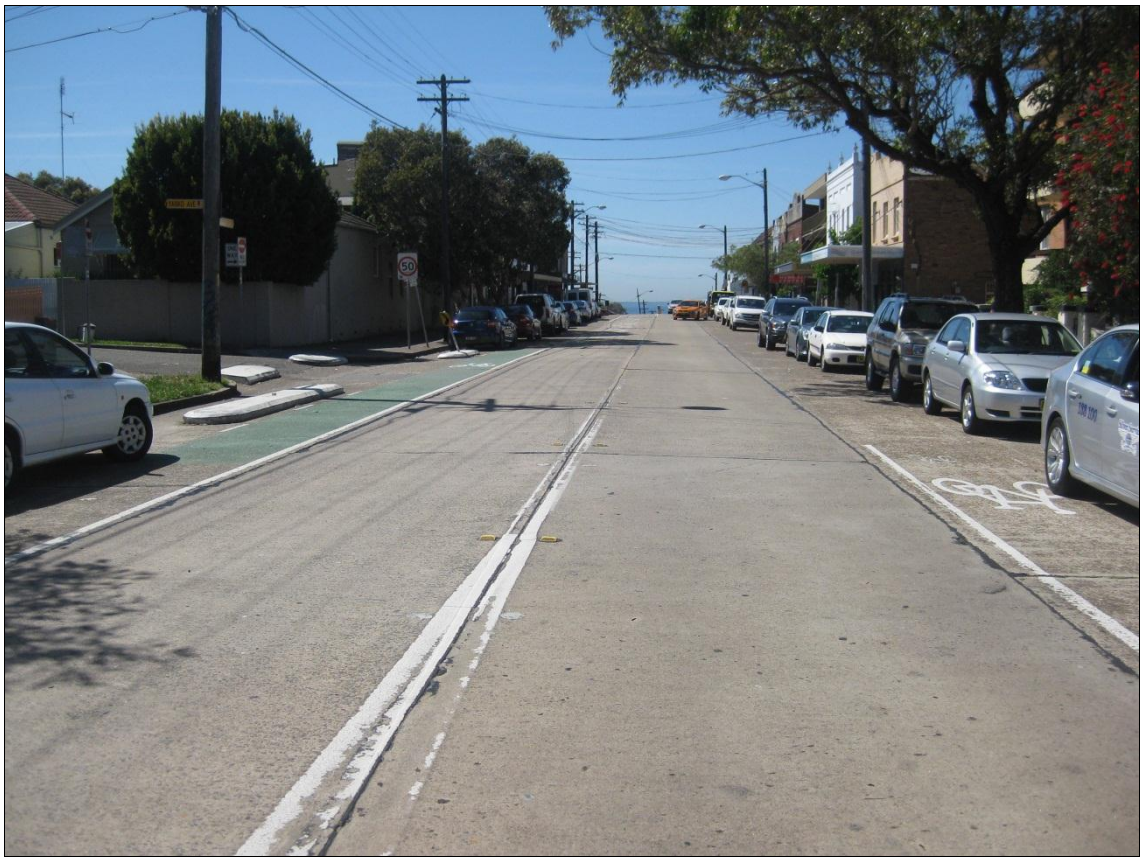
Macpherson Street

Macpherson Street functions as a regional road and is aligned in an east-west direction in the vicinity of the site. It is configured as a two-lane roadway and includes designated bicycle lanes adjacent to each vehicle lane. Additional kerbside parking lanes are provided on each side of the carriageway. It features a carriageway width of approximately 12.5 metres set within an approximately 19 metre wide road reserve.

Historical traffic count data provided by Waverley Council indicate that Macpherson Street has an average traffic volume of about 6,800 per day in the vicinity of the RSL site, increasing to about 10,000 to 13,000 vehicles per day in the vicinity of Albion Street to the east.

Figure 2.2 shows a view of Macpherson Street towards the east, taken from in front of the site.

Figure 2.2: Macpherson Street



Chesterfield Lane

Chesterfield Lane functions as a local road and is aligned in an east-west direction in the vicinity of the site. It is configured as a two-lane, one-way carriageway set within an approximately 6 metre wide road reserve. The width of the laneway carriageway is approximately 4.85 metres.

No parking restrictions exist on Chesterfield Lane. However vehicles have been generally observed to park on the south side (or right side in the travel direction) of the carriageway.

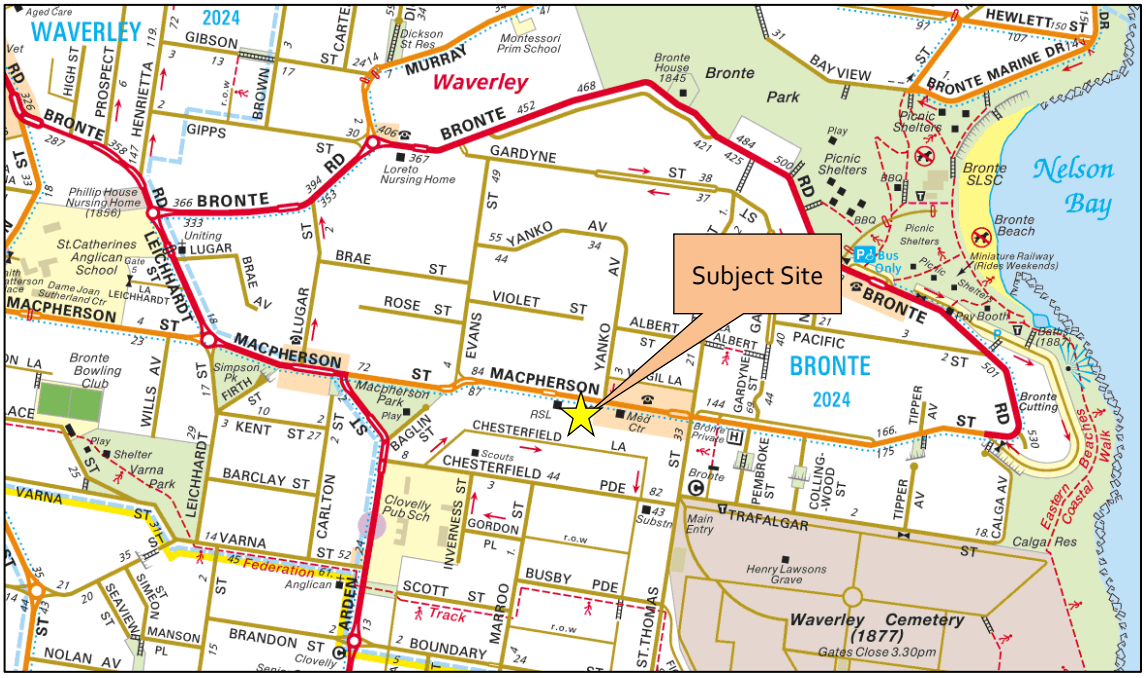
Site observations indicate that Chesterfield Parade is also used for children's play area, as evidenced by play equipment (e.g. basketball goals) along the laneway.

Figure 2.3 shows an eastward view of Chesterfield Lane from the rear of the site.

Figure 2.3: Chesterfield Lane

Figure 2.4 shows the road network surrounding the site.

Figure 2.4: The Site and Surrounding Road Network



Map source: Sydway

2.3 Traffic Volumes

Macpherson Street

Varga commissioned R.O.A.R. Data to conduct traffic counts at the intersection of Macpherson Street and Arden Street at the following times:

- Friday 31 August 2012 between 15:30 and 18:30
- Saturday 1 September between 9:30 and 14:30.

These surveys occurred outside of school or public holidays and are considered appropriate to represent typical network conditions.

The two-way peak volumes recorded in the vicinity of the site on Macpherson Street were:

- Friday PM peak: 439 vehicles
- Saturday peak: 646 vehicles.

GTA notes that the survey periods cover typical peaks for similar developments. However, given the proximity of Clovelly Public School on Chesterfield Parade/Arden Street, the traffic counts should have included the school peak movement periods, e.g. drop-off in the AM peak and pick-up in the mid-afternoon peak (2:30pm-3:30pm).

Chesterfield Lane

GTA commissioned tube counts along Chesterfield Lane adjacent to the site. These were initially undertaken between Thursday 18 and Wednesday 24 October 2012 to meet reporting timeframes. However, these counts were undertaken during road construction activity works along Chesterfield Lane. Although the laneway remained open to general traffic during the counts, it was deemed better to conduct supplementary counts without any construction activities potentially constricting laneway traffic. As such, revised counts were undertaken between Thursday 22 and Wednesday 28 November 2012.

Table 2.1 shows the results of the Chesterfield Lane counts undertaken for this review. The counts reveal that the volumes recorded for Chesterfield Lane are commensurate to the environmental standards for peak traffic volumes (maximum 100 per hour) related to its classification.

Table 2.1: Chesterfield Lane Traffic Volumes

Count Period	Average Weekday Volume (5-day)	Average Daily Volume (7-day)	Maximum Hourly Volume	85th percentile Speed
18-24 Oct 2012	165	144	32 (5-6pm 23.10.12)	32 km/h
22-28 Nov 2012	186	167	28 (4-5pm 27.11.12)	34 km/h

2.4 Surrounding Land Uses

The site is surrounded by a mix of predominantly residential and retail land uses. Portions of Macpherson Street are zoned as a neighbourhood centre and low to medium-density residential. Retail uses are concentrated at the Macpherson Street/St. Thomas Street intersection.

The entry to Waverley Cemetery lies approximately 200 metres to the southeast.

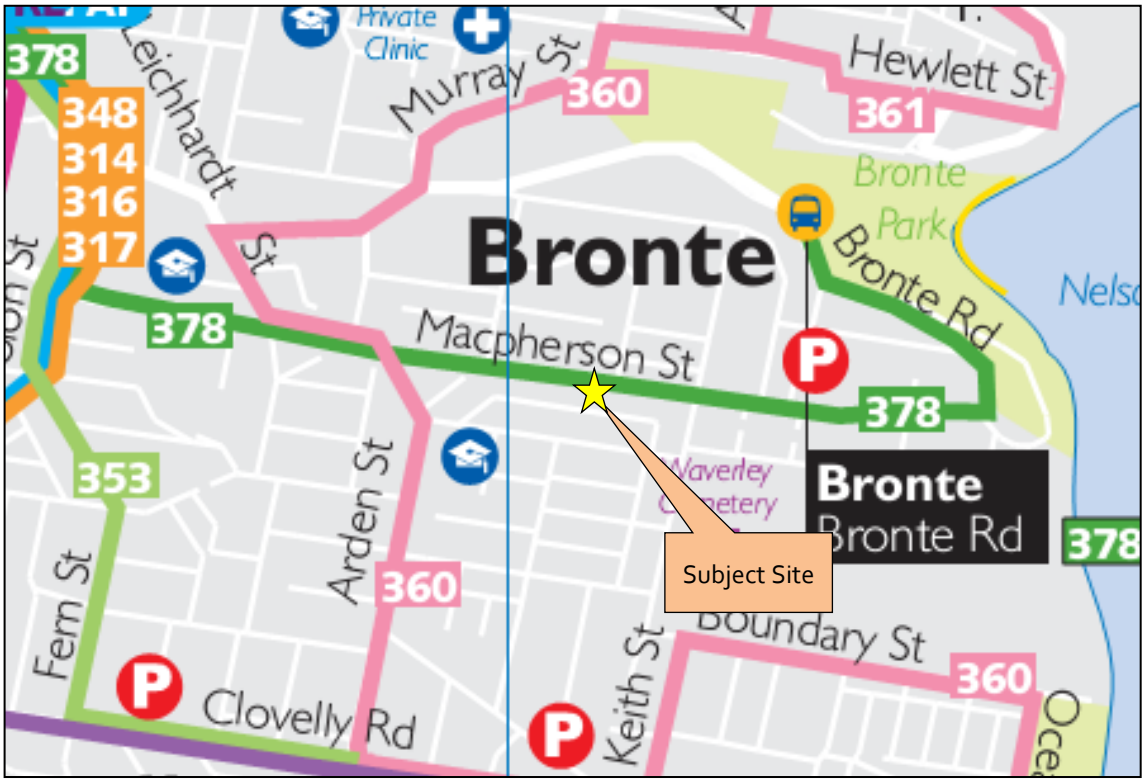
Clovelly Public School is located at the corner of Arden Street and Chesterfield Parade, approximately 200m south-west of the subject site. The Bronte Child Care Centre is also located approximately 200m to the southeast, at the corner of St. Thomas Street and Trafalgar Street.

2.5 Public Transport

2.5.1 Bus services

The site has adequate access to surrounding public transport services, notably with the route 378 bus running along Macpherson Street. The closest bus stop to the site is approximately 100m to the east, close to the St. Thomas Street intersection.

Figure 2.5: Public Transport Map



Source: sydneybuses.info

The 378 bus service operates between Bronte and Central Railway Station via Bondi Junction Transport interchange. During operational times, services operate each 6 minutes during peak periods, to 30 minutes during late night off-peak periods.

2.5.2 Taxis

The site has two permanent taxi bays along its frontage with an additional time period based restriction applicable between 5:00am and 9:00am each weekday morning.

2.6 Active Transport

2.6.1 Bike routes

Designated on-street bicycle lanes, distinguished by painted bicycle logos to the left of the vehicle lane edge line, exist along Macpherson Street adjacent to the site and on Arden Street to the west of the site.

2.6.2 Pedestrian facilities

Pedestrian footpaths are provided on both sides of Macpherson Street, with a designated crossing point and refuge island located adjacent to the site. Chesterfield Lane operates as a shared vehicle and pedestrian area.

3. Description of Proposed Development

3.1 Development Proposal

The proposed development incorporates the demolition of the existing building and RSL club on the site and the construction of a nine level building incorporating 28 residential apartments, 5 ground floor (street level) shop tenancies (with a combined floor area of 1,246 m^2), a 750 m^2 RSL club and 105 on-site car parking spaces. A summary of the proposed development is provided in Table 3.1.

Table 3.1: Key Components of Development Proposal

Use	Description	(Size/No)
Retail	Mini-major/Supermarket	999 m^2
	Seafood Shop	100 m^2
	Butcher/ Delicatessen	50 m^2
	Café	17 m^2
	Juice Bar	30 m^2
Club	RSL	750 m^2
Residential Dwellings	1-bedroom apartments	10 units
	2-bedroom apartments	14 units
	3-bedroom apartments	4 units

The on-site car parking is proposed within a three-level basement car park with vehicular access provided via a right-of-way connecting onto Chesterfield Lane to the south of the site and a proposed access driveway onto Macpherson Street. Chesterfield Lane facilitates one-way vehicle traffic along the southern boundary of the site. Macpherson Street is a two-way, two-lane road adjacent to the site.

Plans of the car parking layout and ground floor are provided in Figure 3.1 through to Figure 3.4.

Figure 3.1: Proposed Macpherson Street Ground Floor Level

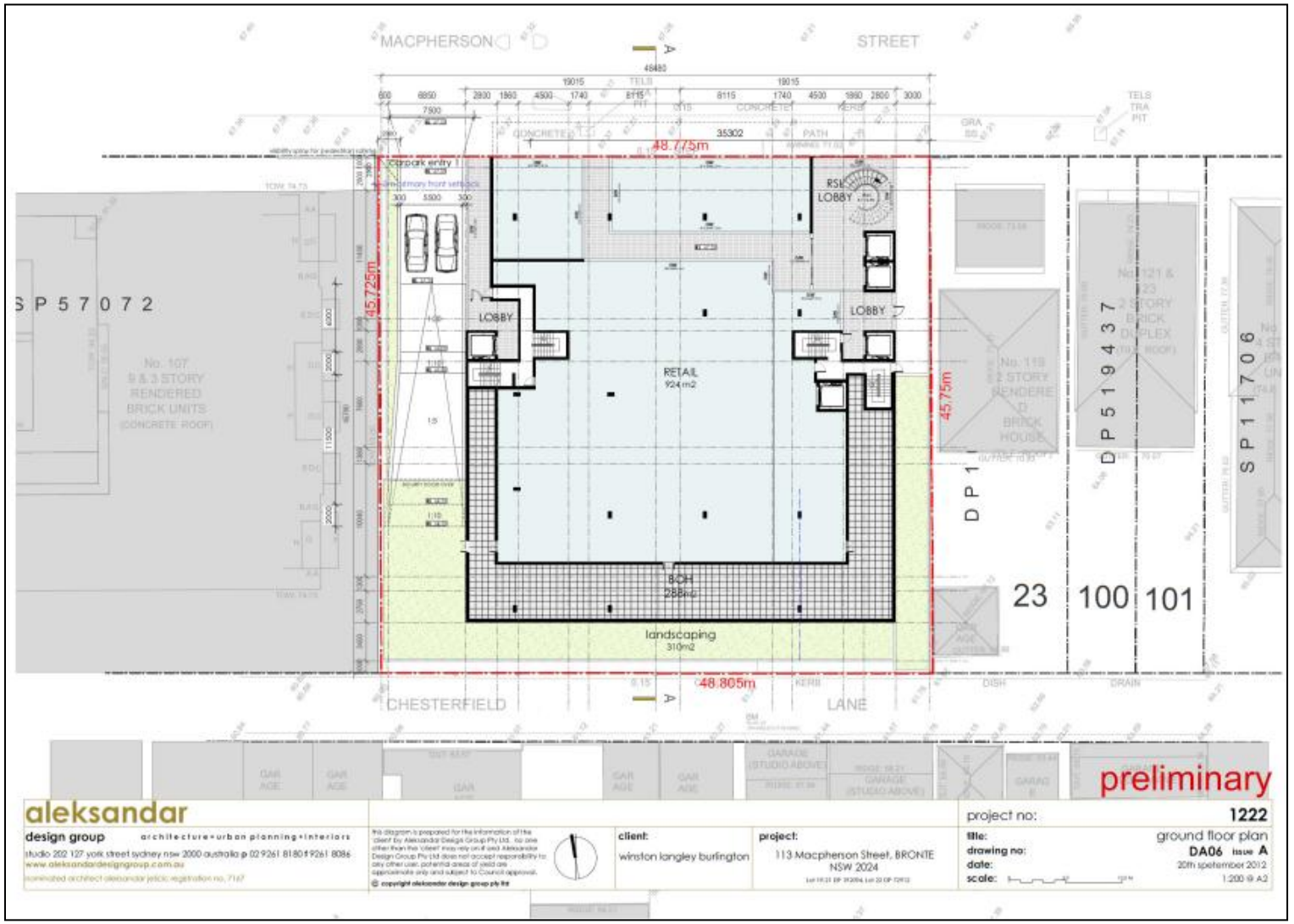
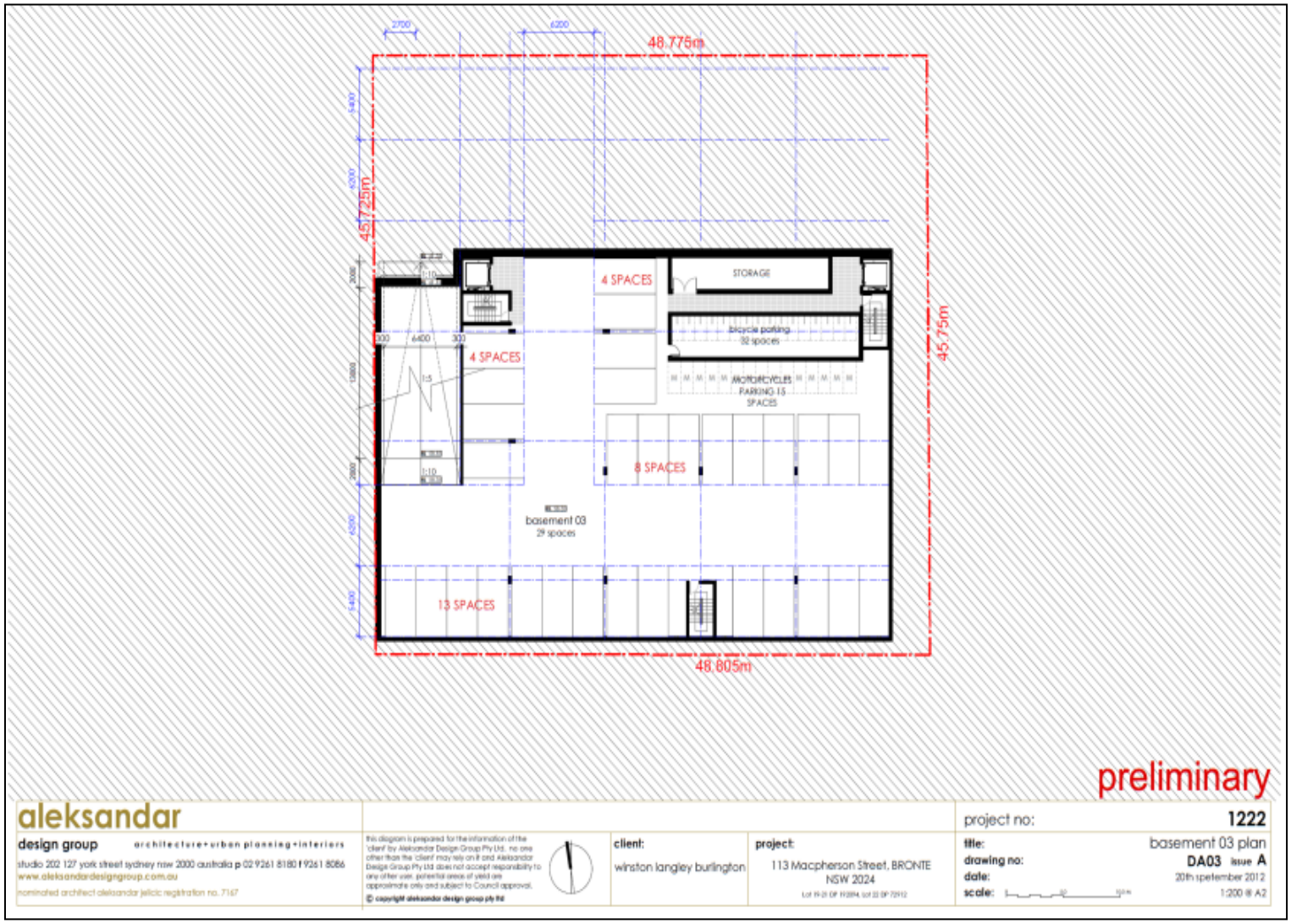


Figure 3.2: Proposed Basement Level 1

Figure 3.3: Proposed Basement Level 2, Level with Chesterfield Lane

Figure 3.4: Proposed Basement Level 3



3.2 Commentary

The following comments are made on the proposed development. These inform the review presented in the succeeding sections of this report.

- The retail component of the proposed development would be anchored by a mini-mart (Harris Farm), which tends to exhibit faster trade per unit space than larger shopping centres.
- The existing loading dock access off Chesterfield Lane used previously by the Bronte RSL is proposed to be retained for use as delivery access for the retail component.
- The proposed loading dock would have only one bay, with a turntable. It is unclear how truck parking would be managed in case a second truck arrives with the loading dock still occupied.
- Basement car parking could be accessed from Macpherson Street for the retail component, and from Chesterfield Parade for the RSL and residential components. It is unclear how these would be segregated.
- The car park layout drawings do not indicate the provision of car parking spaces for the disabled.

4. Transport Impact Review

4.1 Traffic Generation

Varga Report

The traffic generation rates used in the Varga Report to estimate traffic that would be generated by the development was based on recent research undertaken by the Roads and Maritime Services (RMS, formerly the Roads and Traffic Authority) as a way of updating the *Guide to Traffic Generating Developments* (RMS, 2002). This research was prepared by Halcrow Consulting titled *Trip Generation and Parking Demand Surveys for Shopping Centres* (Halcrow, September 2011).

The Varga Report (p16) nominated the following traffic generations rates that it stated were applicable to the retail component of the development proposal:

- 6.4 peak hour vehicle trips per 100 m^2 GLFA (Friday)
- 6.9 peak hour vehicle trips per 100 m^2 GLFA (Saturday).

Based on these, the Varga Report calculated trip generation for the proposed development as shown in Table 4.1:

Table 4.1: Varga Report Trip Generation Calculations

Component	Friday PM Peak	Saturday Noon Peak
Residential	13.6	13.6
Retail (1,246 m^2)	79.7	85.6
RSL	Not stated	Not stated
Total	**93.3**	**99.2**

The Varga Report concluded that the site would generate in the order of 93 and 99 vehicle movements in the Friday and Saturday peak periods respectively.

GTA Review

Retail traffic

GTA notes that the traffic generation rates for the retail component of the development which were nominated in the Varga Report represented *shopping centres*. The proposed use for the retail component is envisioned to be a Harris Farm mini-mart, which would tend to operate more similarly to a supermarket than a general shopping centre.

The traffic generation rates for shopping centres are more applicable for larger centres comprised of a mix of slow trading and fast trading shops, specialty shops as well as supermarkets. The traffic generation figures nominated in the Varga Report also represented average rates. Both the RTA Guide and the Halcrow Report suggest a better approximation of shopping centre traffic generation when the breakdown of component shop mix is known.

It is GTA's opinion that a supermarket rate or an existing similar sized Harris Farm mini-mart traffic generation rates would be more suitable for this assessment. These developments are typically characterised by faster trade, and hence higher traffic generation, compared with overall larger retail centres.

The Halcrow Report provides the following peak hour network vehicle traffic generation rates (per square metre of GLFA) as a more robust approximation of traffic generation:

Friday (PM):

- PVT(P) = – 0.001 A(S) – 0.006 A(F) + 0.133 A(SM) + 0.034 A(SS) + 0.186 A(OM) – 0.034 A(C)

Saturday:

- PVT = 0.005 A(S) + 0.019 A(F) + 0.144 A(SM) + 0.038 A(SS) + 0.19 A(OM) – 0.033 A(C)

Where the components are described as follows:

- A(S): Slow trade includes major department stores such as David Jones and Myer, furniture, electrical and whitegoods stores.
- A(F): Faster trade includes discount department stores such as K-Mart and Target, together with larger specialist stores, e.g. Lowes, Lincraft, etc.
- A(SM): Supermarket includes stores such as Woolworths, Coles, IGA, Franklins and large fruit markets.
- A(SS): Specialty shops / Secondary retail / Automobile services includes smaller retail outlets (eg clothing, jewellery, hairdressers, footwear, fast food, delicatessens, newsagents, sports stores, chemists, service stations, etc.)
- A(OM): Office / Medical / Child care / Other including medical centres, general business offices, child care, library, etc.
- A(C): Cinemas.

In this regard, the traffic generation rates that would need to be nominated for the retail component of the proposed development (which is essentially comprised of the supermarket and a number of specialty shops), would be higher that what was quoted in the Varga Report.

The retail component of the proposed development, with 999 m^2 GLA of supermarket GLFA and 247 m^2 GLFA of specialty shops, would thus generate the following:

Friday (PM *peak):*

- Trips = + [0.133 * 999] + [0.034 * 247] = 132.9 + 8.4 = 141.3 trips

Saturday (noon peak):

- Trips = + [0.144 * 999] + [0.038 * 247] = 143.9 + 9.4 = 153.3 trips

These are 61.6 and 67.7 trips higher for the Friday and Saturday peaks, respectively, than what were quoted for the retail component of traffic generation in the Varga Report.

Residential traffic

The traffic generation rates for Medium Density Residential Flat Buildings nominated in the Varga Report are in line with the rates outlined in the *Guide to Traffic Generating Developments* (RMS, 2002).

RSL traffic

Traffic generation of the RSL component of the development was not included in the Varga Report. The *Guide to Traffic Generating Developments* (RMS, 2002) indicates that surveys undertaken 24 years ago reveal about 10 vehicle trips per hour for each 100 m^2 of RSL club licensed floor area, although it also notes that assessments of new clubs should be based on recent surveys of similar clubs. In the

absence of updated information, GTA assumed that RSL traffic generation would be similar to the 1978 figures quoted in the RTA guide. This rate would be similar to other studies indicating that RSL parking tends to generate about 0.5 trips per space (or 10 trips on the evening peak).

Using the RSL traffic generation rate suggested in the RMS Guide, the overall traffic generation for the proposed development should thus be as shown in Table 4.2.

Table 4.2: Estimated Development Traffic Generation

Component	Size/number	Friday PM Peak		Saturday Noon Peak	
		Peak Traffic Generation Rate	Peak Traffic Generation	Peak Traffic Generation Rate	Peak Traffic Generation
1-bedroom apartment	10	0.5	5.0	0.5	5.0
2-bedroom apartment	14	0.5	7.0	0.5	7.0
3-bedroom apartment	4	0.65	2.6	0.65	2.6
Supermarket(Harris Farm)	999 m^2	13.3/100 m^2	132.9	14.4/100 m^2	143.9
Specialty shops	247 m^2	3.4/100 m^2	8.4	3.8/100 m^2	9.4
RSL	750 m^2	10.0/100 m^2	7.5	-	0[1]
Total peak period movements to/from development			**163.4**		**167.9**

Passing trade

The *Guide to Traffic Generating Developments* (RMS, 2002) typically allows for the traffic generation of retail developments to be discounted by a certain amount that depends on the nature of the road network. This accounts for "linked trips" that are taken as "detours" from another trip. The total traffic generated by the proposed development could be expected to be partially comprised of trips already on the network, i.e. Macpherson Street, and this portion could be thus discounted from the total traffic generated.

GTA Recommendation

- A revised Traffic Impact Assessment for the proposed development should use traffic generation rates for supermarkets/mini-majors and specialty stores for the proposed retail component, which trade faster and this generate more traffic. It should avoid using average rates for larger shopping centres.
- A revised Traffic Impact Assessment could incorporate a discount for linked trips, in accordance with the *Guide to Traffic Generating Developments* (RMS, 2002).
- The revised Traffic Impact Assessment should also discuss traffic generation estimates for the RSL/ Club use.

4.2 Traffic Distribution

Varga Report

There was no mention of the assumed traffic distribution for development traffic in the Varga Report. However, the SIDRA INTERSECTION files prepared by Varga Traffic Planning and provided to GTA indicate that the distribution of development traffic was assumed to be evenly split between

[1] RSL traffic generation assumed to occur outside the Saturday noontime peak.

Macpherson Street eastbound and westbound. Figure 4.1 shows the traffic distribution assumed in the Varga SIDRA files.

Figure 4.1: Varga Traffic Distribution Assumptions

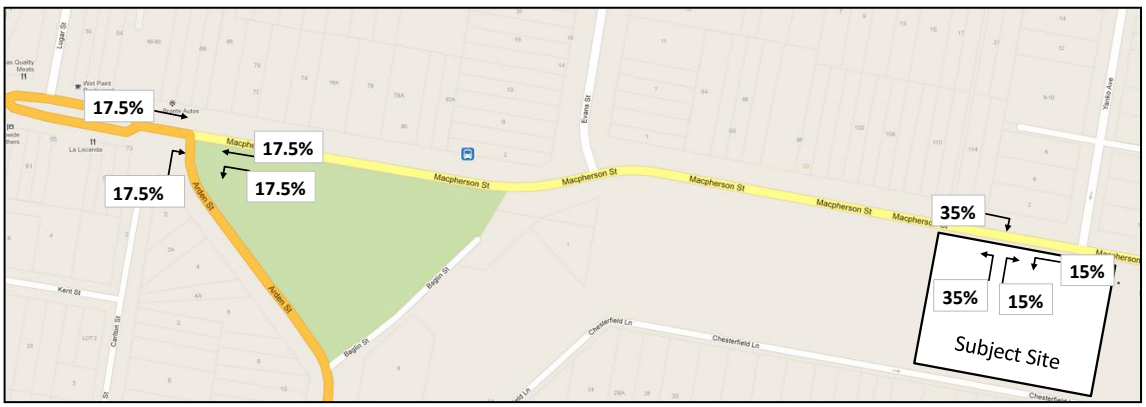
Map source: Google maps

GTA Review

GTA undertook a high-level assessment of the surrounding area to determine likely distribution of generated traffic. This considered surrounding land uses, configuration of the transport network, and competitive offerings. Based on these, GTA assumed that the split of development traffic on Macpherson Street would be about 70% to/from the west, and 30% to/from the east.

Traffic to/from the west was further assumed to be evenly split between Macpherson Street (west) and Arden Street (south) at the Macpherson Street/Arden Street intersection. As such, the assumed traffic distribution is as shown in Figure 4.2.

Figure 4.2: GTA Traffic Distribution Assumptions



Map source: Google maps

GTA Recommendation

- A distribution split that considers local traffic patterns based on geographic and land use characteristics more appropriately should be included in the revised Traffic Assessment for the proposed development.

4.3 Seasonal Factor

Varga Report

The Varga Report undertook traffic surveys during August 2012. No consideration of seasonality of background traffic was included in the assessment.

GTA Review

For purposes of sensitivity testing, the seasonal variation of traffic flows in the surrounding precinct was analysed.

The land uses surrounding the development site are likely to experience higher demand during summer months. There is limited information to inform a thorough assessment of seasonal traffic patterns in Bronte.

However, a review of historical traffic count data provided by Waverley Council indicates that average daily through traffic volumes on Macpherson Street in December 2006 were 13,325, compared with 11,637 in August 2006, or about 14% higher.

GTA estimated that peak summer volumes would follow a similar pattern of seasonality as the average daily volumes in 2006 on Macpherson Street. As such, GTA also undertook, for sensitivity testing purposes, an intersection assessment (using SIDRA INTERSECTION) in which through traffic volumes along Macpherson Street were 14% higher than the volumes identified in the Varga Report and in the SIDRA INTERSECTION files provided.

GTA Recommendation

To better illustrate the impacts of higher background traffic, the revised Traffic Impact Assessment for the proposed development should illustrate potential sensitivity of higher seasonal background traffic. It is noted that this would not necessarily be used as the basis for designing traffic improvements.

4.4 Traffic Impacts

Varga Report

The Varga Report concludes that the site generated traffic has a minimal impact on the surrounding road network based on the volume data used in their SIDRA intersection assessments. The results of the Varga SIDRA analysis are summarised in Table 4.3 to Table 4.6.

Table 4.3: VARGA SIDRA Assessment Macpherson Street/ Arden Street Friday PM

Approach	Movement	Degree of Saturation		Average Delay (seconds)		95th Percentile Queue (Vehicle)		Level of Service	
		Existing	Post-Development	Existing	Post-Development	Existing	Post-Development	Existing	Post-Development
Arden Street (South)	Left	0.40	0.40	9	10	2	2	A	A
	Right	0.29	0.38	26	30	1	2	B	C
Macpherson Street (East)	Left	0.02	0.03	8	8	0	0	A	A
	Through	0.08	0.09	0	0	0	0	A	A
Macpherson Street (West)	Through	0.49	0.52	2	2	4	5	A	A
	Right	0.49	0.52	10	11	4	5	A	A

Table 4.4: VARGA SIDRA Assessment Macpherson Street/ Arden Street Saturday Peak

Approach	Movement	Degree of Saturation		Average Delay (seconds)		95th Percentile Queue (Vehicle)		Level of Service	
		Existing	Post-Development	Existing	Post-Development	Existing	Post-Development	Existing	Post-Development
Arden Street (South)	Left	0.53	0.54	11	12	3	4	A	A
	Right	0.50	0.67	35	46	2	3	C	D
Macpherson Street (East)	Left	0.04	0.05	8	8	0	0	A	A
	Through	0.11	0.13	0	0	0	0	A	A
Macpherson Street (West)	Through	0.50	0.53	3	4	5	6	A	A
	Right	0.50	0.53	11	12	5	6	A	A

Table 4.5: VARGA SIDRA Assessment Macpherson Street/ Proposed Site Access Friday PM Peak

Approach	Movement	Degree of Saturation		Average Delay (seconds)		95th Percentile Queue (Vehicle)		Level of Service	
		Existing	Post-Development	Existing	Post-Development	Existing	Post-Development	Existing	Post-Development
Proposed Site Access	Left	-	0.10	-	10	-	0	-	A
	Right	-	0.10	-	10	-	0	-	A
Macpherson Street (East)	Left	-	0.12	-	7	-	0	-	A
	Through	-	0.12	-	0	-	0	-	A
Macpherson Street (West)	Through	-	0.16	-	1	-	1	-	A
	Right	-	0.16	-	9	-	1	-	A

Table 4.6: VARGA SIDRA Assessment Macpherson Street/ Proposed Site Access Saturday Peak

Approach	Movement	Degree of Saturation		Average Delay (seconds)		95th Percentile Queue (Vehicle)		Level of Service	
		Existing	Post-Development	Existing	Post-Development	Existing	Post-Development	Existing	Post-Development
Proposed Site Access	Left	-	0.16	-	13	-	1	-	A
	Right	-	0.16	-	13	-	1	-	A
Macpherson Street (East)	Left	-	0.17	-	7	-	0	-	A
	Through	-	0.17	-	0	-	0	-	A
Macpherson Street (West)	Through	-	0.22	-	2	-	2	-	A
	Right	-	0.22	-	10	-	2	-	A

A review of the provided SIDRA intersection analysis, in particular the proposed Macpherson Street driveway indicate much higher traffic volumes to/ from the site have been used than the volumes indicated in the report.

Figure 4.3: VARGA Proposed Macpherson Street Access Friday PM

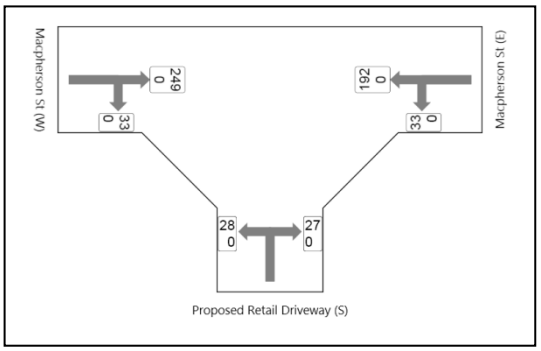
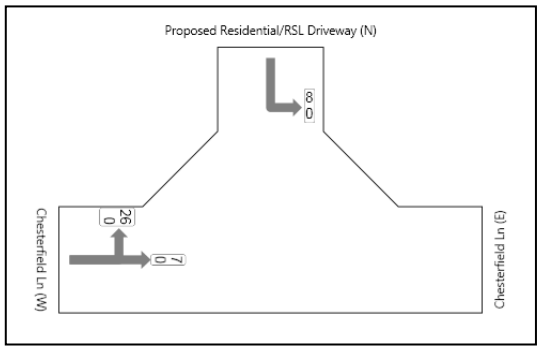


Figure 4.4: VARGA Proposed Chesterfield Lane PM



The diagrams taken from the Varga SIDRA assessments indicate the following:

Table 4.7: Varga Proposed PM Volumes

Direction	Macpherson Street	Chesterfield Lane	Total
In	66	26	**92**
Out	55	8	**63**
Total	**121**	**34**	**155**

Against a suggested 93.3 peak hour trips during the Friday PM Peak, a total of 155 vehicle trips has been assumed in the Varga SIDRA assessment.

GTA Review

GTA used SIDRA INTERSECTION to assess the operation of the Macpherson Street/ Arden Street intersection and the proposed Macpherson Street site access driveway. GTA's assessment assumes that the driveway is only utilised by the traffic generated from the retail and RSL uses and that residential land uses utilise Chesterfield Lane. With the provision of vehicular access on Macpherson Street, it is more likely that RSL traffic would also access/egress from the site via Macpherson Street as opposed to Chesterfield Lane.

Further it has been assumed that in each peak hour the in/ out split is 50% each way and that traffic is split 50% in each direction along Macpherson Street. Further refinements to the model include altered lane widths and grade of roads to better represent actual conditions, as well as increasing through traffic on Macpherson Street by 14% to account for seasonal variations.

Figure 4.5 shows the development traffic generation adopted by GTA for the Friday PM and Saturday noon peak periods.

Figure 4.5: Adopted Development Traffic Generation

Map source: Google maps

The results of the intersection assessment are presented in Table 4.11 to Table 4.14.

Table 4.8: GTA SIDRA Assessment Macpherson Street/ Arden Street Friday PM

Approach	Movement	Degree of Saturation		Average Delay (seconds)		95th Percentile Queue (Vehicle)		Level of Service	
		Existing	Post-Development	Existing	Post-Development	Existing	Post-Development	Existing	Post-Development
Arden Street (South)	Left	0.40	0.40	9	10	2	2	A	A
	Right	0.29	0.47	26	33	1	2	B	C
Macpherson Street (East)	Left	0.02	0.04	8	8	0	0	A	A
	Through	0.08	0.09	0	0	0	0	A	A
Macpherson Street (West)	Through	0.49	0.53	2	3	4	6	A	A
	Right	0.49	0.53	10	11	4	6	A	A

Table 4.9: GTA SIDRA Assessment Macpherson Street/ Arden Street Saturday Peak

Approach	Movement	Degree of Saturation		Average Delay (seconds)		95th Percentile Queue (Vehicle)		Level of Service	
		Existing	Post-Development	Existing	Post-Development	Existing	Post-Development	Existing	Post-Development
Arden Street (South)	Left	0.53	0.54	11	12	3	4	A	A
	Right	0.50	0.76	35	55	2	4	C	D
Macpherson Street (East)	Left	0.04	0.06	8	8	0	0	A	A
	Through	0.11	0.13	0	0	0	0	A	A
Macpherson Street (West)	Through	0.50	0.54	3	4	5	7	A	A
	Right	0.50	0.54	11	12	5	7	A	A

Table 4.10: GTA SIDRA Assessment Macpherson Street/ Proposed Site Access Friday PM Peak

Approach	Movement	Degree of Saturation		Average Delay (seconds)		95th Percentile Queue (Vehicle)		Level of Service	
		Existing	Post-Development	Existing	Post-Development	Existing	Post-Development	Existing	Post-Development
Proposed Site Access	Left	-	0.12	-	9	-	1	-	A
	Right	-	0.12	-	9	-	1	-	A
Macpherson Street (East)	Left	-	0.11	-	7	-	0	-	A
	Through	-	0.11	-	0	-	0	-	A
Macpherson Street (West)	Through	-	0.17	-	1	-	1	-	A
	Right	-	0.17	-	9	-	1	-	A

Seasonal comparison

A sensitivity assessment of seasonal variation along Macpherson Street was analysed by increasing through volumes along Macpherson Street by 14% to account for summer peaks.

The results of the intersection assessment are presented in Table 4.11 to Table 4.14.

Table 4.11: GTA SIDRA Assessment Macpherson Street/ Arden Street Friday PM

Approach	Movement	Degree of Saturation		Average Delay (seconds)		95th Percentile Queue (Vehicle)		Level of Service	
		Existing	Post-Development	Existing	Post-Development	Existing	Post-Development	Existing	Post-Development
Arden Street (South)	Left	0.40	0.41	10	10	2	2	A	A
	Right	0.31	0.52	28	37	1	2	B	C
Macpherson Street (East)	Left	0.02	0.04	8	8	0	0	A	A
	Through	0.09	0.11	0	0	0	0	A	A
Macpherson Street (West)	Through	0.51	0.55	2	3	5	6	A	A
	Right	0.51	0.55	10	11	5	6	A	A

Table 4.12: GTA SIDRA Assessment Macpherson Street/ Arden Street Saturday Peak

Approach	Movement	Degree of Saturation		Average Delay (seconds)		95th Percentile Queue (Vehicle)		Level of Service	
		Existing	Post-Development	Existing	Post-Development	Existing	Post-Development	Existing	Post-Development
Arden Street (South)	Left	0.54	0.55	12	12	4	4	A	A
	Right	0.58	0.87	41	83	3	6	C	F
Macpherson Street (East)	Left	0.04	0.06	8	8	0	0	A	A
	Through	0.13	0.15	0	5	0	0	A	A
Macpherson Street (West)	Through	0.53	0.57	4	5	6	8	A	A
	Right	0.53	0.57	12	13	6	8	A	A

Table 4.13: GTA SIDRA Assessment Macpherson Street/ Proposed Site Access Friday PM Peak

Approach	Movement	Degree of Saturation		Average Delay (seconds)		95th Percentile Queue (Vehicle)		Level of Service	
		Existing	Post-Development	Existing	Post-Development	Existing	Post-Development	Existing	Post-Development
Proposed Site Access	Left	-	0.13	-	9	-	1	-	A
	Right	-	0.13	-	10	-	1	-	A
Macpherson Street (East)	Left	-	0.13	-	7	-	0	-	A
	Through	-	0.13	-	0	-	0	-	A
Macpherson Street (West)	Through	-	0.20	-	1	-	1	-	A
	Right	-	0.20	-	9	-	1	-	A

Table 4.14: GTA SIDRA Assessment Macpherson Street/ Proposed Site Access Saturday Peak

Approach	Movement	Degree of Saturation		Average Delay (seconds)		95th Percentile Queue (Vehicle)		Level of Service	
		Existing	Post-Development	Existing	Post-Development	Existing	Post-Development	Existing	Post-Development
Proposed Site Access	Left	-	0.19	-	12	-	1	-	A
	Right	-	0.19	-	13	-	1	-	A
Macpherson Street (East)	Left	-	0.19	-	7	-	0	-	A
	Through	-	0.19	-	0	-	0	-	A
Macpherson Street (West)	Through	-	0.27	-	2	-	2	-	A
	Right	-	0.27	-	10	-	2	-	A

It is acknowledged while slightly different volumes and parameters have been used in the Varga and GTA SIDRA models, the results are generally similar. The results indicate that Macpherson Street has the capacity to accommodate the additional site generated traffic volumes based on the existing and seasonally-adjusted through traffic volumes in the vicinity of the site and that the nearby intersection of Macpherson Street and Arden Street has spare capacity to accommodate the additional site generated traffic volumes.

With the readjusted distribution of development traffic and the increased through traffic volumes on Macpherson Street arising from seasonal factors, the right turn movement from northbound Arden Street into Macpherson Street (eastbound), particularly for the Saturday noon peak, would experience a Level of Service F, with average vehicle delays doubling from the existing 41 seconds to about 83 seconds with full development.

However, this alone would not constitute grounds for the development not proceeding.

GTA notes that no assessment has been provided in the Varga Report for the other intersections surrounding the site, including the Macpherson Street/St Thomas Street intersection and intersections on Chesterfield Land and Chesterfield Parade.

In particular, an assessment of the Macpherson Street/St. Thomas Street intersection would need to be undertaken, partly to determine impacts of the proposed development on the Precinct Development Plan for the Macpherson Street retail area. Under this plan, the Macpherson Street/St. Thomas Street roundabout is proposed to be converted into a roundabout. This would address potential safety issues relating to the current design layout of the intersection.

The additional residential traffic generation on Chesterfield Lane, totalling about 15 vehicle movements in the peak hour, would increase existing volumes by about 50%. However, the overall volumes could be considered acceptable and still within the environmental standards for access laneways. The post-development traffic movements would be in the order of 47 vehicles in the peak hour, within the typical limit of 100 vehicles per hour for similar access laneways.

GTA Recommendations

- The revised Traffic Impact Assessment for the proposed development should investigate impacts on nearby surrounding intersections, in addition to those that have been analysed.
- The revised assessment would need to cover intersections within the immediate vicinity of the site. These include:
    - i Macpherson Street/St Thomas Street
    - ii Chesterfield Parade/Arden Street
    - iii Chesterfield Parade/Chesterfield Lane (west)
    - iv Chesterfield Parade/Chesterfield Lane (east)
    - v St Thomas Street/Chesterfield Parade.
- The safety and amenity impacts of generated traffic, in particular deliveries, needs to be further investigated particularly with Clovelly Primary School.
- The revised traffic assessment should incorporate updated traffic counts that cover peak school movement periods as well.
- As indicated in Section 4.2, a more appropriate traffic distribution assumption based on the local geography, land use situation and transport network needs to be made.
- Where traffic improvement works at intersections would be required to maintain acceptable levels of service with the traffic generated by the proposed development, an apportionment mechanism needs to be established to determine the cost contribution that the development would need to make. This would need to be discussed with Council and the RMS.

4.4.1 Road Hierarchy

Varga Report

The Varga Report discussed the existing road hierarchy in the precinct surrounding the site, indicating that Macpherson Street is a classified road providing the key east-west road link in the Bronte area. Chesterfield Parade is a local road primarily used to provide vehicular and pedestrian access to frontage

properties. Chesterfield Lane was identified as a local laneway primarily used to provide rear vehicular and pedestrian access to properties fronting Macpherson Street and Chesterfield parade.

GTA Review

GTA agrees with the road hierarchy as described in the Varga Report. It reinforces the proposal for the main access for retail trips to be on Macpherson Street, being a classified Regional Road. The primary vehicular access to the site would therefore be more suited on Macpherson Street, having a higher traffic capacity, than Chesterfield Lane.

The peak period traffic generation of the proposed development, particularly the retail component, would be significantly higher than the typical environmental standard for a laneway such as Chesterfield Lane (around 100 vehicles per hour).

It should be noted, however, that the proposed delivery access from Chesterfield Lane, while consistent with the previous arrangements for the RSL servicing, would potentially create issues with safety and amenity with increased delivery movements. Macpherson Street, being classified as a Regional Road, would function more suitably for delivery access compared with Chesterfield Lane.

GTA Recommendation

- The revised traffic assessment, in line with a review of the proposed plan for the development, should consider delivery access on Macpherson Street, from the traffic, safety and amenity viewpoints, and relative to access from Chesterfield Lane.

The urban design impacts of delivery access from Macpherson Street should also be considered in the revised plan for the proposal.

4.5 Construction Traffic Impact

Varga Report

No assessment of potential traffic impacts of the construction of the proposed development has been included in the Varga Report.

GTA Review

Consideration should be given to the impacts and management of construction traffic arising from the proposed development.

GTA Recommendation

In particular, the revised traffic assessment should provide a discussion of the potential impacts of the proposal during the construction stage. Information on the following would also need to be provided:

- Number of construction vehicles
- Types of construction vehicles accessing the site
- Times of construction activity
- Routes used to access the site (Macpherson Street and/ or Chesterfield Lane)
- Construction personnel parking locations
- Any impacts on the operation of public transport in particular the adjacent bus route
- The safety of the general public and construction staff during the construction process.

4.6 Other Transport Impacts

This section discusses a number of considerations that were not adequately covered in the Varga Report.

4.6.1 Traffic Survey Period

The traffic counts undertaken did not cover the peak movement periods associated with school drop-off and pick-up. It is recommended that the counts for an updated Traffic Impact Assessment include these periods (8:00am-9:30am and 2:30pm-3:30pm).

4.6.2 Public Transport

The Varga Report does not include an assessment of public transport access to the site.

Bus Route 378 services Macpherson Street, linking the Bronte Transport Interchange with Railway Square. Bus stops are located near the intersection of Macpherson Street with St. Thomas Street. However, the proposed development is not likely to generate considerable demand for additional public transport services than is currently provided.

4.6.3 Taxi Facilities

The Varga Report does not indicate if there would be any changes required to the existing taxi rank fronting the site. It would be beneficial for the proposed development if the existing arrangements are maintained.

4.6.4 Pedestrian Facilities

The Varga Report does not include an assessment of the accessibility of the site for pedestrians. The proposed development would attract a considerable walk catchment within nearby residential areas. The Varga Report also mentions that would be wider parking benefits from the development such as linked trips made by shoppers of the Macpherson Street retail shops (east of the site) and the development. In this regard, it could be expected that pedestrian traffic on Macpherson Street would increase, and commensurate measures to ensure that pedestrian facilities have adequate capacity need to be put in place.

The safety impacts of the proposed driveway location and the existing pedestrian refuge fronting the site has not been adequately discussed. There needs to be an assessment whether the existing pedestrian refuge needs to be relocated, considering altered pedestrian desire lines with the proposed development.

4.6.5 Road Maintenance

The Varga Report, in the Introduction section, lists as a consideration in the assessment the capacity/adequacy of the existing pavements in Chesterfield Lane. However, no further discussion in the report was provided relating to pavement maintenance in the context of trucks accessing the laneway for loading.

The site investigation indicated that the current pavement condition on Chesterfield Lane would need to be upgraded in order to accommodate more frequent delivery services.

It is recommended that the potential impacts of the increased delivery movements proposed for Chesterfield Lane be adequately discussed in the revised traffic assessment. This discussion should include a plan for upgrading the current conditions of the pavement on Chesterfield Lane, as well as asset maintenance.

4.6.6 Travel Plans

The Waverley DCP 2012 indicates that the preparation of a workplace travel plans is mandatory for a number of circumstances, including where a proposed development would have 50 or more employees, or where such is deemed necessary by Council.

It is unknown how many employees would be employed within the development (including club and retail). However, the preparation of workplace travel plans would facilitate the achievement of public transport and active transport mode shift targets and reduce staff dependency on private car modes.

5. Parking Review

5.1 Off-Street Parking Requirements

Varga Report

The minimum parking requirements set out in the Varga Report indicate a requirement for 83 car parking spaces for the proposed development, as shown in Table 5.1.

Table 5.1: VARGA Off-Street Car Parking Assessment

Use	Spaces Required
Resident (28 Apartments)	19.2 (Min), 28 (Max)
Resident Visitor	2
Retail (1,246 m^2)	41.5
RSL Club (750 m^2)	20
Total	**82.7 min, 91.5 max**

GTA Review

Residential Car Parking Requirements

The Waverley Development Control Plan 2012 sets out car parking rates for various land uses. An assessment of the proposed development against the prescribed car parking rates is set out in Table 5.2 and Table 5.3.

Table 5.2: Residential Car Parking Requirements – Parking Zone B

Use	Minimum Rate	Maximum Rate	Number of Units	Minimum Requirement	Maximum Allowable
1-bedroom apartment	0.4/ apartment	0.8/ apartment	10	4.00	8.00
2-bedroom apartment	0.8/ apartment	1/ apartment	14	11.20	14.00
3-bedroom apartment	1/ apartment	1.5/ apartment	4	4.00	6.00
Visitor car parking	None for the first 12 dwellings, then one for each 7 dwellings.		28	2.28	
Total				**21.48**	**30.28**
Rounded off				**21**	**30**

Table 5.2 indicates the proposed development would be required to provide between 21 and 30 residential car parking spaces.

Commercial/Retail Car Parking Requirements

Table 5.3: Commercial Land Use Car Parking Requirements

Use	Minimum Rate	Maximum Rate	Size/ No	Minimum Requirement	Maximum Allowable
Retail	0	3.3/100sqm of GLA	1,246sqm	0	41 spaces
Club	Not specified	Not specified	750sqm	N/A	N/A
Total				**0**	**41 spaces**

Table 5.3 indicates the retail component has a minimum requirement of zero (0) spaces and a maximum allowable provision of 41 car parking spaces. The Waverley DCP 2012 does not specify car parking rates for club land uses and GTA does not consider that the retail or business/ office land use rates would reflect parking demands generated by the club use (turnover is usually lower, i.e. longer parking duration).

It is noted that the parking controls existing at the time the parking provision for the proposed development was being planned did not specify maximum allowable rates for retail land uses (only for residential).

Assessment of Proposed Parking Provision

An assessment of all the proposed land uses indicates the development proposal would be able to meet the required minimum off-street car parking requirement of 21 spaces, with 105 spaces proposed. However, with the current parking controls, the proposed development would exceed the maximum allowable car parking provision of 71 spaces for the residential and retail components (excluding RSL). As noted, the Waverley DCP 2012 does not explicitly state parking requirements for clubs.

If the club land use is assessed at the retail rate, a maximum allowance of 25 car parking spaces could be provided[2], resulting in a total maximum allowable parking provision of 96 spaces (30 + 41 + 25). With 105 spaces provided, this would result in an over-provision of 9 spaces. However, it is noted that the current layout plans for the proposed basement car parking needs to be revisited in consideration of vehicle manoeuvring spaces and accommodating two-way circulation flows. It is likely that there would be a need to remove a number of the proposed car parking spaces to allow for vehicle movements to access and turn around the ramps and allow for two-way flows. Given this, the total spaces proposed would roughly correspond to the allowable maximum.

The Varga Report did not discuss provision for staff parking (for the club and retail components), potentially because the Waverley DCP does not indicate the requirements for staff/employee car parking for retail/commercial uses[3]. It is recommended that the requirements for staff parking be evaluated in the revised Traffic Impact Assessment.

In addition to the 105 car parking spaces, a total of 15 motorcycle parking spaces would also be provided. Under the Waverley DCP 2012, 3 motorcycle spaces are required for each 15 car spaces. This results in a requirement of 19 motorcycle spaces (based on 96 maximum car spaces).

[2] The Varga Report identified 20 car parking spaces for the club component. The current off-street car parking on site, used to cater solely to the requirements of the RSL Club, had 22 spaces.

[3] Waverley DCP 2012 only mentions bicycle parking for retail/commercial staff and staff car parking for child care centres.

GTA also notes that there is also no indication whether the basement car parking levels would have parking management controls that would restrict access to only the customers of the development, or whether there would be time limit restrictions put in place. It is also unclear from the plans of the car parking levels provided whether there would be physical barriers separating the residential car parking spaces (accessible from Chesterfield Lane) and the retail/commercial parking, accessible from Macpherson Street.

GTA Recommendation

- The revised Traffic Impact Assessment should provide for a more robust assessment of the parking requirements for each component of the development, including the RSL club component, as well as the requirements for staff parking associated with the retail component.
- It should discuss the requirements for staff parking, including how this would be managed.
- A Car Parking Management Plan would need to be prepared for the development, outlining how demand for car parking and the operation of the basement car park would be controlled. This would need to include physical segregation proposed to separate different land uses.
- If boom gates are a means of providing the segregation, the queuing impacts of these boom gates would need to be analysed as well.

5.2 Precinct Parking Benefits

Varga Report

The Varga Report mentions that the development would generate wider parking benefits to the Macpherson Street retail area, noting that the retail component of the development will potentially reduce on-street parking demand due to multi-purpose trips as well as providing an additional parking location.

GTA Review

There is no direct evidence on how the provision of additional car parking in the site could facilitate other retail developments in the vicinity.

While GTA agrees that there is a potential to reduce on-street car parking demand on Macpherson Street with the proposed development, these benefits could also be off-set by the traffic generation of providing increased parking. Moreover, traffic generation of the precinct could also potentially be altered in a way that those currently accessing the Macpherson Street retail precinct by public or active modes would consider driving if parking was more readily available.

It is also not clear how the car parking spaces for the proposed development would be managed, i.e. how customers of other retail establishments on Macpherson Street would be allowed access to the car parking spaces, and whether there would be time limits or other management measures such as parking fees and the like. Moreover, the opening hours of the car park would need to be in line with the parking demand for the precinct in order to achieve the wider benefits.

GTA Recommendation

- The revised assessment would need to assess the traffic impacts associated with car parking provision for the site.

- Information on how the basement car parking spaces would be managed needs to be provided. This should include access restrictions, time restrictions, vehicle restrictions, etc.

5.3 Car Parking Layout

Varga Report

The Varga Report indicates that the assessment of the proposed car park layout is compliant with Standards Australia *Parking Facilities Part 1 – Off-Street Car Parking AS2890.1* with respect to:

- Parking bay dimensions
- Ramp grades
- Aisle widths.

GTA Review

The report or plans viewed by GTA do not indicate any distinction between what is allocated as retail versus resident parking spaces. It also appears that all three car parking levels would be connected by a ramp system. This would have broader implications for traffic distribution to and from the site. For example, while it was stated that residential parking would access the basement carpark from Chesterfield Lane, there is also the possibility that residential traffic would use Macpherson Street for access and/or egress. Alternatively, there is also the possibility that the rear access on Chesterfield Lane could be used by retail traffic rat-running via Chesterfield Parade while trying to avoid the potentially congested right turn from Arden Street into Macpherson Street, creating greater traffic impacts on the laneway.

Other car parking layout issues noted by GTA include:

- There is no provision for car parking spaces for people with disabilities, as per requirements of AS 2890.6:2009.
- The car park layout drawings need to be revisited and assessed for vehicle manoeuvrability, in particular in relation to the movements accessing the ramps between levels and allow for two-way flow circulation. This would be more critical to the retail parking levels, where there would be significantly higher vehicle movements, compared with the residential parking level.
- The design of the main car park access driveway on Macpherson Street needs to be undertaken in accordance with Australian Standards. There is potentially a requirement to designate a No Stopping zone on the approach and egress sides of the proposed driveway, which would impact on the number of existing kerbside parking spaces on Macpherson Street.
- Access to motorcycle parking bays would potentially be restricted by car parking spaces.
- The interfaces between the loading dock, basement car parking levels and the lobby/street levels need to be more clearly articulated, with particular reference to lift locations and orientation.
- Segregation of car park access needs to be more definitively stated. It is unclear from the drawings that the retail car parking spaces could not be accessed from Chesterfield Lane. With potential queuing issues on the right turn from northbound Arden Street to Macpherson Street, there is the likelihood that retail traffic could rat-run via Chesterfield Parade and into the Chesterfield Lane driveway to the car park.

It is noted that in general, the car park layout is compliant with the relevant standards. Car parking spaces generally measure 2.7m wide by 5.4m long, and aisle widths are generally 6.2m wide.

Height clearances have not been identified, given the likelihood that smaller delivery vans for the supermarket and specialty shops could access basement level 1.

GTA Recommendations

- The proposed development should allow physical separation of residential car parking (accessed from Chesterfield Lane) from retail car parking (accessed from Macpherson Street) by way of securer restricted entrance to residential car parking area.
- The current layout appears to allow for a mix of retail, club and residential parking on Basement 2 car parking level. It is unclear how the Basement 3 car parking level would be segregated. Should boom gates be used for segregating parking spaces, the queuing impacts of these boom gates would also need to be investigated.
- The club parking component would ideally be accessed from Macpherson Street as well, to allow for the possibility of shared parking spaces with the retail component.
- The car parking spaces to be provided should include requirements for people with disabilities. These should be shown on plans for the proposed development.
- It is important that retail access to / egress from the car park be allowed only from Macpherson Street, and it the car parking layout drawings should clearly indicate how this will be achieved.

5.4 Bicycle Parking

Varga Report

The Varga Report does not mention bicycle parking requirements or the allocation of proposed provisions. The bicycle parking facilities included in the drawings indicate a total provision of 44 bicycle parking spaces (6 each on basement levels 1 and 2, and 32 on basement level 3).

GTA Review

An assessment of the bicycle parking requirements is set out Table 5.4.

Table 5.4: Bicycle Parking Requirements – Waverley DCP 2012

Use	Rate	Requirement
Multi dwelling/ unit housing	Resident 1per dwelling Visitor 1 per 10 dwellings	Resident: 28 spaces Visitor: 3 spaces
Commercial/ Retail	1 per 150sqm of GFA	8 spaces
	Total	**39 spaces**

Table 5.4 indicates the proposed development would generate a requirement of some 39 bicycle parking spaces. A review of the plans indicates some 44 spaces in total, with 32 of these spaces located in a secure area on basement level 3.

The total bicycle parking provision would be compliant with DCP requirements. However, the Waverley DCP 2012 requires bike parking for tenants be located "on the uppermost level of the basement" and "close to entry/ exit points". Moreover, the bicycle parking spaces on basement level 2 would practically be inaccessible from either Macpherson Street or Chesterfield Lane. As such, there would

need to be additional bicycle parking provided on basement level 1, or on street level (Macpherson Street).

In this instance the non-residential uses require a personal locker for each bicycle parking space and 1 shower and change room facility close to bicycle parking for non-residential uses.

GTA Recommendation

- The development should allocate part of the bicycle parking, particularly for visitor bike parking relating to the retail component, on the street level near to the main pedestrian entrance (Macpherson Street).

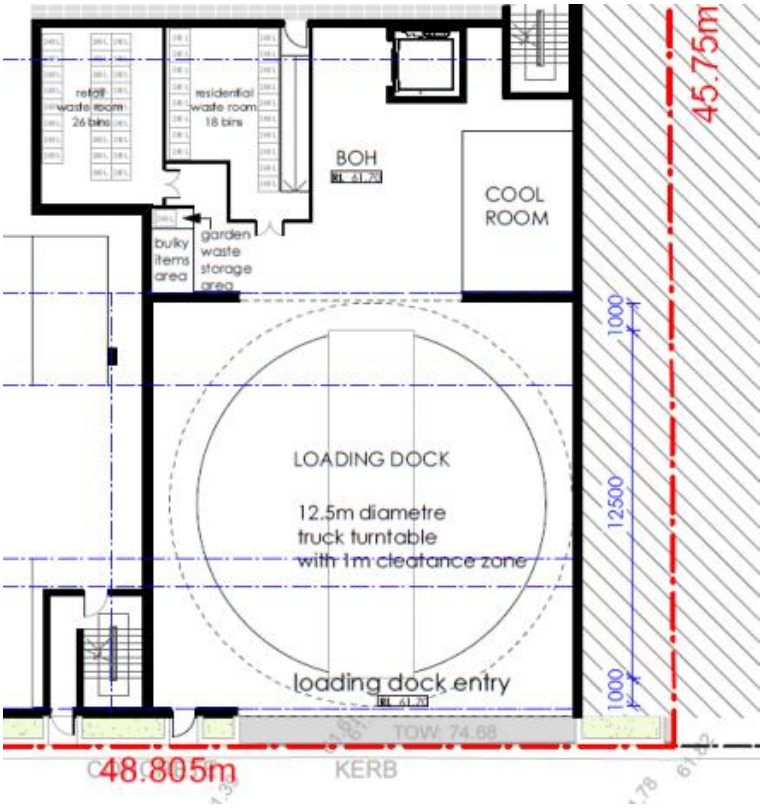
6. Review of Loading Arrangements and Impacts

6.1 Loading Dock

Varga Report

A single loading dock is proposed on basement level 2. It is proposed to have a 12.5m turntable, as shown in Figure 6.1.

Figure 6.1: Proposed Loading Dock



The Varga Report makes note that the geometric design is compliant with relevant standards. It states the 12.5 diameter turntable area has been designed to accommodate the swept turning path requirements of the design delivery trucks.

An outline of the loading vehicle management plan is provided with an indication of volumes, times of operation and the general proposed operation of the loading dock.

GTA Review

An assessment of the required loading facilities according to the Waverley DCP 2012 is shown in Table 6.1

Table 6.1: Loading Facility Requirements

Use	Rate	Requirement
Licensed bars, clubs, hotels & taverns (with a GFA greater than 100 m²)	Merit Assessment	Merit Assessment
Residential flat buildings (with more than 25 dwellings)	1 per 50+ dwellings	0
Retail	1 per 400 m² GFA	4

Table 6.1 indicates the development would have a minimum requirement of 4 "loading facilities". It is apparent that there would be more than one (1) loading dock required just for the shops and supermarket alone, based on Waverley DCP 2012.

Moreover, while it appears that the loading dock is to service the retail and club land uses, no resident loading plan has been discussed in terms of arrangements for removalists.

GTA Recommendation

- The loading facility requirement outlined in the Waverley DCP appears to be high, considering the development mix proposed for the site. However, the proponent should demonstrate how providing for only one loading bay would work.
- The proponent needs to submit a Loading Dock Management Plan that outlines operating hours and access arrangements that demonstrates that likely demand, including for removalists, could be accommodated.

6.2 Layout

Varga Report

The layout of the proposed loading dock, as shown in Figure 6.1, makes use of a 12.5m turntable, so that trucks manoeuvre in a forward position for both access and egress movements.

GTA Review

GTA agrees that the loading dock area meets the geometric requirements set out in AS 2890.2-2002 *Parking facilities, Part 2: Off-street commercial vehicle facilities*.

No standard 11.3m truck turning templates representing the beer trucks that deliver to the RSL site, nor the 10.3 rigid truck proposed to be used for Harris Farm deliveries are available. For purposes of undertaking a swept path analysis to identify potential issues with truck manoeuvres, GTA used an 11m truck turning template.

With this, the following issues were identified:

- Egress manoeuvres from the loading dock. Figure 6.2 shows a potential issue with the driveway width for an 11m truck. The 11.3m truck proposed to be used for deliveries would have a marginally wider turning circle.
- Right turn at the east end of Chesterfield Lane. Figure 6.3 highlights a potential issue with trucks mounting the right-side kerb.
- Egress to Chesterfield Parade. Figure 6.4 shows the swept path of an 11m truck making the right turn egress from Chesterfield Lane to Chesterfield Parade. The wide turn is required to avoid the mature trees on both sides of Chesterfield Parade. The egress manoeuvre would require trucks to cross the centreline.

Figure 6.2: Swept Path – Loading Dock Egress (11m Truck)

Figure 6.3: Swept Path – Right Turn on Chesterfield Lane (11m Truck)

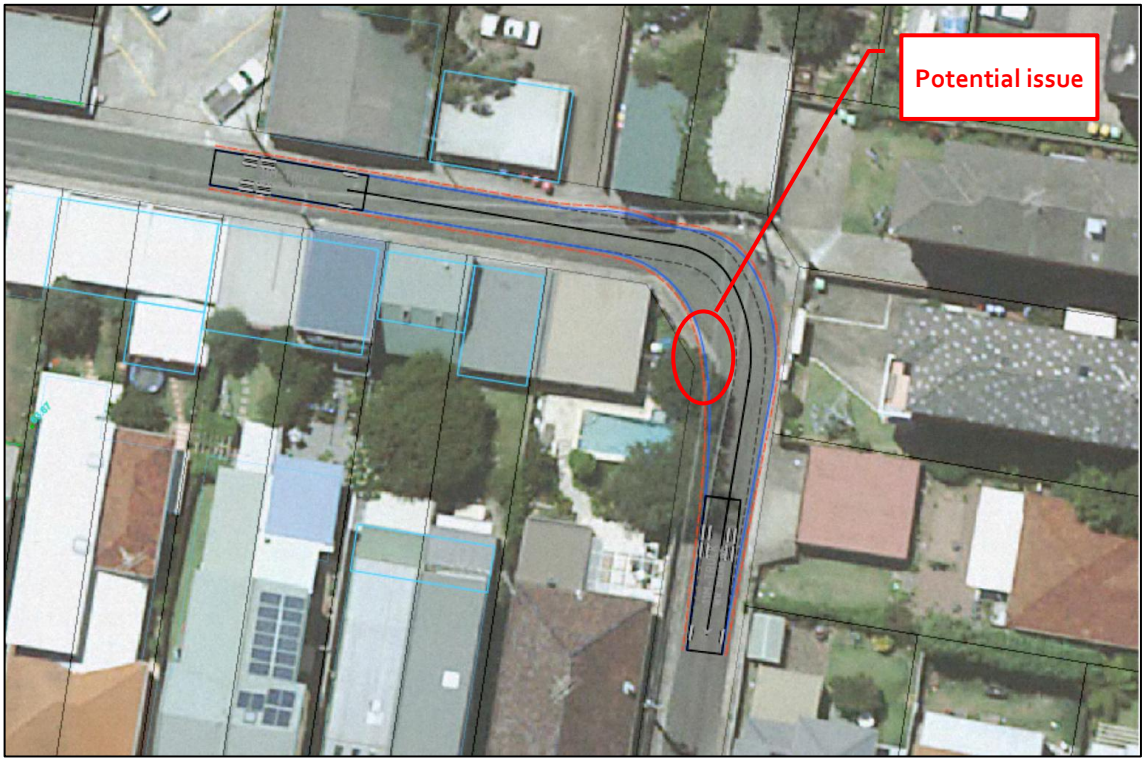


Figure 6.4: Swept Path – Egress to Chesterfield Parade (11m truck)

GTA Recommendation

- The proponent needs to provide a definitive swept path analysis for the proposed loading dock access/egress routes and identify potential impacts.
- The proposal should consider access to the loading dock from Macpherson Street, particularly for smaller delivery vehicles.

6.3 Loading Dock Management

Varga Report

The Varga Report states that "*a Management Plan will be prepared by the applicant in conjunction with Council, the community and the retail tenants to ensure deliveries of goods and removal of waste occur in designated areas and at designated times of day*" (p25).

GTA Review

GTA concurs with the proposal to prepare a management plan for the loading dock, given that the single dock has the potential to block through traffic on Chesterfield Lane should there be a delivery and another truck is occupying the loading dock. A loading dock capacity assessment is required to ensure that demand associated with all land uses on the site can be satisfied without significant detriment to the safety and operation of Chesterfield Lane.

Moreover, the management plan should also incorporate a provision for deliveries using light vehicles to access the Basement 1 carpark from Macpherson Street, with corresponding loading bay provision using part of the excess car parking. Alternatively, Council could designate a loading zone along Macpherson Street next to the existing taxi rank that could be used by small delivery vans, not just for

the development, but also for the other retail shops on Macpherson Street. This could potentially be shared with the residential land uses for removalists.

GTA Recommendation

- A Loading Dock Management Plan would need to be prepared for the development, and submitted as part of the development application.
- The plan should clearly demonstrate the ability of Harris Farm to share loading bays with other retail tenants.
- The plan should also include operating hours for loading. For considerations of residential amenity on Chesterfield Parade, it is suggested that the loading dock operating hours be limited to between 8am-5pm weekdays, and 8am-12 noon on weekends.

6.4 Truck Access Routes

The Varga Report indicates that truck access would be from Chesterfield Lane. It did not identify the access routes that truck deliveries would be making in accessing the loading dock.

The truck access route that requires a left turn from Arden Street (southbound) to Chesterfield Parade (to access Chesterfield Lane) is of particular concern. The topography of the Chesterfield Parade/Arden Street intersection could present issues with regard to truck manoeuvres. GTA notes that the Varga Report did not include an assessment of this particular manoeuvre.

Further, the existing tree canopy on Chesterfield Parade constrains vehicle heights. It was not stated in the Varga Report what height the delivery trucks to be used for the supermarket component would be. This could have impacts on the existing heritage-listed trees along Chesterfield Parade.

Figure 6.5 shows a view of the Chesterfield Parade/Arden Street intersection.

Figure 6.5: Chesterfield Parade/ Arden Street Intersection

GTA Recommendation

- As indicated in Section 6.2, consideration should be given to accessing the loading dock for smaller delivery vehicles from Macpherson Street.
- The revised traffic assessment should investigate vehicle heights and how these could be accommodated within existing vertical clearance constraints on Chesterfield Parade posed by heritage-listed trees.
- The investigation should also include safety/risk assessment of truck manoeuvres from Arden Street (particularly southbound) into Chesterfield Lane, associated with the speed, road geometry and slope requirements (superelevation) for making the turn safely.

6.5 Other Issues

6.5.1 Chesterfield Lane Pavement Conditions

There has been no discussion in the Varga Report about the impacts of increased heavy vehicle activity on Chesterfield Lane on pavement conditions.

GTA notes that a more definitive pavement condition analysis would need to be undertaken by a pavement specialist. However, site observations indicate that the current pavement condition requires improvements even without additional heavy vehicle traffic on Chesterfield Lane.

The proponent should submit information from a suitably qualified pavement engineer that identifies remedial pavement work that needs to be undertaken to rectify the existing condition, and the likely impacts the increased heavy vehicle movements associated with the loading dock would have on Chesterfield Lane.

7. Economic Impact Assessment Review

7.1 Background

Urbis has undertaken a high level review of the *Bronte RSL Redevelopment Economic Impact Assessment* (EIA), prepared by Location IQ in August 2012 for Winston Langley Pty Ltd. The review/assessment focused on the following:

- Review of the document
- Provide high level comment on the appropriateness of the methodology
- Provide high level comment on the reasonableness of the findings.

No site inspection has been undertaken as part of this review.

7.1.1 EIA Methodology

The Location IQ EIA addresses the following methodology:

- Review of the regional and local context of the site and an overview of the composition of the retail scheme.
- Definition of a Trade Area for the retail component of the scheme together with:
  - a population forecast for the Trade Area resident population to 2026
  - a review of the socio-economic profile of residents
  - an assessment of potential spend within the MTA by key commodity groups
  - consideration of visitor numbers to Bronte.
- Review of the competitive retail environment within and around the Trade Area.
- An assessment of the potential for retail facilities, having regard to :
  - Centre sales potential
  - Sales impacts
  - Employment and consumer impacts.

Urbis considers that the approach adopted by Location IQ is consistent with the standard approach to undertaking a Retail Economic Impact Assessment.

7.2 Comments on Key Findings

Urbis considers that that the assumptions and forecasts that have been used in the assessment are reasonable. Specifically:

- The Location IQ report uses 2011 Census data in the Population Forecast and Socio Economic profile assessment. Urbis notes note that in Table 2.1 of the Location IQ report, Census Count data has been extrapolated to an Estimated Resident Population Forecast (ERP) figure using the 2006 enumeration factor. Subsequent to the Location IQ report being produced, the ABS has released 2011 ERP data. However, Urbis does not envisage that there will be a discrepancy of significance between the two figures.
- The Main Trade Area in Figure 2.1 of the Location IQ report appears reasonable for a relatively small scale retail provision such as that proposed. Within the Main Trade Area the majority of spend is likely to come from residents closest to the subject site, as the steep

gradients in the locality may be a disincentive to broader walk-in trade. The provision of additional car parking will enhance the attractiveness of the development for top-up retailing.

- The Location IQ report uses Marketinfo MDS spending data by key commodity groups in Table 2.3. This is the industry standard spending data, assuming that the latest 2010 MDS figures are used.
- With regard to the Competitive Environment review in Section 3, Table 3.1 identifies all relevant Regional and Supermarket Centres that are likely to compete for Main Trade Area spending. The analysis of Bronte Village Centre in Section 3.3 is thorough, however it may also have been helpful to consider the strip retailing along Bronte Road around the intersection with Carrington Road as this is also within the Main Trade Area.
- The forecast sales in Table 4.1 use fairly high turnover per square metre rates relative to other developments, which as Location IQ confirm, reflects the surrounding high density and affluent population and the convenience that the proposed development offers to Main Trade Area residents. As high turnover per square metre rates have been adopted this means that the competitive impacts would reflect the likely upper end of a reasonable range.
- In Table 4.3 the assumption that 10% of sales will be directed from tenants within the Main Trade Area and 90% from beyond the Main Trade Area seems logical in view of:
    - The limited provision of competing retailers within the Main Trade Area which indicates the opportunity to capture escape expenditure
    - The proximity to, and strength of, higher order retailing notably Bondi Junction and Randwick.
- Accordingly, Urbis considers that the Impacts in Table 4.3 appear reasonable, noting that:
    - Year on year spending growth should allow any competitive impacts to be absorbed within a short period.
    - The turnover estimate for the proposed development reflects the likely upper end of a reasonable range.
    - The proposed development is focused on convenience grocery shopping, and we understand that supermarkets close to the Main Trade Area achieve strong sales at present.
- The employment figures in section 4.4 are consistent with employment numbers that Urbis' modelling generates based on the same size and construction cost inputs.

General Observations

More broadly, having regard to the EIA and the plans contained therein, Urbis makes the following observations:

- The proposed development at 1,246 m^2 is relatively modest in scale and is located on the edge of an existing retail strip.
- This scale of grocery retailing is likely to be highly convenient for Main Trade Area residents undertaking top-up food shopping.
- Although there may be some minor competitive impacts on individual retailers within the Main Trade Area, the development should strengthen the overall retail offer on Macpherson

Street. The specialty shops are oriented to the street and should therefore complement the existing retail strip.

In conclusion, the information contained in the Bronte RSL Redevelopment Economic Impact Assessment demonstrates that there are no economics grounds on which the proposed development should be refused planning consent.

8. Conclusions

8.1 Traffic and Parking Review

Based on the identified traffic and parking issues, GTA notes that the following issues were not sufficiently addressed in the Varga Report:

- The use of appropriate traffic generation rates representative of the proposed development.
- Impacts on the operation of the Macpherson Street/St Thomas Street intersection, including consideration of the roundabout proposal, as per the *Local Village Centres Public Domain Improvement Plan* (Waverley Council, 2006) and the need for this as a consequence of the proposed development.
- Consideration of school peak periods in the traffic counts, and the impacts the development proposal would have on school/pre-school peak activity times, including potential safety and amenity issues.
- Required loading dock capacity, considering the mix of uses proposed for the site.
- The likely truck swept paths on Chesterfield Lane and Chesterfield Parade using representative turning templates proposed to be used by the development.
- Truck manoeuvres from Arden Street southbound to Chesterfield Parade (left turn).
- Car parking provision, including potential impacts of apparent over-provision.
- Parking for people with disabilities.

Further investigation on these key issues would need to be undertaken as part of the on-going approval assessment process for the development proposal. Appropriate management plans for off-street car parking and the loading dock would also need to be prepared by the proponent and submitted together with the development application.

8.2 Economic Impact Review

Urbis notes that the information contained in the *Bronte RSL Redevelopment Economic Impact Assessment* demonstrates that there are no economics grounds on which the proposed development should be refused planning consent.

Appendix A

Varga Report

Proposed Mixed-Use Development

Bronte RSL Club Site
113 Macpherson St, Bronte

TRAFFIC AND PARKING ASSESSMENT REPORT

25 September 2012

Ref 11303

VARGA TRAFFIC PLANNING Pty Ltd
Transport, Traffic and Parking Consultants

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Figure 5 Existing Parking Restrictions

1. INTRODUCTION

This report has been prepared to accompany an application to Waverley Council for a mixed-use residential/retail/licensed club development proposal to be located on the Bronte RSL Club site at 113 Macpherson Street, Bronte (Figures 1 and 2).

The proposed development will involve the demolition of the existing RSL Club building on the site to facilitate the construction of a new mixed-use residential/retail development which retains the existing licensed club in the new building.

The proposed retail facilities will comprise a fresh produce mini-major (eg; Harris Farm) and a number of smaller food-related retail specialty stores. The proposed retail facilities will cater primarily for the food and grocery shopping needs of the "main trade area" which extends for a distance of less than 1 km around the site.

Given that the vast majority of food and grocery spending within the main trading area currently occurs outside the main trade area[1], in centres such as Bondi Junction and Randwick, the proposed development is likely to result in a *reduction* in the number of *vehicle-kilometres driven* by local residents when undertaking their food and grocery shopping. In particular, the *reduction* in the number of *vehicle-kilometres driven* will occur because:

- residents living within 400-800m of the site will be able to *walk* to the site, rather than *drive* to Bondi Junction or Randwick, and

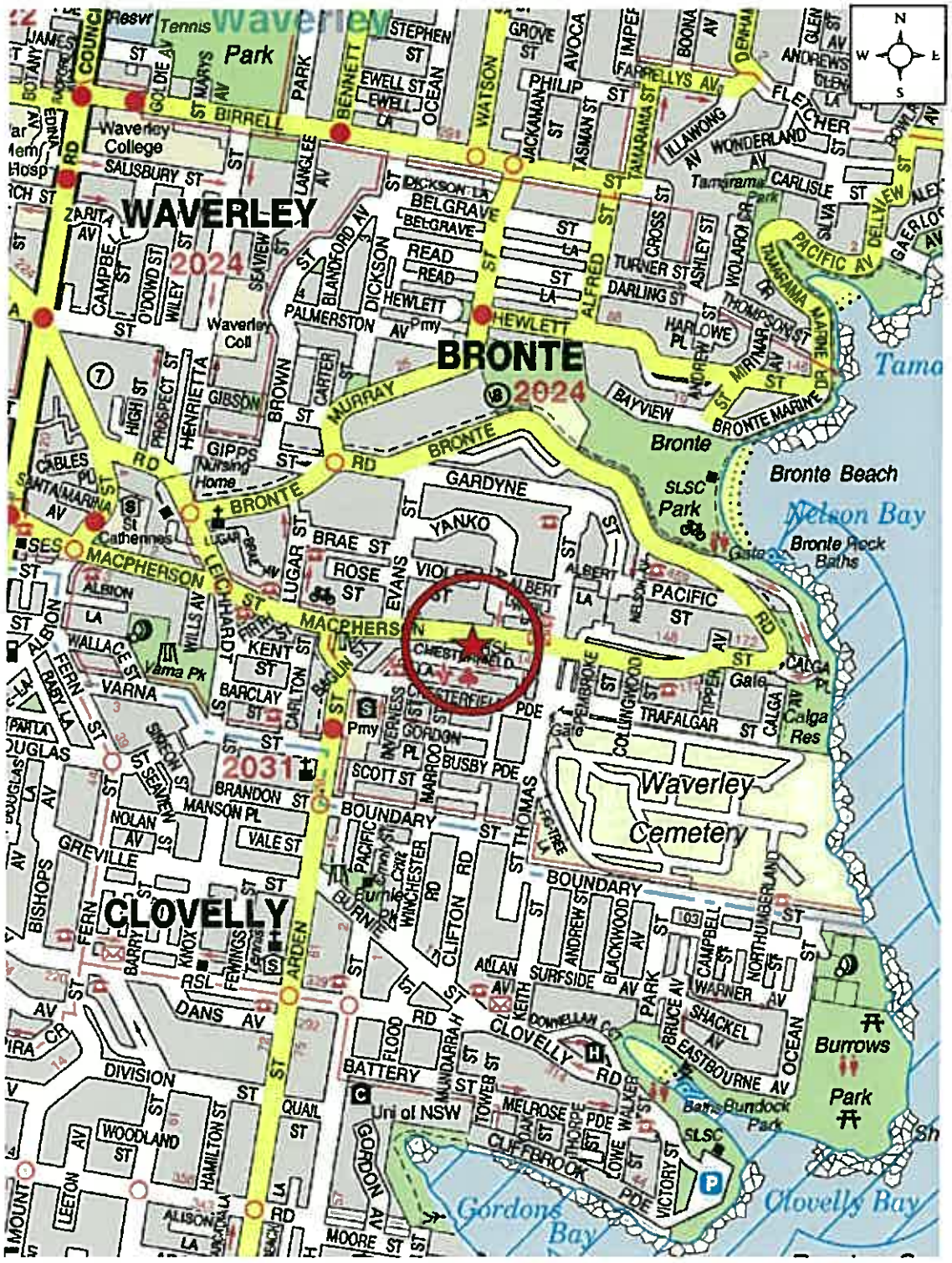
- for customers that *drive* to the site, their car journey will be *much shorter* than driving to Bondi Junction or Randwick to undertake the same shopping task.

Car parking is to be provided in a new basement car parking area. Vehicular access to the retail component and licensed club is to be provided via a driveway located in Macpherson Street, whilst vehicular access to the residential car parking area is to be provided via a driveway located at Chesterfield Lane.

[1] Location IQ *"Bronte RSL Redevelopment, Sydney Economic Impact Assessment"* (August 2012)

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 development 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 development proposal, and assigns that traffic generation to the road network serving the site
- assesses the traffic implications of the development proposal in terms of road network capacity
- reviews the geometric design features of the proposed basement car parking facilities for compliance with the relevant codes and standards
- considers the effect of locating part of the access to the site in Chesterfield Lane in terms of the safety and amenity of residents and children attending Clovelly Public School and Bronte Child Care Centre
- considers the capacity/adequacy of the existing pavements in Chesterfield Lane and the entries/exits to the lane in Chesterfield Parade in terms of the ability to accommodate the turning path requirements of 11.3m long trucks
- provides recommendations on how loading should take place, to be included in a Management Plan for the loading dock.
- considers the appropriateness of locating retail & club car parking access in Macpherson Street
- assesses the adequacy and suitability of the quantum of off-street car parking provided on the site and the wider benefits that flows to the Macpherson Street retail area through the provision of additional parking



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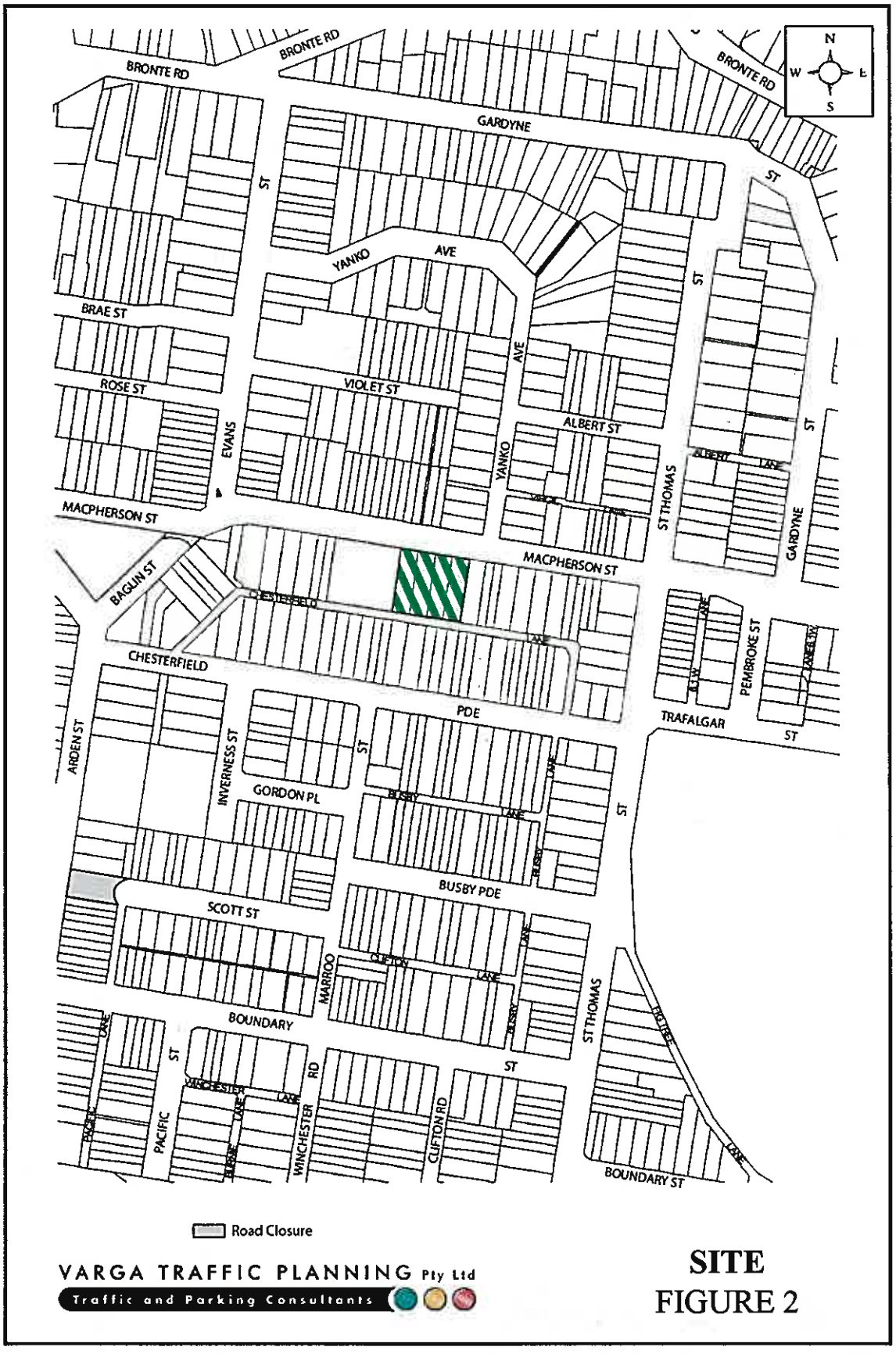
Transport, Traffic and Parking Consultants

LOCATION
FIGURE 1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Road Closure
VARGA TRAFFIC PLANNING Pty Ltd
Traffic and Parking Consultants
SITE
FIGURE 2

2. PROPOSED DEVELOPMENT

Site

The subject site is located on the southern side of Macpherson Street and has a rear lane frontage to Chesterfield Lane. The site has a street frontage approximately 49 metres in length to both Macpherson Street and Chesterfield Lane and occupies an area of approximately 2,231m^2.

The subject site is currently occupied by the Bronte RSL Club – a licensed venue comprising a bar area, bistro, TAB and gaming facilities as well as several rooms which are leased out to various groups such as dance classes and self-defence classes.

Off-street parking is currently provided for 22 cars in a rear outdoor car parking area. Vehicular access to the car parking facilities is provided via an entry/exit driveway located towards the western end of the Chesterfield Lane site frontage.

Proposed Development

The proposed development will involve the demolition of the existing RSL Club building on the site to facilitate the construction of a new mixed-use residential/retail/licensed club building.

Retail uses are proposed on the ground floor level, fronting Macpherson Street, and are likely to include a Harris Farm mini-market with a floor area of 999m^2, and specialty tenancies such as a seafood shop, a butcher/delicatessen, a café and a juice bar with a floor area of 247m^2. The cumulative floor area of the retail component is 1,246m^2.

The first floor level will comprise a new, smaller RSL Club with a floor area of 750m^2.

A total of 28 residential apartments are proposed in the new building on the levels above, as follows:

1 bedroom apartments:	10
2 bedroom apartments:	14
3 bedroom apartments:	4
TOTAL APARTMENTS:	**28**

Off-street parking is proposed for a total of 105 cars in a new basement car parking area, with vehicular access to be provided via a two-way driveway off the Macpherson Street frontage of the site for the retail and club components of the development proposal. Residential carpark access will be provided via a two-way driveway off Chesterfield Lane.

Alcohol deliveries to the club will continue to be made 2-3 times per week, using an 11.3m long rigid truck (with a height of 3.5m), as occurs at present.

There will be 3-4 truck deliveries per day to the retail facilities, using a 10.3m long rigid truck, plus deliveries using light commercial vehicles (such as white vans and the like), making deliveries such as fresh bread, fish, milk etc., yielding a total of 10-15 deliveries per day associated with the retail component of the development proposal.

It is pertinent to note that all of the delivery vehicles associated with the retail component of the development proposal will be *smaller* than the 11.3m long rigid truck which currently makes deliveries to the club loading dock which is accessed via Chesterfield Lane.

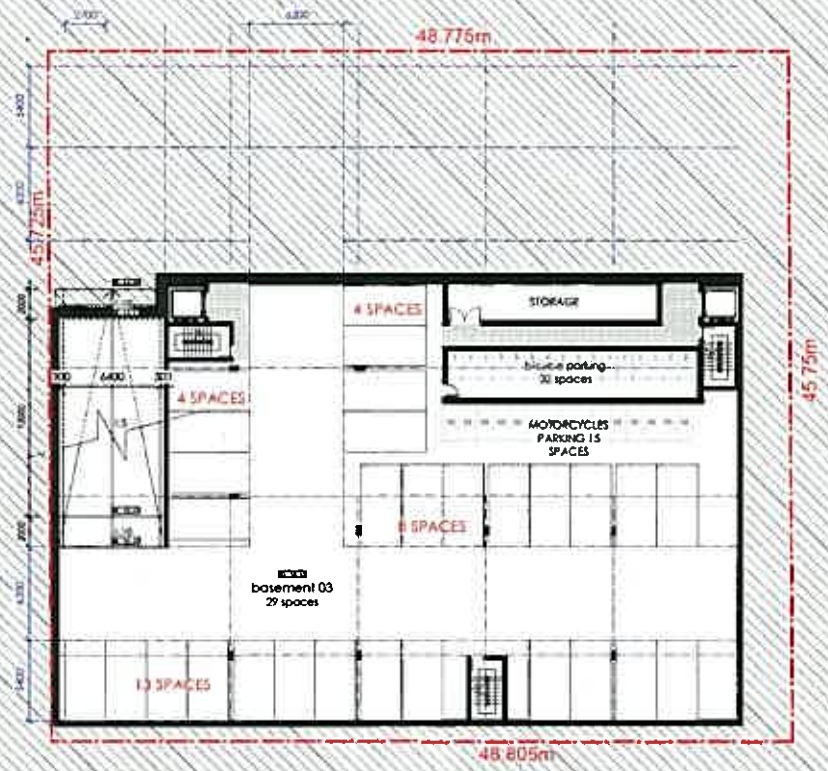
A Management Plan will be prepared to ensure that deliveries are staggered throughout the day, and that a dock manager will be present in the loading dock whenever a delivery vehicle is scheduled to arrive. This document will be prepared in close consultation with Council and the community.

Trucks will approach Chesterfield Lane via a left-turn only movement from Chesterfield Parade, and will depart the site via a left-turn only movement from Chesterfield Lane into Chesterfield Parade, such that they will avoid traversing the majority of Chesterfield Parade.

The loading dock is to be located on the lower basement level, at the rear of the building, and will operate completely independently of the carparking area. Vehicular access to the loading dock is to be provided via Chesterfield Lane. A 12.5m diameter turntable located within the

loading dock will ensure that all vehicles will be able to enter and exit the loading dock whilst travelling in a forward direction at all times.

Preliminary Concept Plans of the proposed development have been prepared by *Aleksandar Design Group* and are reproduced in the following pages.



preliminary

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client:
winston langley burlington

project:
113 Macpherson Street, BRONTE
NSW 2024
Lot 19-21 DP 992094, Lot 22 DP 72912

project no: 1222
title: basement 03 plan
drawing no: DA03 issue A
date: 20th spetember 2012
scale: 1:200 @ A2

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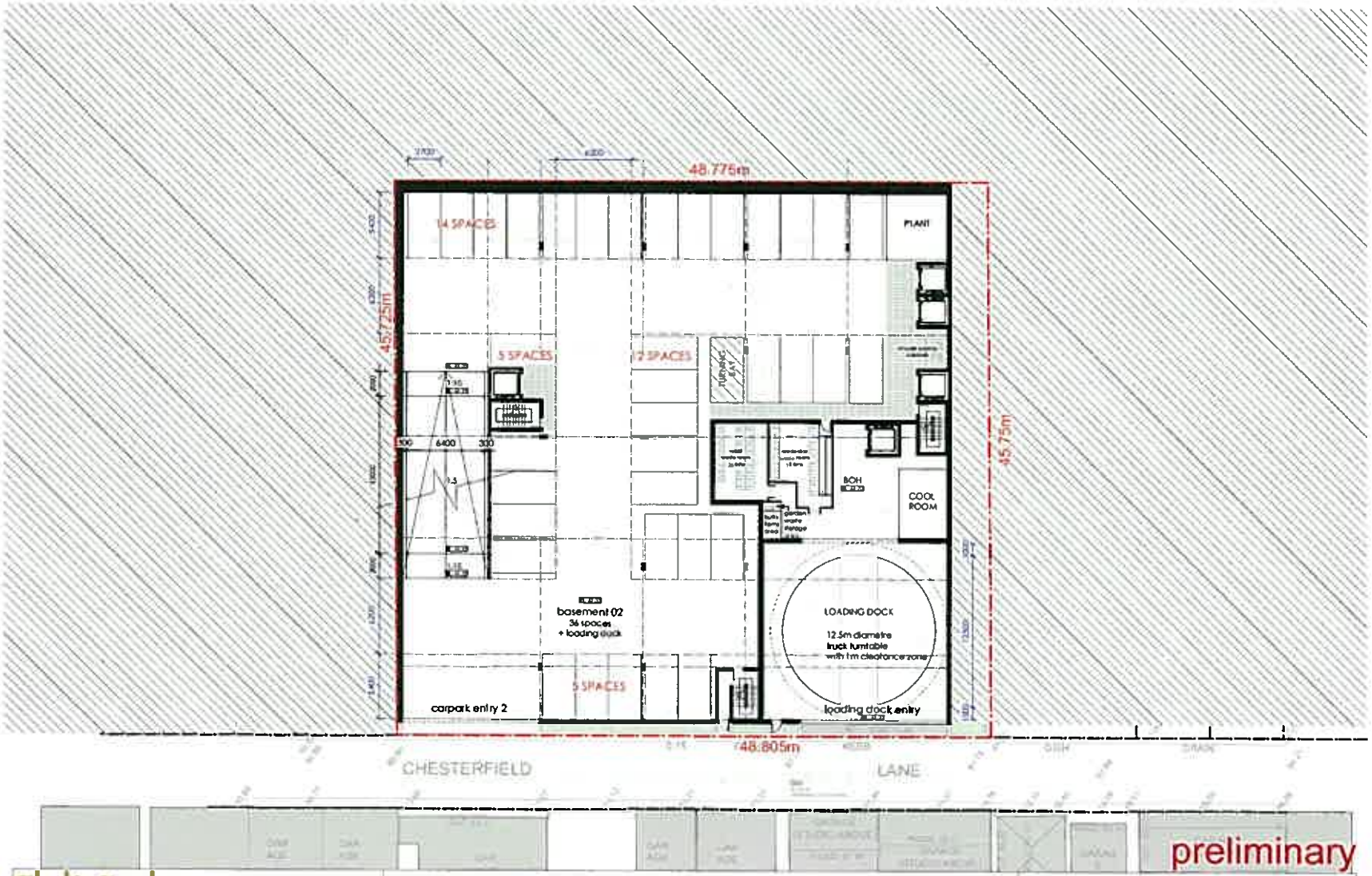

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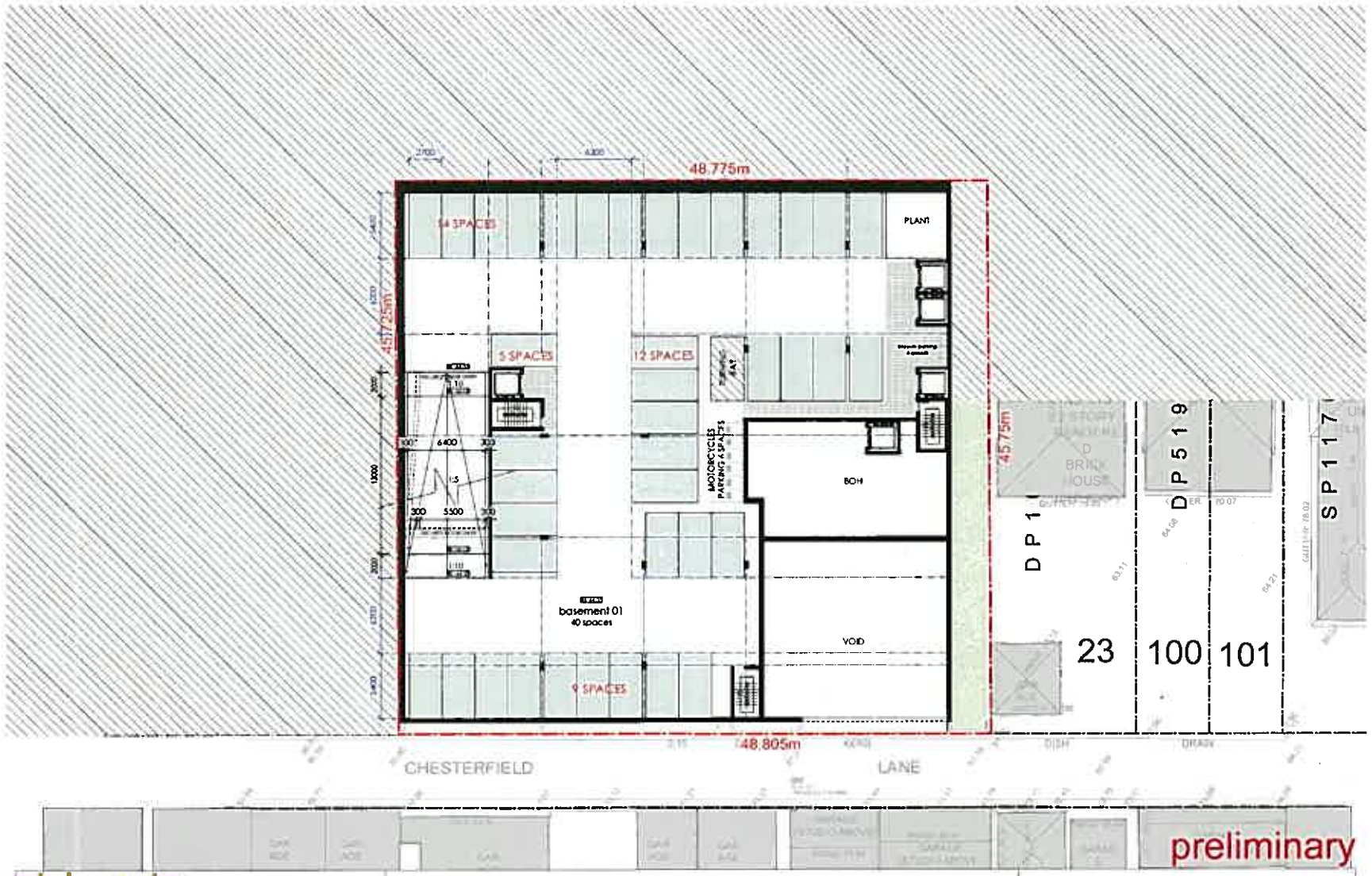
client: winston langley burlington

project: 113 Macpherson Street, BRONTE NSW 2024

project no: 1222
title: basement 02 plan
drawing no: DA04 issue A
date: 20th september 2012
scale: 1:200 @ A2



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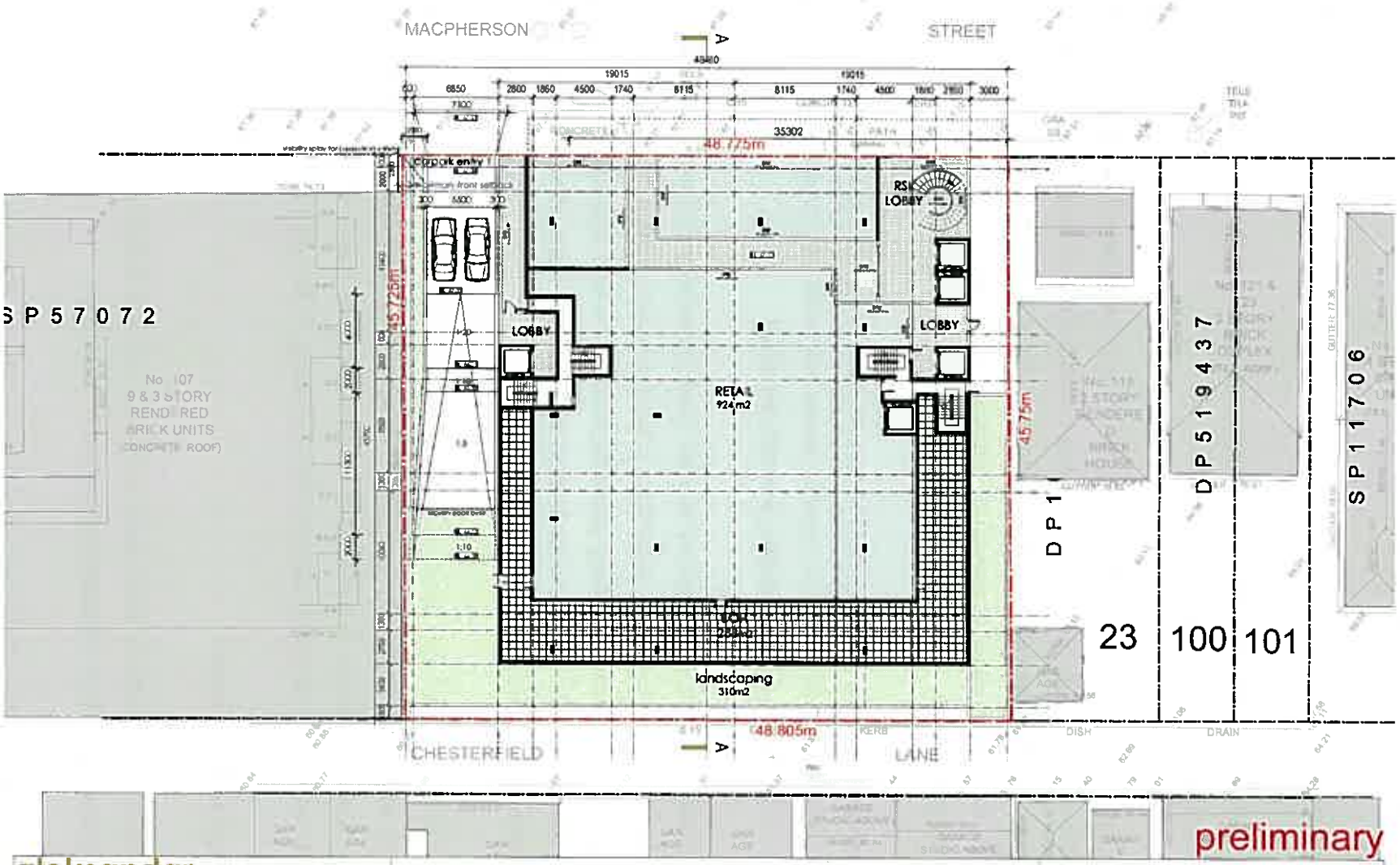
client: winston langley burlington

project: 113 Macpherson Street, BRONTE NSW 2024
Lot 19-21 DP 192096, Lot 22 DP 72912

project no: 1222
title: basement 01 plan
drawing no: DA05 issue A
date: 20th spetember 2012
scale: 1:200 @ A2



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client: winston langley burlington

project: 113 Macpherson Street, BRONTE NSW 2024
Lot 19-21 DP 19 2094, Lot 22 DP 72912

project no: 1222
title: ground floor plan
drawing no: DA06 Issue A
date: 20th spetember 2012
scale: 1:200 @ A2

3. TRAFFIC ASSESSMENT

Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by the Roads and Traffic Authority is illustrated on Figure 3.

Carrington Road and Council Street are classified by the RTA as *State Roads* and provide the key north-south road link in the area, linking Frenchmans Road to Bondi Road. Carrington Road and Council Street typically carry two traffic lanes in each direction in the vicinity of the site. Kerbside parking is generally permitted on both sides of the roads outside of commuter peak periods.

Macpherson Street is classified by the RTA as a *Regional Road* which provides the key east-west road link in the Bronte area. It typically carries one traffic lane in each direction in the vicinity of the site with kerbside parking generally permitted.

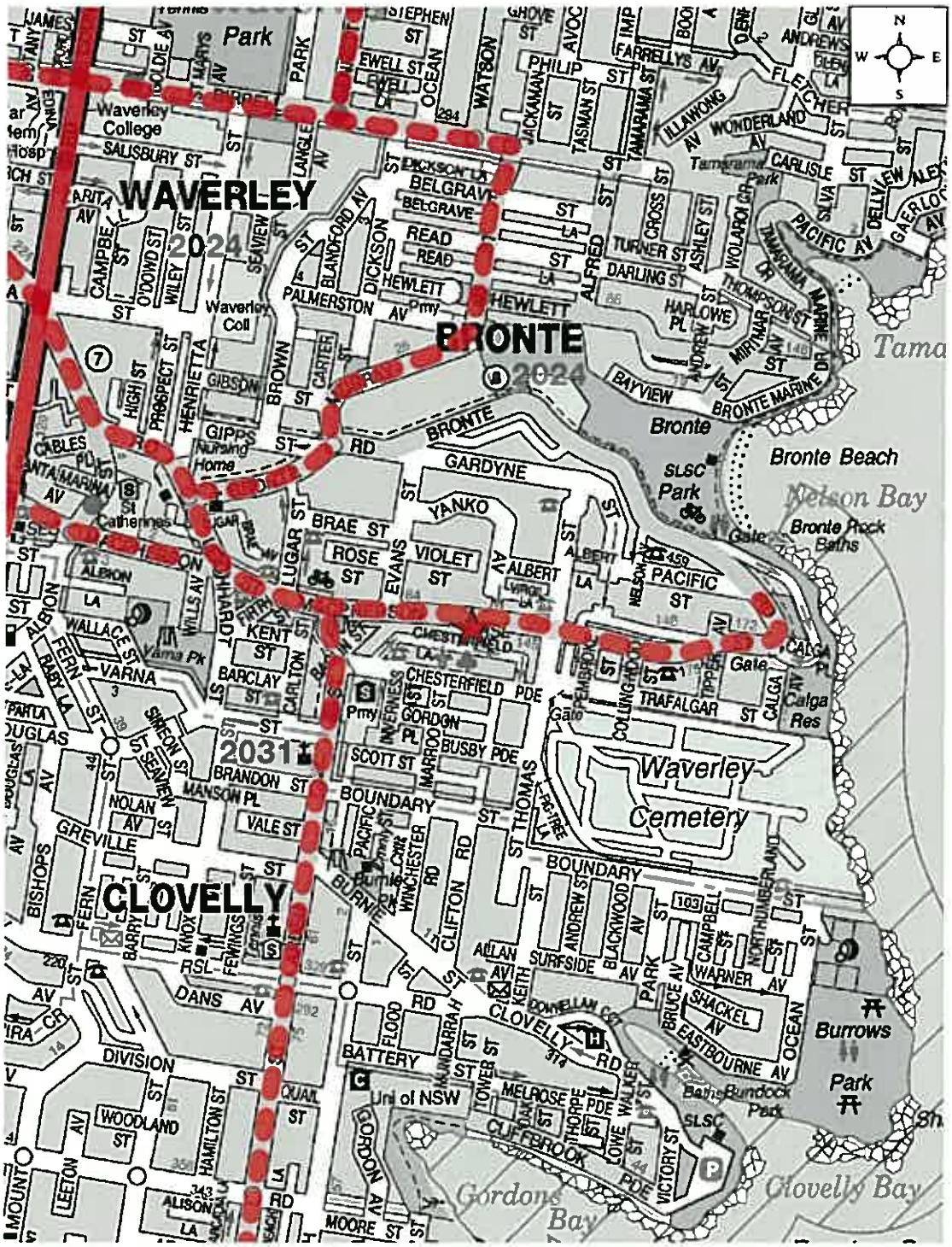
Chesterfield Parade is a local, unclassified road which is primarily used to provide vehicular and pedestrian access to frontage properties. It has a pavement width of approximately 11m between kerbs, with kerbside parking generally permitted on both sides of the road between large, mature street trees which are also located in the kerbside lanes. A school is located on the southern side of Chesterfield Parade.

Chesterfield Lane is a local, unclassified laneway which is primarily used to provide rear vehicular and pedestrian access to properties fronting Macpherson Street and Chesterfield Parade. Kerbside parking is permitted at selected locations only. Chesterfield Lane is currently used to provide deliveries to the RSL club, using 11.3m long rigid trucks.

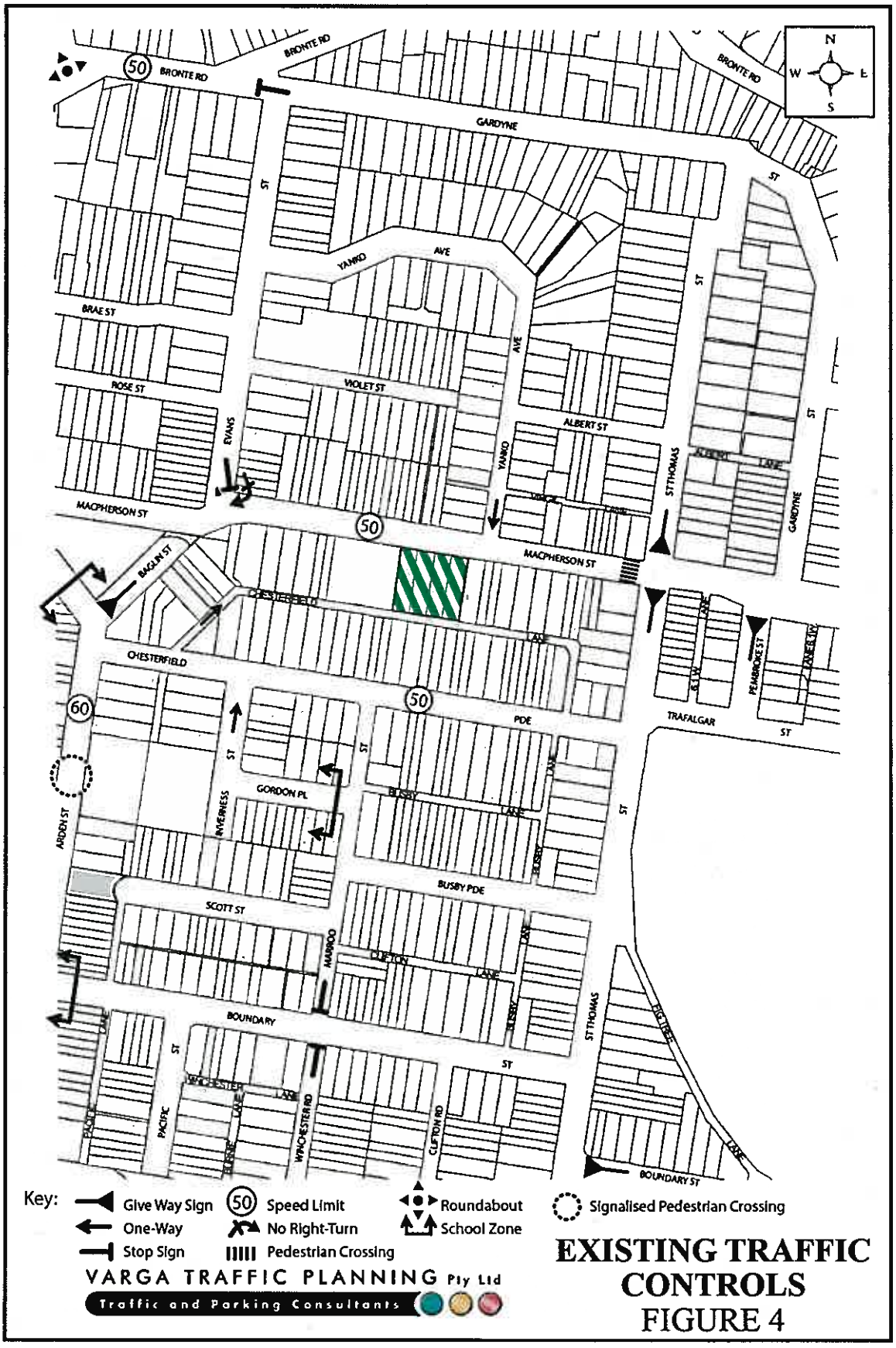
Existing Traffic Controls

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 50 km/h SPEED LIMIT which applies to Macpherson Street and all other local roads in the area



ROAD HIERARCHY
FIGURE 3


BRONTE RD
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YANKO AVE
BRAE ST
ROSE ST
VIOLET ST
ALBERT ST
RYANS
YANKO
ST THOMAS
MACPHERSON ST
BAGLIN ST
CHESTERFIELD
PDE
TRAFALGAR ST
PEMBROKE ST
GORDON PL
RIVERNESS
BUSBY
BUSBY PDE
ARDEN ST
SCOTT ST
HARROD
CLIFTON
BOUNDARY
BOUNDARY ST
WINCHESTER
WINCHESTER RD
CLIFTON RD
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Key:
Give Way Sign
One-Way
Stop Sign
Speed Limit
No Right-Turn
Pedestrian Crossing
Roundabout
School Zone
Signalised Pedestrian Crossing
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EXISTING TRAFFIC CONTROLS
FIGURE 4

- a ONE-WAY eastbound restriction in Chesterfield Lane

- a PEDESTRIAN REFUGE ISLAND in Macpherson Street directly outside the site.

Existing Traffic Conditions

An 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 this traffic study. The traffic surveys were undertaken in Macpherson Street where it intersects with Arden Street and in Chesterfield Lane, at the rear of the site. The results of the traffic surveys are reproduced in full in Appendix A and reveal that:

- two-way traffic flows in Macpherson Street past the site frontage are typically in the order of 400 vehicles per hour (vph) during the Friday *afternoon* commuter peak period

- peak hour traffic flows in Chesterfield Lane are in the order of 28 vph (including traffic flows generated by the RSL club carpark of 21 vph)

- two-way traffic flows in Arden Street are in the order of 900 vph during the Friday *afternoon* peak period.

Projected Traffic Generation

An indication of the traffic generation potential of the development proposal 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. The traffic surveys for shopping centres have recently been updated in a study prepared for the then Roads and Traffic Authority (now RMS)[2] and nominate the following traffic generation rates which are applicable to the development proposal:

Retail Component

[2] Halcrow Consulting *"Trip Generation and Parking Demand Surveys of Shopping Centres"* September 2011

6.4 peak hour vehicle trips per 100m^2 GLFA (Friday)
6.9 peak hour vehicle trips per 100m^2 GLFA (Saturday)

Medium Density Residential Flat Buildings
0.4-0.5 peak hour vehicle trips per 1 & 2 bedroom dwelling
0.5-0.65 peak hour vehicle trips per 3+ bedroom dwelling

Application of the above traffic generation rates to the residential and retail components of the development proposal yields a *nett increase* in traffic generation potential of approximately 93 vehicle trips per hour during the Friday *afternoon* commuter peak period and 99 vph during the Saturday peak period as set out below:

Table 3.1 - Projected Nett Increase in Peak Hour Traffic Generation Potential as a consequence of the development proposal

	Friday PM Peak	**Saturday Peak**
Residential Apartments (19 Apartments):	13.6 peak hour vehicle trips	13.6 peak hour vehicle trips
Retail Component (1246m^2):	79.7 peak hour vehicle trips	85.6 peak hour vehicle trips
NETT INCREASE IN TRAFFIC GENERATON POTENTIAL:	**93.3 peak hour vehicle trips**	**99.2 peak hour vehicle trips**

In summary, the proposed development is expected to generate an additional 14 vehicles per hour during commuter peak periods associated with the residential component of the development proposal in Chesterfield Lane, as well as an additional 10-15 delivery vehicles per day associated with the retail component of the development proposal.

This potential increase in traffic activity in Chesterfield Parade and in Chesterfield Lane will be offset by the relocation of access to vehicular access for the RSL club carparking facilities to the Macpherson Street frontage of the site, such that there will be little, if any *nett increase* in traffic activity in Chesterfield Parade and in Chesterfield Lane.

The retail component of the development proposal is expected to generate an additional 70 vph during the Friday *afternoon* commuter peak period in Macpherson Street, and approximately 85 vph during the Saturday peak period.

It is pertinent to note however, that the traffic activity associated with the retail component already occurs, in that local residents must currently drive to other centres such as Bondi Junction and Randwick to undertake their food and grocery shopping needs.

As noted in the introduction to this report, the proposed development is therefore likely to result in a *reduction* in the number of *vehicle-kilometres driven* by local residents when undertaking their food and grocery shopping. In particular, the *reduction* in the number of *vehicle-kilometres driven* will occur because:

- residents living within 400-800m of the site will be able to *walk* to the site, rather than *drive* to Bondi Junction or Randwick, and

- for customers that *drive* to the site, their car journey will be *much shorter* than driving to Bondi Junction or Randwick to undertake the same shopping task.

In addition to reducing the number of vehicle kilometres driven, the proposed development will also have the added benefit of *reducing* traffic volumes in the more congested centres such as Bondi Junction and Randwick to which residents must currently drive to undertake their food/grocery shopping needs.

Accordingly, the traffic activity expected to be generated by the retail component of the development proposal already occurs, and in practice the actual increase in traffic flows along the site frontage in Macpherson Street is therefore likely to be somewhat *less than* is suggested in the table above.

Notwithstanding, for the purposes of this assessment, the projected future traffic flows identified in Table 3.1 above have been adopted for the purposes of this assessment.

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.

The results of the SIDRA capacity analysis of the Macpherson Street/Arden Street intersection are summarised in Table 3.2 below, revealing that:

- the intersection currently operates at *Level of Service "A"*, with total average vehicle delays in the order of 8 to 10 seconds per vehicle

- under the projected additional traffic flows expected to be generated by the development proposal, the Macpherson Street/Arden Street intersection will continue to operate at *Level of Service "A"*, with increases in total average vehicle delays of approximately 1 second per vehicle.

The operational performance of the vehicular access driveway proposed in Macpherson Street has also been analysed using the SIDRA capacity analysis program. The results of that analysis are summarised in Table 3.3 below, revealing that the proposed driveway will operate at *Level of Service "A"*, with total average vehicle delays in the order of 2-3 seconds per vehicle.

The results of the SIDRA capacity analysis of the driveway proposed in Chesterfield Lane are summarised in Table 3.4 below, revealing that the driveway is expected to operate at *Level of Service "A"*, with total average vehicle delays in the order of *less than* 4 seconds per vehicle.

In the circumstances, it is clear that the proposed development will not have any unacceptable traffic implications in terms of road network capacity.

TABLE 3.2 - MACPHERSON ST & ARDEN ST, BRONTE				
	EXISTING		**PROPOSED**	
	PM	**SAT**	**PM**	**SAT**
Level of Service	A	A	A	A
Degree of Saturation	0.489	0.531	0.515	0.667
Average Vehicle Delays	**8.2**	**9.6**	**8.8**	**10.9**

TABLE 3.3 - MACPHERSON ST & PROPOSED RETAIL DRIVEWAY		
	PROPOSED	
	PM	SAT
Level of Service	A	A
Degree of Saturation	0.156	0.218
Average Vehicle Delays	**2.4**	**2.7**

TABLE 3.4 - CHESTERFIELD LANE & PROPOSED RESIDENTIAL/RSL DRIVEWAY		
	EXISTING	PROPOSED
	PM	PM
Level of Service	A	A
Degree of Saturation	0.012	0.018
Average Vehicle Delays	**3.4**	**3.7**

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[3] 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.

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

4. PARKING IMPLICATIONS

Existing Kerbside Parking Restrictions

The existing kerbside parking restrictions which apply to the road network in the vicinity of the site are illustrated on Figure 5 and comprise:

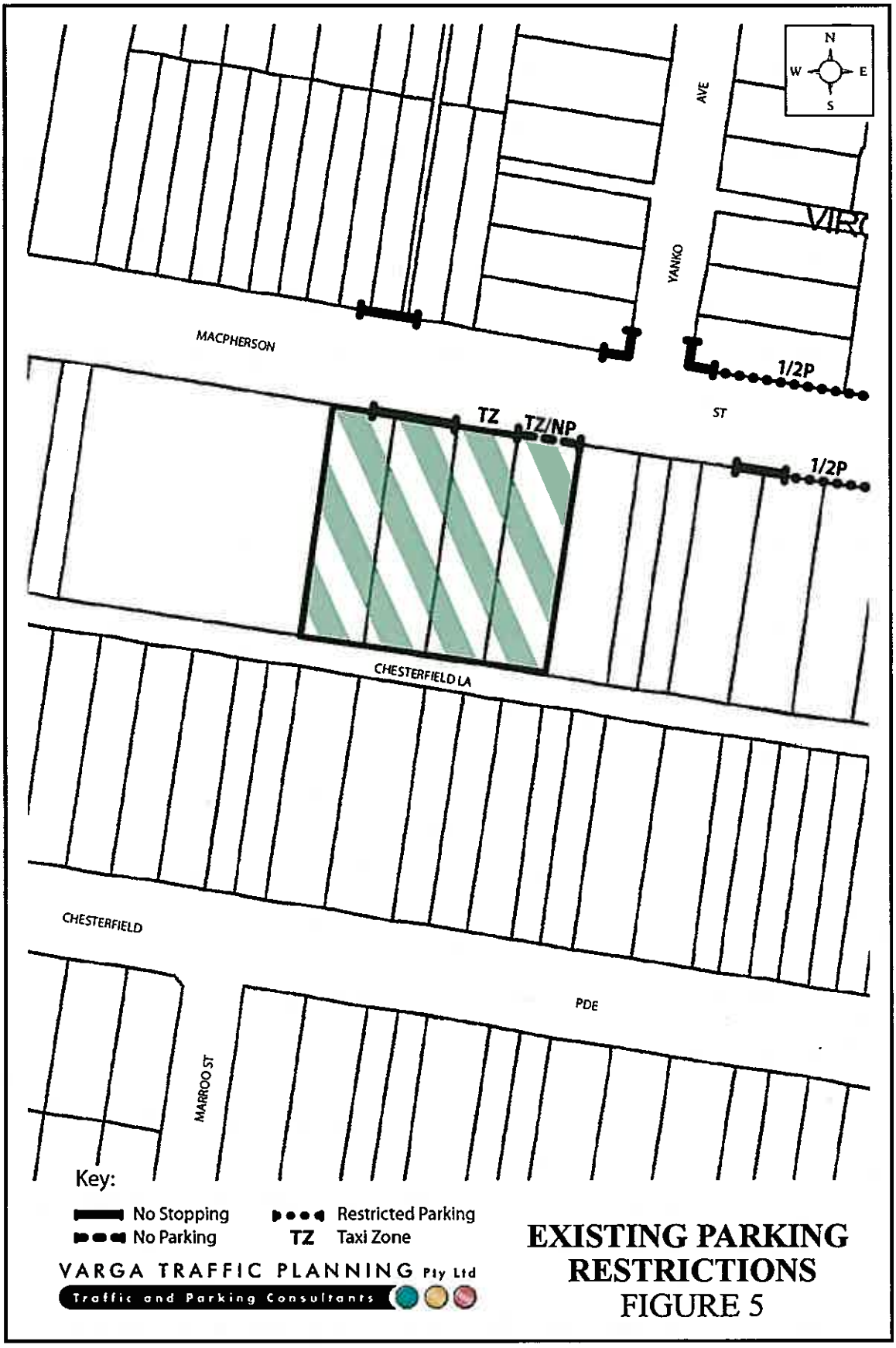
- NO STOPPING restrictions along a portion of the Macpherson Street site frontage
- NO STOPPING restrictions along a portion of the northern side at the Macpherson Street site frontage, directly opposite the site
- a TAXI ZONE located directly outside the site in Macpherson Street
- ½ HOUR PARKING along both sides of Macpherson Street east of Yanko Avenue
- generally UNRESTRICTED kerbside parking elsewhere in Macpherson Street and throughout the local area.

Parking Accumulation Surveys

In order to gain an accurate appreciation of the general availability of car parking on the subject site and on the adjacent road network, a detailed survey of car parking accumulation was undertaken between 3:00pm-9:00pm on Friday 18th November, 2011.

The results of the parking accumulation surveys are reproduced in full in Appendix A and reveal that:

- the RSL Club site has a car parking capacity of approximately 22 spaces
- the *peak* on-site parking demand occurred between 6:15pm-7:00pm when there were 19 parked cars recorded
- patronage surveys undertaken at the RSL Club's pedestrian entrance revealed that a single additional car was also parked on-street during the on-site peak period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Key:
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EXISTING PARKING RESTRICTIONS
FIGURE 5

In summary, the results of the parking accumulation survey indicate that the peak parking demand associated with the existing RSL Club is in the order of 20 cars. It is anticipated that the proposed RSL Club will operate in a similar capacity to their current arrangements and as such the parking demand is likely to be similar.

Off-Street Parking Provisions

The off-street parking requirements applicable to the development proposal are specified in Council's *Development Control Plan 2010, Section II – Land Use and Transport* document in the following terms:

Medium/High Density Residential – Parking Zone B

1 bedroom apartment:	0.4 spaces per dwelling (min)	0.8 spaces per dwelling (max)
2 bedroom apartment:	0.8 spaces per dwelling (min)	1.0 space per dwelling (max)
3 bedroom apartment:	1.0 space per dwelling (min)	1.5 spaces per dwelling (max)
Visitors:	No visitor parking is required for the first 14 units. Thereafter, 1 visitor parking space is required for every 7 additional units. The required number of visitor spaces is reducible by 1 space for every 6m of on-street parking space located in front of the site	

Shops / Retail

1 space per $30m^2$

Discos, nightclubs, licensed bars, reception centres, club, hotel & tavern bar areas

1 per 10 persons as endorsed as the maximum number on the subject liquor license

As the number of persons likely to be specified on the club's liquor license is not yet known, the *peak* parking demands identified by the parking accumulation surveys have been adopted for the purposes of this assessment.

Application of the above parking requirements to the various components of the development proposal yields a *minimum* off-street parking requirement of 83 parking spaces as set out below:

Off-Street Parking Requirements

Residents (28 Apartments):	19.2 spaces (max. 28.0 spaces)
Visitors:	2.0 spaces
Retail (1246m^2)	41.5 spaces
RSL Club (750m^2):	20.0 spaces
TOTAL:	**82.7 spaces**

The proposed development makes provision for a total of 105 off-street parking spaces and therefore complies with Council's minimum Parking Code requirements.

The geometric design layout of the proposed car parking facilities have been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 1 - Off-Street Car Parking AS2890.1* in respect of parking bay dimensions, ramp gradients and aisle widths.

Wider Parking Benefits to Macpherson Street Retail Area

The parking proposed for the retail component of the development proposal will have the added advantage that it will, to some degree, reduce the demand for on-street carparking in the vicinity of the site generated by the nearby retail shops immediately to the east of the site. That reduction in on-street parking demand is likely to occur because:

- shoppers visiting both the existing and proposed retail facilities are likely to make *dual-purpose* trips whereby they will visit more than one shop in the precinct, but will require only 1 parking space to visit all the shops, and

- the proposed new retail carparking area will be readily accessible to any shoppers who were unable to find an on-street carparking space in front of the existing shops.

As such, the proposed development is likely to result in a *slight reduction* in the demand for on-street carparking in the Macpherson Street retail strip, as shoppers visiting both the existing and proposed retail facilities may find it easier to park in the proposed basement carparking area, rather than circulate around-the-block looking for an on-street parking space near the existing shops fronting Macpherson Street.

Finally, it is pertinent to note that the retail carparking and club carparking will share the same carparking facilities. The opportunity therefore arises for *complementary* use of parking spaces whereby the peak parking demands of the retail and club will occur at different times of the day, thus making available additional carparking spaces for both uses at different times of the day, should the need arise.

Loading/Servicing Provisions

The proposed new mixed-use building is expected to be serviced by a variety of commercial vehicles up to and including the 11.3m long brewery truck that currently makes deliveries to the RSL club. The loading dock is to be located on the lower basement level at the rear of the building. The 12.5 diameter turntable area has been designed to accommodate the swept turning path requirements of those rigid trucks, allowing them to enter and exit the site in a forward direction at all times.

The geometric design layout of the proposed loading facilities have been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 2 - Off-Street Commercial Vehicle Facilities AS2890.2* in respect of loading dock dimensions and service area requirements for MRV trucks.

It is proposed that a Management Plan will be prepared by the applicant in conjunction with Council, the community and the retail tenants to ensure that deliveries of goods and removal of waste occur in designated areas and at designated times of day so as to ensure that the amenity of neighbours is not affected.

The Management Plan will include specific provisions to address the following:

- the club will receive up to 3 to 4 deliveries/week of beer. Deliveries will be made by a 12t keg truck with a length of 11.3m (as is currently the case)

- for deliveries to Harris Farm and the retail area, there will be 3-4 truck movements per day of a 10.3m rigid truck (which has been purpose-designed to fit into small laneways surrounding the Harris Farm Potts Point store). The truck is smaller in size than the beer trucks that currently supply and service the RSL club along Chesterfield Lane

- depending on the day and season, there will be a number of additional deliveries using small vans (bread, juice, milk etc.), yielding a total of 10-15 retail deliveries per day

- deliveries will take place in accordance with a roster system so that all deliveries occur on a staggered basis. There will be a staff member supervising the loading dock whenever a delivery vehicle arrives

- no deliveries will occur outside of the hours of 7am-6pm

- the trucks do not need to arrive prior to 8am (although can arrive at 7am if it has less impact on schoolchildren)

- garbage will be removed during the middle of the day from dedicated enclosed bin storage areas located within the building

- the Management Plan will also contain provisions for resident complaints to be addressed and will ensure that all staff are trained and aware of the provisions of the Management Plan

- trucks will approach Chesterfield Lane via a left-turn only movement from Chesterfield Parade, and will depart the site via a left-turn only movement from Chesterfield Lane into Chesterfield Parade, such that they will avoid traversing the majority of Chesterfield Parade, and will use St Thomas Street and then Macpherson Street to depart the Bronte area (as opposed to using Chesterfield Parade)

- the Management Plan will also specifically address the issue of loading/delivery vehicles during critical times for children and their carers travelling to and from Clovelly Public School and Bronte Child Care Centre.

It is pertinent to note that the size and weight of delivery and garbage trucks that are proposed to service the club will be the *same* as those that have successfully serviced the club for many years.

The proposed retail delivery trucks are smaller in length and weight than those currently servicing the existing club, and will be limited to 3-4 trucks per day. Given that the retail

delivery trucks will be *smaller* than the keg truck that currently services the club, it is clear that the retail delivery trucks will be able to traverse Chesterfield Lane without difficulty.

Location of Car Park Access Driveway in Macpherson Street

It is proposed to locate the vehicular access driveway serving the retail car parking area in Macpherson Street to minimise any adverse effects on the amenity of residents living in Chesterfield Parade.

The proposed driveway is to be located near the western boundary of the site, in Macpherson Street, and has been designed to comply with *Clause 3.2 Access Driveways – Widths and Location* as specified in *AS2890.1 – 2004*. In particular, it is noted that:

- the width of the driveway complies with AS2890.1 requirements for a Category 2 driveway on an arterial road

- the location of the driveway complies with *Figure 3.1 – Prohibited Locations of Access Driveways* as specified in *AS2890.1*

- the gradient of the proposed driveway complies with the requirements of *Clause 3.3* of *AS2890.1*, particularly in respect of providing a relatively flat 5% gradient for the first 6m from the property boundary, and

- the design layout of the driveway complies with the driver sight distance and minimum sight lines for pedestrian safety requirements as specified in *Clause 3.2.4* of *AS2890.1*.

In particular, the car park access driveway will comply with *Figure 3.3 – Minimum Sight Lines for Pedestrian Safety* to ensure the safety of pedestrians walking along this section of Macpherson Street.

In addition, capacity analysis confirms that the proposed driveway will operate at *Level of Service "A"*, and with minimal delays at all times, typically in the order of 2 seconds per vehicle.

The use of Macpherson Street to access the commercial components of the development proposal will ensure that the level of traffic activity in Chesterfield Parade and in Chesterfield Lane is minimised, such that there will be little, if any *nett increase* in traffic activity in Chesterfield Parade and in Chesterfield Lane as a consequence of the development proposal.

In summary, the proposed parking and loading facilities satisfy the relevant requirements specified in both Council's Parking Code as well as the Australian Standards and it is therefore concluded that the proposed development will not have any unacceptable parking or loading implications.

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 : 4259 BRONTE Macpherson St
Day/Date : Friday 31st August 2012

PEDS	WEST	SOUTH	EAST	
Time Per	Macpherson St	Arden St	Macpherson St	TOT
1530 - 1545	3	9	1	13
1545 - 1600	2	1	0	3
1600 - 1615	0	3	0	3
1615 - 1630	0	1	0	1
1630 - 1645	1	3	0	4
1645 - 1700	1	0	0	1
1700 - 1715	0	2	0	2
1715 - 1730	0	1	2	3
1730 - 1745	0	2	0	2
1745 - 1800	0	2	0	2
1800 - 1815	0	3	0	3
1815 - 1830	0	3	0	3
Per End	7	30	3	40

PEDS	WEST	SOUTH	EAST	
Peak Per	Macpherson St	Arden St	Macpherson St	TOT
1530 - 1630	5	14	1	20
1545 - 1645	3	8	0	11
1600 - 1700	2	7	0	9
1615 - 1715	2	6	0	8
1630 - 1730	2	6	2	10
1645 - 1745	1	5	2	8
1700 - 1800	0	7	2	9
1715 - 1815	0	8	2	10
1730 - 1830	0	10	0	10
PEAK HR	5	14	1	20

Lights	WEST		SOUTH		EAST		
	Macpherson		Arden St		Macpherson		
Time Per	T	R	L	R	L	T	TOT
1530 - 1545	43	133	83	16	14	44	333
1545 - 1600	50	110	81	17	5	38	301
1600 - 1615	39	120	81	17	11	29	297
1615 - 1630	44	105	77	16	8	34	284
1630 - 1645	42	91	75	17	9	44	278
1645 - 1700	47	114	88	19	3	41	312
1700 - 1715	67	90	80	14	12	31	294
1715 - 1730	52	106	77	11	12	29	287
1730 - 1745	68	91	88	9	5	37	298
1745 - 1800	53	117	63	13	10	24	280
1800 - 1815	62	101	79	14	6	33	295
1815 - 1830	48	78	77	14	10	26	253
Per End	615	1256	949	177	105	410	3512

Heavies	WEST		SOUTH		EAST		
	Macpherson St		Arden St		Macpherson St		
Time Per	T	R	L	R	L	T	TOT
1530 - 1545	1	0	2	0	0	1	4
1545 - 1600	2	2	1	0	1	2	8
1600 - 1615	2	1	1	0	0	1	5
1615 - 1630	2	1	2	0	0	2	7
1630 - 1645	3	3	0	0	0	2	8
1645 - 1700	2	1	1	0	0	3	7
1700 - 1715	1	1	3	0	0	3	8
1715 - 1730	2	0	2	0	0	2	6
1730 - 1745	3	1	0	0	0	2	6
1745 - 1800	3	3	2	0	0	4	12
1800 - 1815	2	1	2	0	0	1	6
1815 - 1830	1	1	2	0	0	2	6
Per End	24	15	18	0	1	25	83

Combined	WEST		SOUTH		EAST		
	Macpherson St		Arden St		Macpherson St		
Time Per	T	R	L	R	L	T	TOT
1530 - 1545	44	133	85	16	14	45	337
1545 - 1600	52	112	82	17	6	40	309
1600 - 1615	41	121	82	17	11	30	302
1615 - 1630	46	106	79	16	8	36	291
1630 - 1645	45	94	75	17	9	46	286
1645 - 1700	49	115	89	19	3	44	319
1700 - 1715	68	91	83	14	12	34	302
1715 - 1730	54	106	79	11	12	31	293
1730 - 1745	71	92	88	9	5	39	304
1745 - 1800	56	120	65	13	10	28	292
1800 - 1815	64	102	81	14	6	34	301
1815 - 1830	49	79	79	14	10	28	259
Per End	639	1271	967	177	106	435	3595

Lights	WEST		SOUTH		EAST		
	Macpherson St		Arden St		Macpherson St		
Peak Per	T	R	L	R	L	T	TOT
1530 - 1630	176	468	322	66	38	145	1215
1545 - 1645	175	426	314	67	33	145	1160
1600 - 1700	172	430	321	69	31	148	1171
1615 - 1715	200	400	320	66	32	150	1168
1630 - 1730	208	401	320	61	36	145	1171
1645 - 1745	234	401	333	53	32	138	1191
1700 - 1800	240	404	308	47	39	121	1159
1715 - 1815	235	415	307	47	33	123	1160
1730 - 1830	231	387	307	50	31	120	1126
PEAK HR	176	468	322	66	38	145	1215

Heavies	WEST		SOUTH		EAST		
	Macpherson St		Arden St		Macpherson St		
Peak Per	T	R	L	R	L	T	TOT
1530 - 1630	7	4	6	0	1	6	24
1545 - 1645	9	7	4	0	1	7	28
1600 - 1700	9	6	4	0	0	8	27
1615 - 1715	8	6	6	0	0	10	30
1630 - 1730	8	5	6	0	0	10	29
1645 - 1745	8	3	6	0	0	10	27
1700 - 1800	9	5	7	0	0	11	32
1715 - 1815	10	5	6	0	0	9	30
1730 - 1830	9	6	6	0	0	9	30
PEAK HR	7	4	6	0	1	6	24

Combined	WEST		SOUTH		EAST		
	Macpherson St		Arden St		Macpherson St		
Peak Per	T	R	L	R	L	T	TOT
1530 - 1630	183	472	328	66	39	151	1239
1545 - 1645	184	433	318	67	34	152	1188
1600 - 1700	181	436	325	69	31	156	1198
1615 - 1715	208	406	326	66	32	160	1198
1630 - 1730	216	406	326	61	36	155	1200
1645 - 1745	242	404	339	53	32	148	1218
1700 - 1800	249	409	315	47	39	132	1191
1715 - 1815	245	420	313	47	33	132	1190
1730 - 1830	240	393	313	50	31	129	1156
PEAK HR	183	472	328	66	39	151	1239

R.O.A.R. DATA

Reliable, Original & Authentic Results

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

Client	: Varga Traffic Planning
Job No/Name	: 4259 BRONTE Macpherson St
Day/Date	: Friday 31st August 2012

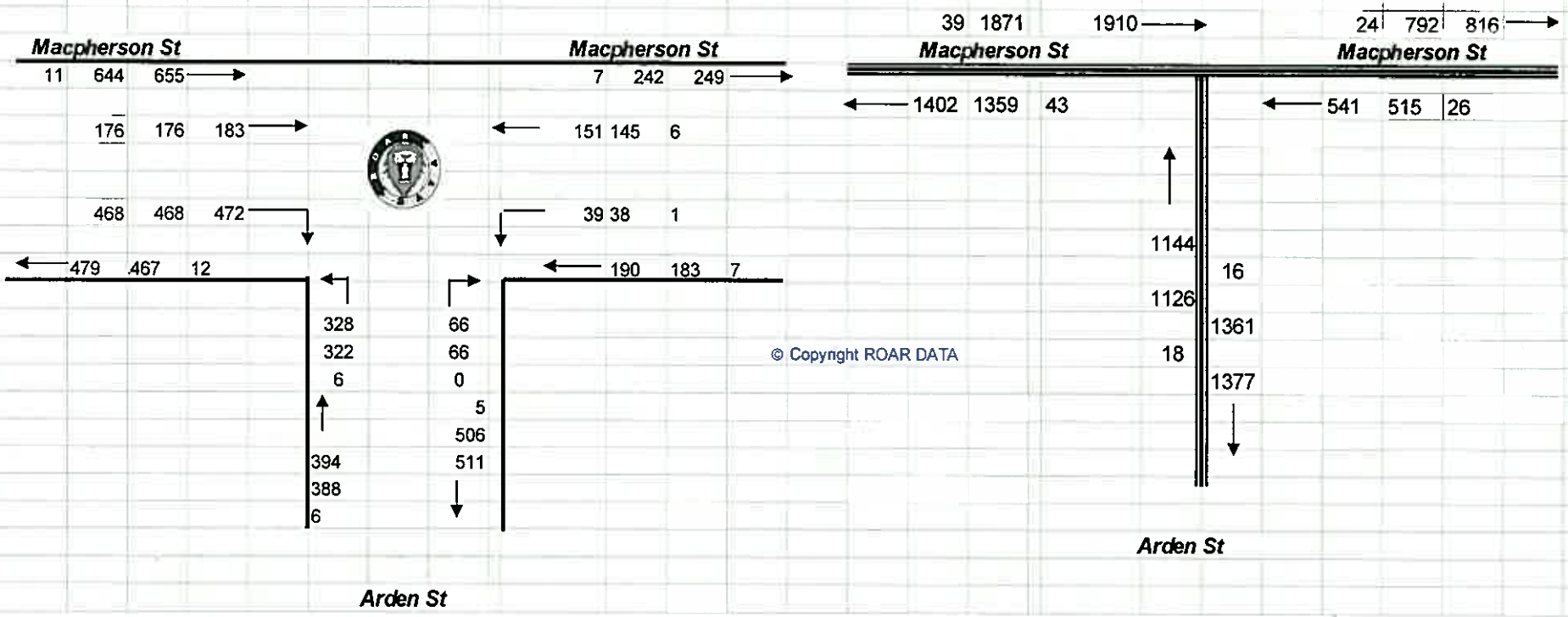
1 2 3

4 5 6 **PM PEAK** 1530 - 1630

7 8 9

N

TOTAL VOLUMES FOR COUNT PERIOD



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R.O.A.R. DATA
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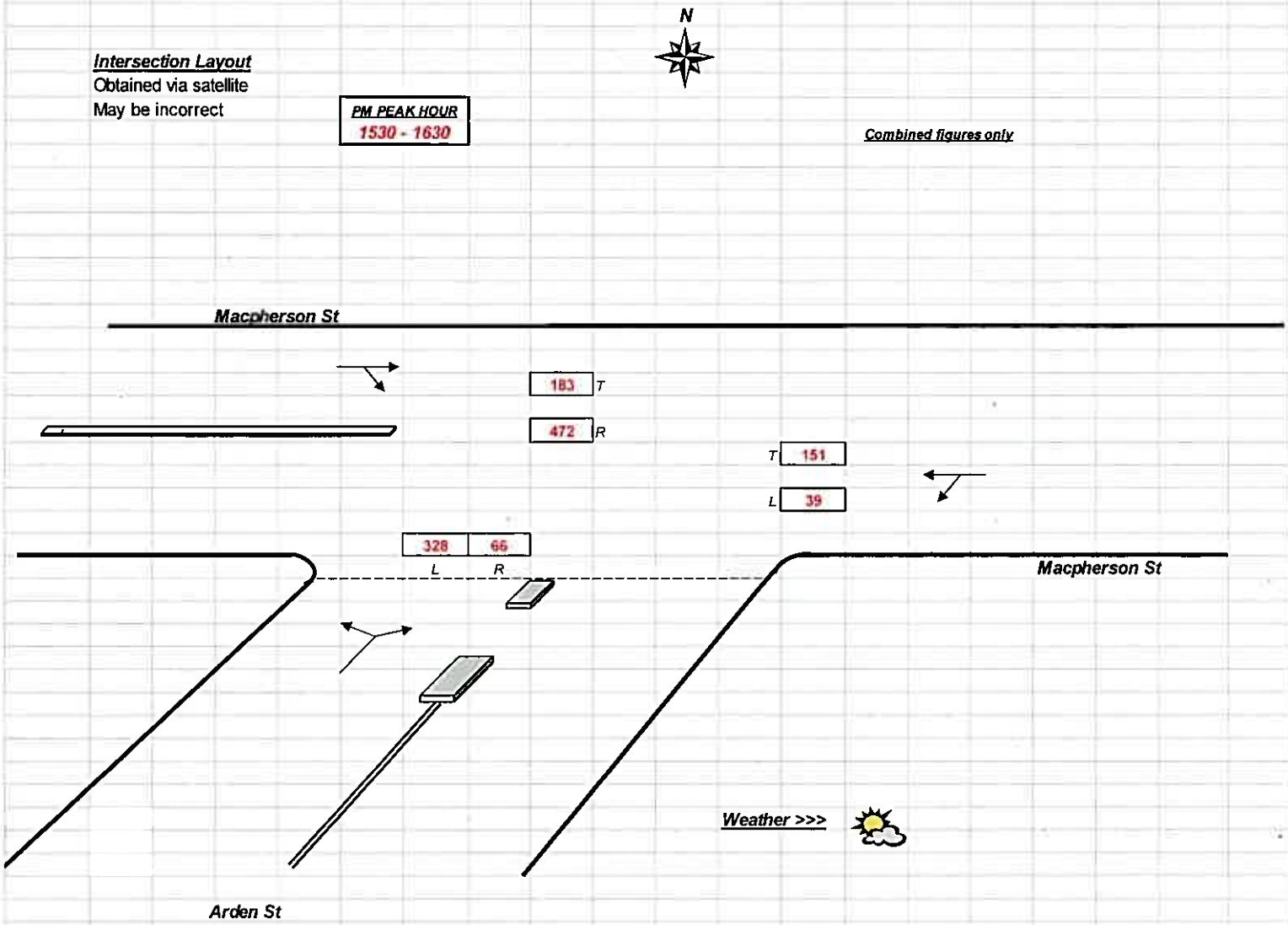
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Varga Traffic Planning
Job No/Name : 4259 BRONTE Macpherson St
Day/Date : Friday 31st August 2012

Intersection Layout
Obtained via satellite
May be incorrect

PM PEAK HOUR
1530 - 1630

Combined figures only



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

Client : Varga Traffic Planning
Job No/Name : 4259 BRONTE Macpherson St
Day/Date : Saturday 1st September 2012

Lights

	WEST		SOUTH		EAST		
	Macpherson		Arden St		Macpherson		
Time Per	T	R	L	R	L	T	TOT
0930 - 0945	39	56	78	24	14	42	253
0945 - 1000	65	71	90	16	9	61	312
1000 - 1015	60	98	84	22	19	76	359
1015 - 1030	46	78	88	18	25	59	314
1030 - 1045	60	83	97	16	18	58	332
1045 - 1100	66	98	107	23	19	44	357
1100 - 1115	60	106	111	27	22	61	387
1115 - 1130	56	105	86	22	16	57	342
1130 - 1145	65	86	119	27	17	51	365
1145 - 1200	52	71	93	17	20	61	314
1200 - 1215	76	98	88	19	12	45	338
1215 - 1230	60	103	98	24	17	50	352
1230 - 1245	58	108	81	21	12	68	348
1245 - 1300	71	87	93	16	11	36	314
1300 - 1315	53	85	89	15	17	54	313
1315 - 1330	61	107	112	18	4	37	339
1330 - 1345	58	95	120	23	14	37	347
1345 - 1400	51	84	89	19	9	54	306
1400 - 1415	62	88	80	19	9	31	289
1415 - 1430	47	90	78	18	7	47	287
Per End	1166	1797	1881	404	291	1029	6568

Heavies

	WEST		SOUTH		EAST		
	Macpherson		Arden St		Macpherson		
Time Per	T	R	L	R	L	T	TOT
0930 - 0945	2	0	0	0	0	1	3
0945 - 1000	1	1	1	0	0	2	5
1000 - 1015	1	0	0	0	0	2	3
1015 - 1030	2	1	1	0	0	1	5
1030 - 1045	1	0	0	0	0	3	4
1045 - 1100	2	1	1	0	0	1	5
1100 - 1115	2	0	2	0	0	2	6
1115 - 1130	1	1	1	0	0	1	4
1130 - 1145	2	0	0	0	0	2	4
1145 - 1200	1	1	1	0	0	2	5
1200 - 1215	2	0	1	0	0	2	5
1215 - 1230	1	2	1	0	0	1	5
1230 - 1245	3	0	0	0	0	4	7
1245 - 1300	2	1	1	0	0	2	6
1300 - 1315	2	2	0	0	0	2	6
1315 - 1330	1	1	1	0	0	0	3
1330 - 1345	2	0	0	0	0	2	4
1345 - 1400	1	1	1	0	0	1	4
1400 - 1415	3	0	1	0	0	2	6
1415 - 1430	1	1	1	0	0	3	6
Per End	33	13	14	0	0	36	96

Combined

	WEST		SOUTH		EAST		
	Macpherson		Arden St		Macpherson		
Time Per	T	R	L	R	L	T	TOT
0930 - 0945	41	56	78	24	14	43	256
0945 - 1000	66	72	91	16	9	63	317
1000 - 1015	61	98	84	22	19	78	362
1015 - 1030	48	79	89	18	25	60	319
1030 - 1045	61	83	97	16	18	61	336
1045 - 1100	68	99	108	23	19	45	362
1100 - 1115	62	106	113	27	22	63	393
1115 - 1130	57	106	87	22	16	58	346
1130 - 1145	67	86	119	27	17	53	369
1145 - 1200	53	72	94	17	20	63	319
1200 - 1215	78	98	89	19	12	47	343
1215 - 1230	61	105	99	24	17	51	357
1230 - 1245	61	108	81	21	12	72	355
1245 - 1300	73	88	94	16	11	38	320
1300 - 1315	55	87	89	15	17	56	319
1315 - 1330	62	108	113	18	4	37	342
1330 - 1345	60	95	120	23	14	39	351
1345 - 1400	52	85	90	19	9	55	310
1400 - 1415	65	88	81	19	9	33	295
1415 - 1430	48	91	79	18	7	50	293
Per End	1199	1810	1895	404	291	1065	6664

Lights

	WEST		SOUTH		EAST		
	Macpherson		Arden St		Macpherson		
Peak Per	T	R	L	R	L	T	TOT
0930 - 1030	210	303	340	80	67	238	1238
0945 - 1045	231	330	359	72	71	254	1317
1000 - 1100	232	357	376	79	81	237	1362
1015 - 1115	232	365	403	84	84	222	1390
1030 - 1130	242	392	401	88	75	220	1418
1045 - 1145	247	395	423	99	74	213	1451
1100 - 1200	233	368	409	93	75	230	1408
1115 - 1215	249	360	386	85	65	214	1359
1130 - 1230	253	358	398	87	66	207	1369
1145 - 1245	246	380	360	81	61	224	1352
1200 - 1300	265	396	360	80	52	199	1352
1215 - 1315	242	383	361	76	57	208	1327
1230 - 1330	243	387	375	70	44	195	1314
1245 - 1345	243	374	414	72	46	164	1313
1300 - 1400	223	371	410	75	44	182	1305
1315 - 1415	232	374	401	79	36	159	1281
1330 - 1430	218	357	367	79	39	169	1229
PEAK HR	247	395	423	99	74	213	1451

Heavies

	WEST		SOUTH		EAST		
	Macpherson		Arden St		Macpherson		
Peak Per	T	R	L	R	L	T	TOT
0930 - 1030	6	2	2	0	0	6	16
0945 - 1045	5	2	2	0	0	8	17
1000 - 1100	6	2	2	0	0	7	17
1015 - 1115	7	2	4	0	0	7	20
1030 - 1130	6	2	4	0	0	7	19
1045 - 1145	7	2	4	0	0	6	19
1100 - 1200	6	2	4	0	0	7	19
1115 - 1215	6	2	3	0	0	7	18
1130 - 1230	6	3	3	0	0	7	19
1145 - 1245	7	3	3	0	0	9	22
1200 - 1300	8	3	3	0	0	9	23
1215 - 1315	8	5	2	0	0	9	24
1230 - 1330	8	4	2	0	0	8	22
1245 - 1345	7	4	2	0	0	6	19
1300 - 1400	6	4	2	0	0	5	17
1315 - 1415	7	2	3	0	0	5	17
1330 - 1430	7	2	3	0	0	8	20
PEAK HR	7	2	4	0	0	6	19

Combined

	WEST		SOUTH		EAST		
	Macpherson		Arden St		Macpherson		
Peak Per	T	R	L	R	L	T	TOT
0930 - 1030	216	305	342	80	67	244	1254
0945 - 1045	236	332	361	72	71	262	1334
1000 - 1100	238	359	378	79	81	244	1379
1015 - 1115	239	367	407	84	84	229	1410
1030 - 1130	248	394	405	88	75	227	1437
1045 - 1145	254	397	427	99	74	219	1470
1100 - 1200	239	370	413	93	75	237	1427
1115 - 1215	255	362	389	85	65	221	1377
1130 - 1230	259	361	401	87	66	214	1388
1145 - 1245	253	383	363	81	61	233	1374
1200 - 1300	273	399	363	80	52	208	1375
1215 - 1315	250	388	363	76	57	217	1351
1230 - 1330	251	391	377	70	44	203	1336
1245 - 1345	250	378	416	72	46	170	1332
1300 - 1400	229	375	412	75	44	187	1322
1315 - 1415	239	376	404	79	36	164	1298
1330 - 1430	225	359	370	79	39	177	1249
PEAK HR	254	397	427	99	74	219	1470

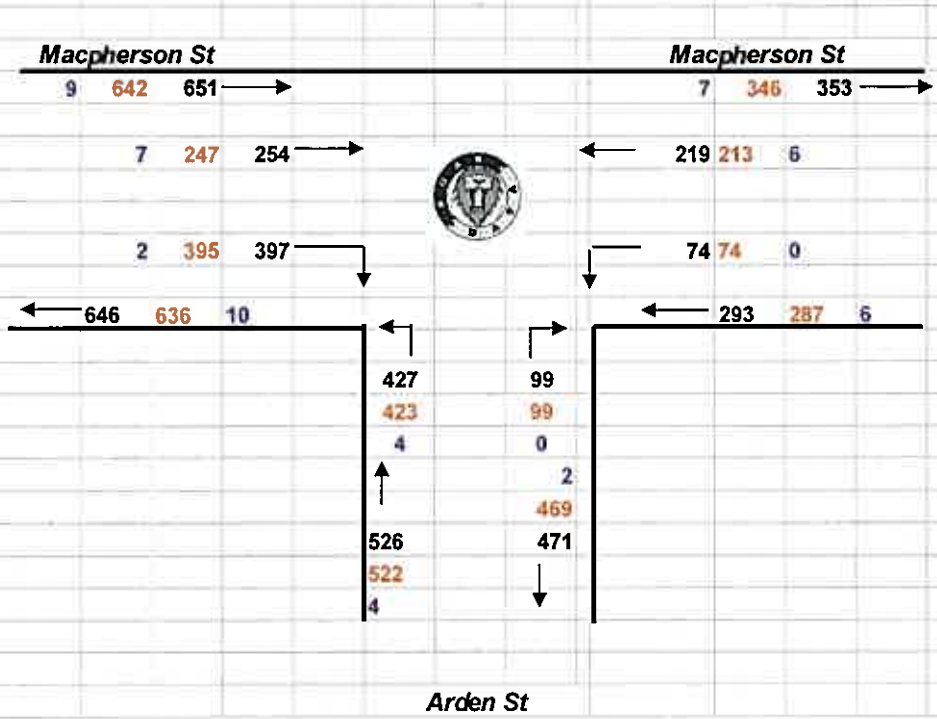
R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

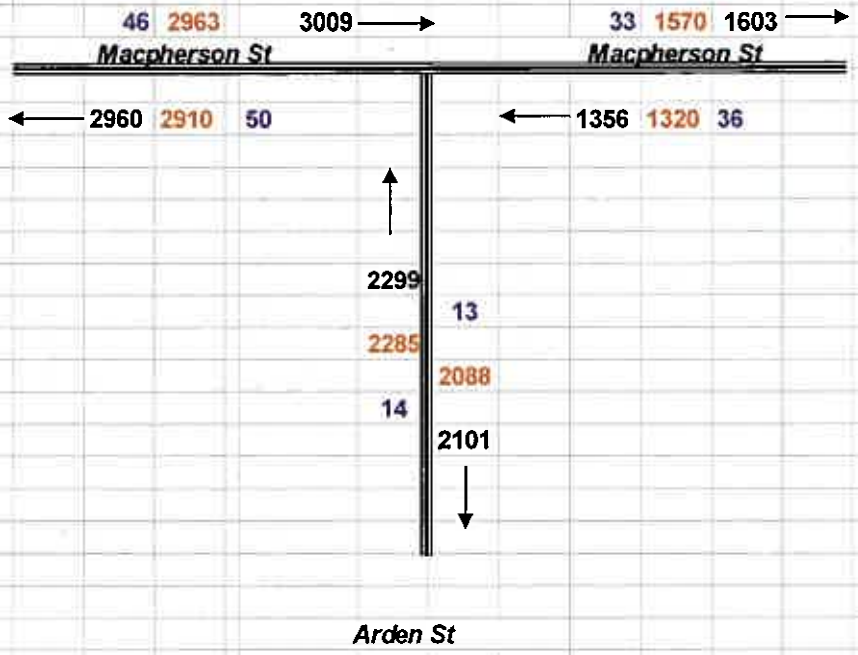
Client	: Varga Traffic Planning
Job No/Name	: 4259 BRONTE Macpherson St
Day/Date	: Saturday 1st September 2012

PEAK HOUR
1045 - 1145

N

TOTAL VOLUMES FOR COUNT PERIOD





R.O.A.R. DATA

Reliable, Original & Authentic Results

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

Client	: Varga Traffic Planning
Job No/Name	: 4259 BRONTE Macpherson St
Day/Date	: Saturday 1st September 2012

PEDS	WEST Macpherson St	SOUTH Arden St	EAST Macpherson St	
Time Per	Unclassified	Unclassified	Unclassified	TOT
0930 - 0945	17	6	1	24
0945 - 1000	32	5	2	39
1000 - 1015	19	6	2	27
1015 - 1030	34	9	0	43
1030 - 1045	40	9	4	53
1045 - 1100	24	7	1	32
1100 - 1115	36	11	4	51
1115 - 1130	23	4	4	31
1130 - 1145	38	12	1	51
1145 - 1200	34	2	0	36
1200 - 1215	40	8	5	53
1215 - 1230	28	2	0	30
1230 - 1245	14	15	1	30
1245 - 1300	26	5	1	32
1300 - 1315	19	8	1	28
1315 - 1330	21	5	0	26
1330 - 1345	24	0	1	25
1345 - 1400	19	5	1	25
1400 - 1415	18	9	0	27
1415 - 1430	23	6	0	29
Per End	529	134	29	692

PEDS	WEST Macpherson St	SOUTH Arden St	EAST Macpherson St	
Time Per	Unclassified	Unclassified	Unclassified	TOT
0930 - 1030	102	26	5	133
0945 - 1045	125	29	8	162
1000 - 1100	117	31	7	155
1015 - 1115	134	36	9	179
1030 - 1130	123	31	13	167
1045 - 1145	121	34	10	165
1100 - 1200	131	29	9	169
1115 - 1215	135	26	10	171
1130 - 1230	140	24	6	170
1145 - 1245	116	27	6	149
1200 - 1300	108	30	7	145
1215 - 1315	87	30	3	120
1230 - 1330	80	33	3	116
1245 - 1345	90	18	3	111
1300 - 1400	83	18	3	104
1315 - 1415	82	19	2	103
1330 - 1430	84	20	2	106
PEAK HR	121	34	10	165

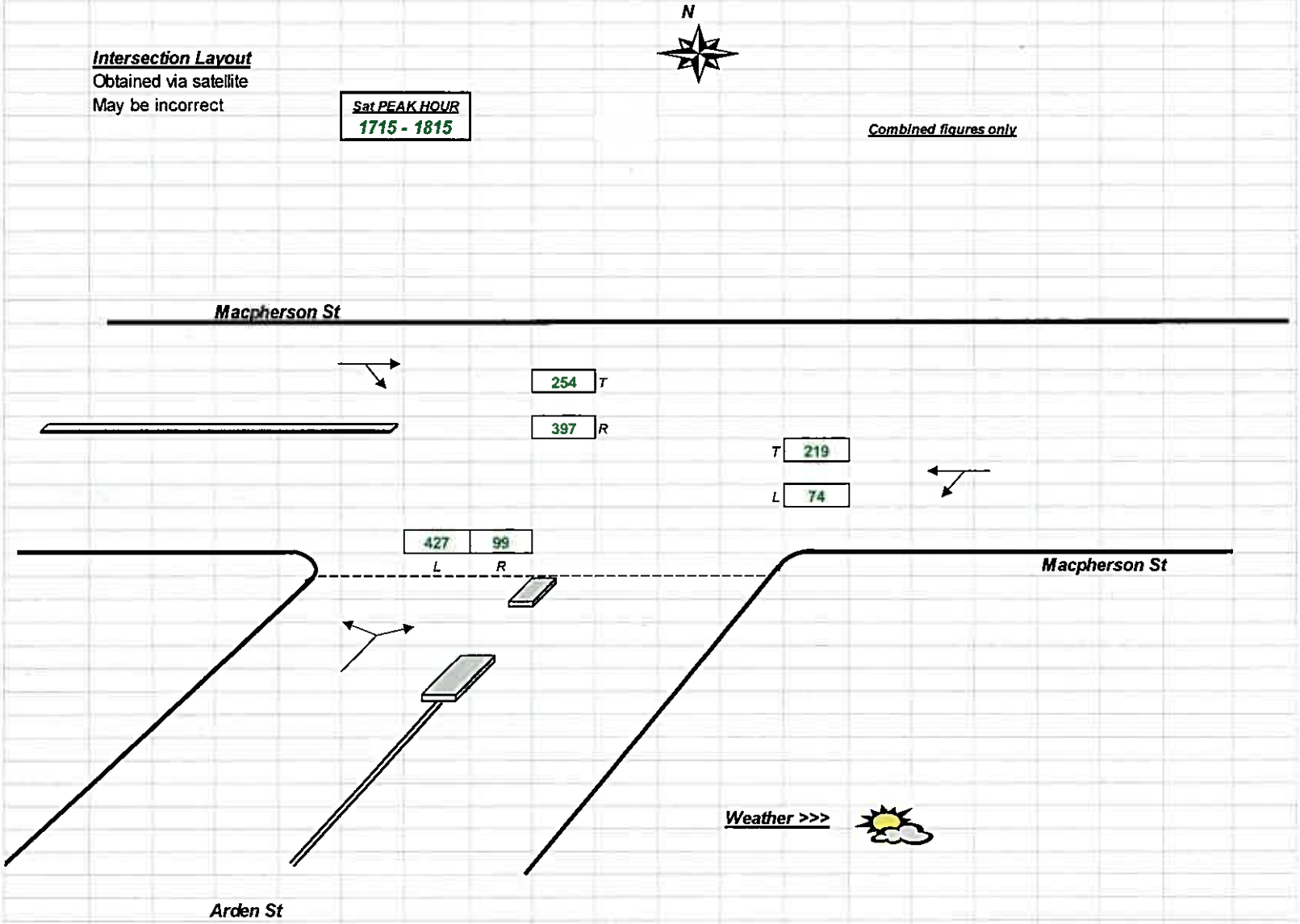
R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

Client	: Varga Traffic Planning
Job No/Name	: 4259 BRONTE Macpherson St
Day/Date	: Saturday 1st September 2012

Intersection Layout
Obtained via satellite
May be incorrect

Sat PEAK HOUR
1715 - 1815

Combined figures only



Appendix A

Appendix B

Location IQ Report

LOCATIQN

Bronte RSL Redevelopment, Sydney

Economic Impact Assessment

Prepared for Winston Langley Pty Limited

August 2012

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INTRODUCTION

This report presents an independent assessment of the demand for a proposed retail centre anchored by a fresh produce trader at the Bronte RSL in the Eastern Suburbs of Sydney. The report also considers the likely economic impacts that would result from the proposed development, with a specific focus on the nearby Macpherson Street retail strip. The proposal is referred to as the Bronte RSL retail centre throughout the remainder of this report.

The report is structured and presented in **four (4) sections** as follows:

- **Section 1** details the location of the proposed Bronte RSL redevelopment site and discusses the context of the site within the Eastern Suburbs of Sydney. The planning environment and the proposed development scheme are also reviewed.
- **Section 2** examines the trade area which is relevant to the proposal, including current and projected population and retail spending levels.
- **Section 3** provides an overview of the retail structure within the surrounding region with a specific focus on the surrounding Macpherson Street retail strip at Bronte.
- **Section 4** outlines our assessment of the sales potential for the proposed retail centre at the Bronte RSL redevelopment and then presents an economic impact assessment. Likely trading impacts on other retailers throughout the local area are considered, as are the employment and other economic impacts, both positive and negative, of the proposal.

EXECUTIVE SUMMARY

The key points of this report, regarding the demand and market scope for the proposed retail centre at the Bronte RSL redevelopment include:

i. The popular coastal suburb of Bronte is located some 8 km to the south-east of the Sydney Central Business District (CBD) and approximately 2 km to the south of Bondi Beach. The proposed Bronte RSL site is located within the main retail precinct of Bronte, along Macpherson Street, and will be effectively integrated within the existing retail strip.

ii. The proposed redevelopment of Bronte RSL by Winston Langley Pty Limited will include a retail centre of 1,246 sq.m with residential apartments provided above (28 apartments). The retail centre will be anchored by a fresh produce mini-major (999 sq.m) as well as five retail specialty stores.

iii. The defined Bronte main trade area extends less than 1 km around the site and currently includes a population of 19,060 that is projected to increase to 20,620 by 2026.

iv. The proposed Bronte RSL retail centre is projected to achieve sales of $13.1 million, representing an average trading level of $10,488. This strong trading level reflects the densely populated surrounding area and the strong trading levels of surrounding supermarkets and fresh produce traders. As such, the Bronte RSL retail centre would record a 4.6% share of total main trade area spending and an approximate 11.5% market share of the food and grocery market.

v. Given that the vast majority of food and grocery spending within the Bronte main trade area is currently directed to retail facilities beyond the main trade area, approximately 90% of the impact of the proposed Bronte RSL retail centre is likely to be on retail facilities beyond the main trade area, including Bondi Junction and Randwick.

vi. In relation to the impact on retail facilities within the main trade area, only 10% or $1.3 million of projected sales will be redirected from main trade area retailers, including at Bronte, Clovelly and other suburbs throughout the main trade area. This impact is likely to be focused on food and grocery traders.

vii. The Macpherson Street retail strip includes food and grocery traders. While there is likely to be some impact on these retail tenants, the proposed Bronte RSL retail centre will not impact on the viability of these tenants nor would the proposed development be detrimental to the surrounding retail strip. Indeed, the surrounding Macpherson Street retail strip stands to benefit from the increased sales potential and increased customer flows attracted to the retail precinct by the proposed development of the Bronte RSL retail centre.

viii. The development of the Bronte RSL retail centre will result in a range of important economic benefits, providing a wider range of shopping facilities for local residents in a convenient location as well as employment benefits. The proposed Bronte retail centre is estimated to employ around 31 persons, representing an additional $900,000 in salary and wages for the local economy. As a result of supplier induced multiplier effects, some 61 jobs are projected to be created in the broader community. In addition, the construction of the proposed retail component of the Bronte RSL redevelopment is estimated to create some 27 jobs, resulting in a further 44 jobs based on the multiplier effect. As a result, in total some 72 jobs are likely to be created both directly and indirectly as a result of the proposed Bronte RSL retail centre.

1 SITE LOCATION AND PROPOSED DEVELOPMENT

This section of the report reviews the regional and local context of the Bronte RSL site and provides an overview of the composition of the proposed retail development scheme.

1.1 Regional and Local Context

i. The Eastern Suburbs of Sydney encompasses the Woollahra, Waverly and Randwick Local Government Areas (LGAs), extending from the South Head peninsula at Watsons Bay in the north to La Perouse in the south.

ii. The Eastern Suburbs of Sydney feature some of Australia's most famous beaches including Bondi Beach, Tamarama Beach, Bronte Beach, Coogee Beach and Maroubra Beach. As shown on Map 1.1, the suburb of Bronte is located some 8 km to the south-east of the Sydney Central Business District (CBD) and is provided within the Waverley LGA.

iii. Bronte is situated on the coast, approximately 2 km from Bondi Beach. Like most of the suburbs in the Eastern Suburbs of Sydney, Bronte is a popular established coastal residential area. Bronte is also one of the most densely populated suburbs of Sydney, reflecting the prevalence of medium density housing. According to the recently released 2011 Census of Population and Housing, the Waverley LGA is the third most densely populated area in Australia with 7,600 persons per sq.km.

iv. The site for the proposed Bronte retail centre is the existing Bronte RSL which is located along Macpherson Street, directly to the south of Yanko Street and bounded by Chesterfield Lane in the south. Map 1.2 illustrates the local context of Bronte. Key points to note include:

   – The proposed Bronte RSL development site is located directly to the west of the Macpherson Street retail strip which extends along both sides of Macpherson Street from around St Thomas Street in the east to Yanko Avenue in the west. Consequently, the proposed Bronte RSL retail centre will effectively be integrated with the existing strip retailing along Macpherson Street.

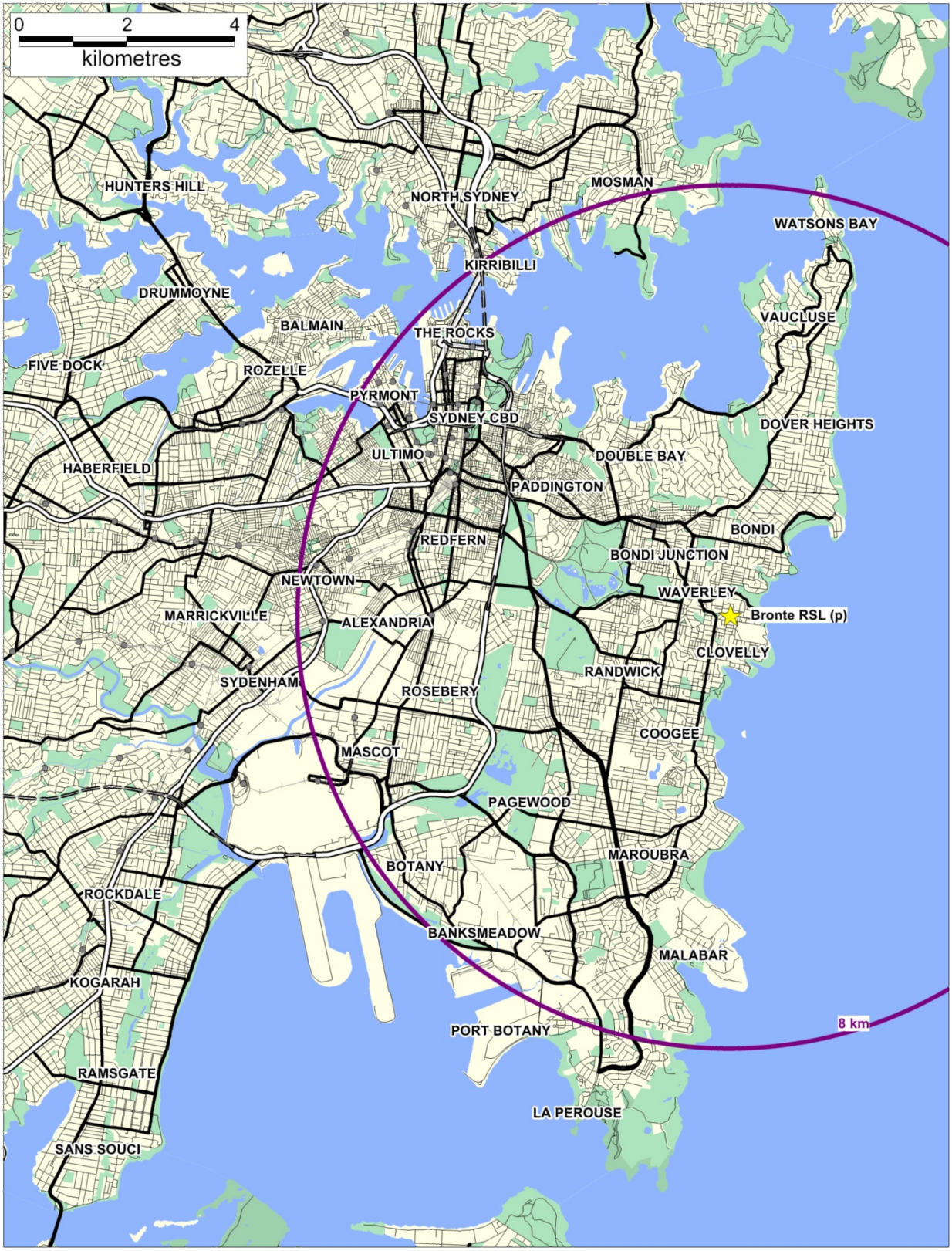
- Further along Macpherson Street, near the intersection of Lugar Street, there is a small retail precinct including key convenience traders such as Waverley Pharmacy and The Friendly Store (convenience store) as well as a number of food catering traders such as Eugene's Cafe, La Locanda, Topping Mad Pizza and Wet Paint Restaurant. A provision of retail services and non-retail tenants are also provided within this precinct.

- Bronte Beach and Bronte Park are located approximately 800 metres to the north-east of the Bronte RSL site, acting as significant attractors to the area for the wider Sydney population and tourists.

- The Bronte Beach retail precinct is located around 600 metres to the north-east of the Bronte RSL and includes primarily cafes and restaurants serving residents and the significant level of visitors/tourists attracted to Bronte Beach.

v. The RSL site, therefore, is highly accessible to the surrounding population being located on a major traffic route, namely Macpherson Street. A number of public buses also run along this street including the 378 and 362 routes providing access to both the Sydney CBD and the remainder of the Eastern Suburbs. Consequently, the site is highly accessible by both public and private transport.

MAP 1.1 – BRONTE REGIONAL CONTEXT



Map produced by Location IQ using MapInfo Pro Australia Pty Ltd and related data sets.

MAP 1.2 – BRONTE LOCAL CONTEXT

Map produced by Location IQ using MapInfo Pro Australia Pty Ltd and related data sets. PhotoMap by nearmap.com

1.2 Planning Environment

i. The *New South Wales Metropolitan Strategy – East Subregion* (released by the New South Wales Government in 2007), defines Bronte as a Village. A Village is fifth in by size in the Centre and Corridor hierarchy for this sub-region, which is as follows:

1. Specialised Centre
2. Major Centre
3. Town Centre
4. Stand-alone Shopping Centre
5. Village
6. Small Village
7. Neighbourhood Centre

ii. A Village Centre is defined as: *"A strip of shops and surrounding residential area within a 5 – 10 minute walk that contains a small supermarket, hairdresser, takeaway food shops. Contained between 2,100 – 5,500 dwellings."*

iii. Based on the 2011 Census, the suburb of Bronte included around 2,765 dwellings as well as a provision of strip retailing along Bronte Road and Macpherson Street. No small supermarket is provided.

iv. Other Villages within the Eastern Subregion include Botany, Hillsdale, Kensington, Coogee, Kingsford, Paddington and Rose Bay. These Villages are typically characterised by a more extensive provision of retail facilities than provided at Bronte, with most Villages including either a large or small supermarket as compared with Bronte not including a supermarket. These supermarkets include:

- Full-line Woolworths and Coles supermarkets at Hillsdale.
- A Woolworths supermarket of 868 sq.m at Coogee.
- A Franklins supermarket of 800 sq.m at Rose Bay, with approval for a Woolworths supermarket of 1,364 sq.m.
- An IGA supermarket of 800 sq.m at Botany.

- Thomas Dux at Paddington.
- A Foodworks supermarket of 500 sq.m at Kensington.

1.3 Proposed Development

i. Winston Langley Pty Limited propose the redevelopment of the Bronte RSL Club to comprise a mix of uses, including a retail centre most likely anchored by a fresh produce trader.

ii. Based on plans provided by Winston Langley Pty Limited (refer Figure 1.1), the Bronte RSL redevelopment proposes a total GFA of 5,443 sq.m including 2,067 sq.m of commercial and retail floorspace as well as 3,376 sq.m of residential floorspace. The commercial and retail component comprises 1,246 sq.m of retail floorspace with a further 750 sq.m identified specifically for RSL floorspace.

iii. The composition of the retail component of the RSL redevelopment is outlined in Table 1.2. The proposed development will include an anchor tenant, namely, a fresh produce trader of 999 sq.m on the ground floor as well as a provision of 5 retail specialty stores. A residential apartment building will be provided above the retail floorspace on Levels 1 – 5 with a gross floor area of 2,603 sq.m including 28 apartments.

iv. Based on information provided by Winston Langley Pty Limited, according to Council Controls designated by the City of Waverley, the Bronte RSL site is zoned as B1 Neighbourhood Centre which allows for a maximum gross floor area (GFA) of 2,231 sq.m.

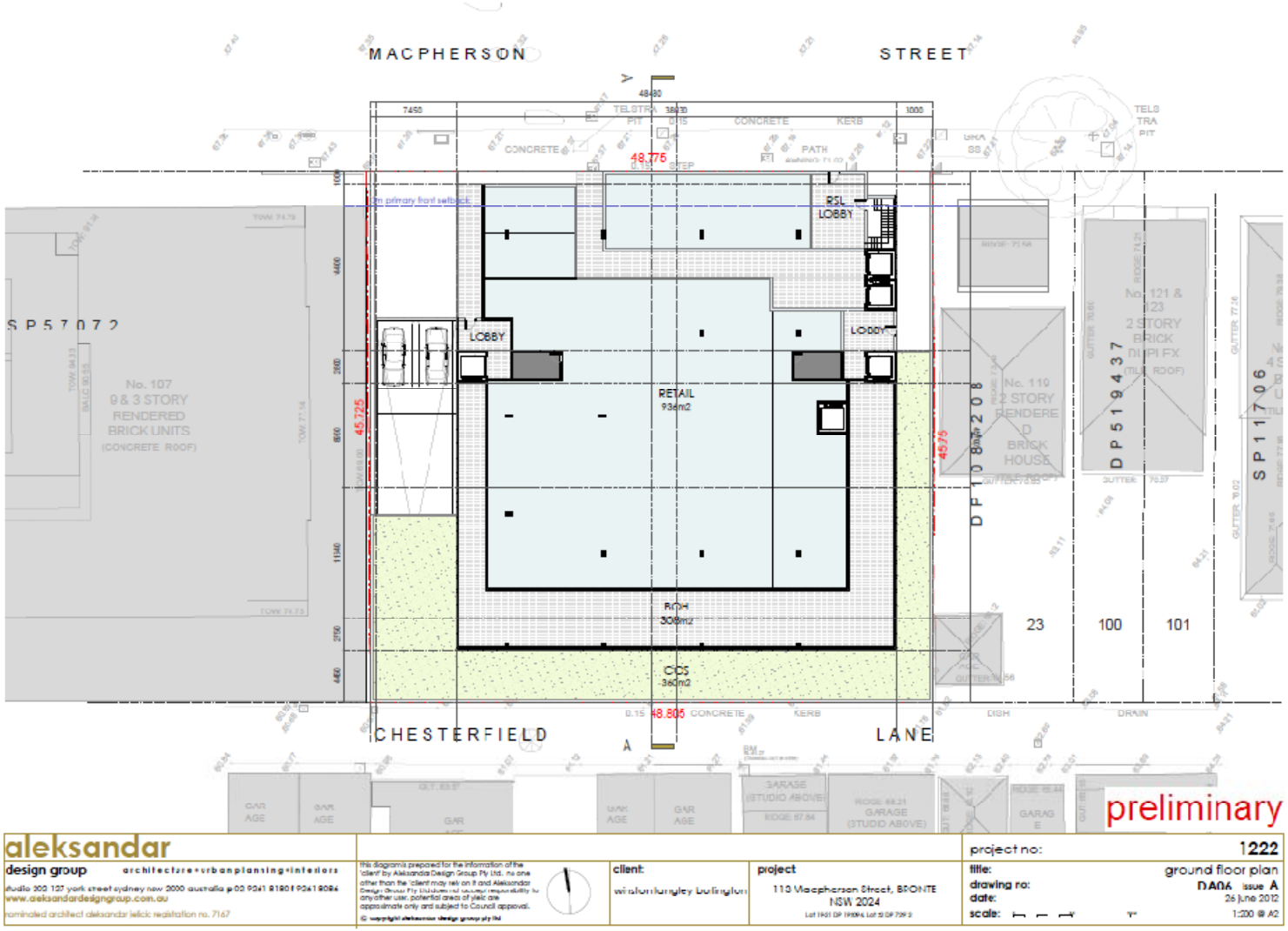
v. Carparking for the development will be provided in basement levels, with some 70 carparking spaces dedicated to the retail development. This equates to a provision of 3.3 car spaces per 100 sq.m of retail floorspace. The provision of 70 carparking spaces for the retail component of the development would significantly add to the carparking on offer within the Macpherson Street retail precinct. A further 49 car spaces will be provided for the RSL and residential component of the development.

TABLE 1.1 – BRONTE RSL RETAIL CENTRE COMPOSITION

Tenant/ Category	GLA (sq.m)	GLA (%)
Mini-majors (> 400 sq.m)		
Harris Farm	999	80%
Mini-majors	999	80%
Retail Specialties		
Seafood	100	8%
Butcher	50	4%
Deli	50	4%
Juice Bar	30	2%
Cafe	17	1%
Total Retail Spec.	247	20%
Total Retail	**1,246**	**100%**

** Based on plans provided by Winston Langley Pty Limited*

FIGURE 1.1 – BRONTE RSL REDEVELOPMENT LAYOUT, GROUND LEVEL



2 TRADE AREA ANALYSIS

This section of the report outlines the trade area likely to be served by the proposed Bronte retail centre including the current and projected population and retail spending levels. An overview of the socio-economic profile of the trade area population is also provided.

2.1 Trade Area Definition

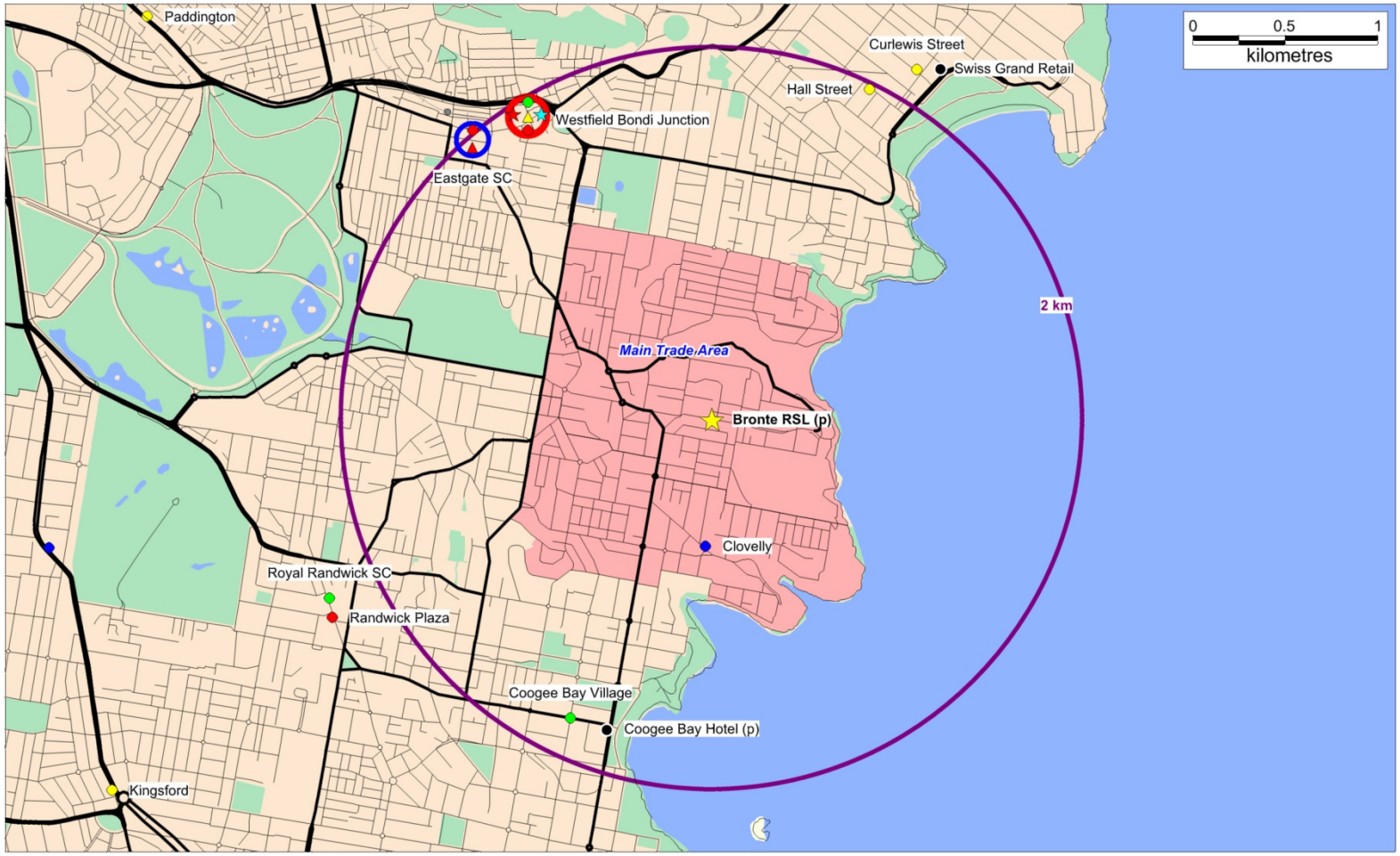
i. The trade area for the proposed Bronte retail centre has been defined taking into account the following key considerations:

- The scale and composition of the proposed Bronte RSL retail centre which will be based on a fresh food grocer as the anchor tenant.
- The provision of retail facilities throughout the region.
- Regional and local accessibility.
- The pattern of urban development.
- Significant physical barriers.

ii. Map 2.1 illustrates the defined main trade area for the proposed retail centre at the Bronte RSL redevelopment, which is bounded by Birrell Street in the east, Quail Street in the south and Carrington Road in the west. The main trade area encompasses the suburbs of Bronte, Waverley and Clovelly and is restricted by the suburb of Bondi in the east as well as Coogee in the south.

iii. The defined main trade area generally extends less than 1 km around the site and is the area from which the proposed development would attract the majority of its customers. The extent of the trade area is generally consistent with that defined for a Village Centre comprising a 5 – 10 minute walk, extending up to around 400 – 800 metres in most directions. The proposed retail offer at the Bronte RSL redevelopment would serve both local residents, by providing a range of food and convenience shops focused around a fresh food grocer.

MAP 2.1 – BRONTE RSL MAIN TRADE AREA



2.2 Main Trade Area Population

i. Table 2.1 details the current and projected population levels for the Bronte main trade area. The current and projected population levels are based on the following:

- The 2011 Census of Population and Housing undertaken by the Australian Bureau of Statistics (ABS);
- New dwelling approval statistics sourced from the ABS;
- Population projections prepared at the Statistical Local Area (SLA) level by the New South Wales Department of Planning (2010);
- The New South Wales Government's Metropolitan Strategy;
- The East Subregion Draft Sub-regional Strategy (2007); and
- Investigations by this office into new residential developments in the area.

ii. The Bronte main trade area population is currently 19,060 (2011) and is projected to increase to 20,610 by 2026, representing average annual growth of 115 persons, or 0.6% per annum over the period to 2026.

iii. The Bronte main trade area is a very densely populated region of Sydney, at approximately 6,400 persons per sq.km. This ranks as one of the most densely populated areas in Sydney and Australia. The provision of convenient fresh food shopping within a walkable distance from their homes would be of high importance for this population. In addition, the proposed development including a provision of carparking would offer a high level of convenience for people driving by car compared to retail facilities at Bondi Junction.

TABLE 2.1 – BRONTE MAIN TRADE AREA POPULATION, 2006 – 2026

Trade Area Sector	Estimated Resident Population		Forecast Population			
	2006	2011	2013	2016	2021	2026
Main Trade Area	18,020	19,060	19,360	19,810	20,310	20,610
			Average Annual Change (No.)			
		2006-2011	2011-2013	2013-2016	2016-2021	2021-2026
Main Trade Area		208	150	150	100	60
			Average Annual Change (%)			
		2006-2011	2011-2013	2013-2016	2016-2021	2021-2026
Main Trade Area		1.1%	0.8%	0.8%	0.5%	0.3%
Syd Metro Average		*1.2%*	*1.2%*	*1.2%*	*1.2%*	*1.1%*
Australian Average		*1.5%*	*1.5%*	*1.4%*	*1.3%*	*1.2%*

All figures as at June
All figures are based on 2011 SA1 boundary definition with the exception of 2006 which is based on 2006 CCD boundary definition. 2011 ERP is calculated using 2006 enumeration factor.
Sources : ABS; NSW Department of Planning

2.3 Socio-economic Profile

i. Table 2.2 provides an overview of the socio-economic profile of the Bronte main trade area population. This information is based on the recently released 2011 Census of Population and Housing.

ii. The key socio-economic characteristics of the Bronte main trade area population compared with the Sydney metropolitan averages, include:

- The main trade area population earn average income levels on a per person basis which are well above (52.3%) the Sydney metropolitan average. Both the per capita and per household averages are significantly above the benchmark.
- The average household size is slightly lower than the Sydney metropolitan benchmark, reflecting the larger component of apartment living in the Bronte area.
- The average age of the main trade area population is similar to the Sydney metropolitan benchmark.
- Home ownership levels are lower than the benchmark.
- The main trade area population is predominately Australian born.
- A review of the household structure of the population indicates an above average proportion of households consisting of couples without dependent children and lone persons.

iii. The socio-economic profile of the main trade area population generally reflects that of an established inner suburban area with a very affluent population, comprising a large number of couples and singles in the 30 – 39 years of age category, but also including a family population. It is important to provide a range of convenience retail facilities within close proximity to residents, including a choice of location for food and grocery shopping.

TABLE 2.2 – MAIN TRADE AREA SOCIO-ECONOMIC PROFILE, 2011 CENSUS

Characteristics	Main TA	Syd Metro Average
Average Per Capita Income	$56,266	$36,941
Per Capita Income Variation	52.3%	n.a.
Average Household Income	$135,323	$99,586
Household Income Variation	35.9%	n.a.
Average Household Size	2.4	2.7
Age Distribution (% of Pop'n)		
Aged 0-14	18.6%	19.2%
Aged 15-19	4.3%	6.3%
Aged 20-29	12.3%	14.7%
Aged 30-39	20.6%	15.3%
Aged 40-49	15.9%	14.2%
Aged 50-59	11.6%	12.3%
Aged 60+	16.7%	18.0%
Average Age	37.4	37.2
Housing Status (% of H'holds)		
Owner/Purchaser	58.4%	67.4%
Renter	41.6%	32.6%
Birthplace (% of Pop'n)		
Australian Born	68.4%	63.7%
Overseas Born	31.6%	36.3%
• Asia	2.9%	13.7%
• Europe	15.5%	9.1%
• Other	13.2%	13.6%
Living Arrangement (% of Pop'n)		
Couple with dep't children	48.8%	48.2%
Couple with non-dep't child.	5.2%	9.1%
Couple without children	23.4%	20.1%
Single with dep't child.	5.9%	8.5%
Single with non-dep't child.	2.7%	3.9%
Other family	1.1%	1.2%
Lone person	12.8%	9.0%

Sources : ABS Census of Population and Housing 2011

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2.4 Main Trade Area Retail Spending

i. The estimated retail expenditure capacity of the proposed Bronte RSL main trade area population is based on information sourced from MDS Market Data Systems. MDS utilises a detailed micro-simulation model of household expenditure behaviour for all residents of Australia.

ii. The MDS model takes into account information from a wide variety of sources, including the regular ABS Household Expenditure Survey, National Accounts Data, Census Data and other information.

iii. In New South Wales, Victoria and Queensland, the MarketInfo estimates of retail spending that are prepared independently by MDS are commonly used by all parties in Economic Impact Assessments.

iv. Table 2.3 outlines the retail expenditure levels generated by the Bronte main trade area population and presents a breakdown of retail spending by key commodity group. The total retail expenditure level of the main trade area population is currently estimated at $281.5 million and is projected to increase at an average annual rate of around 3.2% to $439.0 million by 2026. All figures presented in this report are in constant 2011 dollars and include GST.

v. The largest spending market is food and grocery at $107.8 million representing 38.3% of the total retail spending market. This includes main trade area fresh food expenditure of $38.9 million (13.8% of the total retail spending market).

TABLE 2.3 – MTA RETAIL EXPENDITURE BY KEY COMMODITY GROUP, 2012 – 2026

Y/E June	Food & Liquor	Food Catering	Apparel	H'hold Goods	Leisure	General Retail	Retail Services	Total Retail
2012	107.8	50.6	32.6	46.7	16.2	17.0	10.5	281.5
2013	111.9	52.8	33.5	48.0	16.7	17.5	10.8	291.3
2014	116.2	55.1	34.5	49.3	17.1	18.0	11.1	301.4
2015	120.6	57.5	35.4	50.7	17.6	18.5	11.4	311.8
2016	125.2	60.0	36.4	52.1	18.1	19.0	11.8	322.6
2017	129.8	62.5	37.4	53.5	18.6	19.5	12.1	333.4
2018	134.4	65.0	38.3	54.9	19.0	20.0	12.4	344.0
2019	139.1	67.6	39.3	56.3	19.5	20.5	12.7	355.0
2020	144.0	70.4	40.3	57.7	20.0	21.0	13.0	366.4
2021	149.1	73.2	41.3	59.1	20.5	21.6	13.3	378.2
2022	154.2	76.1	42.3	60.6	21.0	22.1	13.7	389.9
2023	159.3	79.0	43.3	62.0	21.5	22.6	14.0	401.6
2024	164.6	82.0	44.3	63.4	22.0	23.1	14.3	413.7
2025	170.1	85.2	45.3	64.8	22.5	23.7	14.6	426.2
2026	175.7	88.4	46.3	66.3	23.0	24.2	15.0	439.0
Expenditure Growth								
2012-2015	8.4	4.5	1.9	2.7	0.9	1.0	0.6	19.9
2015-2017	13.6	7.4	2.9	4.2	1.5	1.5	0.9	32.0
2017-2021	19.3	10.7	3.9	5.6	1.9	2.0	1.3	44.8
2021-2026	26.6	15.2	5.0	7.2	2.5	2.6	1.6	60.8
2012-2026	67.9	37.8	13.7	19.7	6.8	7.2	4.4	157.5
Average Annual Growth Rate								
2012-2015	3.8%	4.3%	2.8%	2.8%	2.8%	2.8%	2.8%	3.5%
2015-2017	3.7%	4.3%	2.7%	2.7%	2.7%	2.7%	2.7%	3.4%
2017-2021	3.5%	4.0%	2.5%	2.5%	2.5%	2.5%	2.5%	3.2%
2021-2026	3.3%	3.9%	2.3%	2.3%	2.3%	2.3%	2.3%	3.0%
2012-2026	3.5%	4.1%	2.5%	2.5%	2.5%	2.5%	2.5%	3.2%

**Inflated dollars & Including GST*
Source : Marketinfo

2.5 Tourists/Visitors

i. In addition to the resident population, Bronte also attracts a significant number of tourists and visitors from beyond the defined main trade area, particularly those visiting the beach and surrounding parkland.

ii. Tourist information is not available at the local level, however it is estimated that tourists/visitors to the proposed Bronte RSL retail centre from beyond the main trade area would account for a small amount of business, given its location away from the beach.

3 COMPETITIVE ENIRONMENT

This section of the report provides a summary of the existing and proposed competitive developments in the surrounding region to the Bronte RSL development site.

i. Retail facilities on the Eastern Suburbs of Sydney form a typical retail hierarchy, including:

   - A regional shopping centre, namely Westfield Bondi Junction and including the sub-regional shopping centre of Eastgate Shopping Centre.
   - Supermarket based centres to serve the local populations.

ii. The previous Map 2.1 highlights the key locations of retail facilities throughout the Eastern Suburbs of Sydney. Table 3.1 presents a summary of the retail facilities.

TABLE 3.1 – COMPETITIVE ENVIRONMENT

Centre	Shopfront GLA (sq.m)	**Anchor Tenants**	Dist. From Bronte RSL (km)
Regional Shopping Centres			
Bondi Junction	*133,400*		*2.5*
• Westfield Bondi Junction	98,000	David Jones (19,234), Myer (17,887), Target (5,311) Coles (4,757), Woolworths (3,705), Norton St Grocer (1,500)	
• Eastgate SC	15,400	Kmart (6,603), Coles (3,269), Harris Farm (1,000)	
• Other	20,000		
Supermarket Based Shopping Centres			
Clovelly	3,500	Foodworks (500)	1.0
Coogee Bay	*12,000*		*2.0*
• Coogee Bay Village	2,000	Woolworths (868)	
• Other	10,000		
Randwick Retail Precinct	*29,100*		*3.0*
• Royal Randwick SC	9,000	Woolworths (1,420), R R Fruit Market (707)	
• Randwick Plaza	4,400	Coles (3,079)	
• Belmore Road Retail Strip	15,700		
• The Spot, Randwick	5,000		
Kensington - Anzac Parade	7,500	Foodworks (500)	4.5
Bondi	10,000	IGA (500)	4.5

Source : Australian Shopping Centre Council Database - March 2012

3.1 Bondi Junction Central Business Area (CBA)

i. A regional shopping centre is anchored by one or more department stores. The largest provision of retail facilities provided within the Eastern Suburbs is located at Bondi Junction, around 2 km to the north-west of the proposed Bronte RSL development site.

ii. The major component of the Bondi Junction CBA is Westfield Bondi Junction with this centre being one of the largest shopping centres in Australia, encompassing 128,759 sq.m. Westfield Bondi Junction is based on David Jones and Myer department stores, a Target discount department store as well as Woolworths and Coles supermarkets. According to *Big Guns 2012*, Westfield Bondi Junction is the second most successful centre in Australia based on Moving Annual Turnover (MAT), achieving sales of over $1 billion.

iii. The other major shopping centre in the Bondi Junction CBA is Eastgate Shopping Centre which is provided over three levels and is anchored by Kmart, Coles and some 26 specialty stores. According to *Mini Guns 2011*, the centre encompasses 15,375 sq.m and achieves sales of around $145 million.

iv. Bondi Junction currently provides three full-line supermarkets, each over 3,000 sq.m. This includes Coles at Eastgate as well as Woolworths and Coles at Westfield Bondi, which are reported to be some of the highest performing supermarkets in Australia. These centres also include a wide provision of fresh food retailing including Norton Street Grocer at Westfield Bondi and Harris Farm Markets at Eastgate Shopping Centre. Again, these two fresh food traders are reportedly some of the best fresh food operators in Sydney. Consequently, a large proportion of Bronte main trade area food and grocery spending would currently be directed to supermarkets and fresh food facilities in the Bondi Junction CBA.

3.2 Supermarket Based Shopping Centres

i. Typically, any food store less than 500 sq.m is not considered a supermarket as it only serves the basic convenience needs of the immediate population. There is currently only one supermarket provided within the defined main trade area, namely a Foodworks supermarket of 500 sq.m at Clovelly, approximately 1 km to the south of the Bronte RSL development site.

ii. Supermarket based retail facilities of relevance beyond the main trade area include:

- Bondi Road includes an extensive retail strip comprising a range of traders. The major fresh food operator is the Kemeny's Food and Liquor outlet of around 2,000 sq.m. The fresh food offer at this store is relatively limited, with its main business being a highly successful liquor, internet and home delivery business.

- Bondi Beach is located approximately 2 km to the north of Bronte and is currently served by an IGA supermarket of 500 sq.m along Hall Street as well as an IGA foodstore of 300 sq.m along Curlewis Street. The small size of facilities at Bondi Beach means that residents of Bronte would have little association with these facilities for food and grocery shopping.

- Coogee Bay Village is provided as part of the Coogee Bay Road precinct, around 2 km to the south of Bronte. This centre is anchored by a small Woolworths supermarket of 868 sq.m that is reported to trade at very high levels.

- Randwick Junction is a major retail centre located in the Eastern Suburbs of Sydney. The Junction comprises the main strip along Belmore Road, as well as two supermarket anchored shopping centres including:

    - Royal Randwick Shopping Centre incorporates around 9,000 sq.m of retail floorspace and is anchored by a recently refurbished Woolworths supermarket of 1,420 sq.m and also includes a highly successful fresh food operator (R R Fruit Market). According to *Mini Guns 2011,* the centre trades at a very high productivity level of $9,588 per sq.m.

- Randwick Plaza incorporates around 4,400 sq.m of retail floorspace and is anchored by a Coles supermarket of 3,000 sq.m.
- The remainder of the Randwick strip includes a range of food catering, fresh food and service orientated retailing.

3.3 Bronte Village Centre

i. Bronte is currently served by a provision of strip retailing along Macpherson Street as well as Bronte Road in the north.

ii. The Macpherson Street retail strip is separated into an eastern and western portion and is outlined as follows (refer Tables 3.2 and 3.3):

- The eastern provision of retail facilities extends along both sides of Macpherson Street from around St Thomas Street in the east to Yanko Avenue in the west. The precinct incorporates a total of 15 retail traders, with Food & Liquor (37%) and Food Catering (16%) accounting for the largest categories. The precinct is served by a provision of street carparking and is characterised by a strong independent and organic theme including tenants such as Pasta Emilia and the award winning Iggy's Bakery. In addition, Bronte Convenience Store which has an estimated maximum floorspace of 200 sq.m includes the largest fresh food offer in Bronte (around 100 sq.m) with an organic focus.

- The western portion of the Macpherson Street retail strip is provided around the intersection of Leichhardt Street. The precinct has a total of approximately 20 shop fronts, comprising some 13 retail tenants, with the largest retail category being Food Catering, accounting for 25% of the total stores provided. This precinct includes a convenience store, namely, The Friendly Store (approximately 110 sq.m) which includes a limited grocery offer and a small provision of fresh food retailing.

iii. In total, the Macpherson Street retail strip includes approximately 40 retail and non-retail shop fronts, comprising some 28 retail tenants. The retail strip is highly

convenience focused, including key convenience traders such as a pharmacy and newsagent. In addition, Macpherson Street includes two convenience stores, namely Bronte Convenience Store and The Friendly Store. Both stores include only a small provision of fresh food retailing. Consequently, the existing Macpherson Street retail precinct only serves the convenience and top-up shopping needs of the local population. Local residents would need to travel to the surrounding larger retail precincts such as Bondi Junction and Randwick beyond the main trade area for their weekly shopping needs.

iv. The Macpherson Street retail strip includes approximately nine tenants within the Food & Liquor category (the category within which the proposed fresh producer mini-major tenant at the Bronte RSL retail centre would compete in), accounting for 32% of total tenants. The proposed fresh produce mini-major would only compete indirectly with the majority of these tenants including the butcher, bakery and convenience stores. It is important to note that the proposed fresh produce mini-major would not compete with the existing liquor outlet or the herbal store.

v. Bronte also includes around 10 food catering traders along Bronte Road, directly to the south of Bronte Park and Bronte Beach. This bustling precinct includes a number of popular cafes and serves both the local population as well as the significant number of visitors attracted to Bronte Beach.

TABLE 3.2 – BRONTE SPECIALTY PROVISION

Macpherson Street - East		Macpherson Street - West		Bronte Road	
Tenant	Catgeory	Tenant	Catgeory	Tenant	Catgeory
Frockk	Apparel	Lucas Meats	Food & Liquor	Bogey Hole Cafe	Food Catering
Bronte Cake Shop	Food & Liquor	The Friendly Store	Food & Liquor	Bronte Lounge Cafe	Food Catering
Bronte Food Centre	Food & Liquor	Cafe	Food Catering	Cafe	Food Catering
Camperdown Cellars	Food & Liquor	Eugene's Cafe	Food Catering	Cafe Q	Food Catering
Herbalife	Food & Liquor	La Locanda	Food Catering	Cafe Salina	Food Catering
Iggy's Bakery	Food & Liquor	Topping Mad Pizza	Food Catering	G'Day Bronte	Food Catering
Pasta Emilia	Food & Liquor	Wet Paint Restaurant	Food Catering	Jetty's Cafe	Food Catering
Bronte Convenience Store	Food & Liquor	Natty Nealy New	General	Selfish	Food Catering
Bronte Carlo Cafe	Food Catering	Waverley Pharamacy	General	Sewl Cafe	Food Catering
Natraj Indian Diner	Food Catering	Cannon Real Estate Office	Non-retail	The Bronte Pistachio Cafe	Food Catering
Three Blind Ducks	Food Catering	Dr Hazan's Healthy Smiles	Non-retail		
Bronte Pharamacy	General	PRD Nationwide Real Estate	Non-retail		
Newsagent	Leisure	Progress Security Electronics	Non-retail		
Bronte Dental Centre	Non-retail	Sukha Mukha Yoga	Non-retail		
Bronte Medical Centre	Non-retail	The Bronte Sewing Room	Non-retail		
Frothers Gallery	Non-retail	Waverley Medical	Non-retail		
Risacca Hair, Skin & Body	Non-retail	Art of Massage	Retail Services		
Pandora's Hair Boutique	Retail Services	Brush	Retail Services		
St Thomas Dry Cleaner	Retail Services	R & J Laundromat	Retail Services		
		Sienna Salon	Retail Services		

** As of July 2012*

LOCATIQN

TABLE 3.3 – MACPHERSON STREET SPECIALTY TENANTS

Macpherson Street - East			Macpherson Street - West		
Retail Specialties	No.	%	Retail Specialties	No.	%
Food & Liquor	7	37%	Food & Liquor	2	10%
Food Catering	3	16%	Food Catering	5	25%
Apparel	1	5%	Apparel	0	0%
Household Goods	0	0%	Household Goods	0	0%
Leisure	1	5%	Leisure	0	0%
General Retail	1	5%	General Retail	2	10%
Retail Services	2	11%	Retail Services	4	20%
Total Retail Specialty	**15**	**79%**	**Total Retail Specialty**	**13**	**65%**
Non-retail	4	21%	Non-retail	7	35%
Total	**19**	**100%**	**Total**	**20**	**100%**

** As of July 2012*

3.4 Summary

i. Overall, there are a limited number of major supermarkets and fresh produce stores located in the Eastern Suburbs of Sydney. Table 3.4 outlines the provision of supermarket floorspace in the Bronte main trade area as well as the Waverley and Randwick Local Government Areas (LGAs), indicating that the supermarket provision throughout the Eastern Suburbs of Sydney is significantly lower than both the Sydney metropolitan and Australian averages. The provision of supermarket floorspace within the Waverley LGA is approximately 20% below the Sydney metropolitan average and around 40% below the Australian average while the provision of supermarket floorspace within the Randwick LGA is approximately 60% below the Sydney metropolitan benchmark and nearly 70% below the Australian average.

ii. Consequently, it is understood that all major supermarkets within this area trade at very successful levels, indicating demand for further food and grocery facilities. In addition, a number of fresh produce operators also trade successfully throughout the Eastern Suburbs, including Norton Street Grocer and Harris Farm at Bondi Junction as well as R R Food Market at Royal Randwick.

iii. The largest provision of retail facilities within the Eastern Suburbs is provided within the Bondi Junction CBA, which is based on three strong trading supermarkets as well as two strong trading fresh produce stores. Given that the Bronte main trade area currently only includes a small Foodworks supermarket of 500 sq.m at Clovelly, a large proportion of food and grocery spending would currently be directed to retail facilities beyond the main trade area.

iv. The Macpherson Street retail strip currently includes some 28 retail tenants of which nine stores are categorised as Food & Liquor. The proposed fresh produce mini-major at the Bronte RSL retail centre would compete indirectly with these Food & Liquor tenants, if at all. Indeed, the proposed Bronte RSL retail centre would integrate well into the precinct which has a strong organic and independent vibe.

TABLE 3.4 – EASTERN SUBURBS SUPERMARKET PROVISION, 2012

Trade Area Sector	No. of Supermarkets*	GLA (sq.m)	2012 Population	GLA per 1,000 persons
Bronte Main Trade Area	1	500	19,060	26
Waverley LGA	4	12,052	63,496	190
Randwick LGA	8	12,615	128,989	98
Total Waverley & Randwick LGAs	**12**	**24,667**	**192,485**	**128**
New South Wales Average				*240*
Australian Average				*312*

** Defined as 500 sq.m or larger*

4 ASSESSMENT OF POTENTIAL FOR RETAIL FACILITIES

This section of the report considers the sales potential for the retail component of the proposed Bronte RSL, as well as the likely trading and other impacts that can be anticipated following the construction of the proposal.

4.1 Sales Overview

i. In order to assess the potential economic benefits and impacts that may arise from the development of the proposed Bronte RSL the sales level which the development is projected to achieve is outlined.

ii. The sales performance of any particular retail facility, be it an individual store or a collection of stores provided in a shopping centre or precinct, is determined by a combination of the following critical factors:

- The composition and quality of the facility, including major trader or traders; the specialty mix; centre layout and configuration; ease of accessibility and parking; and the overall feel of the centre.
- The size of the available catchment which the facility serves.
- The locations and strengths of competitive retail facilities.

iii. The sales potential for the retail component of the proposed Bronte RSL redevelopment, which would be anchored by a fresh produce store (most likely Harris Farm of 999 sq.m) and a small provision of retail specialty shops (247 sq.m), is now considered taking these factors into account. The indicative mix for the retail specialty shops includes:

- Seafood
- Butcher
- Deli
- Juice Bar
- Cafe

4.2 Centre Potential

i. Table 4.1 details the potential sales volume for the retail component of the Bronte RSL redevelopment. Total centre sales are projected at $13.1 million, representing an average trading level of $10,488 per sq.m. The proposed fresh produce mini-major is projected to achieve sales of $10.5 million. This very successful trading level for the proposed development reflects a number of factors:

- The density of the population within the immediate area surrounding the site.
- The very successful sales volumes being achieved by other supermarket and fresh produce traders in the Eastern Suburbs of Sydney.
- The convenience which would be offered by the subject development for the main trade area population.

ii. Table 4.2 details the market shares of main trade area retail expenditure which would be achieved by the subject development, including the share of food and grocery spending, total food spending and total retail spending. The Bronte retail centre would achieve a 4.6% share of total main trade area spending and an approximate 11.5% market share of the food and grocery market.

TABLE 4.1 – INDICATIVE PROJECTED SALES

Tenant/ Category	GLA (sq.m)	Forecast Sales* ($'000)	($/sq.m)
Mini-majors (> 400 sq.m)			
Harris Farm	999	10,476	10,486
Mini-majors	999	10,476	10,486
Retail Specialties			
Seafood	100	993	9,934
Butcher	50	580	11,590
Deli	50	414	8,279
Juice Bar	30	381	12,694
Cafe	17	225	13,246
Total Retail Spec.	247	2,593	10,497
Total Retail	**1,246**	**13,069**	**10,488**

**Inflated dollars & Including GST*
*** Excluding GST*

TABLE 4.2 – BRONTE MAIN TRADE AREA MARKET SHARES

Trade Area Sector	Retail Spending ($M)			Sales ($M)			Market Share		
	F&G	Food	Total	F&G	Food	Total	F&G	Food	Total
Main Trade Area	108	158	281	12.5	13.1	13.1	11.6%	8.2%	4.6%

** Including GST*

4.3 Sales Impacts

i. This sub-section of the report outlines the likely sales impacts on competitive retail centres/facilities as a result of the additional 1,246 sq.m of retail floorspace that is currently proposed at the Bronte RSL redevelopment.

ii. It is important to note that impacts outlined in this report are indicative as it is difficult to precisely project the sales impact of the opening of a new store/centre on existing retail facilities. A number of factors can influence the impact on individual centres/retailers, including but not limited to:

- Refurbishment/improvements to existing centres.
- Expansions to existing centres.
- Loyalty programs of existing retailers.
- The existing centre mix and how it competes with the proposed development.

iii. For all these reasons and other similar factors, sales impacts outlined in this report should be used as a broad indication.

iv. The previous Table 4.2 indicated that, on average, the impact from the subject development would be 4.6% across all main trade area retail facilities, but likely to be higher at 11.5% on food and grocery facilities, if all the spending was redirected from main trade area retail facilities. However, the vast majority of food and grocery spending (including for fresh produce traders) is currently directed to retail facilities beyond the defined main trade area rather than within the main trade area.

v. Consequently, Table 4.3 provides an indicative breakdown of the likely redirection of sales from within and beyond the main trade area. Approximately 90% of the impact is likely to be on retail facilities beyond the main trade area including centres such as Bondi Junction and Randwick. The supermarkets and food and grocery facilities at these centres achieve sales in-excess of $100 million and $200 million, respectively. As such, the impacts on these centres will be minor.

TABLE 4.3 – BRONTE RSL CENTRE IMPACTS

		($M)
Bronte RSL Retail Centre Sales		13.1
Source of Sales	% Impact	Sales ($M)
• Tenants within Trade Area	10%	1.3
• Tenants beyond Trade Area	90%	11.8

**Includes bulky goods floorspace and other retail/strip facilities.*
Source : Marketinfo

vi. The proposed Bronte RSL retail centre is projected to achieve sales in the order of $13.1 million, accounting for around 12% of total Food & Liquor expenditure within the main trade area. This leaves $94.8 million of Food & Liquor expenditure within the main trade area for other main trade area retailers.

vii. In relation to the impact on retail facilities within the main trade area, particularly along Macpherson Street, the previous Section 3 identified the number of tenants within the strip. The Macpherson Street retail strip includes approximately nine tenants within the Food & Liquor category (the category within which the proposed fresh producer mini-major tenant at the Bronte RSL retail centre would compete in), accounting for 32% of total tenants.

viii. However, there is only likely to be around six food and grocery tenants that the proposed fresh produce mini-major would compete with to a limited degree, including:

- Bronte Food Centre

- Iggy's Bakery
- Pasta Emilia
- Bronte Convenience Store
- Lucas Meats
- The Friendly Store

ix. Importantly, the proposed fresh produce mini-major would only compete indirectly with the majority of these tenants given that none of the above listed tenants operate as pure fresh produce stores. In addition, the majority of these stores are already established and successful traders in their own right, particularly the award winning Iggy's Bakery. As such, it is unlikely that any retail development within the area would impact significantly on such popular traders.

x. Therefore, only six of the 40 tenants within the Macpherson street retail strip would be relevant to the proposed Bronte RSL retail centre, or around 15%. Consequently, the vast majority of tenants in the Macpherson Street Strip would not be impacted by the development.

xi. In fact, there are likely to be flow on benefits to the surrounding Macpherson Street retail strip as a simple reflection of the proposed retail development retaining customers within the region rather than those customers escaping to centres outside the region currently.

xii. As an example, if a fresh food/produce trader achieved sales of $10 million, and assuming an average spend per visit of $25, there would be an additional 400,000 customers per annum using the Macpherson Street retail strip that would currently be going outside the region. The existing retail tenants within the area would receive flow on benefits with these additional 400,000 customers undertaking shopping at the local pharmacy, newsagents, cafes, hairdressers and the like. Consequently, the vast majority of existing retail facilities are likely to benefit from the subject development.

xiii. In addition, the provision of 70 carparking spaces for the retail component of the proposed development would significantly add to the carparking on offer within the Macpherson Street retail strip. This would consequently increase the level of convenience offered by the Macpherson Street retail strip and therefore retaining customers within the region with flow on benefits to the existing tenants within the strip.

xiv. In summary, as outlined in Table 4.3, only 10% or $1.3 million of projected sales will be redirected from main trade area retailers. This impact is likely to be focused on food and grocery traders including tenants at Bronte as well as Clovelly and other suburbs throughout the main trade area.

xv. There are six relevant traders within the Macpherson Street retail strip. While there is likely to be some impact on these retail tenants, the proposed Bronte RSL retail centre will not impact on the viability of these tenants nor would the proposed development be detrimental to the surrounding retail strip. This reflects the established and popular nature of these tenants within the precinct such as Iggy's Bakery and Pasta Emilia. Indeed, the surrounding Macpherson Street retail strip stands to benefit from the increased sales potential and increased customer flows attracted to the retail precinct by the proposed development of the Bronte RSL retail centre.

4.4 Employment and Consumer Impacts

i. The development of the Bronte RSL retail centre will result in a range of important economic benefits which will be of direct benefit to the local community.

ii. The key positive employment and consumer impacts resulting from the retail component of the Bronte RSL redevelopment will include the following:

- The provision of a wider range of shopping facilities for local residents, including a fresh produce trader and retail specialty floorspace in a convenient location.

- The retail component of the proposed centre is projected to employ around 35 persons as summarised in Table 4.4. Taking a conservative view and allowing for an estimated 10% of the total increase to be as a result of the reduced employment at existing retail facilities, the net additional jobs are estimated at 31.

- The additional 31 permanent retail employees would earn an average annual wage of around $28,800 as sourced from the ABS. This represents an additional $900,000 in salary and wages for the local economy, directly as a result of the retail component of the proposed development.

- Further jobs would be created from the supplier induced multiplier effects as a result of the retail jobs for the on-going running of the additional retail component of the proposed Bronte RSL retail centre. Jobs created are full-time equivalent jobs, which may include both full-time and part-time positions. In total, some 61 jobs are projected to be created in the broader community, based on ABS Input/Output Multipliers (refer Table 4.5).

- The retail floorspace at the proposed Bronte RSL retail centre will create a substantial number of additional jobs, both for the construction and related industries during the construction phase of the development and for the economy generally once the development is completed.

- The estimated total capital costs for the construction of the development is around $7 million. By using the appropriate ABS Input/Output Multipliers that were last produced in 1996/97 and a deflated estimated total capital cost of construction of $5.5 million (i.e. in 1996/97 dollars), it is estimated that the construction period of the proposed Bronte RSL retail centre would create some 38 jobs (refer Table 4.6).

- The additional construction jobs (38), will result in a further 62 jobs in the broader community based on ABS Input/Output Multipliers (refer Table 4.6).

- As a result, in total some 100 jobs are likely to be created both directly and indirectly as a result of the proposed Bronte RSL retail centre.

TABLE 4.4 – ESTIMATED PERMANENT EMPLOYMENT

Type of Use	Estimated Employment Per '000 sq.m	Bronte RSL Change in GLA (sq.m)	Bronte RSL Employment (persons)
Mini-majors	20	999	20
Retail Specialty Shops	60	247	15
Total Centre[1]		**1,246**	**35**
Net Increase[2]			**31**

1. Excludes non-retail components.
2. Net increase includes an allowance for reduced employment levels at impacted centres estimated at 10% of the total increase

TABLE 4.5 – ESTIMATED EMPLOYMENT IMPACT

Original Stimulus	Direct Employment	Supplier Employment *Multiplier Effects*	Total
Centre Employment[1]	31	30	61

** Employment totals include both full-time and part-time work*
1. Indicates the estimated number of net additional ongoing jobs as a result of the proposed development
Source : Australian National Accounts: Input-Output Tables 1996-97

TABLE 4.6 – ESTIMATED CONSTRUCTION EMPLOYMENT IMPACT

Original Stimulus	Estimated Capital Costs ($M)[1]	Direct Employment	Supplier Employment *Multiplier Effects*	Total	
Construction of Project	5.5	38	62	100	Job Years[2]

** Employment totals include both full-time and part-time work*
1. Adjusted by inflation and productivity to 1996/97 Dollars
2. Indicates the estimated number of jobs over the life of the construction project plus ongoing multiplier effects, for the equivalent of one year
Source : Australian National Accounts: Input-Output Tables 1996-97

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Appendix C

Economic Impact Assessment Review (Urbis)

18 October 2012

Mr Ronaldo Manahan
Associate
GTA Consultants
PO Box 5254
WEST CHATSWOOD NSW 1515

Dear Ronaldo,

Bronte RSL Redevelopment Economic Impact Assessment: Peer Review

As requested Urbis has undertaken a high level review of the Bronte RSL Redevelopment Economic Impact Assessment (EIA), prepared by Location IQ in August 2012 for Winston Langley Pty Ltd. In accordance with our agreed scope of works our assessment is focused on the following:

- Review of the document;
- Provide high level comment on the appropriateness of the methodology; and
- Provide high level comment on the reasonableness of the findings.

No site inspection has been undertaken as part of this review.

EIA Methodology

The Location IQ EIA addresses the following methodology:

- Review of the regional and local context of the site and an overview of the composition of the retail scheme;
- Definition of a Trade Area for the retail component of the scheme together with:
  - a population forecast for the Trade Area resident population to 2026,
  - a review of the socio-economic profile of residents,
  - an assessment of potential spend within the MTA by key commodity groups; and
  - consideration of visitor numbers to Bronte.
- Review of the competitive retail environment within and around the Trade Area; and
- An assessment of the potential for retail facilities, having regard to :
  - Centre sales potential;
  - Sales impacts; and

- Employment and consumer impacts.

The approach adopted by Location IQ is consistent with the standard approach to undertaking a Retail Economic Impact Assessment.

Comments on Key Findings

More specifically, we consider that that the assumptions and forecasts that have been used in the assessment are reasonable, specifically:

- The report uses 2011 Census data in the Population Forecast and Socio Economic profile assessment. We note that in Table 2.1 Census Count data has been extrapolated to an Estimated Resident Population Forecast (ERP) figure using the 2006 enumeration factor. Subsequent to the Location IQ report being produced the ABS has released 2011 ERP data, however we do not envisage that there will be a discrepancy of significance between the two figures.

- The Main Trade Area in Figure 2.1 appears reasonable for a relatively small scale retail provision such as that proposed. Within the Main Trade Area the majority of spend is likely to come from residents closest to the subject site, as the steep gradients in the locality may be a disincentive to broader walk-in trade. The provision of additional car parking will enhance the attractiveness of the development for top-up retailing.

- The report uses Marketinfo MDS spending data by key commodity groups in Table 2.3. This is the industry standard spending data, assuming that the latest 2010 MDS figures are used.

- With regard to the Competitive Environment review in Section 3, Table 3.1 identifies all relevant Regional and Supermarket Centres that are likely to compete for Main Trade Area spending. The analysis of Bronte Village Centre in Section 3.3 is thorough, however it may also have been helpful to consider the strip retailing along Bronte Road around the intersection with Carrington Road as this is also within the Main Trade Area.

- The forecast sales in Table 4.1 use fairly high turnover per sq.m rates relative to other developments, which as Location IQ confirm, reflects the surrounding high density and affluent population and the convenience that the proposed development offers to Main Trade Area residents. As high turnover per sq.m rates have been adopted this means that the competitive impacts would reflect the likely upper end of a reasonable range.

- In Table 4.3 the assumption that 10% of sales will be directed from tenants within the Main Trade Area and 90% from beyond the Main Trade Area seems logical in view of:

  - The limited provision of competing retailers within the Main Trade Area which indicates the opportunity to capture escape expenditure; and

  - The proximity to, and strength of, higher order retailing notably Bondi Junction and Randwick.

- Accordingly, we consider that the Impacts in Table 4.3 appear reasonable, noting that:

  - Year on year spending growth should allow any competitive impacts to be absorbed within a short period;

  - The turnover estimate for the proposed development reflects the likely upper end of a reasonable range; and

- The proposed development is focused on convenience grocery shopping, and we understand that supermarkets close to the Main Trade Area achieve strong sales at present.

- The employment figures in section 4.4 are consistent with employment numbers that Urbis' modelling generates based on the same size and construction cost inputs.

General Observations

More broadly, having regard to the EIA and the plans contained therein we make the following observations:

- The proposed development at 1,246 sq.m is relatively modest in scale and is located on the edge of an existing retail strip;

- This scale of grocery retailing is likely to be highly convenient for Main Trade Area residents undertaking top-up food shopping;

- Although there may be some minor competitive impacts on individual retailers within the Main Trade Area, the development should strengthen the overall retail offer on Macpherson Street. The specialty shops are oriented to the street and should therefore complement the existing retail strip.

In conclusion, the information contained in the Bronte RSL Redevelopment Economic Impact Assessment demonstrates that there are no economics grounds on which the proposed development should be refused planning consent.

Yours sincerely,

David Wilcox
Senior Consultant

Appendix D

Chesterfield Lane – Traffic Counts

Traffic Count Summary Report

Count Number	**409**	Ref : **GTA**	**Lat/Long : S33 54 23.1 / E151 15 44.5**	**UBD 257 J-10**
Street	**CHESTERFIELD LANE : From CHESTERFIELD PARADE WAVERLEY to CHESTERFIELD PARADE WAVERLEY : EAST BOUND**			
Location	One Way Lane, at rear of RSL, ELP			*Carriageway*

TOTAL COUNT MATRIX

Start Date	18-OCT-12
Start Time	100
Duration	7 DAYS
Interval	1 HOUR

Weekly 50th Percentile Speed	22
Weekly 85th Percentile Speed	32
Five Day AADT	166
Seven Day AADT	144

	MON *22ND*	TUE *23RD*	WED *24TH*	THU *18TH*	FRI *19TH*	SAT *20TH*	SUN *21ST*	5 Day Total	5 Day Average	7 Day Total	7 Day Average
Midnight - 1am	0	0	0	0	0	1	0	**0**	**0**	**1**	**0**
1am - 2am	1	0	0	0	1	0	1	**2**	**0**	**3**	**0**
2am - 3am	0	0	0	0	0	0	0	**0**	**0**	**0**	**0**
3am - 4am	0	0	0	0	0	0	0	**0**	**0**	**0**	**0**
4am - 5am	2	3	1	1	3	0	0	**10**	**2**	**10**	**1**
5am - 6am	8	**12**	12	8	**16**	0	0	**56**	**11**	**56**	**8**
6am - 7am	**16**	6	7	9	11	3	1	**49**	**10**	**53**	**8**
7am - 8am	7	7	11	8	14	**9**	3	**47**	**9**	**59**	**8**
8am - 9am	4	9	**13**	**15**	**16**	3	**9**	**57**	**11**	**69**	**10**
9am - 10am	9	4	11	10	9	2	7	**43**	**9**	**52**	**7**
10am - 11am	5	5	4	7	8	2	8	**29**	**6**	**39**	**6**
11am - Midday	4	3	5	12	5	2	6	**29**	**6**	**37**	**5**
Midday - 1pm	4	4	8	6	2	3	10	**24**	**5**	**37**	**5**
1pm - 2pm	1	3	7	1	4	4	5	**16**	**3**	**25**	**4**
2pm - 3pm	1	6	10	4	6	0	3	**27**	**5**	**30**	**4**
3pm - 4pm	14	14	16	12	11	8	9	**67**	**13**	**84**	**12**
4pm - 5pm	21	21	11	18	13	**11**	12	**84**	**17**	**107**	**15**
5pm - 6pm	**24**	**32**	**24**	**19**	**17**	**11**	**17**	**116**	**23**	**144**	**21**
6pm - 7pm	10	13	17	15	14	9	4	**69**	**14**	**82**	**12**
7pm - 8pm	9	9	12	8	4	4	2	**42**	**8**	**48**	**7**
8pm - 9pm	5	8	5	6	4	4	1	**28**	**6**	**33**	**5**
9pm - 10pm	2	5	3	3	1	2	3	**14**	**3**	**19**	**3**
10pm - 11pm	0	3	2	2	5	0	2	**12**	**2**	**14**	**2**
11pm - Midnight	0	0	4	3	1	1	0	**8**	**2**	**9**	**1**
Total	**147**	**167**	**183**	**167**	**165**	**79**	**103**	**829**	**165**	**1011**	**144**

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Data displayed has been compiled from pneumatic traffic count processes and is subject to the documented limitations

Traffic Count Summary Report

Count Number	**410**	Ref : **GTA**	**Lat/Long : S33 54 23.1 / E151 15 44.5**	**UBD 257 J-10**
Street	**CHESTERFIELD LANE : From CHESTERFIELD PARADE WAVERLEY to CHESTERFIELD PARADE WAVERLEY : EAST BOUND**			
Location	One Way Lane, at rear of RSL, ELP SY15672		*Carriageway*	

TOTAL COUNT MATRIX

Start Date	22-NOV-12
Start Time	100
Duration	7 DAYS
Interval	1 HOUR

Weekly 50th Percentile Speed	24
Weekly 85th Percentile Speed	34
Five Day AADT	187
Seven Day AADT	168

	MON *26TH*	TUE *27TH*	WED *28TH*	THU *22ND*	FRI *23RD*	SAT *24TH*	SUN *25TH*	5 Day Total	5 Day Average	7 Day Total	7 Day Average
Midnight - 1am	0	0	0	0	0	2	0	**0**	**0**	**2**	**0**
1am - 2am	0	0	0	0	0	1	0	**0**	**0**	**1**	**0**
2am - 3am	0	0	0	0	0	1	0	**0**	**0**	**1**	**0**
3am - 4am	0	0	0	0	0	0	0	**0**	**0**	**0**	**0**
4am - 5am	1	3	3	4	2	0	0	**13**	**3**	**13**	**2**
5am - 6am	4	13	9	9	12	0	1	**47**	**9**	**48**	**7**
6am - 7am	11	7	8	9	13	9	0	**48**	**10**	**57**	**8**
7am - 8am	12	**15**	13	10	**17**	13	2	**67**	**13**	**82**	**12**
8am - 9am	14	10	**18**	**22**	15	7	5	**79**	**16**	**91**	**13**
9am - 10am	**16**	14	9	21	**17**	4	2	**77**	**15**	**83**	**12**
10am - 11am	14	12	7	10	14	**16**	7	**57**	**11**	**80**	**11**
11am - Midday	4	9	4	10	11	14	**12**	**38**	**8**	**64**	**9**
Midday - 1pm	9	8	4	7	8	5	8	**36**	**7**	**49**	**7**
1pm - 2pm	5	7	6	7	9	10	7	**34**	**7**	**51**	**7**
2pm - 3pm	9	7	8	7	10	4	**12**	**41**	**8**	**57**	**8**
3pm - 4pm	**21**	12	15	15	16	12	6	**79**	**16**	**97**	**14**
4pm - 5pm	18	**28**	10	**24**	15	**14**	4	**95**	**19**	**113**	**16**
5pm - 6pm	17	20	**23**	19	**19**	8	11	**98**	**20**	**117**	**17**
6pm - 7pm	18	9	10	10	10	4	8	**57**	**11**	**69**	**10**
7pm - 8pm	6	7	6	9	7	6	4	**35**	**7**	**45**	**6**
8pm - 9pm	2	3	1	2	5	3	7	**13**	**3**	**23**	**3**
9pm - 10pm	1	2	4	4	1	3	3	**12**	**2**	**18**	**3**
10pm - 11pm	1	1	0	0	2	2	0	**4**	**1**	**6**	**1**
11pm - Midnight	0	1	1	1	1	2	1	**4**	**1**	**7**	**1**
Total	**183**	**188**	**159**	**200**	**204**	**140**	**100**	**934**	**186**	**1174**	**167**

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CFE Information Technologies

Data displayed has been compiled from pneumatic traffic count processes and is subject to the documented limitations

Appendix E

SIDRA INTERSECTION Outputs

MOVEMENT SUMMARY

Site: Existing Friday PM Peak

Macpherson St & Arden St, Bronte
Existing Friday PM Peak

Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Arden St (S)											
1	L	328	1.8	0.399	9.4	LOS A	1.5	10.7	0.35	0.67	47.4
3	R	66	0.0	0.286	25.5	LOS B	1.1	7.7	0.80	0.97	35.2
Approach		394	1.5	0.399	12.1	LOS A	1.5	10.7	0.43	0.72	44.8
East: Macpherson St (E)											
4	L	39	2.6	0.021	8.3	LOS A	0.0	0.0	0.00	0.67	49.0
5	T	151	4.0	0.079	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		190	3.7	0.079	1.7	NA	0.0	0.0	0.00	0.14	57.4
West: Macpherson St (W)											
11	T	183	3.8	0.489	1.7	LOS A	4.2	30.1	0.47	0.00	49.9
12	R	472	0.8	0.489	10.0	LOS A	4.2	30.1	0.47	0.74	47.5
Approach		655	1.7	0.489	7.7	NA	4.2	30.1	0.47	0.54	48.1
All Vehicles		1239	1.9	0.489	8.2	NA	4.2	30.1	0.39	0.53	48.2

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Existing SAT Peak

Macpherson St & Arden St, Bronte
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Arden St (S)											
1	L	427	0.9	0.531	11.3	LOS A	3.4	24.2	0.49	0.80	45.8
3	R	99	0.0	0.503	34.6	LOS C	2.2	15.7	0.88	1.07	30.7
Approach		526	0.8	0.531	15.7	LOS B	3.4	24.2	0.56	0.85	41.9
East: Macpherson St (E)											
4	L	74	0.0	0.040	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
5	T	219	2.7	0.114	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		293	2.0	0.114	2.1	NA	0.0	0.0	0.00	0.17	56.8
West: Macpherson St (W)											
11	T	254	2.8	0.499	3.0	LOS A	5.3	37.6	0.61	0.00	48.0
12	R	397	0.5	0.499	11.3	LOS A	5.3	37.6	0.61	0.87	46.7
Approach		651	1.4	0.499	8.1	NA	5.3	37.6	0.61	0.53	47.2
All Vehicles		1470	1.3	0.531	9.6	NA	5.3	37.6	0.47	0.57	46.7

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Existing Friday PM +14% Mac St

Macpherson St & Arden St, Bronte
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Arden St (S)											
1	L	328	1.8	0.401	9.6	LOS A	1.6	11.2	0.37	0.68	47.3
3	R	66	0.0	0.314	27.8	LOS B	1.2	8.5	0.83	0.98	34.0
Approach		394	1.5	0.401	12.6	LOS A	1.6	11.2	0.45	0.73	44.4
East: Macpherson St (E)											
4	L	39	2.6	0.021	8.3	LOS A	0.0	0.0	0.00	0.67	49.0
5	T	172	4.0	0.090	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		211	3.7	0.090	1.5	NA	0.0	0.0	0.00	0.12	57.6
West: Macpherson St (W)											
11	T	209	3.8	0.511	2.1	LOS A	5.1	35.9	0.52	0.00	49.3
12	R	472	0.8	0.511	10.3	LOS A	5.1	35.9	0.52	0.77	47.4
Approach		681	1.8	0.511	7.8	NA	5.1	35.9	0.52	0.53	48.0
All Vehicles		1286	2.0	0.511	8.2	NA	5.1	35.9	0.41	0.53	48.1

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Existing SAT +14% Mac St

Macpherson St & Arden St, Bronte
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Arden St (S)											
1	L	427	0.9	0.537	11.7	LOS A	3.6	25.3	0.52	0.84	45.4
3	R	99	0.0	0.575	41.3	LOS C	2.6	18.4	0.91	1.10	28.1
Approach		526	0.8	0.575	17.3	LOS B	3.6	25.3	0.60	0.89	40.7
East: Macpherson St (E)											
4	L	74	0.0	0.040	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
5	T	250	2.7	0.130	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		324	2.1	0.130	1.9	NA	0.0	0.0	0.00	0.15	57.1
West: Macpherson St (W)											
11	T	290	2.8	0.530	3.6	LOS A	6.3	44.8	0.67	0.00	47.2
12	R	397	0.5	0.530	11.8	LOS A	6.3	44.8	0.67	0.92	46.4
Approach		687	1.5	0.530	8.4	NA	6.3	44.8	0.67	0.53	46.7
All Vehicles		1537	1.4	0.575	10.0	NA	6.3	44.8	0.50	0.57	46.1

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

GTA Blank (V1.1)

MOVEMENT SUMMARY

Site: Proposed Friday PM Peak Mac St

Macpherson St & Arden St, Bronte
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Arden St (S)											
1	L	328	1.8	0.404	9.9	LOS A	1.7	12.2	0.40	0.70	47.2
3	R	94	0.0	0.469	32.9	LOS C	2.0	14.3	0.87	1.05	31.5
Approach		422	1.4	0.469	15.0	LOS B	2.0	14.3	0.50	0.78	42.5
East: Macpherson St (E)											
4	L	67	1.8	0.037	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
5	T	180	3.6	0.094	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		247	3.1	0.094	2.2	NA	0.0	0.0	0.00	0.18	56.5
West: Macpherson St (W)											
11	T	212	3.5	0.527	2.7	LOS A	5.6	40.1	0.57	0.00	48.4
12	R	472	0.8	0.527	10.9	LOS A	5.6	40.1	0.57	0.82	46.9
Approach		684	1.7	0.527	8.3	NA	5.6	40.1	0.57	0.56	47.4
All Vehicles		1353	1.8	0.527	9.3	NA	5.6	40.1	0.45	0.56	47.1

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Proposed Saturday Peak Mac St

Macpherson St & Arden St, Bronte
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Arden St (S)											
1	L	427	0.9	0.539	11.9	LOS A	3.7	25.8	0.54	0.85	45.2
3	R	128	0.0	0.755	54.6	LOS D	4.3	30.3	0.95	1.25	24.0
Approach		555	0.7	0.755	21.7	LOS B	4.3	30.3	0.63	0.95	37.5
East: Macpherson St (E)											
4	L	103	0.0	0.055	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
5	T	249	2.5	0.130	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		352	1.8	0.130	2.4	NA	0.0	0.0	0.00	0.20	56.3
West: Macpherson St (W)											
11	T	284	2.6	0.538	4.0	LOS A	6.5	46.1	0.70	0.00	46.7
12	R	397	0.5	0.538	12.2	LOS A	6.5	46.1	0.70	0.95	46.0
Approach		681	1.4	0.538	8.8	NA	6.5	46.1	0.70	0.55	46.3
All Vehicles		1588	1.2	0.755	11.9	NA	6.5	46.1	0.52	0.61	44.4

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Proposed Friday PM Peak +14% Mac St

Macpherson St & Arden St, Bronte
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Arden St (S)											
1	L	328	1.8	0.407	10.1	LOS A	1.8	13.0	0.42	0.72	47.0
3	R	94	0.0	0.515	37.0	LOS C	2.3	15.9	0.89	1.07	29.7
Approach		422	1.4	0.515	16.1	LOS B	2.3	15.9	0.52	0.80	41.6
East: Macpherson St (E)											
4	L	67	1.8	0.037	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
5	T	201	3.6	0.105	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		268	3.1	0.105	2.1	NA	0.0	0.0	0.00	0.17	56.8
West: Macpherson St (W)											
11	T	238	3.5	0.549	3.1	LOS A	6.4	45.8	0.62	0.00	47.7
12	R	472	0.8	0.549	11.3	LOS A	6.4	45.8	0.62	0.86	46.6
Approach		710	1.7	0.549	8.6	NA	6.4	45.8	0.62	0.57	46.9
All Vehicles		1400	1.9	0.549	9.6	NA	6.4	45.8	0.47	0.56	46.7

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Proposed Saturday Peak +14% Mac St

Macpherson St & Arden St, Bronte
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Arden St (S)											
1	L	427	0.9	0.546	12.3	LOS A	3.8	26.9	0.56	0.90	44.8
3	R	128	0.0	0.867	82.9	LOS F	6.1	42.6	0.97	1.44	18.3
Approach		555	0.7	0.867	28.6	LOS C	6.1	42.6	0.66	1.02	33.6
East: Macpherson St (E)											
4	L	103	0.0	0.055	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
5	T	280	2.5	0.146	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		383	1.8	0.146	2.2	NA	0.0	0.0	0.00	0.18	56.6
West: Macpherson St (W)											
11	T	320	2.6	0.570	4.8	LOS A	7.6	54.2	0.77	0.00	45.8
12	R	397	0.5	0.570	13.0	LOS A	7.6	54.2	0.77	1.01	45.5
Approach		717	1.4	0.570	9.4	NA	7.6	54.2	0.77	0.56	45.6
All Vehicles		1655	1.3	0.867	14.2	NA	7.6	54.2	0.55	0.63	42.4

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Proposed PM Mac St

Macpherson St & Proposed Retail Driveway
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Proposed Retail Driveway (S)											
1	L	57	0.0	0.121	8.7	LOS A	0.5	3.2	0.40	0.60	35.8
3	R	25	0.0	0.121	9.1	LOS A	0.5	3.2	0.40	0.80	35.6
Approach		82	0.0	0.121	8.8	LOS A	0.5	3.2	0.40	0.66	35.7
East: Macpherson St (E)											
4	L	25	0.0	0.110	7.2	LOS A	0.0	0.0	0.00	1.09	48.7
5	T	188	0.0	0.110	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		213	0.0	0.110	0.8	NA	0.0	0.0	0.00	0.13	58.5
West: Macpherson St (W)											
11	T	244	0.0	0.174	1.0	LOS A	1.2	8.1	0.38	0.00	52.8
12	R	57	0.0	0.174	8.8	LOS A	1.2	8.1	0.38	1.03	48.8
Approach		301	0.0	0.174	2.5	NA	1.2	8.1	0.38	0.19	52.0
All Vehicles		596	0.0	0.174	2.8	NA	1.2	8.1	0.25	0.24	50.8

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Proposed SAT Mac St

Macpherson St & Proposed Retail Driveway
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Proposed Retail Driveway (S)											
1	L	59	0.0	0.163	10.9	LOS A	0.6	4.1	0.52	0.69	34.6
3	R	25	0.0	0.163	11.3	LOS A	0.6	4.1	0.52	0.84	34.4
Approach		84	0.0	0.163	11.0	LOS A	0.6	4.1	0.52	0.73	34.5
East: Macpherson St (E)											
4	L	25	0.0	0.163	7.2	LOS A	0.0	0.0	0.00	1.09	48.7
5	T	292	0.0	0.163	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		317	0.0	0.163	0.6	NA	0.0	0.0	0.00	0.09	59.0
West: Macpherson St (W)											
11	T	346	0.0	0.234	1.8	LOS A	1.8	12.8	0.51	0.00	50.8
12	R	59	0.0	0.234	9.6	LOS A	1.8	12.8	0.51	1.03	48.9
Approach		405	0.0	0.234	3.0	NA	1.8	12.8	0.51	0.15	50.6
All Vehicles		806	0.0	0.234	2.9	NA	1.8	12.8	0.31	0.19	51.0

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Proposed PM +14% Mac St

Macpherson St & Proposed Retail Driveway
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Proposed Retail Driveway (S)											
1	L	57	0.0	0.132	9.3	LOS A	0.5	3.4	0.44	0.63	35.4
3	R	25	0.0	0.132	9.8	LOS A	0.5	3.4	0.44	0.82	35.2
Approach		82	0.0	0.132	9.5	LOS A	0.5	3.4	0.44	0.69	35.4
East: Macpherson St (E)											
4	L	25	0.0	0.126	7.2	LOS A	0.0	0.0	0.00	1.09	48.7
5	T	219	0.0	0.126	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		244	0.0	0.126	0.7	NA	0.0	0.0	0.00	0.11	58.7
West: Macpherson St (W)											
11	T	284	0.0	0.196	1.3	LOS A	1.4	9.6	0.42	0.00	52.1
12	R	57	0.0	0.196	9.0	LOS A	1.4	9.6	0.42	1.04	49.0
Approach		341	0.0	0.196	2.6	NA	1.4	9.6	0.42	0.17	51.6
All Vehicles		667	0.0	0.196	2.7	NA	1.4	9.6	0.27	0.21	51.0

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Proposed SAT +14% Mac St

Macpherson St & Proposed Retail Driveway
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Proposed Retail Driveway (S)											
1	L	59	0.0	0.191	12.4	LOS A	0.7	4.7	0.58	0.73	33.7
3	R	25	0.0	0.191	12.8	LOS A	0.7	4.7	0.58	0.86	33.6
Approach		84	0.0	0.191	12.5	LOS A	0.7	4.7	0.58	0.77	33.7
East: Macpherson St (E)											
4	L	25	0.0	0.187	7.2	LOS A	0.0	0.0	0.00	1.09	48.7
5	T	339	0.0	0.187	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		364	0.0	0.187	0.5	NA	0.0	0.0	0.00	0.07	59.1
West: Macpherson St (W)											
11	T	402	0.0	0.266	2.3	LOS A	2.3	15.9	0.57	0.00	50.0
12	R	59	0.0	0.266	10.0	LOS A	2.3	15.9	0.57	1.03	48.7
Approach		461	0.0	0.266	3.3	NA	2.3	15.9	0.57	0.13	49.8
All Vehicles		909	0.0	0.266	3.0	NA	2.3	15.9	0.34	0.17	50.8

Level of Service (LOS) Method: Delay (RTA NSW).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.

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