



Traffic Impact Assessment

**295 Church Street, Parramatta
Planning Proposal**

Ref: 14.393r01v02 TRAFFIX 295 Church Street, Parramatta

traffix
traffic & transport planners

po box 1061
potts point nsw 1335
t: +61 2 8324 8700
f: +61 2 9380 4481
w: www.traffix.com.au
abn: 66065132961



Contents

1. Introduction	1
2. Location and Site	2
3. Existing Traffic Conditions	5
3.1 Road Hierarchy	5
3.2 Key Intersections	8
3.3 Public Transport	11
3.4 Existing Site Traffic Generation	14
4. Description of Proposed Development	15
5. Parking Requirement	16
5.1 Planning Controls	16
5.2 Bicycle Parking	17
5.3 Car Share	18
5.4 Servicing	18
6. Traffic Impacts	20
6.1 Trip Generation	20
6.2 Traffic Distribution	21
6.3 Intersection Analysis	23
7. Access & Internal Design	25
7.1 Access Requirements	25
7.2 Internal Road Design	25
8. Conclusions	27



1. Introduction

TRAFFIX has been commissioned by 'Iris Capital' to undertake a Traffic Impact Assessment (TIA) in support of a Planning Proposal for the proposed rezoning of 295 Church Street, Parramatta. The planning proposal seeks to rezone the land and provide a mixed use development accommodating a combination of residential and retail land. It is noted that the development primarily relates to a residential land use with ancillary retail at ground and first floor level.

The site is located within the Parramatta City Council LGA and has been assessed under the relevant Council controls. This report documents the findings of our investigations and should be read in the context of the Planning Proposal, prepared separately by Mecone.

The objective of this report is to assess the traffic impacts of the concept plan that has been adopted for assessment purposes. In this regard, further detailed investigations will be undertaken at the future development application stage, at which time changes to the land use mix and intensity would be reasonably expected.

The report is structured as follows:

- Section 2: Describes the site and its location;
- Section 3: Documents existing traffic conditions;
- Section 4: Describes the proposed development;
- Section 5: Discusses the parking requirements;
- Section 6: Assesses traffic impacts;
- Section 7: Discusses access and internal design aspects; and
- Section 8: Presents the overall study conclusions.



2. Location and Site

The site currently accommodates a mix of retail, restaurant and commercial land use. It is located to the south of the Parramatta River and is bound by the external road network of Phillip Lane to the west, Church Street to the east and Phillip Street to the south. The site currently comprises mixed use retail/commercial uses with an approximate GFA of 3,210m².

The site has a western frontage of approximately 26 metres to Phillip Lane, a northern boundary of 35 metres to a neighbouring development, an eastern frontage of 35 metres to Church Street and a southern property boundary of 34 metres to a neighbouring development. There are currently two driveway crossings serving the site with access from Phillip Lane. The access driveways facilitate access to garages that accommodate parking associated with retail tenants (circa 5 parking spaces in a tandem configuration). In addition, a loading zone is provided directly adjacent the Phillip Lane frontage.

A Location Plan is presented in **Figure 1**, with a Site Plan presented in **Figure 2**. Reference should also be made to the Photographic Record presented in **Appendix A**, which provides an appreciation of the general character of roads and other key attributes in proximity to the site.

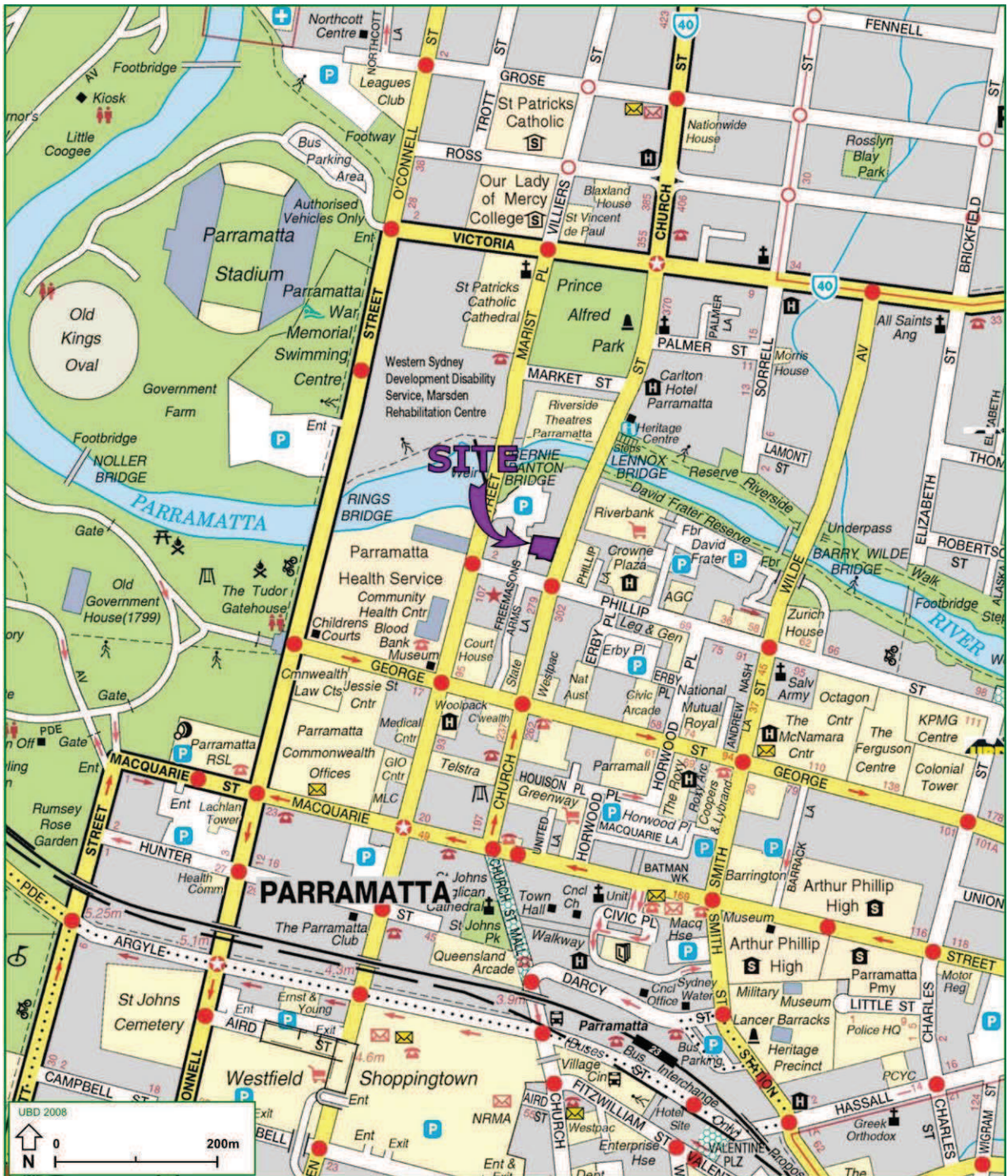


Figure 1: Location Plan



Figure 2 : Site Plan



3. Existing Traffic Conditions

3.1 Road Hierarchy

The road hierarchy surrounding the site is shown in **Figure 3**, with the following roads in proximity to the site being of particular interest:

- ➊ Phillip Street: a local road located approximately 33 metres to the south of the subject site. It connects from Marsden Street to the west of the site, to Charles Street, near the Parramatta Ferry Wharf. Phillip Street generally has a two-lane, two-way cross-section with auxiliary lanes at intersections and kerbside parking in selected locations along its length. Church Street is posted at 40km/hr in the vicinity of the site, and is estimated to carry in the order of 3,000vpd.

- ➋ Church Street: a road which runs in a north-south direction to the west of the site, and carries approximately 10,000vpd over the Parramatta River. Church Street is a local road in the vicinity of the site, between Victoria Street to the north of the river and the Great Western Highway to the south of the river. It generally has a two-lane, two-way cross-section with auxiliary lanes at intersections and kerbside parking in selected locations along its length. Church Street is posted at 40km/hr in the vicinity of the site.

- ➌ Marsden Street: a local collector road which runs in a north-south direction to the west of the site, and carries approximately 14,000vpd. It provides connection over the Parramatta River via the Marsden Street Bridge, and generally has a two-lane, two-way cross-section with auxiliary lanes at intersections and kerbside parking in selected locations along its length. Marsden Street is posted at 50km/hr in the vicinity of the site.



- ➡ Phillip Lane: It is understood that Phillip Lane is a private road which forms part of the Lennox Bridge Car Park site, however it is relied upon for vehicular access to various properties fronting Church Street, Phillip Street, Marsden Street and including the subject site. It provides direct access to Phillip Street and will accommodate all movements associated with the subject development.

It can be seen from **Figure 3** that the site is conveniently located with respect to the local road systems serving the region. It is therefore able to effectively distribute traffic onto the wider road network, minimising traffic impacts.

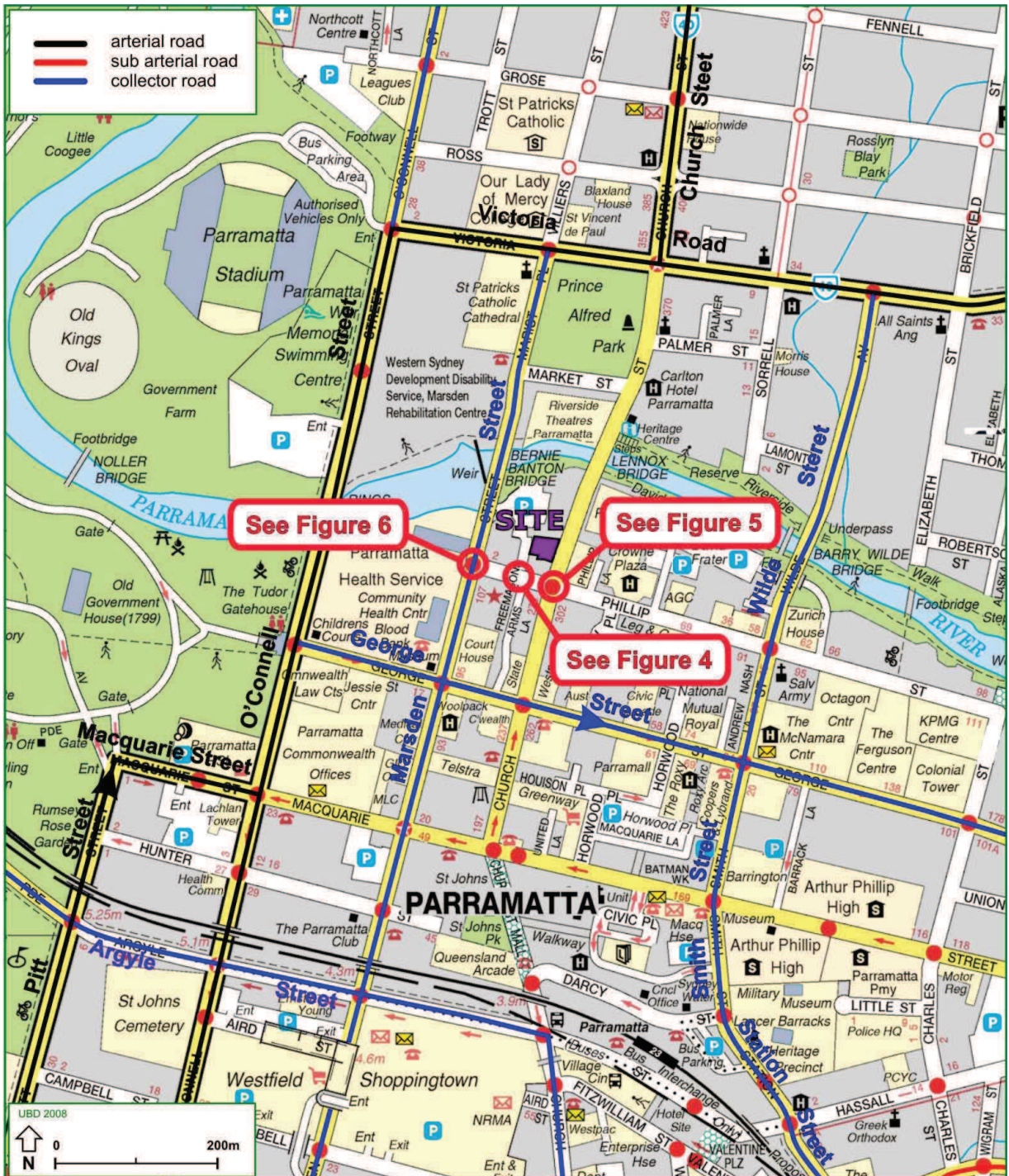


Figure 3: Surrounding Road Hierarchy



3.2 Key Intersections

The key intersections in the vicinity of the site are shown below and provide an understanding of the existing road geometry and alignment:

3.2.1 Phillip Street / Phillip Lane / Freemasons Arms Lane Intersection

The Phillip Street / Phillip Lane / Freemasons Arms Lane Intersection (provided in **Figure 4** below) is located to the immediate south of the subject site and forms a priority-controlled intersection. This intersection provides access to the existing site and Phillip Lane itself accommodates a high volume of service vehicles associated with development fronting Church Street, Phillip Street, Marsden Street and the existing “Riverside Parramatta” development. It is evident from on-site observations that the lane accommodates a proportion of heavy vehicles associated with servicing during the morning peaks. Notwithstanding this, the significant and proposed redevelopment of the area seeks to further improve the loading facilities with all future development (Riverside Development, Phillip Street Development and the subject site) assumed to provide off-street loading which would naturally improve the functionality of Phillip Lane and reduce parking congestion on street.



Figure 4: Phillip Street /Phillip Lane/ Freemasons Arms Lane Intersection



3.2.2 Church Street / Phillip Street Intersection

The Church Street / Phillip Street Intersection is located to the south east of the subject site, and operates as a four-way signalised intersection. Based upon traffic analyses undertaken by Varga Traffic Planning as part of the application for the proposed “Riverside Parramatta” Development, this intersection is currently operating within acceptable capacity limits, at Level of Service A and 33% and 29% degree of saturation during the AM and PM peak hours respectively (noting that 90% degree of saturation typically represents acceptable operation at a signalised intersection).



Figure 5: Church Street / Phillip Street Intersection



3.2.3 Marsden Street / Phillip Street Intersection

The Marsden Street / Phillip Street Intersection is located to the west of the subject site. It operates as a four-way signalised intersection with the western leg providing access (controlled by boomgates) to/from the Parramatta Community Health Centre. Based upon traffic analyses undertaken by Varga Traffic Planning as part of the application for the proposed “Riverside Parramatta” Development, this intersection is currently operating within acceptable capacity limits, at Level of Service A and 34% and 55% degree of saturation during the AM and PM peak hours respectively (noting that 90% degree of saturation typically represents acceptable operation at a signalised intersection).

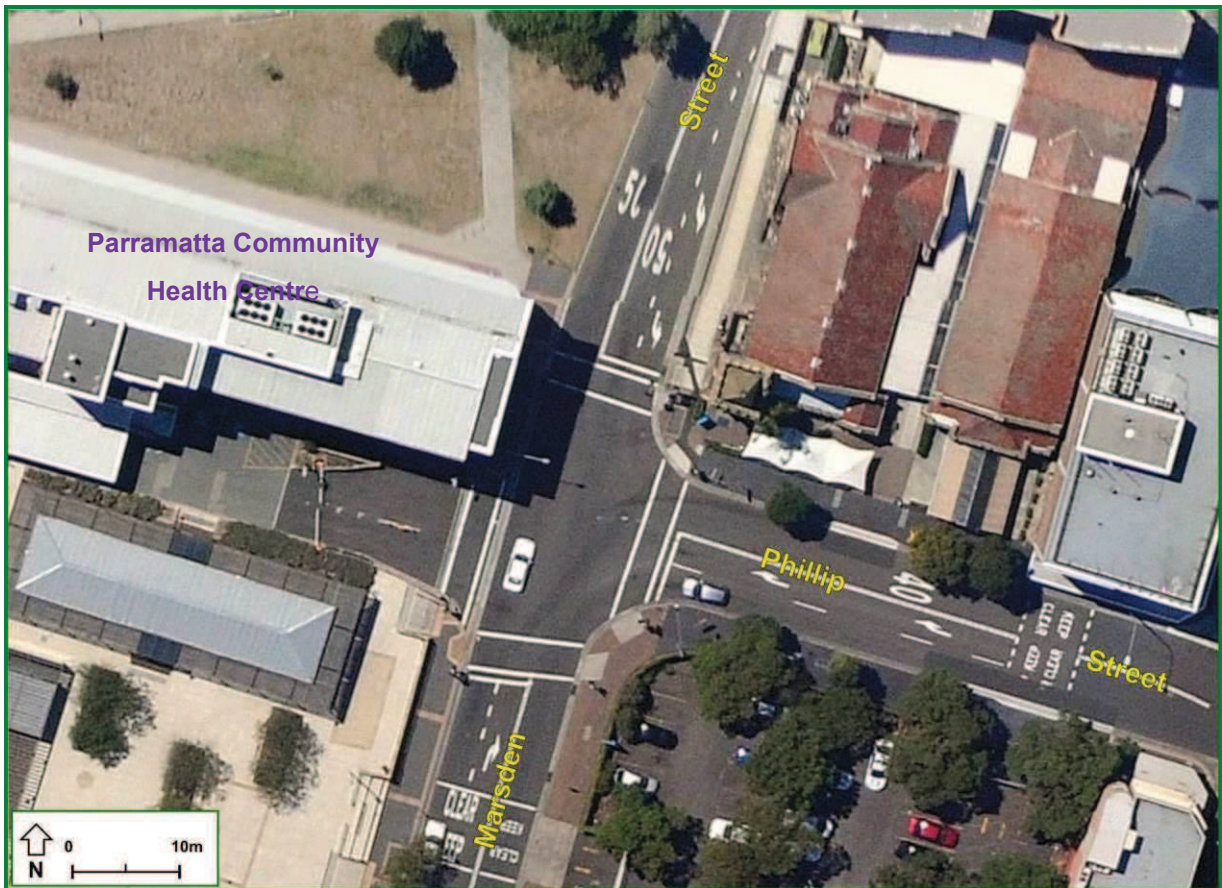


Figure 6: Marsden Street / Phillip Street Intersection



3.3 Public Transport

3.3.1 Existing Services

The subject site is within Parramatta City Centre and is therefore well serviced by public transport. It is approximately a 700m (or a 10min walk) to/from Parramatta Railway Station, which is situated to the south-east of the site. The public bus services on the local road network are as shown in **Figure 7**, and include both local and regional services. There are several bus stops within a 400m radius of the site, on Church Street, Phillip Street, George Street and Macquarie Street.

The Parramatta Rivercat Wharf is located approximately 800m to the east of the site, via an 8 minute walk along Phillip Street and/or the pedestrian path along the river.

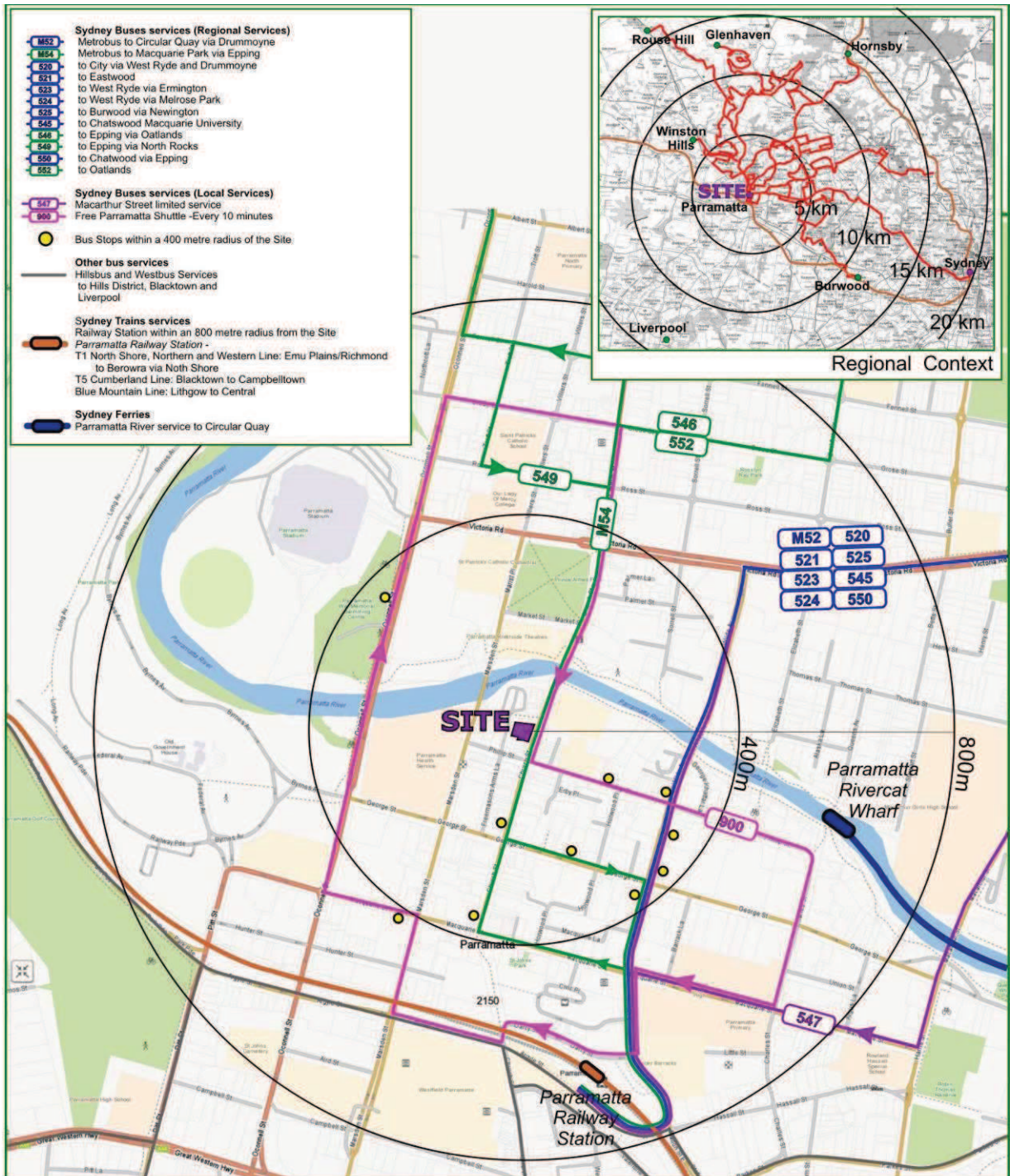


Figure 7: Existing Public Transport Services



3.3.2 Future Light Rail

Parramatta City Council (Council) proposes a Western Sydney Light Rail Network centred on Parramatta, linking key activity centres in the region. The network stretches from Macquarie Park and Strathfield in the east to Rouse Hill in the north, Bankstown and Liverpool in the south and Wetherill Park and Blacktown in the west. The potential light rail routes identified included:

- Parramatta to Macquarie Park via Carlingford
- Parramatta to Castle Hill via Old Northern Road
- Parramatta to Liverpool via the T-way
- Parramatta to Bankstown
- Parramatta to Sydney Olympic Park
- Parramatta to Rouse Hill
- Parramatta to Ryde via Victoria Road
- Parramatta to Sydney CBD via Parramatta Road
- Parramatta to Macquarie Park via Eastwood
- Parramatta to Castle Hill via Windsor Road



Figure 8: Light Rail Alignment Options Considered

It is understood that the state government has recently allocated funding to accelerate work on the project, with the first task to identify the highest priority corridor from Parramatta and carry out a detailed feasibility study. Once the first stage of work to identify the best light rail route is completed, a number of viable options will be taken forward for detailed design and feasibility.

Whilst this study is in its early stages and the delivery of the light rail network is not likely to commence for several years, ultimately once delivered, it will further improve accessibility between the subject site and the key activity centres in the region.

3.4 Existing Site Traffic Generation

The existing site accommodates 3,210m² GFA of retail area however no parking is provided for public use. The subject site primarily attracts 'walk by' trips with vehicular generation associated with the site limited to retail tenants and service vehicles. The generation of the existing site is therefore considered to be minor.



4. Description of Proposed Development

Approval from Parramatta City Council is sought for the rezoning of the 295 Church Street Development. A detailed description of the proposal is provided in the Planning Proposal prepared separately by Mecone. The key aspects from a traffic perspective are summarised below:

- To establish a mixed use development comprising:
 - A maximum residential yield of 240 units; and
 - Retail Gross Floor Area (GFA) ranging from 680m²– 1380m²
- An access driveway located on Phillip Lane facilitating entry to the basement level car parking
- A Loading Dock (at grade) accommodating two service vehicles (8.8m MRV's)

It is noted that the above indicative yield has been adopted as a maximum to identify the traffic implications of the land rezoning and in turn represents a sensitivity type analysis. Reference should also be made to the architectural plans issued separately by 'Grimshaw Architects'.



5. Parking Requirement

5.1 Planning Controls

All car parking is to be provided in accordance with the Parramatta City Centre Local Environmental Plan 2007, Part 2c – Car Parking. It is noted that the rates identified in this LEP are maximum rates. In this regard, **Table 1** below provides an overview of the maximum car parking requirement permitted on site based on the indicative development yields that have been provided to TRAFFIX.

Table 1: 'Planning Proposal' Council Parking Rates

Type	GFA/Number	Council Parking Rates	Maximum Spaces Permitted
Residential			
All bedrooms	240	1 space per unit	240
Visitor	240	1 spaces per 5 units	48
Retail			
Retail	680-1380m ²	1 space per 30m ²	23-46
Total			311-332

It is evident from the above that with 240 units and a range of retail from 680m²-1380 m² GFA, the proposed development and indicative yield identified above is permitted to provide between 311-332 parking spaces. Whilst it is intended that the development will comply with the relevant residential parking component, it is considered that a lower level of parking provision would be appropriate for the retail components of the development, on the basis that it would benefit from extremely convenient access to public transport and the retail area would primarily attract walk by trips within the precinct. A suitable level of parking would be provided for all retail tenants only.

Whilst detailed site layout plans have not yet been prepared, the proposed residential parking provisions are expected to be consistent with the requirements of Council's DCP and other relevant provisions. It is noted that concept development has resulted in a potential parking provision of 150 spaces.



Any departure from the retail rates (if sought) would be subject to review during the Development Application process. Compliance with relevant car parking controls will be confirmed as part of any subsequent development application(s), following approval of this Planning Proposal.

5.2 Bicycle Parking

Council's DCP stipulates the following requirements for bicycle parking:

- Bicycle parking for business and retail premises is to be provided at a rate of 1 bicycle space per 200 sqm of floor space.
- Bicycle parking for residential flat buildings is to be provided at a rate of 1 bicycle space per 2 dwellings.
- Bicycle parking is to be provided in the form of Class 2 compounds, as specified in AS 2890.3 – Bicycle Parking Facilities. These facilities may be located in storage areas if good access is provided.
- All bicycle parking should be located in a safe and secure location that is under cover and convenient for users.
- Trip end facilities including showers and lockers must be provided to adequately service the number of bicycle parking spaces required in business and retail premises.
- Bicycle parking in the public domain must be located as close as possible to the main entrance of the building at ground level.

Based upon the above requirements, a total of 120 bicycle parking spaces for residents and 3-7 bicycle parking spaces to service the retail components of the development should be provided. It is proposed that compliance with Council bicycle parking controls will be provided and can be further detailed during relevant Development Applications.



5.3 Car Share

Council's DCP stipulates the following controls with regards to car share parking:

- ② 1 carshare parking space is to be provided for any residential development containing more than 50 residential units and is within a 800m radial catchment of a railway station (which this development is) or 400m radial catchment of a bus stop with a service frequency of an average of 15 minutes or less during the morning peak (7 am - 9 am) in either direction.
- ② Carshare parking spaces must be publicly accessible at all times, adequately lit and sign posted and located off street.

In light of the above and the proposed parking strategy discussed in Section 5.1, the proposed car park will not be “publicly accessible at all times. Having regard for the extensive redevelopment in the locality, it would be appropriate to provide a dedicated bay (or bays) in lieu of on-street parking in order to service the entire local catchment. As noted in Section 5.2, this is a matter that can be addressed at during future detailed investigations which will be undertaken at the future development application staging.

5.4 Servicing

5.4.1 Development Provision

Council's DCP attracts a rate of 1 loading bay per 400m² of Gross Floor Area for retail use. Application of this rate to the 680m²-1380m² range would require 2-4 spaces. The residential component of the development will ultimately operate as a typical residential development with servicing expected to primarily be associated with waste collection (by private contractor) and occasional attendance at site by removalist vehicles. In this regard, it is proposed that a loading area capable of accommodating two 8.8m MRV's are provided at grade within the property boundary.

The 8.8m MRV is typically adopted as the design vehicle where there is significant movement of goods but provision of more than the occasional HRV or AV is not necessary (AUSTROADS Guidelines). It is therefore considered that the provision of two loading spaces for 8.8m MRV's is an appropriate amenity noting the site constraints which are discussed in further detail below. TRAFFIX has been involved in numerous mixed use developments where the MRV is the design vehicle utilised in these



situation. It is common to accept a condition of consent that limits the development to this size of truck and this approach recognises site constraints apply in this and many other circumstances

5.4.2 Site Constraints

The site is constrained in nature. In particular, a width of 35 metres from Phillip Lane to Church Street forms the northern boundary. In this regard, a compliant ramp system with access to an internal loading area would require a ramp length of approximately 42 metres. It is for these reasons that at grade loading area has been pursued.

AS 2890.2 (2002) states that for occasional servicing:

- ➊ the vehicle shall be able to stand wholly within the site and
- ➋ Reverse manoeuvres at the property boundary, if permitted by the relevant authority, shall be limited to one only either on entering or departing and shall be subject to consideration of both safety and obstruction to other on street traffic.

The loading area will require a single reverse manoeuvres into the site with all exit movements in a forward direction. This is considered satisfactory on the basis that volumes will not be significant and that a detailed Loading Dock Management Plan (LDMP) would be provided. The LDMP would address the management of the bays and most importantly the supervision of reverse manoeuvres at all times to ameliorate any concerns Council may have relating to safety. This could be addressed at DA stage detailing the traffic management measures to be implemented to allow for the safe movement of both vehicles and pedestrians. Irrespective of the proposed service area, it is also highly noteworthy that the proposed car park would provide dedicated courier bays (suitable for B99 vans) which would further reduce the volume of traffic utilising the loading docks and these are typical vehicles associated with residential developments.

5.4.3 Conclusion

In summary, the servicing provision is considered suitable for the proposed development noting the site constraints and the benefit that all service vehicles can be accommodated off street further improving the existing parking impact of service vehicles on Phillip Lane. This has also been implemented with the Riverside Development Planning Proposal Application and it is assumed that this approach would be taken for all other re-development in the locality to improve the urban design and public amenity of Phillip Lane.



6. Traffic Impacts

6.1 Trip Generation

The impacts of the proposed development on the external road network have been assessed having regard for the indicative yield scenarios as summarised in Section 4. This assessment has been undertaken in accordance with the requirements of the RMS Guideline and as such, the traffic generation rates published in the RMS Guide have been adopted. The result of this assessment is summarised below:

6.1.1 Residential

The RMS Technical Direction 2013/04a (TD 2013/04a) was published in August 2013 documenting updated trip rate and research data to that published in the RMS Guide to trip Generating Developments. It is particularly noteworthy that the Technical direction states that “*it must be followed when RMS is undertaking trip generation and/or parking demand assessments.*” In this regard, the trip rates that apply to the high density residential flat building are 0.19 trips per unit during the AM peak and 0.15 trips per unit during the PM peak. Application of these rates to the 240 units result in 46 vehicles trips during the AM peak and 36 vehicle trips during the PM peak. The resulting split of 80/20 during the peak periods provides the following generation and directional split:

➡ 9 in, 37 out during the AM peak

➡ 29 in, 7 out during the PM peak

The impacts of these additional volumes are discussed in the following sections.

6.1.2 Retail

To assess the impacts of the retail land use, it has been assumed that the future retail component of the development will be similar to that presently on the site. The RMS traffic generation rates for speciality retail are applicable to speciality retail developments based on the assumption that the full complement of parking would be provided for public users. As mentioned in Section 5.1, it is intended to provide parking for tenants only with patrons primarily associated with walk-by trips and residents/employees within the local catchment. This is consistent with the existing retail/commercial use on site which it is noted provides a total area of 3,210m² GFA. As such, the traffic generation



associated with the retail development will be negligible and a worst case assessment would see all retail tenants (assumed as 4 tenancies) arrive during a peak hour, and generate 4 veh/hr during the peak periods.

Combined Generation

Based on the above assumptions the site would generate approximately 50 veh/hr during the AM peak and 40 veh/hr during the PM peak period with the following directional split:

- 13 in, 37 out during the AM peak
- 29 in, 11 out during the PM peak

6.2 Traffic Distribution

The intersection of Phillip Street and Phillip Lane will accommodate all vehicle movements associated with the subject site. Having regard for the surveys undertaken as part of the Riverside Development, the following traffic distribution assumptions have been applied to the development traffic generation. The trip distribution splits have therefore taken account of the existing turning volumes of Phillip Street and Phillip Lane:

➤ AM Peak

- Vehicles entering the site: 70% from Marsden Street (West) and 30% from Church Street (East);
- Vehicles exiting the site: 50% to Marsden Street (West) and 50% to Church Street (East);

➤ PM Peak

- Vehicles entering the site: 63% from Marsden Street (West) and 27% from Church Street (East);
- Vehicles exiting the site: 25% to Marsden Street (West) and 75% to Church Street (East);

Application of this traffic distribution to the traffic generation above, results in the development traffic network demand flows presented in **Figure 9** and **Figure 10** below.

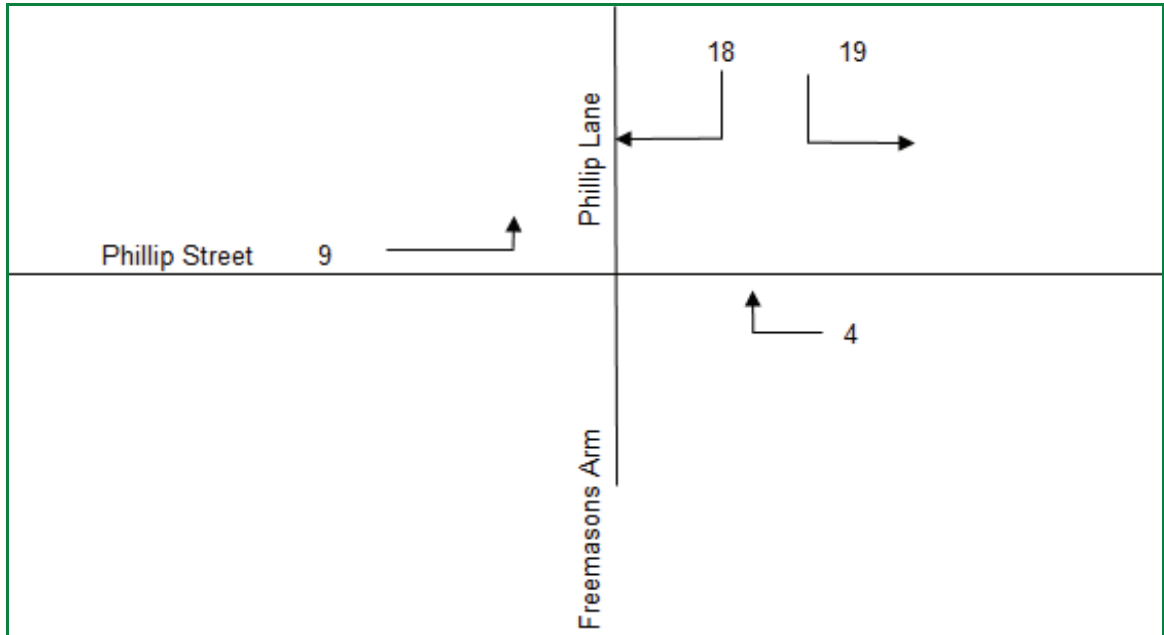


Figure 9: AM Development Traffic Flows

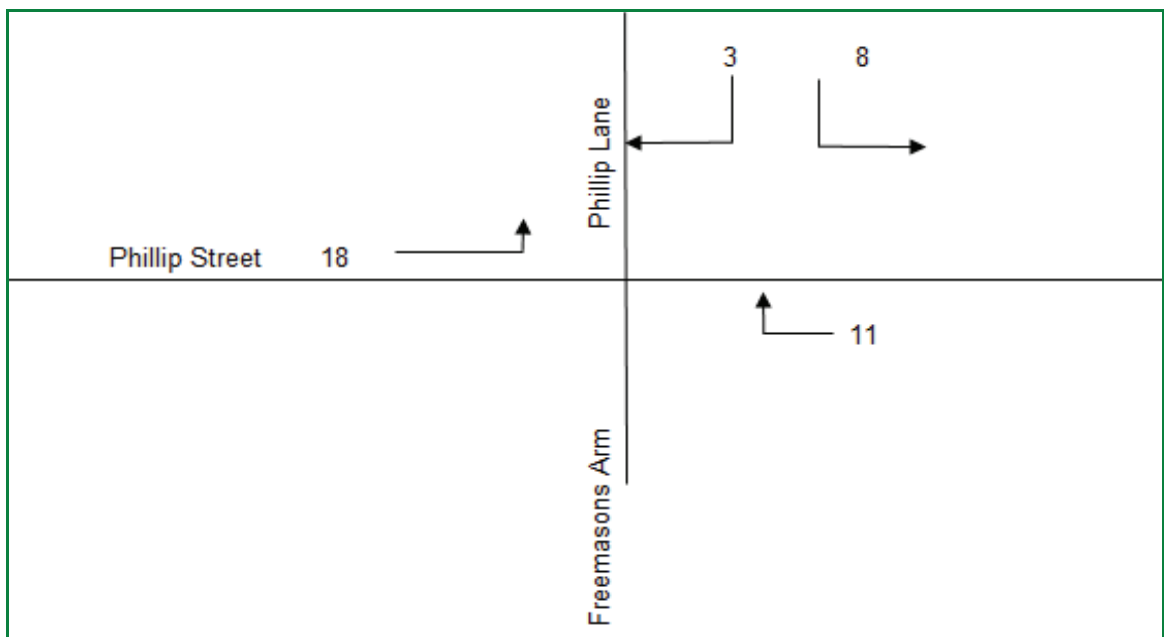


Figure 10: PM Development Traffic Flows



6.3 Intersection Analysis

The above forecasted traffic volumes are minor and equate to an additional vehicle movement every 1-1.5 minutes during the respective peak periods. Furthermore, 'AUSTROADS' states that "at un-signalised intersections with minor roads where there are relatively low volumes of cross turning traffic, capacity considerations are usually not significant and capacity analysis is unnecessary. In particular, AUSTROADS Table 6.1 of Section 6.1.1 provides intersection volumes below which capacity analysis is unnecessary. They are as follows:

- Two Lane Major Road – 400 veh/hr (two-way)
- Cross Road – 250 veh/hr (two-way)

The existing and proposed AM and PM peak hourly volumes are provided below in **Table 3** providing a direct comparison to the threshold volumes identified in the 'AUSTROADS' Guide.

Table 3: Existing & Proposed Traffic Volume Comparison

Intersection: Phillip St/Phillip Lane	Road	'Austroads' Guidance	AM Peak (veh/hr)	PM Peak (veh/hr)
Existing Scenario	Phillip Street	400	320	364
	Phillip Lane/Freemasons	250	34	91
Existing Plus Development Scenario	Phillip Street	400	333	393
	Phillip Lane/Freemasons	250	71	128

It is evident from **Table 3** that the existing plus development traffic volumes do not exceed the threshold that would require intersection analysis. As mentioned in Section 3.2, the Riverside Development which is located to the direct north of the subject site undertook intersection analysis for:



- Phillip Street/ Phillip Lane
- Phillip Street /Marsden Street
- Phillip Street/Church Street

The 'Varga Traffic Planning' Report dated 20 January 2014 summarised all three intersections operating at LoS A. This analysis indicates that the intersection of Phillip Street and Phillip lane does operate with some spare capacity and in this regard the additional volume of the proposed development will not adversely affect the existing operation. Whilst the analysis undertaken indicates acceptable performance, it is recommended that future traffic modelling may be necessary for subsequent development applications within the precinct.

In summary, the traffic generation associated with the proposed development is anticipated to have a negligible impact and to remain generally unchanged from current conditions.



7. Access & Internal Design

7.1 Access Requirements

7.1.1 Car Park Access Driveway

The car park access driveway requires a Category 2 Driveway under AS2890.1 (2004), providing 6.0 metres driveway width. In response, the development will provide a driveway with access to Phillip Lane which would satisfy the minimum requirements of AS2890.1.

7.1.2 Loading Access Driveway

The loading access to be provide at grade will require a 7 metre width noting that AS 2890.2 requires a 3.5 metre wide bay for an MRV. In response, the development will provide a separate driveway with access to Phillip Lane which would satisfy the minimum requirements of AS2890.2.

7.2 Internal Road Design

7.2.1 Relevant Australian Standards

The internal basement car park will be designed in accordance with the Australian Standard requirements of AS2890.1 (2004) *Part 1: Off-street car parking*, AS2890.2 (2002) *Part 2: Off-street commercial vehicle facilities*, AS2890.6 (2009) *Part 6: Off-street parking for people with disabilities* and AS4299 (1995) *Adaptable housing*. The following characteristics are noteworthy:

7.2.2 Parking Modules

- ➊ All residential and retail tenant parking spaces would be designed in accordance with a Class 1A user and provided with a minimum space length of 5.4m a minimum width of 2.4m and a minimum aisle
- ➋ All spaces located adjacent to obstructions of greater than 150mm in height would be provided with an additional width of 300mm;



- Dead-end aisles would be provided with the required 1.0m aisle extension in accordance with Figure 2.3 of AS2890.1;
- All disabled parking spaces would be designed in accordance with AS2890.6. Spaces would be provided with a clear width of 2.4m and located adjacent to a minimum shared area of 2.4m;
- All adaptable parking spaces would be designed in accordance with AS4299. Spaces would be provided with a minimum space length of 5.4m a minimum width of 3.8m.

7.2.3 Ramps

- All ramps would have a maximum gradient of 25% (1 in 4) with transitions that satisfy AS2890.1.

7.2.4 Clear Head heights

- A minimum clear head height of 2.2m would be provided for all areas within the basement car park as required by AS2890.1.
- A clear head height of 2.5m would be provided above all disabled spaces as required by AS2890.6 and AS4299.
- Strict application of AS 2890.2 would require a 4.5m head height clearance for an 8.8m MRV. This is however considered onerous and unnecessary noting that all servicing will be undertaken by a private contractor. It is therefore recommended that an operation head height clearance of between 3.5 - 4.0 metres is provided and this could be addressed at further DA stages.

7.2.5 Other Considerations

- All columns are required to be located outside of the parking space design envelope shown in Figure 5.2 of AS2890.1;
- Appropriate visual splays are to be provided in accordance with the requirements of Figure 3.3 of AS2890.1 at all accesses;

7.2.6 Summary of Internal Design

In summary, the internal configuration of the basement car park and loading areas will be designed in accordance with AS2890.1, AS2890.2, AS2890.6 and AS4299, the details of which will be provided at subsequent development application stages.



8. Conclusions

The following conclusions are noteworthy:

Parking

- The proposed development with a maximum residential yield of 240 units and retail GFA ranging from 680-1380m² is permitted to provide a maximum of between 311-332 parking spaces. In response, it has been demonstrated through concept development undertaken by Grimshaw Architects that a basement of 150 parking spaces can be provided and will not exceed the maximum parking rates identified in the Parramatta City Centre Local Environmental Plan 200. The allocation of parking will of course be subject to further analysis however it would be proposed that the majority of parking be dedicated the residential land use.

Traffic Generation

- Based on the latest RMS Guidance, the development is forecast to generate an additional 50 in the AM peak and 40 trips in the PM peak on the surrounding road network, As discussed in Section 6 of this report, the proposed development is a minor traffic generator.

Intersection Analysis

- Intersection Analysis undertaken within the precinct for the Riverside development has identified that the nearby intersections operate at Level of Service A. Notwithstanding this, it has been demonstrated that the volumes accommodated on Phillip Street and Phillip lane do not warrant intersection analysis. That is, the proposed development volumes do not exceed the thresholds identified in AUSTORADS.

Vehicular Access

- Car Park Access Driveway

The car park access driveway requires a Category 2 Driveway under AS2890.1 (2004), providing 6.0 metres driveway width. In response, the development will provide a driveway with access to Phillip Lane which would satisfy the minimum requirements of AS2890.1.



- Loading Access Driveway

The loading access (at grade) will require a 7 metre width noting that AS 2890.2 requires a 3.5 metre wide bay for an MRV. In response, the development will provide a separate driveway with access to Phillip Lane which would satisfy the minimum requirements of AS2890.2.

- Internal Design

- The internal access arrangements, including car parking ,will be designed in accordance with the Australian Standard requirements of AS2890.1 (2004) *Part 1: Off-street car parking*, AS2890.2 (2002) *Part 2: Off-street commercial vehicle facilities*, AS2890.6 (2009) *Part 6: Off-street parking for people with disabilities* and AS4299 (1995) *Adaptable housing*.

This report demonstrates that the proposed rezoning is supportable on traffic planning grounds, based on the concept plan that has been adopted for assessment purposes, recognising that further detailed investigations will be undertaken at the future development application stage.



Appendix A

Photographic Record



View looking east at the site frontage to Phillip Lane



View looking in a south east direction at the loading area located directly adjacent the site frontage.





View looking in a south east direction from within the existing car park of the Lennox bridge car park. .



View looking south along Phillip Lane towards Phillip Street.





View looking south along Phillip Lane towards Phillip Street providing a more detailed view of the lane geometry.



View looking west along Phillip Street towards Phillip Lane and Marsden Street.

