

Drivas Property Group
**220-230 Church Street and 48
Macquarie Street, Parramatta**
Traffic and Transport Assessment

Rev A | 16 April 2015

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 601138

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Job title		220-230 Church Street and 48 Macquarie Street, Parramatta		Job number		601138	
Document title		Traffic and Transport Assessment				File reference	
Document ref							
Revision	Date	Filename	20150327 TIA Church and Macquarie Draft Report.docx				
Draft 1	27 Mar 2015	Description	First draft				
			Prepared by	Checked by	Approved by		
		Name	Joey Schaasberg	James Turner	Andrew Hulse		
		Signature					
Issue	10 Apr 2015	Filename	20150410 TIA Church and Macquarie Issue Report.docx				
		Description					
			Prepared by	Checked by	Approved by		
		Name	Joey Schaasberg	James Turner	Andrew Hulse		
		Signature					
Rev A	16 Apr 2015	Filename	20150414 TIA Church and Macquarie RevA Report.docx				
		Description	Updated with new schedule and comments				
			Prepared by	Checked by	Approved by		
		Name	James Turner	James Turner	Andrew Hulse		
		Signature					
		Filename					
		Description					
			Prepared by	Checked by	Approved by		
		Name					
		Signature					
Issue Document Verification with Document ☒							

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1 Introduction

1.1 Background

Drivas Property Group and Coombes Property Group have commissioned Arup to undertake a transport assessment of the proposed rezoning at 220-230-Church Street and 48 Macquarie Street, Parramatta. The site is located on the corner of Church Street and Macquarie Street within the Parramatta City Centre within the Parramatta Local Government Area (LGA). Reference is made to the relevant Parramatta City Council (PCC): Development Control Plan (DCP) and Local Environment Plans (LEP).

The site currently contains a two storey building with retail and restaurant functions. The proposal includes the redevelopment of retail functions, a 62 level residential tower and off street parking.

1.2 Scope

This traffic impact assessment supports the Planning Proposal for 220-230-Church Street and 48 Macquarie Street, Parramatta and will outline the following:

- Existing transport conditions
- Forecast traffic generation
- Road network impacts
- Parking provisions
- Access arrangements
- Public transport availability

2 Existing conditions

2.1 Site location

The site is located in the Parramatta City Centre, on the corner of Church Street and Macquarie Street. Currently the site has two addresses, being 220-230 Church Street to the west and 48 Macquarie Street to the south of the building. See Figure 1.

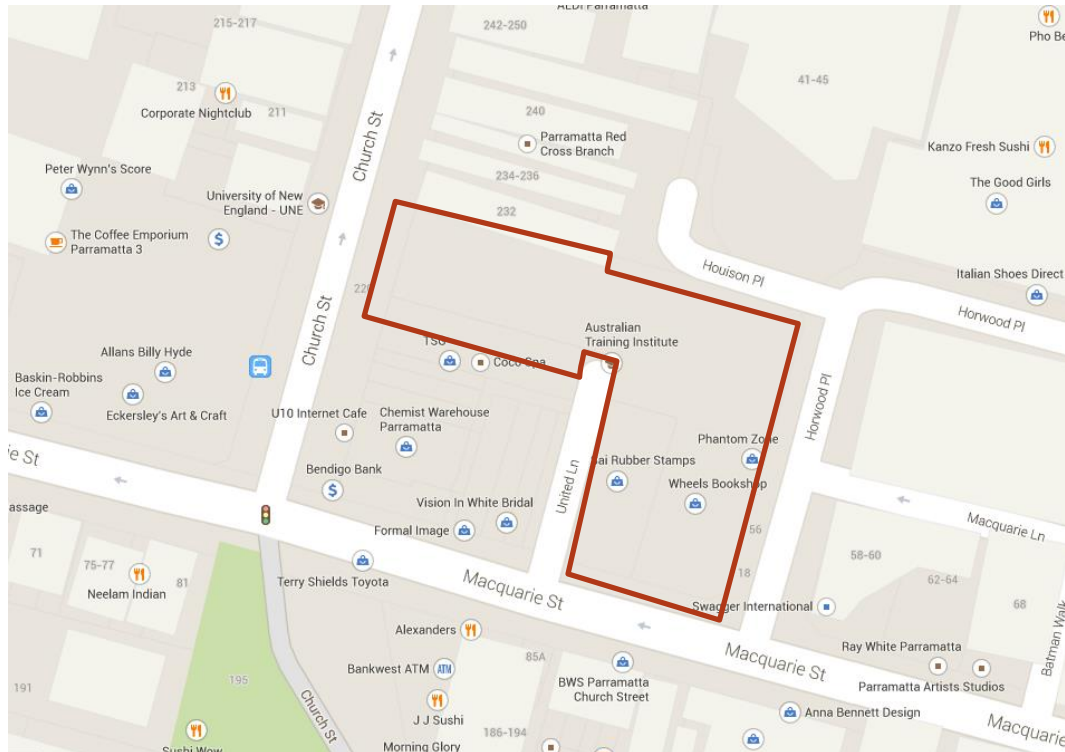


Figure 1: Site location

2.2 Road network and access

The site is located at the intersection of two locally well connected roads. Church Street connects the site to North Parramatta, crosses the A40 and goes further into Northmead and Baulkham Hills as Windsor Road. Church Street is a one way street northbound between Macquarie Street and George Street.

Macquarie Street to the south of the building and George Street to the north are local east-west roads, operating as one way pairs into and out of the Parramatta CBD respectively.

Road access to the site is currently provided through two cul-de-sacs. United Lane is accessed from Macquarie Street and Houison Place is accessed at the rear of the building, from Horwood Place (see Figure 1).

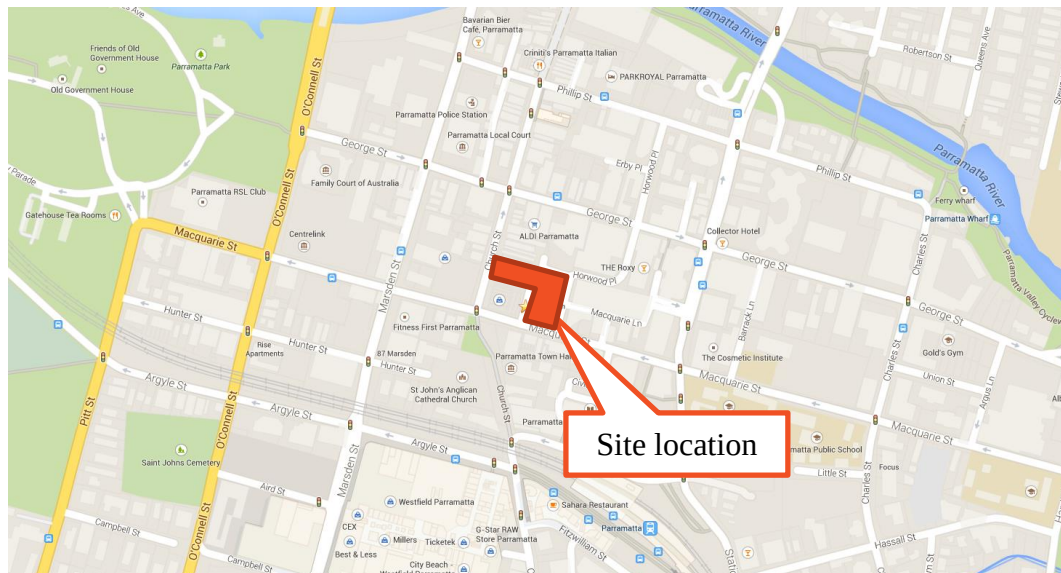


Figure 2: Road access to the site.

Traffic surveys within the Parramatta City Centre were undertaken in March 2007. Recent traffic counts at five sites located to the east and north of the city centre (in May 2014) were used to determine traffic growth in the area. It was found that traffic overall has not grown in the area and has in fact decreased at a number of sites. Therefore, the 2007 traffic counts have been deemed appropriate background traffic and are described for each peak hour below in Table 1.

Table 1: Two-way traffic flows

Location	AM peak hour (8:00-9:00)	PM peak (17:00-18:00)
Church Street (between Macquarie and George)	30	100
Smith Street (between Macquarie and George)	1150	1070
Macquarie Street (between Church and Smith)	420-800*	720-800*
George Street (between Church and Smith)	800-910*	560-680*

*A number of vehicles are lost and gained on Macquarie Street and George Street due to the Horwood Place access and the large multi-storey car park.

2.3 Parking

2.3.1 On-street parking

On-street parking is meter restricted within the Parramatta City Centre. Free parking is offered on Sundays.

- Macquarie street offers 1P parking (8am-6pm Monday-Saturday) and 4P (6pm-10pm Monday to Friday, 8am-10pm Saturday).
- Houison Place offers 1/2P parking (8am-6pm Monday-Friday) and 4P (6pm-10pm Monday-Friday, 8am-10pm Saturday).
- Horwood Place offers 1/2P (8am-6pm Monday-Friday) and 4P (6PM-10pm Monday-Friday) 8am-10pm Saturday.

There is limited free 15 minute ticket parking provided in the streets surrounding the building block of the site, including Church Street, Macquarie Street, George Street and Horwood Place.

Parking is generally provided at \$2.50 per hour for short-stay areas and \$1.50 per hour for commuter parking areas, with rates up to \$3.50 within the central CBD. Rates are capped at a maximum of \$7.70 or \$6.00 per day for some streets in the centre close to the site.

A part-time (Friday and Saturday, from 10.30 pm-4am) taxi rank operates on George Street between Church Street and Horwood Place.

2.3.2 Off-street parking

The site currently offers no on-site parking.

Parramatta has a number of paid public parking stations within walking distance of the site. The relevant sites near the site include:

- Macquarie Street PCC Car Park
- Leabeter Street level parking PCC Car Park
- Horwood Street PCC Car Park
- Horwood Place Secure Parking
- Erby Place Car Park
- Lennox Bridge Car Park
- Brand Smart Car Park
- Hunter Car Park
- 80 George Street Wilson Car Park

2.4 Public transport network

2.4.1 Parramatta interchange

Parramatta is highly accessible by public transport. The Parramatta Interchange is located to the west of the site within 10 minutes walking distance and includes train services on the T1 North Shore, Northern & Western Line, Blue Mountains Line and the T5 Cumberland Line as shown in Figure 3.

The interchange also provides connection to a wide range of bus services including Transitway services on Argyle Street. Bus services operate to key centres surrounding Parramatta including Epping, Bankstown, Liverpool and Rouse Hill.

The site is also located within walking distance of the Parramatta ferry wharf. The wharf provides regular ferry services along Parramatta River to Circular Quay.

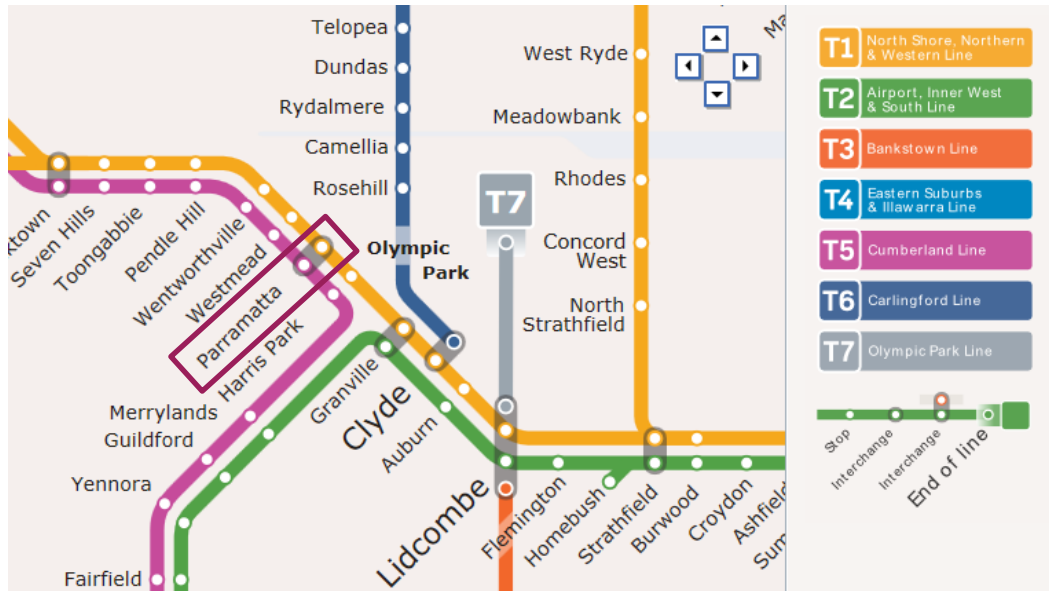


Figure 3: Sydney Trains map

2.4.2 Free shuttle bus

The Parramatta Shuttle Bus (Line 900, formerly The Loop) is a free transport solution that connects tourists, residents and commuters to the commercial, retail and recreational landmarks of the city. There are stops located within five minutes walking distance west of the site (Macquarie Street) or south (Argyle Street). The free Parramatta Shuttle Bus runs every 10 minutes, seven days a week.



Figure 4: Parramatta Free Shuttle

2.4.3 Planned transport improvements

There are several transport planning documents related to the Western Sydney or Parramatta City area. Key plans developed by PCC which are likely to result in either a reduction in vehicle trips, or a redistribution of existing vehicle trips are as follows:

- **Western Sydney Light Rail Network (PCC).** This is a long term plan which identifies connections to Castle Hill, Macquarie Park, Rhodes and Bankstown. Parramatta City Council has completed the a feasibility study into the proposed Western Sydney Light Rail Network. Two lines have been proposed as part of the first stage of the network:
 - Westmead to Macquarie Park
 - Castle Hill to Rydalmere

Both of these lines have been identified to run along Church Street (north-south) and Macquarie Street (east-west) through the City Centre.

Future identified stages of the Light Rail network include a further line to the east connecting to Sydney Olympic Park and Rhodes, and a line to the south to Chester Hill and Bankstown (along the southern portion of Church Street to Woodville Road).

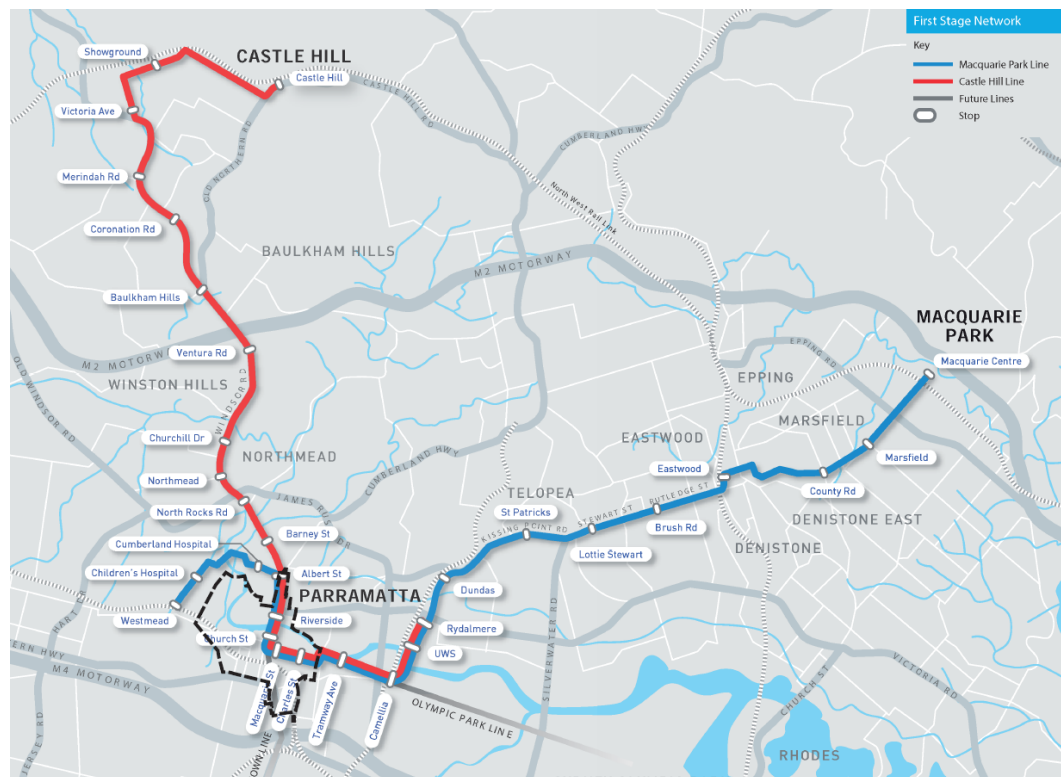


Figure 5: Western Sydney Light Rail

- **Western Sydney Regional Ring Road (PCC).** This plan involves prioritised upgrades for key intersections on the roads surrounding greater Parramatta including Cumberland Highway, James Ruse Drive and M4 Motorway. It is understood that this will improve efficiency in the surrounding road network and take through traffic away from the city centre.

- **Integrated Transport Plan for Parramatta City Centre (PCC).** This plan involves prioritising active and communal transport opportunities over commuter and private vehicle movements. The Strategy Plan covers key aspects of travel behaviours into the centre.

2.5 Walking and cycling network

The site is in an established urban area with a good network of footpaths on either side of the road. The site is located in the City Centre and offers a car free pedestrian connection towards Parramatta station via Church Street. Crossing facilities are provided at all signalised intersections on approach to the site.

There is a moderately dense cycling network surrounding the site, mostly on-road cyclepaths with low/moderate road traffic, with the exception of Macquarie Street. The 12 km Parramatta Valley Cycleway is located north of the site, and connects Putney to Elizabeth Street, Parramatta via the Parramatta River. Cycleways within Parramatta are presented in Figure 6.

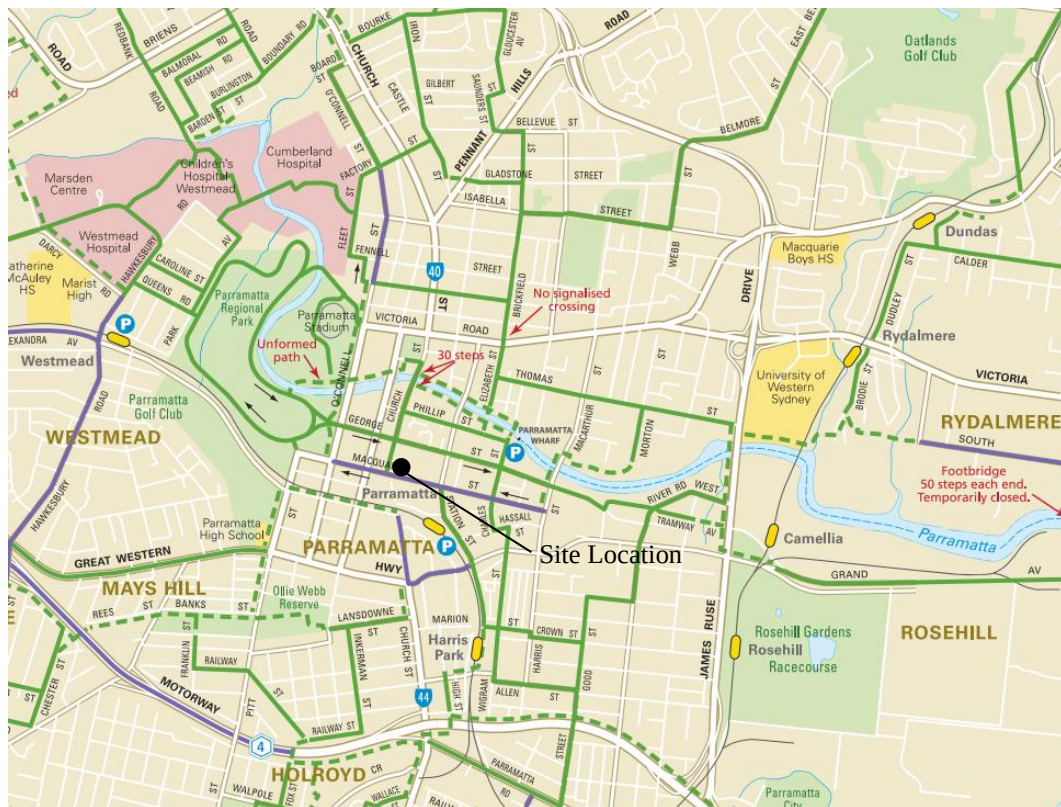


Figure 6: Cycleways in the vicinity of the site

3 Proposed development

3.1 Description of proposed works

The current proposal includes the redevelopment of the site. It is proposed to develop the site into 3,700m² of retail at lower levels and a residential tower from Level 4 to 61 (including 443 residential units). Car parking is proposed in four basement levels and Level 2. The total allowable gross floor area of the concept is 42,366m².

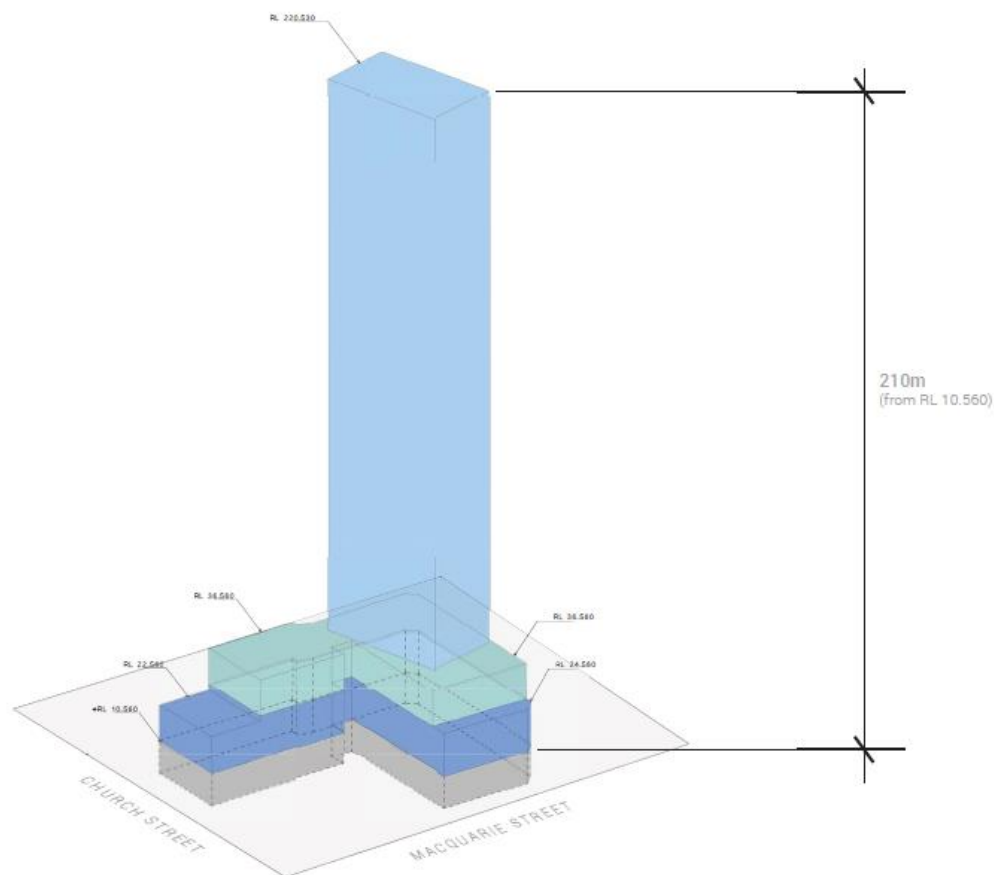


Figure 7: Development proposal

3.2 Proposed site access

It is assumed that main vehicular access to the proposed site will be provided via United Lane or Houison Place. This access provides car and light vehicle access at grade and is assumed to connect to both the residential car park and the retail carpark in the basement and at level 2 and 3.

The main pedestrian accesses are assumed to be on Church Street and Macquarie Street.

4 Transport and parking assessment

4.1 Parking assessment

Part 4 of the PCC DCP 2011 was consulted for parking and service vehicle provisions as the site falls within the boundary of the Parramatta City Centre. Reference was also made to Clause 22C of the Parramatta City Centre LEP 2007 and Part 3 of the PCC DCP 2011 with reference to loading provisions.

4.1.1 Car parking

PCC development plans indicate that the site has maximum parking rates. Given the proximity to the city and surrounding transport nodes, parking was reduced to applicable rates for the development as provided in Table 2.

Table 2: Proposed parking provision

Proposed use of building	Number of units / GFA	Maximum number of parking spaces (LEP)	Maximum parking allowed
Multi dwelling housing: 1, 2 and 3 beds	443	1 per dwelling	443 resident car spaces
		Plus 1 for every 5 dwellings	88 visitor car spaces
Retail	3,700m ²	1 per 30m ² GFA	123 car spaces*
Total parking spaces allowable			654 car spaces

*It is assumed that parking will be provided for the maximum residential rate only. Given the public parking opportunities nearby and the surrounding land uses, retail uses at the site are assumed as walk-in / passing trade. As such, on-site parking may be reduced within the site to 531 parking spaces.

Car share parking is also required for developments containing more than 50 residential units and within 800m of a railway station. At least one space is to be provided within the development. This may be included as either visitor or residential parking, and be easily accessible within the building.

4.1.2 Service/loading provisions

There is no specific guidance on the service vehicle provisions within the Parramatta City Centre. Given that on-street loading will likely be prohibited, adequate provision for loading should be provided on-site. The retail rate from the DCP suggests one loading space per 400 m² GFA. This would allow for 9 loading/service bays. These may also be used for the residential component as well as waste removal. At least two bays should be provided designed for larger vehicles.

4.1.3 Bicycle parking

Bicycle parking from the PCC development plans is to be provided at the following rates:

- 1 bicycle space per 2 dwellings
- 1 bicycle space per 200m² GFA retail

On this basis, up to 240 bicycle spaces will need to be provided for the development. Secure bicycle parking in the form of lockers would need to be provided. As the retail development is likely to provide employment for 20 persons or more, adequate change and shower facilities are to be provided for cyclists, conveniently located close to bike storage areas.

4.2 Road network impacts

4.2.1 Forecast traffic generation

Traffic generation rates are heavily influenced by factors such as public transport provision, availability and cost of parking, mixed use and complementary nature of various land use components and peak traffic generation hours.

The key factor however when considering future traffic generation for a development is the level of on-site parking provided. It is a widely accepted notion that the more parking a development provides for users, the higher the traffic generation level. Constraining parking so that building users must adopt alternative transport modes, particularly for sites with good public transport availability, reduces the number of peak hour vehicle trips.

Traffic generation rates were adopted from the RMS Technical Direction (TDT 2013/04a) re-released in August 2013 and the RTA Guide to Traffic Generating Developments, Version 2.2, October 2002 where applicable. The relevant rates for the concept development are shown below in Table 3. It has been assumed that since no car parking is provided for the retail uses, that no retail traffic is generated for the development.

Table 3: Peak hour traffic generation rates

Land use	Peak hour generation rate (RMS, 2013)	
High density residential (per apartment)	Weekday AM	0.19
	Weekday PM	0.15

Based on the indicative development schedule outlined in Section 3.1, a maximum development yield of approximately 443 units are envisaged.

Table 4: Peak hour trips generated

Land use	AM peak hour trips	PM peak hour trips
Residential	84	66

4.2.2 Trip distribution

For incoming traffic, the distributed development traffic was based on the 2011 JTW data for travel zone 1055. For outgoing traffic, data from the adjacent travel zone 1053 has been used because there was no data of residents in travel zone 1055. The most likely routes have been assessed for the most frequent destinations/origins. The current distribution applied across both peak hours is described below in Table 5.

Table 5: Peak distribution of trips

Zone	Origin/Destination	In	Out
1	George Street (E)	27%	46%
2	Smith Street (N)	58%	39%
3	Smith Street (S)	15%	0
4	Macquarie Street (W)		14%

The assumed distribution of trips to the local network reflects the observed journey to work patterns and the most likely routes which will be taken by future vehicular traffic travelling to and from the site. Road access to the site is restricted by the one way roads surrounding the site.

During the AM peak, it is assumed that there will be 20% traffic into the development and 80% out of the development as the traffic will be residential only. During the PM peak, it is assumed that 80% of the traffic will be incoming.

4.2.3 Road network impacts

The proposal is considered to have a minimal impact on the operation of the local road network. Reasons for this include the following:

- Traffic movements at the key access points into the site operate efficiently;
- The forecast increase in peak hour traffic of between 66 and 84 vehicles is considered modest when distributed within the city centre and viewed in the context of high background traffic volumes in the Parramatta area;
- There are opportunities for a mode shift away from private vehicle travel, with the site located less than five minutes walking distance away from the major Parramatta Transport Interchange, with good walking and cycling routes available;
- On-site parking is provided in accordance with the requirements as set out in the Parramatta City Council DCP, providing an appropriate balance to mitigate impacts on the local road network and on-street parking in the area;

4.3 Walking and cycling access

The provision of walking/cycling facilities provided within the development needs to be integrated with the surrounding and well-connected network to contribute to active transport within the site. The current surrounding external network is deemed both adequate and appropriate for the proposed site development.

Secure bicycle parking will need to be provided as a component of the residential and retail developments, with complementary end of trip facilities such as bike storage. Provision of these facilities will encourage active travel, such as cycling as a viable mode of transport to the site. This will further contribute to a reduced car mode share of trips.

5 Conclusions

This review has described the potential traffic and transport impacts of the proposed rezoning at 220-230-Church Street and 48 Macquarie Street, Parramatta. Key findings of the review are as follows:

- The site is located within Parramatta City Centre with a constrained parking environment;
- The rezoned development would be responsible for a minor increase in peak hour traffic flows along surrounding key roads, and impacts are considered modest given the distribution to the surrounding road network;
- Up to 654 off-street parking bays (with one car share space) are allowed in the concept development, in accordance with Parramatta City Council DCP and LEP;
- On-site loading and servicing is proposed for the concept development; and
- Secure bicycle parking is to be provided as a component of the proposed development.