



Parramatta North Urban Renewal
Proposed Rezoning
Traffic and Transport Review

transportation planning, design and delivery

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Traffic and Transport Review


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Executive Summary

Parramatta North Urban Renewal area (PNUR) is located to the west and north-west of the Parramatta CBD, Sydney's second CBD. PNUR includes many locational and site specific attributes, including frontage to the Parramatta River and a rich history of Aboriginal, early colonial, nineteenth and twentieth century uses.

PNUR in its end state proposes to provide about 5,600 residential dwellings, 35,000 m² of adaptive reuse of historic buildings and 4,000 m² of retail use in the Cumberland Precinct. It is also proposed to include 46,000 m² of mixed use developments in the Sports and Leisure Precinct (which would be predominantly commercial use). The staging of the works will be over a 15 to 20 year period.

GTA Consultants has been engaged by UrbanGrowth NSW to assess the traffic and transport impacts/issues relating to the proposed amendment to the planning framework applying to the study area. The investigations relate only to the Cumberland and Sports and Leisure Precincts within the PNUR. The Parramatta Gaol and SES land do not form part of this rezoning proposal.

An assessment of car parking requirement using the current Parramatta City Council's development control plan indicates that the proposal would need to provide 8,820 to 9,770 car parking spaces.

However, in order to minimise the car travel, a number of measures will be incorporated into the proposal. The potential measures are:

- limited parking ratios
- bus improvements
- cycle parking /facilities
- car sharing/car club cars.

On the basis of all such measures being fully incorporated into the development, it is anticipated that the subject site would generate significantly less traffic than other residential sites in the vicinity, which will have the positive effect of reducing the traffic impact of the proposal.

The comparison of post development flows and the theoretical capacity indicates that Church Street, south of Pennant Hills Road which is the section along the Church Street with only one travelling lane in each direction (i.e. excluding the bus lane) would exceed its theoretical capacity. O'Connell Street, south of Barney Street section and south of Victoria Road section and Barney Street, east of O'Connell Street would also reach the theoretical capacities under the current configurations.

Hence, the following intersection upgrades would be required to accommodate the additional traffic generated by the proposed development and the future background growth on key external roads:

- Church Street/Board Street – Upgrade to a partial signal (west side of Church Street only).
- Church Street/Barney Street – Additional right turn bay (i.e. dual right turn lanes) from Church Street southbound.
- For the intersections on Church Street between Factory Street and Grose Street, an additional through lane would be required for southbound traffic in the AM peak. For the PM peak, an additional northbound through lane would be required for the intersections on Church Street between east of Barney Street and Grose Street.

- O'Connell Street intersections at Barney Street & Factory Street – Upgrade to a traffic signal.
- O'Connell Street intersections at Dunlop Street & Fennell Street – Upgrade to a one-lane roundabout.
- O'Connell Street/Victoria Road signalised intersection – Revise lane configuration.

In addition to the above, the Windsor Road bridge over the Cumberland Highway is proposed to be widened as part of the proposed Western Sydney Regional Ring Road and this improvement will be necessary to address existing/ future traffic problems.

The provision of a new cycleway along the waterfront which will run from north of the site to south of the Sports Precinct would enhance the pedestrian and cycleway network significantly.

Provision of a good quality shuttle bus service between the subject site and the Parramatta interchange is also proposed. In addition, the potential future introduction of light rail into the precinct would have the ability to significantly reduce the travel by car mode.

In summary, the traffic impacts of the proposed development could be mitigated by the list of measures described in this report.

Table of Contents

1. Introduction	1
1.1 Background	1
1.2 Purpose of this Report	1
1.3 References	2
2. Existing Context	3
2.1 NSW Long Term Masterplan	3
2.2 Parramatta Local Environmental Plan 2011	3
2.3 Parramatta Development Control Plan 2011	3
2.4 Proposed Western Sydney Light Rail Network	3
2.5 Proposed Western Sydney Regional Ring Road	4
2.6 WestConnex	5
2.7 Sydney's Bus Future: Rapid Bus Routes	6
3. Existing Conditions	10
3.1 Site Description	10
3.2 Existing Land Uses	11
3.3 Surrounding Areas	11
3.4 Road Network	12
3.5 Future Intersection Upgrades	13
3.6 Access	13
3.7 Historical Traffic Flows	14
3.8 Traffic and Parking Surveys	14
3.9 Traffic Signal Operation	25
3.10 Intersection Operation	26
3.11 Existing Mode Share	29
3.12 Existing Public Transport Services	30
3.13 Parramatta Shuttle Bus	32
3.14 Cycle and Pedestrian Networks	33
4. Development Proposal	35
4.1 Background	35
4.2 Proposed Development	37
4.3 Proposed Layout	39
5. Parking Provision	45
5.1 Car Parking	45
5.2 Bicycle Parking	46
6. Travel Demand Management	47
6.1 Potential Measures	47
6.2 Summary	50

7. Traffic Impact Assessment	51
7.1 Traffic Generation	51
7.2 Trip Distribution	54
7.3 Background Growth	55
7.4 Mid-Block Capacity	57
7.5 Intersection Operation	60
7.6 Possible Intersection/Road Improvements	62
8. Proposed Infrastructure Improvements	64
8.1 Road Improvements	64
8.2 Public Transport Improvements	67
8.3 Pedestrian & Cycleway Improvements	67
9. Conclusion	68

Appendices

A: Survey Results	
B: Modelling Results	
C: Post Development Intersection Turning Movement Diagrams	
D: Linsig Modelling Process	
E: Linsig Modelling Results	

Figures

Figure 2.1: Parramatta City Council's Proposed Light Rail Routes	4
Figure 2.2: Proposed Western Sydney Regional Ring Road	5
Figure 2.3: WestConnex – Stage 1: Parramatta to Haberfield	6
Figure 2.4: Current and Future Rapid Bus Route: Parramatta to CBD via Ryde	8
Figure 2.5: Parramatta Rapid and Suburban Bus Routes	9
Figure 3.1: Location Plan	10
Figure 3.2: Road Network	12
Figure 3.3: Survey Plan	15
Figure 3.4: Maximum Queue Length Recorded on Thursday 7-9AM	19
Figure 3.5: Maximum Queue Length Recorded on Thursday 4-6PM	20
Figure 3.6: Maximum Queue Length Recorded on Saturday 12-2PM	21
Figure 3.7: Duration of Parking Profiles for Thursday and Saturday	23
Figure 3.8: Parking Occupancy Profiles for Thursday and Saturday	24
Figure 3.9: Travel Zones 1018 & 1025	29
Figure 3.10: Existing Bus Routes Operated by Sydney Buses	30
Figure 3.11: Existing Bus Routes Operated by Hills Bus	31
Figure 3.12: Parramatta Free Shuttle Bus Service Route	32
Figure 3.13: Existing Bicycle Network Map	33

Figure 3.14:	Council's Bike Plan	34
Figure 4.1:	Precinct Map	36
Figure 4.2:	Rezoning Boundary	38
Figure 4.3:	Indicative Layout Plan	40
Figure 4.4:	Development Location & Indicative Development Yields (for Traffic Assessment Purposes Only)	41
Figure 4.5:	Proposed Pedestrian & Cycleway Network	43
Figure 4.6:	Proposed Shuttle Bus Service Route between Parramatta Interchange and the Site	44
Figure 7.1:	Background Traffic Growth	57
Figure 8.1:	Existing and Proposed Intersection Configurations	65

Tables

Table 3.1:	Average Daily Traffic Flows	14
Table 3.2:	2014 Surveyed Mid-block Flows	18
Table 3.3:	Origin-Destination Survey	22
Table 3.4:	Summary of Parking Occupancy and Duration Surveys	22
Table 3.5:	Surveyed Average Travel Time	25
Table 3.6:	Level of Service (LoS) Criteria	27
Table 3.7:	Existing Operating Conditions	28
Table 3.8:	2011 Journey to Work Data	29
Table 3.9:	Existing Bus Service	31
Table 5.1:	DCP Parking Provision	45
Table 5.2:	Required Commercial/ Retail Parking Provision	45
Table 5.3:	Bicycle Parking Provision	46
Table 7.1:	Current Traffic Generation of the Cumberland Hospital Precinct	51
Table 7.2:	Revised RMS Traffic Generation Rates for High Density Residential Apartments	52
Table 7.3:	Journey to Work, Travel Mode (for residents)	52
Table 7.4:	Revised RMS Traffic Generation Rates for Office Blocks	53
Table 7.5:	Resultant Traffic Generation by the Proposal	54
Table 7.6:	Development Traffic Distribution Percentages	55
Table 7.7:	Additional Development Traffic on the Existing Road Network	55
Table 7.8:	Future Mid-Block Traffic Flows	58
Table 7.9:	Peak Direction Post Development Maximum Hourly Flow and Theoretical Capacity Comparisons	60
Table 7.10:	Future Intersection Operating Conditions	61
Table 7.11:	Future Intersection Operating Conditions with Upgrades	63

1. Introduction

1.1 Background

Parramatta North Urban Renewal area (PNUR) is located to the west and north-west of the Parramatta CBD, Sydney's second CBD. Parramatta is located in the geographical heart of Sydney and plays a significant role in the Greater Metropolitan area as the most important centre in Western Sydney. The PNUR is located to the east of the Westmead Health campus, separated by the Parramatta River. The PNUR is also within close proximity to the Rydalmere Education Precinct and transport links.

GTA Consultants has been engaged by UrbanGrowth NSW to assess the traffic and transport impacts/issues relating to the proposed amendment to the planning framework applying to the study area. The investigations relate only to the Cumberland and Sports and Leisure Precincts within the PNUR. The assessment has been undertaken to inform a State Significant Site study (the Study) which is investigating potential amendments of the statutory planning controls applying to the Cumberland and Sports and Leisure Precincts of the PNUR.

PNUR includes many locational and site specific attributes, including frontage to the Parramatta River and a rich history of Aboriginal, early colonial, nineteenth and twentieth century uses. The potential exists to deliver housing and employment opportunities in a precinct that will embrace and interpret these heritage attributes to make them a focus of the urban environment that will emerge through future development and facilitate their retention and re-use.

The amendment to the statutory planning provisions is anticipated to be undertaken via a State Environmental Planning Policy (SEPP) to amend the provisions of Parramatta City Centre LEP 2007 and Parramatta LEP 2011. Site specific Development Control Plan (DCP) provisions are also proposed to be prepared to guide future development. Amendment of the planning framework will facilitate the lodgement of future Development Applications with Parramatta City Council to be assessed and determined under the provisions of Part 4 of the *Environmental Planning and Assessment Act 1979*.

1.2 Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposed development, including consideration of the following:

- i existing traffic and parking conditions surrounding the site
- ii suitability of the proposed parking in terms of supply (quantum)
- iii the traffic generating characteristics of the proposed development
- iv the transport impact of the development proposal on the surrounding road network
- v potential mitigation measures to address transport impact of the development proposal.

1.3 References

In preparing this report, reference has been made to the following:

- an inspection of the site and its surrounds
- Parramatta City Council's *Development Control Plan 2011 Part 3* (DC)
- traffic and car parking surveys undertaken by Austraffic as referenced in the context of this report
- plans for the proposed development prepared by AJ+C, Drawing Number 13031, Revision 13d, dated 14/10/2014
- other documents and data as referenced in this report
- meetings with TfNSW and Parramatta Council traffic engineers.

2. Existing Context

2.1 NSW Long Term Masterplan

The NSW Long Term Transport Master Plan 2012 (LTTMP) presents a 20 year vision for transport planning through to 2031. The LTTMP provides integrated advice with regards to transport policy; identifying solutions to develop and manage the NSW's transport system with short to long term strategies. Forming part of the LTTMP is Sydney's Rail Future, a long-term plan to increase the capacity of Sydney's rail network and update existing infrastructure.

Parramatta North has been identified as part of the LTTMP support of developments in the Greater Sydney region. More specifically, the following strategies have been outlined for Pennant Hills Road between North Parramatta and Wahroonga:

- Develop Strategic Bus Corridors for rapid service
- Investigate congestion management measures
- Improve road connections to Parramatta Road.

2.2 Parramatta Local Environmental Plan 2011

The Parramatta Local Environmental Plan provides guidelines, objectives and control for development in Parramatta City. Parramatta North is characterised by areas of low density residential, mixed use, general industrial and enterprise (along Church Street corridor).

2.3 Parramatta Development Control Plan 2011

The Development Control Plan outlines development principles including measures for sustainable transport, parking and vehicular access, and access and connectivity. The following summarise development controls relating the North Parramatta area:

- North Parramatta is an early subdivision in Parramatta and identified as heritage conservation area.
- The Collet Park Precinct in North Parramatta has been identified as a special precinct, with DCP objectives to provide high and medium density developments and to improve pedestrian links throughout the precinct.
- The area surrounding All Saints Cemetery and the area bounded by Brickfield, Belmore, Buller and Albert Streets have been identified as special character areas, with specific design controls implemented to maintain their character.

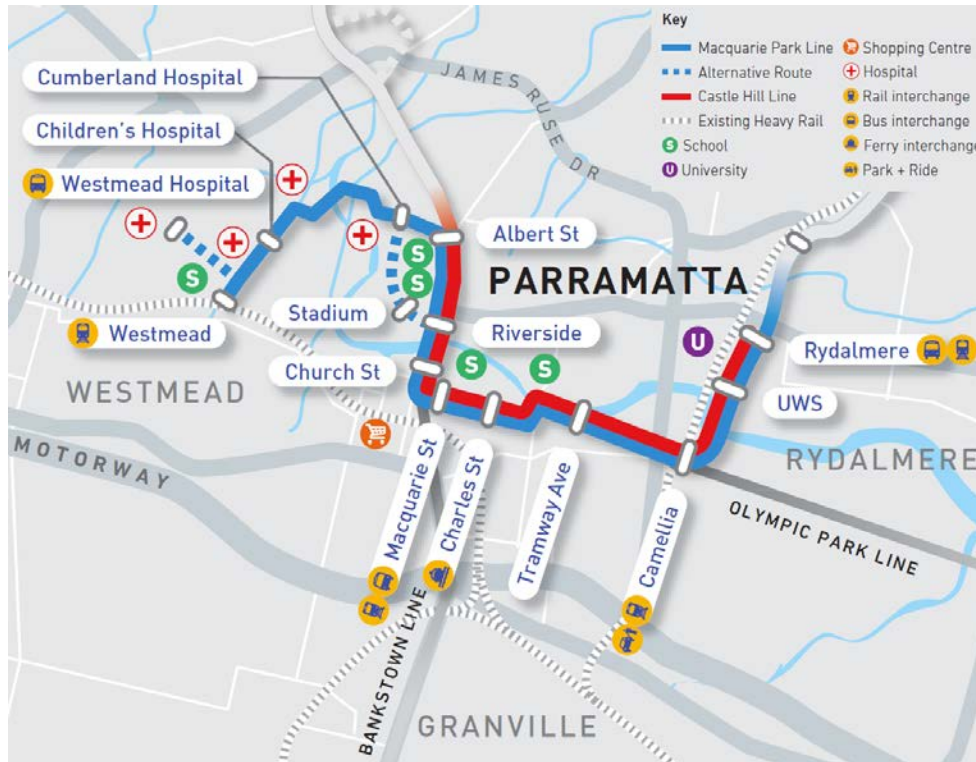
2.4 Proposed Western Sydney Light Rail Network

Parramatta City Council advised that they had recently completed a feasibility study into the development of a light rail network for Western Sydney. The proposed light rail network would link key centres within the western Sydney region and would integrate with the existing public transport network. The light rail network is proposing to link Parramatta CBD to other western Sydney centres such as Macquarie Park and Strathfield in the east, to Rouse Hill in the north, to Bankstown and Liverpool in the south and to Wetherill Park and Blacktown in the west.

Council's proposed Western Sydney Light Rail Network includes two stops in the vicinity of the Cumberland Precinct – one within the site and another one on Church Street near Albert Street.

Figure 2.1 shows the proposed routes in the vicinity of the subject site.

Figure 2.1: Parramatta City Council's Proposed Light Rail Routes



Recently, the NSW Government announced that the Western Sydney Light Rail network would be allocated a further \$400 million for a feasibility study to identify the highest priority corridors from Parramatta.

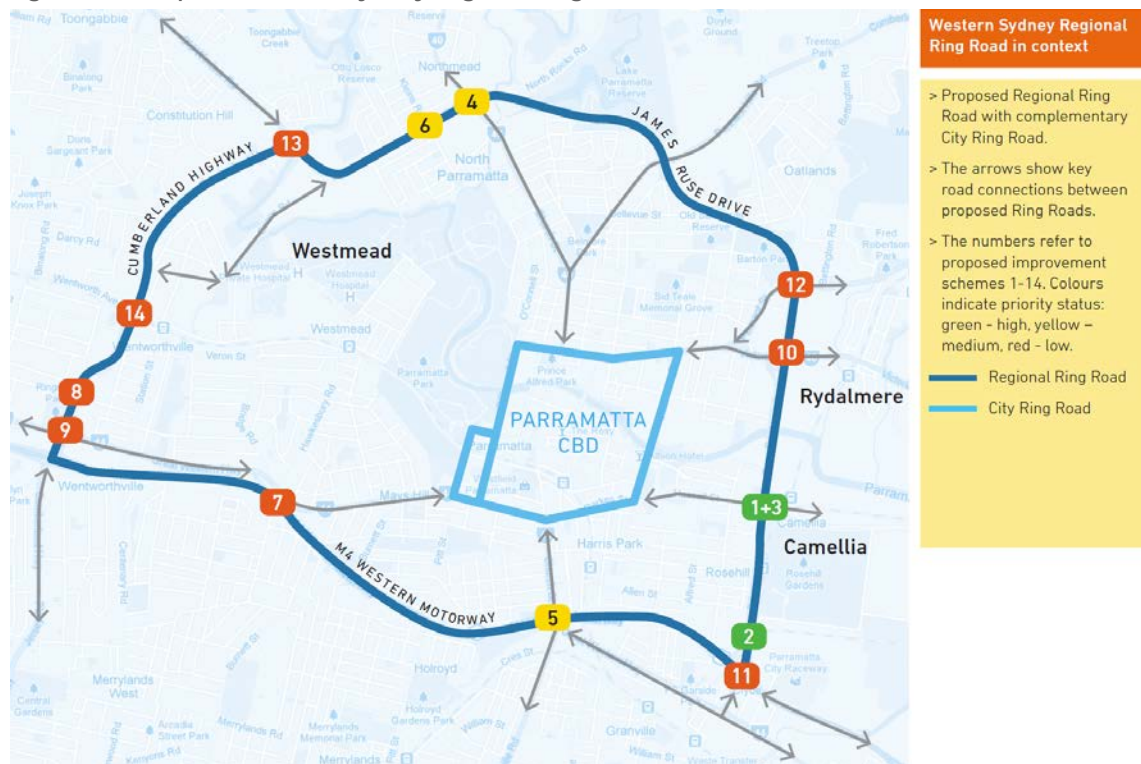
The project is to be completed in two stages. Stage one is comprised of the Macquarie Park and Castle Hill lines, which would cost a combined \$1.5 billion for 30 kilometres of light rail and 21 light rail vehicles.

2.5 Proposed Western Sydney Regional Ring Road

Parramatta City Council is proposing a regional ring road to address traffic congestion resulting from the entangling of cross regional car and freight flows. The proposed regional ring road would also improve efficiency in the road network so that the population of Western Sydney can access employment and training opportunities close to home. A series of intersection upgrades are proposed along the M4 Motorway, James Ruse Drive and Cumberland Highway to create a free flowing arterial road network and allow traffic to circumnavigate Parramatta quickly and efficiently. Parramatta Council is also developing a City Ring Road to complement the Regional Ring Road.

Figure 2.2 shows the proposed Regional and City Ring Roads.

Figure 2.2: Proposed Western Sydney Regional Ring Road



In the vicinity of the subject site, the Windsor Road bridge (Project Number 4 on the plan above) over the Cumberland Highway is proposed to be widened at a cost of \$20million.

The Windsor Road intersection with the Cumberland Highway was identified in the discussion with Council as being critical.

2.6 WestConnex

WestConnex is a three stage upgrade of the M4 Western Motorway which encompasses 33 km of road upgrades in the form of road widening and tunnelling. The project will use a combination of above and below ground motorways in order to save up to 40 minutes of travel time between Parramatta and Sydney Airport. Stage 1 (Parramatta to Haberfield) of the project will be completed in two sections:

- Widening of the M4 Western Motorway in both directions for 7.5 kilometres between Church Street, Parramatta and Homebush Bay Drive,
- Widening M4 (east) and new 5 kilometre tunnel (under the Parramatta Road corridor) connecting Homebush Bay Drive with Parramatta Road and City West Link, Haberfield.

Along with the proposed works for widening and tunnelling, the M4 new motorway access points are to be introduced, including:

- eastbound access to Westmead and Parramatta from the M4 near Coleman Street
- westbound access from Parramatta at Church Street to the M4.

The staging of works for WestConnex is shown in Figure 2.3.

Figure 2.3: WestConnex – Stage 1: Parramatta to Haberfield

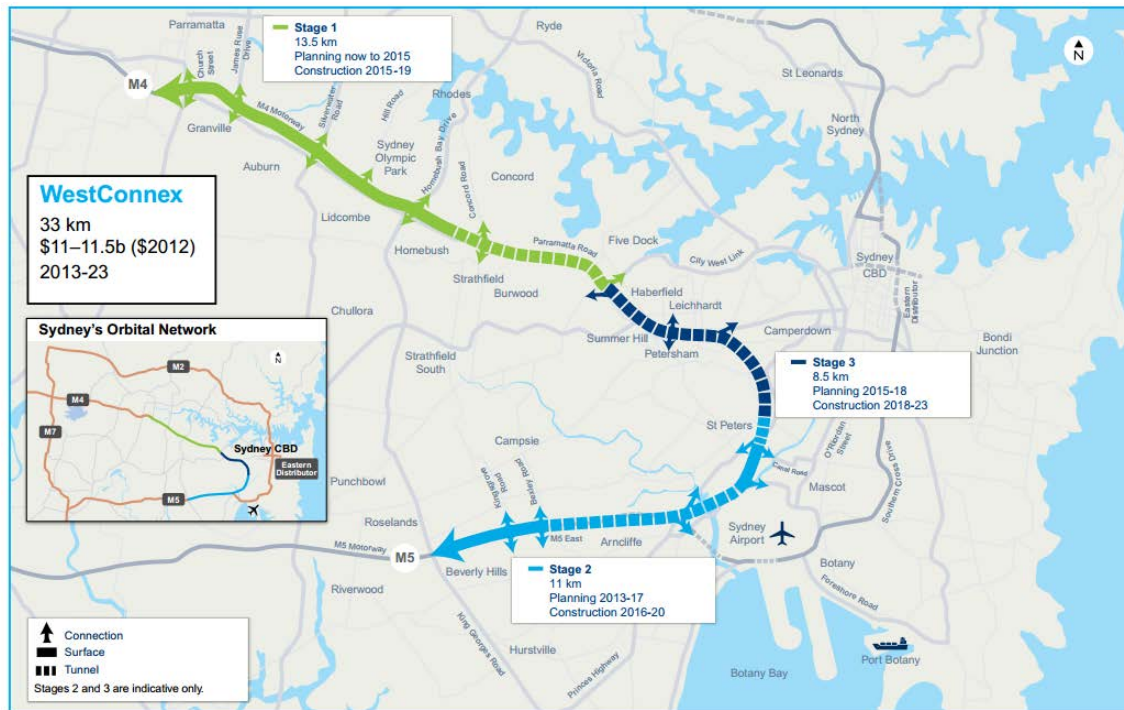


Image Source: WestConnex Fact Sheet – Stage 1: Parramatta to Haberfield

2.7 Sydney's Bus Future: Rapid Bus Routes

Sydney's Bus Future, December 2013 document outlines the NSW Government's long term plan for the bus network to meet customer needs.

The proposed upgrade for the Sydney bus network will include the addition of new rapid bus routes while maintaining and improving elements of the existing bus network, such as cross-city services on Metro bus routes. The additional rapid bus services are intended to operate every 10 minutes (or more often) during the week, between 6am and 7pm, and every 15 minutes in weekends.

Rapid bus routes will offer faster and more reliable bus travel for commuters between major city centres as extra services are planned to be implemented and bus stops to be further dispersed along routes, generally spaced 800 meters to one kilometre apart.

Existing suburban and local service routes will remain to provide commuter access to local, neighbourhood destinations. An additional 20 suburban routes are to be introduced.

Proposed network upgrades would fill the gaps in the heavy rail network, strengthening links from the Parramatta region to areas including Norwest, Castle Hill, Macquarie Park, Ryde, Bankstown, and Liverpool.

The proposed rapid bus routes include:

- Castle Hill to Liverpool via Parramatta
- Parramatta to the CBD via Ryde
- Rouse Hill to Hurstville via Parramatta and Bankstown
- Mona Vale to the CBD
- Maroubra Junction to the CBD
- North Bondi to the CBD
- Castle Hill to the CBD.

An example of the existing bus route and proposed rapid route from Parramatta to Sydney CBD via Ryde is shown in Figure 2.4. The proposed rapid bus routes connecting Parramatta to western suburbs is shown in Figure 2.5.

Figure 2.4: Current and Future Rapid Bus Route: Parramatta to CBD via Ryde

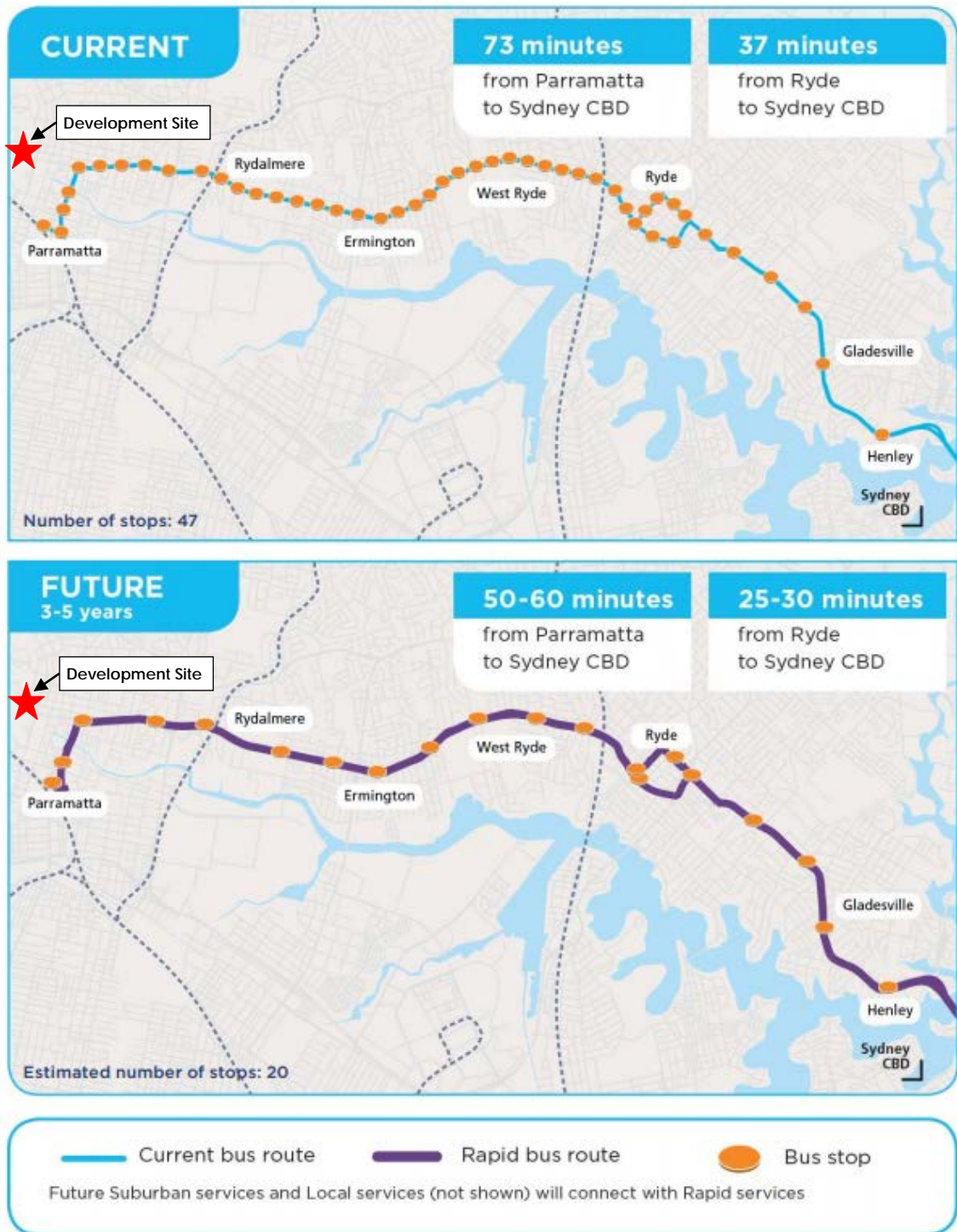


Image Source: Sydney's Bus Future 2013

Figure 2.5: Parramatta Rapid and Suburban Bus Routes



Image Source: Sydney's Bus Future 2013

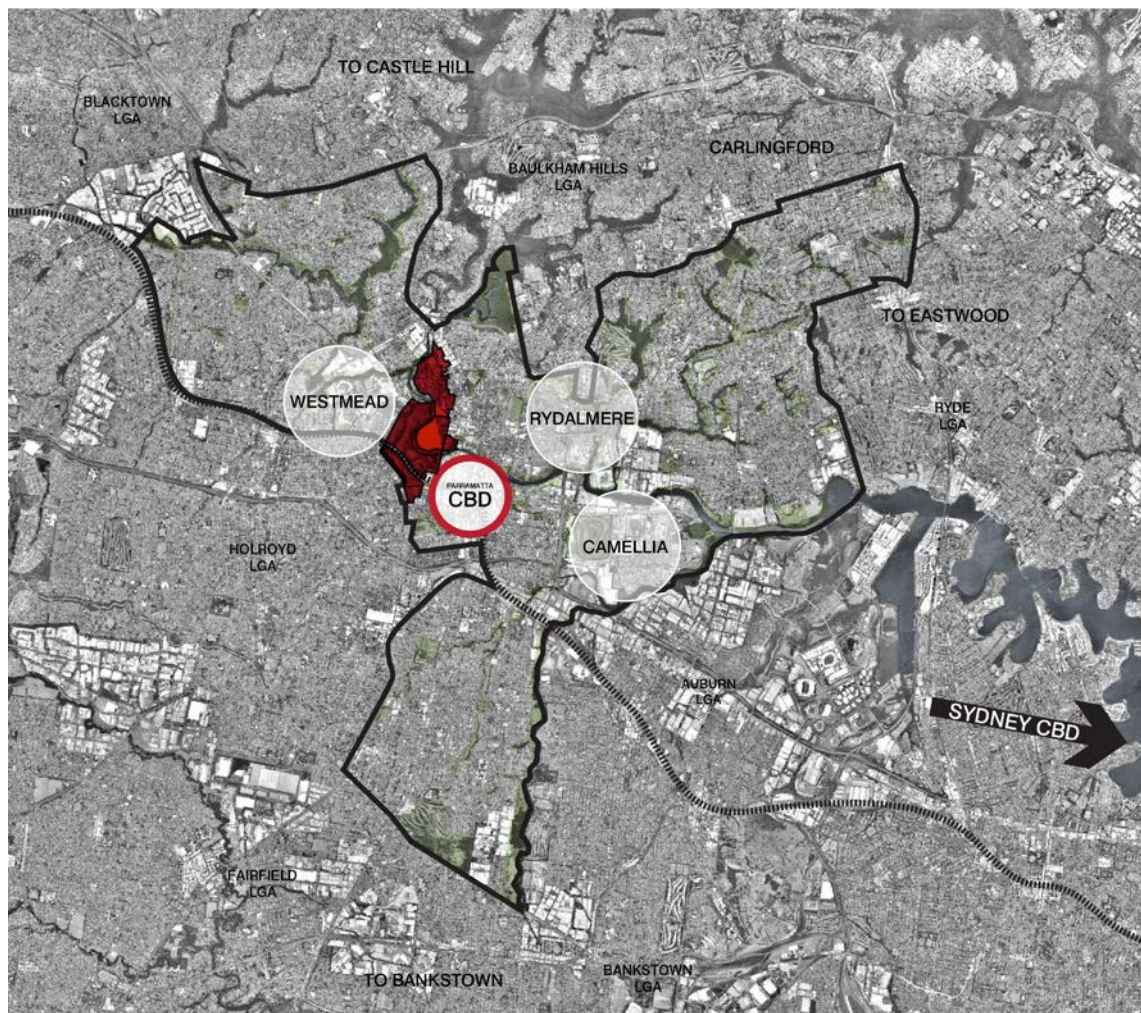
3. Existing Conditions

3.1 Site Description

Parramatta North Urban Renewal area (PNUR) is located to the west and north-west of the Parramatta CBD, Sydney’s second CBD. Parramatta is located in the geographical heart of Sydney and plays a significant role in the Greater Metropolitan area as the most important centre in Western Sydney. The PNUR is located to the east of the Westmead Health campus, separated by the Parramatta River. The PNUR is also within close proximity to the Rydalmere Education Precinct and transport links.

Figure 3.1 presents the location plan of the site.

Figure 3.1: Location Plan



The Study relates only to the Cumberland and Sports and Leisure precincts within the PNUR.

The Sports and Leisure Precinct (SLP) is located centrally within the PNUR. The SLP is delineated to the west and south by the meander of the Parramatta River, O’Connell Street to the east and Grose Street to the north.

The Cumberland Precinct (CP) is the northern most part of the PNUR and is broadly delineated by the meander of the Parramatta River to the west and north, O'Connell Street to the east and Grose Street to the south.

Combined, the two precincts comprise the areas of the PNUR to the east of the Parramatta River and west of O'Connell Street. The lands to the west of the Parramatta River contain Parramatta Park, including Old Government House and Domain.

3.2 Existing Land Uses

Land uses and facilities currently located within the SLP include Parramatta Stadium and associated facilities, Parramatta public pool, Parramatta Leagues Club, open space parkland and venue car parking. These built facilities and associated structures occupy predominantly the north eastern two thirds of the precinct. The balance of the precinct, nestled inside the meander of the Parramatta River, is predominantly landscaped open space with some incursion of at grade car parking.

Existing land uses within the Cumberland Precinct include the Cumberland Hospital, the NSW Linen Service, allied health related uses and Non Government Organisations (NGOs) and the former Parramatta Gaol. The precinct contains buildings of State and local heritage significance as well as potential Aboriginal archaeological sites. Buildings are dispersed through the precinct serviced by an irregular access network and broadly surrounding a central oval. These clusters of buildings are interspersed with vegetation and are framed by an almost continuous band of vegetation framing the eastern bank of the Parramatta River.

3.3 Surrounding Areas

The PNUR study area is located to the immediate west and north-west of the Parramatta CBD. The north-eastern area of the CBD is emerging as a mixed use residential precinct with residential tower forms.

To the east of the study area, uses range from educational uses, residential accommodation in forms ranging from single dwellings to three storey residential flat buildings, interspersed with non-residential uses of former dwellings. Further east a spine of retail and commercial uses are located along Church Street and Victoria Road.

To the north east of the site, generally along O'Connell Street building forms are typically three storey residential flat buildings and commercial and retail land uses in the areas to the east of the former Parramatta Gaol.

To the north of the site on the opposite bank of the Parramatta River is the Northmead industrial area including large format industrial buildings.

To the north-west of the site is a small pocket of single storey cottages bound by further industrial development to the west and three storey residential flat buildings fronting Briens Road, Northmead

To the west of the site beyond Parramatta Park is the Westmead medical precinct which is adjoined by a residential area bound generally by Hawkesbury Road, Hainsworth Street, Park Avenue and Railway Parade. Development in this area is predominantly three storey residential flat building forms interspersed with taller higher density residential flat buildings. This residential pocket of land is separated from the lands the subject of this Study by Parramatta Park.

3.4 Road Network

The road network in the vicinity of the site includes Church Street, Victoria Road, O’Connell Street and a number of local streets such as Fleet Street, New Street, Dunlop Street, Factory Street, Albert Street, Fennel Street and Marsden Street. Figure 3.2 shows the road network in vicinity of the site.

Figure 3.2: Road Network



Church Street is a north-south arterial road with one general traffic lane plus one bus lane in each direction. Kerbside parking is not permitted on either side of the road. North of Barney Street, Church Street is widened to provide two traffic lanes and one bus lane in each direction. It has a sign posted speed limit of 60km/hr. Generally intersections along Church Street are controlled by traffic lights. Where the intersections are not controlled by traffic lights, traffic movements are generally restricted to left-in and left-out from/to the side streets.

Victoria Road is an east-west arterial road with generally two or three travelling lanes in each direction. Kerbside parking is not permitted on either side of the road. It has a sign posted speed limit of 60km/hr. Generally intersections along Victoria Road are controlled by traffic lights. Where the intersections are not controlled by traffic lights, traffic movements are generally restricted to left-in and left-out from/to the side streets.

O'Connell Street is a north-south sub-arterial/collector road with one traffic lane in each direction. Kerbside parking is permitted intermittently along O'Connell Street. It also has a posted speed limit of 60km/hr. Intersections along O'Connell Street are generally controlled by priority signs. At Factory Street, a median is provided along O'Connell Street to restrict traffic movements to left-in and left-out only.

Fleet Street, New Street and Marsden Street are local streets. These local streets provide vehicular access to properties fronting onto them. They run in the north-south direction. Time restricted kerbside parking is permitted on either side of the road. Street trees are planted on both sides of Fleet Street making Fleet Street narrower than New Street. These streets have a sign posted speed limit of 50km/hr.

Similarly, Dunlop Street, Factory Street, Albert Street and Fennell Street are all local streets. Due to a level change, these locations provide vehicular access to residential properties butting them. It is noted that Albert Street forms a cul-de-sac at its west end; therefore it does not connect to Fleet Street to permit access into the subject site from Albert Street.

Greenup Drive and Eastern Circuit together form a two-way loop road that connects to Fleet Street on the eastern side and to Bridge Road on the western side of the site. The internal loop road provides access to the various parking areas within the precinct. River Road joins Greenup Drive at two locations to provide access to the southern part of the subject site.

Some of these internal roads have only sufficient width to allow two vehicles to pass another (but it might not be possible for a car to pass a truck around bends). The internal roads have only green verge except for a short section on Eastern Circuit and in some places do not have any kerb and gutter. The internal roads have a posted speed limit of 20km/hr.

3.5 Future Intersection Upgrades

Historic discussions with RMS and Parramatta City Council have suggested that a number of intersection upgrades are being considered in the vicinity of the site. These include:

- Removal of the median strip at the Factory Street intersection to allow cross traffic across O'Connell Street and replacement of the existing intersection arrangement with a roundabout.
- The intersection at O'Connell Street with Fennell Street is being considered for an upgrade to either traffic signals (Council's preferred choice) or a roundabout (RMS' preferred choice) to address road safety concerns.
- The Windsor Road bridge over the Cumberland Highway is proposed to be widened as part of the proposed Western Sydney Regional Ring Road.

3.6 Access

The subject area can be accessed from the north via Windsor Road then using Barney Street, Factory Street, Grose Street or Victoria Road. Access from the north-east to the site can also be gained from Pennant Hills Road then via Albert Street or Barney Street, Dunlop Street, Factory Street, Grose Street or Victoria Road via Church Street.

From the south, it can be accessed via O'Connell Street or Marden Street/Victoria Road/O'Connell Street.

Access from the east can be gained from Victoria Road via O'Connell Street or Church Street.

There is a vehicular bridge which links the site to Bridge Road on the western side of the Parramatta River. This bridge link is controlled by boom gates (although these are regularly left open during the day).

The main access to Cumberland Precinct is currently from Fleet Street at Greenup Drive (near the western end of Albert Street). A separate access is also available off O’Connell Street near Broad Street. However, this access road is provided as an unsealed road linking to an isolated area to the north of the precinct. There is no connection provided to the internal loop road.

The access to the Sports and Leisure site is currently provided along O’Connell Street and off the Grose Street extension.

3.7 Historical Traffic Flows

Historical average daily traffic flows have been sourced from RMS for a number of selected locations in the vicinity of the site. These are presented in Table 3.1.

Table 3.1: Average Daily Traffic Flows

Location	2002	2005	2009	2012
Church St, South of Albert St	29,771	28,490	27,490	-
Church St, South Of North Rocks Rd	-	-	32,934	32,362
Pennant Hills Rd, South of James Ruse Dr	-	-	14,289	14,592
O’Connell St at bridge over Parramatta River	30,275	29,099	28,519	-
O’Connell St, North of Factory St	14,315	12,933	-	-
Victoria Rd, East of Church St	28,751	27,853	26,045	-

Source: Roads and Maritime Services

The historical traffic data indicates that traffic in the vicinity has generally decreased since 2002 by a rate of about one per cent per annum. However, in the last few years the level of traffic appears to have stabilised.

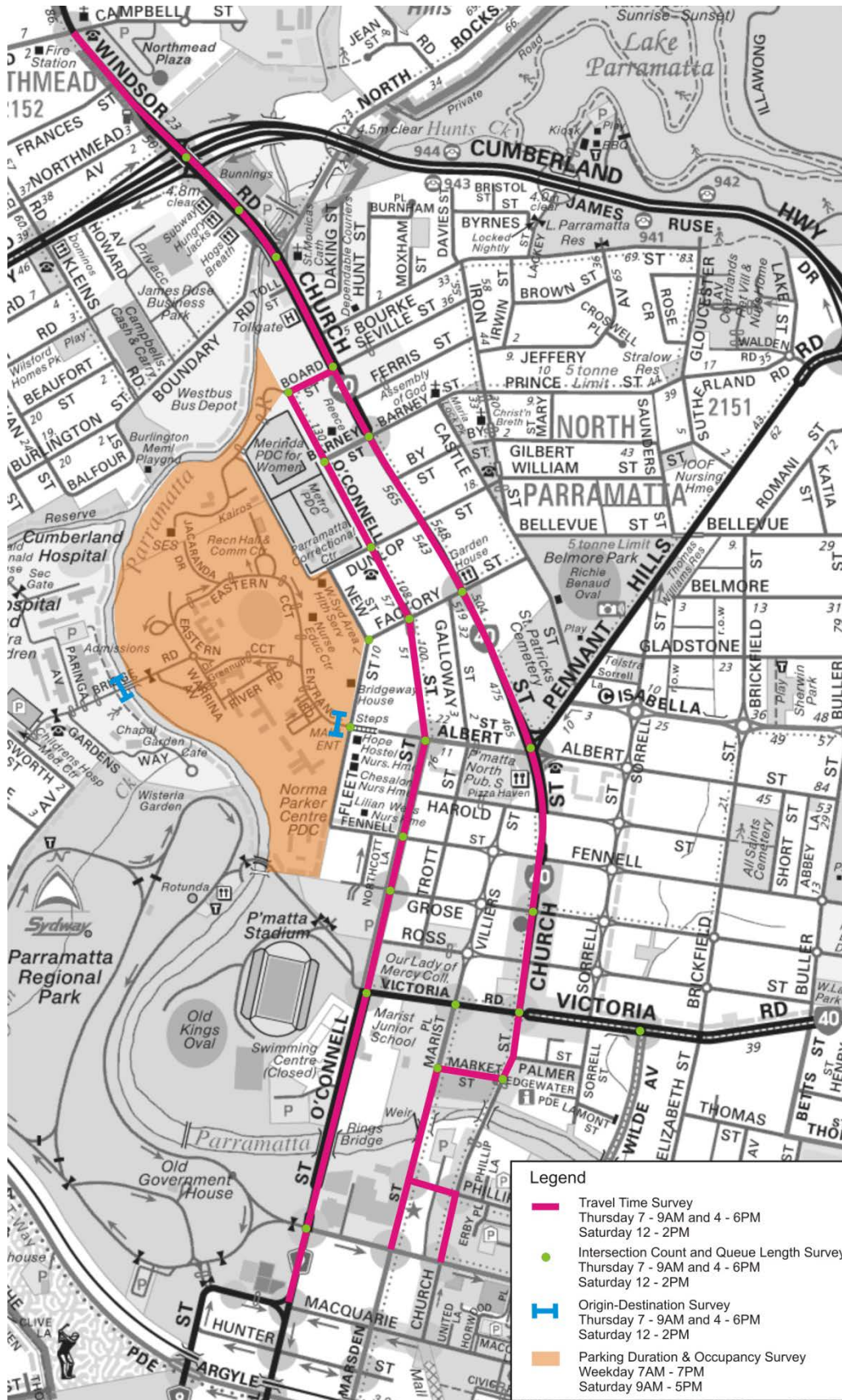
3.8 Traffic and Parking Surveys

GTA Consultants commissioned the following surveys as part of this study:

- Intersection movement count and queue length surveys
- Origin-Destination surveys for two access points at the Cumberland hospital precinct
- Parking occupancy and duration surveys within the Cumberland hospital site
- Travel time surveys along O’Connell Street and Church Street.

Figure 3.3 presents the type and location of the surveys. The results of these surveys are presented below. Detailed surveyed results are also included in Appendix A.

Figure 3.3: Survey Plan



Intersection Turning Movement Count & Queue Length Surveys

The traffic movement counts and queue length surveys at key roads in the vicinity of the site was undertaken on Saturday 9th August and Thursday 14th August 2014 during the following periods:

- 7:00am and 9:00am (for Thursday)
- 4:00pm and 6:00pm (for Thursday)
- 12:00pm and 2:00pm (for Saturday).

The following intersections were surveyed:

- Windsor Road/ Cumberland Highway
- Church Street/ The Junction Access
- Church Street/ North Rocks Road
- Church Street/ Board Street/ Seville Street
- Church Street/ Barney Street
- Church Street/ Factory Street
- Church Street/ Albert Street/ Pennant Hills Road
- Church Street/ Grose Street
- Church Street/ Victoria Road
- Church Street/ Market Street
- O'Connell Street/ Board Street
- O'Connell Street/ Barney Street
- O'Connell Street/ Dunlop Street
- O'Connell Street/ Factory Street
- O'Connell Street/ Fennell Street
- O'Connell Street/ Albert Street
- O'Connell Street/ Grose Street
- O'Connell Street/ Victoria Road
- O'Connell Street/ George Street
- Victoria Road/ Marsden Street
- Victoria Road/ Wilde Avenue
- Factory Street/ New Street
- Greenup Drive/ Fleet Street
- Marsden Street/ Market Street.

The survey results indicated the peak hours were generally between 7:45-8:45am for the Thursday AM, 4:30-5:30pm for the Thursday PM and 12-1pm for the Saturday midday.

It is noted that Church Street, south of Market Street was closed during the surveyed days. This section of the road is to be closed until December 2014 due to construction works on the Lennox Bridge. Hence, all traffic using Church Street, south of Market Street has been detoured to Marsden Street or Wilde Avenue.

In order to predict the effect of this road closure on other nearby intersections, GTA has obtained SCATS (Sydney Coordinated Adaptive Traffic System) counts from RMS at Victoria Road intersections at Marist Place, Church Street and Wilde Avenue on the same surveyed days (i.e. with road closure) and March 2014 (i.e. without road closure). The comparison of traffic flows on Victoria Road, Church Street, Marist Place and Wilde Avenue with and without the road closure south of Market Street indicated that there is no substantial difference in turning movement flows at intersections along Victoria Road.

Both Market Street intersections at Marsden Street and Church Street are non-signalised intersections. Hence, historically data is unavailable from RMS. Without historical data (i.e. without road closure), the effect of road closure on these two local intersections cannot be predicted. Nevertheless, the operating conditions at Market Street intersections at Marsden Street and Church Street as shown in Table 3.7 indicate that both intersections currently operate at level of service A with ample spare capacities.

Table 3.2 summarises the mid-block two-way peak hour flows derived from the intersection turning movement flows for the Thursday AM, Thursday PM and Saturday midday peak hours.

RMS guidelines indicates that arterial roads generally have daily flows greater than 20,000 vehicles per day (vpd) and sub-arterial roads have daily flows between 5,000 vpd to 20,000 vpd. Other roads have daily flows of 10,000 vpd or less. Typically, peak hour flows are approximately 8 to 10 percent of the daily flows. The surveyed flows are generally within these limits.

Table 3.2: 2014 Surveyed Mid-block Flows

Location	Thursday AM			Thursday PM			Saturday Midday		
	NB/ EB	SB/ WB	Two- way	NB/ EB	SB/ WB	Two- way	NB/ EB	SB/ WB	Two- way
Church St, south of Victoria Rd	228	319	547	304	251	555	236	347	583
Church St, north of Victoria Rd	472	950	1422	824	654	1478	592	739	1331
Church St, south of Pennant Hills Rd	583	1247	1830	1150	730	1880	852	915	1767
Church St, south of Factory St	430	862	1292	809	567	1376	649	691	1340
Church St, south of Barney St	441	874	1315	849	563	1412	667	660	1327
Church St, south of Board St	694	1772	2466	1662	1008	2670	1042	1239	2281
Church St, south of North Rocks Rd	893	1867	2760	2079	1014	3093	1342	1255	2597
Church St, south of James Ruse Dr	861	1858	2719	2128	1190	3318	1562	1552	3114
Church St, north of James Ruse Dr	848	2956	3804	2308	1632	3940	1729	1946	3675
O'Connell St, south of George St	1966	1238	3204	1319	1315	2634	1101	1102	2203
O'Connell St, south of Victoria Rd	1323	1498	2821	1194	1415	2609	872	1161	2033
O'Connell St, south of Grose St	921	1120	2041	971	844	1815	627	808	1435
O'Connell St, south of Albert St	540	1039	1579	939	596	1535	520	694	1214
O'Connell St, south of Barney St	377	814	1191	731	401	1132	396	494	890
O'Connell St, south of Board St	281	15	296	379	23	402	310	23	333
Fleet St, south of Albert St	160	54	214	74	171	245	54	47	101
Fleet St, south of Factory St	22	85	107	99	24	123	30	22	52
Marist St, south of Market St	505	560	1065	777	512	1289	648	601	1249
Marist St, south of Victoria Rd	329	267	596	553	277	830	482	295	777
Wilde Ave, south of Victoria Rd	383	1132	1515	878	537	1415	364	379	743
Market St, east of Marist St	200	332	532	272	267	539	216	345	561
Victoria Rd, east of O'Connell St	504	541	1045	447	635	1082	374	444	818
Victoria Rd, east of Marist St	603	612	1215	687	734	1421	603	586	1189
Victoria Rd, east of Church St	1245	874	2119	990	1187	2177	838	811	1649
Grose St, east of O'Connell St	275	193	468	181	222	403	127	152	279
Grose St, west of Church St	255	464	719	290	308	598	195	285	480
Fennell St, west of O'Connell St	63	235	298	181	68	249	93	73	166
Fennell St, east of O'Connell St	74	20	94	68	40	108	34	21	55
Albert St, west of Fleet St	40	210	250	238	68	306	28	25	53
Albert St, east of O'Connell St	219	288	507	298	248	546	177	223	400
Pennant Hills Rd, east of Church St	413	767	1180	646	492	1138	440	501	941
Factory St, east of Fleet St	12	18	30	32	7	39	6	8	14
Factory St, east of O'Connell St	8	38	46	13	26	39	10	39	49
Dunlop St, west of O'Connell St	19	86	105	78	27	105	31	22	53
Dunlop St, east of O'Connell St	16	18	34	28	13	41	23	12	35
Barney St, east of O'Connell St	115	824	939	387	403	790	139	515	654
Board St, east of O'Connell St	269	16	285	380	18	398	313	23	336
North Rocks Rd, east of Church St	663	830	1493	713	680	1393	665	700	1365

NOTE: NB – Northbound; EB – Eastbound; SB – Southbound; WB – Westbound

The intersection turning movement flows at the surveyed locations are presented in Appendix A.1.

The results of the queue length surveys are also presented graphically in Figure 3.4 to Figure 3.6 for the different surveyed peak periods.

Figure 3.4: Maximum Queue Length Recorded on Thursday 7-9AM

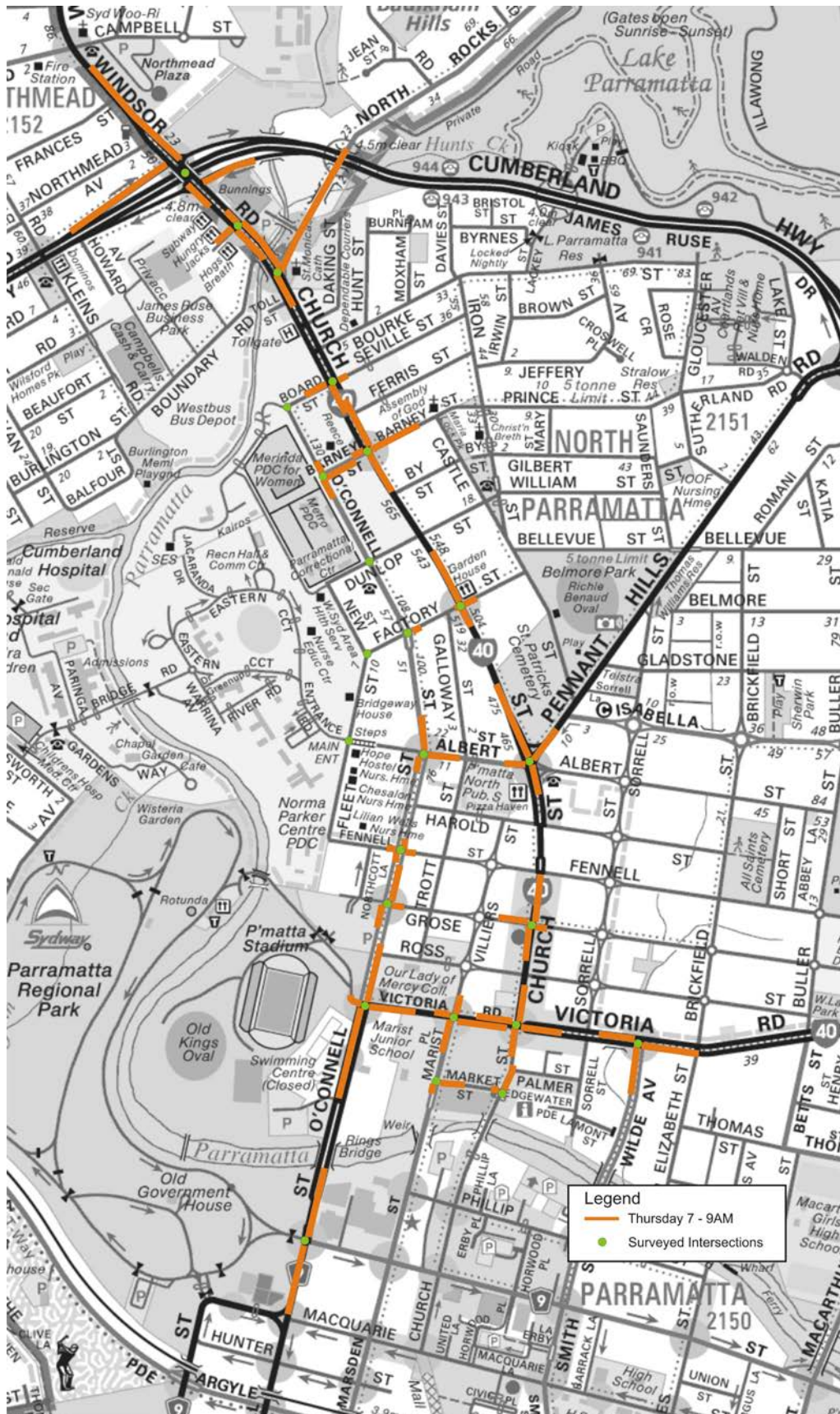


Figure 3.5: Maximum Queue Length Recorded on Thursday 4-6PM

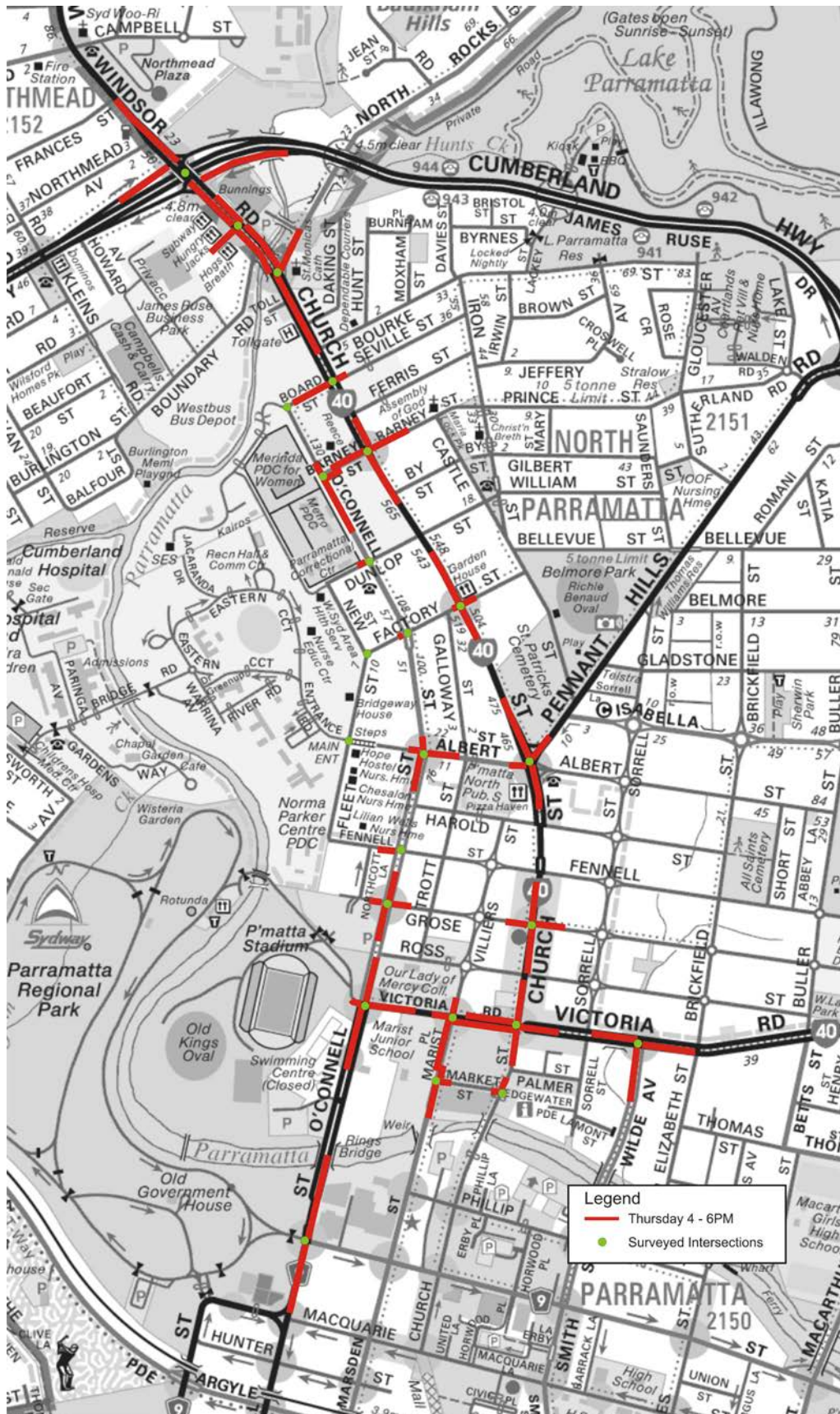
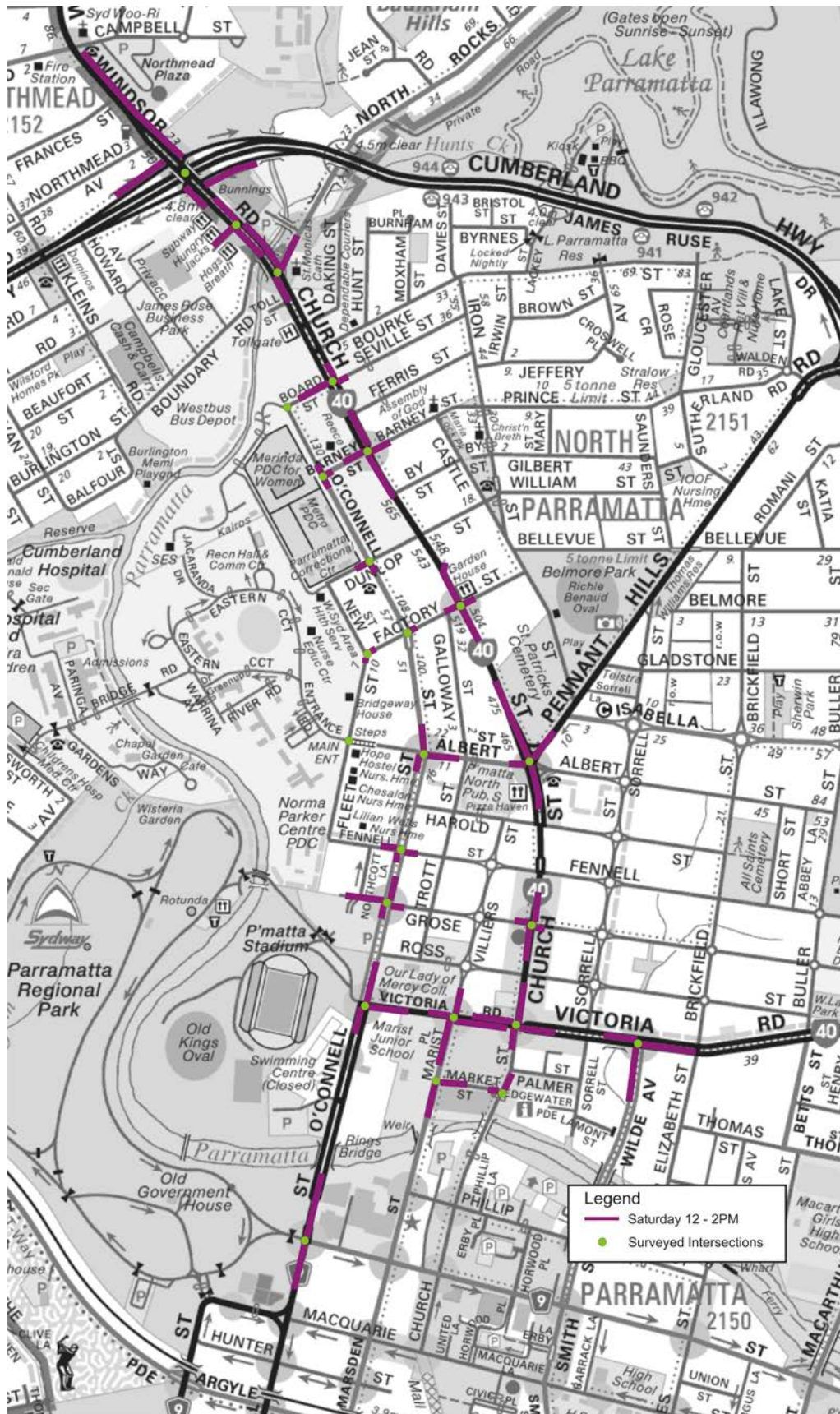


Figure 3.6: Maximum Queue Length Recorded on Saturday 12-2PM



Origin-Destination Surveys

Origin-destination surveys for two access roads serving the Cumberland hospital precinct was undertaken at the same period as the intersection count surveys. The surveys were undertaken to establish the extent of rat-running traffic from the Westmead Hospital through the Cumberland Hospital site. The locations of the access roads are shown in Figure 3.3.

This survey involved recording number plates of all vehicles passing Bridge Road, west of the Cumberland hospital precinct and Greenup Drive, west of Fleet Street. The result of the origin-destination survey is presented in Table 3.3. A detailed surveyed data is included Appendix A.2.

Table 3.3: Origin-Destination Survey

Surveyed Period	No. of Vehicles Recorded (2 hr period)			No. of Vehicles Passing Two Access Points (during 2 hr period)		
	Greenup Dr	Bridge Rd	Total	Eastbound	Westbound	Two-way
Thursday 7-9AM	382	252	634	30	106	136 (21%)
Thursday 4-6PM	117	164	281	125	98	223 (79%)
Saturday 12-2PM	65	46	111	27	40	67 (61%)

NOTE: Figures in parenthesis presents the percentage of vehicles passing the Cumberland hospital precinct over the 2 hour period.

The results indicate that a significant proportion of vehicles using the two access roads serving the Cumberland hospital precinct do not have destination within the hospital site and are rat-running through the hospital precinct. This behaviour is more dominant during the weekday afternoon period with about 79 percent of vehicles using the two access points as a through link.

Parking Occupancy & Duration Surveys

Parking occupancy and duration surveys were undertaken on the Cumberland Hospital site on Saturday 9th of August and Thursday 14th August 2014 during the following periods:

- 7:00am and 7:00pm (for Thursday)
- 9:00am and 5:00pm (for Saturday).

A boundary of the parking surveys is shown in Figure 3.3. The survey was undertaken to establish whether there was an element of parking at the hospital by people who were not working or visiting the hospital (i.e. they were using the site as a free long term car park but working elsewhere).

The survey of parking inventory indicated that the Cumberland hospital precinct provides about 1,005 car parking spaces. About 105 spaces are on-street car parking spaces and about 900 spaces are provided within on-site car parks.

Table 3.4: Summary of Parking Occupancy and Duration Surveys

	Thursday (7am-7pm)	Saturday (9am-5pm)
Supply/Capacity	1005	1005
Average Occupancy (%)	49%	17%
Maximum Occupancy (%)	70%	19%
Average Duration of Stay (h:mm)	4:04	4:26
Maximum Duration of Stay (h:mm)	12:00	8:00
Total Users (no. of vehicles)	1454	306

Figure 3.7 and Figure 3.8 show the parking duration and occupancy profiles, respectively.

Figure 3.7: Duration of Parking Profiles for Thursday and Saturday

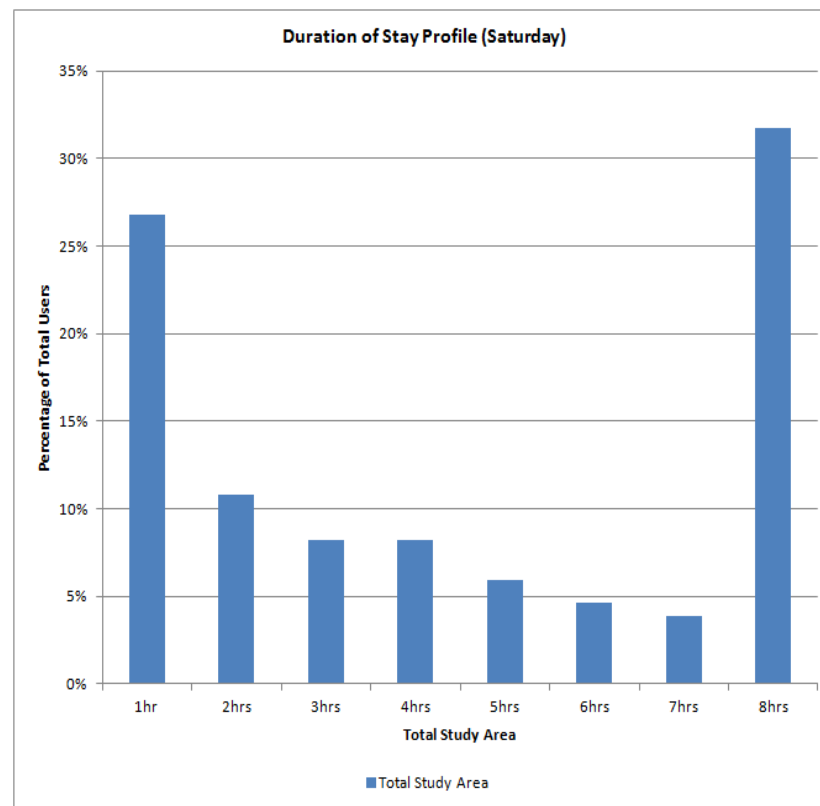
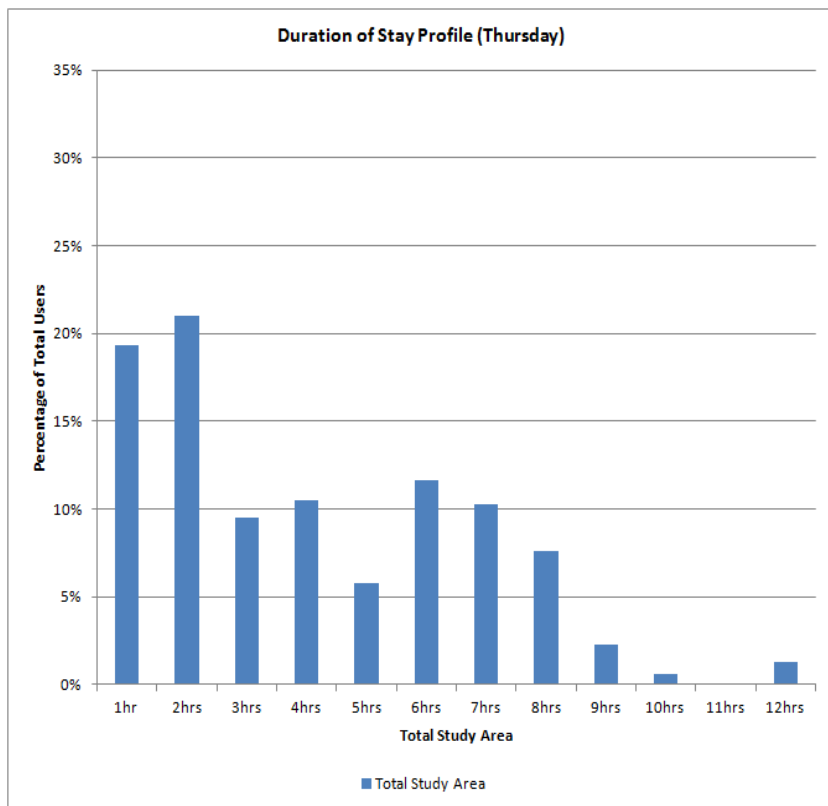
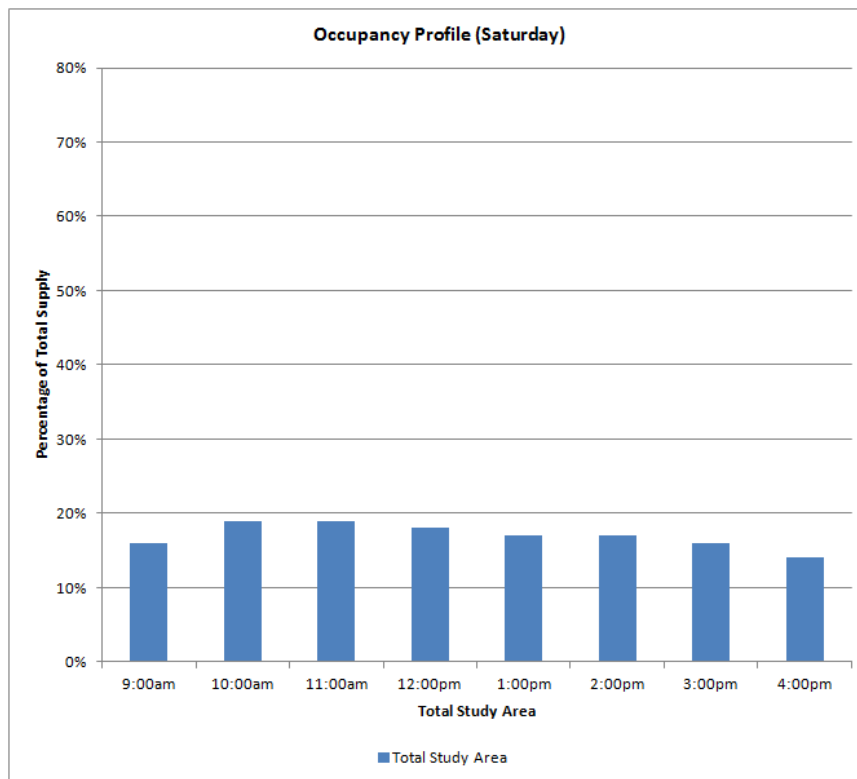
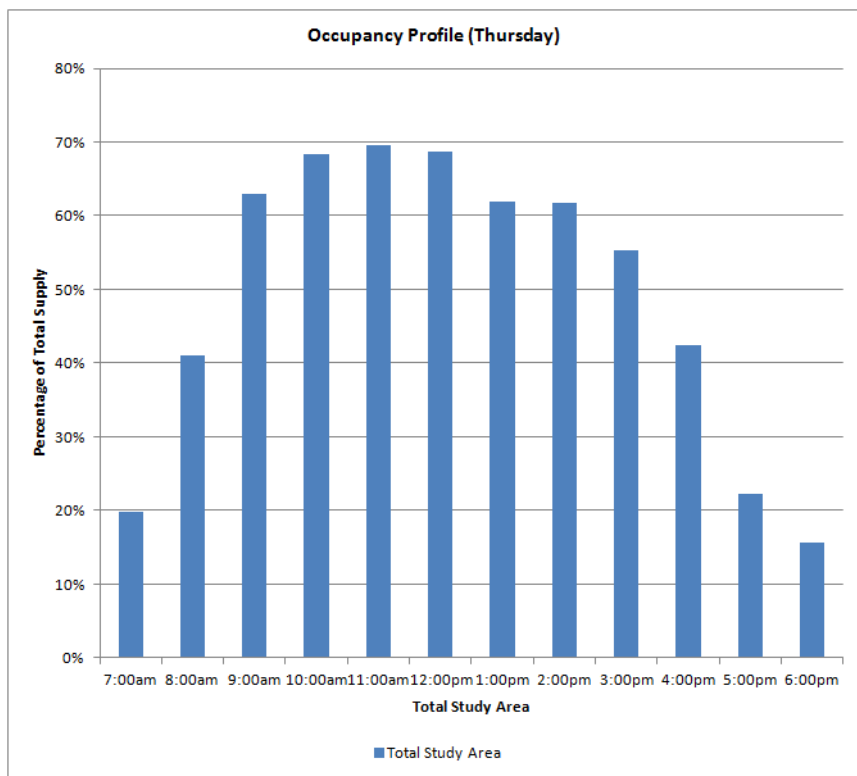


Figure 3.8: Parking Occupancy Profiles for Thursday and Saturday



The results of parking occupancy and duration surveys indicate that:

- The average parking occupancy across the hospital precinct is 49% (for Thursday) and 17% (for Saturday).
- The maximum parking occupancy recorded is 70% (for Thursday) and 19% (for Saturday).
- The average parking duration is about 4 to 4.5 hours.

There is no clear evidence from the parking surveys that the hospital site may be used as long term car park for people working elsewhere such as the Westmead hospital. The average parking occupancy for parking areas in the vicinity of the Bridge Road access remains similar to the average occupancy of the overall hospital precinct.

A detailed surveyed data is included Appendix A.3.

Travel Time Surveys

Travel time surveys were carried out along O'Connell Street and Church Street on Saturday 9th of August and Thursday 14th of August 2014 during the following peak periods:

- 7:00am and 9:00am (for Thursday)
- 4:00pm and 6:00pm (for Thursday)
- 12:00pm and 2:00pm (for Saturday).

The travel time survey routes along O'Connell Street and Church Street are shown in Figure 3.3.

The average travel time survey results are presented in Table 3.5.

Table 3.5: Surveyed Average Travel Time

Survey Period	Church St, between Victoria Rd & Cumberland Hwy Average Travel Time		O'Connell St, between Victoria Rd & Board St Average Travel Time	
	Northbound	Southbound	Northbound	Southbound
Thursday 7-9AM	5:18	5:44	1:53	2:52
Thursday 4-6PM	6:28	4:54	2:23	2:33
Saturday 12-2PM	4:28	5:17	2:00	2:24

The results indicate that the average travel time for northbound traffic is longest during the afternoon peak period for both Church Street and O'Connell Street. The average travel time for southbound traffic is longest during the morning peak period. The recorded travel time during the Saturday midday period is generally less than the Thursday morning and afternoon peak periods.

The travel time surveys were undertaken to assist with calibrating the traffic model. A detailed surveyed data is included Appendix A.4.

3.9 Traffic Signal Operation

GTA has also obtained LX files of the study area and the Intersection Diagnostic Monitor (IDM) at the following signalised intersections from RMS:

- Windsor Road/Cumberland Highway
- Windsor Road/ The Junction Access Road
- Church Street/North Rocks Road
- Church Street/Barney Street
- Church Street/Factory Street

- Church Street/Pennant Hills Road/Albert Street
- Church Street/Grose Street
- Church Street/Victoria Road
- Victoria Road/Marist Place
- Victoria Road/Wilde Avenue
- O'Connell Street/Albert Street
- O'Connell Street/Grose Street
- O'Connell Street/Victoria Road
- O'Connell Street/George Street.

The LX file is the data file that feeds into the region computer. It contains the data necessary for communications, signal timing, coordination and variation routines.

IDM data are used to validate the operation of the traffic signals in the model. IDM data for the above intersections are pre-arranged with RMS to be on the same day as other traffic data. The data files contain a record of which phases and split plans were called, which link plans were used as well as phase times and cycle times throughout the monitored period. This data has been used to calibrate the model.

3.10 Intersection Operation

The operation of the key intersections within the study area has been assessed using LinSig/SIDRA INTERSECTION¹, a computer based modelling package which calculates intersection performance.

In general, most of signalised intersections along Church Street, O'Connell Street and Victoria Road were modelled using LinSig program and the rest, using SIDRA INTERSECTION program. Table 3.7 presents the intersection performance and also indicates which modelling package has been used to model the particular intersections.

The commonly used measure of intersection performance, as defined by the RMS, is vehicle delay. SIDRA INTERSECTION determines the average delay that vehicles encounter and provides a measure of the level of service. Table 3.6 shows the level of service criteria.

¹ Program used under license from Akcelik & Associates Pty Ltd.

Table 3.6: Level of Service (LoS) Criteria

Level of Service (LoS)	Average Delay per vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Sign
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	Near capacity	Near capacity, accident study required
E	57 to 70	At capacity, at signals incidents will cause excessive delays	At capacity, requires other control mode
F	Greater than 70	Extra capacity required	Extreme delay, major treatment required

Table 3.7 presents a summary of the existing operation of the intersection for the Thursday AM, Thursday PM and Saturday midday peak hours, with full results presented in Appendix B of this report.

The results presented in Table 3.7 indicate that Windsor Road/Cumberland Highway intersection currently operates with level of service (LoS) F for all three peak periods. Similarly, O'Connell Street/Fennell Street intersection operates at capacity with LoS E/F.

A number of signalised intersections along Church Street (i.e. at North Rocks Road, Barney Street and Victoria Road intersections) operate at near capacity during at least one of the modelled peak period.

Intersections along O'Connell Street generally operate at LoS B or better except for Fennell Street intersection mentioned above.

Table 3.7: Existing Operating Conditions

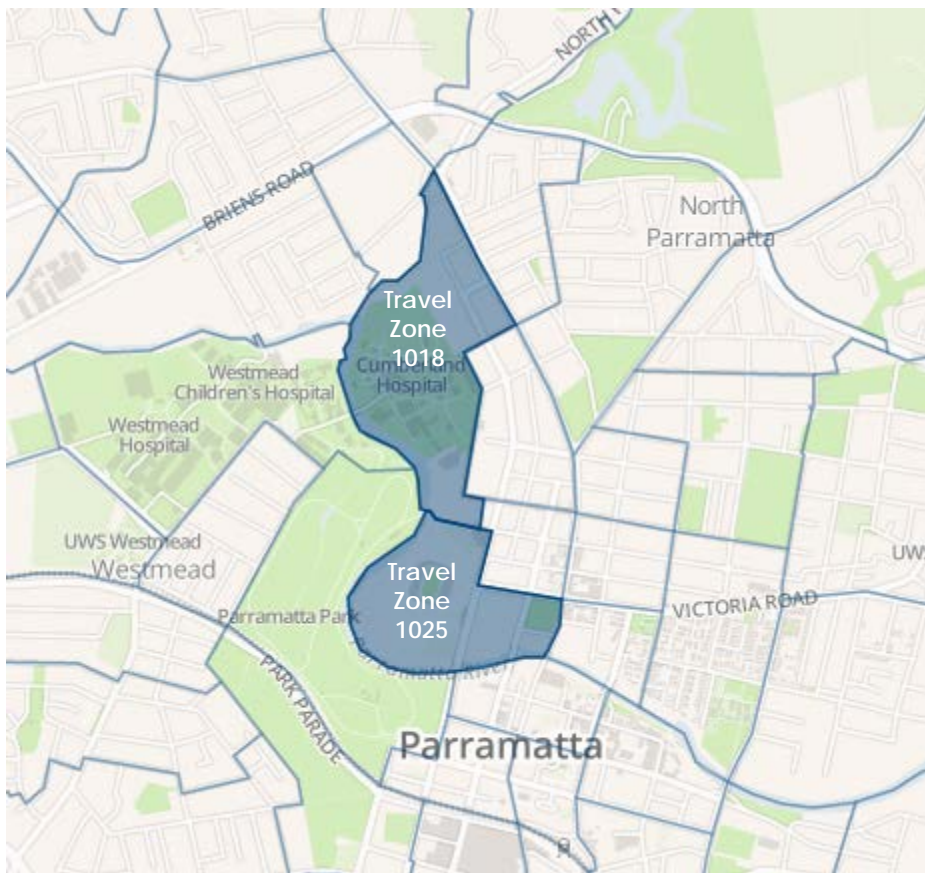
	Intersections	Control Type	Thursday AM		Thursday PM		Saturday Midday	
			Level of Service	Average Delay (sec)	Level of Service	Average Delay (sec)	Level of Service	Average Delay (sec)
(LinSig)	Windsor Rd/ Cumberland Hwy	Signal	F	73	F	119	F	83
(LinSig)	Church St/ The Junction Access	Signal	A	10	B	19	B	19
(LinSig)	Church St/ North Rocks Rd	Signal	D	50	B	26	C	33
(SIDRA)	Church St/ Board St/ Seville St	Priority	C	40	C	33	B	26
(LinSig)	Church St/ Barney St	Signal	C	40	D	47	C	33
(LinSig)	Church St/ Factory St	Signal	B	16	A	13	A	14
(LinSig)	Church St/ Albert St/ Pennant Hills Rd	Signal	C	40	B	29	B	26
(LinSig)	Church St/ Grose St	Signal	C	35	C	30	B	24
(LinSig)	Church St/ Victoria Rd	Signal	C	32	D	49	E	62
(SIDRA)	Church St/ Market St	Priority	A	9	A	9	A	9
(SIDRA)	O'Connell St/ Board St	Priority	A	9	A	9	A	9
(SIDRA)	O'Connell St/ Barney St	Priority	A	13	A	10	A	10
(SIDRA)	O'Connell St/ Dunlop St	Priority	A	14	A	14	A	12
(SIDRA)	O'Connell St/ Factory St	Priority	B	16	B	15	A	13
(SIDRA)	O'Connell St/ Fennell St	Priority	F	82	F	117	E	59
(LinSig)	O'Connell St/ Albert St	Signal	B	19	A	14	B	17
(LinSig)	O'Connell St/ Grose St	Signal	B	21	B	21	B	17
(LinSig)	O'Connell St/ Victoria Rd	Signal	C	31	C	30	C	35
(SIDRA)	O'Connell St/George St	Signal	B	18	A	12	A	13
(LinSig)	Victoria Rd/ Marsden St	Signal	C	37	D	51	C	39
(LinSig)	Victoria Rd/ Wilde Ave	Signal	C	40	C	34	B	25
(SIDRA)	Factory St/ New St	Priority	A	9	A	9	A	9
(SIDRA)	Greenup Drive/ Fleet St	Priority	A	9	A	9	A	9
(SIDRA)	Marsden St/ Market St	Priority	A	10	A	11	A	10

3.11 Existing Mode Share

The 2011 Census Journey to Work (JTW) data provides the most robust picture of existing travel patterns to and from the Cumberland hospital and Sports/Leisure precincts. The smallest geographical area for which JTW data is available is known as a travel zone (TZ).

The subject site is located in travel zones 1018 and 1025, as shown in Figure 3.9. According to the 2011 JTW data, these two travel zones provide employment for about 2,600 people and about 20 people reside within this area.

Figure 3.9: Travel Zones 1018 & 1025



Background Image Source: Bureau of Transport Statistics website (<http://visual.bts.nsw.gov.au/jtwbasic/#1018,1025>)

Table 3.8 presents the travel mode share of employees travelling to TZs 1018 and 1025.

Table 3.8: 2011 Journey to Work Data

Travel Mode	Percentage
Car (driver)	79%
Car (passenger)	6%
Train	7%
Bus	3%
Walked only	3%
Mode not stated	2%
Total	100%

Data Source: Bureau of Transport Statistics website (<http://visual.bts.nsw.gov.au/jtwbasic/#1018,1025>)

Table 3.8 indicates that percentage of people travelling by car mode (including drivers and passengers) is about 85 percent. The percentage of people using public transport mode is about 10 percent.

The results indicate that there is currently a high reliance of private vehicle usage of people travelling to work within the subject site.

3.12 Existing Public Transport Services

The site is located in close proximity to Parramatta CBD and Westfield Shopping Centre.

It is approximately 2.3km in terms of walking distance to Parramatta Railway Station. As such, whilst not considered as being Transit Orientated Development (TOD), the site is within a walkable catchment of the CBD in the same way that Surry Hills or Redfern are connected to Sydney CBD.

The site is presently served by bus services operated by Sydney Buses as well as Hills Bus. These services can either be accessed from O’Connell Street and/or Church Street. It is noted that Church Street has designated bus lanes in both directions as indicated previously. Much of the subject site is within 400m of bus stops along O’Connell Street, which is generally accepted as the distance that public transport users are prepared to walk. Figure 3.10 presents a map of the existing bus routes in the area that are operated by Sydney Buses, while services provided by Hills Bus are shown in Figure 3.11.

Figure 3.10: Existing Bus Routes Operated by Sydney Buses

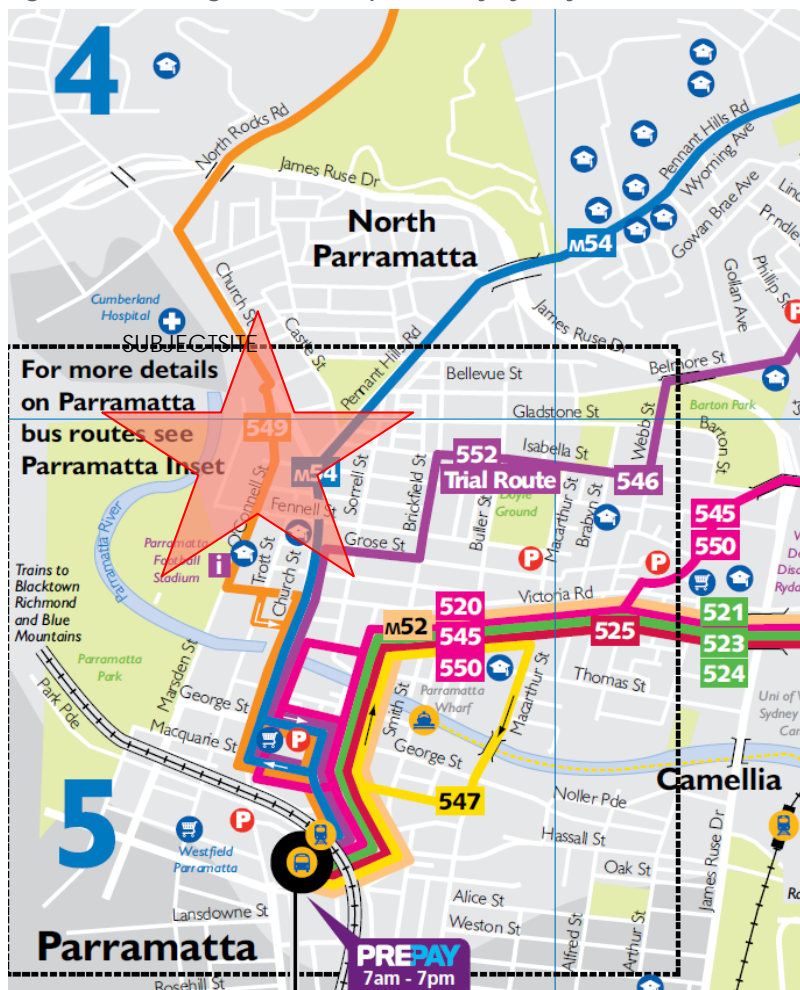
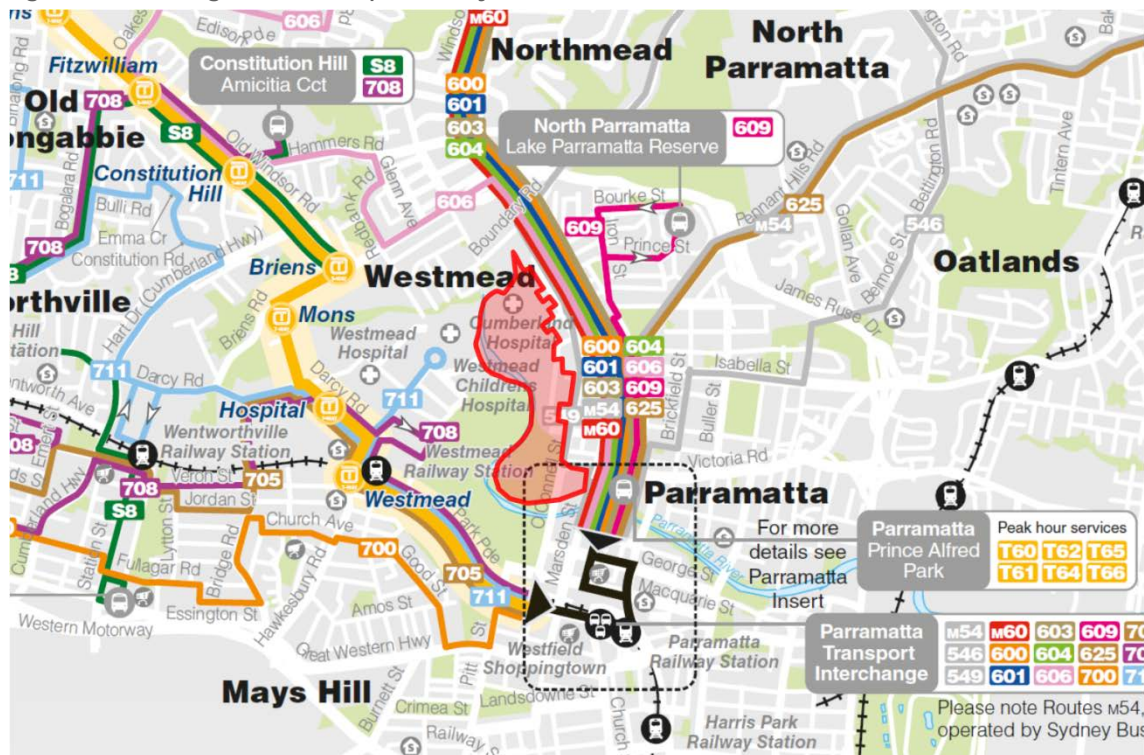


Figure 3.11: Existing Bus Routes Operated by Hills Bus



These services connect the Cumberland Precinct site with the Parramatta CBD (and railway station) as well as Carlingford, Epping and Macquarie Park to the north east of the site and to Castle Hill, Rouse Hill and Hornsby to the north.

Table 3.9 presents the number of (inbound and outbound) services for the three hour morning (6:30am to 9:30am) and evening (4:00pm to 7:00pm) peak periods.

Table 3.9: Existing Bus Service

Bus Route	Bus Operator	Morning Peak Period	Evening Peak Period
549	Sydney Buses	7 (7)	6 (7)
M54*	Sydney Buses	18 (18)	18 (18)
600	Hills Bus	3 (1)	- (-)
601	Hills Bus	10 (8)	7 (10)
603	Hills Bus	6 (2)	3 (6)
604	Hills Bus	5 (2)	4 (5)
606	Hills Bus	6 (4)	4 (5)
609	Hills Bus	6 (1)	- (6)
625	Hills Bus	6 (5)	6 (7)
M60	Hills Bus	15 (15)	17 (19)

* This service operates along Church Street/Pennant Hills Road. The nearest bus stop on this service is some 800m walking distance from the site.

7 (8) - Inbound (Outbound)

The bus services in the vicinity of the site have a combined frequency of approximately one minute or less.

3.13 Parramatta Shuttle Bus

The Parramatta Shuttle Bus is a free service that connects commuters to the commercial, retail and recreational landmarks of the city. The shuttle service operates in a loop with major attractions along its course including Parramatta Wharf, Transport Interchange, Parramatta Library, Westfield and Parramatta Park.

The Shuttle Bus operates within the vicinity of the Parramatta Square, primarily along Macquarie Street, Darcy Street, Argyle Street and Marsden Street.

The bus route and bus stops of the Parramatta Shuttle Bus service are shown in Figure 3.12.

Figure 3.12: Parramatta Free Shuttle Bus Service Route



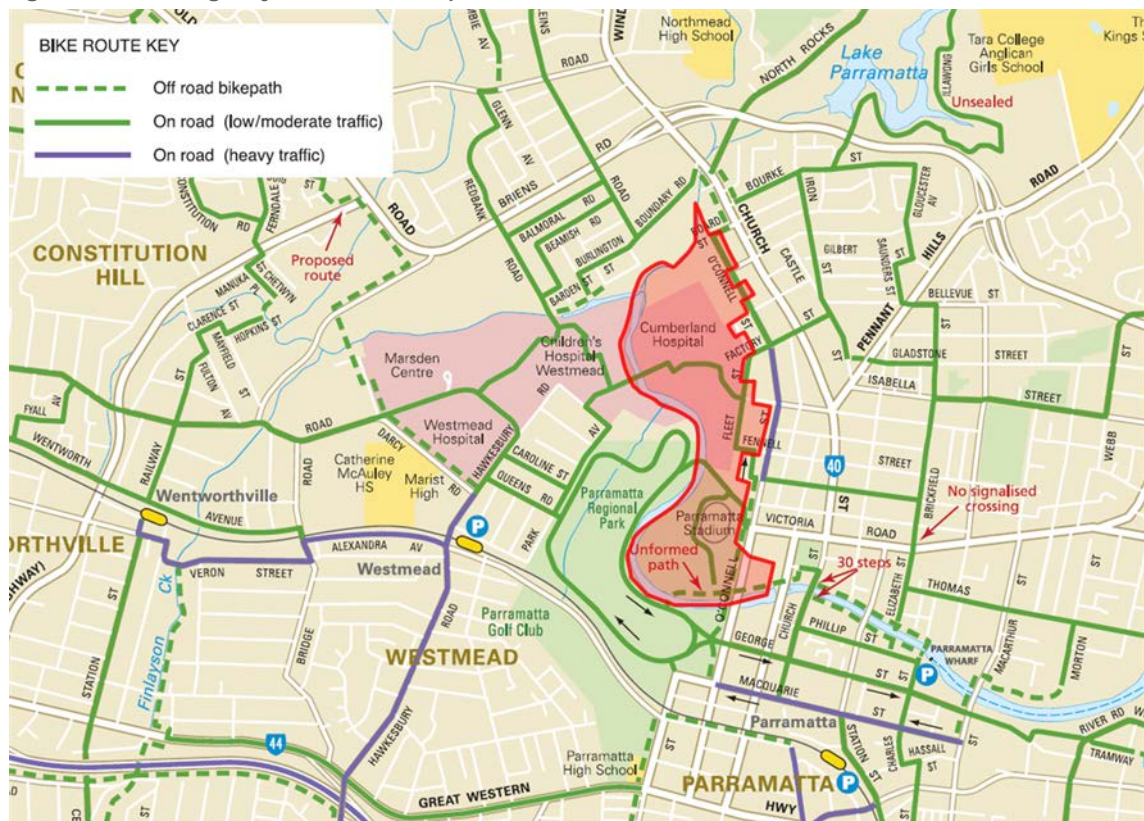
Image Source: TfNSW

3.14 Cycle and Pedestrian Networks

Information available from Parramatta City Council website indicates that there are currently on-road bicycle routes near the site. These include routes along O’Connell Street and Fleet Street as well as along Factory Street. Council’s information also indicates that the route along Fleet Street branches out into the site via Greenup Drive. This then continues along Eastern Circuit to connect to Bridge Road to link across the Parramatta River into Westmead Hospital.

Existing available bicycle network is shown in Figure 3.13.

Figure 3.13: Existing Bicycle Network Map



Source: Parramatta City Council Website

However, from our site observations, bicycle symbols (indicating an on road bicycle route) were observed on both sides of O’Connell Street, but not on the other streets mentioned above.

Council’s Bike Plan, as show in Figure 3.14, contains a map depicting both the existing and proposed bike routes. In the vicinity of the site, it shows only a proposed off road route along Church Street.

Figure 3.14: Council's Bike Plan



Source: Parramatta City Council Website

Pedestrian facilities are available in the area by way of constructed footpaths on one or both sides of the road.

However, the only controlled pedestrian crossing in the vicinity of the site is that at the signalised intersection of O'Connell Street with Albert Street. However, there are a number of controlled crossings are located along Church Street including those at Albert Street and Factory Street.

There are presently no formally identified bicycle routes within the Cumberland Precinct site. Similarly, pedestrian facilities are also very limited.

4. Development Proposal

4.1 Background

Parramatta North Urban Renewal area (PNUR) is located to the west and north-west of the Parramatta CBD, Sydney's second CBD. Parramatta is located in the geographical heart of Sydney and plays a significant role as the most important centre in Western Sydney. The PNUR is located to the immediate east of the Westmead Health campus, separated by the Parramatta River.

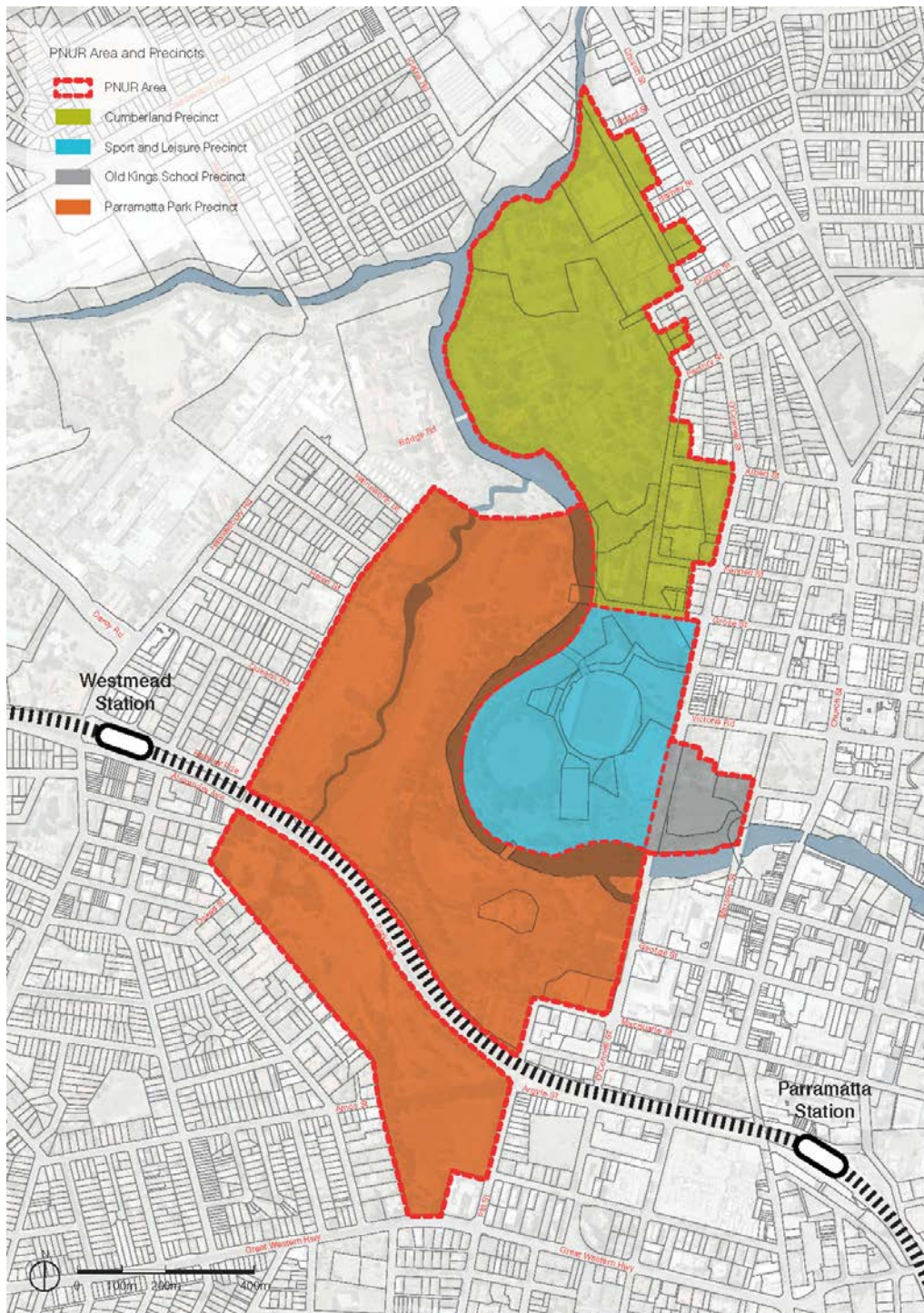
The PNUR is a 146 Ha area and has been divided into four distinct Precincts as shown in Figure 4.1, comprising of:

- The Cumberland Precinct (40 Ha)
- Sport and Leisure Precinct (21 Ha)
- Old Kings School Precinct (4 Ha), and
- Parramatta Park Precinct (81 Ha).

This Study has been prepared in order to identify how best to plan for the urban renewal of the Cumberland Precinct and the Sports and Leisure Precinct only noting that the Parramatta Gaol and Lot 1 are not part of the current rezoning. The recommended planning controls have been prepared recognising the locational advantages of the PNUR to the Parramatta CBD, the Westmead Health Precinct, the Rydalmere Education Precinct, and transport options.

The renewal of the area provides exceptional opportunities for the delivery of housing, cultural and community uses, and the capacity to protect, enhance and re-use significant heritage buildings and structures.

Figure 4.1: Precinct Map



4.2 Proposed Development

The Parramatta North Urban Renewal (PNUR) area provides opportunities to protect and enhance heritage significant sites, and deliver housing, cultural uses and employment on the edge of the Parramatta CBD. The area is also exceptionally well located in close proximity to the Westmead Health and Rydalmere Education specialised precincts, as well as existing and planned transport.

The location at the edge of the Parramatta CBD also places the area at the western extent of the Global Economic Corridor and Parramatta Road Corridor. These locational advantages, in concert with the proximity to the Western Sydney Employment Area, underline the strategic merits of the urban renewal of the area. PNUR includes many locational and site specific attributes, including frontage to the Parramatta River and a rich history of Aboriginal, early colonial, nineteenth and twentieth century uses. The potential exists to deliver housing and employment opportunities in a precinct that will embrace and interpret these heritage attributes to make them a focus of the urban environment that will emerge through future development.

The Study has been undertaken to prepare an appropriate suite of planning controls to guide the urban renewal of the area and future development. This has led to an Indicative Layout Plan (ILP) guiding future open space, transport links and building footprints, as well as zoning and height of building controls, which are to be implemented in conjunction with site specific Development Control Plan provisions to guide the fine grain development of the area.

This suite of controls has had regard to the site's heritage, environmental values and physical constraints.

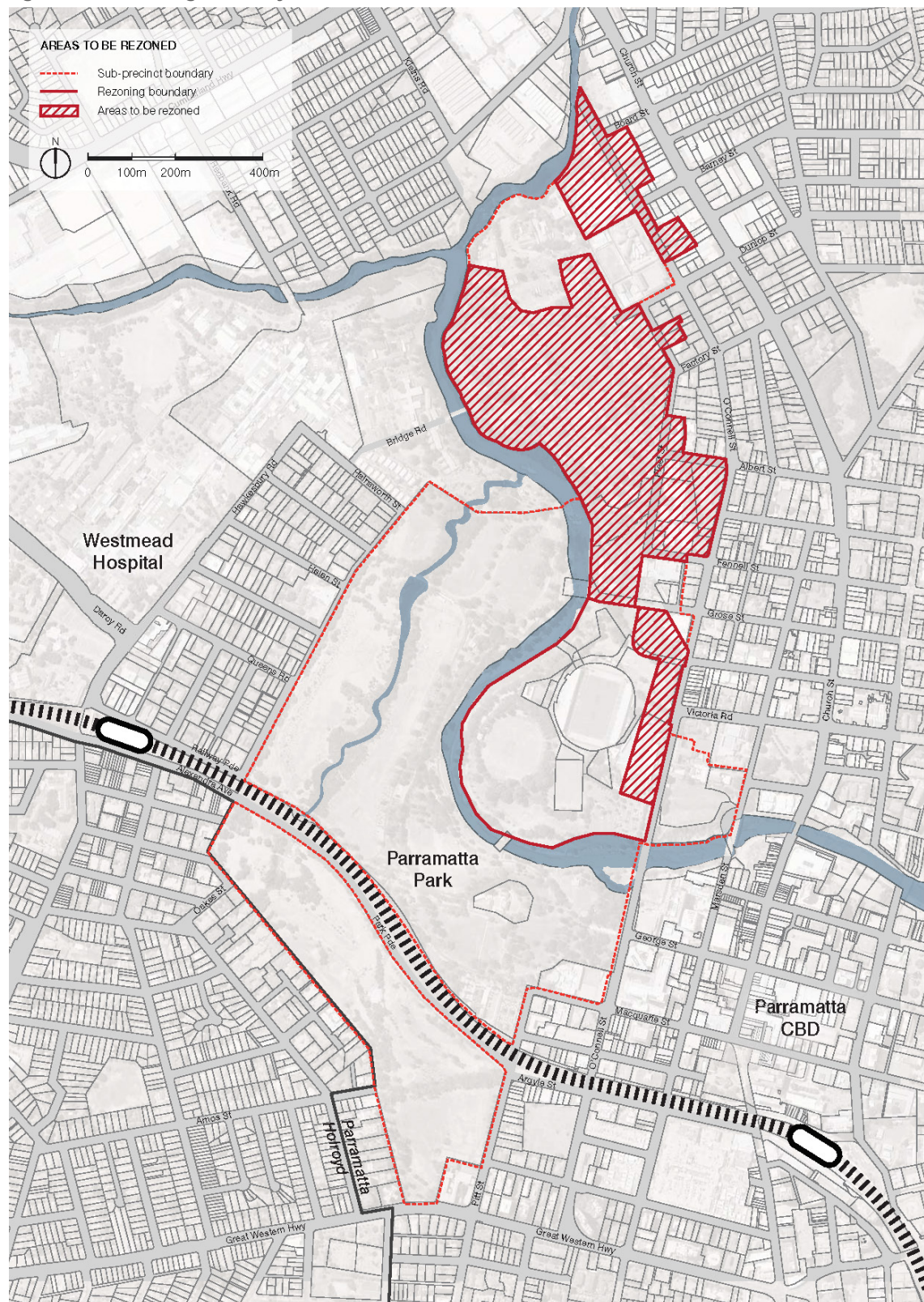
The ILP envisages the creation of a mixed use area within the Cumberland Precinct that accommodates new development for housing, employment, cultural and community uses in new buildings and through the adaptation of existing heritage buildings. For the Sports and Leisure Precinct, the ILP envisages the strengthening of the current role of the area as a major sports venue and the introduction of allied retail and commercial uses to support the role of Parramatta Stadium as a major sport and entertainment venue for Parramatta and greater western Sydney. The Sports and Leisure Precinct may also accommodate ancillary retail to support the resident and employee population to be accommodated in the PNUR.

The study proposes amendments to the planning framework, including revisions to the development controls that will facilitate a mixed use residential redevelopment of the study area. The proposed amended planning framework will facilitate the lodgement of future development applications for the land in the study area which are anticipated to achieve the following development yields:

- Cumberland Precinct
 - Approximately 4,100 dwellings
 - Approximately 28,000m² GFA of adaptive reuse of retained heritage buildings
 - Up to 4,000m² GFA of retail space
- Sports and Leisure Precinct
 - Approximately 34,000m² GFA of mixed-use (likely to be predominantly commercial).

Figure 4.2 shows the boundary of the proposed rezoning.

Figure 4.2: Rezoning Boundary



For the purposes of this assessment of potential traffic generation impacts, a higher development yield has been assumed to reflect the outcome of a future redevelopment of land not included as part of the overall study into the amendment of the planning framework. For the purpose of traffic impact modelling the development has assumed a development yield potential of:

- Cumberland Precinct
 - Approximately 5,600 dwellings.
 - Approximately 35,000m² GFA of adaptive reuse of retained heritage buildings. Of which about 11,000m² (i.e. about 140 dwellings) would be used as residential area and the remaining (i.e. 24,000m² GFA) would be used for commercial area.
 - Up to 4,000m² GFA of retail space.
- Sports and Leisure Precinct
 - Approximately 46,000m² GFA of mixed-use. Of which 75% of the area has been estimated to be commercial area and 25% of the area would be for residential area (i.e. about 130 dwellings).

The above potential development yields have been adopted for the purpose of the traffic assessment and modelling.

4.3 Proposed Layout

Figure 4.3 presents the indicative layout plan for the proposed development. As discussed above, for the purpose of the traffic assessment, a higher development yield has been assumed. This includes the potential for nearby future developments, which are not part of the current rezoning. Figure 4.4 shows the location of potential developments and the indicative development yields for the traffic assessment purposes.

Figure 4.3: Indicative Layout Plan

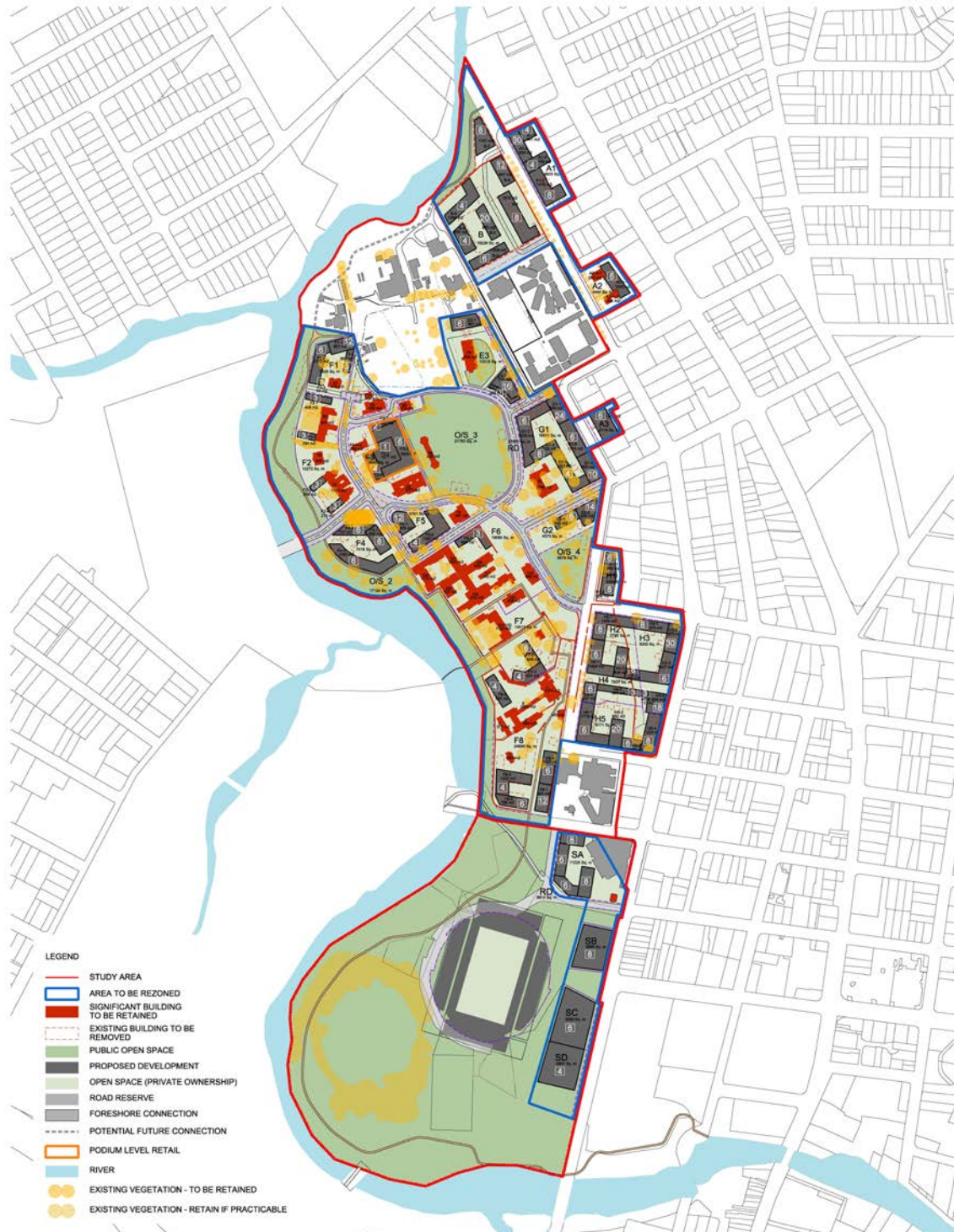
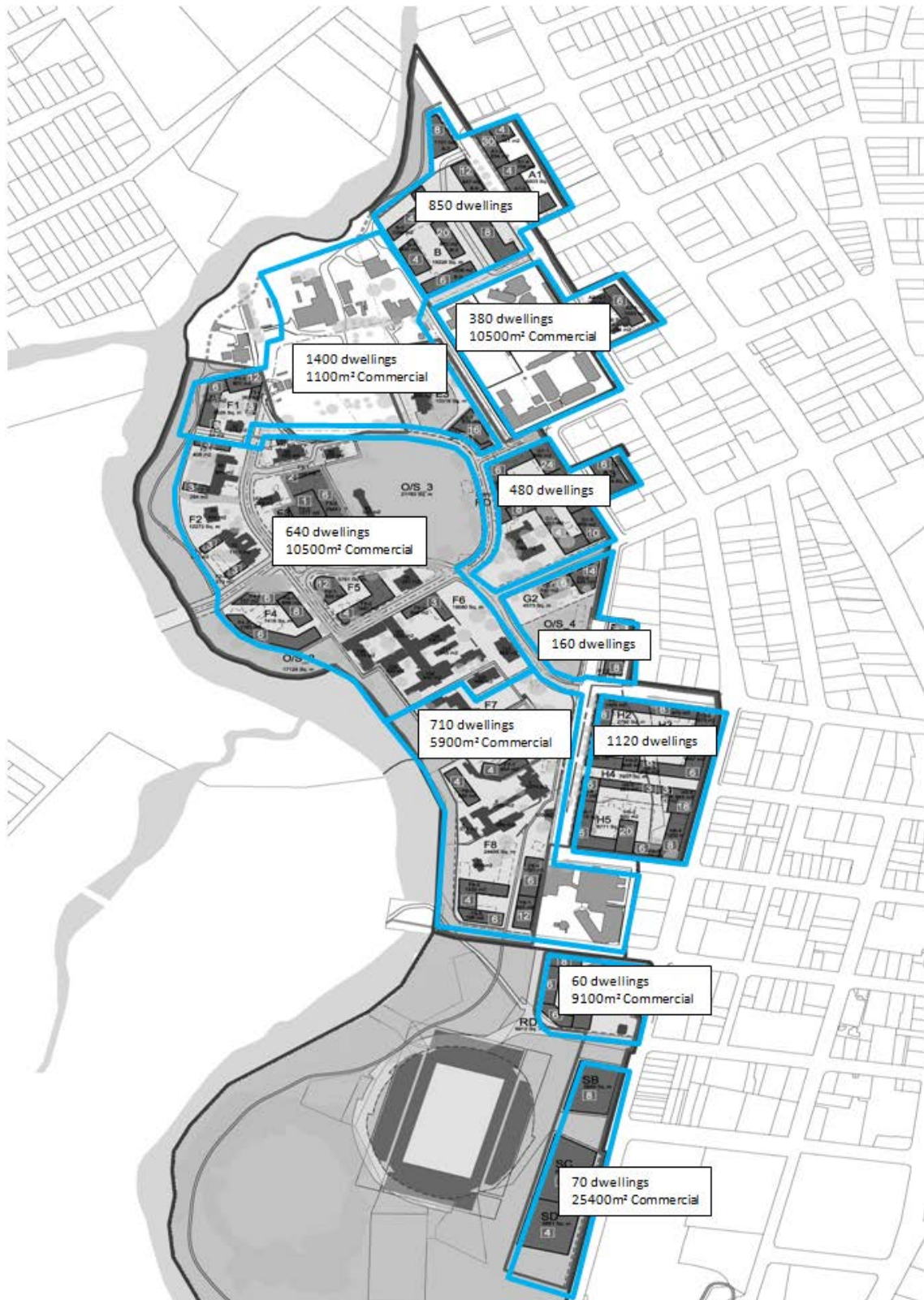


Figure 4.4: Development Location & Indicative Development Yields (for Traffic Assessment Purposes Only)



NOTE: The retail areas (i.e. 4,000m² in total) are included as the commercial component.

4.3.1 Road Layout

A number of new roads and new connections have been proposed to accommodate the proposed development. For the traffic assessment purposes, it is assumed that the internal roads will be connected for the overall development (i.e. including development on Parramatta Gaol and SES lot, which are not part of the current rezoning).

In summary, the following new links and changes to the existing intersections are proposed:

- Barney Street, west of O'Connell Street, forming a new western approach at the O'Connell Street-Barney Street intersection (i.e. proposed 4-way intersection)
- Dunlop Street, west of New Street, forming a new western approach at the New Street-Dunlop Street intersection (i.e. proposed 3-way intersection)
- Factory Street, west of Fleet Street, forming a new western approach at the Fleet Street-Factory Street intersection (i.e. proposed 4-way intersection)
- A through link that joins Albert Street, west of O'Connell Street and Greenup Drive, east of Fleet Street. This forms a new eastern approach at the Fleet Street-Greenup Drive intersection (i.e. proposed 4-way intersection).

4.3.2 Pedestrian & Cycleway Connectivity

It is intended to construct a cycleway along the waterfront which will run from north of the site to south of the Sports Precinct. This will tie into existing cycle ways and those being planned by others. The proposed cycleway includes 1.75km of cycle path to connect areas either side of the development, as shown on the indicative layout plan.

Figure 4.5 shows the proposed pedestrian and cycleway for the proposed development as well as the existing and proposed cycleway in accordance with Parramatta City Councils, *Parramatta Bike Plan 2009*.

4.3.3 Public Transport Connectivity

It is proposed to provide a good quality shuttle bus service between the subject site and the Parramatta interchange. Figure 4.6 shows the possible shuttle bus route. Similar to the existing Parramatta Free Shuttle Bus, it would be a one-way loop service starting from Parramatta Interchange travelling northbound along O'Connell Street then using Barney Street/Castle Street/Factory Street to return to Church Street travelling southbound to join the current Free Shuttle Bus route.

The shuttle bus route and the location of bus stops will be refined during the later stage in consultation with the public.

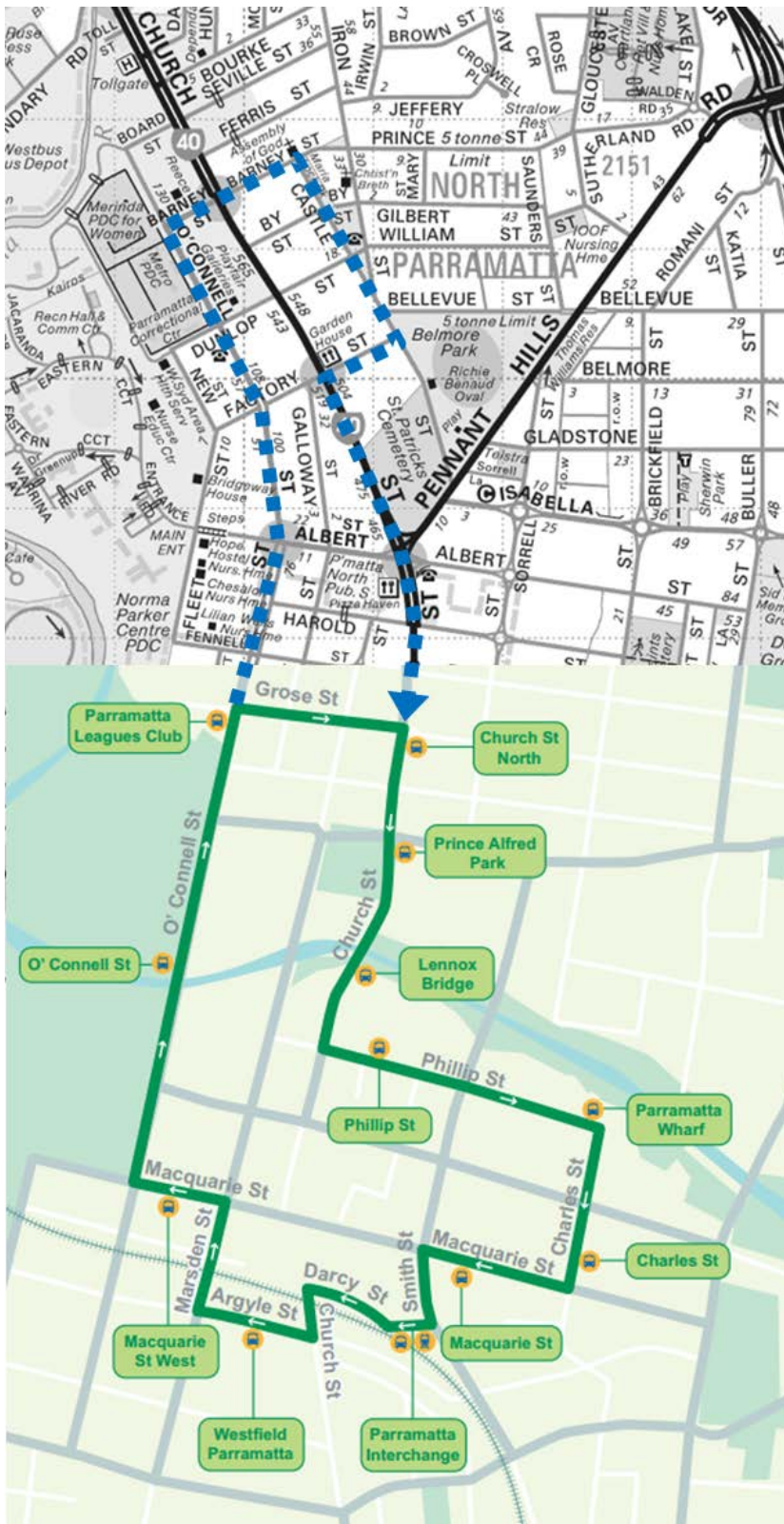
It is the intention that this service is to be provided at least every 10 minutes in the weekday peak periods and every 20 to 30 minutes during other times of the day and at the weekend.

Figure 4.5: Proposed Pedestrian & Cycleway Network



Reproduced from http://www.parracity.nsw.gov.au/_data/assets/pdf_file/0004/34843/ParramattaBikePlan.pdf

Figure 4.6: Proposed Shuttle Bus Service Route between Parramatta Interchange and the Site



Reproduced from <http://www.transportnsw.info/resources/documents/maps/parramatta-shuttle-map.pdf>

5. Parking Provision

5.1 Car Parking

Car parking requirement for the proposed development has been assessed against Parramatta City Council's development control plan, namely *Development Control Plan 2011 Part 3 (Section 3.6.2 Parking and Vehicular Access)*.

Residential Development

In relation to high density residential developments, the DCP stipulated separate parking rates for developments located within and not within 400m walking distance of a railway station or transitway bus stop with an average service frequency of 10 minutes or less. These rates are presented in Table 5.1.

Based on our experience elsewhere, we have assumed the 5,870 residential apartments would have the following mix:

- one-bedroom units – 2,640 (45 per cent)
- two-bedroom units – 2,350 (40 per cent)
- three-bedroom units – 880 (15 per cent).

The required parking provisions are presented in Table 5.1.

Table 5.1: DCP Parking Provision

Unit Types	Number of Units	Within 400m		Not Within 400m	
		Parking Rate	Parking Provision	Parking Rate	Parking Provision
1-Bedroom Units	2,640	1.0 per unit	2,640	1.0 per unit	2,640
2-Bedroom Units	2,350	1.0 per unit	2,350	1.25 per unit	2,938
3-Bedroom Units	880	1.2 per unit	1,056	1.5 per unit	1,320
Visitors	-	0.25 per unit	1,468	0.25 per unit	1,468
Total	5,870		7,514		8,366

It is expected that parking provision for a 5,870 high density residential apartment development at the proposed site would be in the range from 7,510 to 8,370 parking spaces using the Parramatta DCP parking provision rates.

Commercial/Retail Development

Parramatta DCP 2011 also states the required car parking rates for "business premises and office premises" and "retail premises". These rates are presented in Table 5.2.

Table 5.2: Required Commercial/ Retail Parking Provision

Land Use	Gross Floor Area (GFA)	Parking Rate	Parking Provision
Commercial	58,500	1 per 50m ²	1,170
Retail	4,000	1 per 30m ²	133
Total	62,500		1,303

The required parking provision for commercial and retail component would be in the order of 1,300 car parking spaces using the Parramatta DCP parking provision rates.

Total Development

If the parking provision of the proposed development is to be provided in accordance with the current Parramatta City Council's DCP, it is expected that total parking provision would be in the range of 8,820 to 9,770 car parking spaces.

Finally, to encourage a greater modal shift to non-car modes, a lower parking provision rate should be sought from the Council. It is believed that the provision of car parking for the proposed site should be approached innovatively and that site specific car parking provision rates should be agreed with the Council. This is discussed in Section 6.

In order to achieve this, a number of possible measures which can be implemented to reduce the car dependency and encourage use of sustainable transport modes are proposed in Section 6 of this report.

5.2 Bicycle Parking

Bicycle parking requirement for the proposed development has been assessed against Parramatta City Council's DCP Part 3 (Section 3.6.2 Parking and Vehicular Access). These rates are presented in Table 5.3.

Table 5.3: Bicycle Parking Provision

Land Use	Development Size (No. of dwellings/ area)	Bicycle Parking Rate	Bicycle Parking Provision
Residential	5,870 dwellings	1 per 2 dwellings	2,935
Commercial	58,500m ²	1 per 200m ²	293
Retail	4,000m ²	1 per 200m ²	20
Total			3,248

The required bicycle parking provision for the overall development would be about 3,250 spaces.

The DCP also stipulates that "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".

The Class 2 compounds will have medium level security and are locked compounds with communal access using duplicate keys.

For commercial and retail developments, trip end facilities including showers and lockers would need to be provided to adequately service the bicycle users.

6. Travel Demand Management

Transport is a necessary part of life which has effects that can be managed. The transport sector is one of the fastest growing emissions sectors in Australia and travel demand management provides an opportunity for reducing greenhouse gases. As well as delivering better environmental outcomes, providing a range of travel choices with a focus on walking, cycling and public transport will have major public health benefits and will ensure a strong and prosperous community at the site and in the surrounding suburbs.

The planning of the new precinct will need to accommodate innovative ideas to manage the transport demand of the project. Whilst it will be necessary to manage the traffic impacts of the development, it will be necessary to introduce new measures to ensure that the movement trips generated by the proposed development are not all car based (particularly single occupancy trips).

6.1 Potential Measures

Some of the measures that will be incorporated to minimise single vehicle car travel are:

- limited parking ratios
- bus improvements
- cycle parking /facilities
- car sharing/car club cars
- green travel plan.

Car Parking Ratios

One of the most effective ways to reduce traffic congestion and pollution, and encourage a shift to sustainable transportation modes, is through parking reform.

Excessive off-street parking requirements can harm the environment by encouraging traffic and its associated pollution, high parking requirements can make housing prohibitively expensive to build, particularly for affordable housing especially where the cost of land is relatively high. Every parking space increases the amount of land that needs to be developed and each parking space can cost up to \$40,000 per space.

Any reduction in such parking rates does however require the provision of alternative good quality non-car based transport.

Bus Improvements

As described earlier in the text, it is the intention to provide a good quality shuttle bus between the subject site and the Parramatta interchange. The recent introduction of Opal cards means that transfers/ changing modes at such interchanges is much easier and without the historic cost implications.

It would be the intention for such a service to be at least every 10 minutes in the weekday peak periods and every 20 to 30 minutes during other times of the day and at the weekend.

Clearly the potential future introduction of light rail into the precinct would have the ability to reduce the need to travel by car significantly.

Cycle Parking

Cycling is becoming increasingly recognised for the contribution it can make as being a sustainable and healthy form of transport for trips within and around our towns and cities.

There are two main elements to providing a quality cycle outcome:

- Provision of corridor infrastructure
- Provision of good quality parking facilities.

As described in Section 4.3.2 of this report, it is intended to construct a cycleway along the waterfront which will run from north of the site to south of the Sports Precinct. This will tie into existing cycle ways and those being planned by others.

Cycle parking needs to be allowed for early in the development layout, as space needed to accommodate cycles can be significant. The importance of well thought out design cannot be overstated, as all too often space set aside for cycle parking is left half empty because it is either not possible to manoeuvre cycles into designated spaces, or the location is inconvenient. This in turn leads to cycles being left attached to railings or street furniture nearer entrances. Consequently, cycle parking both for residents and visitors will be incorporated into the design.

Evidence of Less Car Ownership

Whilst over the last 30 years there has been a long term trend towards higher rates of car ownership in the population, there is evidence that people aged under 35 are becoming less likely to hold a driver's licence.

Papers such as "*Why are young people driving less? Trends in licence-holding and travel behaviour*" presented at the Australasian Transport Research Forum in Canberra in 2010, examined licence-holding trends for young people in NSW and Sydney, explore possible reasons for these trends, and their policy and planning implications.

The report concluded that "*transport modelling and transport planning needs to begin to adjust to this new paradigm of lower levels of licence-holding by young people. The increasing importance of public transport access to jobs, services, and local shopping opportunities are clear, and are already reflected in the NSW State Plan priority of improving public transport access to key major centres in the metropolitan region. There is also an opportunity for cycling and walking to play a much larger role in the transport task for this age group*".

The changes observed in this paper should be viewed as a positive trend for road safety, for the environment, and for more liveable cities. These finding also acknowledge that the transport planner's toolkit is much larger than transport infrastructure and service provision. Education policies, licensing policies and communications developments are all possible contributors to this significant new trend,

Car Share

Car share is a concept by which members join a car ownership club, choose a rate plan and pay an annual fee. The fees cover fuel, insurance, maintenance, and cleaning. The vehicles are mostly sedans, but also include SUVs and station wagons. Each vehicle has a home location, referred to as a "pod", either in a parking lot or on a street, typically in a highly-populated urban neighbourhood. Members reserve a car by web or telephone and use a key card to access the vehicle.

Similarly located councils (i.e. City of Canada Bay Council) have reported that "*each share car replaces between 8 and 23 private car parking spaces, depending on the location of the*

development". Consequently, provision of car share in the site should be able to reduce both the parking demand for the site and the traffic generated by it.

There are numerous examples in Sydney, and elsewhere in Australia, where one of the main operators, GoGet, has provided car share cars to reduce the environmental impact of the development (<http://www.goget.com.au/developer-partners/>) some of which are listed below:

- Central Park Sydney, Chippendale NSW - 2100 apartments, 2000 parking spaces, 44 GoGet on-site pods
- Trio Apartments, Camperdown NSW - 397 apartments, 355 parking spaces, 10 GoGet on-site pods
- Belvedere Apartments, North Sydney NSW, 195 apartments, 140 parking spaces, 3 GoGet on-site pods.

Clearly, the subject site would be an ideal location for the introduction of similar car share spaces and it is not unrealistic to suggest that up to 100 cars could be provided.

Green Travel Plan (GTP)

A GTP is a package of measures aimed at promoting and encouraging sustainable travel and reducing reliance on the private car. It is not designed to be 'anti-car', but will make apparent, encourage and support people's aspirations for carrying out their daily business in a more sustainable way. GTPs can provide both:

- measures which encourage reduced car use (disincentives or 'sticks')
- measures which encourage or support sustainable travel (also known as Active Transport), reduce the need to travel or make travelling more efficient (incentives or 'carrots').

Active transport relates to physical activity undertaken as a means of transport. It includes travel by foot, bicycle and other non-motorised vehicles. Use of public transport is also included in the definition as it often involves some walking or cycling to pick-up and from drop-off points.

Such travel plans have been implemented by GTA at sites such as Harold Park in Sydney. At that site, the following measures are provided:

- Compliance with the stringent parking controls applicable to the site.
- Creation of street networks and associated cycle ways, footpaths and links to encourage cycling and walking.
- Provision of a Transport Access Guide which would be given to every new occupant of dwellings.
- Provision of public transport noticeboards to make residents and visitors more aware of the alternative transport options available to them. The format would be based upon the Transport Access Guide.
- Provision of yearly membership to a GoOccasional car share which would have dedicated cars and dedicated parking spaces reasonably close to the proposed development.
- Provision of free weekly light rail and travel ten bus tickets for the initial occupation of the dwellings so that residents will be encouraged to make public transport their modal choice from the day they occupy the property. The provision of Opal cards with prepaid credits is likely to be the preferred method of ticket for future precincts when the Opal system is fully rolled out.

- All properties will be provided with high quality telecommunication points which will provide residents with the opportunity to work at home and to reduce the need to travel.
- Provision of bicycle parking spaces both for residents and for visitors to the site.
- Provision of a half yearly newsletter to residents to promote local travel initiatives.

The sites are not yet fully occupied but the early signs of higher than average sustainable travel use is encouraging.

6.2 Summary

On the basis of all such measures being fully incorporated into the development, it is anticipated that the subject site would generate significantly less traffic than other residential sites in the vicinity. This will have the positive effect of reducing traffic impact.

7. Traffic Impact Assessment

7.1 Traffic Generation

Existing Cumberland Hospital Precinct

The surveys at two access roads serving the Cumberland hospital precinct were undertaken as part of the intersection count surveys on Saturday 9th of August and Thursday 14th August 2014.

Table 7.1 summarises the network peak hour traffic generation of the existing hospital precinct. The number of vehicles recorded to be using the hospital access roads as a through-link to Westmead precinct (i.e. rat running through the Cumberland precinct) is not included in the traffic generation figures.

Table 7.1: Current Traffic Generation of the Cumberland Hospital Precinct

	Inbound	Outbound	Total (2-way)
Thursday AM Peak Hour			
-At Bridge Rd, west of site	136	27	163
-At Greenup Dr, west of Fleet St	169	20	189
- Thursday AM Traffic Generation	305	47	352
Thursday PM Peak Hour			
-At Bridge Rd, west of site	35	126	161
-At Greenup Dr, west of Fleet St	15	176	191
- Thursday PM Traffic Generation	50	302	352
Saturday Midday Peak Hour			
-At Bridge Rd, west of site	9	8	17
-At Greenup Dr, west of Fleet St	8	15	23
- Saturday Traffic Generation	17	23	40

The table above shows that the Cumberland hospital precinct currently generates about 352 vehicles per hour during the weekday morning and afternoon peak periods and about 40 vehicles per hour during the Saturday midday periods.

As previously discussed in Section 4 of this report, the current Cumberland hospital precinct will be redeveloped to provide residential and commercial developments. Hence, the traffic generated by the existing hospital use will no longer be present in the future.

Residential Development

RMS has recently released a Technical Direction (TDT2013/04) providing a summary of trip generation rates for various land uses to replace the suggested trip rates in their *Guide to Traffic Generating Developments*. The sites surveyed for high density residential are summarised in Table 7.2 below.

Table 7.2: Revised RMS Traffic Generation Rates for High Density Residential Apartments

	No. of Units	Morning Peak Hour (Trips per Unit per Hour)	Evening Peak Hour (Trips per Unit per Hour)
Site 1 – St Leonards	70	0.14	0.07
Site 2 - Chatswood	129	0.14	0.12
Site 3 - Cronulla	28	0.07	0.11
Site 4 - Rockdale	234	0.32	0.18
Site 5 - Parramatta	83	0.27	0.12
Site 6 – Liberty Grove	64	0.28	0.41
Site 7 - Strathfield	31	0.1	0.06
Site 10 - Pyrmont	131	0.18	0.1
Average	96	0.19	0.15

The average updated traffic generation rates in the Technical Direction for high density residential developments are 0.19 and 0.15 trips per peak hour per unit during the morning and evening peak periods respectively (as opposed to their previous guidance which suggested 0.29 trips per peak hour per unit). These rates are generally on the basis of excellent public transport/active transport facilities. However rather than using the average rate, it is generally more accepted to delve into the detail to provide a more reasonable/accurate rate and hence, the first point of reference would be the surveys that were undertaken in Parramatta.

It is also noted that the Parramatta survey in Table 7.2 reported a higher than average morning peak hour traffic generation of 0.27 trips per hour per unit. The Parramatta site surveyed was at Hassall Street which is only 300m from the railway station. Consequently, the Journey to Work data contained in Bureau of Transport Statistics (BTS) have been reviewed to understand the transport characteristics of the Hassall Street precinct and the residential precinct close to the Cumberland precinct to establish the difference in the travel patterns between two locations. Table 7.3 indicates the following travel modes were recorded for residents at Parramatta and North Parramatta.

Table 7.3: Journey to Work, Travel Mode (for residents)

Travel Mode	Parramatta (Hassall St, near Railway Station)	North Parramatta (near the subject site)
Train	45%	21%
Car (driver)	29%	50%
Walked	10%	10%
Bus	10%	10%
Car (passenger)	5%	5%
Others	1%	4%
Total	100%	100%

The table above indicates that the Parramatta site near the railway station has the percentage of people who travel to work by car (as driver) is 29%. North Parramatta, however, indicates that the percentage of people who travel to work by car (as driver) is about 50%, which is significantly higher than North Parramatta sites, albeit not necessarily all in the peak hour.

As described in Section 6, it is the intention to introduce a “sea change” in the provision of facilities for non-car based modes of transport.

It is considered that in the longer term as significant public transport options are improved such as possible light rail and/or operation of shuttle bus to and from the Parramatta station, the trip

generation of high density residential dwellings in the subject site would reduce below that of a traditional Parramatta unit block.

For assessment purposes, the trip generation rate of 0.23 trips per hour per unit has been adopted, on the basis that the site will undergo a significant improvement to public transport active travel measure in the future. Section 6 discusses the possible measures which can be implemented to reduce the car dependency and encourage use of sustainable transport modes.

Using the trip generation rate of 0.23 trips per hour per unit for the expected residential development scenario of some 5,870 apartments (including the Cumberland and Sport/Leisure precincts), about 1,350 peak hour vehicular trips would be generated for the residential component. For assessment purposes, the same trip generation rate is adopted for all three peak periods (i.e. Thursday AM, Thursday PM and Saturday midday peak hour).

Commercial/Retail Development

RMS' Technical Direction (TDT2013/04) also provides updated traffic generation rates for the office blocks. The sites surveyed for office blocks are summarised in Table 7.4 below.

Table 7.4: Revised RMS Traffic Generation Rates for Office Blocks

	Gross Floor Area (m ²)	Morning Peak Hour (Trips per 100m ² GFA)	Evening Peak Hour (Trips per 100m ² GFA)
Site 1 – North Sydney	31,400	0.17	0.14
Site 2 – Chatswood	10,214	1.03	0.84
Site 3 – Sydney Olympic Park	34,131	1.48	1.41
Site 4 – Hurstville	3,254	2.86	1.84
Site 5 – Macquarie Park	5,748	2.07	1.84
Site 6 – Parramatta	27,000	0.69	0.61
Site 7 – Liverpool	2,817	2.49	1.70
Site 8 – Norwest	1,200	2.75	1.17
Site 9 – Newcastle	12,182	1.03	1.14
Site 10 – Wollongong	12,921	0.95	0.77
Average		1.55	1.15

The following revised average rates are provided for the AM and PM peak hours:

- AM peak hour vehicle trips = 1.6 per 100m² gross floor area
- PM peak hour vehicle trips = 1.2 per 100m² gross floor area.

Of the ten sites that were surveyed by RMS, eight of the sites were located where a good level of public transport is provided. The remaining two sites were located at Sydney Olympic Park and Norwest.

In anticipation that the site will provide a good level of public transport as well as active travel opportunities, a trip generation rate of 1.25 per 100m² gross floor area has been assumed for both AM and PM peak hour vehicle trips.

Whilst the proposed development consists of about 4,000m² of retail area in total, it is anticipated that small areas of retail space would be provided throughout the precinct. The nature of the proposed retail use on site would generally consist of a local minimart for supply of general provision to service the surrounding residential area. It is not envisaged that the retail development would attract traffic into the area as it would serve only local residents or employee. The majority of customers would be from walk in pedestrians from the surrounding

developments. Hence, it is expected that little or no additional vehicular traffic will be generated by the retail component. However, conservatively the proposed retail area has been included in the commercial area (i.e. 62,500m² of commercial area has been assumed).

Using the trip generation rate of 1.25 per 100m² gross floor area, the proposed commercial/retail area of some 62,500m² will generate about 780 vehicular traffic per weekday AM and PM peak hour for the commercial development component. It is expected that the proposed commercial/retail development will not generate any vehicular trips during the Saturday midday periods.

Total Development Traffic Generation

Table 7.5 presents the total traffic generation of the proposed development then subtracts the current hospital generated traffic and the number of vehicles passing through the site without having a destination within the site.

Table 7.5: Resultant Traffic Generation by the Proposal

	Peak Hour Traffic (vehicles per hour)		
	Thursday AM	Thursday PM	Saturday Midday
Development Generated Traffic			
Residential	+ 1350	+ 1350	+ 1350
Commercial/Retail	+ 780	+ 780	
Total (additional)	+ 2130	+ 2130	+ 1350
Existing Cumberland Precinct Traffic			
Hospital generated traffic [#]	- 60	- 115	- 30
No. of vehicles rat-running through the site	- 190	- 190	- 20
Total (loss of existing traffic)	- 250	- 305	- 50
Resultant Increase	+ 1880	+ 1825	+ 1300

NOTE: Total hospital generated traffic is 352 vph (AM); 352 vph (PM); 40 (Sat). However the figures presented in the table above only represents vehicles using the main hospital access i.e. does not include traffic using the Bridge Road access as these vehicles do not use the surveyed intersections along O'Connell Street/Church Street. Hence the removal of vehicular access at Bridge Road will not have an impact on road network east of the Cumberland precinct.

The resultant increase in traffic due to the proposal would be in the order of 1,800 to 1,900 vehicles per hour during the weekday AM, PM and Saturday midday peak periods. These figures have been adopted for the post development traffic modelling purposes.

7.2 Trip Distribution

The directional distribution for residential traffic was assumed to be 20 percent inbound and 80 percent outbound during the morning peak period. Similarly for traffic arising from the commercial use, 70 percent of the development traffic was assumed to be inbound while the remaining 30 percent would be outbound. These inbound/outbound percentages are reversed in the afternoon peak period.

The development traffic was distributed on the local road network based on 2011 journey to work data as follows:

- residential trips – journey to work data based on the North Parramatta residential area
- commercial trips – journey to work data on the Parramatta/North Parramatta employment area including the current Cumberland hospital precinct.

The distribution factors are presented in Table 7.6.

Table 7.6: Development Traffic Distribution Percentages

To/From Directions	Residential	Commercial
Windsor Rd-North	10%	18%
Cumberland Highway-West	10%	17%
Pennant Hills Rd-East	28%	10%
Victoria Rd-East	25%	20%
O'Connell St-South	27%	35%
Total	100%	100%

Using the above traffic distribution percentages and the resultant increase in traffic generated by the proposal presented in Table 7.5, the development generated traffic using the key external road network is calculated and presented in Table 7.7.

Table 7.7: Additional Development Traffic on the Existing Road Network

To/From Directions	Thursday AM	Thursday PM	Saturday Midday
Windsor Rd-North	230	220	125
Cumberland Highway-West	230	220	125
Pennant Hills Rd-East	420	420	370
Victoria Rd-East	440	430	330
O'Connell St-South	560	535	350
Total	1880	1825	1300

7.3 Background Growth

There are a large number of development sites proposed in Parramatta, many in the CBD. This includes:

- Parramatta Square – It will include public space, corporate facilities, residential apartments, retail and dining, new Council headquarters, and connections to the transport interchange. It is expected to house up to 13,000 jobs upon completion.
- Lennox Bridge Car Park site – A range of uses will be accommodated including cafés / bars / restaurants and Council's new Discovery Centre.
- Macquarie Street Car Park site – The site will be redeveloped into a new residential tower and a new commercial tower above a multi deck public car.
- Eclipse Tower, 60 Station Street – This will be a 26,000m², 20 storey commercial building close to the transport interchange.
- 100 George Street – This is a ground floor public domain and retail space and 9,600 m² of commercial office space in the heart of the Parramatta CBD.
- 89 George Street – A proposed 14 storey boutique commercial building, DA-approved and will be approximately 10,000 m² when built.
- 105 Phillip Street – A proposed 13 storey commercial building will deliver 20,500 m².
- 111 George Street – This is a 17 Storey mixed use development.
- Westfield Tower – A proposed 20 storey 35,000 m² commercial tower designed to sit atop the current Parramatta Westfield Shopping Centre.
- Cumberland Newspaper / News Ltd Site – Stage 1 will be a five storey commercial building as part of a broader precinct development plan.
- UWS – Westmead Precinct – The vision for this future mixed use development is to establish a diverse range of activities to enhance and support Westmead's role as a specialist medical research hub. It is expected to create new links to the adjoining

Westmead Hospital, schools and key public transport nodes including Westmead Station and the new Transit Way.

- Westmead Millennium Institute – This 7 storey purpose-built facility.
- Major Residential Developments – The Parramatta CBD has seen a surge of inner-city residential development in recent years. Below is a sample of the key sites:
 - Altitude - Meriton Development – This proposed mixed use development on the former David Jones site, includes an "East" tower at 30-storeys (242 serviced apartments), a "West" tower at 53-storeys (354 residential apartments) and a 3-storey podium including eight commercial tenancies.
 - V By Crown, 45 Macquarie Street – This is a 20+ storey development with significant ground floor retail and 5,800 m2 commercial space and 336 luxury apartments located above street level.
 - B1 Tower, 118 Church Street – This will be a 28 level mixed-use building featuring 80 apartments and 5 floors of commercial & retail.
 - Focus, 6-10 Charles Street – This is a 12 storey, 100 residential unit twin tower design situated between Parramatta & Harris Park railway stations.

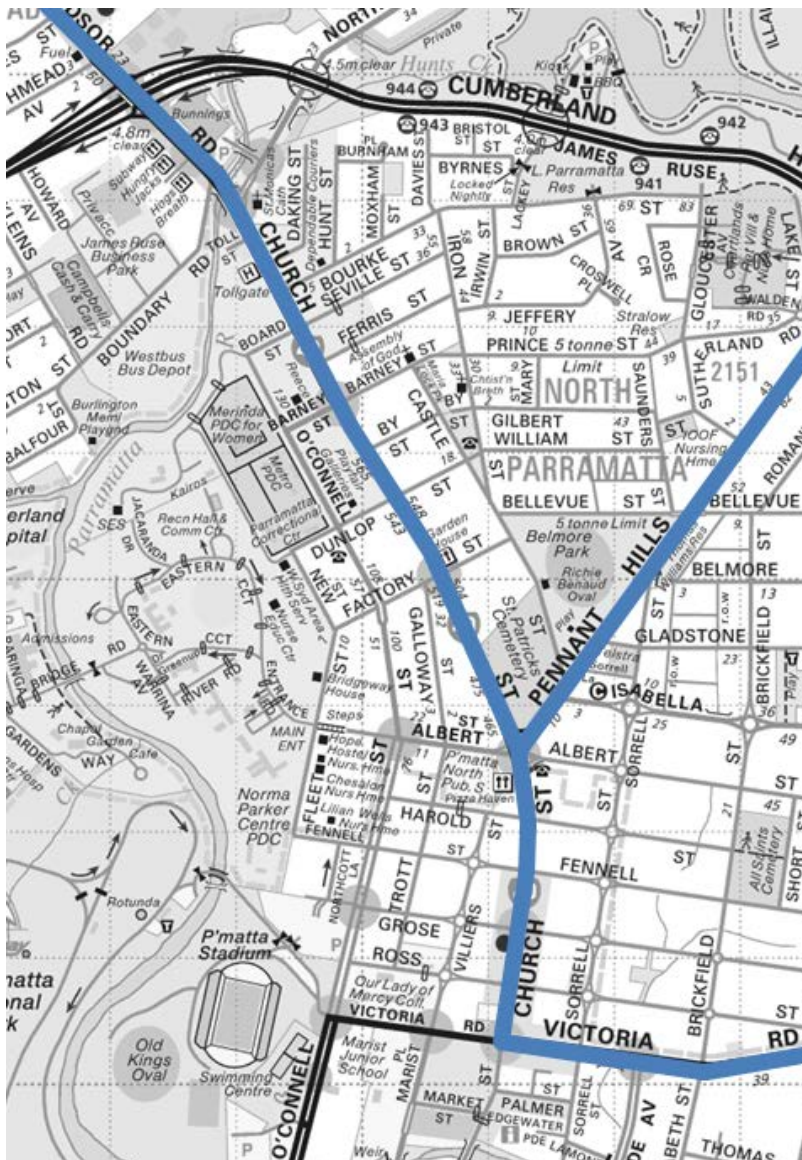
Traffic will be generated by these developments and there is likely to be an increase in background traffic growth. However, many of these developments are proposed to be located in sustainable locations which mean that car use will be minimal.

Along the Church Road corridor, the main development proposal is the Cumberland/Sports precinct proposal and it will be the subject site that will create most of the localised traffic growth. It is also noted that many of the roads close to the subject site are close to capacity.

Consequently, rather than resulting in high peak hour traffic growth increases, there is likely to be peak spreading when the length of the peak time period extends. As a result, the background traffic growth, created by other developments is likely to be low, and a figure of 5% over the development of the site has been assumed. Such traffic growth has been applied to Church Street, Pennant Hills Road and Victoria Road. These key external roads are shown in Figure 7.1.

Notwithstanding the above, RMS has recently released a tender for the strategic modelling study of Parramatta area. The results of this study would provide additional guidance on the future growth in Parramatta and its vicinity, which could be incorporated in the later stage once the modelling results are made available.

Figure 7.1: Background Traffic Growth



The resultant increase in development generated traffic has been assigned to surrounding road network using the trip distribution percentages presented above and superimposed on to the existing intersection turning movements (refer to Appendix A.1). The post development intersection turning movements including the background traffic growth is presented in Appendix C.

7.4 Mid-Block Capacity

The forecast future peak hour mid-block traffic flows are shown in Table 7.8.

The figures presented in Table 7.8 represent the post development flows with the background growth added to the key external roads as discussed above.

Table 7.8: Future Mid-Block Traffic Flows

Location	Thursday AM			Thursday PM			Saturday Midday		
	NB/ EB	SB/ WB	Two- way	NB/ EB	SB/ WB	Two- way	NB/ EB	SB/ WB	Two- way
Church St, south of Victoria Rd	228	319	547	304	251	555	236	347	583
Church St, north of Victoria Rd	603	1240	1843	1113	784	1897	704	850	1554
Church St, south of Pennant Hills Rd	729	1596	2325	1491	887	2378	992	1057	2049
Church St, south of Factory St	547	1320	1867	1105	733	1838	774	915	1689
Church St, south of Barney St	656	1048	1704	1136	716	1852	840	742	1582
Church St, south of Board St	917	2046	2963	1909	1330	3239	1178	1436	2614
Church St, south of North Rocks Rd	1199	2128	3327	2355	1328	3683	1534	1443	2977
Church St, south of James Ruse Dr	1149	2105	3254	2379	1495	3874	1737	1726	3463
Church St, north of James Ruse Dr	1001	3111	4112	2467	1802	4269	1836	2052	3888
O'Connell St, south of George St	2168	1552	3720	1660	1448	3108	1286	1284	2570
O'Connell St, south of Victoria Rd	1525	1812	3337	1535	1548	3083	1057	1343	2400
O'Connell St, south of Grose St	1078	1558	2636	1400	1010	2410	887	1065	1952
O'Connell St, south of Albert St	608	1283	1891	1141	677	1818	643	838	1481
O'Connell St, south of Barney St	433	1146	1579	959	483	1442	538	701	1239
O'Connell St, south of Board St	364	15	379	400	23	423	362	23	385
Fleet St, south of Albert St	332	100	432	158	334	492	177	147	324
Fleet St, south of Factory St	97	108	205	122	99	221	76	68	144
Marist St, south of Market St	505	596	1101	777	590	1367	648	603	1251
Marist St, south of Victoria Rd	329	303	632	553	355	908	482	297	779
Wilde Ave, south of Victoria Rd	383	1132	1515	878	537	1415	364	379	743
Market St, east of Marist St	200	332	532	272	267	539	216	345	561
Victoria Rd, east of O'Connell St	736	722	1458	706	831	1537	457	527	984
Victoria Rd, east of Marist St	799	793	1592	868	930	1798	684	669	1353
Victoria Rd, east of Church St	1579	1034	2613	1149	1520	2669	1022	998	2020
Grose St, east of O'Connell St	305	248	553	231	257	488	132	157	289
Grose St, west of Church St	285	519	804	340	343	683	200	290	490
Fennell St, west of O'Connell St	242	296	538	233	285	518	204	208	412
Fennell St, east of O'Connell St	74	20	94	68	40	108	34	21	55
Albert St, west of Fleet St	134	233	367	261	162	423	86	84	170
Albert St, east of O'Connell St	353	368	721	332	545	877	259	404	663
Pennant Hills Rd, east of Church St	736	899	1635	768	825	1593	639	699	1338
Factory St, east of Fleet St	178	59	237	80	152	232	108	98	206
Factory St, east of O'Connell St	391	67	458	125	123	248	244	99	343
Dunlop St, west of O'Connell St	112	137	249	132	99	231	79	57	136
Dunlop St, east of O'Connell St	58	33	91	38	36	74	49	23	72
Barney St, east of O'Connell St	137	904	1041	410	654	1064	148	667	815
Board St, east of O'Connell St	352	16	368	401	18	419	365	23	388
North Rocks Rd, east of Church St	663	830	1493	713	680	1393	665	700	1365

NOTE: NB – Northbound; EB – Eastbound; SB – Southbound; WB - Westbound

The comparison with the existing and future mid-block flows indicates that the following additional traffic would be using the key roads in the vicinity of the site during the Thursday AM/PM peak hours:

- Church Street: 310 to 590 additional vehicles per hour (vph)
- O'Connell Street: 280 to 600 additional vph
- Victoria Road: 380 to 500 additional vph
- Pennant Hills Road: about 460 additional vph
- Factory Street: 200 to 410 additional vph
- Albert Street: 120 to 330 additional vph
- Barney Street: 100 to 270 additional vph
- Fennell Street: 240 to 270 additional vph
- Fleet Street: 100 to 250 additional vph
- Dunlop Street: 130 to 150 additional vph
- Grose Street: about 90 additional vph
- Board Street: 20 to 80 additional vph.

The greatest increase in volumes would occur on O'Connell Street, Church Street, Victoria Road and Pennant Hills Road. The local streets in the vicinity of the site with an increase of more than 200 vph would be Factory Street, Albert Street, Barney Street, Fennell Street and Fleet Street.

Table 7.9 presents the maximum hourly flow in the peak direction (i.e. one-way peak hour flow). These figures are compared against the theoretical lane capacity for urban roads contained in RMS guidelines without consideration to the type of roads.

Austrroads Guide to Traffic Management Part 3 states that the peak period mid-block traffic capacities are between 1200 to 1400 vph. Recent Studies by GTA have utilised a similar figure of 1,350 (or 1,320) vph for a sub-arterial type road. On O'Connell Street, north of Victoria Road, a nominal capacity of 1,200 vph has been adopted. In addition, the *Austrroads Guide to Traffic Engineering Practice* also stated the nominal capacity of a traffic lane on an undivided road is 900 vph. Hence, this is adopted for all other local roads.

The comparison results are presented in Table 7.9.

Table 7.9: Peak Direction Post Development Maximum Hourly Flow and Theoretical Capacity Comparisons

Location	Capacity per Lane	Lanes in Peak Direction	Max. Hourly Flows	Demand/ Capacity Ratio
Church St, north of Victoria Rd	1350	2	1240	0.5
Church St, south of Pennant Hills Rd	1350	1	1596	1.2
Church St, south of North Rocks Rd	1350	2	2128	0.8
O'Connell St, south of George St	1350	2	2168	0.8
O'Connell St, south of Grose St	1200	2	1558	0.6
O'Connell St, south of Albert St	1200	2	1283	0.5
O'Connell St, south of Barney St	1200	1	1146	1.0
Victoria Rd, east of Church St	1350	2	1579	0.6
Pennant Hills Rd, east of Church St	1350	2	899	0.3
Factory St, east of O'Connell St	900	1	391	0.4
Albert St, east of O'Connell St	900	1	545	0.6
Barney St, east of O'Connell St	900	1	904	1.0
Fennell St, west of O'Connell St	900	1	296	0.3
Fleet St, south of Albert St	900	1	334	0.4

The comparison of post development flows and the theoretical capacity presented in Table 7.9 indicates that Church Street, south of Pennant Hills Road which is the section along the Church Street with only one travelling lane in each direction (i.e. excluding the bus lane) would exceed its theoretical capacity. O'Connell Street, south of Barney Street and Barney Street, east of O'Connell Street would also reach the theoretical capacities under the current configurations.

7.5 Intersection Operation

The analysis results for future conditions (including development traffic and background growth) are presented in Table 7.10. It is noted that the intersections have been optimised in Linsig model in terms of signal timing for the future operations.

Linsig modelling process undertaken and detailed outputs are also included in Appendix D.

Table 7.10: Future Intersection Operating Conditions

	Intersections	Control Type	Thursday AM		Thursday PM		Saturday Midday	
			Level of Service	Average Delay (sec)	Level of Service	Average Delay (sec)	Level of Service	Average Delay (sec)
(LinSig)	Windsor Rd/ Cumberland Hwy	Signal	F	109	F	150	F	106
(LinSig)	Church St/ The Junction Access	Signal	A	10	A	13	A	15
(LinSig)	Church St/ North Rocks Rd	Signal	D	47	B	26	C	29
(SIDRA)	Church St/ Board St/ Seville St	Priority	E	69	F	199	B	23
(LinSig)	Church St/ Barney St	Signal	C	39	F	109	C	40
(LinSig)	Church St/ Factory St	Signal	F	139	B	21	B	25
(LinSig)	Church St/ Albert St/ Pennant Hills Rd	Signal	F	148	F	173	C	35
(LinSig)	Church St/ Grose St	Signal	D	54	E	71	B	28
(SIDRA)	Church St/ Market St	Priority	A	9	A	12	A	9
(SIDRA)	O'Connell St/ Board St	Priority	A	9	A	9	A	9
(SIDRA)	O'Connell St/ Barney St	Priority	F	122	E	66	F	173
(SIDRA)	O'Connell St/ Dunlop St	Priority	F	82	C	30	B	21
(SIDRA)	O'Connell St/ Factory St	Priority	F	>5 minutes	C	36	F	>5 minutes
(SIDRA)	O'Connell St/ Fennell St	Priority	F	>5 minutes	F	>5 minutes	F	>5 minutes
(SIDRA)	O'Connell St/ George St	Signal	B	26	A	10	A	13
(LinSig)	O'Connell St/ Albert St	Signal	B	28	B	24	B	22
(LinSig)	O'Connell St/ Grose St	Signal	B	19	B	21	A	13
(LinSig)	O'Connell St/ Victoria Rd	Signal	F	72	C	32	B	26
(LinSig)	Church St/ Victoria Rd	Signal	D	47	E	69	C	33
(LinSig)	Victoria Rd/ Marsden St	Signal	C	34	C	41	C	34
(LinSig)	Victoria Rd/ Wilde Ave	Signal	C	32	C	37	B	27
(SIDRA)	Factory St/ New St	Priority	A	9	A	9	A	9
(SIDRA)	Greenup Dr/ Fleet St	Priority	A	11	A	10	A	9
(SIDRA)	Marsden St/ Market St	Priority	A	10	A	11	A	10

The results indicate that Windsor Road/Cumberland Highway intersection would continue to operate with level of service (LoS) F for all three peak periods. As described previously, the Windsor Road bridge over the Cumberland Highway is proposed to be widened as part of the proposed Western Sydney Regional Ring Road to address this existing issue.

The intersections with LoS E/F under the future conditions have been tested further with additional capacities. This is discussed in detail in the following section.

7.6 Possible Intersection/Road Improvements

Historic discussions with RMS and Parramatta City Council have suggested that a number of intersection upgrades are being considered in the vicinity of the site. These include:

- Removal of the median strip at the Factory Street intersection to allow cross traffic across O'Connell Street and replacement of existing intersection arrangement with a roundabout.
- The intersection at O'Connell Street with Fennell Street is being considered for an upgrade to either traffic signals (Council's preferred choice) or a roundabout (RMS' preferred choice) to address road safety concerns.
- The Windsor Road bridge over the Cumberland Highway is proposed to be widened as part of the proposed Western Sydney Regional Ring Road.

In general, the above upgrades are adopted as being included in the intersection improvement options.

The intersections that would require additional capacity under the future conditions are listed below along with the upgrade options:

- Church Street/Board Street/Seville Street is currently a priority controlled intersection. The partially signalised option has been tested with only Board Street approach being signalised.
- Church Street/Barney Street is currently a signalised intersection. Church Street southbound was tested with additional right turn bay (i.e. dual right turn lanes).
- For the intersections on Church Street between Factory Street and Grose Street, an additional through lane option has been tested for southbound traffic in the AM peak. For the PM peak, an additional northbound through lane option has been tested for the intersections on Church Street between east of Barney Street and Grose Street.
- O'Connell Street intersections at Barney Street, Dunlop Street, Factory Street and Fennell Street are all currently priority controlled intersections. These intersections have been tested as one lane roundabouts.
- O'Connell Street intersections at Barney Street and Factory Street have been further tested as signalised intersections
- O'Connell Street/Victoria Road intersection has been tested with revised lane configuration on the O'Connell Street south approach (i.e. one shared left and through lane, one shared through and right turn lane and one designated right turn lane).

The results of the possible intersection improvements described above are presented in Table 7.11.

Table 7.11: Future Intersection Operating Conditions with Upgrades

	Intersections	Upgraded Control Type	Thursday AM		Thursday PM		Saturday Midday	
			Level of Service	Average Delay (sec)	Level of Service	Average Delay (sec)	Level of Service	Average Delay (sec)
(LinSig)	Church St/ Board St/ Seville St	Partially Signalised - Church St/ Board St	A	9	B	17	A	9
(LinSig)	Church St/ Barney St	Additional right turn bay (min. of 50m) on Church St southbound	C	35	D	49	C	39
(LinSig)	Church St/ Factory St	Additional through lane on peak direction on Church St (between Factory St and Grose St) - AM Peak, additional through lane for Southbound - PM Peak, additional through lane for Northbound	C	35	B	21	B	25
(LinSig)	Church St/ Pennant Hills Rd		C	32	C	37	C	35
(LinSig)	Church St/ Grose St		B	26	B	26	B	28
(SIDRA)	O'Connell St/ Barney St	Upgrade to Roundabout	F	92	D	48	B	16
		Upgrade to Signalised intersection	B	23	B	24	B	18
(SIDRA)	O'Connell St/ Dunlop St	Upgrade to Roundabout	C	31	B	23	B	17
(SIDRA)	O'Connell St/ Factory St	Upgrade to Roundabout	D	54	B	23	B	16
		Upgrade to Signalised intersection	B	17	B	18	A	11
(SIDRA)	O'Connell St/ Fennell St	Upgrade to Roundabout	B	19	B	17	B	16
(LinSig)	O'Connell St/ Victoria Rd	Lane Reconfiguration on O'Connell St south approach	D	44	C	34	B	26

8. Proposed Infrastructure Improvements

8.1 Road Improvements

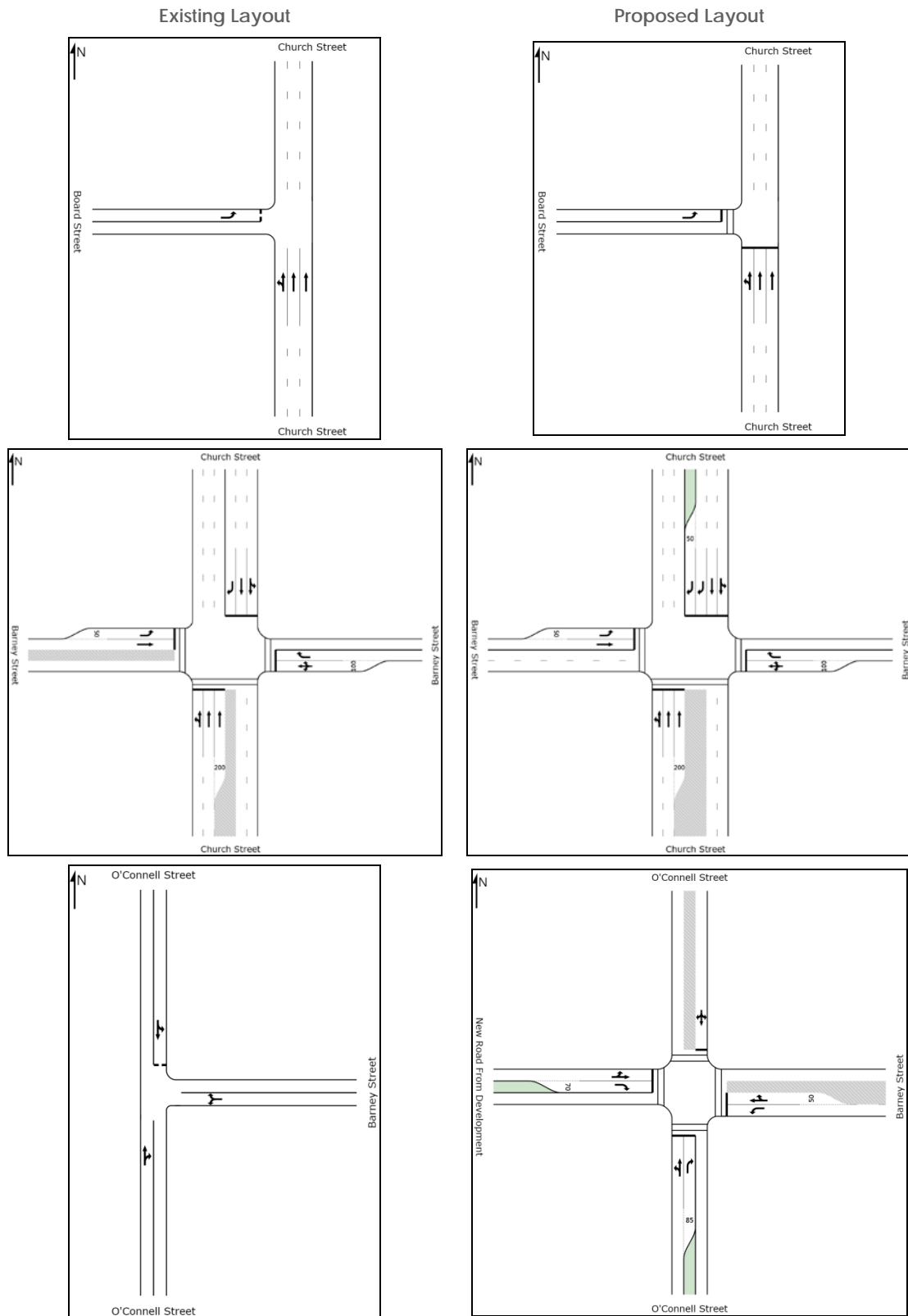
As discussed in Section 7.6, the following intersection upgrades would be required to accommodate the additional traffic generated by the proposed development and the future background growth on key external roads:

- Church Street/Board Street – Upgrade to a signal (partially – west side of Church Street only).
- Church Street/Barney Street – Additional right turn bay (i.e. dual right turn lanes) from Church Street southbound.
- For the intersections on Church Street between Factory Street and Grose Street, an additional through lane would be required for southbound traffic in the AM peak. For the PM peak, an additional northbound through lane would be required for the intersections on Church Street between east of Barney Street and Grose Street.
- This proposal in particular would require detailed consideration as whilst only one lane is required for southbound traffic in the AM peak and northbound traffic in the PM peak, as simple tidal flow system might not be appropriate as with such an arrangement it may be difficult to accommodate right turning traffic.
- O’Connell Street/Barney Street – Upgrade to a signal
- O’Connell Street/Dunlop Street – Upgrade to a one-lane roundabout
- O’Connell Street/Factory Street – Upgrade to a signal
- O’Connell Street/Fennell Street – Upgrade to a one-lane roundabout
- O’Connell Street/Victoria Road – Revise lane configuration.

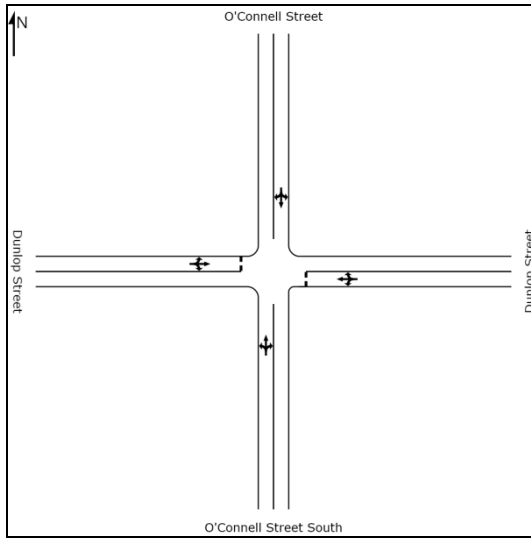
In addition to the above, the Windsor Road bridge over the Cumberland Highway is proposed to be widened as part of the proposed Western Sydney Regional Ring Road.

Figure 8.1 presents the indicative intersection configuration of the existing and proposed upgrades described above.

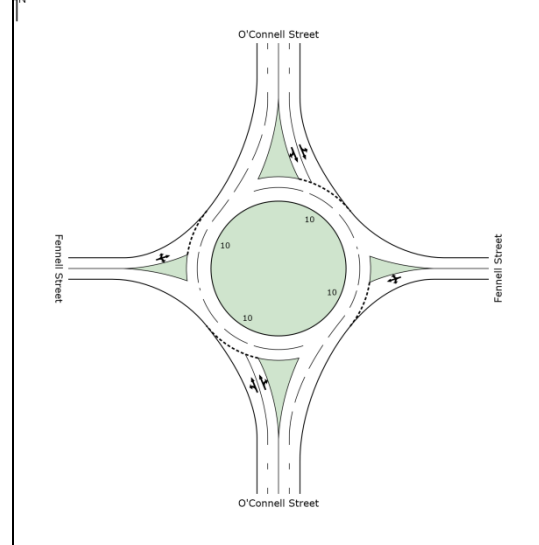
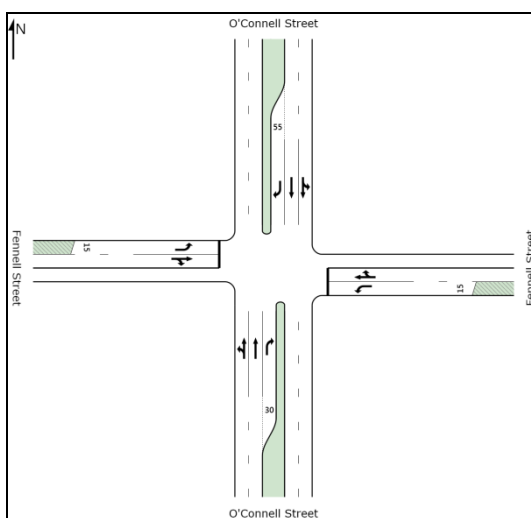
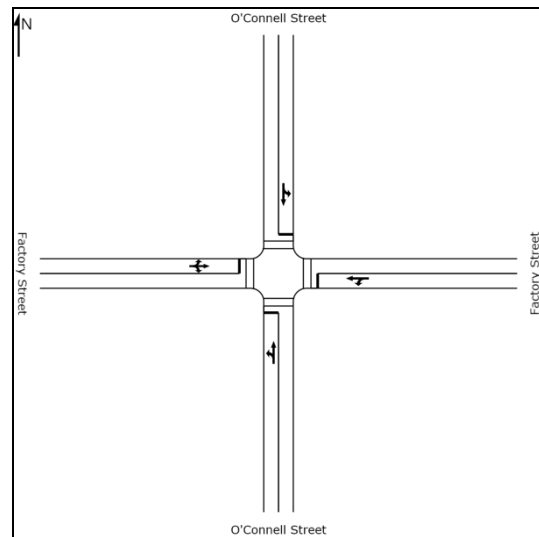
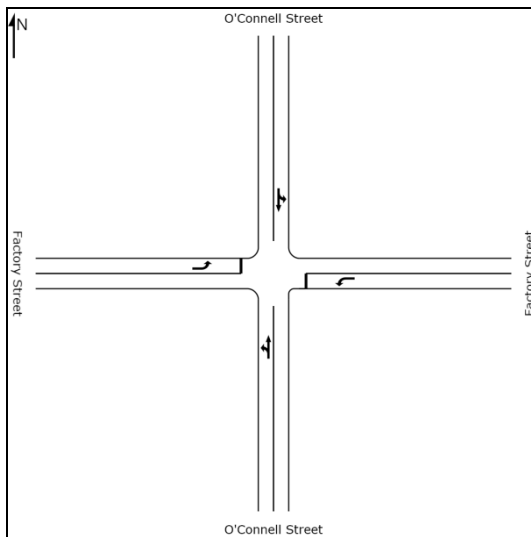
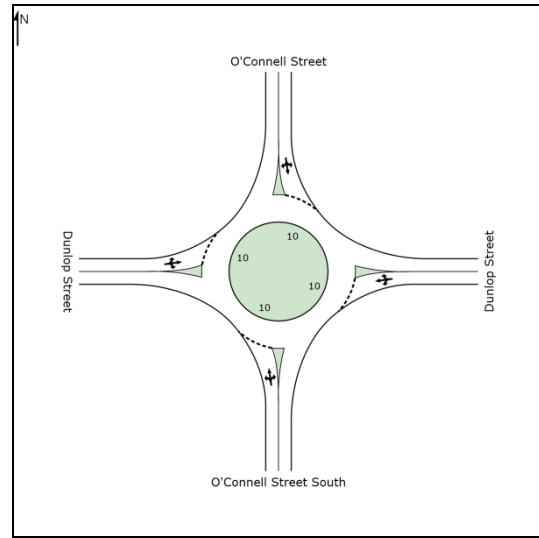
Figure 8.1: Existing and Proposed Intersection Configurations

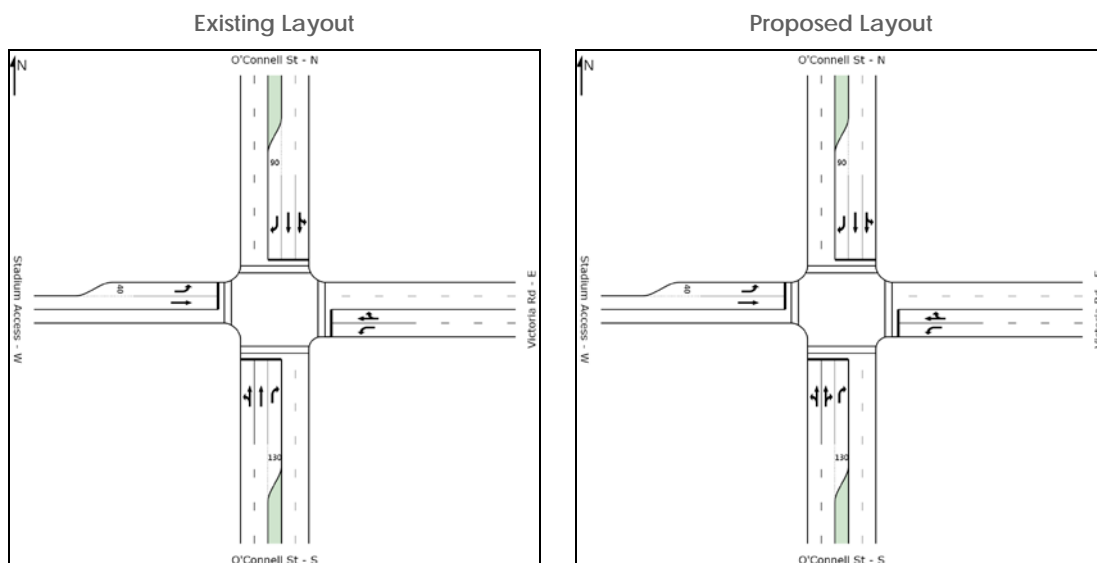


Existing Layout



Proposed Layout





8.2 Public Transport Improvements

As described earlier in the report, it is the intention to provide a good quality shuttle bus between the subject site and the Parramatta interchange. The possible shuttle bus route is shown in Figure 4.6. The proposed shuttle bus would provide services at every 10 minutes in the weekday peak periods and every 20 to 30 minutes during other times of the day and at the weekend.

In addition to the shuttle bus service, the potential future introduction of light rail into the precinct would have the ability to significantly reduce the travel by car mode.

The recent introduction of Opal cards means that transfers/ changing modes at such interchanges is much easier and without the historic cost implications.

8.3 Pedestrian & Cycleway Improvements

The provision of a new cycleway along the waterfront which will run from north of the site to south of the Sports Precinct would enhance the pedestrian and cycleway network significantly. It will also tie into existing and proposed cycle ways in the vicinity of the site. Figure 4.5 presented the proposed pedestrian and cycleway for the proposed development as well as the existing and proposed cycleway.

The assessment of bicycle parking provision (refer to Section 5.2) indicated that the proposed development would require about 3,095 spaces.

As per the Council's DCP, trip end facilities including showers and lockers would need to be provided for commercial and retail developments.

9. Conclusion

Based on the analysis and discussions presented within this report, the following conclusions are made:

- The Parramatta North Urban Renewal (PNUR) in its end state proposes to provide about 5,600 residential dwellings, 35,000 m² of adaptive reuse of historic buildings and 4,000 m² of retail use in the Cumberland Precinct. It is also proposed to include 46,000 m² of mixed use developments in the Sports and Leisure Precinct (which would be predominantly commercial use).
- The staging of the works is over a 15 to 20 year period.
- The Parramatta Gaol and SES land do not form part of this rezoning proposal.
- Using the current DCP parking rates, the proposal would need to provide 8,820 to 9,770 car parking spaces. In addition, the required bicycle parking provision for the overall development would be about 3,250 spaces.
- A number of measures will be incorporated into the proposal to minimise the car travel. The potential measures are:
 - Limited parking ratios - One of the most effective ways to reduce traffic congestion and pollution, and encourage a shift to sustainable transportation modes, is through parking reform.
 - Bus improvements - It is the intention to provide a good quality shuttle bus between the subject site and the Parramatta interchange.
 - Cycle parking /facilities - It is intended to construct a cycleway along the waterfront which will run from north of the site to south of the Sports Precinct. This will tie into existing cycle ways and those being planned by others.
 - Car sharing/car club cars - The subject site would be ideal location for the introduction of car share spaces and it is not unrealistic to suggest that up to 100 cars could be provided within the site.
 - Green travel plan (GTP) - A GTP is a package of measures aimed at promoting and encouraging sustainable travel and reducing reliance on the private car. GTPs can provide measures which encourage reduced car use and support sustainable travel.
- On the basis of all such measures being fully incorporated into the development, it is anticipated that the subject site would generate significantly less traffic than other residential sites in the vicinity. This will have the positive effect of reducing traffic impact.
- The resultant increase in traffic generated by the proposal is 1,880 vehicles per hour (vph) for Thursday AM, 1,825 vph for Thursday PM and 1,300 vph for Saturday midday.
- The comparison of post development flows and the theoretical capacity indicates that Church Street, south of Pennant Hills Road which is the section along the Church Street with only one travelling lane in each direction (i.e. excluding the bus lane) would exceed its theoretical capacity. O'Connell Street, south of Barney Street and Barney Street, east of O'Connell Street would also reach the theoretical capacities under the current configurations.

- The following intersection upgrades would be required to accommodate the additional traffic generated by the proposed development and the future background growth on key external roads:
 - Church Street/Board Street – Upgrade to a partial signal (west side of Church Street only)
 - Church Street/Barney Street – Additional right turn bay (i.e. dual right turn lanes) from Church Street southbound
 - For the intersections on Church Street between Factory Street and Grose Street, an additional through lane would be required for southbound traffic in the AM peak. For the PM peak, an additional northbound through lane would be required for the intersections on Church Street between east of Barney Street and Grose Street
 - O’Connell Street intersections at Barney Street & Factory Street – Upgrade to a signal
 - O’Connell Street intersections at Dunlop Street & Fennell Street – Upgrade to a one-lane roundabout
 - O’Connell Street/Victoria Road signalised intersection – Revise lane configuration.
- In addition to the above, the Windsor Road bridge over the Cumberland Highway is proposed to be widened as part of the proposed Western Sydney Regional Ring Road and this improvement will be necessary to address existing/ future traffic problems.
- The provision of a new cycleway along the waterfront which will run from north of the site to south of the Sports Precinct would enhance the pedestrian and cycleway network significantly. It will also tie into existing and proposed cycle ways in the vicinity of the site.
- It is proposed to provide a good quality shuttle bus service between the subject site and the Parramatta interchange. The proposed shuttle bus would provide services at every 10 minutes in the weekday peak periods and every 20 to 30 minutes during other times of the day and at the weekend.
- In addition to the shuttle bus service, the potential future introduction of light rail into the precinct would have the ability to significantly reduce the travel by car mode. The recent introduction of Opal cards means that transfers/ changing modes at such interchanges is much easier and without the historic cost implications.

In summary, the traffic impacts of the proposed development could be mitigated by the list of measures described above.

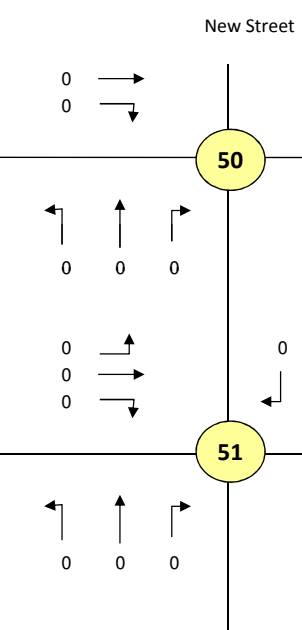
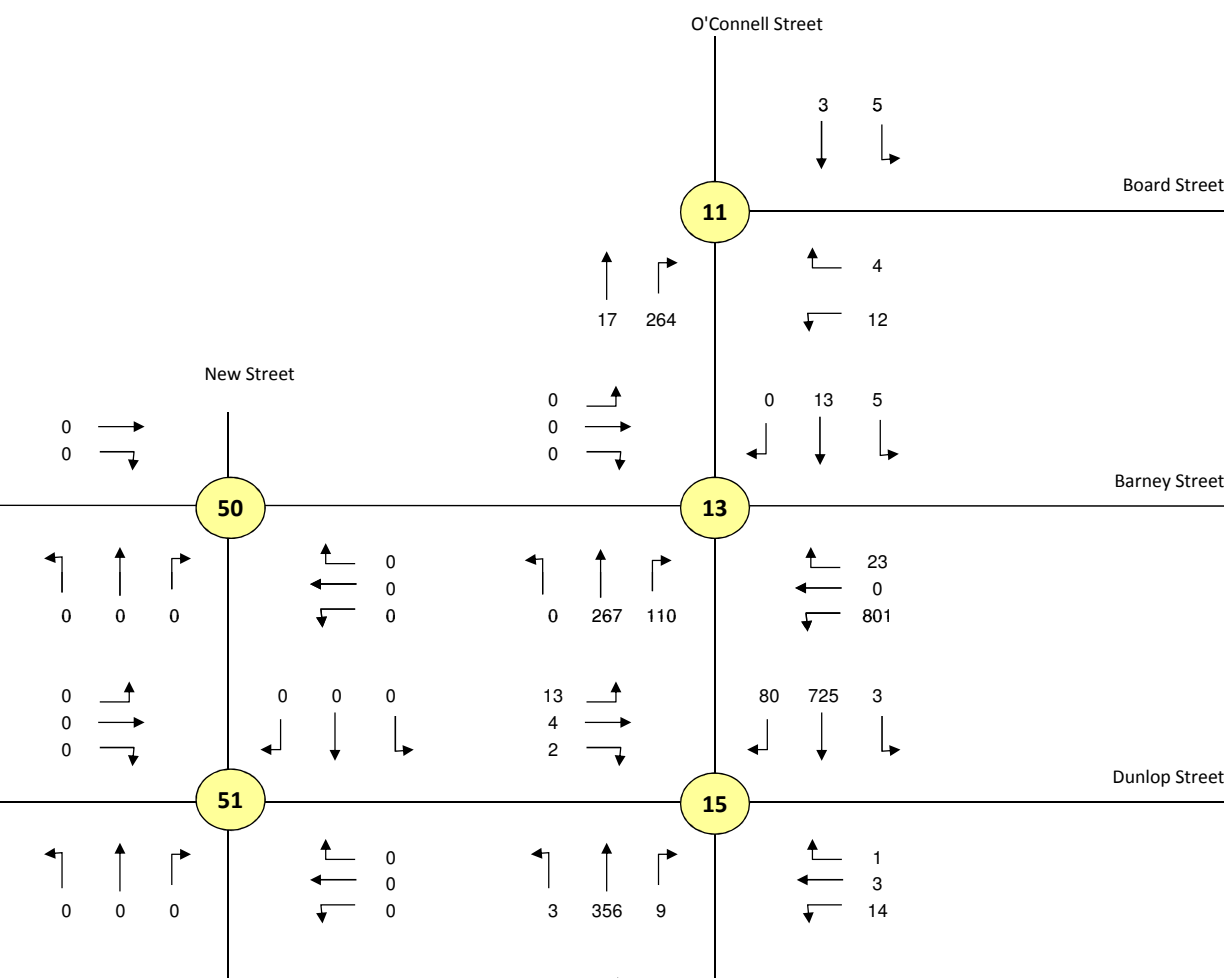
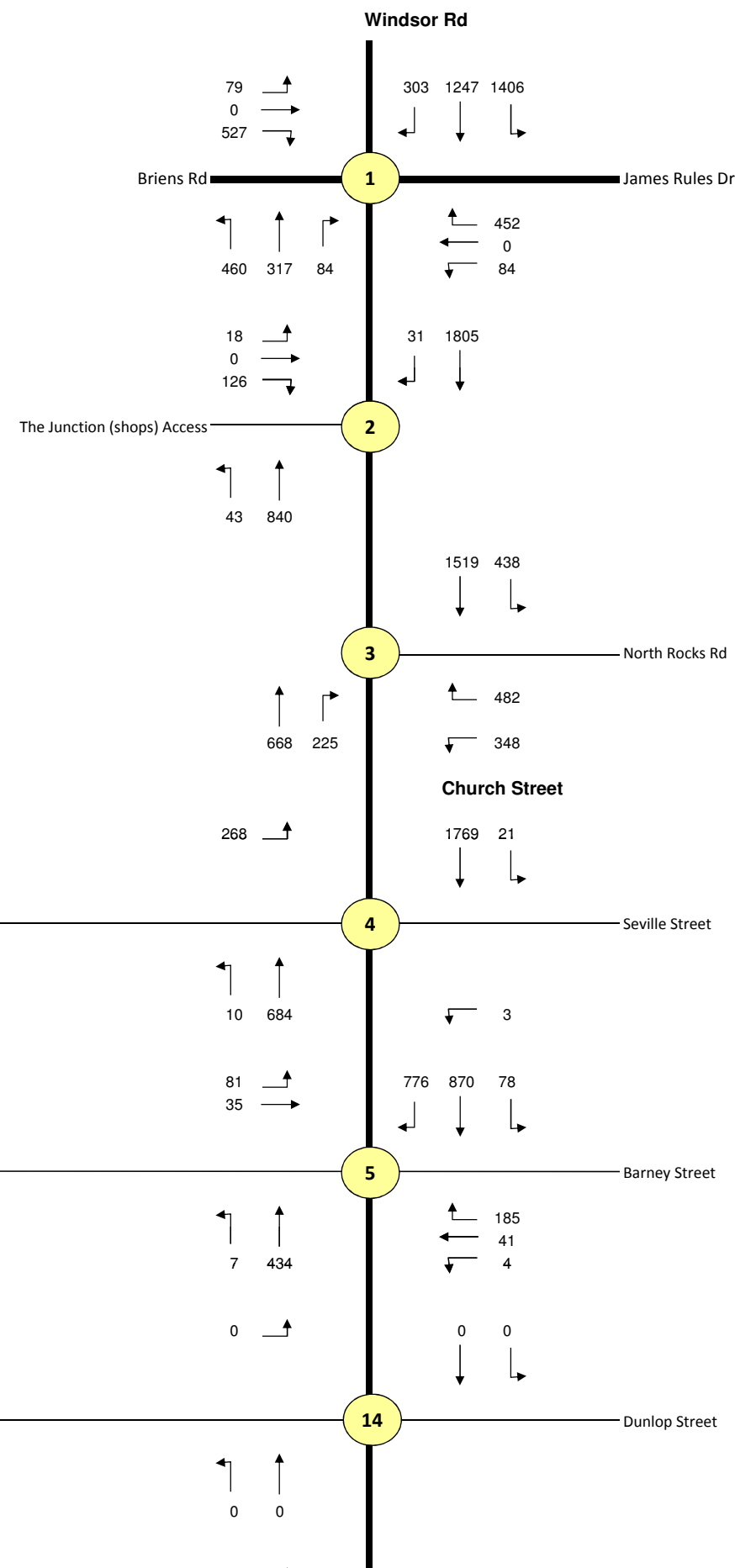
Appendix A

Survey Results

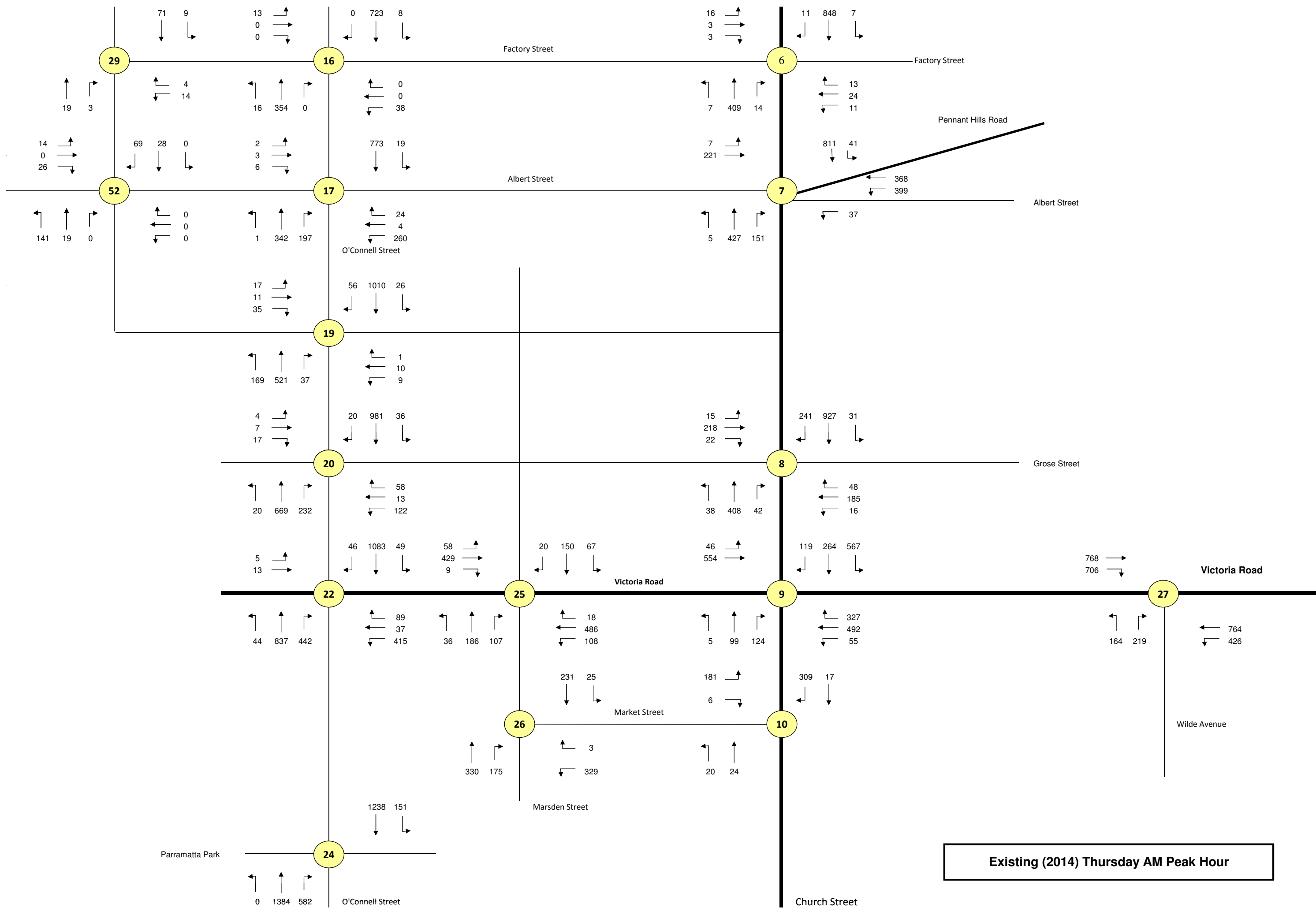
- A.1 Intersection Turning Movement Diagrams
- A.2 Origin-Destination Survey
- A.3 Parking Occupancy & Duration
- A.4 Travel Time Survey

A.1 Intersection Turning Movement Diagrams

Existing (2014) Thursday AM Peak Hour

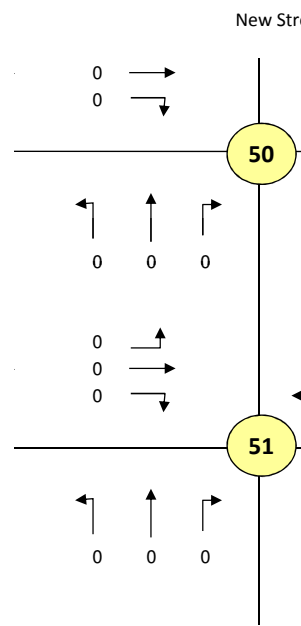
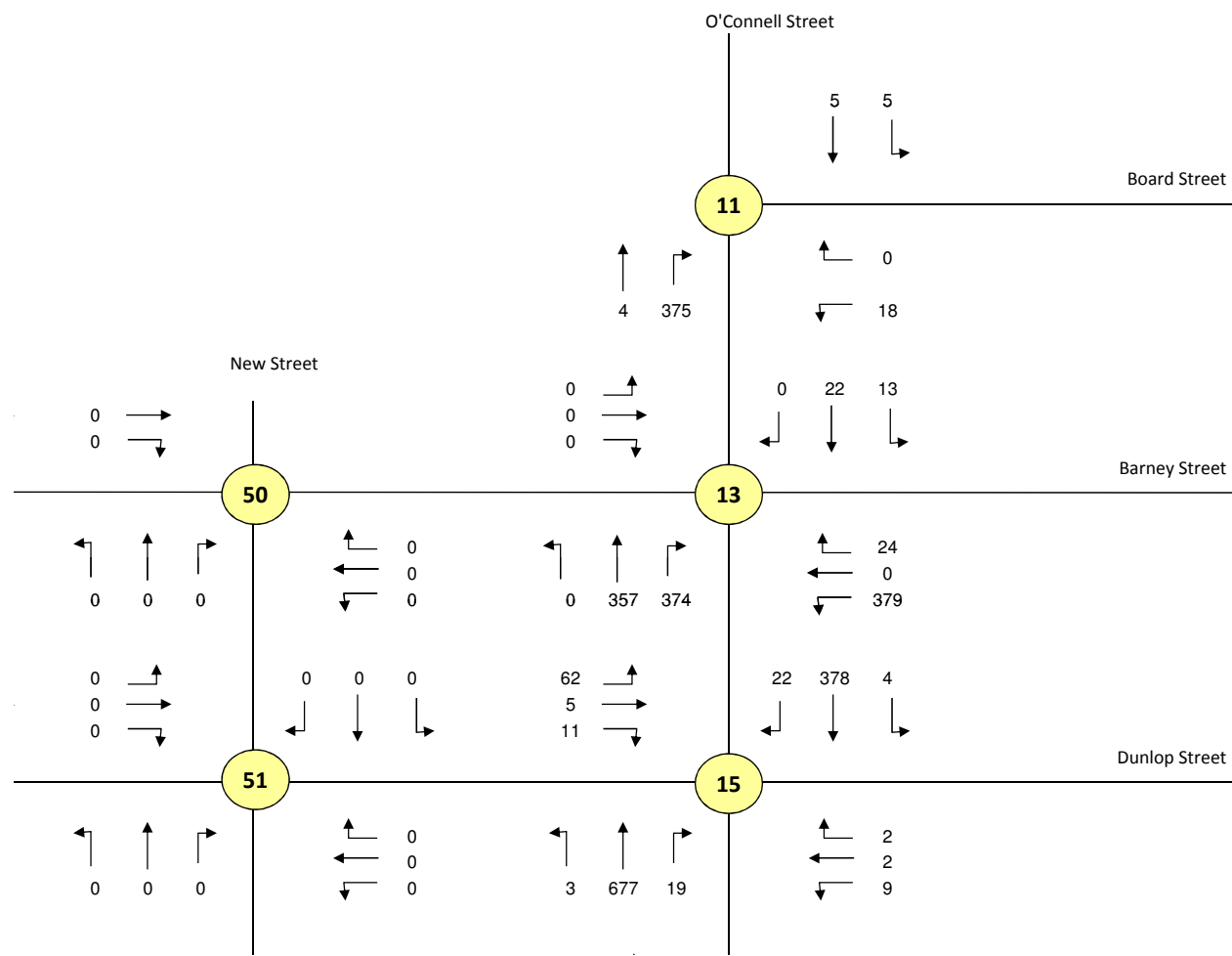
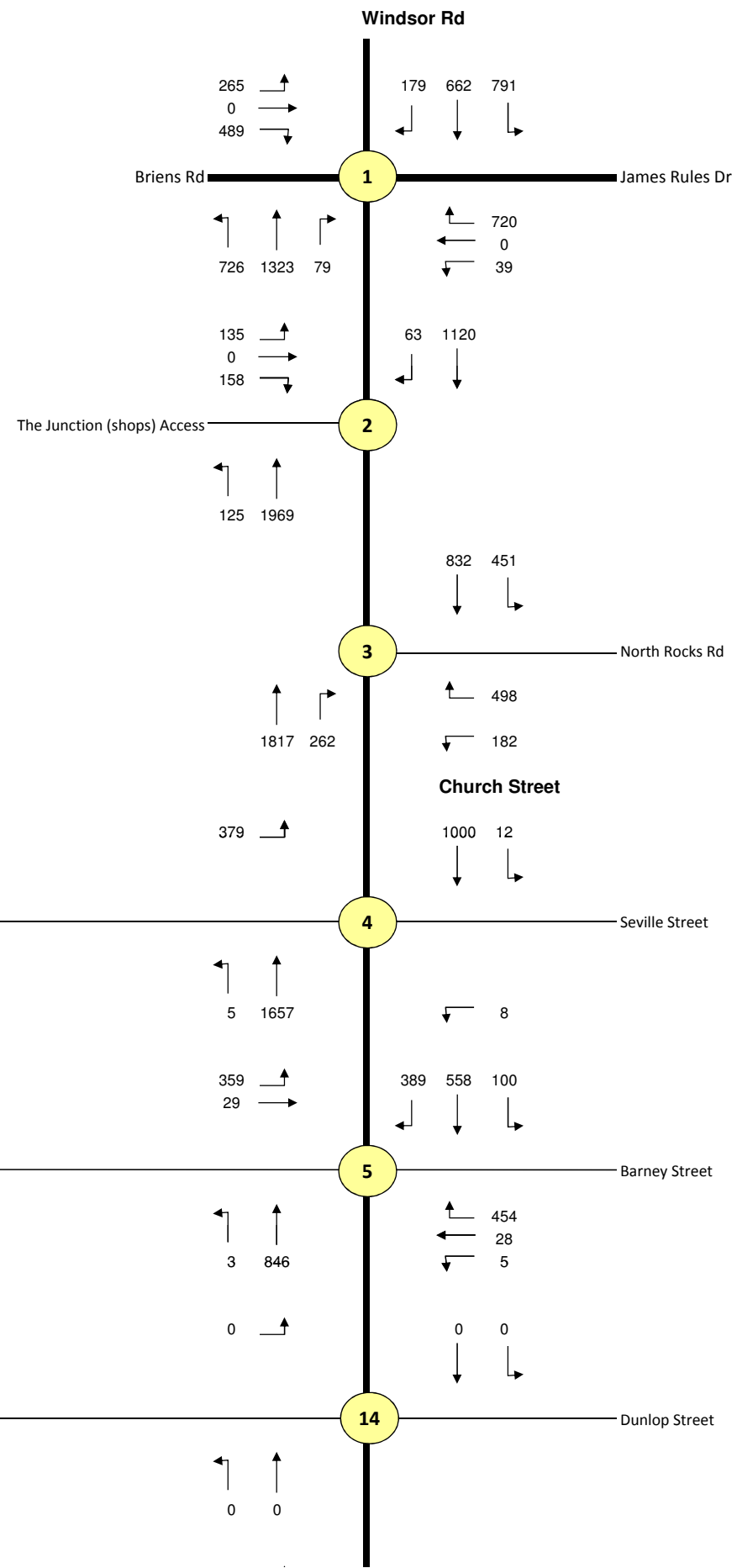


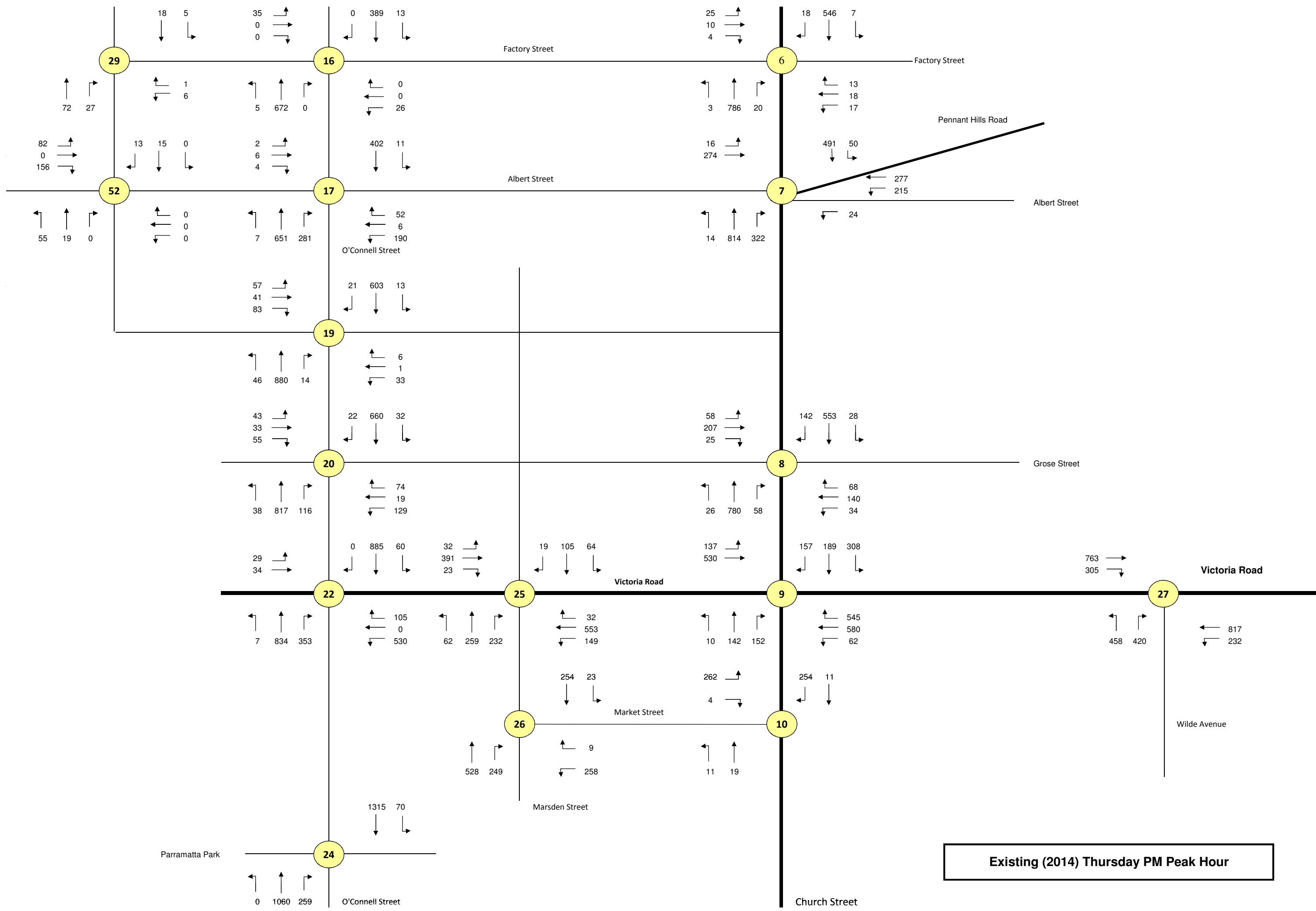
Location	Direction	Volume		
Windsor Rd	Northbound	1406		
	Northbound	1247		
	Northbound	303		
	Southbound	527		
	Southbound	0		
	Southbound	79		
	Junction 1	Windsor Rd Northbound	452	
		Windsor Rd Northbound	0	
		Windsor Rd Northbound	84	
		Briens Rd Westbound	460	
		Briens Rd Eastbound	317	
		Briens Rd Eastbound	84	
Junction 2		Windsor Rd Northbound	1805	
		Windsor Rd Northbound	31	
		The Junction (shops) Access	840	
		The Junction (shops) Access	43	
		Junction 3	Windsor Rd Northbound	438
			Windsor Rd Northbound	1519
	North Rocks Rd		482	
	Windsor Rd Southbound		348	
	Windsor Rd Southbound		225	
	Windsor Rd Southbound		668	
	Junction 4		Windsor Rd Northbound	21
			Windsor Rd Northbound	1769
Church Street			482	
Windsor Rd Southbound			3	
Windsor Rd Southbound			684	
Windsor Rd Southbound			10	
Junction 5		Windsor Rd Northbound	78	
		Windsor Rd Northbound	870	
		Windsor Rd Northbound	776	
		Barney Street	185	
		Windsor Rd Southbound	4	
		Windsor Rd Southbound	41	
	Junction 14	Windsor Rd Northbound	0	
		Windsor Rd Northbound	0	
		Dunlop Street	1	
		Dunlop Street	3	
		Dunlop Street	14	
		Windsor Rd Southbound	0	
Junction 11		O'Connell Street	5	
		O'Connell Street	3	
		Board Street	4	
		Windsor Rd Southbound	12	
		Windsor Rd Southbound	264	
		Windsor Rd Southbound	17	
	Junction 13	O'Connell Street	5	
		O'Connell Street	13	
		Barney Street	23	
		Windsor Rd Southbound	801	
		Windsor Rd Southbound	0	
		Windsor Rd Southbound	0	
Junction 15		O'Connell Street	3	
		O'Connell Street	725	
		Dunlop Street	80	
		Windsor Rd Southbound	110	
		Windsor Rd Southbound	267	
		Windsor Rd Southbound	0	



Existing (2014) Thursday AM Peak Hour

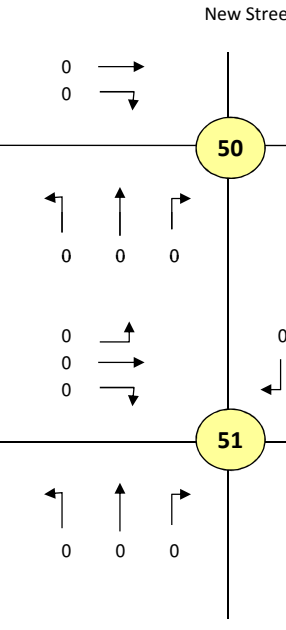
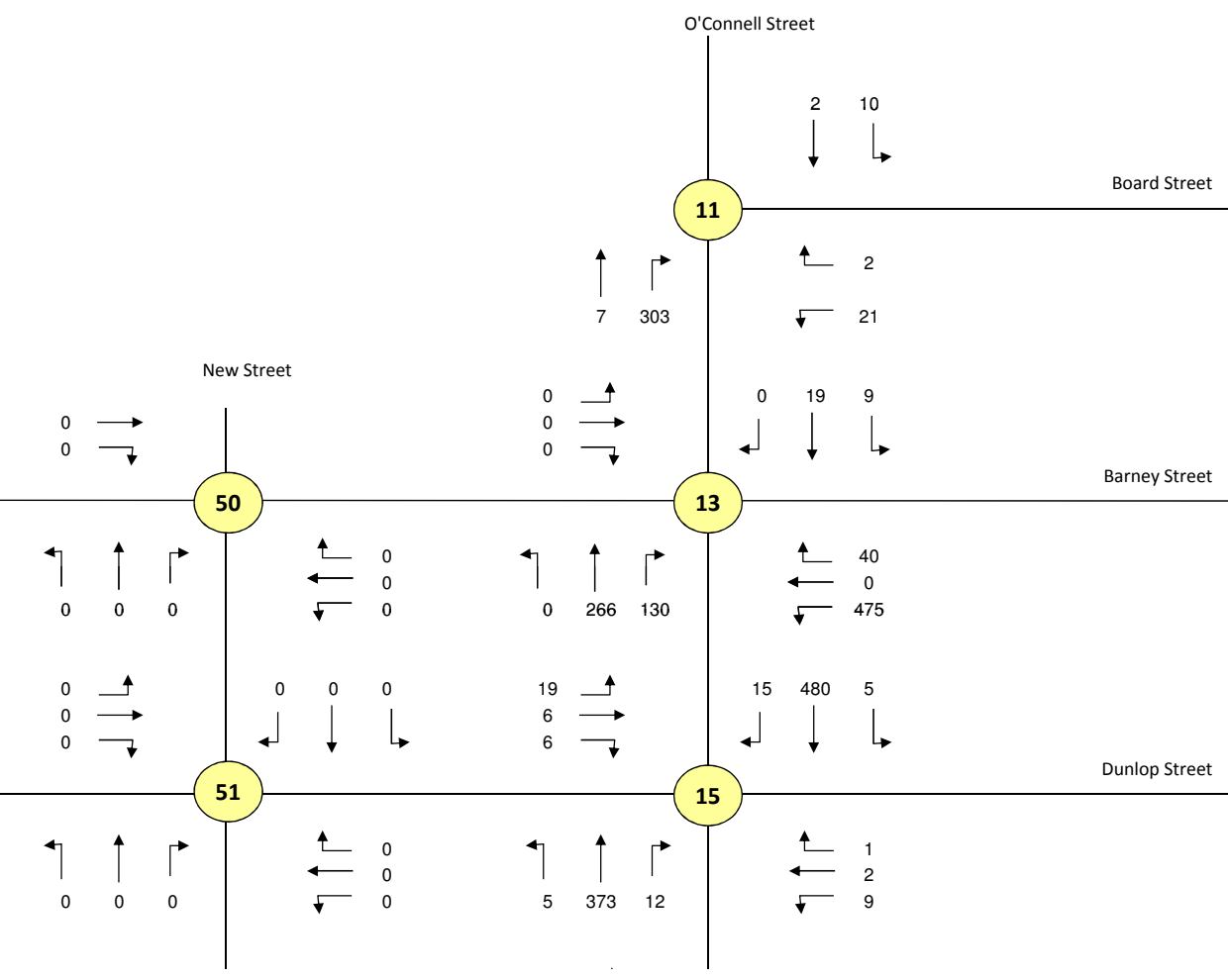
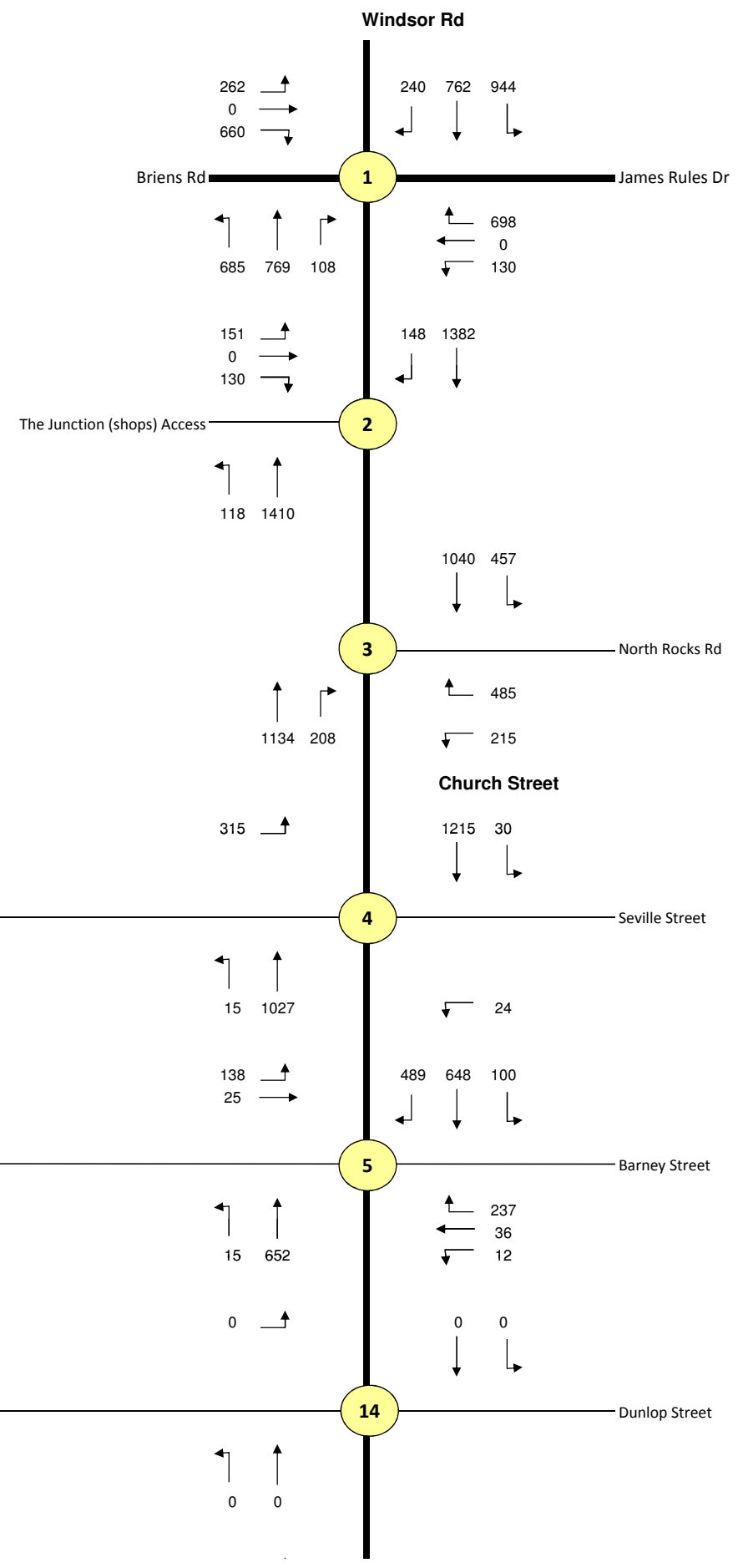
Existing (2014) Thursday PM Peak Hour





Existing (2014) Thursday PM Peak Hour

Existing (2014) Saturday Midday Peak Hour



262
0
660

1

685
769
108

2

151
0
130

3

118
1410

4

1134
208

315

5

15
1027

138
25

14

15
652

0

0
0

240 762 944

698
0
130

148 1382

1040 457

485
215

1215 30

24

489 648 100

237
36
12

0 0

7
303

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0
0

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266
130

19
6
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5
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12

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10

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19
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40
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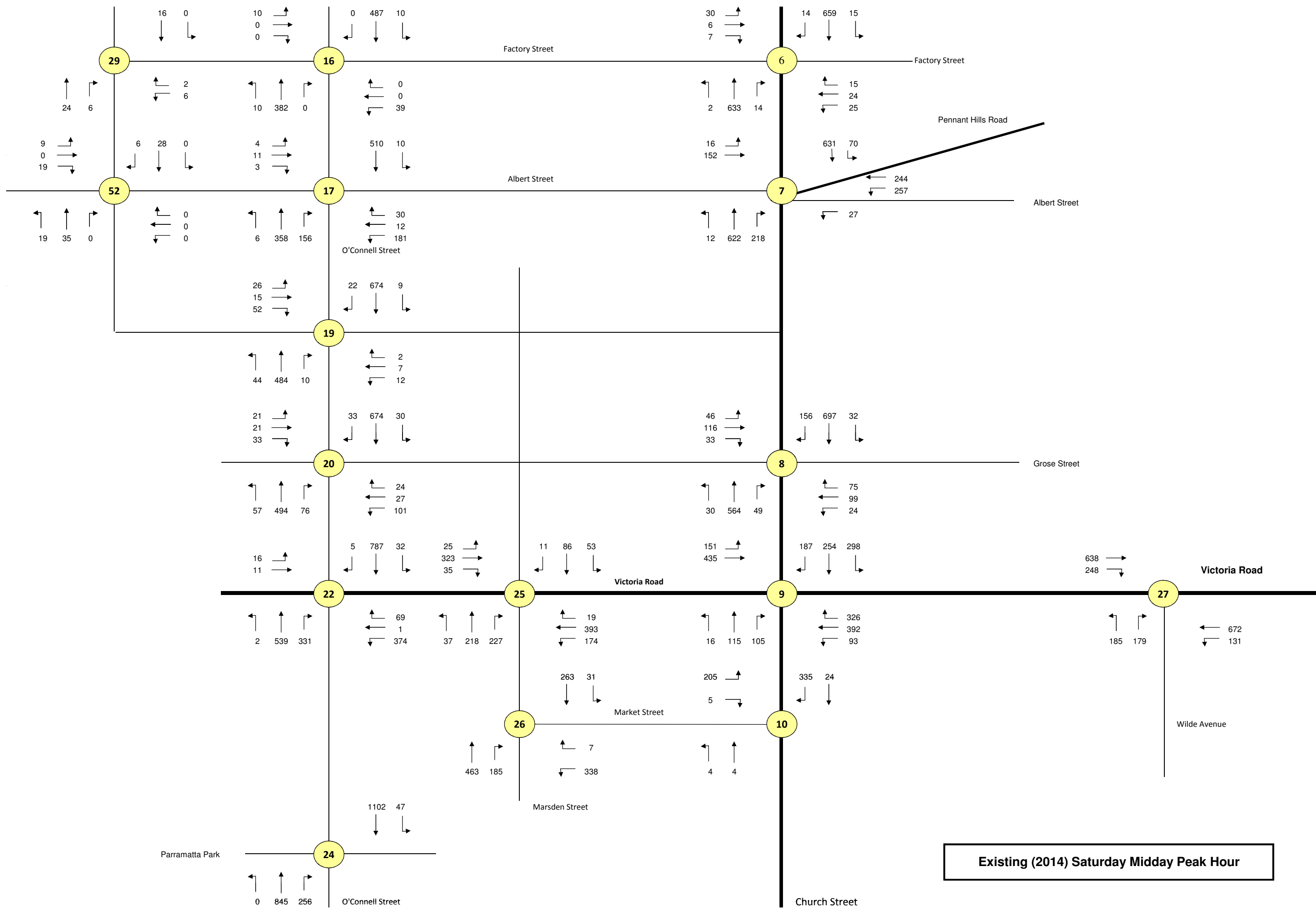
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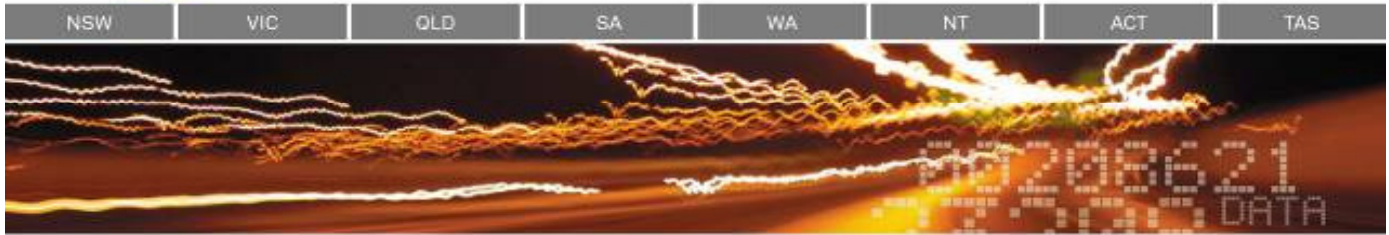
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Existing (2014) Saturday Midday Peak Hour

A.2 Origin-Destination Survey



6439 - North Parramatta Origin Destination Survey

August 2014

JOB NUMBER 6439

JOB NAME North Parramatta

CLIENT GTA

SURVEY LOCATIONS P2. Green Up Dr, West of Fleet St
P3. Bridge Rd, East of Paringa Ave

SURVEY TYPE Origin Destination Survey

VEHICLE CLASS 1. Light Vehicles
2. Heavy Vehicles

MATCH TIME Open

SURVEY TIME 07:00 AM - 09:00 AM (THU); 4:00PM - 6:00PM (THU); 12:00PM - 2:00PM (SAT)

SURVEY DATE Thursday 14/08/2014 & Saturday 09/08/2

WEATHER Fine

6439 - North Parramatta OD - Matrix

AUSTRAFFIC

Date 14/08/2014

Start Time 7:00

End Time 9:00

Match Time Open

Origin - Destination Matches - Class 1 - Light Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
7:00	9:00						
Origin		Recorded	72	160	232		
P2W		382	16	106	122	31.9%	260
P3E		251	29	12	41	16.3%	210
Total		633	45	118	163	25.8%	470
% Matched			62.5%	73.8%	70.3%		
Local Origin			27	42	69		

Origin - Destination Matches - Class 2 - Heavy Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
7:00	9:00						
Origin		Recorded	1	0	1		
P2W		0	0	0	0	0.0%	0
P3E		1	1	0	1	100.0%	0
Total		1	1	0	1	100.0%	0
% Matched			100.0%	0.0%	100.0%		
Local Origin			0	0	0		

Origin - Destination Matches - Total Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
7:00	9:00						
Origin		Recorded	73	160	233		
P2W		382	16	106	122	31.9%	260
P3E		252	30	12	42	16.7%	210
Total		634	46	118	164	25.9%	470
% Matched			63.0%	73.8%	70.4%		
Local Origin			27	42	69		

6439 - North Parramatta OD - Matrix

AUSTRAFFIC

Date **14/08/2014**

Start Time **7:00**

End Time **8:00**

Match Time **Open**

Origin - Destination Matches - Class 1 - Light Vehicles

Survey Time 7:00 8:00	Destination	P2E	P3W	Total	% Matched	Local Destination
	Recorded	31	78	109		
P2W	167	8	65	73	43.7%	94
P3E	111	9	4	13	11.7%	98
Total	278	17	69	86	30.9%	192

Origin - Destination Matches - Class 2 - Heavy Vehicles

Survey Time 7:00 8:00	Destination	P2E	P3W	Total	% Matched	Local Destination
	Recorded	0	0	0		
P2W	0	0	0	0	0.0%	0
P3E	0	0	0	0	0.0%	0
Total	0	0	0	0	0.0%	0

Origin - Destination Matches - Total Vehicles

Survey Time 7:00 8:00	Destination	P2E	P3W	Total	% Matched	Local Destination
	Recorded	31	78	109		
P2W	167	8	65	73	43.7%	94
P3E	111	9	4	13	11.7%	98
Total	278	17	69	86	30.9%	192

6439 - North Parramatta OD - Matrix

AUSTRAFFIC

Date **14/08/2014**

Start Time **8:00**

End Time **9:00**

Match Time **Open**

Origin - Destination Matches - Class 1 - Light Vehicles

Survey Time 8:00 9:00	Destination	P2E	P3W	Total	% Matched	Local Destination
Origin	Recorded	41	82	123		
P2W	215	8	41	49	22.8%	166
P3E	140	20	8	28	20.0%	112
Total	355	28	49	77	21.7%	278

Origin - Destination Matches - Class 2 - Heavy Vehicles

Survey Time 8:00 9:00	Destination	P2E	P3W	Total	% Matched	Local Destination
Origin	Recorded	1	0	1		
P2W	0	0	0	0	0.0%	0
P3E	1	1	0	1	100.0%	0
Total	1	1	0	1	100.0%	0

Origin - Destination Matches - Total Vehicles

Survey Time 8:00 9:00	Destination	P2E	P3W	Total	% Matched	Local Destination
Origin	Recorded	42	82	124		
P2W	215	8	41	49	22.8%	166
P3E	141	21	8	29	20.6%	112
Total	356	29	49	78	21.9%	278

6439 - North Parramatta OD - Matrix

AUSTRAFFIC

Date **14/08/2014**

Start Time **16:00**

End Time **18:00**

Match Time **Open**

Origin - Destination Matches - Class 1 - Light Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
16:00	18:00						
Origin		Recorded	357	290	647		
P2W		116	9	97	106	91.4%	10
P3E		164	125	5	130	79.3%	34
Total		280	134	102	236	84.3%	44
% Matched			37.5%	35.2%	36.5%		
Local Origin			223	188	411		

Origin - Destination Matches - Class 2 - Heavy Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
16:00	18:00						
Origin		Recorded	1	1	2		
P2W		1	0	1	1	100.0%	0
P3E		0	0	0	0	0.0%	0
Total		1	0	1	1	100.0%	0
% Matched			0.0%	100.0%	50.0%		
Local Origin			1	0	1		

Origin - Destination Matches - Total Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
16:00	18:00						
Origin		Recorded	358	291	649		
P2W		117	9	98	107	91.5%	10
P3E		164	125	5	130	79.3%	34
Total		281	134	103	237	84.3%	44
% Matched			37.4%	35.4%	36.5%		
Local Origin			224	188	412		

6439 - North Parramatta OD - Matrix

AUSTRAFFIC

Date **14/08/2014**

Start Time **16:00**

End Time **17:00**

Match Time **Open**

Origin - Destination Matches - Class 1 - Light Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
16:00	17:00						
Origin		Recorded	182	148	330		
P2W		53	5	44	49	92.5%	4
P3E		81	63	4	67	82.7%	14
Total		134	68	48	116	86.6%	18

Origin - Destination Matches - Class 2 - Heavy Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
16:00	17:00						
Origin		Recorded	1	1	2		
P2W		1	0	1	1	100.0%	0
P3E		0	0	0	0	0.0%	0
Total		1	0	1	1	100.0%	0

Origin - Destination Matches - Total Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
16:00	17:00						
Origin		Recorded	183	149	332		
P2W		54	5	45	50	92.6%	4
P3E		81	63	4	67	82.7%	14
Total		135	68	49	117	86.7%	18

6439 - North Parramatta OD - Matrix

AUSTRAFFIC

Date **14/08/2014**

Start Time **17:00**

End Time **18:00**

Match Time **Open**

Origin - Destination Matches - Class 1 - Light Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
17:00	18:00						
Origin		Recorded	175	142	317		
P2W		63	4	53	57	90.5%	6
P3E		83	62	1	63	75.9%	20
Total		146	66	54	120	82.2%	26

Origin - Destination Matches - Class 2 - Heavy Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
17:00	18:00						
Origin		Recorded	0	0	0		
P2W		0	0	0	0	0.0%	0
P3E		0	0	0	0	0.0%	0
Total		0	0	0	0	0.0%	0

Origin - Destination Matches - Total Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
17:00	18:00						
Origin		Recorded	175	142	317		
P2W		63	4	53	57	90.5%	6
P3E		83	62	1	63	75.9%	20
Total		146	66	54	120	82.2%	26

6439 - North Parramatta OD - Matrix

AUSTRAFFIC

Date 9/08/2014

Start Time 12:00

End Time 14:00

Match Time 5 Minutes

Origin - Destination Matches - Class 1 - Light Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
12:00	14:00						
Origin		Recorded	49	51	100		
P2W		65	8	40	48	73.8%	17
P3E		46	27	4	31	67.4%	15
Total		111	35	44	79	71.2%	32
% Matched			71.4%	86.3%	79.0%		
Local Origin			14	7	21		

Origin - Destination Matches - Class 2 - Heavy Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
12:00	14:00						
Origin		Recorded	0	0	0		
P2W		0	0	0	0	0.0%	0
P3E		0	0	0	0	0.0%	0
Total		0	0	0	0	0.0%	0
% Matched			0.0%	0.0%	0.0%		
Local Origin			0	0	0		

Origin - Destination Matches - Total Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
12:00	14:00						
Origin		Recorded	49	51	100		
P2W		65	8	40	48	73.8%	17
P3E		46	27	4	31	67.4%	15
Total		111	35	44	79	71.2%	32
% Matched			71.4%	86.3%	79.0%		
Local Origin			14	7	21		

6439 - North Parramatta OD - Matrix

AUSTRAFFIC

Date **9/08/2014**

Start Time **12:00**

End Time **13:00**

Match Time **5 Minutes**

Origin - Destination Matches - Class 1 - Light Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
12:00	13:00						
Origin		Recorded	28	25	53		
P2W		25	4	17	21	84.0%	4
P3E		22	13	2	15	68.2%	7
Total		47	17	19	36	76.6%	11

Origin - Destination Matches - Class 2 - Heavy Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
12:00	13:00						
Origin		Recorded	0	0	0		
P2W		0	0	0	0	0.0%	0
P3E		0	0	0	0	0.0%	0
Total		0	0	0	0	0.0%	0

Origin - Destination Matches - Total Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
12:00	13:00						
Origin		Recorded	28	25	53		
P2W		25	4	17	21	84.0%	4
P3E		22	13	2	15	68.2%	7
Total		47	17	19	36	76.6%	11

6439 - North Parramatta OD - Matrix

AUSTRAFFIC

Date **9/08/2014**

Start Time **13:00**

End Time **14:00**

Match Time **5 Minutes**

Origin - Destination Matches - Class 1 - Light Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
13:00	14:00						
Origin		Recorded	21	26	47		
P2W		40	4	23	27	67.5%	13
P3E		24	14	2	16	66.7%	8
Total		64	18	25	43	67.2%	21

Origin - Destination Matches - Class 2 - Heavy Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
13:00	14:00						
Origin		Recorded	0	0	0		
P2W		0	0	0	0	0.0%	0
P3E		0	0	0	0	0.0%	0
Total		0	0	0	0	0.0%	0

Origin - Destination Matches - Total Vehicles

Survey Time		Destination	P2E	P3W	Total	% Matched	Local Destination
13:00	14:00						
Origin		Recorded	21	26	47		
P2W		40	4	23	27	67.5%	13
P3E		24	14	2	16	66.7%	8
Total		64	18	25	43	67.2%	21

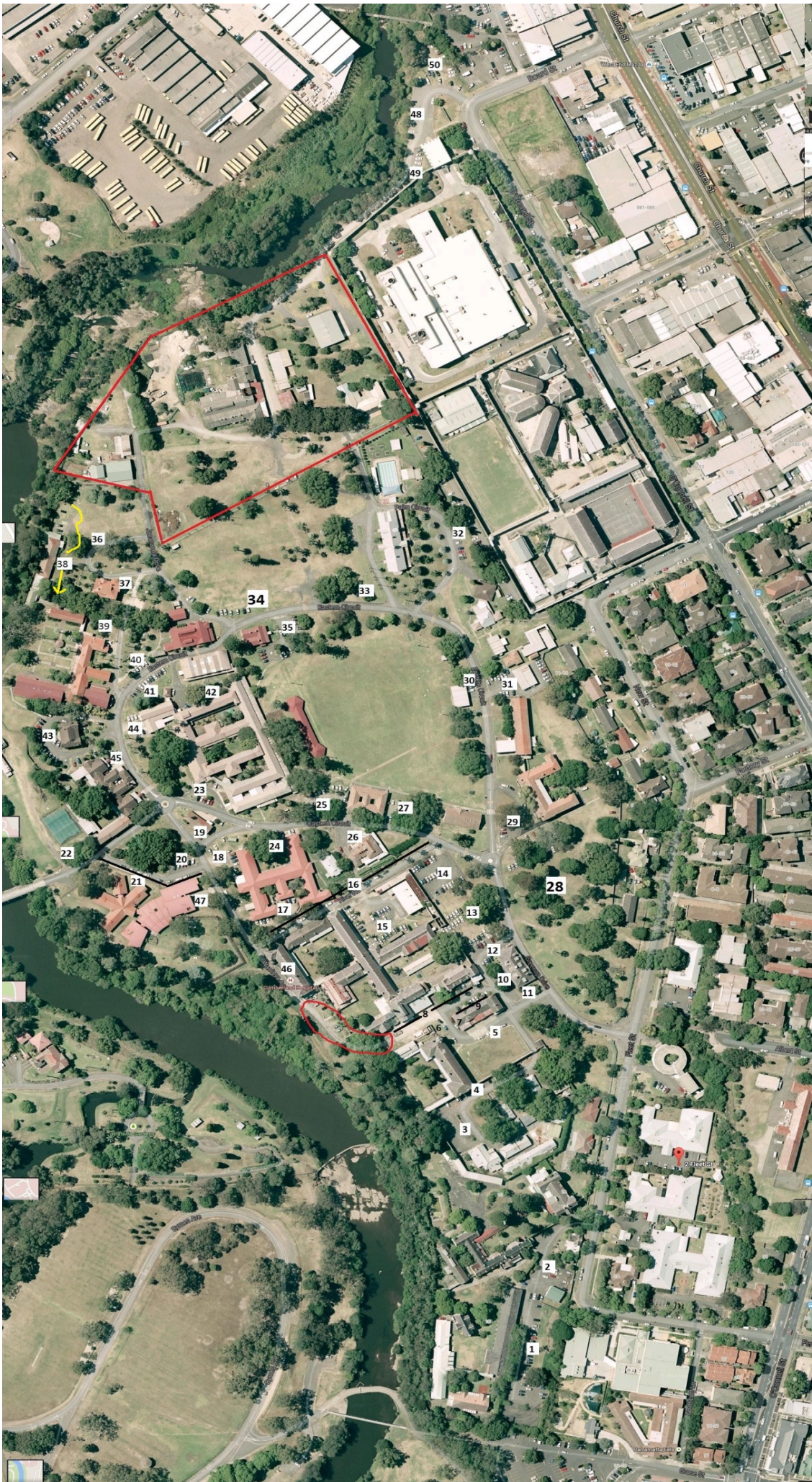
A.3 Parking Occupancy & Duration



6439 - Surveys at North Parramatta - PO & PD

Aug-14

JOB NUMBER 6439
.....
JOB NAME Surveys at North Parramatta
.....
CLIENT GTA
.....
SURVEY TYPE Parking Occupancy and Parking Duration
.....
SURVEY DATE Thursday 14/08/2014 & Saturday 9/08/2014
.....
SURVEY PERIOD 7:00 AM - 07:00 PM (THU); 9:00 AM - 05:00 PM (SAT)
.....
WEATHER Fine
.....





North Parramatta
GTA
14-08-14 - Thursday

Zone Inventory Summary

Id	Location	Side of Street	Parking Type	Adjacent Land Use	Restrictions	Supply
Fleet Street						
2	Fleet St, btw Fennel St & Greenup Drive	West Side	Kerbside		4P 8am-6pm Mon-Fri; Area 7 Resident Permit Excepted	24
5	Fleet St, btw Greenup Drive & Factory St	West Side	Kerbside		4P 8am-6pm Mon-Fri; Area 7 Resident Permit Excepted	20
7	Fleet St, No. 5A	West Side	Off Street		Private	3
8	Fleet St, No. 7	West Side	Off Street		Private	3
9	Fleet St, No. 9, Chip Cottage	West Side	Off Street		Private, 90 Degree	9
Fleet Street						59
New Street						
11	New St, btw Factory St & Dunlop St	West Side	Kerbside		Unrestricted	16
12	New St, btw Factory St & Dunlop St	West Side	Kerbside		No Parking; Authorised Vehicles Excepted	2
13	New St, No. 1	West Side	Off Street		Private	2
14	New St, No. 3	West Side	Off Street		Private	2
15	New St, No. 5	West Side	Off Street		Private	2
16	New St, No. 9	West Side	Off Street		Private	2
17	New St, No. 11	West Side	Off Street		Private	2
New Street						28
Car Park 1						
18	Car Park 1		Off Street		Authorised Parking only	31
Car Park 1						31
Car Park 2						
19	Car Park 2		Off Street		Authorised Parking only	25
Car Park 2						25
Car Park 3						
20	Car Park 3		Off Street		Unrestricted	29
Car Park 3						29
Car Park 4						
21	Car Park 4	Staff Parking Zone	Off Street		Staff Parking 90 Degree	11
22	Car Park 4	Disabled Zone	Off Street		Disabled	1
23	Car Park 4	Unrestricted Zone	Off Street		Unrestricted	7
Car Park 4						19
Car Park 5						
24	Car Park 5, NSW Institute of Psychology		Off Street		Unrestricted	12
Car Park 5						12
Car Park 6						
25	Car Park 6, Warrinya Ave		Off Street		Unrestricted	6
Car Park 6						6
Car Park 7						
26	Car Park 7, Warrinya Ave		Off Street		Unrestricted	3
Car Park 7						3
Car Park 8						
28	Car Park 8, Warrinya Ave	Unrestricted Zone 1	Off Street		Unrestricted	3
30	Car Park 8, Warrinya Ave	Unrestricted Zone 2	Off Street		Unrestricted	3
31	Car Park 8, Warrinya Ave	Private	Off Street		Private	2
32	Car Park 8, Warrinya Ave	Credit Union Parking Zone	Off Street		Credit Union Parking Only	6
33	Car Park 8, Warrinya Ave	Disabled Zone	Off Street		Disabled	1
Car Park 8						15
Car Park 9						
34	Car Park 9, Warrinya Ave		Off Street		Unrestricted	10
Car Park 9						10
Car Park 10						
35	Car Park 10, WSAMHS		Off Street		Unrestricted	12
Car Park 10						12
Car Park 11						
36	Car Park 11, WSAMHS		Off Street		Unrestricted	3
Car Park 11						3
Car Park 12						
37	Car Park 12		Off Street		Unrestricted	16
Car Park 12						16
Car Park 13						
38	Car Park 13, Post Acute Care		Off Street		Unrestricted	43
Car Park 13						43
Car Park 14						
39	Car Park 14, Post Acute Care		Off Street		Unrestricted	32
Car Park 14						32
Car Park 15						
40	Car Park 15, IT Services		Off Street		Unrestricted	44
Car Park 15						44
Car Park 16 - River Road						
42	River Rd, btw Eastern Circuit & Warrinya Ave	North Side	Kerbside		Unrestricted	5
44	River Rd, btw Eastern Circuit & Warrinya Ave	North Side	Kerbside		Unrestricted	11



North Parramatta
GTA
14-08-14 - Thursday

Zone Inventory Summary

Id	Location	Side of Street	Parking Type	Adjacent Land Use	Restrictions	Supply
R	Car Park 16 - River Road					16
S	Car Park 17					
46	Car Park 17, Kalindi		Off Street		Unrestricted	7
47	Car Park 17, 68a	Unrestricted Zone	Off Street		Unrestricted	15
S	Car Park 17					22
T	Car Park 18 - Warrinya Avenue					
50	Warrinya Ave, btw River Rd & lane to Bunya	East Side	Kerbside		Unrestricted	9
51	Car Park 18	Delivery Zone	Off Street		Delivery Zone	2
52	Car Park 18	Unrestricted Zone	Off Street		Unrestricted	22
T	Car Park 18 - Warrinya Avenue					33
U	Car Park 19 - Warrinya Avenue					
54	Warrinya Ave, lane to Bunya & Bridge St	East Side	Kerbside		Unrestricted	3
55	Car Park 19	Unrestricted Zone	Off Street		Unrestricted	7
56	Car Park 19	Loading Zone	Off Street		Loading Zone	2
U	Car Park 19 - Warrinya Avenue					12
V	Car Park 20					
57	Car Park 20, Bunya	North Side	Kerbside		Unrestricted	7
V	Car Park 20					7
W	Car Park 21					
58	Car Park 21, Bunya	South Side	Kerbside		Unrestricted	8
W	Car Park 21					8
X	Car Park 22					
60	Car Park 22, Life Skills		Off Street		Unrestricted	6
X	Car Park 22					6
Y	Car Park 23					
61	Eastern Circuit, Wirrabilla		Off Street		Unrestricted	5
62	Car Park 23, Wirrabilla		Off Street		Unrestricted	3
Y	Car Park 23					8
Z	Car Park 24					
63	Car Park 24, Gungura		Off Street		Risk Management Unit	3
64	Car Park 24, Gungura	Unrestricted (on grass) Zone	Off Street		Unrestricted	8
Z	Car Park 24					11
AA	Car Park 25					
65	Car Park 25, Bridgeway Cetnre	Unrestricted Zone	Off Street		Unrestricted	24
AA	Car Park 25					24
AB	Car Park 26					
67	Car Park 26, Wattle Cottage	Unrestricted Zone	Off Street		Unrestricted	4
68	Car Park 26, Wattle Cottage	Delivery Zone	Off Street		Delivery Zone	3
AB	Car Park 26					7
AC	Car Park 27					
69	Car Park 27		Off Street		Unrestricted	25
AC	Car Park 27					25
AD	Car Park 28					
70	Car Park 28, large grass area		Off Street		Unrestricted	75
AD	Car Park 28					75
AE	Car Park 29					
71	Car Park 29, Centre for Addiction Medicine		Off Street		Ward Car only	6
AE	Car Park 29					6
AF	Car Park 30					
73	Car Park 30	Unrestricted Zone	Off Street		Unrestricted	5
AF	Car Park 30					5
AG	Car Park 31					
74	Car Park 31, Health Support Services	Staff Parking Zone	Off Street		Staff Parking Only	10
75	Car Park 31, Health Support Services	Staff Parking Zone (under cover)	Off Street		Staff Parking Only	13
76	Car Park 31, Health Support Services	Staff Parking Zone (at back)	Off Street		Staff Parking Only	47
AG	Car Park 31					70
AH	Car Park 32					
77	Car Park 32, Palm Circuit (on grass 5th)		Off Street		Unrestricted	16
78	Car Park 32, Palm Circuit (on East side)	Cumberland Campus Staff Parkin	Off Street		Cumberland Campus Staff Parking	6
79	Car Park 32, Palm Circuit (on East side)	Unrestricted Zone	Off Street		Unrestricted	15
AH	Car Park 32					37
AI	Car Park 34 (incl Car Park 33)					
80	Car Park 34 (incl 33), large grass area		Off Street		Unrestricted	51
AI	Car Park 34 (incl Car Park 33)					51
AJ	Car Park 35					
81	Car Park 35, Pine Cottage	Disabled Zone	Off Street		Disabled	1
82	Car Park 35, Pine Cottage	Unrestricted Zone	Off Street		Unrestricted	17
AJ	Car Park 35					18
AK	Car Park 36					
83	Car Park 36, New Street	Unrestricted Zone	Off Street		Unrestricted	35
AK	Car Park 36					35



North Parramatta
GTA
14-08-14 - Thursday

Zone Inventory Summary

Id	Location	Side of Street	Parking Type	Adjacent Land Use	Restrictions	Supply
AL						
Car Park 37						
84	Car Park 37, Multicultural Health Unit	Unrestricted Zone	Off Street		Unrestricted	12
AL						
Car Park 37						
AM						
Car Park 38						
85	Car Park 38, behind gate	Unrestricted Zone	Off Street		Unrestricted	4
AM						
Car Park 38						
AN						
Car Park 39						
86	Car Park 39, Womens Health at Work	Unrestricted Zone	Off Street		Unrestricted	2
AN						
Car Park 39						
AO						
Car Park 40						
88	Car Park 40	Unrestricted Zone	Off Street		Unrestricted	6
AO						
Car Park 40						
AP						
Car Park 41						
89	Car Park 41	Ward Car Only Zone	Off Street		Ward Car only	1
90	Car Park 41	Unrestricted Zone	Off Street		Unrestricted	12
AP						
Car Park 41						
AQ						
Car Park 42						
91	Car Park 42	Area Pool Car only Zone	Off Street		Area Pool Car only	6
92	Car Park 42	Unrestricted Zone	Off Street		Unrestricted	2
AQ						
Car Park 42						
AR						
Car Park 43						
93	Car Park 43, Transcultural Mental Health Services	Unrestricted (on grass) Zone	Off Street		Unrestricted	2
94	Car Park 43, Transcultural Mental Health Services	Unrestricted Zone	Off Street		Unrestricted	28
AR						
Car Park 43						
AS						
Car Park 44						
95	Car Park 44, Diversity Health Institute	Unrestricted Zone	Off Street		Unrestricted	8
AS						
Car Park 44						
AT						
Car Park 45						
96	Car Park 45, Innovation redesign	Unrestricted Zone	Off Street		Unrestricted	8
AT						
Car Park 45						
AU						
Car Park 46						
97	Car Park 46, Health Support Services	Unrestricted Zone	Off Street		Unrestricted	2
AU						
Car Park 46						
AV						
Car Park 47						
98	Car Park 47	Unrestricted Zone	Off Street		Unrestricted	4
AV						
Car Park 47						
AW						
Car Park 48						
99	Car Park 48, Parramatta Linen Services	Authorised Parking only Zone	Off Street		Authorised Parking only	18
AW						
Car Park 48						
AX						
Car Park 49						
100	Car Park 49, Parramatta Linen Services (west side)	Authorised Parking only Zone	Off Street		Authorised Parking only	6
AX						
Car Park 49						
AY						
Car Park 50						
101	Car Park 50	Unrestricted Zone	Off Street		Unrestricted	20
AY						
Car Park 50						

Off Street 899
Kerbside 105



North Parramatta
GTA
14-08-14 - Thursday
Survey Summary

Zone Group Id	Location	Supply	Average Occupancy (%)	Maximum Occupancy (%)	Average Duration of Stay (minutes)	Maximum Duration of Stay (minutes)	Total Users (Vehicles)
A	Fleet Street	59	46%	75%	238	600	81
B	New Street	28	32%	46%	300	720	22
C	Car Park 1	31	0%	0%	0	0	0
D	Car Park 2	25	4%	12%	140	180	3
E	Car Park 3	29	21%	45%	317	480	14
F	Car Park 4	19	47%	79%	278	720	24
G	Car Park 5	12	58%	100%	277	540	18
H	Car Park 6	6	50%	100%	308	480	8
I	Car Park 7	3	33%	100%	204	480	5
J	Car Park 8	15	47%	80%	330	540	16
K	Car Park 9	10	50%	90%	254	420	13
L	Car Park 10	12	58%	92%	198	720	26
M	Car Park 11	3	67%	100%	400	480	3
N	Car Park 12	16	62%	94%	300	600	24
O	Car Park 13	43	63%	86%	226	720	85
P	Car Park 14	32	69%	88%	236	480	67
Q	Car Park 15	44	73%	95%	227	720	101
R	Car Park 16 - River Road	16	56%	81%	297	480	22
S	Car Park 17	22	64%	100%	264	720	38
T	Car Park 18 - Warrinya Avenue	33	70%	100%	285	480	57
U	Car Park 19 - Warrinya Avenue	12	50%	83%	218	420	19
V	Car Park 20	7	71%	100%	325	480	12
W	Car Park 21	8	62%	88%	248	480	15
X	Car Park 22	6	50%	100%	189	540	13
Y	Car Park 23	8	88%	100%	397	720	13
Z	Car Park 24	11	64%	100%	218	420	24
AA	Car Park 25	24	54%	96%	237	480	40
AB	Car Park 26	7	14%	29%	180	360	3
AC	Car Park 27	25	44%	72%	298	540	26
AD	Car Park 28	75	45%	72%	185	480	131
AE	Car Park 29	6	83%	100%	549	720	7
AF	Car Park 30	5	80%	100%	394	540	7
AG	Car Park 31	70	64%	79%	230	540	140
AH	Car Park 32	37	57%	84%	198	720	75
AI	Car Park 34 (Incl Car Park 33)	51	51%	84%	228	420	81
AJ	Car Park 35	18	67%	100%	274	540	32
AK	Car Park 36	35	9%	23%	136	360	15
AL	Car Park 37	12	42%	92%	236	720	16
AM	Car Park 38	4	25%	25%	210	240	2
AN	Car Park 39	2	50%	100%	450	540	2
AO	Car Park 40	6	83%	100%	300	540	11
AP	Car Park 41	13	69%	92%	321	600	20
AQ	Car Park 42	8	62%	88%	221	720	16
AR	Car Park 43	30	67%	93%	277	600	53
AS	Car Park 44	8	50%	75%	318	660	10
AT	Car Park 45	8	62%	88%	214	420	16
AU	Car Park 46	2	0%	50%	300	300	1
AV	Car Park 47	4	25%	50%	330	480	2
AW	Car Park 48	18	39%	61%	267	480	18
AX	Car Park 49	6	33%	67%	250	420	6
AY	Car Park 50	20	0%	5%	120	120	1
TOTAL STUDY AREA		1004	49%	70%	244	720	1454



North Parramatta
GTA
14-08-14 - Thursday

Accumulation & Occupancy Summary

Id	Location	Side of Street	Parking Type	Adjacent Land Use	Restrictions	Supply	Occupancy per 1hr Interval - Thursday												AVERAGE
							7:00am	8:00am	9:00am	10:00am	11:00am	12:00pm	1:00pm	2:00pm	3:00pm	4:00pm	5:00pm	6:00pm	
A Fleet Street																			
2	Fleet St, btw Fennel St & Greenup Drive	West Side	Kerbside		4P 8am-6pm Mon-Fri; Area 7 Resident Permit Excepted	24	3	7	24	24	23	21	18	21	14	12	8	6	15
							12%	29%	100%	100%	96%	88%	75%	88%	58%	50%	33%	25%	62%
5	Fleet St, btw Greenup Drive & Factory St	West Side	Kerbside		4P 8am-6pm Mon-Fri; Area 7 Resident Permit Excepted	20	4	3	11	16	14	15	9	8	6	3	5	8	40
							20%	15%	55%	80%	70%	75%	45%	40%	30%	15%	15%	25%	40%
7	Fleet St, No. 5A	West Side	Off Street		Private	3	0	0	0	0	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
8	Fleet St, No. 7	West Side	Off Street		Private	3	0	0	0	0	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
9	Fleet St, No. 9, Chip Cottage	West Side	Off Street		Private, 90 Degree	9	4	4	4	4	4	4	4	6	3	2	2	2	4
							44%	44%	44%	44%	44%	44%	44%	67%	33%	22%	22%	22%	44%
A	Fleet Street					59	11	14	39	44	41	40	31	35	23	17	13	13	27
							19%	24%	66%	75%	69%	68%	53%	59%	39%	29%	22%	22%	46%
B New Street																			
11	New St, btw Factory St & Dunlop St	West Side	Kerbside		Unrestricted	16	6	9	10	9	11	11	10	8	7	5	5	4	8
							38%	56%	62%	56%	69%	69%	62%	50%	44%	31%	31%	25%	50%
12	New St, btw Factory St & Dunlop St	West Side	Kerbside		No Parking, Authorised Vehicles Excepted	2	0	0	0	0	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
13	New St, No. 1	West Side	Off Street		Private	2	0	0	0	0	0	0	0	0	0	1	1	1	0
							0%	0%	0%	0%	0%	0%	0%	0%	50%	50%	50%	0%	0%
14	New St, No. 3	West Side	Off Street		Private	2	0	0	0	0	0	0	0	0	0	0	0	0	0
							0%	0%	0%	50%	50%	50%	50%	0%	0%	0%	0%	0%	0%
15	New St, No. 5	West Side	Off Street		Private	2	0	0	0	0	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
16	New St, No. 9	West Side	Off Street		Private	2	1	1	1	1	1	1	1	0	0	0	0	0	1
							50%	50%	50%	50%	50%	50%	50%	50%	0%	0%	0%	0%	50%
17	New St, No. 11	West Side	Off Street		Private	2	0	0	0	0	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
B	New Street					28	7	10	11	11	13	13	12	9	8	6	6	4	9
							25%	38%	39%	39%	46%	46%	43%	32%	29%	21%	21%	14%	32%
C Car Park 1																			
18	Car Park 1		Off Street		Authorised Parking only	31	0	0	0	0	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
C	Car Park 1					31	0	0	0	0	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
D Car Park 2																			
19	Car Park 2		Off Street		Authorised Parking only	25	0	0	0	0	3	2	2	0	0	0	0	0	1
							0%	0%	0%	0%	12%	8%	8%	0%	0%	0%	0%	0%	4%
D	Car Park 2					25	0	0	0	0	3	2	2	0	0	0	0	0	1
							0%	0%	0%	0%	12%	8%	8%	0%	0%	0%	0%	0%	4%
E Car Park 3																			
20	Car Park 3		Off Street		Unrestricted	29	0	0	6	13	13	12	9	9	8	4	0	0	6
							0%	0%	21%	45%	45%	41%	31%	31%	28%	14%	0%	0%	21%
E	Car Park 3					29	0	0	6	13	13	12	9	9	8	4	0	0	6
							0%	0%	21%	45%	45%	41%	31%	31%	28%	14%	0%	0%	21%
F Car Park 4																			
21	Car Park 4	Staff Parking Zone	Off Street		Staff Parking 90 Degree	11	1	4	7	8	8	8	8	8	4	1	1	1	6
							9%	36%	64%	73%	73%	73%	73%	73%	36%	9%	9%	9%	55%
22	Car Park 4	Disabled Zone	Off Street		Disabled	1	0	0	0	0	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
23	Car Park 4	Unrestricted Zone	Off Street		Unrestricted	7	0	0	4	7	7	7	6	6	4	2	1	1	4
							0%	0%	57%	100%	100%	100%	86%	86%	57%	29%	14%	14%	57%
F	Car Park 4					19	1	4	11	15	15	15	14	14	12	6	2	2	9
							5%	21%	58%	79%	79%	79%	74%	74%	63%	32%	11%	11%	47%
G Car Park 5																			
24	Car Park 5, NSW Institute of Psychology		Off Street		Unrestricted	12	2	11	12	12	12	11	9	9	6	0	0	0	7
							17%	92%	100%	100%	100%	92%	67%	75%	50%	0%	0%	0%	58%
G	Car Park 5					12	2	11	12	12	12	11	9	9	6	0	0	0	7
							17%	92%	100%	100%	100%	92%	67%	75%	50%	0%	0%	0%	58%
H Car Park 6																			
25	Car Park 6, Warrinya Ave		Off Street		Unrestricted	6	0	2	5	6	6	6	5	5	3	2	1	0	3
							0%	33%	83%	100%	100%	100%	83%	83%	50%	33%	17%	0%	50%
H	Car Park 6					6	0	2	5	6	6	6	5	5	3	2	1	0	3
							0%	33%	83%	100%	100%	100%	83%	83%	50%	33%	17%	0%	50%
I Car Park 7																			
26	Car Park 7, Warrinya Ave		Off Street		Unrestricted	3	0	1	3	3	3	2	1	2	1	1	0	0	1
							0%	33%	100%	100%	100%	67%	33%	67%	33%	33%	0%	0%	33%
I	Car Park 7					3	0	1	3	3	3	2	1	2	1	1	0	0	1
							0%	33%	100%	100%	100%	67%	33%	67%	33%	33%	0%	0%	33%
J Car Park 8																			
28	Car Park 8, Warrinya Ave	Unrestricted Zone 1	Off Street		Unrestricted	3	0	1	3	3	3	3	3	3	2	1	0	0	2
							0%	33%	100%	100%	100%	100%	100%	100%	100%	33%	0%	0%	67%
30	Car Park 8, Warrinya Ave	Unrestricted Zone 2	Off Street		Unrestricted	3	0	0	3	3	3	3	3	3	3	3	3	3	2
							0%	0%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	67%
31	Car Park 8, Warrinya Ave	Private	Off Street		Private	2	0	1	2	2	2	2	2	2	2	1	0	0	1
							0%	50%	100%	100%	100%	100%	100%	100%	100%	50%	0%	0%	50%
32	Car Park 8, Warrinya Ave	Credit Union Parking Zone	Off Street		Credit Union Parking Only	6	0	0	3	4	4	4	4	4	1	0	0	0	2
							0%	0%	50%	67%	67%	67%	67%	67%	17%	0%	0%	0%	33%
33	Car Park 8, Warrinya Ave	Disabled Zone	Off Street		Disabled	1	0	0	0	0	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
J	Car Park 8					15	0	2	11	11	12	12	11	12	9	5	3	6	7
							0%	13%	73%	73%	80%	80%	73%	80%	60%	33%	20%	0%	47%
K Car Park 9																			
34	Car Park 9, Warrinya Ave		Off Street		Unrestricted	10	0	9	9	9	9	8	4	4	2	1	0	0	5
							0%	90%	90%	90%	90%	80%	40%	40%	20%	10%	0%	0%	50%
K	Car Park 9					10	0	9	9	9	9	8	4	4	2	1	0	0	5
							0%	90%	90%	90%	90%	80%	40%	40%	20%	10%	0%	0%	50%
L Car Park 10																			
35	Car Park 10, WSAMHS		Off Street		Unrestricted	12	4	9	11	11	10	9	6	7	7	7	4	1	7
							33%	75%	92%	92%	83%	75%	50%	58%	58%	58%	33%	8%	58%
L	Car Park 10					12	4	9	11	11	10	9	6	7	7	7	4	1	



North Parramatta
GTA
14-08-14 - Thursday

Accumulation & Occupancy Summary

Id	Location	Side of Street	Parking Type	Adjacent Land Use	Restrictions	Supply	Occupancy per 1hr Interval - Thursday												AVERAGE		
							7:00am	8:00am	9:00am	10:00am	11:00am	12:00pm	1:00pm	2:00pm	3:00pm	4:00pm	5:00pm	6:00pm			
44	River Rd, btw Eastern Circuit & Warringya Ave	North Side	Kerbside		Unrestricted	11	6	8	8	8	8	8	8	8	7	5	2	0	0	6	
Car Park 16 - River Road							16	6	12	13	13	13	13	13	12	8	3	2	1	9	
							38%	75%	81%	81%	81%	81%	81%	75%	50%	19%	12%	6%	56%		
Car Park 17																					
46	Car Park 17, Kallindi		Off Street		Unrestricted	7	1	4	6	7	7	5	6	5	5	4	1	0	4		
							14%	57%	86%	100%	100%	71%	86%	71%	71%	57%	14%	0%	57%		
47	Car Park 17, 68a	Unrestricted Zone	Off Street		Unrestricted	15	1	3	15	15	15	15	14	14	9	7	7	1	10		
							7%	20%	100%	100%	100%	100%	93%	93%	60%	47%	47%	7%	67%		
Car Park 17							22	2	7	21	22	22	20	20	19	14	11	8	1	14	
							9%	32%	95%	100%	100%	91%	91%	86%	64%	50%	36%	5%	64%		
Car Park 18 - Warringya Avenue																					
50	Warringya Ave, btw River Rd & lane to Bunya	East Side	Kerbside		Unrestricted	9	4	9	9	9	9	9	9	7	8	8	5	0	7		
							44%	100%	100%	100%	100%	100%	100%	78%	89%	89%	56%	0%	78%		
51	Car Park 18	Delivery Zone	Off Street		Delivery Zone	2	2	2	2	2	2	2	2	2	0	0	0	0	1		
							100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	0%	0%	50%		
52	Car Park 18	Unrestricted Zone	Off Street		Unrestricted	22	1	13	22	22	22	22	21	20	10	10	4	2	14		
							5%	59%	100%	100%	100%	100%	95%	91%	45%	45%	18%	9%	64%		
Car Park 18 - Warringya Avenue							33	7	24	33	33	33	33	32	29	18	18	9	2	23	
							21%	73%	100%	100%	100%	100%	97%	88%	55%	55%	27%	6%	70%		
Car Park 19 - Warringya Avenue																					
54	Warringya Ave, lane to Bunya & Bridge St	East Side	Kerbside		Unrestricted	3	0	0	3	3	3	3	2	1	3	3	2	0	2		
							0%	0%	100%	100%	100%	100%	67%	33%	100%	100%	67%	0%	67%		
55	Car Park 19	Unrestricted Zone	Off Street		Unrestricted	7	0	3	6	6	6	6	6	4	3	2	0	0	4		
							0%	43%	86%	86%	86%	86%	86%	57%	43%	29%	0%	0%	57%		
56	Car Park 19	Loading Zone	Off Street		Loading Zone	2	0	1	0	0	0	0	1	0	0	0	2	0	1		
							0%	50%	0%	0%	0%	50%	0%	0%	50%	0%	0%	50%	0%		
Car Park 19 - Warringya Avenue							12	0	4	9	9	9	9	10	8	5	7	5	2	1	6
							0%	33%	75%	75%	75%	83%	67%	42%	38%	42%	17%	8%	59%		
Car Park 20																					
57	Car Park 20, Bunya	North Side	Kerbside		Unrestricted	7	7	6	6	7	7	7	7	7	3	3	2	3	5		
							100%	86%	86%	100%	100%	100%	100%	100%	43%	43%	29%	43%	71%		
Car Park 20							7	7	6	6	7	7	7	7	7	3	3	2	3	5	
							100%	86%	86%	100%	100%	100%	100%	100%	43%	43%	29%	43%	71%		
Car Park 21																					
58	Car Park 21, Bunya	South Side	Kerbside		Unrestricted	8	4	2	2	7	7	7	6	7	6	6	5	3	5		
							50%	25%	25%	88%	88%	88%	75%	88%	75%	75%	62%	38%	62%		
Car Park 21							8	4	2	2	7	7	7	6	7	6	6	5	3	5	
							50%	25%	25%	88%	88%	88%	75%	88%	75%	75%	62%	38%	62%		
Car Park 22																					
60	Car Park 22, Life Skills		Off Street		Unrestricted	6	2	3	2	4	6	6	4	4	5	4	1	0	3		
							33%	50%	33%	67%	100%	100%	67%	67%	83%	67%	17%	0%	50%		
Car Park 22							6	2	3	2	4	6	6	4	4	5	4	1	0	3	
							33%	50%	33%	67%	100%	100%	67%	67%	83%	67%	17%	0%	50%		
Car Park 23																					
61	Eastern Circuit, Wirrabilla		Off Street		Unrestricted	5	3	4	5	5	5	5	5	5	5	4	2	2	4		
							60%	80%	100%	100%	100%	100%	100%	100%	100%	80%	40%	40%	80%		
62	Car Park 23, Wirrabilla		Off Street		Unrestricted	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
							100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Car Park 23							8	6	7	8	8	8	8	8	8	8	7	5	9	7	
							75%	88%	100%	100%	100%	100%	100%	100%	100%	88%	62%	62%	88%		
Car Park 24																					
63	Car Park 24, Gungura		Off Street		Risk Management Unit	3	1	2	3	3	3	3	2	3	3	3	2	2	3		
							33%	67%	100%	100%	100%	100%	67%	100%	100%	67%	67%	67%	100%		
64	Car Park 24, Gungura	Unrestricted (on grass) Zone	Off Street		Unrestricted	8	1	1	5	6	8	7	7	6	6	5	3	2	5		
							12%	12%	62%	75%	100%	88%	88%	75%	75%	62%	38%	25%	62%		
Car Park 24							11	2	3	8	9	11	10	9	9	9	8	5	4	7	
							18%	27%	73%	82%	100%	91%	82%	82%	82%	73%	45%	36%	64%		
Car Park 25																					
65	Car Park 25, Bridgeway Centre	Unrestricted Zone	Off Street		Unrestricted	24	3	10	23	23	23	23	19	14	12	7	1	0	13		
							12%	42%	96%	96%	96%	96%	79%	58%	50%	29%	4%	0%	54%		
Car Park 25							24	3	10	23	23	23	23	19	14	12	7	1	0	13	
							12%	42%	96%	96%	96%	96%	79%	58%	50%	29%	4%	0%	54%		
Car Park 26																					
67	Car Park 26, Wattle Cottage	Unrestricted Zone	Off Street		Unrestricted	4	0	0	2	1	1	1	1	1	1	1	0	0	1		
							0%	0%	50%	25%	25%	25%	25%	25%	25%	25%	0%	0%	25%		
68	Car Park 26, Wattle Cottage	Delivery Zone	Off Street		Delivery Zone	3	0	0	0	0	0	0	0	0	0	0	0	0	0		
							0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		
Car Park 26							7	0	0	2	1	1	1	1	1	1	1	0	0	1	
							0%	0%	29%	14%	14%	14%	14%	14%	14%	14%	0%	0%	14%		
Car Park 27																					
69	Car Park 27		Off Street		Unrestricted	25	1	5	16	17	18	18	15	15	12	9	2	1	11		
							4%	20%	64%	68%	72%	72%	60%	60%	48%	36%	8%	4%	44%		
Car Park 27							25	1	5	16	17	18	18	15	15	12	9	2	1	11	
							4%	20%	64%	68%	72%	72%	60%	60%	48%	36%	8%	4%	44%		
Car Park 28																					
70	Car Park 28, large grass area		Off Street		Unrestricted	75	1	9	36	48	51	54	49	54	48	41	8	4	34		
							1%	12%	48%	64%	68%	72%	65%	72%	64%	55%	11%	5%	45%		
Car Park 28							75	1	9	36	48	51	54	49	54	48	41	8	4	34	
							1%	12%	48%	64%	68%	72%	65%	72%	64%	55%	11%	5%	45%		
Car Park 29																					
71	Car Park 29, Centre for Addiction Medicine		Off Street		Ward Car only	6	6	6	5	5	5	5	5	6	6	5	5	5	5		
							100%	100%	83%	83%	83%	83%	100%	100%	83%	83%	83%	83%	83%		
Car Park 29							6	6	6	5	5	5	5	5	6	6	5	5	5	5	
							100%	100%	83%	83%	83%	83%	100%	100%	83%	83%	83%	83%	83%		
Car Park 30																					
73	Car Park 30	Unrestricted Zone	Off Street		Unrestricted	5	1	5	5	4	4	4	5	5	5	4	2	2	4		
							20%	100%	100%	80%	80%	80%	100%	100%	100%	80%	40%	40%	80%		
Car Park 30							5	1	5	5	4	4	4	5	5	5	4	2	2	4	
							20%	100%	100%	80%	80%	80%	100%	100%	100%	80%	40%	40%	80%		
Car Park 31																					
74	Car Park 31, Health Support Services	Staff Parking Zone	Off Street		Staff Parking Only	10	5	9	9	9	9	9	10	9	9	7	4	4	8		
							50%	90%	90%	90%	90%	90%	100%	90%	90%	70%	40%	40%	80%		
75	Car Park 31, Health Support Services	Staff Parking Zone (under cover)	Off Street		Staff Parking Only	13	12	12	12	13	13	13	13	13	9	7	7	7	11		
							92%	92%	92%	100%	100%	100%	100%	92%	100%	69%	54%	54%	85%		
76	Car Park 31, Health Support Services	Staff Parking Zone (at back)	Off Street		Staff Parking Only	47	15	24	31	28	30	29	30	30	33	27	16	15	26		
							32%	51%	66%	60%	64%	62%	64%	64%	70%	57%	34%	32%	55%		
Car Park 31							70	32	45	52	50	52	51	53	51	55	43	27	26	45	
							46%	64%	74%	71%	74%	73%	76%	73%	79%	61%	39%	37%	64%		
Car Park 32																					
77	Car Park 32, Palm Circuit (on grass SH)		Off Street		Unrestricted	16	5	7	16	15	12	13	9	12	10	10	6	5	10		
							31%	44%	100%	94%	75%	61%	56%	75%	62%	62%	38%	31%	62%		
78	Car Park 32, Palm Circuit (on East side)	Cumberland Campus Staff Parking	Off Street		Cumberland Campus Staff Parking	6	2	5	5	6	6	6	6	6	6	3	2	0	4		
							33%	83%	83%	100%	100%	100%	83%	100%	100%	50%	33%	0%	67%		
79	Car Park 32, Palm Circuit (on East side)	Unrestricted Zone	Off Street		Unrestricted	15	0	4	4	5	5	6	6	11	15	6	5	6	7		
							0%	27%	27%	33%	33%	40%	40%	73%	100%	60%	40%	33%	40%		
Car Park 32							37	7	16	25	26	23	25	20	29	31	22	14	10	21	
							19%	43%	68%	70%	62%	68%	54%	78%	84%	59%	38%	27%	57%		
Car Park 34 (incl Car Park 33)																					
80	Car Park 34 (incl 33), large grass area		Off Street		Unrestricted	51	0	9	34	43	41	42	36	33	30	25	11	4	26		
							0%	18%	67%	84%	80%	82%	71%	65%	59%	49%	22%	8%	51%		
Car Park 34 (incl Car Park 33)							51	0	9	34	43	41	42	36	33	30	25	11	4	26	
							0%	18%	67%	84%	80%	82%	71%	65%	59%						



North Parramatta
GTA
14-08-14 - Thursday

Accumulation & Occupancy Summary

Id	Location	Side of Street	Parking Type	Adjacent Land Use	Restrictions	Supply	Occupancy per 1hr Interval - Thursday												AVERAGE	
							7:00am	8:00am	9:00am	10:00am	11:00am	12:00pm	1:00pm	2:00pm	3:00pm	4:00pm	5:00pm	6:00pm		
AJ Car Park 35							18	4	11	18	18	18	18	16	15	14	9	4	1	12
AJ								22%	61%	100%	100%	100%	100%	89%	83%	78%	50%	22%	6%	67%
AK Car Park 36							35	0	0	3	3	2	2	4	4	8	6	2	0	3
AK								0%	0%	9%	9%	6%	6%	11%	11%	23%	17%	6%	0%	9%
AK Car Park 36							35	0	0	3	3	2	2	4	4	8	6	2	0	3
AK								0%	0%	9%	9%	6%	6%	11%	11%	23%	17%	6%	0%	9%
AL Car Park 37							12	1	3	3	10	11	11	7	6	5	3	2	1	5
AL								8%	25%	25%	83%	92%	92%	58%	50%	42%	25%	17%	8%	42%
AL Car Park 37							12	1	3	3	10	11	11	7	6	5	3	2	1	5
AL								8%	25%	25%	83%	92%	92%	58%	50%	42%	25%	17%	8%	42%
AM Car Park 38							4	1	1	1	1	0	0	0	0	0	1	1	1	1
AM								25%	25%	25%	25%	0%	0%	0%	0%	0%	25%	25%	25%	25%
AM Car Park 38							4	1	1	1	1	0	0	0	0	1	1	1	1	
AM								25%	25%	25%	25%	0%	0%	0%	0%	0%	25%	25%	25%	25%
AN Car Park 39							2	0	0	1	2	2	2	2	2	2	1	1	0	1
AN								0%	0%	50%	100%	100%	100%	100%	100%	100%	50%	50%	0%	50%
AO Car Park 40							6	0	6	6	6	6	6	6	6	6	4	2	1	5
AO								0%	100%	100%	100%	100%	100%	100%	100%	100%	67%	33%	17%	83%
AO Car Park 40							6	0	6	6	6	6	6	6	6	6	4	2	1	5
AO								0%	100%	100%	100%	100%	100%	100%	100%	100%	67%	33%	17%	83%
AP Car Park 41							1	0	0	0	0	0	0	0	0	0	0	0	0	0
AP								0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AQ Car Park 41							12	3	12	12	12	12	12	11	12	12	7	1	1	9
AQ								25%	100%	100%	100%	100%	100%	92%	100%	100%	58%	8%	8%	75%
AQ Car Park 41							13	3	12	12	12	12	12	11	12	12	7	1	1	9
AQ								23%	92%	92%	92%	92%	92%	85%	92%	92%	54%	8%	8%	69%
AR Car Park 42							6	5	4	4	3	3	3	3	5	5	6	6	6	4
AR								83%	67%	67%	50%	50%	50%	50%	83%	83%	100%	100%	100%	100%
AR Car Park 42							2	2	1	0	0	0	0	0	0	1	0	1	1	1
AR								100%	50%	0%	0%	0%	0%	0%	0%	50%	0%	50%	50%	50%
AR Car Park 42							8	7	5	4	3	3	3	3	5	6	6	7	7	5
AR								88%	62%	50%	38%	38%	38%	38%	62%	75%	75%	88%	88%	62%
AS Car Park 43							2	1	2	2	2	2	2	2	2	2	1	1	1	2
AS								50%	100%	100%	100%	100%	100%	100%	100%	100%	50%	50%	50%	100%
AS Car Park 43							28	3	14	26	25	26	26	26	26	23	19	7	1	19
AS								11%	50%	93%	89%	93%	93%	93%	93%	82%	68%	25%	11%	68%
AS Car Park 43							30	4	16	28	27	28	28	28	28	25	21	8	4	20
AS								13%	53%	93%	90%	93%	93%	93%	93%	83%	70%	27%	13%	67%
AS Car Park 44							8	1	6	6	6	6	6	6	6	5	3	1	1	4
AS								12%	75%	75%	75%	75%	75%	75%	75%	62%	38%	12%	12%	50%
AS Car Park 44							8	1	6	6	6	6	6	6	6	5	3	1	1	4
AS								12%	75%	75%	75%	75%	75%	75%	75%	62%	38%	12%	12%	50%
AT Car Park 45							8	0	4	6	7	7	7	6	6	6	5	2	1	5
AT								0%	50%	75%	88%	88%	88%	75%	75%	75%	62%	25%	12%	62%
AT Car Park 45							8	0	4	6	7	7	7	6	6	6	5	2	1	5
AT								0%	50%	75%	88%	88%	88%	75%	75%	75%	62%	25%	12%	62%
AU Car Park 46							2	0	0	1	1	1	1	1	0	0	0	0	0	0
AU								0%	0%	50%	50%	50%	50%	50%	0%	0%	0%	0%	0%	0%
AU Car Park 46							2	0	0	1	1	1	1	1	0	0	0	0	0	0
AU								0%	0%	50%	50%	50%	50%	50%	0%	0%	0%	0%	0%	0%
AV Car Park 47							4	1	1	1	1	1	2	2	2	2	0	0	0	1
AV								25%	25%	25%	25%	25%	50%	50%	50%	50%	0%	0%	0%	25%
AV Car Park 47							4	1	1	1	1	1	2	2	2	2	0	0	0	1
AV								25%	25%	25%	25%	25%	50%	50%	50%	50%	0%	0%	0%	25%
AW Car Park 48							18	7	10	10	9	11	11	7	9	3	1	1	1	7
AW								39%	56%	56%	50%	61%	61%	39%	50%	17%	6%	6%	6%	39%
AW Car Park 48							18	7	10	10	9	11	11	7	9	3	1	1	1	7
AW								39%	56%	56%	50%	61%	61%	39%	50%	17%	6%	6%	6%	39%
AX Car Park 49							6	0	3	3	3	4	4	3	3	2	0	0	0	2
AX								0%	50%	50%	50%	67%	67%	50%	50%	33%	0%	0%	0%	33%
AX Car Park 49							6	0	3	3	3	4	4	3	3	2	0	0	0	2
AX								0%	50%	50%	50%	67%	67%	50%	50%	33%	0%	0%	0%	33%
AY Car Park 50							20	0	0	0	0	1	1	0	0	0	0	0	0	0
AY								0%	0%	0%	0%	5%	5%	0%	0%	0%	0%	0%	0%	0%
AY Car Park 50							20	0	0	0	0	1	1	0	0	0	0	0	0	0
AY								0%	0%	0%	0%	5%	5%	0%	0%	0%	0%	0%	0%	0%
TOTAL STUDY AREA							1004	199	412	632	687	698	690	621	620	555	426	223	158	493
TOTAL STUDY AREA								20%	41%	63%	68%	70%	69%	62%	62%	55%	42%	22%	16%	49%



North Parramatta
GTA
14-08-14 - Thursday

Duration of Stay Summary

Id	Location	Side of Street	Parkings Type	Adjacent Land Use	Restrictions	Supply	Duration of Stay - Thursday												TOTAL USERS
							1hr	2hrs	3hrs	4hrs	5hrs	6hrs	7hrs	8hrs	9hrs	10hrs	11hrs	12hrs	
Fleet Street																			
2	Fleet St, btw Fennel St & Greensop Drive	West Side	Kerbside		4P 8am-6pm Mon-Fri, Area 7 Resident Permit Excepted	24	7	3	2	9	2	4	2	5	2	2	0	0	38
5	Fleet St, btw Greensop Drive & Factory St	West Side	Kerbside		4P 8am-6pm Mon-Fri, Area 7 Resident Permit Excepted	20	11	8	5	3	1	4	2	0	0	0	0	0	34
7	Fleet St, No. 5A	West Side	Off Street		Private	3	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Fleet St, No. 7	West Side	Off Street		Private	3	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Fleet St, No. 9, Chip Cottage	West Side	Off Street		Private, 90 Degree	9	1	2	1	0	1	1	0	3	0	0	0	0	0
A	Fleet Street					59	19	13	8	12	4	9	4	8	2	2	2	0	81
	Users (%)					23%	16%	10%	15%	5%	11%	5%	10%	2%	2%	0%	0%	100%	
New Street																			
11	New St, btw Factory St & Dunlop St	West Side	Kerbside		Unrestricted	16	6	1	3	0	0	0	4	2	0	1	0	2	19
12	New St, btw Factory St & Dunlop St	West Side	Kerbside		No Parking - Authorised Vehicles Excepted	2	0	0	0	0	0	0	0	0	0	0	0	0	0
13	New St, No. 1	West Side	Off Street		Private	2	0	0	1	0	0	0	0	0	0	0	0	0	1
14	New St, No. 3	West Side	Off Street		Private	2	0	0	0	1	0	0	0	0	0	0	0	0	1
15	New St, No. 5	West Side	Off Street		Private	2	0	0	0	0	0	0	0	0	0	0	0	0	0
16	New St, No. 9	West Side	Off Street		Private	2	0	0	0	0	0	0	0	1	0	0	0	0	1
17	New St, No. 11	West Side	Off Street		Private	2	0	0	0	0	0	0	0	0	0	0	0	0	0
B	New Street					28	6	1	4	1	0	0	4	3	0	1	0	2	22
	Users (%)					27%	5%	18%	5%	0%	0%	18%	14%	0%	5%	0%	0%	100%	
Car Park 1																			
18	Car Park 1		Off Street		Authorised Parking only	31	0	0	0	0	0	0	0	0	0	0	0	0	0
	Users (%)					0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Car Park 2																			
19	Car Park 2		Off Street		Authorised Parking only	25	1	0	2	0	0	0	0	0	0	0	0	0	3
	Users (%)					33%	0%	67%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Car Park 3																			
20	Car Park 3		Off Street		Unrestricted	29	1	0	4	0	1	3	2	3	0	0	0	0	14
	Users (%)					7%	0%	29%	0%	7%	21%	14%	21%	0%	0%	0%	0%	0%	100%
Car Park 4																			
21	Car Park 4	Staff Parking Zone	Off Street		Staff Parking 90 Degree	11	3	2	0	0	0	3	3	1	0	0	0	1	13
22	Car Park 4	Disabled Zone	Off Street		Disabled	1	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Car Park 4	Unrestricted Zone	Off Street		Unrestricted	7	2	1	1	1	2	4	0	0	0	0	0	0	11
	Users (%)					21%	12%	12%	4%	4%	29%	12%	4%	0%	0%	0%	4%	100%	
Car Park 5																			
24	Car Park 5, NSW Institute of Psychology		Off Street		Unrestricted	12	3	3	2	1	2	0	3	3	1	0	0	0	18
	Users (%)					17%	17%	11%	6%	11%	0%	17%	17%	6%	0%	0%	0%	100%	
Car Park 6																			
25	Car Park 6, Warringa Ave		Off Street		Unrestricted	6	1	1	1	0	0	1	3	1	0	0	0	0	8
	Users (%)					12%	12%	12%	0%	0%	12%	38%	12%	0%	0%	0%	0%	100%	
Car Park 7																			
26	Car Park 7, Warringa Ave		Off Street		Unrestricted	3	2	0	1	1	0	0	0	1	0	0	0	0	5
	Users (%)					40%	0%	20%	20%	0%	0%	0%	20%	0%	0%	0%	0%	100%	
Car Park 8																			
28	Car Park 8, Warringa Ave	Unrestricted Zone 1	Off Street		Unrestricted	3	0	0	0	0	0	0	1	2	0	0	0	0	3
30	Car Park 8, Warringa Ave	Unrestricted Zone 2	Off Street		Unrestricted	3	0	0	0	0	0	0	0	0	3	0	0	0	3
31	Car Park 8, Warringa Ave	Private	Off Street		Private	2	0	0	0	0	0	0	2	0	0	0	0	2	
32	Car Park 8, Warringa Ave	Credit Union Parking Zone	Off Street		Credit Union Parking Only	6	4	0	1	1	1	1	0	0	0	0	0	0	8
33	Car Park 8, Warringa Ave	Disabled Zone	Off Street		Disabled	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Users (%)					25%	0%	6%	6%	6%	6%	6%	25%	19%	0%	0%	0%	100%	
Car Park 9																			
34	Car Park 9, Warringa Ave		Off Street		Unrestricted	10	3	1	0	2	3	1	3	0	0	0	0	0	13
	Users (%)					23%	8%	0%	15%	23%	8%	23%	0%	0%	0%	0%	0%	100%	
Car Park 10																			
35	Car Park 10, WSAMHS		Off Street		Unrestricted	12	10	3	3	2	4	0	3	0	0	0	0	1	28
	Users (%)					38%	12%	12%	8%	15%	0%	12%	0%	0%	0%	0%	4%	100%	
Car Park 11																			
36	Car Park 11, WSAMHS		Off Street		Unrestricted	3	0	0	0	1	0	1	1	0	0	0	0	0	3
	Users (%)					0%	0%	0%	0%	33%	0%	33%	33%	0%	0%	0%	0%	100%	
Car Park 12																			
37	Car Park 12		Off Street		Unrestricted	16	4	2	0	6	2	2	2	3	2	1	0	0	24
	Users (%)					17%	8%	0%	25%	8%	8%	8%	12%	8%	4%	0%	0%	100%	
Car Park 13																			
38	Car Park 13, Post Acute Care		Off Street		Unrestricted	43	13	29	3	13	1	8	13	4	0	0	0	1	85
	Users (%)					15%	34%	4%	15%	1%	9%	15%	5%	0%	0%	0%	1%	100%	
Car Park 14																			
39	Car Park 14, Post Acute Care		Off Street		Unrestricted	22	11	22	3	4	4	4	12	6	0	0	0	0	67
	Users (%)					16%	33%	4%	6%	6%	6%	19%	9%	0%	0%	0%	0%	100%	
Car Park 15																			
40	Car Park 15, IT Services		Off Street		Unrestricted	44	21	16	12	20	5	13	7	5	1	0	0	1	101
	Users (%)					21%	16%	12%	20%	5%	13%	7%	5%	1%	0%	0%	1%	100%	
Car Park 16 - River Road																			
42	River Rd, btw Eastern Circuit & Warringa Ave	North Side	Kerbside		Unrestricted	5	3	0	0	1	0	1	4	0	0	0	0	0	9
44	River Rd, btw Eastern Circuit & Warringa Ave	North Side	Kerbside		Unrestricted	11	3	2	0	0	0	3	5	0	0	0	0	0	13
	Users (%)					27%	9%	0%	5%	0%	5%	32%	23%	0%	0%	0%	0%	100%	
Car Park 17																			
46	Car Park 17, Kalindi		Off Street		Unrestricted	7	1	4	2	2	1	0	2	0	1	0	0	0	13
47	Car Park 17, 68a	Unrestricted Zone	Off Street		Unrestricted	15	4	0	6	1	0	13	0	0	0	0	0	1	25
	Users (%)					22	5	4	8	3	1	13	2	0	1	0	0	1	38
	Users (%)					13%	11%	21%	8%	3%	34%	5%	6%	3%	0%	0%	3%	100%	
Car Park 18 - Warringa Avenue																			
50	Warringa Ave, btw River Rd & lane to Bunya	East Side	Kerbside		Unrestricted	9	0	5	5	0	0	4	3	2	0	0	0	0	19
51	Car Park 18	Delivery Zone	Off Street		Delivery Zone	2	0	0	0	0	0	0	2	0	0	0	0	0	2
52	Car Park 18	Unrestricted Zone	Off Street		Unrestricted	22	3	7	2	3	1	11	9	0	0	0	0	0	36
	Users (%)					33	3	12	7	3	1	15	12	4	0	0	0	0	57
	Users (%)					5%	21%	12%	5%	2%	26%	21%	7%	0%	0%	0%	0%	100%	
Car Park 19 - Warringa Avenue																			
54	Warringa Ave, lane to Bunya & Bridge St	East Side	Kerbside		Unrestricted	3	0	1	2	1	1	1	0	0	0	0	0	0	6
55	Car Park 19	Unrestricted Zone	Off Street		Unrestricted	7	1	2	0	0	2	1	3	0	0	0	0	0	9
56	Car Park 19	Loading Zone	Off Street		Loading Zone	2	4	0	0	0	0	0	0	0	0	0	0	0	4
	Users (%)					12	5	3	2	1	3	2	3	0	0	0	0	0	19
	Users (%)					26%	16%	11%	5%	16%	11%	16%	0%	0%	0%	0%	0%	0%	100%
Car Park 20																			
57	Car Park 20, Bunya	North Side	Kerbside		Unrestricted	7	3	0	0	1	1	0	3	4	0	0	0	0	12
	Users (%)					7	3	0	0	1	1	0	3	4	0	0	0	0	12
	Users (%)					25%	0%	0%	8%	8%	0%	25%	33%	0%	0%	0%	0%	100%	
Car Park 21																			
58	Car Park 21, Bunya	South Side	Kerbside		Unrestricted	8	4	2	1	2	1	0	2	3	0	0	0	0	15
	Users (%)					8	4	2	1	2	1	0	2	3	0	0	0	0	15
	Users (%)					27%	13%	7%	13%	7%	0%	13%	20%	0%	0%	0%	0%	100%	
Car Park 22																			
60	Car Park 22, Life Skills		Off Street		Unrestricted	6	8	1	0	0	1	0	0	1	2	0	0	0	13
	Users (%)					6	8	1	0	0	1	0	0	1	2	0	0	0	13
	Users (%)					62%	8%	0%	0%	8%	0%	0%	8%	15%	0%	0%	0%	0%	100%
Car Park 23																			
61	Eastern Circuit, Wirrabilia		Off Street																



North Parramatta
GTA
14-08-14 - Thursday

Duration of Stay Summary

Id	Location	Side of Street	Parking Type	Adjacent Land Use	Restrictions	Duration of Stay - Thursday												TOTAL USERS	
						Supply	1hr	2hrs	3hrs	4hrs	5hrs	6hrs	7hrs	8hrs	9hrs	10hrs	11hrs		12hrs
						Users (%)	0%	23%	8%	8%	0%	0%	8%	15%	8%	0%	0%		0%
Car Park 24																			
63	Car Park 24, Gungura	Unrestricted (on grass)	Off Street		Risk Management Unit	3	2	3	0	1	1	1	1	0	0	0	0	0	9
64	Car Park 24, Gungura	Unrestricted (on grass)	Off Street		Unrestricted	8	2	2	3	2	3	2	1	0	0	0	0	0	15
Z	Car Park 24					11	4	5	3	3	4	3	2	0	0	0	0	0	24
AA	Car Park 24					Users (%)	17%	21%	12%	12%	17%	12%	8%	0%	0%	0%	0%	0%	100%
Car Park 25																			
65	Car Park 25, Bridgeway Centre	Unrestricted Zone	Off Street		Unrestricted	24	8	8	1	4	9	3	4	3	0	0	0	0	40
AA	Car Park 25					24	8	8	1	4	9	3	4	3	0	0	0	0	40
AA	Car Park 25					Users (%)	20%	20%	2%	10%	22%	8%	10%	8%	0%	0%	0%	0%	100%
Car Park 26																			
67	Car Park 26, Watlie Cottage	Unrestricted Zone	Off Street		Unrestricted	4	1	1	0	0	0	1	0	0	0	0	0	0	3
68	Car Park 26, Watlie Cottage	Delivery Zone	Off Street		Delivery Zone	3	0	0	0	0	0	0	0	0	0	0	0	0	0
AB	Car Park 26					7	1	1	0	0	0	1	0	0	0	0	0	0	3
AB	Car Park 26					Users (%)	33%	33%	0%	0%	0%	33%	0%	0%	0%	0%	0%	0%	100%
Car Park 27																			
69	Car Park 27		Off Street		Unrestricted	25	5	4	0	2	0	7	1	4	3	0	0	0	26
AC	Car Park 27					25	5	4	0	2	0	7	1	4	3	0	0	0	26
AC	Car Park 27					Users (%)	19%	15%	0%	8%	0%	27%	4%	15%	12%	0%	0%	0%	100%
Car Park 28																			
70	Car Park 28, large grass area		Off Street		Unrestricted	75	30	48	10	7	9	18	6	3	0	0	0	0	131
AD	Car Park 28					75	30	48	10	7	9	18	6	3	0	0	0	0	131
AD	Car Park 28					Users (%)	23%	37%	8%	5%	7%	14%	5%	2%	0%	0%	0%	0%	100%
Car Park 29																			
71	Car Park 29, Centre for Addiction Medicine		Off Street		Ward Car only	6	0	2	0	0	0	0	0	0	0	0	0	5	7
AE	Car Park 29					6	0	2	0	0	0	0	0	0	0	0	0	0	5
AE	Car Park 29					Users (%)	0%	29%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	71%
Car Park 30																			
73	Car Park 30	Unrestricted Zone	Off Street		Unrestricted	5	0	1	0	0	0	3	0	1	2	0	0	0	7
AF	Car Park 30					5	0	1	0	0	0	3	0	1	2	0	0	0	7
AF	Car Park 30					Users (%)	0%	14%	0%	0%	0%	43%	0%	14%	29%	0%	0%	0%	100%
Car Park 31																			
74	Car Park 31, Health Support Services	Staff Parking Zone	Off Street		Staff Parking Only	10	7	4	3	6	1	2	4	0	0	0	0	0	27
75	Car Park 31, Health Support Services	Staff Parking Zone (under cover)	Off Street		Staff Parking Only	13	8	9	4	7	1	3	1	5	0	0	0	0	38
76	Car Park 31, Health Support Services	Staff Parking Zone (at back)	Off Street		Staff Parking Only	47	4	24	4	19	3	7	2	11	1	0	0	0	75
AG	Car Park 31					70	19	37	11	32	5	12	7	16	1	0	0	0	140
AG	Car Park 31					Users (%)	14%	26%	8%	23%	4%	9%	5%	11%	1%	0%	0%	0%	100%
Car Park 32																			
77	Car Park 32, Palm Circuit (on grass 5th)		Off Street		Unrestricted	16	8	4	2	5	3	2	2	2	1	0	0	1	30
78	Car Park 32, Palm Circuit (on East side)	Cumberland Campus Staff Parking	Off Street		Cumberland Campus Staff Parking	6	4	2	2	0	2	1	2	1	0	0	0	0	14
79	Car Park 32, Palm Circuit (on East side)	Unrestricted Zone	Off Street		Unrestricted	15	13	8	2	5	0	0	3	0	0	0	0	0	35
AH	Car Park 32					37	25	14	6	10	5	3	7	3	1	0	0	1	75
AH	Car Park 32					Users (%)	33%	19%	8%	13%	7%	4%	9%	4%	1%	0%	0%	1%	100%
Car Park 34 (incl Car Park 33)																			
80	Car Park 34 (incl 33), large grass area		Off Street		Unrestricted	51	11	18	15	5	5	18	9	0	0	0	0	0	81
AI	Car Park 34 (incl Car Park 33)					51	11	18	15	5	5	18	9	0	0	0	0	0	81
AI	Car Park 34 (incl Car Park 33)					Users (%)	14%	22%	19%	6%	6%	22%	11%	0%	0%	0%	0%	0%	100%
Car Park 35																			
81	Car Park 35, Pine Cottage	Disabled Zone	Off Street		Disabled	1	1	0	0	0	0	0	1	0	0	0	0	0	2
82	Car Park 35, Pine Cottage	Unrestricted Zone	Off Street		Unrestricted	17	4	5	4	2	0	6	6	1	2	0	0	0	30
AI	Car Park 35					18	5	5	4	2	0	6	7	1	2	0	0	0	32
AI	Car Park 35					Users (%)	16%	16%	12%	6%	0%	19%	22%	3%	6%	0%	0%	0%	100%
Car Park 36																			
83	Car Park 36, New Street	Unrestricted Zone	Off Street		Unrestricted	35	4	7	2	1	0	1	0	0	0	0	0	0	15
AK	Car Park 36					35	4	7	2	1	0	1	0	0	0	0	0	0	15
AK	Car Park 36					Users (%)	27%	47%	13%	7%	0%	7%	0%	0%	0%	0%	0%	0%	100%
Car Park 37																			
84	Car Park 37, Multicultural Health Unit	Unrestricted Zone	Off Street		Unrestricted	12	1	4	8	0	0	0	1	0	1	0	1	1	15
AL	Car Park 37					12	1	4	8	0	0	0	1	0	1	0	1	1	16
AL	Car Park 37					Users (%)	6%	25%	50%	0%	0%	0%	6%	0%	6%	0%	6%	100%	
Car Park 38																			
85	Car Park 38, behind gate	Unrestricted Zone	Off Street		Unrestricted	4	0	0	1	1	0	0	0	0	0	0	0	0	2
AM	Car Park 38					4	0	0	1	1	0	0	0	0	0	0	0	0	2
AM	Car Park 38					Users (%)	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Car Park 39																			
86	Car Park 39, Womens Health at Work	Unrestricted Zone	Off Street		Unrestricted	2	0	0	0	0	0	1	0	0	1	0	0	0	2
AN	Car Park 39					2	0	0	0	0	0	1	0	0	1	0	0	0	2
AN	Car Park 39					Users (%)	0%	0%	0%	0%	0%	50%	0%	0%	50%	0%	0%	0%	100%
Car Park 40																			
88	Car Park 40	Unrestricted Zone	Off Street		Unrestricted	6	1	3	1	0	0	0	4	1	1	0	0	0	11
AD	Car Park 40					6	1	3	1	0	0	0	4	1	1	0	0	0	11
AD	Car Park 40					Users (%)	9%	27%	9%	0%	0%	0%	36%	9%	9%	0%	0%	0%	100%
Car Park 41																			
89	Car Park 41	Ward Car Only Zone	Off Street		Ward Car only	1	0	0	0	0	0	0	0	0	0	0	0	0	0
90	Car Park 41	Unrestricted Zone	Off Street		Unrestricted	12	4	3	2	0	1	0	1	3	5	1	0	0	20
AP	Car Park 41					13	4	3	2	0	1	0	1	3	5	1	0	0	20
AP	Car Park 41					Users (%)	20%	15%	10%	0%	5%	0%	5%	15%	25%	5%	0%	0%	100%
Car Park 42																			
91	Car Park 42	Area Pool Car only Zone	Off Street		Area Pool Car only	6	4	2	0	0	3	1	0	0	0	0	0	0	12
92	Car Park 42	Unrestricted Zone	Off Street		Unrestricted	2	2	2	0	0	0	0	0	0	0	0	0	0	4
AQ	Car Park 42					8	6	4	0	0	3	1	0	0	0	0	0	0	16
AQ	Car Park 42					Users (%)	38%	25%	0%	0%	19%	6%	0%	0%	0%	0%	0%	0%	12%
Car Park 43																			
93	Car Park 43, Transcultural Mental Health Services	Unrestricted (on grass) Zone	Off Street		Unrestricted	2	0	3	2	1	1	0	0	0	0	0	0	0	7
94	Car Park 43, Transcultural Mental Health Services	Unrestricted Zone	Off Street		Unrestricted	28	6	8	4	6	2	6	3	3	5	3	0	0	48
AR	Car Park 43					30	6	11	6	7	3	6	3	5	3	0	0	0	53
AR	Car Park 43					Users (%)	11%	21%	11%	13%	6%	11%	6%	9%	6%	0%	0%	0%	100%
Car Park 44																			
95	Car Park 44, Diversity Health Institute	Unrestricted Zone	Off Street		Unrestricted	8	3	0	0	1	1	1	0	3	0	0	1	0	10
AS	Car Park 44					8	3	0	0	1	1	1	0	3	0	0	1	0	10
AS	Car Park 44					Users (%)	30%	0%	0%	10%	10%	10%	0%	30%	0%	0%	10%	0%	100%
Car Park 45																			
96	Car Park 45, Innovation redesign	Unrestricted Zone	Off Street		Unrestricted	8	3	4	3	1	0	2	3	0	0	0	0	0	16
AT	Car Park 45					8	3	4	3	1	0	2	3	0	0	0	0	0	16
AT	Car Park 45					Users (%)	19%	25%	19%	6%	0%	12%	19%	0%	0%	0%	0%	0%	100%
Car Park 46																			
97	Car Park 46, Health Support Services	Unrestricted Zone	Off Street		Unrestricted	2	0	0	0	0	1	0	0	0	0	0	0	0	1
AU	Car Park 46					2	0	0	0	0	1	0	0	0	0	0	0	0	1
AU	Car Park 46					Users (%)	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%
Car Park 47																			
98	Car Park 47	Unrestricted Zone	Off Street		Unrestricted	4	0	0	1	0	0	0	0	1	0	0	0	0	2
AV	Car Park 47					4	0	0	1	0	0	0	0	1	0	0	0	0	2
AV	Car Park 47					Users (%)	0%	0%	50%	0%	0%	0%	0%	50%	0%	0%	0%	0%	100%
Car Park 4																			



North Parramatta
GTA
09-08-14 - Saturday
Survey Summary

Zone Group Id	Location	Supply	Average Occupancy (%)	Maximum Occupancy (%)	Average Duration of Stay (minutes)	Maximum Duration of Stay (minutes)	Total Users (Vehicles)
A	Fleet Street	59	39%	56%	113	480	96
B	New Street	28	21%	29%	294	480	10
C	Car Park 1	31	13%	23%	249	360	7
D	Car Park 2	25	4%	8%	150	180	2
E	Car Park 3	29	0%	0%	0	0	0
F	Car Park 4	19	0%	0%	0	0	0
G	Car Park 5	12	0%	0%	0	0	0
H	Car Park 6	6	0%	0%	0	0	0
I	Car Park 7	3	0%	0%	0	0	0
J	Car Park 8	15	0%	0%	0	0	0
K	Car Park 9	10	10%	10%	480	480	1
L	Car Park 10	12	17%	17%	360	480	2
M	Car Park 11	3	0%	0%	0	0	0
N	Car Park 12	16	25%	31%	348	480	5
O	Car Park 13	43	35%	42%	393	480	18
P	Car Park 14	32	34%	38%	348	480	15
Q	Car Park 15	44	0%	0%	0	0	0
R	Car Park 16 - River Road	16	6%	6%	480	480	1
S	Car Park 17	22	5%	5%	480	480	1
T	Car Park 18 - Warrinya Avenue	33	12%	12%	280	480	6
U	Car Park 19 - Warrinya Avenue	12	0%	8%	60	60	2
V	Car Park 20	7	86%	100%	251	480	11
W	Car Park 21	8	50%	88%	213	480	9
X	Car Park 22	6	0%	0%	0	0	0
Y	Car Park 23	8	38%	50%	390	480	4
Z	Car Park 24	11	0%	0%	0	0	0
AA	Car Park 25	24	4%	4%	480	480	1
AB	Car Park 26	7	0%	0%	0	0	0
AC	Car Park 27	25	8%	8%	480	480	2
AD	Car Park 28	75	7%	9%	369	480	7
AE	Car Park 29	6	83%	83%	267	480	9
AF	Car Park 30	5	0%	0%	0	0	0
AG	Car Park 31	70	50%	53%	444	480	38
AH	Car Park 32	37	11%	22%	225	480	8
AI	Car Park 34 (Incl Car Park 33)	51	0%	2%	60	60	1
AJ	Car Park 35	18	6%	6%	480	480	1
AK	Car Park 36	35	0%	0%	0	0	0
AL	Car Park 37	12	25%	67%	188	480	8
AM	Car Park 38	4	25%	25%	480	480	1
AN	Car Park 39	2	0%	0%	0	0	0
AO	Car Park 40	6	33%	50%	280	480	3
AP	Car Park 41	13	31%	31%	480	480	4
AQ	Car Park 42	8	75%	75%	480	480	6
AR	Car Park 43	30	13%	13%	336	480	5
AS	Car Park 44	8	0%	0%	0	0	0
AT	Car Park 45	8	0%	0%	0	0	0
AU	Car Park 46	2	0%	0%	0	0	0
AV	Car Park 47	4	25%	25%	360	360	1
AW	Car Park 48	18	56%	89%	296	360	16
AX	Car Park 49	6	33%	50%	280	360	3
AY	Car Park 50	20	5%	10%	270	360	2
TOTAL STUDY AREA		1004	17%	19%	266	480	306



North Parramatta
GTA
09-08-14 - Saturday

Accumulation & Occupancy Summary

Id	Location	Side of Street	Parking Type	Adjacent Land Use	Restrictions	Supply	Occupancy per 1hr Interval - Saturday								AVERAGE
							9:00am	10:00am	11:00am	12:00pm	1:00pm	2:00pm	3:00pm	4:00pm	
Fleet Street															
2	Fleet St, btw Fennel St & Greenup Drive	West Side	Kerbside		4P 8am-6pm Mon-Fri; Area 7 Resident Permit Excepted	24	6	17	19	17	6	16	6	6	12
							25%	71%	79%	71%	25%	67%	25%	25%	50%
5	Fleet St, btw Greenup Drive & Factory St	West Side	Kerbside		4P 8am-6pm Mon-Fri; Area 7 Resident Permit Excepted	20	8	10	13	11	9	4	5	5	8
							40%	50%	65%	55%	45%	20%	25%	25%	40%
7	Fleet St, No. 5A	West Side	Off Street		Private	3	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
8	Fleet St, No. 7	West Side	Off Street		Private	3	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
9	Fleet St, No. 9, Chip Cottage	West Side	Off Street		Private, 90 Degree	9	2	2	1	2	2	3	5	5	3
							22%	22%	11%	22%	22%	33%	50%	50%	33%
Fleet Street						59	16	29	33	30	17	23	16	16	23
							27%	49%	56%	51%	29%	39%	27%	27%	39%
New Street															
11	New St, btw Factory St & Dunlop St	West Side	Kerbside		Unrestricted	16	5	5	4	4	3	3	3	3	4
							31%	31%	25%	25%	19%	19%	19%	19%	25%
12	New St, btw Factory St & Dunlop St	West Side	Kerbside		No Parking; Authorised Vehicles Excepted	2	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
13	New St, No. 1	West Side	Off Street		Private	2	1	1	1	1	1	1	1	0	1
							50%	50%	50%	50%	50%	50%	50%	0%	50%
14	New St, No. 3	West Side	Off Street		Private	2	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
15	New St, No. 5	West Side	Off Street		Private	2	1	2	2	1	2	2	1	1	2
							50%	100%	100%	50%	100%	100%	50%	50%	100%
16	New St, No. 9	West Side	Off Street		Private	2	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
17	New St, No. 11	West Side	Off Street		Private	2	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
New Street						28	7	8	7	6	6	6	5	4	6
							25%	29%	25%	21%	21%	21%	18%	14%	21%
Car Park 1															
18	Car Park 1		Off Street		Authorised Parking only	31	0	7	7	7	5	2	1	0	4
							0%	23%	23%	23%	16%	6%	3%	0%	13%
Car Park 1						31	0	7	7	7	5	2	1	0	4
							0%	23%	23%	23%	16%	6%	3%	0%	13%
Car Park 2															
19	Car Park 2		Off Street		Authorised Parking only	25	0	2	2	1	0	0	0	0	1
							0%	8%	8%	4%	0%	0%	0%	0%	4%
Car Park 2						25	0	2	2	1	0	0	0	1	
							0%	8%	8%	4%	0%	0%	0%	0%	4%
Car Park 3															
20	Car Park 3		Off Street		Unrestricted	29	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
Car Park 3						29	0	0	0	0	0	0	0	0	
							0%	0%	0%	0%	0%	0%	0%	0%	
Car Park 4															
21	Car Park 4	Staff Parking Zone	Off Street		Staff Parking 90 Degree	11	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
22	Car Park 4	Disabled Zone	Off Street		Disabled	1	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
23	Car Park 4	Unrestricted Zone	Off Street		Unrestricted	7	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
Car Park 4						19	0	0	0	0	0	0	0	0	
							0%	0%	0%	0%	0%	0%	0%	0%	
Car Park 5															
24	Car Park 5, NSW Institute of Psychology		Off Street		Unrestricted	12	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
Car Park 5						12	0	0	0	0	0	0	0	0	
							0%	0%	0%	0%	0%	0%	0%	0%	
Car Park 6															
25	Car Park 6, Warrinya Ave		Off Street		Unrestricted	6	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
Car Park 6						6	0	0	0	0	0	0	0	0	
							0%	0%	0%	0%	0%	0%	0%	0%	
Car Park 7															
26	Car Park 7, Warrinya Ave		Off Street		Unrestricted	3	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
Car Park 7						3	0	0	0	0	0	0	0	0	
							0%	0%	0%	0%	0%	0%	0%	0%	
Car Park 8															
28	Car Park 8, Warrinya Ave	Unrestricted Zone 1	Off Street		Unrestricted	3	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
30	Car Park 8, Warrinya Ave	Unrestricted Zone 2	Off Street		Unrestricted	3	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
31	Car Park 8, Warrinya Ave	Private	Off Street		Private	2	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
32	Car Park 8, Warrinya Ave	Credit Union Parking Zone	Off Street		Credit Union Parking Only	6	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
33	Car Park 8, Warrinya Ave	Disabled Zone	Off Street		Disabled	1	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
Car Park 8						15	0	0	0	0	0	0	0	0	
							0%	0%	0%	0%	0%	0%	0%	0%	
Car Park 9															
34	Car Park 9, Warrinya Ave		Off Street		Unrestricted	10	1	1	1	1	1	1	1	1	1
							10%	10%	10%	10%	10%	10%	10%	10%	10%
Car Park 9						10	1	1	1	1	1	1	1	1	
							10%	10%	10%	10%	10%	10%	10%	10%	
Car Park 10															
35	Car Park 10, WSAMHS		Off Street		Unrestricted	12	1	1	1	1	2	2	2	2	2
							8%	8%	8%	8%	17%	17%	17%	17%	17%
Car Park 10						12	1	1	1	1	2	2	2	2	
							8%	8%	8%	17%	17%	17%	17%	17%	
Car Park 11															
36	Car Park 11, WSAMHS		Off Street		Unrestricted	3	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
Car Park 11						3	0	0	0	0	0	0	0	0	
							0%	0%	0%	0%	0%	0%	0%	0%	
Car Park 12															



North Parramatta
GTA
09-08-14 - Saturday

Accumulation & Occupancy Summary

Id	Location	Side of Street	Parking Type	Adjacent Land Use	Restrictions	Supply	Occupancy per 1hr Interval - Saturday								AVERAGE
							9:00am	10:00am	11:00am	12:00pm	1:00pm	2:00pm	3:00pm	4:00pm	
37	Car Park 12		Off Street		Unrestricted	16	3	3	3	3	4	5	5	3	4
							19%	19%	19%	19%	25%	31%	31%	19%	25%
N Car Park 12						16	3	3	3	3	4	5	5	3	4
O Car Park 13							19%	19%	19%	19%	25%	31%	31%	19%	25%
38	Car Park 13, Post Acute Care		Off Street		Unrestricted	43	13	13	13	14	16	18	16	15	15
							30%	30%	30%	33%	37%	42%	37%	35%	35%
O Car Park 13						43	13	13	13	14	16	18	16	15	15
P Car Park 14							30%	30%	30%	33%	37%	42%	37%	35%	35%
39	Car Park 14, Post Acute Care		Off Street		Unrestricted	32	11	11	11	11	12	12	12	7	11
							34%	34%	34%	34%	38%	38%	38%	22%	34%
P Car Park 14						32	11	11	11	11	12	12	12	7	11
Q Car Park 15							34%	34%	34%	34%	38%	38%	38%	22%	34%
40	Car Park 15, IT Services		Off Street		Unrestricted	44	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
Q Car Park 15						44	0	0	0	0	0	0	0	0	
R Car Park 16 - River Road							0%	0%	0%	0%	0%	0%	0%	0%	0%
42	River Rd, btw Eastern Circuit & Warrinya Ave	North Side	Kerbside		Unrestricted	5	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
44	River Rd, btw Eastern Circuit & Warrinya Ave	North Side	Kerbside		Unrestricted	11	1	1	1	1	1	1	1	1	1
							9%	9%	9%	9%	9%	9%	9%	9%	9%
R Car Park 16 - River Road						16	1	1	1	1	1	1	1	1	
S Car Park 17							6%	6%	6%	6%	6%	6%	6%	6%	6%
46	Car Park 17, Kalindi		Off Street		Unrestricted	7	1	1	1	1	1	1	1	1	1
							14%	14%	14%	14%	14%	14%	14%	14%	14%
47	Car Park 17, 68a	Unrestricted Zone	Off Street		Unrestricted	15	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
S Car Park 17						22	1	1	1	1	1	1	1	1	
T Car Park 18 - Warrinya Avenue							5%	5%	5%	5%	5%	5%	5%	5%	
50	Warrinya Ave, btw River Rd & lane to Bunya	East Side	Kerbside		Unrestricted	9	1	1	0	0	0	0	0	0	0
							11%	11%	0%	0%	0%	0%	0%	0%	0%
51	Car Park 18	Delivery Zone	Off Street		Delivery Zone	2	2	2	2	2	2	2	2	2	2
							100%	100%	100%	100%	100%	100%	100%	100%	100%
52	Car Park 18	Unrestricted Zone	Off Street		Unrestricted	22	1	1	1	1	1	1	2	2	1
							5%	5%	5%	5%	5%	5%	9%	9%	5%
T Car Park 18 - Warrinya Avenue						33	4	4	3	3	3	3	4	4	
U Car Park 19 - Warrinya Avenue							12%	12%	9%	9%	9%	9%	12%	12%	12%
54	Warrinya Ave, lane to Bunya & Bridge St	East Side	Kerbside		Unrestricted	3	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
55	Car Park 19	Unrestricted Zone	Off Street		Unrestricted	7	0	0	0	1	0	0	0	0	0
							0%	0%	0%	14%	0%	0%	0%	0%	
56	Car Park 19	Loading Zone	Off Street		Loading Zone	2	0	0	0	0	0	1	0	0	0
							0%	0%	0%	0%	0%	50%	0%	0%	0%
U Car Park 19 - Warrinya Avenue						12	0	0	0	1	0	1	0	0	
V Car Park 20							0%	0%	0%	8%	0%	8%	0%	0%	
57	Car Park 20, Bunya	North Side	Kerbside		Unrestricted	7	6	6	5	5	6	6	7	5	6
							86%	86%	71%	71%	86%	86%	100%	71%	86%
V Car Park 20						7	6	6	5	5	6	6	7	5	6
W Car Park 21							86%	86%	71%	71%	86%	86%	100%	71%	86%
58	Car Park 21, Bunya	South Side	Kerbside		Unrestricted	8	2	2	4	3	4	4	7	6	4
							25%	25%	50%	38%	50%	50%	88%	75%	50%
W Car Park 21						8	2	2	4	3	4	4	7	6	4
X Car Park 22							25%	25%	50%	38%	50%	50%	88%	75%	50%
60	Car Park 22, Life Skills		Off Street		Unrestricted	6	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
X Car Park 22						6	0	0	0	0	0	0	0	0	
Y Car Park 23							0%	0%	0%	0%	0%	0%	0%	0%	
61	Eastern Circuit, Wirrabilla		Off Street		Unrestricted	5	0	0	0	0	0	0	1	1	0
							0%	0%	0%	0%	0%	0%	20%	20%	0%
62	Car Park 23, Wirrabilla		Off Street		Unrestricted	3	3	3	3	3	3	3	3	3	3
							100%	100%	100%	100%	100%	100%	100%	100%	100%
Y Car Park 23						8	3	3	3	3	3	3	4	4	3
Z Car Park 24							38%	38%	38%	38%	38%	38%	50%	50%	38%
63	Car Park 24, Gungura		Off Street		Risk Management Unit	3	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
64	Car Park 24, Gungura	Unrestricted (on grass) Zone	Off Street		Unrestricted	8	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
Z Car Park 24						11	0	0	0	0	0	0	0	0	
AA Car Park 25							0%	0%	0%	0%	0%	0%	0%	0%	
65	Car Park 25, Bridgeway Centre	Unrestricted Zone	Off Street		Unrestricted	24	1	1	1	1	1	1	1	1	1
							4%	4%	4%	4%	4%	4%	4%	4%	4%
AA Car Park 25						24	1	1	1	1	1	1	1	1	
AB Car Park 26							4%	4%	4%	4%	4%	4%	4%	4%	
67	Car Park 26, Wattle Cottage	Unrestricted Zone	Off Street		Unrestricted	4	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
68	Car Park 26, Wattle Cottage	Delivery Zone	Off Street		Delivery Zone	3	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%
AB Car Park 26						7	0	0	0	0	0	0	0	0	
AC Car Park 27							0%	0%	0%	0%	0%	0%	0%	0%	
69	Car Park 27		Off Street		Unrestricted	25	2	2	2	2	2	2	2	2	2
							8%	8%	8%	8%	8%	8%	8%	8%	8%
AC Car Park 27						25	2	2	2	2	2	2	2	2	
AD Car Park 28							8%	8%	8%	8%	8%	8%	8%	8%	
70	Car Park 28, Isaacs grass area		Off Street		Unrestricted	75	7	6	5	5	5	5	5	5	5



North Parramatta
GTA
09-08-14 - Saturday

Accumulation & Occupancy Summary

Id	Location	Side of Street	Parking Type	Adjacent Land Use	Restrictions	Supply	Occupancy per 1hr Interval - Saturday								AVERAGE		
							9:00am	10:00am	11:00am	12:00pm	1:00pm	2:00pm	3:00pm	4:00pm			
97	Car Park 46, Health Support Services	Unrestricted Zone	Off Street		Unrestricted	2	0	0	0	0	0	0	0	0	0	0	0
							0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
AU	Car Park 46					2	0	0	0	0	0	0	0	0	0	0	0
AV	Car Park 47						0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
98	Car Park 47	Unrestricted Zone	Off Street		Unrestricted	4	1	1	1	1	1	1	0	0	0	1	
							25%	25%	25%	25%	25%	25%	0%	0%	0%	25%	
AV	Car Park 47					4	1	1	1	1	1	1	0	0	0	1	
AW	Car Park 48						25%	25%	25%	25%	25%	25%	0%	0%	0%	25%	
99	Car Park 48, Parramatta Linen Services	Authorised Parking only Zone	Off Street		Authorised Parking only	18	16	16	16	14	14	3	0	0	0	10	
							89%	89%	89%	78%	78%	17%	0%	0%	0%	56%	
AW	Car Park 48					18	16	16	16	14	14	3	0	0	0	10	
AX	Car Park 49						89%	89%	89%	78%	78%	17%	0%	0%	0%	56%	
100	Car Park 49, Parramatta Linen Services (west side)	Authorised Parking only Zone	Off Street		Authorised Parking only	6	3	3	3	2	2	1	0	0	0	2	
							50%	50%	50%	33%	33%	17%	0%	0%	0%	33%	
AX	Car Park 49					6	3	3	3	2	2	1	0	0	0	2	
AY	Car Park 50						50%	50%	50%	33%	33%	17%	0%	0%	0%	33%	
101	Car Park 50	Unrestricted Zone	Off Street		Unrestricted	20	2	2	2	1	1	1	0	0	0	1	
							10%	10%	10%	5%	5%	5%	0%	0%	0%	5%	
AY	Car Park 50					20	2	2	2	1	1	1	0	0	0	1	
							10%	10%	10%	5%	5%	5%	0%	0%	0%	5%	
TOTAL STUDY AREA						1004	159	187	193	185	170	170	157	136	169		
							16%	19%	19%	18%	17%	17%	16%	14%	17%		



North Parramatta
GTA
09-08-14 - Saturday

Duration of Stay Summary

Id	Location	Side of Street	Parking Type	Adjacent Land Use	Restrictions	Supply	Duration of Stay - Saturday								TOTAL USERS
							1hr	2hrs	3hrs	4hrs	5hrs	6hrs	7hrs	8hrs	
Fleet Street															
2	Fleet St, btw Fennel St & Greenup Drive	West Side	Kerbside		4P 8am-6pm Mon-Fri; Area 7 Resident Permit Excepted	24	51	3	0	0	1	0	1	3	59
5	Fleet St, btw Greenup Drive & Factory St	West Side	Kerbside		4P 8am-6pm Mon-Fri; Area 7 Resident Permit Excepted	20	20	0	2	1	1	1	0	3	28
7	Fleet St, No. 5A	West Side	Off Street		Private	3	0	0	0	0	0	0	0	0	0
8	Fleet St, No. 7	West Side	Off Street		Private	3	0	0	0	0	0	0	0	0	0
9	Fleet St, No. 9, Chip Cottage	West Side	Off Street		Private, 90 Degree	9	1	6	1	0	0	1	0	0	9
Fleet Street						59	72	9	3	1	2	2	1	6	96
Users (%)						75%	9%	3%	1%	2%	2%	1%	6%	100%	
New Street															
11	New St, btw Factory St & Dunkop St	West Side	Kerbside		Unrestricted	16	0	2	0	1	0	1	0	2	6
12	New St, btw Factory St & Dunkop St	West Side	Kerbside		No Parking; Authorised Vehicles Excepted	2	0	0	0	0	0	0	0	0	0
13	New St, No. 1	West Side	Off Street		Private	2	0	0	0	0	0	0	1	0	1
14	New St, No. 3	West Side	Off Street		Private	2	0	0	0	0	0	0	0	0	0
15	New St, No. 5	West Side	Off Street		Private	2	0	1	0	1	0	1	0	0	3
16	New St, No. 9	West Side	Off Street		Private	2	0	0	0	0	0	0	0	0	0
17	New St, No. 11	West Side	Off Street		Private	2	0	0	0	0	0	0	0	0	0
New Street						28	0	3	0	2	0	2	1	2	10
Users (%)						0%	30%	0%	20%	0%	20%	10%	20%	100%	
Car Park 1															
18	Car Park 1		Off Street		Authorised Parking only	31	0	0	2	3	1	1	0	0	7
Car Park 1						31	0	0	2	3	1	1	0	0	7
Users (%)						0%	0%	29%	43%	14%	14%	0%	0%	100%	
Car Park 2															
19	Car Park 2		Off Street		Authorised Parking only	25	0	1	1	0	0	0	0	0	2
Car Park 2						25	0	1	1	0	0	0	0	0	2
Users (%)						0%	50%	50%	0%	0%	0%	0%	0%	100%	
Car Park 3															
20	Car Park 3		Off Street		Unrestricted	29	0	0	0	0	0	0	0	0	0
Car Park 3						29	0	0	0	0	0	0	0	0	0
Users (%)						0%	0%	0%	0%	0%	0%	0%	0%	100%	
Car Park 4															
21	Car Park 4	Staff Parking Zone	Off Street		Staff Parking 90 Degree	11	0	0	0	0	0	0	0	0	0
22	Car Park 4	Disabled Zone	Off Street		Disabled	1	0	0	0	0	0	0	0	0	0
23	Car Park 4	Unrestricted Zone	Off Street		Unrestricted	7	0	0	0	0	0	0	0	0	0
Car Park 4						19	0	0	0	0	0	0	0	0	0
Users (%)						0%	0%	0%	0%	0%	0%	0%	0%	100%	
Car Park 5															
24	Car Park 5, NSW Institute of Psychology		Off Street		Unrestricted	12	0	0	0	0	0	0	0	0	0
Car Park 5						12	0	0	0	0	0	0	0	0	0
Users (%)						0%	0%	0%	0%	0%	0%	0%	0%	100%	
Car Park 6															
25	Car Park 6, Warrinya Ave		Off Street		Unrestricted	6	0	0	0	0	0	0	0	0	0
Car Park 6						6	0	0	0	0	0	0	0	0	0
Users (%)						0%	0%	0%	0%	0%	0%	0%	0%	100%	
Car Park 7															
26	Car Park 7, Warrinya Ave		Off Street		Unrestricted	3	0	0	0	0	0	0	0	0	0
Car Park 7						3	0	0	0	0	0	0	0	0	0
Users (%)						0%	0%	0%	0%	0%	0%	0%	0%	100%	
Car Park 8															
28	Car Park 8, Warrinya Ave	Unrestricted Zone 1	Off Street		Unrestricted	3	0	0	0	0	0	0	0	0	0
30	Car Park 8, Warrinya Ave	Unrestricted Zone 2	Off Street		Unrestricted	3	0	0	0	0	0	0	0	0	0
31	Car Park 8, Warrinya Ave	Private	Off Street		Private	2	0	0	0	0	0	0	0	0	0
32	Car Park 8, Warrinya Ave	Credit Union Parking Zone	Off Street		Credit Union Parking Only	6	0	0	0	0	0	0	0	0	0
33	Car Park 8, Warrinya Ave	Disabled Zone	Off Street		Disabled	1	0	0	0	0	0	0	0	0	0
Car Park 8						15	0	0	0	0	0	0	0	0	0
Users (%)						0%	0%	0%	0%	0%	0%	0%	0%	100%	
Car Park 9															
34	Car Park 9, Warrinya Ave		Off Street		Unrestricted	10	0	0	0	0	0	0	0	1	1
Car Park 9						10	0	0	0	0	0	0	0	1	1
Users (%)						0%	0%	0%	0%	0%	0%	0%	100%	100%	
Car Park 10															
35	Car Park 10, WSAMHS		Off Street		Unrestricted	12	0	0	0	1	0	0	0	1	2
Car Park 10						12	0	0	0	1	0	0	0	1	2
Users (%)						0%	0%	0%	50%	0%	0%	0%	50%	100%	
Car Park 11															
36	Car Park 11, WSAMHS		Off Street		Unrestricted	3	0	0	0	0	0	0	0	0	0
Car Park 11						3	0	0	0	0	0	0	0	0	0
Users (%)						0%	0%	0%	0%	0%	0%	0%	0%	100%	
Car Park 12															
37	Car Park 12		Off Street		Unrestricted	16	0	0	2	0	0	0	1	2	5
Car Park 12						16	0	0	2	0	0	0	1	2	5
Users (%)						0%	0%	40%	0%	0%	0%	20%	40%	100%	
Car Park 13															
38	Car Park 13, Post Acute Care		Off Street		Unrestricted	43	0	0	2	2	1	2	1	10	18
Car Park 13						43	0	0	2	2	1	2	1	10	18
Users (%)						0%	0%	11%	11%	6%	11%	6%	56%	100%	
Car Park 14															
39	Car Park 14, Post Acute Care		Off Street		Unrestricted	32	1	0	1	4	0	0	5	4	15
Car Park 14						32	1	0	1	4	0	0	5	4	15
Users (%)						7%	0%	7%	27%	0%	0%	33%	27%	100%	
Car Park 15															
40	Car Park 15, IT Services		Off Street		Unrestricted	44	0	0	0	0	0	0	0	0	0
Car Park 15						44	0	0	0	0	0	0	0	0	0
Users (%)						0%	0%	0%	0%	0%	0%	0%	0%	100%	
Car Park 16 - River Road															
42	River Rd, btw Eastern Circuit & Warrinya Ave	North Side	Kerbside		Unrestricted	5	0	0	0	0	0	0	0	0	0
44	River Rd, btw Eastern Circuit & Warrinya Ave	North Side	Kerbside		Unrestricted	11	0	0	0	0	0	0	0	1	1
Car Park 16 - River Road						16	0	0	0	0	0	0	0	1	1
Users (%)						0%	0%	0%	0%	0%	0%	0%	100%	100%	
Car Park 17															
46	Car Park 17, Kalindi		Off Street		Unrestricted	7	0	0	0	0	0	0	0	1	1
47	Car Park 17, 68a	Unrestricted Zone	Off Street		Unrestricted	15	0	0	0	0	0	0	0	0	0
Car Park 17						22	0	0	0	0	0	0	0	1	1
Users (%)						0%	0%	0%	0%	0%	0%	0%	100%	100%	
Car Park 18 - Warrinya Avenue															
50	Warrinya Ave, btw River Rd & lane to Burya	East Side	Kerbside		Unrestricted	9	0	1	0	0	0	0	0	0	1
51	Car Park 18	Delivery Zone	Off Street		Delivery Zone	2	0	0	0	0	0	0	0	2	2
52	Car Park 18	Unrestricted Zone	Off Street		Unrestricted	22	0	2	0	0	0	1	0	0	3
Car Park 18 - Warrinya Avenue						33	0	3	0	0	0	1	0	2	6
Users (%)						0%	50%	0%	0%	0%	17%	0%	33%	100%	
Car Park 19 - Warrinya Avenue															



North Parramatta
GTA
09-08-14 - Saturday

Duration of Stay Summary

Id	Location	Side of Street	Parking Type	Adjacent Land Use	Restrictions	Supply	Duration of Stay - Saturday								TOTAL USERS		
							1hr	2hrs	3hrs	4hrs	5hrs	6hrs	7hrs	8hrs			
54	Warrinya Ave, lane to Bunya & Bridge St	East Side	Kerbside		Unrestricted	3	0	0	0	0	0	0	0	0	0	0	0
55	Car Park 19	Unrestricted Zone	Off Street		Unrestricted	7	1	0	0	0	0	0	0	0	0	0	1
56	Car Park 19	Loading Zone	Off Street		Loading Zone	2	1	0	0	0	0	0	0	0	0	0	1
U	Car Park 19 - Warrinya Avenue					12	2	0	0	0	0	0	0	0	0	0	2
						Users (%)	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
V	Car Park 20																
57	Car Park 20, Bunya	North Side	Kerbside		Unrestricted	7	1	4	0	2	0	0	3	1	11		
V	Car Park 20					7	1	4	0	2	0	0	3	1	11		
						Users (%)	9%	36%	0%	18%	0%	0%	27%	9%	100%		
W	Car Park 21																
58	Car Park 21, Bunya	South Side	Kerbside		Unrestricted	8	3	2	0	1	1	0	0	2	9		
W	Car Park 21					8	3	2	0	1	1	0	0	2	9		
						Users (%)	33%	22%	0%	11%	11%	0%	0%	22%	100%		
X	Car Park 22																
60	Car Park 22, Life Skills		Off Street		Unrestricted	6	0	0	0	0	0	0	0	0	0	0	
X	Car Park 22					6	0	0	0	0	0	0	0	0	0	0	
						Users (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
Y	Car Park 23																
61	Eastern Circuit, Wirrabilla		Off Street		Unrestricted	5	0	1	0	0	0	0	0	0	1		
62	Car Park 23, Wirrabilla		Off Street		Unrestricted	3	0	0	0	0	0	0	0	3	3		
Y	Car Park 23					8	0	1	0	0	0	0	0	3	4		
						Users (%)	0%	25%	0%	0%	0%	0%	0%	75%	100%		
Z	Car Park 24																
63	Car Park 24, Gungah		Off Street		Risk Management Unit	3	0	0	0	0	0	0	0	0	0	0	
64	Car Park 24, Gungah	Unrestricted (on grass) Zone	Off Street		Unrestricted	8	0	0	0	0	0	0	0	0	0		
Z	Car Park 24					11	0	0	0	0	0	0	0	0	0	0	
						Users (%)	0%	0%	0%	0%	0%	0%	0%	0%	100%		
AA	Car Park 25																
65	Car Park 25, Bridgeway Centre	Unrestricted Zone	Off Street		Unrestricted	24	0	0	0	0	0	0	0	1	1		
AA	Car Park 25					24	0	0	0	0	0	0	0	1	1		
						Users (%)	0%	0%	0%	0%	0%	0%	0%	100%	100%		
AB	Car Park 26																
67	Car Park 26, Wattle Cottage	Unrestricted Zone	Off Street		Unrestricted	4	0	0	0	0	0	0	0	0	0	0	
68	Car Park 26, Wattle Cottage	Delivery Zone	Off Street		Delivery Zone	3	0	0	0	0	0	0	0	0	0	0	
AB	Car Park 26					7	0	0	0	0	0	0	0	0	0	0	
						Users (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	
AC	Car Park 27																
69	Car Park 27		Off Street		Unrestricted	25	0	0	0	0	0	0	0	2	2		
AC	Car Park 27					25	0	0	0	0	0	0	0	2	2		
						Users (%)	0%	0%	0%	0%	0%	0%	0%	100%	100%		
AD	Car Park 28																
70	Car Park 28, large grass area		Off Street		Unrestricted	75	1	1	0	0	0	0	0	5	7		
AD	Car Park 28					75	1	1	0	0	0	0	0	5	7		
						Users (%)	14%	14%	0%	0%	0%	0%	0%	71%	100%		
AE	Car Park 29																
71	Car Park 29, Centre for Addiction Medicine		Off Street		Ward Car only	6	0	0	0	8	0	0	0	1	9		
AE	Car Park 29					6	0	0	0	8	0	0	0	1	9		
						Users (%)	0%	0%	0%	89%	0%	0%	0%	11%	100%		
AF	Car Park 30																
73	Car Park 30	Unrestricted Zone	Off Street		Unrestricted	5	0	0	0	0	0	0	0	0	0	0	
AF	Car Park 30					5	0	0	0	0	0	0	0	0	0	0	
						Users (%)	0%	0%	0%	0%	0%	0%	0%	0%	100%		
AG	Car Park 31																
74	Car Park 31, Health Support Services	Staff Parking Zone	Off Street		Staff Parking Only	10	0	0	2	0	1	0	0	6	9		
75	Car Park 31, Health Support Services	Staff Parking Zone (under cover)	Off Street		Staff Parking Only	13	0	0	0	0	0	0	0	12	12		
76	Car Park 31, Health Support Services	Staff Parking Zone (at back)	Off Street		Staff Parking Only	47	0	1	0	1	0	0	0	15	17		
AG	Car Park 31					70	0	1	2	1	1	0	0	33	38		
						Users (%)	0%	3%	5%	3%	3%	0%	0%	87%	100%		
AH	Car Park 32																
77	Car Park 32, Palm Circuit (on grass 5th)		Off Street		Unrestricted	16	0	0	0	0	0	0	0	1	1		
78	Car Park 32, Palm Circuit (on East side)	Cumberland Campus Staff Parking	Off Street		Cumberland Campus Staff Parking	6	0	1	0	0	0	0	0	1	2		
79	Car Park 32, Palm Circuit (on East side)	Unrestricted Zone	Off Street		Unrestricted	15	0	3	2	0	0	0	0	0	5		
AH	Car Park 32					37	0	4	2	0	0	0	0	2	8		
						Users (%)	0%	50%	25%	0%	0%	0%	0%	25%	100%		
AI	Car Park 34 (Incl Car Park 33)																
80	Car Park 34 (Incl 33), large grass area		Off Street		Unrestricted	51	1	0	0	0	0	0	0	0	1		
AI	Car Park 34 (Incl Car Park 33)					51	1	0	0	0	0	0	0	0	1		
						Users (%)	100%	0%	0%	0%	0%	0%	0%	0%	100%		
AJ	Car Park 35																
81	Car Park 35, Pine Cottage	Disabled Zone	Off Street		Disabled	1	0	0	0	0	0	0	0	0	0	0	
82	Car Park 35, Pine Cottage	Unrestricted Zone	Off Street		Unrestricted	17	0	0	0	0	0	0	0	1	1		
AJ	Car Park 35					18	0	0	0	0	0	0	0	1	1		
						Users (%)	0%	0%	0%	0%	0%	0%	0%	100%	100%		
AK	Car Park 36																
83	Car Park 36, New Street	Unrestricted Zone	Off Street		Unrestricted	35	0	0	0	0	0	0	0	0	0	0	
AK	Car Park 36					35	0	0	0	0	0	0	0	0	0	0	
						Users (%)	0%	0%	0%	0%	0%	0%	0%	0%	100%		
AL	Car Park 37																
84	Car Park 37, Multicultural Health Unit	Unrestricted Zone	Off Street		Unrestricted	12	1	2	4	0	0	0	0	1	8		
AL	Car Park 37					12	1	2	4	0	0	0	0	1	8		
						Users (%)	12%	25%	50%	0%	0%	0%	0%	12%	100%		
AM	Car Park 38																
85	Car Park 38, behind gate	Unrestricted Zone	Off Street		Unrestricted	4	0	0	0	0	0	0	0	1	1		
AM	Car Park 38					4	0	0	0	0	0	0	0	1	1		
						Users (%)	0%	0%	0%	0%	0%	0%	0%	100%	100%		
AN	Car Park 39																
86	Car Park 39, Womens Health at Work	Unrestricted Zone	Off Street		Unrestricted	2	0	0	0	0	0	0	0	0	0	0	
AN	Car Park 39					2	0	0	0	0	0	0	0	0	0	0	
						Users (%)	0%	0%	0%	0%	0%	0%	0%	0%	100%		
AO	Car Park 40																
88	Car Park 40	Unrestricted Zone	Off Street		Unrestricted	6	0	0	2	0	0	0	0	1	3		
AO	Car Park 40					6	0	0	2	0	0	0	0	1	3		
						Users (%)	0%	0%	67%	0%	0%	0%	0%	33%	100%		
AP	Car Park 41																
89	Car Park 41	Ward Car Only Zone	Off Street		Ward Car only	1	0	0	0	0	0	0	0	0	0	0	
90	Car Park 41	Unrestricted Zone	Off Street		Unrestricted	12	0	0	0	0	0	0	0	4	4		
AP	Car Park 41					13	0	0	0	0	0	0	0	4	4		
						Users (%)	0%	0%	0%	0%	0%	0%	0%	100%	100%		
AQ	Car Park 42																
91	Car Park 42	Area Pool Car only Zone	Off Street		Area Pool Car only	6	0	0	0	0	0	0	0	4	4		
92	Car Park 42	Unrestricted Zone	Off Street		Unrestricted	2	0	0	0	0	0	0	0	2	2		

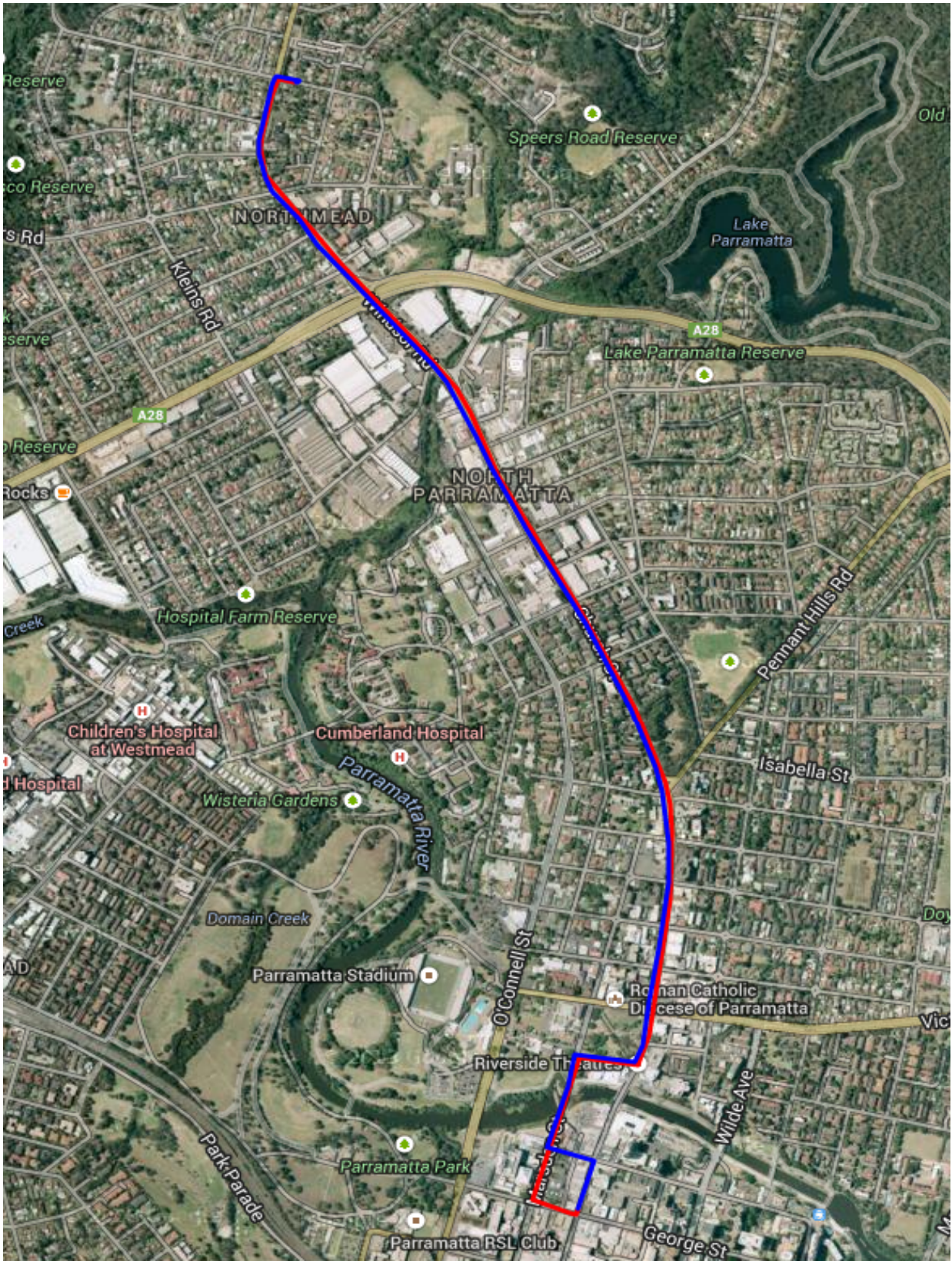


North Parramatta
GTA
09-08-14 - Saturday

Duration of Stay Summary

Id	Location	Side of Street	Parking Type	Adjacent Land Use	Restrictions	Supply	Duration of Stay - Saturday								TOTAL USERS		
							1hr	2hrs	3hrs	4hrs	5hrs	6hrs	7hrs	8hrs			
Car Park 42							8	0	0	0	0	0	0	0	0	6	6
Users (%)							0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	
Car Park 43							2	0	0	0	0	0	0	0	0	0	0
93	Car Park 43, Transcultural Mental Health Services	Unrestricted (on grass) Zone	Off Street		Unrestricted	28	0	2	0	0	0	0	0	0	3	5	
94	Car Park 43, Transcultural Mental Health Services	Unrestricted Zone	Off Street		Unrestricted	30	0	2	0	0	0	0	0	0	3	5	
Users (%)							0%	40%	0%	0%	0%	0%	0%	60%	100%		
Car Park 44							8	0	0	0	0	0	0	0	0	0	
95	Car Park 44, Diversity Health Institute	Unrestricted Zone	Off Street		Unrestricted	8	0	0	0	0	0	0	0	0	0		
Users (%)							0%	0%	0%	0%	0%	0%	0%	0%	100%		
Car Park 45							8	0	0	0	0	0	0	0	0	0	
96	Car Park 45, Innovation redesign	Unrestricted Zone	Off Street		Unrestricted	8	0	0	0	0	0	0	0	0	0		
Users (%)							0%	0%	0%	0%	0%	0%	0%	0%	100%		
Car Park 46							2	0	0	0	0	0	0	0	0	0	
97	Car Park 46, Health Support Services	Unrestricted Zone	Off Street		Unrestricted	2	0	0	0	0	0	0	0	0	0		
Users (%)							0%	0%	0%	0%	0%	0%	0%	0%	100%		
Car Park 47							4	0	0	0	0	0	1	0	0	1	
98	Car Park 47	Unrestricted Zone	Off Street		Unrestricted	4	0	0	0	0	0	1	0	0	1		
Users (%)							0%	0%	0%	0%	0%	100%	0%	0%	100%		
Car Park 48							18	0	0	2	0	11	3	0	0	16	
99	Car Park 48, Parramatta Linen Services	Authorised Parking only Zone	Off Street		Authorised Parking only	18	0	0	2	0	11	3	0	0	16		
Users (%)							0%	0%	12%	0%	69%	19%	0%	0%	100%		
Car Park 49							6	0	0	1	0	1	1	0	0	3	
100	Car Park 49, Parramatta Linen Services (west side)	Authorised Parking only Zone	Off Street		Authorised Parking only	6	0	0	1	0	1	1	0	0	3		
Users (%)							0%	0%	33%	0%	33%	33%	0%	0%	100%		
Car Park 50							20	0	0	1	0	0	1	0	0	2	
101	Car Park 50	Unrestricted Zone	Off Street		Unrestricted	20	0	0	1	0	0	1	0	0	2		
Users (%)							0%	0%	50%	0%	0%	50%	0%	0%	100%		
TOTAL STUDY AREA						1004	82	33	25	25	18	14	12	97	306		
Users (%)						27%	11%	8%	8%	6%	5%	4%	32%	100%			

A.4 Travel Time Survey





Church Street/Windsor Road between Campbell St and George St - Route Number 0001

Road Name: Church Street/Windsor Road between Campbell St and George St
Direction: Northbound

No of Runs: 4 runs
AM: 7:00 - 9:00

Section	Road	Average			Average Delay	
		Distance (km)	Time	Speed (km/h)	Mid Section	End Section
1	Church Street and George Street					
2	Church Street and Victoria Road	0.787	0:03:09	15.80	0:00:58	0:00:25
3	Church Street and Pennant Hills Road	0.574	0:01:26	24.36	0:00:21	0:00:00
4	Church Street and Barney Street	0.781	0:01:29	35.19	0:00:00	0:00:19
5	Church Street and North Rocks Road	0.449	0:00:50	35.71	0:00:11	0:00:00
6	Church Street and Cumberland Highway	0.304	0:01:35	14.18	0:00:01	0:00:53
7	Windsor Road and Campbell St	0.385	0:02:57	10.23	0:01:19	0:00:00
Total		3.279	0:11:24	17.25	0:02:48	0:01:37

Road Name: Church Street/Windsor Road between Campbell St and George St
Direction: Southbound

No of Runs: 4 runs
AM: 7:00 - 9:00

Section	Road	Average			Average Delay	
		Distance (km)	Time	Speed (km/h)	Mid Section	End Section
7	Windsor Road and Campbell St					
6	Church Street and Cumberland Highway	0.374	0:01:23	32.59	0:00:23	0:00:19
5	Church Street and North Rocks Road	0.303	0:00:29	40.57	0:00:00	0:00:00
4	Church Street and Barney Street	0.444	0:00:37	44.64	0:00:00	0:00:00
3	Church Street and Pennant Hills Road	0.788	0:02:27	20.55	0:00:35	0:00:21
2	Church Street and Victoria Road	0.578	0:02:10	16.93	0:00:07	0:00:56
1	Church Street and George Street	0.813	0:01:58	25.90	0:00:19	0:00:00
Total		3.300	0:09:05	21.79	0:01:23	0:01:36

Please Note: Delay is when the vehicle is travelling at less than 5 km/h. End delay is within 100 metres of the node. Mid delay is more than 100 metres from the node.



Church Street/Windsor Road between Campbell St and George St - Route Number 0001

Road Name: Church Street/Windsor Road between Campbell St and George St
Direction: Northbound

No of Runs: 5 runs
PM: 16:00 - 18:00

Section	Road	Average			Average Delay	
		Distance (km)	Time	Speed (km/h)	Mid Section	End Section
1	Church Street and George Street					
2	Church Street and Victoria Road	0.811	0:03:13	15.84	0:00:52	0:00:27
3	Church Street and Pennant Hills Road	0.566	0:01:07	32.25	0:00:02	0:00:04
4	Church Street and Barney Street	0.786	0:01:54	26.48	0:00:08	0:00:31
5	Church Street and North Rocks Road	0.446	0:00:50	36.09	0:00:01	0:00:06
6	Church Street and Cumberland Highway	0.307	0:02:37	7.33	0:00:46	0:01:01
7	Windsor Road and Campbell St	0.369	0:00:31	43.66	0:00:00	0:00:00
Total		3.286	0:10:11	19.36	0:01:48	0:02:08

Road Name: Church Street/Windsor Road between Campbell St and George St
Direction: Southbound

No of Runs: 5 runs
PM: 16:00 - 18:00

Section	Road	Average			Average Delay	
		Distance (km)	Time	Speed (km/h)	Mid Section	End Section
7	Windsor Road and Campbell St					
6	Church Street and Cumberland Highway	0.364	0:00:27	48.88	0:00:00	0:00:00
5	Church Street and North Rocks Road	0.306	0:00:34	46.86	0:00:00	0:00:11
4	Church Street and Barney Street	0.442	0:00:46	42.83	0:00:00	0:00:12
3	Church Street and Pennant Hills Road	0.788	0:01:25	34.33	0:00:08	0:00:09
2	Church Street and Victoria Road	0.574	0:02:09	16.61	0:00:28	0:00:32
1	Church Street and George Street	0.829	0:02:56	18.27	0:00:53	0:00:02
Total		3.303	0:08:17	23.90	0:01:29	0:01:06

Please Note: Delay is when the vehicle is travelling at less than 5 km/h. End delay is within 100 metres of the node. Mid delay is more than 100 metres from the node.



Church Street/Windsor Road between Campbell St and George St - Route Number 0001

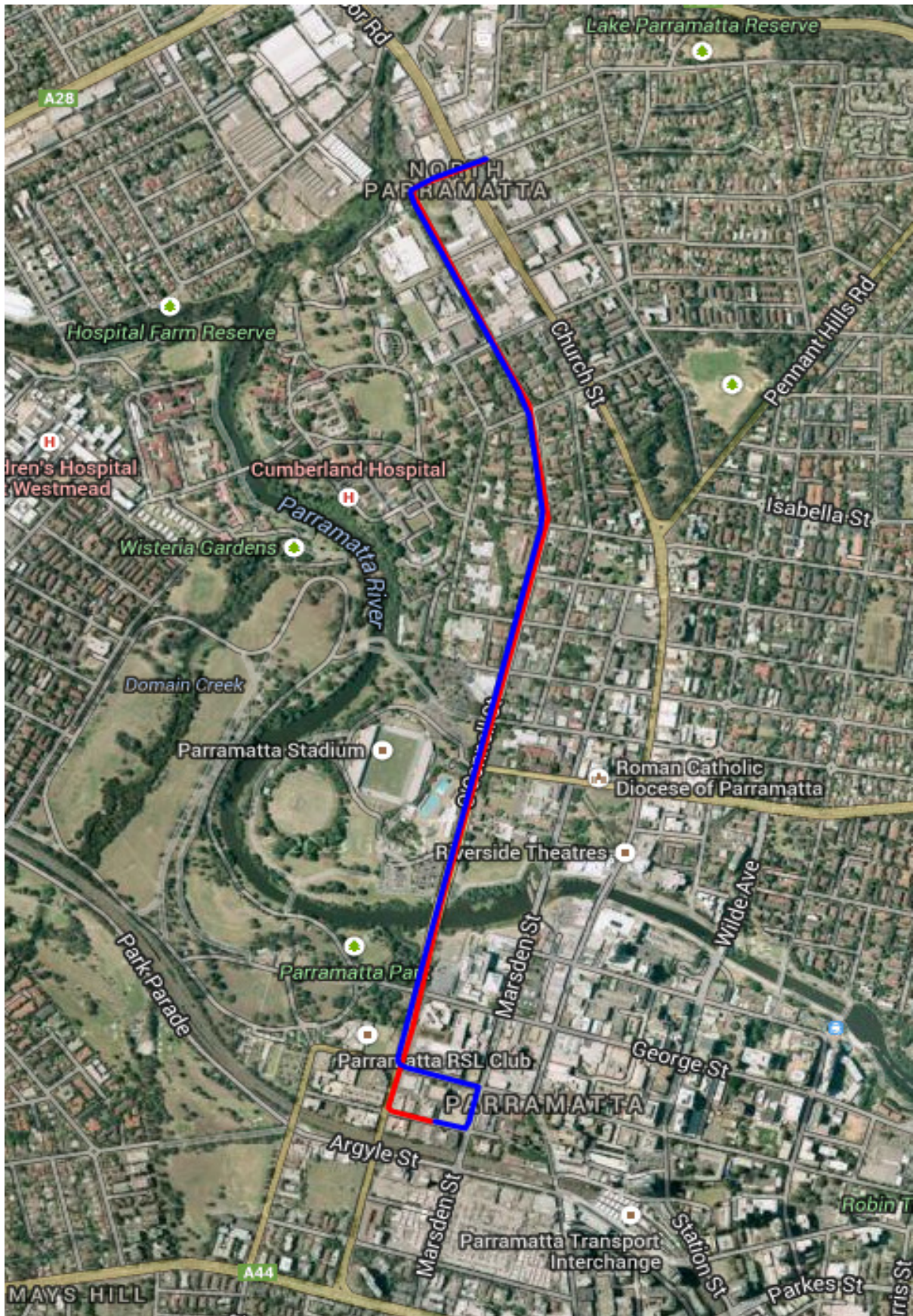
Road Name: Church Street/Windsor Road between Campbell St and George St **No of Runs: 5 runs**
Direction: Northbound **Mid: 12:00 - 14:00**

Section	Road	Average			Average Delay	
		Distance (km)	Time	Speed (km/h)	Mid Section	End Section
1	Church Street and George Street					
2	Church Street and Victoria Road	0.814	0:03:03	16.49	0:00:55	0:00:10
3	Church Street and Pennant Hills Road	0.561	0:01:07	31.16	0:00:05	0:00:02
4	Church Street and Barney Street	0.786	0:01:31	34.83	0:00:11	0:00:14
5	Church Street and North Rocks Road	0.436	0:00:30	53.37	0:00:00	0:00:00
6	Church Street and Cumberland Highway	0.311	0:01:18	14.90	0:00:13	0:00:22
7	Windsor Road and Campbell St	0.368	0:00:28	47.09	0:00:00	0:00:00
Total		3.277	0:07:57	24.74	0:01:25	0:00:49

Road Name: Church Street/Windsor Road between Campbell St and George St **No of Runs: 5 runs**
Direction: Southbound **Mid: 12:00 - 14:00**

Section	Road	Average			Average Delay	
		Distance (km)	Time	Speed (km/h)	Mid Section	End Section
7	Windsor Road and Campbell St					
6	Church Street and Cumberland Highway	0.365	0:01:14	29.61	0:00:08	0:00:25
5	Church Street and North Rocks Road	0.326	0:01:01	25.20	0:00:00	0:00:23
4	Church Street and Barney Street	0.446	0:00:41	44.24	0:00:00	0:00:07
3	Church Street and Pennant Hills Road	0.784	0:01:50	25.85	0:00:15	0:00:19
2	Church Street and Victoria Road	0.578	0:01:45	21.85	0:00:00	0:00:42
1	Church Street and George Street	0.802	0:02:33	19.67	0:00:43	0:00:03
Total		3.301	0:09:04	21.84	0:01:07	0:01:59

Please Note: Delay is when the vehicle is travelling at less than 5 km/h. End delay is within 100 metres of the node. Mid delay is more than 100 metres from the node.





O'Connell Street between Macquarie St and Board St - Route Number 0002

Road Name: O'Connell Street between Macquarie St and Board St
 Direction: Northbound

No of Runs: 13 runs
 AM: 7:00 - 9:00

Section	Road	Average			Average Delay	
		Distance (km)	Time	Speed (km/h)	Mid Section	End Section
1	O'Connell Street and Macquarie Street					
2	O'Connell Street and George Street	0.181	0:00:24	33.95	0:00:05	0:00:00
3	O'Connell Street and Victoria Road	0.536	0:00:40	49.93	0:00:01	0:00:00
4	O'Connell Street and Albert Street	0.567	0:00:46	46.58	0:00:03	0:00:02
5	O'Connell Street and Board Street	0.853	0:01:07	46.99	0:00:00	0:00:01
Total		2.136	0:02:57	43.43	0:00:09	0:00:03

Road Name: O'Connell Street between Macquarie St and Board St
 Direction: Southbound

No of Runs: 12 runs
 AM: 7:00 - 9:00

Section	Road	Average			Average Delay	
		Distance (km)	Time	Speed (km/h)	Mid Section	End Section
5	O'Connell Street and Board Street					
4	O'Connell Street and Albert Street	0.849	0:01:16	41.47	0:00:01	0:00:04
3	O'Connell Street and Victoria Road	0.578	0:01:37	26.86	0:00:20	0:00:13
2	O'Connell Street and George Street	0.538	0:01:01	33.86	0:00:02	0:00:10
1	O'Connell Street and Macquarie Street	0.164	0:00:18	36.44	0:00:00	0:00:01
Total		2.129	0:04:12	30.47	0:00:24	0:00:28

Please Note: Delay is when the vehicle is travelling at less than 5 km/h. End delay is within 100 metres of the node. Mid delay is more than 100 metres from the node.



O'Connell Street between Macquarie St and Board St - Route Number 0002

Road Name: O'Connell Street between Macquarie St and Board St
 Direction: Northbound

No of Runs: 11 runs
 PM: 16:00 - 18:00

Section	Road	Average			Average Delay	
		Distance (km)	Time	Speed (km/h)	Mid Section	End Section
1	O'Connell Street and Macquarie Street					
2	O'Connell Street and George Street	0.188	0:00:17	40.54	0:00:00	0:00:00
3	O'Connell Street and Victoria Road	0.533	0:00:37	52.52	0:00:00	0:00:01
4	O'Connell Street and Albert Street	0.568	0:00:56	37.99	0:00:06	0:00:01
5	O'Connell Street and Board Street	0.893	0:01:27	37.92	0:00:02	0:00:06
Total		2.181	0:03:17	39.96	0:00:08	0:00:08

Road Name: O'Connell Street between Macquarie St and Board St
 Direction: Southbound

No of Runs: 11 runs
 PM: 16:00 - 18:00

Section	Road	Average			Average Delay	
		Distance (km)	Time	Speed (km/h)	Mid Section	End Section
5	O'Connell Street and Board Street					
4	O'Connell Street and Albert Street	0.855	0:01:26	38.03	0:00:09	0:00:05
3	O'Connell Street and Victoria Road	0.565	0:01:07	35.14	0:00:02	0:00:18
2	O'Connell Street and George Street	0.532	0:01:17	32.25	0:00:11	0:00:13
1	O'Connell Street and Macquarie Street	0.171	0:00:28	35.53	0:00:05	0:00:01
Total		2.124	0:04:18	29.65	0:00:27	0:00:37

Please Note: Delay is when the vehicle is travelling at less than 5 km/h. End delay is within 100 metres of the node. Mid delay is more than 100 metres from the node.



O'Connell Street between Macquarie St and Board St - Route Number 0002

Road Name: O'Connell Street between Macquarie St and Board St
 Direction: Northbound

No of Runs: 13 runs
 Mid: 12:00 - 14:00

Section	Road	Average			Average Delay	
		Distance (km)	Time	Speed (km/h)	Mid Section	End Section
1	O'Connell Street and Macquarie Street					
2	O'Connell Street and George Street	0.187	0:00:33	32.42	0:00:14	0:00:00
3	O'Connell Street and Victoria Road	0.536	0:00:36	53.64	0:00:00	0:00:01
4	O'Connell Street and Albert Street	0.565	0:00:46	46.65	0:00:02	0:00:00
5	O'Connell Street and Board Street	0.863	0:01:15	42.72	0:00:01	0:00:05
Total		2.152	0:03:09	40.95	0:00:17	0:00:06

Road Name: O'Connell Street between Macquarie St and Board St
 Direction: Southbound

No of Runs: 13 runs
 Mid: 12:00 - 14:00

Section	Road	Average			Average Delay	
		Distance (km)	Time	Speed (km/h)	Mid Section	End Section
5	O'Connell Street and Board Street					
4	O'Connell Street and Albert Street	0.851	0:01:20	40.15	0:00:01	0:00:07
3	O'Connell Street and Victoria Road	0.570	0:01:04	36.10	0:00:07	0:00:11
2	O'Connell Street and George Street	0.536	0:00:40	49.59	0:00:01	0:00:01
1	O'Connell Street and Macquarie Street	0.169	0:00:20	41.97	0:00:00	0:00:05
Total		2.126	0:03:24	37.53	0:00:09	0:00:23

Please Note: Delay is when the vehicle is travelling at less than 5 km/h. End delay is within 100 metres of the node. Mid delay is more than 100 metres from the node.

Appendix B

Modelling Results

- B.1 Existing Conditions
- B.2 Future Conditions
- B.3 Future Conditions with Intersection Upgrades

B.1 Existing Conditions

MOVEMENT SUMMARY

Site: O'Connell St- Fennell St

14S1091200 PNUR
Existing Thursday AM
O'Connell St/ Fennell St
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	179	0.0	0.195	8.2	LOS A	0.0	0.0	0.00	0.83	49.0
2	T	572	0.0	0.195	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	39	0.0	0.087	15.3	LOS B	0.3	1.8	0.71	0.90	42.2
Approach		789	0.0	0.195	2.6	NA	0.3	1.8	0.03	0.23	56.0
East: Fennell Street											
4	L	9	0.0	0.028	19.5	LOS B	0.1	0.6	0.72	0.98	40.1
5	T	11	0.0	0.297	118.3	LOS F	0.9	6.0	0.97	1.02	14.4
6	R	1	0.0	0.297	117.6	LOS F	0.9	6.0	0.97	1.02	14.4
Approach		21	0.0	0.297	73.8	LOS F	0.9	6.0	0.86	1.00	20.2
North: O'Connell Street											
7	L	27	0.0	0.283	8.2	LOS A	0.0	0.0	0.00	1.06	49.0
8	T	1075	0.0	0.283	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
9	R	61	0.0	0.082	11.5	LOS A	0.3	2.0	0.50	0.76	45.6
Approach		1163	0.0	0.283	0.8	NA	0.3	2.0	0.03	0.06	58.7
West: Fennell Street											
10	L	19	0.0	0.031	13.3	LOS A	0.1	0.6	0.49	0.88	44.8
11	T	13	0.0	0.566	82.3	LOS F	2.2	15.4	0.97	1.09	18.8
12	R	38	0.0	0.566	81.6	LOS F	2.2	15.4	0.97	1.09	18.8
Approach		69	0.0	0.566	63.1	LOS E	2.2	15.4	0.84	1.03	22.3
All Vehicles		2043	0.0	0.566	4.4	NA	2.2	15.4	0.07	0.17	53.7

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: Marsden St- Market St

14S1091200 PNUR
Existing Thursday AM
Marsden St/ Market St
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Marsden Street											
2	T	358	0.0	0.322	1.4	LOS A	2.3	16.2	0.41	0.00	51.8
3	R	196	0.0	0.322	9.9	LOS A	2.3	16.2	0.41	0.83	48.4
Approach		554	0.0	0.322	4.4	NA	2.3	16.2	0.41	0.29	50.6
East: Market Street											
4	L	356	0.0	0.277	9.4	LOS A	1.5	10.3	0.41	0.66	47.2
6	R	3	0.0	0.277	9.6	LOS A	1.5	10.3	0.41	0.82	47.3
Approach		359	0.0	0.277	9.4	LOS A	1.5	10.3	0.41	0.66	47.2
North: Marsden Street											
7	L	34	0.0	0.149	8.2	LOS A	0.0	0.0	0.00	1.01	49.0
8	T	255	0.0	0.149	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		288	0.0	0.149	1.0	NA	0.0	0.0	0.00	0.12	58.5
All Vehicles		1201	0.0	0.322	5.1	NA	2.3	16.2	0.31	0.36	51.1

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.

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MOVEMENT SUMMARY

Site: Church St- Market St

14S1091200 PNUR
Existing Thursday AM
Church St/ Market St
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Church Street											
1	L	21	0.0	0.024	8.2	LOS A	0.0	0.0	0.00	0.84	49.0
2	T	25	0.0	0.024	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		46	0.0	0.024	3.7	NA	0.0	0.0	0.00	0.38	54.4
North: Church Street											
8	T	18	0.0	0.009	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
9	R	335	0.0	0.289	8.8	LOS A	1.0	6.8	0.29	0.59	47.5
Approach		353	0.0	0.289	8.4	NA	1.0	6.8	0.27	0.56	48.0
West: Market Street											
10	L	207	0.0	0.138	8.4	LOS A	0.7	4.7	0.10	0.63	48.5
12	R	6	0.0	0.138	8.6	LOS A	0.7	4.7	0.10	0.73	48.3
Approach		214	0.0	0.138	8.4	LOS A	0.7	4.7	0.10	0.63	48.5
All Vehicles		613	0.0	0.289	8.0	NA	1.0	6.8	0.19	0.57	48.6

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: Church St- Board St

14S1091200 PNUR
Existing Thursday AM
Church St/ Board St/ Seville St
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: Church Street												
1	L	13	0.0	0.198	8.2	LOS A	0.0	0.0	0.00	1.07	49.0	
2	T	759	0.0	0.198	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		772	0.0	0.198	0.1	NA	0.0	0.0	0.00	0.02	59.8	
East: Seville Street												
4	L	3	0.0	0.030	39.5	LOS C	0.1	0.6	0.92	0.97	28.7	
Approach		3	0.0	0.030	39.5	LOS C	0.1	0.6	0.92	0.97	28.7	
North: Church Street												
7	L	22	0.0	0.493	8.2	LOS A	0.0	0.0	0.00	1.07	49.0	
8	T	1901	0.0	0.493	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		1923	0.0	0.493	0.1	NA	0.0	0.0	0.00	0.01	59.8	
West: Board Street												
10	L	302	0.0	0.451	14.2	LOS A	2.6	18.2	0.66	0.98	43.1	
Approach		302	0.0	0.451	14.2	LOS A	2.6	18.2	0.66	0.98	43.1	
All Vehicles		3000	0.0	0.493	1.6	NA	2.6	18.2	0.07	0.11	57.5	

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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MOVEMENT SUMMARY

Site: O'Connell St- Barney St

14S1091200 PNUR
Existing Thursday AM
O'Connell St/ Barney St
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
2	T	296	0.0	0.217	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	121	0.0	0.217	8.4	LOS A	0.0	0.0	0.00	0.99	48.6
Approach		417	0.0	0.217	2.5	NA	0.0	0.0	0.00	0.29	56.2
East: Barney Street											
4	L	852	0.0	0.474	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
6	R	29	0.0	0.474	8.4	LOS A	0.0	0.0	0.00	0.73	48.6
Approach		881	0.0	0.474	8.2	NA	0.0	0.0	0.00	0.67	48.9
North: O'Connell Street											
7	L	6	0.0	0.033	12.5	LOS A	0.1	0.9	0.40	0.58	44.8
8	T	15	0.0	0.033	11.3	LOS A	0.1	0.9	0.40	0.70	45.7
Approach		21	0.0	0.033	11.6	LOS A	0.1	0.9	0.40	0.67	45.4
All Vehicles		1319	0.0	0.474	6.4	NA	0.1	0.9	0.01	0.55	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.

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MOVEMENT SUMMARY

Site: O'Connell St- Dunlop St

14S1091200 PNUR
Existing Thursday AM
O'Connell St/ Dunlop St
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street South											
1	L	3	0.0	0.216	13.5	LOS A	2.3	16.3	0.76	0.26	46.8
2	T	393	0.0	0.216	5.3	LOS A	2.3	16.3	0.76	0.00	47.7
3	R	9	0.0	0.216	13.8	LOS A	2.3	16.3	0.76	1.04	46.8
Approach		405	0.0	0.216	5.6	NA	2.3	16.3	0.76	0.03	47.7
East: Dunlop Street											
4	L	17	0.0	0.040	13.6	LOS A	0.1	0.9	0.65	0.83	43.7
5	T	3	0.0	0.040	12.4	LOS A	0.1	0.9	0.65	0.85	44.3
6	R	1	0.0	0.040	13.9	LOS A	0.1	0.9	0.65	0.91	43.6
Approach		21	0.0	0.040	13.4	LOS A	0.1	0.9	0.65	0.84	43.8
North: O'Connell Street											
7	L	3	0.0	0.465	11.5	LOS A	6.6	46.3	0.71	0.29	48.4
8	T	773	0.0	0.465	3.3	LOS A	6.6	46.3	0.71	0.00	48.1
9	R	84	0.0	0.465	11.7	LOS A	6.6	46.3	0.71	0.98	48.4
Approach		860	0.0	0.465	4.1	NA	6.6	46.3	0.71	0.10	48.1
West: Dunlop Street											
10	L	15	0.0	0.040	13.0	LOS A	0.1	0.9	0.53	0.67	44.3
11	T	5	0.0	0.040	11.7	LOS A	0.1	0.9	0.53	0.79	45.0
12	R	2	0.0	0.040	13.2	LOS A	0.1	0.9	0.53	0.88	44.2
Approach		22	0.0	0.040	12.7	LOS A	0.1	0.9	0.53	0.72	44.4
All Vehicles		1308	0.0	0.465	4.9	NA	6.6	46.3	0.72	0.10	47.9

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: New St- Factory St

14S1091200 PNUR
Existing Thursday AM
New St/ Factory St
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: New Street												
2	T	23	0.0	0.014	0.2	LOS A	0.1	0.5	0.18	0.00	56.3	
3	R	3	0.0	0.014	8.7	LOS A	0.1	0.5	0.18	0.96	48.8	
Approach		26	0.0	0.014	1.2	NA	0.1	0.5	0.18	0.11	55.3	
East: Factory Street												
4	L	15	0.0	0.013	8.4	LOS A	0.1	0.4	0.17	0.60	48.2	
6	R	4	0.0	0.013	8.7	LOS A	0.1	0.4	0.17	0.67	48.0	
Approach		19	0.0	0.013	8.5	LOS A	0.1	0.4	0.17	0.62	48.2	
North: New Street												
7	L	9	0.0	0.044	8.2	LOS A	0.0	0.0	0.00	1.01	49.0	
8	T	76	0.0	0.044	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		85	0.0	0.044	0.9	NA	0.0	0.0	0.00	0.11	58.5	
All Vehicles		131	0.0	0.044	2.1	NA	0.1	0.5	0.06	0.19	56.1	

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.

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MOVEMENT SUMMARY

Site: O'Connell St- Factory St

14S1091200 PNUR
Existing Thursday AM
O'Connell St/ Factory St
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: O'Connell Street												
1	L	17	0.0	0.209	8.2	LOS A	0.0	0.0	0.00	1.06	49.0	
2	T	391	0.0	0.209	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		407	0.0	0.209	0.3	NA	0.0	0.0	0.00	0.04	59.4	
East: Factory Street												
4	L	42	0.0	0.080	16.2	LOS B	0.2	1.6	0.65	1.00	42.6	
Approach		42	0.0	0.080	16.2	LOS B	0.2	1.6	0.65	1.00	42.6	
North: O'Connell Street												
7	L	8	0.0	0.401	8.2	LOS A	0.0	0.0	0.00	1.08	49.0	
8	T	774	0.0	0.401	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		782	0.0	0.401	0.1	NA	0.0	0.0	0.00	0.01	59.9	
West: Factory Street												
10	L	14	0.0	0.014	12.4	LOS A	0.1	0.4	0.43	0.83	45.6	
Approach		14	0.0	0.014	12.4	LOS A	0.1	0.4	0.43	0.83	45.6	
All Vehicles		1245	0.0	0.401	0.8	NA	0.2	1.6	0.03	0.06	58.7	

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.

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MOVEMENT SUMMARY

Site: O'Connell St- Board St

14S1091200 PNUR
Existing Thursday AM
O'Connell St/ Board St/ Property Access
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: O'Connell Street												
2	T	23	0.0	0.169	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
3	R	293	0.0	0.169	8.4	LOS A	0.0	0.0	0.00	0.72	48.6	
Approach		316	0.0	0.169	7.8	NA	0.0	0.0	0.00	0.67	49.3	
East: Board Street												
4	L	15	0.0	0.012	8.2	LOS A	0.0	0.0	0.00	0.66	49.0	
6	R	7	0.0	0.012	8.4	LOS A	0.0	0.0	0.00	0.72	48.6	
Approach		22	0.0	0.012	8.3	NA	0.0	0.0	0.00	0.68	48.8	
North: Access Road												
7	L	11	0.0	0.011	8.9	LOS A	0.0	0.3	0.12	0.66	48.2	
8	T	3	0.0	0.011	7.6	LOS A	0.0	0.3	0.12	0.52	49.5	
Approach		14	0.0	0.011	8.6	LOS A	0.0	0.3	0.12	0.63	48.5	
All Vehicles		352	0.0	0.169	7.9	NA	0.0	0.3	0.00	0.67	49.2	

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.

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MOVEMENT SUMMARY

Site: New St- Greenup Drive

14S1091200 PNUR
Existing Thursday AM
New St/ Greenup Drive
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: New Street											
1	L	148	0.0	0.092	8.2	LOS A	0.0	0.0	0.00	0.70	49.0
2	T	23	0.0	0.092	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		172	0.0	0.092	7.1	NA	0.0	0.0	0.00	0.61	50.2
North: New Street											
8	T	31	0.0	0.063	0.5	LOS A	0.3	2.1	0.28	0.00	53.5
9	R	73	0.0	0.063	9.0	LOS A	0.3	2.1	0.28	0.71	47.9
Approach		103	0.0	0.063	6.5	NA	0.3	2.1	0.28	0.50	49.5
West: Greenup Drive											
10	L	15	0.0	0.034	8.8	LOS A	0.1	0.9	0.23	0.59	47.9
12	R	27	0.0	0.034	9.0	LOS A	0.1	0.9	0.23	0.67	47.8
Approach		42	0.0	0.034	8.9	LOS A	0.1	0.9	0.23	0.64	47.8
All Vehicles		317	0.0	0.092	7.1	NA	0.3	2.1	0.12	0.58	49.6

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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MOVEMENT SUMMARY

Site: O'Connell St- Fennell St

14S1091200 PNUR
Existing Thursday PM
O'Connell St/ Fennell St
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	48	0.0	0.254	8.2	LOS A	0.0	0.0	0.00	1.02	49.0
2	T	939	0.0	0.254	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	16	0.0	0.020	11.0	LOS A	0.1	0.5	0.47	0.70	46.0
Approach		1003	0.0	0.254	0.6	NA	0.1	0.5	0.01	0.06	59.1
East: Fennell Street											
4	L	35	0.0	0.066	14.5	LOS A	0.2	1.4	0.53	0.93	43.8
5	T	1	0.0	0.155	85.6	LOS F	0.4	3.0	0.95	1.00	18.3
6	R	6	0.0	0.155	84.9	LOS F	0.4	3.0	0.95	1.00	18.3
Approach		42	0.0	0.155	26.8	LOS B	0.4	3.0	0.61	0.95	35.2
North: O'Connell Street											
7	L	14	0.0	0.170	8.2	LOS A	0.0	0.0	0.00	1.06	49.0
8	T	651	0.0	0.170	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
9	R	23	0.0	0.040	13.1	LOS A	0.1	0.9	0.61	0.80	44.1
Approach		687	0.0	0.170	0.6	NA	0.1	0.9	0.02	0.05	59.0
West: Fennell Street											
10	L	60	0.0	0.107	15.8	LOS B	0.4	2.7	0.61	1.00	42.9
11	T	43	0.0	0.856	75.8	LOS F	5.1	35.8	0.98	1.36	19.9
12	R	87	0.0	0.856	75.1	LOS F	5.1	35.8	0.98	1.35	19.9
Approach		191	0.0	0.856	56.6	LOS E	5.1	35.8	0.86	1.24	24.0
All Vehicles		1923	0.0	0.856	6.7	NA	5.1	35.8	0.11	0.19	50.9

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: Marsden St- Market St

14S1091200 PNUR
Existing Thursday PM
Marsden St/ Market St
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: Marsden Street												
2	T	558	0.0	0.479	2.3	LOS A	5.4	38.1	0.51	0.00	50.3	
3	R	268	0.0	0.479	10.8	LOS A	5.4	38.1	0.51	0.86	47.8	
Approach		826	0.0	0.479	5.1	NA	5.4	38.1	0.51	0.28	49.5	
East: Market Street												
4	L	274	0.0	0.235	9.6	LOS A	1.2	8.2	0.41	0.66	47.2	
6	R	9	0.0	0.235	9.9	LOS A	1.2	8.2	0.41	0.84	47.3	
Approach		283	0.0	0.235	9.6	LOS A	1.2	8.2	0.41	0.67	47.2	
North: Marsden Street												
7	L	28	0.0	0.156	8.2	LOS A	0.0	0.0	0.00	1.03	49.0	
8	T	275	0.0	0.156	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		303	0.0	0.156	0.8	NA	0.0	0.0	0.00	0.10	58.8	
All Vehicles		1413	0.0	0.479	5.0	NA	5.4	38.1	0.38	0.32	50.7	

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.

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MOVEMENT SUMMARY

Site: Church St- Market St

14S1091200 PNUR
Existing Thursday PM
Church St/ Market St
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: Church Street												
1	L	12	0.0	0.016	8.2	LOS A	0.0	0.0	0.00	0.88	49.0	
2	T	20	0.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		32	0.0	0.016	3.0	NA	0.0	0.0	0.00	0.32	55.4	
North: Church Street												
8	T	12	0.0	0.006	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
9	R	269	0.0	0.233	8.7	LOS A	0.7	5.2	0.26	0.59	47.6	
Approach		281	0.0	0.233	8.4	NA	0.7	5.2	0.25	0.56	48.0	
West: Market Street												
10	L	286	0.0	0.183	8.3	LOS A	0.9	6.6	0.09	0.63	48.5	
12	R	4	0.0	0.183	8.6	LOS A	0.9	6.6	0.09	0.73	48.3	
Approach		291	0.0	0.183	8.3	LOS A	0.9	6.6	0.09	0.63	48.5	
All Vehicles		603	0.0	0.233	8.1	NA	0.9	6.6	0.16	0.58	48.6	

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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MOVEMENT SUMMARY

Site: Church St- Board St

14S1091200 PNUR
Existing Thursday PM
Church St/ Board St/ Seville St
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Church Street											
1	L	5	0.0	0.461	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
2	T	894	0.0	0.461	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		899	0.0	0.461	0.0	NA	0.0	0.0	0.00	0.01	59.9
East: Seville Street											
4	L	9	0.0	0.022	14.9	LOS B	0.1	0.5	0.68	0.84	42.5
Approach		9	0.0	0.022	14.9	LOS B	0.1	0.5	0.68	0.84	42.5
North: Church Street											
7	L	14	0.0	0.283	8.2	LOS A	0.0	0.0	0.00	1.07	49.0
8	T	1088	0.0	0.283	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1102	0.0	0.283	0.1	NA	0.0	0.0	0.00	0.01	59.8
West: Board Street											
10	L	402	0.0	0.871	33.2	LOS C	9.7	67.9	0.94	1.61	31.3
Approach		402	0.0	0.871	33.2	LOS C	9.7	67.9	0.94	1.61	31.3
All Vehicles		2413	0.0	0.871	5.6	NA	9.7	67.9	0.16	0.28	51.9

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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MOVEMENT SUMMARY

Site: O'Connell St- Barney St

14S1091200 PNUR
Existing Thursday PM
O'Connell St/ Barney St
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
2	T	379	0.0	0.411	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	402	0.0	0.411	8.4	LOS A	0.0	0.0	0.00	0.87	48.6
Approach		781	0.0	0.411	4.3	NA	0.0	0.0	0.00	0.45	53.6
East: Barney Street											
4	L	409	0.0	0.234	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
6	R	25	0.0	0.234	8.4	LOS A	0.0	0.0	0.00	0.73	48.6
Approach		435	0.0	0.234	8.2	NA	0.0	0.0	0.00	0.67	48.9
North: O'Connell Street											
7	L	16	0.0	0.040	9.9	LOS A	0.2	1.2	0.45	0.69	47.3
8	T	25	0.0	0.040	8.7	LOS A	0.2	1.2	0.45	0.62	47.8
Approach		41	0.0	0.040	9.2	LOS A	0.2	1.2	0.45	0.65	47.6
All Vehicles		1257	0.0	0.411	5.8	NA	0.2	1.2	0.01	0.53	51.7

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.

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MOVEMENT SUMMARY

Site: O'Connell St- Dunlop St

14S1091200 PNUR
Existing Thursday PM
O'Connell St/ Dunlop St
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street South											
1	L	3	0.0	0.390	11.0	LOS A	4.1	28.8	0.59	0.44	48.6
2	T	724	0.0	0.390	2.8	LOS A	4.1	28.8	0.59	0.00	50.0
3	R	20	0.0	0.390	11.2	LOS A	4.1	28.8	0.59	1.02	48.6
Approach		747	0.0	0.390	3.1	NA	4.1	28.8	0.59	0.03	50.0
East: Dunlop Street											
4	L	9	0.0	0.023	12.3	LOS A	0.1	0.5	0.52	0.67	44.8
5	T	2	0.0	0.023	11.0	LOS A	0.1	0.5	0.52	0.78	45.6
6	R	2	0.0	0.023	12.6	LOS A	0.1	0.5	0.52	0.87	44.7
Approach		14	0.0	0.023	12.1	LOS A	0.1	0.5	0.52	0.71	44.9
North: O'Connell Street											
7	L	4	0.0	0.241	12.9	LOS A	2.7	19.2	0.74	0.28	47.1
8	T	411	0.0	0.241	4.7	LOS A	2.7	19.2	0.74	0.00	47.9
9	R	23	0.0	0.241	13.2	LOS A	2.7	19.2	0.74	1.04	47.1
Approach		438	0.0	0.241	5.3	NA	2.7	19.2	0.74	0.06	47.9
West: Dunlop Street											
10	L	65	0.0	0.140	13.2	LOS A	0.5	3.5	0.62	0.86	43.9
11	T	5	0.0	0.140	12.0	LOS A	0.5	3.5	0.62	0.83	44.6
12	R	12	0.0	0.140	13.5	LOS A	0.5	3.5	0.62	0.90	43.9
Approach		82	0.0	0.140	13.2	LOS A	0.5	3.5	0.62	0.86	44.0
All Vehicles		1281	0.0	0.390	4.6	NA	4.1	28.8	0.64	0.10	48.8

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: New St- Factory St

14S1091200 PNUR
Existing Thursday PM
New St/ Factory St
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: New Street											
2	T	76	0.0	0.055	0.1	LOS A	0.3	1.9	0.09	0.00	58.1
3	R	28	0.0	0.055	8.5	LOS A	0.3	1.9	0.09	0.93	48.6
Approach		104	0.0	0.055	2.4	NA	0.3	1.9	0.09	0.25	55.1
East: Factory Street											
4	L	6	0.0	0.005	8.3	LOS A	0.0	0.1	0.07	0.63	48.6
6	R	1	0.0	0.005	8.6	LOS A	0.0	0.1	0.07	0.70	48.4
Approach		7	0.0	0.005	8.3	LOS A	0.0	0.1	0.07	0.64	48.6
North: New Street											
7	L	5	0.0	0.013	8.2	LOS A	0.0	0.0	0.00	0.95	49.0
8	T	19	0.0	0.013	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		24	0.0	0.013	1.8	NA	0.0	0.0	0.00	0.21	57.2
All Vehicles		136	0.0	0.055	2.6	NA	0.3	1.9	0.07	0.27	55.1

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.

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MOVEMENT SUMMARY

Site: O'Connell St- Factory St

14S1091200 PNUR
Existing Thursday PM
O'Connell St/ Factory St
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued sec	Effective Stop Rate per veh	Average Speed km/h	
South: O'Connell Street												
1	L	5	0.0	0.372	8.2	LOS A	0.0	0.0	0.00	1.09	49.0	
2	T	719	0.0	0.372	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		724	0.0	0.372	0.1	NA	0.0	0.0	0.00	0.01	59.9	
East: Factory Street												
4	L	28	0.0	0.031	12.6	LOS A	0.1	0.7	0.38	0.90	45.2	
Approach		28	0.0	0.031	12.6	LOS A	0.1	0.7	0.38	0.90	45.2	
North: O'Connell Street												
7	L	14	0.0	0.223	8.2	LOS A	0.0	0.0	0.00	1.07	49.0	
8	T	421	0.0	0.223	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		435	0.0	0.223	0.3	NA	0.0	0.0	0.00	0.03	59.6	
West: Factory Street												
10	L	38	0.0	0.060	15.1	LOS B	0.2	1.6	0.59	0.95	43.4	
Approach		38	0.0	0.060	15.1	LOS B	0.2	1.6	0.59	0.95	43.4	
All Vehicles		1225	0.0	0.372	0.9	NA	0.2	1.6	0.03	0.07	58.7	

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.

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INTERSECTION

MOVEMENT SUMMARY

Site: O'Connell St- Board St

14S1091200 PNUR
Existing Thursday PM
O'Connell St/ Board St/ Property Access
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
2	T	4	0.0	0.216	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	398	0.0	0.216	8.4	LOS A	0.0	0.0	0.00	0.70	48.6
Approach		402	0.0	0.216	8.4	NA	0.0	0.0	0.00	0.70	48.7
East: Board Street											
4	L	21	0.0	0.012	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
6	R	1	0.0	0.012	8.4	LOS A	0.0	0.0	0.00	0.73	48.6
Approach		22	0.0	0.012	8.2	NA	0.0	0.0	0.00	0.67	48.9
North: Access Road											
7	L	6	0.0	0.010	8.9	LOS A	0.0	0.3	0.07	0.69	48.2
8	T	6	0.0	0.010	7.6	LOS A	0.0	0.3	0.07	0.55	49.5
Approach		13	0.0	0.010	8.3	LOS A	0.0	0.3	0.07	0.62	48.9
All Vehicles		437	0.0	0.216	8.3	NA	0.0	0.3	0.00	0.69	48.7

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.

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MOVEMENT SUMMARY

Site: New St- Greenup Drive

14S1091200 PNUR
Existing Thursday PM
New St/ Greenup Drive
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: New Street											
1	L	58	0.0	0.042	8.2	LOS A	0.0	0.0	0.00	0.74	49.0
2	T	21	0.0	0.042	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		79	0.0	0.042	6.0	NA	0.0	0.0	0.00	0.54	51.5
North: New Street											
8	T	16	0.0	0.016	0.2	LOS A	0.1	0.5	0.17	0.00	56.1
9	R	14	0.0	0.016	8.7	LOS A	0.1	0.5	0.17	0.79	48.4
Approach		29	0.0	0.016	4.1	NA	0.1	0.5	0.17	0.37	52.3
West: Greenup Drive											
10	L	86	0.0	0.187	8.5	LOS A	0.8	5.6	0.17	0.60	48.2
12	R	164	0.0	0.187	8.7	LOS A	0.8	5.6	0.17	0.67	48.0
Approach		251	0.0	0.187	8.6	LOS A	0.8	5.6	0.17	0.64	48.1
All Vehicles		359	0.0	0.187	7.7	NA	0.8	5.6	0.13	0.60	49.1

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: O'Connell St- Fennell St

14S1091200 PNUR
Existing Saturday
O'Connell St/ Fennell St
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	46	0.0	0.146	8.2	LOS A	0.0	0.0	0.00	0.98	49.0
2	T	519	0.0	0.146	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	11	0.0	0.015	11.5	LOS A	0.0	0.3	0.50	0.71	45.5
Approach		576	0.0	0.146	0.9	NA	0.0	0.3	0.01	0.09	58.6
East: Fennell Street											
4	L	13	0.0	0.099	25.5	LOS B	0.3	2.2	0.76	0.97	36.1
5	T	7	0.0	0.099	26.3	LOS B	0.3	2.2	0.76	1.00	35.8
6	R	2	0.0	0.099	25.6	LOS B	0.3	2.2	0.76	0.99	36.1
Approach		22	0.0	0.099	25.8	LOS B	0.3	2.2	0.76	0.98	36.0
North: O'Connell Street											
7	L	9	0.0	0.186	8.2	LOS A	0.0	0.0	0.00	1.07	49.0
8	T	717	0.0	0.186	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
9	R	23	0.0	0.026	10.4	LOS A	0.1	0.6	0.40	0.68	46.7
Approach		749	0.0	0.186	0.4	NA	0.1	0.6	0.01	0.03	59.3
West: Fennell Street											
10	L	27	0.0	0.677	58.3	LOS E	3.3	23.3	0.90	1.28	23.5
11	T	16	0.0	0.677	59.1	LOS E	3.3	23.3	0.90	1.19	23.4
12	R	55	0.0	0.677	58.4	LOS E	3.3	23.3	0.90	1.18	23.5
Approach		98	0.0	0.677	58.5	LOS E	3.3	23.3	0.90	1.21	23.5
All Vehicles		1445	0.0	0.677	4.9	NA	3.3	23.3	0.08	0.15	53.0

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: Marsden St- Market St

14S1091200 PNUR
Existing Saturday
Marsden St/ Market St
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Marsden Street											
2	T	492	0.0	0.396	1.8	LOS A	3.3	23.1	0.47	0.00	51.0
3	R	198	0.0	0.396	10.3	LOS A	3.3	23.1	0.47	0.85	48.3
Approach		689	0.0	0.396	4.2	NA	3.3	23.1	0.47	0.24	50.2
East: Market Street											
4	L	357	0.0	0.294	9.6	LOS A	1.6	10.9	0.43	0.68	47.1
6	R	7	0.0	0.294	9.9	LOS A	1.6	10.9	0.43	0.84	47.2
Approach		364	0.0	0.294	9.6	LOS A	1.6	10.9	0.43	0.68	47.1
North: Marsden Street											
7	L	33	0.0	0.163	8.2	LOS A	0.0	0.0	0.00	1.02	49.0
8	T	283	0.0	0.163	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		316	0.0	0.163	0.8	NA	0.0	0.0	0.00	0.11	58.6
All Vehicles		1369	0.0	0.396	4.9	NA	3.3	23.1	0.35	0.33	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.

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MOVEMENT SUMMARY

Site: Church St- Market St

14S1091200 PNUR
Existing Saturday
Church St/ Market St
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: Church Street												
1	L	4	0.0	0.005	8.2	LOS A	0.0	0.0	0.00	0.84	49.0	
2	T	5	0.0	0.005	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		9	0.0	0.005	3.6	NA	0.0	0.0	0.00	0.38	54.5	
North: Church Street												
8	T	26	0.0	0.013	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
9	R	354	0.0	0.303	8.9	LOS A	1.0	7.1	0.57	0.40	46.5	
Approach		380	0.0	0.303	8.2	NA	1.0	7.1	0.53	0.37	47.2	
West: Market Street												
10	L	220	0.0	0.142	8.3	LOS A	0.7	4.9	0.03	0.65	48.8	
12	R	5	0.0	0.142	8.5	LOS A	0.7	4.9	0.03	0.73	48.5	
Approach		225	0.0	0.142	8.3	LOS A	0.7	4.9	0.03	0.65	48.8	
All Vehicles		615	0.0	0.303	8.2	NA	1.0	7.1	0.34	0.47	47.9	

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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MOVEMENT SUMMARY

Site: Church St- Board St

14S1091200 PNUR
Existing Saturday
Church St/ Board St/ Seville St
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Church Street											
1	L	18	0.0	0.286	8.2	LOS A	0.0	0.0	0.00	1.07	49.0
2	T	1098	0.0	0.286	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1116	0.0	0.286	0.1	NA	0.0	0.0	0.00	0.02	59.8
East: Seville Street											
4	L	25	0.0	0.081	18.7	LOS B	0.3	1.8	0.78	0.93	39.6
Approach		25	0.0	0.081	18.7	LOS B	0.3	1.8	0.78	0.93	39.6
North: Church Street											
7	L	32	0.0	0.342	8.2	LOS A	0.0	0.0	0.00	1.06	49.0
8	T	1301	0.0	0.342	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1333	0.0	0.342	0.2	NA	0.0	0.0	0.00	0.03	59.7
West: Board Street											
10	L	340	0.0	0.758	25.5	LOS B	5.8	40.7	0.89	1.30	35.2
Approach		340	0.0	0.758	25.5	LOS B	5.8	40.7	0.89	1.30	35.2
All Vehicles		2814	0.0	0.758	3.4	NA	5.8	40.7	0.11	0.18	54.9

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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MOVEMENT SUMMARY

Site: O'Connell St- Barney St

14S1091200 PNUR
Existing Saturday
O'Connell St/ Barney St
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
2	T	287	0.0	0.222	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	139	0.0	0.222	8.4	LOS A	0.0	0.0	0.00	0.96	48.6
Approach		426	0.0	0.222	2.8	NA	0.0	0.0	0.00	0.31	55.8
East: Barney Street											
4	L	505	0.0	0.296	8.2	LOS A	0.0	0.0	0.00	0.66	49.0
6	R	44	0.0	0.296	8.4	LOS A	0.0	0.0	0.00	0.73	48.6
Approach		549	0.0	0.296	8.2	NA	0.0	0.0	0.00	0.67	48.9
North: O'Connell Street											
7	L	9	0.0	0.030	10.1	LOS A	0.1	0.9	0.36	0.60	47.1
8	T	20	0.0	0.030	8.9	LOS A	0.1	0.9	0.36	0.63	48.1
Approach		29	0.0	0.030	9.3	LOS A	0.1	0.9	0.36	0.62	47.7
All Vehicles		1005	0.0	0.296	5.9	NA	0.1	0.9	0.01	0.52	51.6

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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MOVEMENT SUMMARY

Site: O'Connell St- Dunlop St

14S1091200 PNUR
Existing Saturday
O'Connell St/ Dunlop St
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street South											
1	L	5	0.0	0.221	10.9	LOS A	1.8	12.5	0.55	0.47	48.6
2	T	402	0.0	0.221	2.7	LOS A	1.8	12.5	0.55	0.00	50.5
3	R	13	0.0	0.221	11.1	LOS A	1.8	12.5	0.55	1.01	48.5
Approach		420	0.0	0.221	3.0	NA	1.8	12.5	0.55	0.04	50.4
East: Dunlop Street											
4	L	9	0.0	0.017	11.2	LOS A	0.1	0.4	0.52	0.69	45.9
5	T	2	0.0	0.017	9.9	LOS A	0.1	0.4	0.52	0.73	46.7
6	R	1	0.0	0.017	11.4	LOS A	0.1	0.4	0.52	0.83	45.8
Approach		13	0.0	0.017	11.0	LOS A	0.1	0.4	0.52	0.71	46.0
North: O'Connell Street											
7	L	5	0.0	0.277	10.3	LOS A	2.5	17.3	0.58	0.44	49.3
8	T	511	0.0	0.277	2.1	LOS A	2.5	17.3	0.58	0.00	50.1
9	R	16	0.0	0.277	10.5	LOS A	2.5	17.3	0.58	0.95	49.3
Approach		532	0.0	0.277	2.4	NA	2.5	17.3	0.58	0.03	50.1
West: Dunlop Street											
10	L	20	0.0	0.047	11.6	LOS A	0.2	1.2	0.50	0.68	45.5
11	T	6	0.0	0.047	10.3	LOS A	0.2	1.2	0.50	0.77	46.3
12	R	6	0.0	0.047	11.9	LOS A	0.2	1.2	0.50	0.87	45.4
Approach		33	0.0	0.047	11.4	LOS A	0.2	1.2	0.50	0.73	45.6
All Vehicles		997	0.0	0.277	3.1	NA	2.5	17.3	0.57	0.07	50.0

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: New St- Factory St

14S1091200 PNUR
Existing Saturday
New St/ Factory St
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: New Street											
2	T	25	0.0	0.017	0.0	LOS A	0.1	0.6	0.07	0.00	58.5
3	R	6	0.0	0.017	8.5	LOS A	0.1	0.6	0.07	0.98	48.6
Approach		32	0.0	0.017	1.7	NA	0.1	0.6	0.07	0.20	56.2
East: Factory Street											
4	L	6	0.0	0.006	8.3	LOS A	0.0	0.1	0.07	0.63	48.6
6	R	2	0.0	0.006	8.5	LOS A	0.0	0.1	0.07	0.69	48.4
Approach		8	0.0	0.006	8.3	LOS A	0.0	0.1	0.07	0.64	48.6
North: New Street											
7	L	1	0.0	0.009	8.2	LOS A	0.0	0.0	0.00	1.05	49.0
8	T	17	0.0	0.009	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		18	0.0	0.009	0.5	NA	0.0	0.0	0.00	0.06	59.2
All Vehicles		58	0.0	0.017	2.3	NA	0.1	0.6	0.05	0.22	55.8

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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MOVEMENT SUMMARY

Site: O'Connell St- Factory St

14S1091200 PNUR
Existing Saturday
O'Connell St/ Factory St
Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: O'Connell Street												
1	L	11	0.0	0.217	8.2	LOS A	0.0	0.0	0.00	1.07	49.0	
2	T	412	0.0	0.217	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		422	0.0	0.217	0.2	NA	0.0	0.0	0.00	0.03	59.7	
East: Factory Street												
4	L	41	0.0	0.052	13.4	LOS A	0.2	1.1	0.46	0.92	44.7	
Approach		41	0.0	0.052	13.4	LOS A	0.2	1.1	0.46	0.92	44.7	
North: O'Connell Street												
7	L	11	0.0	0.271	8.2	LOS A	0.0	0.0	0.00	1.08	49.0	
8	T	518	0.0	0.271	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		528	0.0	0.271	0.2	NA	0.0	0.0	0.00	0.02	59.7	
West: Factory Street												
10	L	11	0.0	0.011	12.4	LOS A	0.0	0.3	0.44	0.83	45.5	
Approach		11	0.0	0.011	12.4	LOS A	0.0	0.3	0.44	0.83	45.5	
All Vehicles		1002	0.0	0.271	0.9	NA	0.2	1.1	0.02	0.07	58.7	

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.

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SIDRA INTERSECTION 5.1.13.2093

Project: \\gta-syd-ss1\project_files\14S1000-1099\14S1091200 PNUR - Rezoning\Modelling\SIDRA

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INTERSECTION

MOVEMENT SUMMARY

Site: O'Connell St- Board St

14S1091200 PNUR
Existing Saturday
O'Connell St/ Board St/ Property Access
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
2	T	12	0.0	0.181	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	325	0.0	0.181	8.4	LOS A	0.0	0.0	0.00	0.71	48.6
Approach		337	0.0	0.181	8.2	NA	0.0	0.0	0.00	0.69	48.9
East: Board Street											
4	L	23	0.0	0.015	8.2	LOS A	0.0	0.0	0.00	0.66	49.0
6	R	4	0.0	0.015	8.4	LOS A	0.0	0.0	0.00	0.73	48.6
Approach		27	0.0	0.015	8.2	NA	0.0	0.0	0.00	0.67	48.9
North: Access Road											
7	L	13	0.0	0.012	9.1	LOS A	0.0	0.3	0.17	0.65	48.0
8	T	2	0.0	0.012	7.8	LOS A	0.0	0.3	0.17	0.50	49.2
Approach		15	0.0	0.012	8.9	LOS A	0.0	0.3	0.17	0.63	48.2
All Vehicles		379	0.0	0.181	8.2	NA	0.0	0.3	0.01	0.68	48.9

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.

Processed: Tuesday, 26 August 2014 1:07:21 PM
SIDRA INTERSECTION 5.1.13.2093
Project: \\gta-syd-ss1\project_files\14S1000-1099\14S1091200 PNUR – Rezoning\Modelling\SIDRA
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SIDRA
INTERSECTION

MOVEMENT SUMMARY

Site: New St- Greenup Drive

14S1091200 PNUR
Existing Saturday
New St/ Greenup Drive
Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: New Street												
1	L	20	0.0	0.030	8.2	LOS A	0.0	0.0	0.00	0.88	49.0	
2	T	37	0.0	0.030	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		57	0.0	0.030	2.9	NA	0.0	0.0	0.00	0.31	55.6	
North: New Street												
8	T	29	0.0	0.019	0.2	LOS A	0.1	0.7	0.15	0.00	57.0	
9	R	6	0.0	0.019	8.6	LOS A	0.1	0.7	0.15	0.95	48.7	
Approach		36	0.0	0.019	1.6	NA	0.1	0.7	0.15	0.17	55.4	
West: Greenup Drive												
10	L	9	0.0	0.022	8.4	LOS A	0.1	0.6	0.14	0.59	48.3	
12	R	20	0.0	0.022	8.7	LOS A	0.1	0.6	0.14	0.66	48.1	
Approach		29	0.0	0.022	8.6	LOS A	0.1	0.6	0.14	0.64	48.1	
All Vehicles		122	0.0	0.030	3.9	NA	0.1	0.7	0.08	0.35	53.5	

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.

B.2 Future Conditions

MOVEMENT SUMMARY

Site: O'Connell St- Fennell St

14S1091200 PNUR
 Post Development Thursday AM
 O'Connell St/ Fennell St
 Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	243	0.0	0.230	8.2	LOS A	0.0	0.0	0.00	0.80	49.0
2	T	643	0.0	0.230	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	39	0.0	0.126	19.7	LOS B	0.4	2.5	0.81	0.94	38.9
Approach		925	0.0	0.230	3.0	NA	0.4	2.5	0.03	0.25	55.5
East: Fennell Street											
4	L	9	0.0	0.763	274.1	LOS F	2.5	17.2	0.99	1.11	7.1
5	T	11	0.0	0.763	274.9	LOS F	2.5	17.2	0.99	1.09	7.1
6	R	1	0.0	0.763	274.2	LOS F	2.5	17.2	0.99	1.09	7.1
Approach		21	0.0	0.763	274.5	LOS F	2.5	17.2	0.99	1.10	7.1
North: O'Connell Street											
7	L	27	0.0	0.349	8.2	LOS A	0.0	0.0	0.00	1.06	49.0
8	T	1332	0.0	0.349	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
9	R	61	0.0	0.094	12.6	LOS A	0.3	2.3	0.58	0.82	44.5
Approach		1420	0.0	0.349	0.7	NA	0.3	2.3	0.02	0.06	58.9
West: Fennell Street											
10	L	19	0.0	4.298	3047.2	LOS F	134.8	943.3	1.00	5.29	0.7
11	T	13	0.0	4.298	3048.0	LOS F	134.8	943.3	1.00	3.82	0.7
12	R	226	0.0	4.298	3047.3	LOS F	134.8	943.3	1.00	3.76	0.7
Approach		258	0.0	4.298	3047.4	LOS F	134.8	943.3	1.00	3.88	0.7
All Vehicles		2624	0.0	4.298	303.1	NA	134.8	943.3	0.13	0.51	6.4

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: Marsden St- Market St

14S1091200 PNUR
 Post Development Thursday AM
 Marsden St/ Market St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Marsden Street											
2	T	358	0.0	0.328	1.7	LOS A	2.4	16.7	0.44	0.00	51.3
3	R	196	0.0	0.328	10.1	LOS A	2.4	16.7	0.44	0.84	48.2
Approach		554	0.0	0.328	4.7	NA	2.4	16.7	0.44	0.30	50.2
East: Market Street											
4	L	356	0.0	0.287	9.6	LOS A	1.5	10.6	0.44	0.68	47.1
6	R	3	0.0	0.287	9.8	LOS A	1.5	10.6	0.44	0.83	47.2
Approach		359	0.0	0.287	9.6	LOS A	1.5	10.6	0.44	0.68	47.1
North: Marsden Street											
7	L	34	0.0	0.168	8.2	LOS A	0.0	0.0	0.00	1.02	49.0
8	T	293	0.0	0.168	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		326	0.0	0.168	0.8	NA	0.0	0.0	0.00	0.11	58.6
All Vehicles		1239	0.0	0.328	5.1	NA	2.4	16.7	0.32	0.36	51.1

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: Church St- Market St

14S1091200 PNUR
 Post Development Thursday AM
 Church St/ Market St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Church Street											
1	L	21	0.0	0.024	8.2	LOS A	0.0	0.0	0.00	0.84	49.0
2	T	25	0.0	0.024	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		46	0.0	0.024	3.7	NA	0.0	0.0	0.00	0.38	54.4
North: Church Street											
8	T	18	0.0	0.009	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
9	R	335	0.0	0.289	8.8	LOS A	1.0	6.8	0.29	0.59	47.5
Approach		353	0.0	0.289	8.4	NA	1.0	6.8	0.27	0.56	48.0
West: Market Street											
10	L	207	0.0	0.138	8.4	LOS A	0.7	4.7	0.10	0.63	48.5
12	R	6	0.0	0.138	8.6	LOS A	0.7	4.7	0.10	0.73	48.3
Approach		214	0.0	0.138	8.4	LOS A	0.7	4.7	0.10	0.63	48.5
All Vehicles		613	0.0	0.289	8.0	NA	1.0	6.8	0.19	0.57	48.6

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: Church St- Board St

14S1091200 PNUR
 Post Development Thursday AM
 Church St/ Board St/ Seville St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Church Street											
1	L	13	0.0	0.259	8.2	LOS A	0.0	0.0	0.00	1.07	49.0
2	T	996	0.0	0.259	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1008	0.0	0.259	0.1	NA	0.0	0.0	0.00	0.01	59.8
East: Seville Street											
4	L	3	0.0	0.059	69.2	LOS E	0.2	1.1	0.96	0.99	20.6
Approach		3	0.0	0.059	69.2	LOS E	0.2	1.1	0.96	0.99	20.6
North: Church Street											
7	L	22	0.0	0.568	8.2	LOS A	0.0	0.0	0.00	1.08	49.0
8	T	2192	0.0	0.568	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		2214	0.0	0.568	0.1	NA	0.0	0.0	0.00	0.01	59.9
West: Board Street											
10	L	389	0.0	0.763	23.5	LOS B	6.4	45.0	0.87	1.32	36.4
Approach		389	0.0	0.763	23.5	LOS B	6.4	45.0	0.87	1.32	36.4
All Vehicles		3615	0.0	0.763	2.7	NA	6.4	45.0	0.09	0.15	55.9

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: O'Connell St- Barney St

14S1091200 PNUR
 Post Development Thursday AM
 O'Connell St/ Barney St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: O'Connell Street												
1	L	37	0.0	0.280	9.0	LOS A	1.9	13.1	0.34	0.58	48.5	
2	T	318	0.0	0.280	0.8	LOS A	1.9	13.1	0.34	0.00	53.1	
3	R	121	0.0	0.280	9.3	LOS A	1.9	13.1	0.34	0.84	48.5	
Approach		476	0.0	0.280	3.6	NA	1.9	13.1	0.34	0.26	51.5	
East: Barney Street												
4	L	852	0.0	0.771	12.5	LOS A	11.9	83.4	0.37	0.75	44.6	
5	T	65	0.0	0.771	11.2	LOS A	11.9	83.4	0.37	0.80	45.5	
6	R	48	0.0	0.771	12.7	LOS A	11.9	83.4	0.37	0.91	44.5	
Approach		965	0.0	0.771	12.4	LOS A	11.9	83.4	0.37	0.76	44.7	
North: O'Connell Street												
7	L	6	0.0	0.080	9.9	LOS A	0.6	4.4	0.49	0.54	49.2	
8	T	147	0.0	0.080	1.7	LOS A	0.6	4.4	0.49	0.00	51.4	
9	R	1	0.0	0.080	10.1	LOS A	0.6	4.4	0.49	0.95	49.3	
Approach		155	0.0	0.080	2.1	NA	0.6	4.4	0.49	0.03	51.3	
West: New Road From Development												
10	L	55	0.0	1.059	121.7	LOS F	22.6	158.3	1.00	3.00	13.8	
11	T	23	0.0	1.059	120.4	LOS F	22.6	158.3	1.00	2.91	13.8	
12	R	217	0.0	1.059	121.9	LOS F	22.6	158.3	1.00	2.41	13.7	
Approach		295	0.0	1.059	121.7	LOS F	22.6	158.3	1.00	2.56	13.7	
All Vehicles		1891	0.0	1.059	26.4	NA	22.6	158.3	0.47	0.86	34.2	

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: O'Connell St- Dunlop St

14S1091200 PNUR
 Post Development Thursday AM
 O'Connell St/ Dunlop St
 Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street South											
1	L	41	0.0	0.280	23.4	LOS B	5.8	40.4	1.00	0.00	39.0
2	T	452	0.0	0.280	15.2	LOS B	5.8	40.4	1.00	0.00	39.2
3	R	9	0.0	0.280	23.7	LOS B	5.8	40.4	1.00	1.06	39.0
Approach		502	0.0	0.280	16.1	NA	5.8	40.4	1.00	0.02	39.2
East: Dunlop Street											
4	L	17	0.0	0.217	30.0	LOS C	0.7	4.6	0.90	0.98	33.0
5	T	19	0.0	0.217	28.8	LOS C	0.7	4.6	0.90	0.97	33.3
6	R	1	0.0	0.217	30.3	LOS C	0.7	4.6	0.90	0.99	33.0
Approach		37	0.0	0.217	29.4	LOS C	0.7	4.6	0.90	0.98	33.1
North: O'Connell Street											
7	L	3	0.0	0.652	15.7	LOS B	16.2	113.1	1.00	0.00	45.4
8	T	1122	0.0	0.652	7.5	LOS A	16.2	113.1	1.00	0.00	44.6
9	R	84	0.0	0.652	15.9	LOS B	16.2	113.1	1.00	1.17	45.5
Approach		1209	0.0	0.652	8.1	NA	16.2	113.1	1.00	0.08	44.7
West: Dunlop Street											
10	L	15	0.0	0.873	81.4	LOS F	4.8	33.5	0.96	1.54	18.5
11	T	49	0.0	0.873	80.1	LOS F	4.8	33.5	0.96	1.32	18.6
12	R	56	0.0	0.873	81.6	LOS F	4.8	33.5	0.96	1.33	18.5
Approach		120	0.0	0.873	81.0	LOS F	4.8	33.5	0.96	1.35	18.5
All Vehicles		1868	0.0	0.873	15.3	NA	16.2	113.1	1.00	0.16	39.4

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: New St- Factory St

14S1091200 PNUR
 Post Development Thursday AM
 New St/ Factory St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: New Street											
2	T	23	0.0	0.065	0.6	LOS A	0.3	2.2	0.29	0.00	53.2
3	R	82	0.0	0.065	9.0	LOS A	0.3	2.2	0.29	0.69	47.8
Approach		105	0.0	0.065	7.2	NA	0.3	2.2	0.29	0.54	48.9
East: Factory Street											
4	L	39	0.0	0.048	8.8	LOS A	0.2	1.3	0.24	0.60	47.8
6	R	23	0.0	0.048	9.0	LOS A	0.2	1.3	0.24	0.69	47.8
Approach		62	0.0	0.048	8.9	LOS A	0.2	1.3	0.24	0.64	47.8
North: New Street											
7	L	105	0.0	0.096	8.2	LOS A	0.0	0.0	0.00	0.79	49.0
8	T	76	0.0	0.096	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		181	0.0	0.096	4.8	NA	0.0	0.0	0.00	0.46	53.0
All Vehicles		348	0.0	0.096	6.2	NA	0.3	2.2	0.13	0.52	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: O'Connell St- Factory St

14S1091200 PNUR
 Post Development Thursday AM
 O'Connell St/ Factory St
 Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	29	0.0	0.269	26.0	LOS B	6.3	44.0	1.00	0.00	37.4
2	T	487	0.0	0.269	17.8	LOS B	6.3	44.0	1.00	0.00	37.6
3	R	1	0.0	0.269	26.3	LOS B	6.3	44.0	1.00	1.06	37.5
Approach		518	0.0	0.269	18.3	NA	6.3	44.0	1.00	0.00	37.6
East: Factory Street											
4	L	42	0.0	0.297	26.4	LOS B	0.8	5.9	0.87	1.03	35.7
5	T	31	0.0	0.297	26.0	LOS B	0.8	5.9	0.87	1.03	35.9
6	R	1	0.0	0.297	26.2	LOS B	0.8	5.9	0.87	1.03	35.9
Approach		74	0.0	0.297	26.3	LOS B	0.8	5.9	0.87	1.03	35.8
North: O'Connell Street											
7	L	262	0.0	0.616	15.6	LOS B	17.6	123.0	1.00	0.00	44.8
8	T	923	0.0	0.616	7.5	LOS A	17.6	123.0	1.00	0.00	44.0
9	R	1	0.0	0.616	15.9	LOS B	17.6	123.0	1.00	1.17	44.9
Approach		1186	0.0	0.616	9.3	NA	17.6	123.0	1.00	0.00	44.2
West: Factory Street											
10	L	14	0.0	1.294	334.9	LOS F	32.6	228.4	1.00	4.38	5.9
11	T	149	0.0	1.294	334.4	LOS F	32.6	228.4	1.00	2.98	5.9
12	R	25	0.0	1.294	334.6	LOS F	32.6	228.4	1.00	3.07	5.9
Approach		188	0.0	1.294	334.5	LOS F	32.6	228.4	1.00	3.10	5.9
All Vehicles		1966	0.0	1.294	43.4	NA	32.6	228.4	1.00	0.34	26.4

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: O'Connell St- Board St

14S1091200 PNUR
 Post Development Thursday AM
 O'Connell St/ Board St/ Property Access
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
2	T	23	0.0	0.216	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	380	0.0	0.216	8.4	LOS A	0.0	0.0	0.00	0.72	48.6
Approach		403	0.0	0.216	8.0	NA	0.0	0.0	0.00	0.68	49.1
East: Board Street											
4	L	15	0.0	0.012	8.2	LOS A	0.0	0.0	0.00	0.66	49.0
6	R	7	0.0	0.012	8.4	LOS A	0.0	0.0	0.00	0.72	48.6
Approach		22	0.0	0.012	8.3	NA	0.0	0.0	0.00	0.68	48.8
North: Access Road											
7	L	11	0.0	0.011	9.2	LOS A	0.0	0.3	0.11	0.67	47.9
8	T	3	0.0	0.011	7.9	LOS A	0.0	0.3	0.11	0.52	49.2
Approach		14	0.0	0.011	8.9	LOS A	0.0	0.3	0.11	0.64	48.2
All Vehicles		439	0.0	0.216	8.0	NA	0.0	0.3	0.00	0.67	49.1

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: New St- Greenup Drive

14S1091200 PNUR
 Post Development Thursday AM
 Fleet St/ Greenup Drive
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: New Street											
1	L	156	0.0	0.193	8.5	LOS A	1.1	7.8	0.26	0.55	48.1
2	T	98	0.0	0.193	0.3	LOS A	1.1	7.8	0.26	0.00	54.1
3	R	99	0.0	0.193	8.7	LOS A	1.1	7.8	0.26	0.70	48.0
Approach		353	0.0	0.193	6.3	NA	1.1	7.8	0.26	0.44	49.6
East: Albert Street											
4	L	25	0.0	0.043	9.3	LOS A	0.2	1.1	0.17	0.63	47.8
5	T	17	0.0	0.043	8.1	LOS A	0.2	1.1	0.17	0.60	48.9
6	R	4	0.0	0.043	9.6	LOS A	0.2	1.1	0.17	0.76	47.5
Approach		46	0.0	0.043	8.9	LOS A	0.2	1.1	0.17	0.63	48.2
North: New Street											
7	L	25	0.0	0.092	9.1	LOS A	0.5	3.4	0.38	0.46	47.8
8	T	54	0.0	0.092	0.9	LOS A	0.5	3.4	0.38	0.00	51.6
9	R	73	0.0	0.092	9.3	LOS A	0.5	3.4	0.38	0.74	47.9
Approach		152	0.0	0.092	6.3	NA	0.5	3.4	0.38	0.43	49.1
West: Greenup Drive											
10	L	15	0.0	0.162	10.3	LOS A	0.6	4.3	0.43	0.64	47.0
11	T	99	0.0	0.162	9.0	LOS A	0.6	4.3	0.43	0.69	47.9
12	R	27	0.0	0.162	10.5	LOS A	0.6	4.3	0.43	0.82	46.8
Approach		141	0.0	0.162	9.4	LOS A	0.6	4.3	0.43	0.71	47.6
All Vehicles		692	0.0	0.193	7.1	NA	1.1	7.8	0.31	0.50	49.0

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: O'Connell St- Fennell St

14S1091200 PNUR
 Post Development Thursday PM
 O'Connell St/ Fennell St
 Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	277	0.0	0.370	8.2	LOS A	0.0	0.0	0.00	0.87	49.0
2	T	1152	0.0	0.370	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	16	0.0	0.023	11.7	LOS A	0.1	0.5	0.52	0.73	45.3
Approach		1444	0.0	0.370	1.7	NA	0.1	0.5	0.01	0.17	57.3
East: Fennell Street											
4	L	35	0.0	0.375	51.1	LOS D	1.2	8.6	0.86	1.07	25.4
5	T	1	0.0	0.375	51.8	LOS D	1.2	8.6	0.86	1.05	25.4
6	R	6	0.0	0.375	51.1	LOS D	1.2	8.6	0.86	1.04	25.4
Approach		42	0.0	0.375	51.1	LOS D	1.2	8.6	0.86	1.07	25.4
North: O'Connell Street											
7	L	14	0.0	0.192	8.2	LOS A	0.0	0.0	0.00	1.07	49.0
8	T	736	0.0	0.192	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
9	R	23	0.0	0.071	18.9	LOS B	0.2	1.5	0.78	0.93	39.4
Approach		773	0.0	0.192	0.7	NA	0.2	1.5	0.02	0.05	58.8
West: Fennell Street											
10	L	60	0.0	3.572	2394.1	LOS F	120.2	841.4	1.00	4.60	0.9
11	T	43	0.0	3.572	2394.9	LOS F	120.2	841.4	1.00	3.97	0.9
12	R	142	0.0	3.572	2394.2	LOS F	120.2	841.4	1.00	3.89	0.9
Approach		245	0.0	3.572	2394.3	LOS F	120.2	841.4	1.00	4.08	0.9
All Vehicles		2504	0.0	3.572	236.6	NA	120.2	841.4	0.12	0.53	8.0

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: Marsden St- Market St

14S1091200 PNUR
 Post Development Thursday PM
 Marsden St/ Market St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Marsden Street											
2	T	558	0.0	0.495	3.3	LOS A	6.4	45.1	0.59	0.00	49.0
3	R	268	0.0	0.495	11.8	LOS A	6.4	45.1	0.59	0.93	47.0
Approach		826	0.0	0.495	6.1	NA	6.4	45.1	0.59	0.30	48.4
East: Market Street											
4	L	274	0.0	0.254	10.1	LOS A	1.2	8.7	0.47	0.70	46.9
6	R	9	0.0	0.254	10.3	LOS A	1.2	8.7	0.47	0.86	46.8
Approach		283	0.0	0.254	10.1	LOS A	1.2	8.7	0.47	0.71	46.9
North: Marsden Street											
7	L	28	0.0	0.198	8.2	LOS A	0.0	0.0	0.00	1.04	49.0
8	T	357	0.0	0.198	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		385	0.0	0.198	0.6	NA	0.0	0.0	0.00	0.08	59.0
All Vehicles		1495	0.0	0.495	5.4	NA	6.4	45.1	0.41	0.32	50.4

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: Church St- Market St

14S1091200 PNUR
 Post Development Thursday PM
 Church St/ Market St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Church Street											
1	L	12	0.0	0.016	8.2	LOS A	0.0	0.0	0.00	0.88	49.0
2	T	20	0.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		32	0.0	0.016	3.0	NA	0.0	0.0	0.00	0.32	55.4
North: Church Street											
8	T	12	0.0	0.006	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
9	R	269	0.0	0.233	8.7	LOS A	0.7	5.2	0.26	0.59	47.6
Approach		281	0.0	0.233	8.4	NA	0.7	5.2	0.25	0.56	48.0
West: Market Street											
10	L	286	0.0	0.183	8.3	LOS A	0.9	6.6	0.09	0.63	48.5
12	R	4	0.0	0.183	8.6	LOS A	0.9	6.6	0.09	0.73	48.3
Approach		291	0.0	0.183	8.3	LOS A	0.9	6.6	0.09	0.63	48.5
All Vehicles		603	0.0	0.233	8.1	NA	0.9	6.6	0.16	0.58	48.6

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: Church St- Board St

14S1091200 PNUR
 Post Development Thursday PM
 Church St/ Board St/ Seville St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Church Street											
1	L	5	0.0	0.528	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
2	T	1024	0.0	0.528	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1029	0.0	0.528	0.0	NA	0.0	0.0	0.00	0.01	59.9
East: Seville Street											
4	L	9	0.0	0.036	20.8	LOS B	0.1	0.8	0.81	0.94	38.1
Approach		9	0.0	0.036	20.8	LOS B	0.1	0.8	0.81	0.94	38.1
North: Church Street											
7	L	14	0.0	0.370	8.2	LOS A	0.0	0.0	0.00	1.08	49.0
8	T	1429	0.0	0.370	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		1443	0.0	0.370	0.1	NA	0.0	0.0	0.00	0.01	59.9
West: Board Street											
10	L	424	0.0	1.177	198.9	LOS F	50.1	350.6	1.00	3.96	9.2
Approach		424	0.0	1.177	198.9	LOS F	50.1	350.6	1.00	3.96	9.2
All Vehicles		2906	0.0	1.177	29.2	NA	50.1	350.6	0.15	0.59	33.3

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.

Processed: Wednesday, 1 October 2014 11:28:44 AM

SIDRA INTERSECTION 5.1.13.2093

Project: P:\14S1000-1099\14S1091200 PNUR - Rezoning\Modelling\SIDRA\14S1091200sid_SIDRA Future

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MOVEMENT SUMMARY

Site: O'Connell St- Barney St

14S1091200 PNUR
 Post Development Thursday PM
 O'Connell St/ Barney St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	148	0.0	0.620	9.0	LOS A	7.1	49.4	0.40	0.47	48.0
2	T	471	0.0	0.620	0.8	LOS A	7.1	49.4	0.40	0.00	51.6
3	R	402	0.0	0.620	9.3	LOS A	7.1	49.4	0.40	0.71	48.0
Approach		1021	0.0	0.620	5.3	NA	7.1	49.4	0.40	0.35	49.6
East: Barney Street											
4	L	409	0.0	1.015	65.7	LOS E	49.8	348.7	1.00	1.17	21.4
5	T	191	0.0	1.015	64.4	LOS E	49.8	348.7	1.00	1.46	21.4
6	R	99	0.0	1.015	65.9	LOS E	49.8	348.7	1.00	1.46	21.3
Approach		699	0.0	1.015	65.4	LOS E	49.8	348.7	1.00	1.29	21.4
North: O'Connell Street											
7	L	16	0.0	0.040	11.8	LOS A	0.4	2.8	0.68	0.30	47.5
8	T	58	0.0	0.040	3.6	LOS A	0.4	2.8	0.68	0.00	48.1
9	R	1	0.0	0.040	12.0	LOS A	0.4	2.8	0.68	0.91	47.5
Approach		75	0.0	0.040	5.4	NA	0.4	2.8	0.68	0.08	48.0
West: New Road From Development											
10	L	14	0.0	0.369	25.2	LOS B	1.4	9.5	0.83	0.99	35.4
11	T	24	0.0	0.369	24.0	LOS B	1.4	9.5	0.83	0.99	35.7
12	R	54	0.0	0.369	25.5	LOS B	1.4	9.5	0.83	1.01	35.3
Approach		92	0.0	0.369	25.0	LOS B	1.4	9.5	0.83	1.00	35.4
All Vehicles		1886	0.0	1.015	28.5	NA	49.8	348.7	0.66	0.72	32.9

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: O'Connell St- Dunlop St

14S1091200 PNUR
 Post Development Thursday PM
 O'Connell St/ Dunlop St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street South											
1	L	55	0.0	0.542	13.6	LOS A	9.9	69.6	0.88	0.13	47.0
2	T	964	0.0	0.542	5.4	LOS A	9.9	69.6	0.88	0.00	46.1
3	R	20	0.0	0.542	13.9	LOS A	9.9	69.6	0.88	1.12	47.0
Approach		1039	0.0	0.542	6.0	NA	9.9	69.6	0.88	0.03	46.2
East: Dunlop Street											
4	L	9	0.0	0.170	23.7	LOS B	0.5	3.6	0.82	0.85	36.6
5	T	26	0.0	0.170	22.4	LOS B	0.5	3.6	0.82	0.93	36.9
6	R	2	0.0	0.170	23.9	LOS B	0.5	3.6	0.82	0.96	36.5
Approach		38	0.0	0.170	22.8	LOS B	0.5	3.6	0.82	0.91	36.8
North: O'Connell Street											
7	L	4	0.0	0.304	19.3	LOS B	5.8	40.4	1.00	0.00	42.3
8	T	497	0.0	0.304	11.1	LOS A	5.8	40.4	1.00	0.00	42.5
9	R	23	0.0	0.304	19.6	LOS B	5.8	40.4	1.00	1.08	42.4
Approach		524	0.0	0.304	11.6	NA	5.8	40.4	1.00	0.05	42.5
West: Dunlop Street											
10	L	65	0.0	0.560	29.9	LOS C	2.4	16.6	0.90	1.10	32.9
11	T	16	0.0	0.560	28.6	LOS C	2.4	16.6	0.90	1.07	33.1
12	R	58	0.0	0.560	30.1	LOS C	2.4	16.6	0.90	1.09	32.8
Approach		139	0.0	0.560	29.8	LOS C	2.4	16.6	0.90	1.09	32.9
All Vehicles		1740	0.0	0.560	10.0	NA	9.9	69.6	0.91	0.14	43.4

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: New St- Factory St

14S1091200 PNUR
 Post Development Thursday PM
 New St/ Factory St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: New Street											
2	T	76	0.0	0.069	0.1	LOS A	0.4	2.5	0.14	0.00	56.9
3	R	53	0.0	0.069	8.6	LOS A	0.4	2.5	0.14	0.83	48.5
Approach		128	0.0	0.069	3.6	NA	0.4	2.5	0.14	0.34	53.1
East: Factory Street											
4	L	85	0.0	0.119	8.6	LOS A	0.5	3.4	0.12	0.61	48.4
6	R	75	0.0	0.119	8.8	LOS A	0.5	3.4	0.12	0.70	48.2
Approach		160	0.0	0.119	8.7	LOS A	0.5	3.4	0.12	0.65	48.3
North: New Street											
7	L	32	0.0	0.027	8.2	LOS A	0.0	0.0	0.00	0.78	49.0
8	T	19	0.0	0.027	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		51	0.0	0.027	5.1	NA	0.0	0.0	0.00	0.49	52.6
All Vehicles		339	0.0	0.119	6.2	NA	0.5	3.4	0.11	0.51	50.7

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: O'Connell St- Factory St

14S1091200 PNUR
 Post Development Thursday PM
 O'Connell St/ Factory St
 Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	56	0.0	0.549	14.7	LOS B	10.9	76.0	1.00	0.00	46.5
2	T	1011	0.0	0.549	6.5	LOS A	10.9	76.0	1.00	0.00	44.8
3	R	1	0.0	0.549	14.9	LOS B	10.9	76.0	1.00	1.15	46.6
Approach		1067	0.0	0.549	6.9	NA	10.9	76.0	1.00	0.00	44.9
East: Factory Street											
4	L	28	0.0	0.603	35.7	LOS C	2.1	15.0	0.90	1.16	31.0
5	T	102	0.0	0.603	35.3	LOS C	2.1	15.0	0.90	1.10	31.1
6	R	1	0.0	0.603	35.5	LOS C	2.1	15.0	0.90	1.11	31.1
Approach		132	0.0	0.603	35.4	LOS C	2.1	15.0	0.90	1.12	31.1
North: O'Connell Street											
7	L	87	0.0	0.295	20.2	LOS B	6.9	48.3	1.00	0.00	41.2
8	T	480	0.0	0.295	12.0	LOS A	6.9	48.3	1.00	0.00	41.4
9	R	1	0.0	0.295	20.5	LOS B	6.9	48.3	1.00	1.07	41.3
Approach		568	0.0	0.295	13.3	NA	6.9	48.3	1.00	0.00	41.4
West: Factory Street											
10	L	38	0.0	0.375	29.5	LOS C	1.4	9.6	0.88	1.06	34.0
11	T	44	0.0	0.375	29.1	LOS C	1.4	9.6	0.88	1.05	34.2
12	R	6	0.0	0.375	29.3	LOS C	1.4	9.6	0.88	1.06	34.1
Approach		88	0.0	0.375	29.3	LOS C	1.4	9.6	0.88	1.06	34.1
All Vehicles		1856	0.0	0.603	12.0	NA	10.9	76.0	0.99	0.13	41.9

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: O'Connell St- Board St

14S1091200 PNUR
 Post Development Thursday PM
 O'Connell St/ Board St/ Property Access
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
2	T	4	0.0	0.228	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	420	0.0	0.228	8.4	LOS A	0.0	0.0	0.00	0.70	48.6
Approach		424	0.0	0.228	8.4	NA	0.0	0.0	0.00	0.70	48.7
East: Board Street											
4	L	21	0.0	0.012	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
6	R	1	0.0	0.012	8.4	LOS A	0.0	0.0	0.00	0.73	48.6
Approach		22	0.0	0.012	8.2	NA	0.0	0.0	0.00	0.67	48.9
North: Access Road											
7	L	6	0.0	0.010	8.9	LOS A	0.0	0.3	0.07	0.69	48.2
8	T	6	0.0	0.010	7.7	LOS A	0.0	0.3	0.07	0.55	49.5
Approach		13	0.0	0.010	8.3	LOS A	0.0	0.3	0.07	0.62	48.8
All Vehicles		459	0.0	0.228	8.4	NA	0.0	0.3	0.00	0.69	48.7

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: New St- Greenup Drive

14S1091200 PNUR
 Post Development Thursday PM
 Fleet St/ Greenup Drive
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: New Street											
1	L	89	0.0	0.090	8.5	LOS A	0.5	3.4	0.28	0.54	48.1
2	T	53	0.0	0.090	0.3	LOS A	0.5	3.4	0.28	0.00	53.6
3	R	25	0.0	0.090	8.7	LOS A	0.5	3.4	0.28	0.70	48.1
Approach		167	0.0	0.090	5.9	NA	0.5	3.4	0.28	0.39	49.7
East: Albert Street											
4	L	99	0.0	0.151	9.0	LOS A	0.6	4.3	0.22	0.63	48.0
5	T	67	0.0	0.151	7.7	LOS A	0.6	4.3	0.22	0.60	49.0
6	R	17	0.0	0.151	9.2	LOS A	0.6	4.3	0.22	0.75	47.9
Approach		183	0.0	0.151	8.5	LOS A	0.6	4.3	0.22	0.63	48.4
North: New Street											
7	L	6	0.0	0.057	8.6	LOS A	0.3	2.2	0.26	0.71	48.9
8	T	88	0.0	0.057	0.4	LOS A	0.3	2.2	0.26	0.00	54.8
9	R	14	0.0	0.057	8.9	LOS A	0.3	2.2	0.26	0.90	48.7
Approach		108	0.0	0.057	2.0	NA	0.3	2.2	0.26	0.15	53.6
West: Greenup Drive											
10	L	86	0.0	0.298	10.0	LOS A	1.2	8.7	0.32	0.60	47.0
11	T	24	0.0	0.298	8.8	LOS A	1.2	8.7	0.32	0.60	48.0
12	R	164	0.0	0.298	10.3	LOS A	1.2	8.7	0.32	0.78	46.8
Approach		275	0.0	0.298	10.1	LOS A	1.2	8.7	0.32	0.71	46.9
All Vehicles		734	0.0	0.298	7.5	NA	1.2	8.7	0.28	0.53	48.8

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: O'Connell St- Fennell St

14S1091200 PNUR
 Future Saturday
 O'Connell St/ Fennell St
 Stop (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: O'Connell Street												
1	L	188	0.0	0.217	8.2	LOS A	0.0	0.0	0.00	0.84	49.0	
2	T	648	0.0	0.217	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
3	R	11	0.0	0.018	12.7	LOS A	0.1	0.4	0.59	0.76	44.4	
Approach		847	0.0	0.217	2.0	NA	0.1	0.4	0.01	0.20	56.9	
East: Fennell Street												
4	L	13	0.0	0.185	40.8	LOS C	0.6	3.9	0.87	1.01	28.9	
5	T	7	0.0	0.185	41.6	LOS C	0.6	3.9	0.87	1.01	28.8	
6	R	2	0.0	0.185	40.9	LOS C	0.6	3.9	0.87	1.00	28.9	
Approach		22	0.0	0.185	41.1	LOS C	0.6	3.9	0.87	1.01	28.9	
North: O'Connell Street												
7	L	9	0.0	0.225	8.2	LOS A	0.0	0.0	0.00	1.08	49.0	
8	T	868	0.0	0.225	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
9	R	23	0.0	0.034	12.0	LOS A	0.1	0.8	0.53	0.75	45.0	
Approach		901	0.0	0.225	0.4	NA	0.1	0.8	0.01	0.03	59.4	
West: Fennell Street												
10	L	27	0.0	3.127	2004.1	LOS F	101.0	707.2	1.00	4.86	1.1	
11	T	16	0.0	3.127	2004.9	LOS F	101.0	707.2	1.00	3.72	1.1	
12	R	172	0.0	3.127	2004.2	LOS F	101.0	707.2	1.00	3.64	1.1	
Approach		215	0.0	3.127	2004.2	LOS F	101.0	707.2	1.00	3.80	1.1	
All Vehicles		1985	0.0	3.127	218.3	NA	101.0	707.2	0.13	0.52	8.6	

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: Marsden St- Market St

14S1091200 PNUR
 Future Saturday
 Marsden St/ Market St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Marsden Street											
2	T	492	0.0	0.396	1.8	LOS A	3.3	23.3	0.47	0.00	51.0
3	R	198	0.0	0.396	10.3	LOS A	3.3	23.3	0.47	0.85	48.3
Approach		689	0.0	0.396	4.3	NA	3.3	23.3	0.47	0.24	50.2
East: Market Street											
4	L	357	0.0	0.295	9.6	LOS A	1.6	10.9	0.44	0.68	47.1
6	R	7	0.0	0.295	9.9	LOS A	1.6	10.9	0.44	0.84	47.2
Approach		364	0.0	0.295	9.6	LOS A	1.6	10.9	0.44	0.68	47.1
North: Marsden Street											
7	L	33	0.0	0.164	8.2	LOS A	0.0	0.0	0.00	1.02	49.0
8	T	285	0.0	0.164	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		318	0.0	0.164	0.8	NA	0.0	0.0	0.00	0.10	58.6
All Vehicles		1372	0.0	0.396	4.9	NA	3.3	23.3	0.35	0.33	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: Church St- Market St

14S1091200 PNUR
 Future Saturday
 Church St/ Market St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Church Street											
1	L	4	0.0	0.005	8.2	LOS A	0.0	0.0	0.00	0.84	49.0
2	T	5	0.0	0.005	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		9	0.0	0.005	3.6	NA	0.0	0.0	0.00	0.38	54.5
North: Church Street											
8	T	26	0.0	0.013	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
9	R	354	0.0	0.303	8.9	LOS A	1.0	7.1	0.57	0.40	46.5
Approach		380	0.0	0.303	8.2	NA	1.0	7.1	0.53	0.37	47.2
West: Market Street											
10	L	220	0.0	0.142	8.3	LOS A	0.7	4.9	0.03	0.65	48.8
12	R	5	0.0	0.142	8.5	LOS A	0.7	4.9	0.03	0.73	48.5
Approach		225	0.0	0.142	8.3	LOS A	0.7	4.9	0.03	0.65	48.8
All Vehicles		615	0.0	0.303	8.2	NA	1.0	7.1	0.34	0.47	47.9

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: Church St- Board St

14S1091200 PNUR
 Future Saturday
 Church St/ Board St/ Seville St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: Church Street												
1	L	18	0.0	0.328	8.2	LOS A	0.0	0.0	0.00	1.07	49.0	
2	T	621	0.0	0.328	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		639	0.0	0.328	0.2	NA	0.0	0.0	0.00	0.03	59.6	
East: Seville Street												
4	L	25	0.0	0.113	23.6	LOS B	0.4	2.5	0.85	0.95	36.4	
Approach		25	0.0	0.113	23.6	LOS B	0.4	2.5	0.85	0.95	36.4	
North: Church Street												
7	L	32	0.0	0.396	8.2	LOS A	0.0	0.0	0.00	1.06	49.0	
8	T	1509	0.0	0.396	0.0	LOS A	0.0	0.0	0.00	0.00	60.0	
Approach		1541	0.0	0.396	0.2	NA	0.0	0.0	0.00	0.02	59.7	
West: Board Street												
10	L	395	0.0	0.568	15.4	LOS B	4.2	29.2	0.70	1.06	42.1	
Approach		395	0.0	0.568	15.4	LOS B	4.2	29.2	0.70	1.06	42.1	
All Vehicles		2600	0.0	0.568	2.7	NA	4.2	29.2	0.12	0.19	55.8	

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: O'Connell St- Barney St

14S1091200 PNUR
 Future Saturday
 O'Connell St/ Barney St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: O'Connell Street												
1	L	94	0.0	0.334	8.8	LOS A	2.3	16.4	0.32	0.58	48.5	
2	T	343	0.0	0.334	0.6	LOS A	2.3	16.4	0.32	0.00	53.4	
3	R	139	0.0	0.334	9.1	LOS A	2.3	16.4	0.32	0.81	48.4	
Approach		576	0.0	0.334	4.0	NA	2.3	16.4	0.32	0.29	51.3	
East: Barney Street												
4	L	505	0.0	1.051	90.6	LOS F	61.4	429.7	1.00	1.80	17.2	
5	T	113	0.0	1.051	89.4	LOS F	61.4	429.7	1.00	1.84	17.2	
6	R	92	0.0	1.051	90.9	LOS F	61.4	429.7	1.00	1.84	17.1	
Approach		709	0.0	1.051	90.5	LOS F	61.4	429.7	1.00	1.81	17.2	
North: O'Connell Street												
7	L	9	0.0	0.059	10.3	LOS A	0.5	3.4	0.55	0.46	49.0	
8	T	102	0.0	0.059	2.2	LOS A	0.5	3.4	0.55	0.00	50.4	
9	R	1	0.0	0.059	10.6	LOS A	0.5	3.4	0.55	0.93	48.9	
Approach		113	0.0	0.059	2.9	NA	0.5	3.4	0.55	0.05	50.3	
West: New Road From Development												
10	L	34	0.0	1.083	172.4	LOS F	18.4	129.0	1.00	2.74	10.4	
11	T	9	0.0	1.083	171.2	LOS F	18.4	129.0	1.00	2.42	10.4	
12	R	136	0.0	1.083	172.7	LOS F	18.4	129.0	1.00	2.16	10.4	
Approach		179	0.0	1.083	172.6	LOS F	18.4	129.0	1.00	2.28	10.4	
All Vehicles		1577	0.0	1.083	62.0	NA	61.4	429.7	0.72	1.18	21.9	

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: O'Connell St- Dunlop St

14S1091200 PNUR
 Future Saturday
 O'Connell St/ Dunlop St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street South											
1	L	31	0.0	0.316	14.0	LOS A	4.1	29.0	0.83	0.18	46.4
2	T	552	0.0	0.316	5.8	LOS A	4.1	29.0	0.83	0.00	46.7
3	R	13	0.0	0.316	14.3	LOS A	4.1	29.0	0.83	1.08	46.4
Approach		595	0.0	0.316	6.4	NA	4.1	29.0	0.83	0.03	46.7
East: Dunlop Street											
4	L	9	0.0	0.071	17.5	LOS B	0.2	1.6	0.75	0.88	40.7
5	T	14	0.0	0.071	16.3	LOS B	0.2	1.6	0.75	0.89	41.2
6	R	1	0.0	0.071	17.8	LOS B	0.2	1.6	0.75	0.94	40.7
Approach		24	0.0	0.071	16.8	LOS B	0.2	1.6	0.75	0.89	41.0
North: O'Connell Street											
7	L	5	0.0	0.392	12.8	LOS A	5.8	40.8	0.79	0.22	47.6
8	T	728	0.0	0.392	4.6	LOS A	5.8	40.8	0.79	0.00	47.3
9	R	16	0.0	0.392	13.1	LOS A	5.8	40.8	0.79	1.07	47.7
Approach		749	0.0	0.392	4.9	NA	5.8	40.8	0.79	0.02	47.3
West: Dunlop Street											
10	L	20	0.0	0.280	21.0	LOS B	1.0	6.9	0.79	0.93	38.1
11	T	34	0.0	0.280	19.7	LOS B	1.0	6.9	0.79	0.94	38.5
12	R	29	0.0	0.280	21.2	LOS B	1.0	6.9	0.79	0.98	38.1
Approach		83	0.0	0.280	20.6	LOS B	1.0	6.9	0.79	0.95	38.2
All Vehicles		1452	0.0	0.392	6.6	NA	5.8	40.8	0.81	0.09	46.3

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: New St- Factory St

14S1091200 PNUR
 Future Saturday
 New St/ Factory St
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: New Street											
2	T	25	0.0	0.045	0.2	LOS A	0.2	1.5	0.17	0.00	55.9
3	R	55	0.0	0.045	8.7	LOS A	0.2	1.5	0.17	0.72	48.2
Approach		80	0.0	0.045	6.0	NA	0.2	1.5	0.17	0.49	50.4
East: Factory Street											
4	L	55	0.0	0.075	8.5	LOS A	0.3	2.1	0.14	0.61	48.3
6	R	48	0.0	0.075	8.7	LOS A	0.3	2.1	0.14	0.69	48.1
Approach		103	0.0	0.075	8.6	LOS A	0.3	2.1	0.14	0.64	48.2
North: New Street											
7	L	59	0.0	0.040	8.2	LOS A	0.0	0.0	0.00	0.73	49.0
8	T	17	0.0	0.040	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		76	0.0	0.040	6.4	NA	0.0	0.0	0.00	0.57	51.0
All Vehicles		259	0.0	0.075	7.1	NA	0.3	2.1	0.11	0.57	49.7

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: O'Connell St- Factory St

14S1091200 PNUR
 Future Saturday
 O'Connell St/ Factory St
 Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	42	0.0	0.325	17.1	LOS B	5.8	40.7	0.93	0.07	43.9
2	T	586	0.0	0.325	8.9	LOS A	5.8	40.7	0.93	0.00	44.6
3	R	1	0.0	0.325	17.3	LOS B	5.8	40.7	0.93	1.07	44.0
Approach		629	0.0	0.325	9.5	NA	5.8	40.7	0.93	0.01	44.6
East: Factory Street											
4	L	41	0.0	0.739	62.8	LOS E	3.1	21.9	0.94	1.23	22.4
5	T	63	0.0	0.739	62.4	LOS E	3.1	21.9	0.94	1.18	22.4
6	R	1	0.0	0.739	62.6	LOS E	3.1	21.9	0.94	1.18	22.4
Approach		105	0.0	0.739	62.6	LOS E	3.1	21.9	0.94	1.20	22.4
North: O'Connell Street											
7	L	165	0.0	0.400	15.0	LOS B	8.0	55.8	0.99	0.01	45.4
8	T	604	0.0	0.400	6.8	LOS A	8.0	55.8	0.99	0.00	44.1
9	R	1	0.0	0.400	15.3	LOS B	8.0	55.8	0.99	1.09	45.5
Approach		771	0.0	0.400	8.6	NA	8.0	55.8	0.99	0.00	44.4
West: Factory Street											
10	L	11	0.0	1.308	390.3	LOS F	23.3	163.2	1.00	2.95	5.1
11	T	92	0.0	1.308	389.9	LOS F	23.3	163.2	1.00	2.33	5.1
12	R	16	0.0	1.308	390.1	LOS F	23.3	163.2	1.00	2.35	5.1
Approach		118	0.0	1.308	389.9	LOS F	23.3	163.2	1.00	2.39	5.1
All Vehicles		1623	0.0	1.308	40.1	NA	23.3	163.2	0.97	0.25	27.5

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: O'Connell St- Board St

14S1091200 PNUR
 Future Saturday
 O'Connell St/ Board St/ Property Access
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
2	T	12	0.0	0.211	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	380	0.0	0.211	8.4	LOS A	0.0	0.0	0.00	0.71	48.6
Approach		392	0.0	0.211	8.2	NA	0.0	0.0	0.00	0.69	48.9
East: Board Street											
4	L	23	0.0	0.015	8.2	LOS A	0.0	0.0	0.00	0.66	49.0
6	R	4	0.0	0.015	8.4	LOS A	0.0	0.0	0.00	0.73	48.6
Approach		27	0.0	0.015	8.2	NA	0.0	0.0	0.00	0.67	48.9
North: Access Road											
7	L	13	0.0	0.013	9.3	LOS A	0.0	0.3	0.18	0.66	47.8
8	T	2	0.0	0.013	8.0	LOS A	0.0	0.3	0.18	0.50	49.0
Approach		15	0.0	0.013	9.1	LOS A	0.0	0.3	0.18	0.64	48.0
All Vehicles		434	0.0	0.211	8.2	NA	0.0	0.3	0.01	0.69	48.9

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: New St- Greenup Drive

14S1091200 PNUR
 Future Saturday
 New St/ Greenup Drive
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: New Street												
1	L	40	0.0	0.102	8.5	LOS A	0.5	3.8	0.22	0.62	48.4	
2	T	86	0.0	0.102	0.3	LOS A	0.5	3.8	0.22	0.00	55.1	
3	R	60	0.0	0.102	8.7	LOS A	0.5	3.8	0.22	0.77	48.3	
Approach		186	0.0	0.102	4.8	NA	0.5	3.8	0.22	0.38	51.3	
East: Albert Street												
4	L	61	0.0	0.093	8.9	LOS A	0.4	2.5	0.20	0.62	48.1	
5	T	42	0.0	0.093	7.6	LOS A	0.4	2.5	0.20	0.59	49.1	
6	R	11	0.0	0.093	9.2	LOS A	0.4	2.5	0.20	0.74	48.0	
Approach		114	0.0	0.093	8.5	LOS A	0.4	2.5	0.20	0.62	48.5	
North: New Street												
7	L	15	0.0	0.050	8.6	LOS A	0.3	1.9	0.26	0.70	48.8	
8	T	74	0.0	0.050	0.4	LOS A	0.3	1.9	0.26	0.00	54.9	
9	R	6	0.0	0.050	8.8	LOS A	0.3	1.9	0.26	0.88	48.7	
Approach		95	0.0	0.050	2.2	NA	0.3	1.9	0.26	0.17	53.4	
West: Greenup Drive												
10	L	9	0.0	0.090	9.4	LOS A	0.3	2.3	0.32	0.61	47.7	
11	T	61	0.0	0.090	8.1	LOS A	0.3	2.3	0.32	0.60	48.5	
12	R	20	0.0	0.090	9.6	LOS A	0.3	2.3	0.32	0.77	47.6	
Approach		91	0.0	0.090	8.6	LOS A	0.3	2.3	0.32	0.64	48.2	
All Vehicles		485	0.0	0.102	5.8	NA	0.5	3.8	0.24	0.44	50.4	

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.

B.3 Future Conditions with Intersection Upgrades

MOVEMENT SUMMARY

Site: O'Connell St- Fennell St - Roundabout

14S1091200 PNUR
Post Development Thursday AM
O'Connell St/ Fennell St
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	243	0.0	0.340	7.9	LOS A	2.1	14.8	0.20	0.62	48.8
2	T	643	0.0	0.340	6.8	LOS A	2.1	14.8	0.21	0.52	49.7
3	R	39	0.0	0.340	11.4	LOS A	2.1	14.6	0.21	0.80	46.2
Approach		925	0.0	0.340	7.3	LOS A	2.1	14.8	0.21	0.55	49.3
East: Fennell Street											
4	L	9	0.0	0.055	15.0	LOS B	0.3	2.0	0.82	0.87	42.7
5	T	11	0.0	0.055	14.3	LOS A	0.3	2.0	0.82	0.85	42.8
6	R	1	0.0	0.055	18.8	LOS B	0.3	2.0	0.82	0.91	40.6
Approach		21	0.0	0.055	14.8	LOS B	0.3	2.0	0.82	0.86	42.6
North: O'Connell Street											
7	L	27	0.0	0.657	10.4	LOS A	6.2	43.4	0.62	0.75	47.2
8	T	1332	0.0	0.657	9.5	LOS A	6.2	43.4	0.63	0.70	47.3
9	R	61	0.0	0.657	14.2	LOS A	6.2	43.2	0.63	0.84	44.2
Approach		1420	0.0	0.657	9.7	LOS A	6.2	43.4	0.63	0.71	47.1
West: Fennell Street											
10	L	19	0.0	0.330	10.9	LOS A	2.0	14.1	0.67	0.77	45.7
11	T	13	0.0	0.330	10.2	LOS A	2.0	14.1	0.67	0.74	46.0
12	R	226	0.0	0.330	14.7	LOS B	2.0	14.1	0.67	0.83	43.2
Approach		258	0.0	0.330	14.2	LOS A	2.0	14.1	0.67	0.82	43.5
All Vehicles		2624	0.0	0.657	9.4	LOS A	6.2	43.4	0.48	0.67	47.4

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

Processed: Wednesday, 1 October 2014 10:32:15 AM

SIDRA INTERSECTION 5.1.13.2093

Project: P:\14S1000-1099\14S1091200 PNUR - Rezoning\Modelling\SIDRA\14S1091200sid_SIDRA Future

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MOVEMENT SUMMARY

Site: O'Connell St- Barney St - Roundabout

14S1091200 PNUR
Post Development Thursday AM
O'Connell St/ Barney St
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	37	0.0	0.394	8.4	LOS A	3.3	23.3	0.43	0.60	47.8
2	T	318	0.0	0.394	7.6	LOS A	3.3	23.3	0.43	0.55	48.0
3	R	121	0.0	0.394	11.7	LOS A	3.3	23.3	0.43	0.72	45.7
Approach		476	0.0	0.394	8.7	LOS A	3.3	23.3	0.43	0.60	47.4
East: Barney Street											
4	L	852	0.0	1.065	88.6	LOS F	66.1	462.4	1.00	2.42	17.4
5	T	65	0.0	1.065	87.9	LOS F	66.1	462.4	1.00	2.42	17.4
6	R	48	0.0	1.065	91.9	LOS F	66.1	462.4	1.00	2.42	17.3
Approach		965	0.0	1.065	88.7	LOS F	66.1	462.4	1.00	2.42	17.4
North: O'Connell Street											
7	L	6	0.0	0.181	10.2	LOS A	1.1	7.9	0.61	0.72	47.2
8	T	147	0.0	0.181	9.4	LOS A	1.1	7.9	0.61	0.68	47.3
9	R	1	0.0	0.181	13.5	LOS A	1.1	7.9	0.61	0.81	44.7
Approach		155	0.0	0.181	9.5	LOS A	1.1	7.9	0.61	0.68	47.2
West: New Road From Development											
10	L	55	0.0	0.381	11.9	LOS A	2.7	19.0	0.76	0.80	44.8
11	T	23	0.0	0.381	11.1	LOS A	2.7	19.0	0.76	0.78	45.1
12	R	217	0.0	0.381	15.2	LOS B	2.7	19.0	0.76	0.84	42.7
Approach		295	0.0	0.381	14.3	LOS A	2.7	19.0	0.76	0.83	43.2
All Vehicles		1891	0.0	1.065	50.5	LOS D	66.1	462.4	0.79	1.57	25.0

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: O'Connell St- Barney St - Signals

14S1091200 PNUR
 Post Development Thursday AM
 O'Connell St/ Barney St
 Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	37	0.0	0.512	27.5	LOS B	9.7	67.7	0.84	0.88	36.0
2	T	318	0.0	0.512	19.3	LOS B	9.7	67.7	0.84	0.72	36.9
3	R	121	0.0	0.338	30.2	LOS C	3.4	23.6	0.89	0.78	32.7
Approach		476	0.0	0.512	22.7	LOS B	9.7	67.7	0.85	0.75	35.7
East: Barney Street											
4	L	852	0.0	0.713	17.1	LOS B	19.2	134.4	0.71	0.84	40.8
5	T	65	0.0	0.247	11.4	LOS A	2.2	15.5	0.60	0.48	42.6
6	R	48	0.0	0.247	19.8	LOS B	2.2	15.5	0.60	0.85	39.8
Approach		965	0.0	0.713	16.8	LOS B	19.2	134.4	0.70	0.82	40.9
North: O'Connell Street											
7	L	6	0.0	0.436	36.4	LOS C	4.9	34.1	0.93	0.82	31.6
8	T	147	0.0	0.436	28.2	LOS B	4.9	34.1	0.93	0.75	32.0
9	R	1	0.0	0.436	36.5	LOS C	4.9	34.1	0.93	0.82	31.6
Approach		155	0.0	0.436	28.6	LOS C	4.9	34.1	0.93	0.75	32.0
West: New Road From Development											
10	L	55	0.0	0.088	19.1	LOS B	1.5	10.2	0.58	0.77	39.8
11	T	23	0.0	0.088	10.9	LOS A	1.5	10.2	0.58	0.46	42.6
12	R	217	0.0	0.839	45.0	LOS D	9.1	63.9	0.98	1.03	26.7
Approach		295	0.0	0.839	37.5	LOS C	9.1	63.9	0.88	0.94	29.4
All Vehicles		1891	0.0	0.839	22.5	LOS B	19.2	134.4	0.78	0.81	36.5

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	13.8	LOS B	0.1	0.1	0.63	0.63
P3	Across E approach	53	29.3	LOS C	0.1	0.1	0.91	0.91
P5	Across N approach	53	12.6	LOS B	0.1	0.1	0.60	0.60
P7	Across W approach	53	29.3	LOS C	0.1	0.1	0.91	0.91
All Pedestrians		212	21.2	LOS C			0.76	0.76

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
 Pedestrian movement LOS values are based on average delay per pedestrian movement.
 Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: O'Connell St- Dunlop St - Roundabout

14S1091200 PNUR
Post Development Thursday AM
O'Connell St/ Dunlop St
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street South											
1	L	41	0.0	0.410	8.4	LOS A	3.3	22.9	0.40	0.62	48.1
2	T	452	0.0	0.410	7.6	LOS A	3.3	22.9	0.40	0.55	48.4
3	R	9	0.0	0.410	11.7	LOS A	3.3	22.9	0.40	0.75	46.0
Approach		502	0.0	0.410	7.8	LOS A	3.3	22.9	0.40	0.56	48.3
East: Dunlop Street											
4	L	17	0.0	0.189	27.3	LOS B	1.4	9.7	1.00	0.97	34.3
5	T	19	0.0	0.189	26.6	LOS B	1.4	9.7	1.00	0.97	34.4
6	R	1	0.0	0.189	30.6	LOS C	1.4	9.7	1.00	0.97	33.3
Approach		37	0.0	0.189	27.0	LOS B	1.4	9.7	1.00	0.97	34.3
North: O'Connell Street											
7	L	3	0.0	0.941	12.7	LOS A	28.2	197.4	1.00	0.62	45.0
8	T	1122	0.0	0.941	11.9	LOS A	28.2	197.4	1.00	0.62	45.0
9	R	84	0.0	0.941	16.0	LOS B	28.2	197.4	1.00	0.62	42.9
Approach		1209	0.0	0.941	12.2	LOS A	28.2	197.4	1.00	0.62	44.9
West: Dunlop Street											
10	L	15	0.0	0.150	11.0	LOS A	1.0	6.8	0.65	0.72	46.0
11	T	49	0.0	0.150	10.2	LOS A	1.0	6.8	0.65	0.68	46.3
12	R	56	0.0	0.150	14.3	LOS A	1.0	6.8	0.65	0.78	43.7
Approach		120	0.0	0.150	12.2	LOS A	1.0	6.8	0.65	0.73	45.0
All Vehicles		1868	0.0	0.941	11.3	LOS A	28.2	197.4	0.82	0.62	45.5

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

Processed: Wednesday, 1 October 2014 10:20:37 AM

SIDRA INTERSECTION 5.1.13.2093

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MOVEMENT SUMMARY

Site: O'Connell St- Factory St - Roundabout

14S1091200 PNUR
Post Development Thursday AM
O'Connell St/ Factory St
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	29	0.0	0.357	7.7	LOS A	2.8	19.7	0.19	0.61	48.9
2	T	487	0.0	0.357	6.9	LOS A	2.8	19.7	0.19	0.53	49.5
3	R	1	0.0	0.357	11.0	LOS A	2.8	19.7	0.19	0.80	46.3
Approach		518	0.0	0.357	7.0	LOS A	2.8	19.7	0.19	0.53	49.5
East: Factory Street											
4	L	42	0.0	0.204	16.5	LOS B	1.2	8.6	0.79	0.88	41.3
5	T	31	0.0	0.204	15.8	LOS B	1.2	8.6	0.79	0.86	41.5
6	R	1	0.0	0.204	19.8	LOS B	1.2	8.6	0.79	0.92	39.6
Approach		74	0.0	0.204	16.3	LOS B	1.2	8.6	0.79	0.87	41.4
North: O'Connell Street											
7	L	262	0.0	1.022	51.1	LOS D	65.1	455.6	1.00	1.37	25.0
8	T	923	0.0	1.022	50.3	LOS D	65.1	455.6	1.00	1.37	25.1
9	R	1	0.0	1.022	54.4	LOS D	65.1	455.6	1.00	1.37	24.6
Approach		1186	0.0	1.022	50.5	LOS D	65.1	455.6	1.00	1.37	25.1
West: Factory Street											
10	L	14	0.0	0.229	11.6	LOS A	1.6	11.5	0.69	0.73	45.8
11	T	149	0.0	0.229	10.8	LOS A	1.6	11.5	0.69	0.70	46.1
12	R	25	0.0	0.229	14.9	LOS B	1.6	11.5	0.69	0.80	43.5
Approach		188	0.0	0.229	11.4	LOS A	1.6	11.5	0.69	0.72	45.7
All Vehicles		1966	0.0	1.022	34.0	LOS C	65.1	455.6	0.75	1.07	30.9

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: O'Connell St- Factory St - Signals

14S1091200 PNUR
 Post Development Thursday AM
 O'Connell St/ Factory St
 Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	29	0.0	0.373	13.0	LOS A	7.8	54.6	0.42	0.98	45.8
2	T	487	0.0	0.373	4.8	LOS A	7.8	54.6	0.42	0.37	51.0
Approach		517	0.0	0.373	5.3	LOS A	7.8	54.6	0.42	0.41	50.7
East: Factory Street											
4	L	42	0.0	0.279	42.8	LOS D	2.6	18.5	0.94	0.77	28.1
5	T	31	0.0	0.279	34.7	LOS C	2.6	18.5	0.94	0.72	28.4
Approach		73	0.0	0.279	39.4	LOS C	2.6	18.5	0.94	0.75	28.2
North: O'Connell Street											
7	L	262	0.0	0.863	23.0	LOS B	39.9	279.6	0.81	0.99	38.5
8	T	923	0.0	0.863	14.8	LOS B	39.9	279.6	0.81	0.82	39.8
Approach		1185	0.0	0.863	16.6	LOS B	39.9	279.6	0.81	0.86	39.5
West: Factory Street											
10	L	14	0.0	0.771	48.8	LOS D	7.9	55.2	1.00	0.92	26.6
11	T	149	0.0	0.771	40.6	LOS C	7.9	55.2	1.00	0.92	26.7
12	R	25	0.0	0.771	49.1	LOS D	7.9	55.2	1.00	0.92	26.6
Approach		188	0.0	0.771	42.3	LOS C	7.9	55.2	1.00	0.92	26.7
All Vehicles		1963	0.0	0.863	16.9	LOS B	39.9	279.6	0.73	0.74	39.4

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	34.2	LOS D	0.1	0.1	0.93	0.93
P3	Across E approach	53	4.9	LOS A	0.0	0.0	0.35	0.35
P5	Across N approach	53	34.2	LOS D	0.1	0.1	0.93	0.93
P7	Across W approach	53	4.9	LOS A	0.0	0.0	0.35	0.35
All Pedestrians		212	19.6	LOS B			0.64	0.64

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
 Pedestrian movement LOS values are based on average delay per pedestrian movement.
 Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: O'Connell St- Fennell St - Roundabout

14S1091200 PNUR
Post Development Thursday PM
O'Connell St/ Fennell St
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	277	0.0	0.482	7.7	LOS A	3.7	26.2	0.14	0.62	49.1
2	T	1152	0.0	0.482	6.6	LOS A	3.7	26.2	0.14	0.51	50.1
3	R	16	0.0	0.482	11.1	LOS A	3.7	25.7	0.14	0.83	46.3
Approach		1444	0.0	0.482	6.9	LOS A	3.7	26.2	0.14	0.53	49.9
East: Fennell Street											
4	L	35	0.0	0.067	11.1	LOS A	0.3	2.2	0.65	0.77	45.9
5	T	1	0.0	0.067	10.4	LOS A	0.3	2.2	0.65	0.74	46.1
6	R	6	0.0	0.067	14.9	LOS B	0.3	2.2	0.65	0.84	43.3
Approach		42	0.0	0.067	11.6	LOS A	0.3	2.2	0.65	0.78	45.4
North: O'Connell Street											
7	L	14	0.0	0.340	8.7	LOS A	2.1	14.4	0.41	0.68	48.2
8	T	736	0.0	0.340	7.6	LOS A	2.1	14.4	0.41	0.59	48.5
9	R	23	0.0	0.340	12.2	LOS A	2.0	14.2	0.41	0.80	45.8
Approach		773	0.0	0.340	7.8	LOS A	2.1	14.4	0.41	0.60	48.4
West: Fennell Street											
10	L	60	0.0	0.358	13.6	LOS A	2.5	17.6	0.81	0.84	43.4
11	T	43	0.0	0.358	12.8	LOS A	2.5	17.6	0.81	0.82	43.6
12	R	142	0.0	0.358	17.3	LOS B	2.5	17.6	0.81	0.88	41.3
Approach		245	0.0	0.358	15.6	LOS B	2.5	17.6	0.81	0.86	42.2
All Vehicles		2504	0.0	0.482	8.1	LOS A	3.7	26.2	0.30	0.59	48.5

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: O'Connell St- Barney St - Roundabout

14S1091200 PNUR
Post Development Thursday PM
O'Connell St/ Barney St
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	148	0.0	0.988	44.2	LOS D	49.7	348.2	1.00	1.31	27.0
2	T	471	0.0	0.988	43.5	LOS D	49.7	348.2	1.00	1.31	27.1
3	R	402	0.0	0.988	47.5	LOS D	49.7	348.2	1.00	1.31	26.5
Approach		1021	0.0	0.988	45.2	LOS D	49.7	348.2	1.00	1.31	26.8
East: Barney Street											
4	L	409	0.0	0.561	8.7	LOS A	5.1	35.6	0.38	0.61	47.9
5	T	191	0.0	0.561	7.9	LOS A	5.1	35.6	0.38	0.55	48.2
6	R	99	0.0	0.561	12.0	LOS A	5.1	35.6	0.38	0.73	45.6
Approach		699	0.0	0.561	9.0	LOS A	5.1	35.6	0.38	0.61	47.7
North: O'Connell Street											
7	L	16	0.0	0.103	10.9	LOS A	0.6	4.5	0.69	0.74	46.4
8	T	58	0.0	0.103	10.2	LOS A	0.6	4.5	0.69	0.70	46.7
9	R	1	0.0	0.103	14.3	LOS A	0.6	4.5	0.69	0.81	44.0
Approach		75	0.0	0.103	10.4	LOS A	0.6	4.5	0.69	0.71	46.6
West: New Road From Development											
10	L	14	0.0	0.258	17.7	LOS B	1.9	13.6	0.99	0.95	40.1
11	T	24	0.0	0.258	16.9	LOS B	1.9	13.6	0.99	0.95	40.2
12	R	54	0.0	0.258	21.0	LOS B	1.9	13.6	0.99	0.95	38.6
Approach		92	0.0	0.258	19.4	LOS B	1.9	13.6	0.99	0.95	39.2
All Vehicles		1886	0.0	0.988	29.1	LOS C	49.7	348.2	0.76	1.01	33.3

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

Processed: Wednesday, 1 October 2014 10:58:17 AM

SIDRA INTERSECTION 5.1.13.2093

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SIDRA
INTERSECTION

MOVEMENT SUMMARY

Site: O'Connell St- Barney St - Signals

14S1091200 PNUR
 Post Development Thursday PM
 O'Connell St/ Barney St
 Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	148	0.0	0.803	32.1	LOS C	20.8	145.9	0.95	0.97	33.3
2	T	471	0.0	0.803	23.9	LOS B	20.8	145.9	0.95	0.92	33.7
3	R	402	0.0	0.735	31.3	LOS C	12.0	84.3	0.97	0.90	32.2
Approach		1021	0.0	0.803	28.0	LOS B	20.8	145.9	0.96	0.92	33.0
East: Barney Street											
4	L	409	0.0	0.312	14.1	LOS A	6.2	43.4	0.48	0.77	43.2
5	T	191	0.0	0.637	15.1	LOS B	6.8	47.8	0.77	0.63	38.9
6	R	99	0.0	0.637	23.6	LOS B	6.8	47.8	0.77	0.87	37.7
Approach		699	0.0	0.637	15.7	LOS B	6.8	47.8	0.60	0.74	41.1
North: O'Connell Street											
7	L	16	0.0	0.197	34.8	LOS C	2.2	15.5	0.88	0.79	31.9
8	T	58	0.0	0.197	26.6	LOS B	2.2	15.5	0.88	0.68	32.5
9	R	1	0.0	0.197	34.9	LOS C	2.2	15.5	0.88	0.79	31.9
Approach		75	0.0	0.197	28.5	LOS B	2.2	15.5	0.88	0.70	32.4
West: New Road From Development											
10	L	14	0.0	0.114	36.2	LOS C	1.1	8.0	0.89	0.75	31.1
11	T	24	0.0	0.114	28.0	LOS B	1.1	8.0	0.89	0.65	31.6
12	R	54	0.0	0.250	37.8	LOS C	1.7	11.9	0.91	0.76	29.3
Approach		92	0.0	0.250	35.0	LOS C	1.7	11.9	0.90	0.73	30.1
All Vehicles		1886	0.0	0.803	23.8	LOS B	20.8	145.9	0.82	0.84	35.4

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	29.3	LOS C	0.1	0.1	0.91	0.91
P3	Across E approach	53	29.3	LOS C	0.1	0.1	0.91	0.91
P5	Across N approach	53	29.3	LOS C	0.1	0.1	0.91	0.91
P7	Across W approach	53	29.3	LOS C	0.1	0.1	0.91	0.91
All Pedestrians		212	29.3	LOS C			0.91	0.91

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
 Pedestrian movement LOS values are based on average delay per pedestrian movement.
 Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: O'Connell St- Dunlop St - Roundabout

14S1091200 PNUR
Post Development Thursday PM
O'Connell St/ Dunlop St
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street South											
1	L	55	0.0	0.719	8.3	LOS A	10.3	72.0	0.41	0.57	48.0
2	T	964	0.0	0.719	7.5	LOS A	10.3	72.0	0.41	0.51	48.3
3	R	20	0.0	0.719	11.6	LOS A	10.3	72.0	0.41	0.70	46.0
Approach		1039	0.0	0.719	7.6	LOS A	10.3	72.0	0.41	0.52	48.2
East: Dunlop Street											
4	L	9	0.0	0.054	11.6	LOS A	0.3	2.2	0.68	0.72	45.7
5	T	26	0.0	0.054	10.9	LOS A	0.3	2.2	0.68	0.69	46.0
6	R	2	0.0	0.054	14.9	LOS B	0.3	2.2	0.68	0.79	43.4
Approach		38	0.0	0.054	11.3	LOS A	0.3	2.2	0.68	0.70	45.7
North: O'Connell Street											
7	L	4	0.0	0.418	8.3	LOS A	3.7	26.1	0.42	0.60	48.0
8	T	497	0.0	0.418	7.5	LOS A	3.7	26.1	0.42	0.54	48.2
9	R	23	0.0	0.418	11.6	LOS A	3.7	26.1	0.42	0.74	46.0
Approach		524	0.0	0.418	7.7	LOS A	3.7	26.1	0.42	0.55	48.1
West: Dunlop Street											
10	L	65	0.0	0.302	19.3	LOS B	2.5	17.3	0.98	0.90	39.0
11	T	16	0.0	0.302	18.5	LOS B	2.5	17.3	0.98	0.90	39.1
12	R	58	0.0	0.302	22.6	LOS B	2.5	17.3	0.98	0.91	37.5
Approach		139	0.0	0.302	20.6	LOS B	2.5	17.3	0.98	0.90	38.4
All Vehicles		1740	0.0	0.719	8.8	LOS A	10.3	72.0	0.47	0.56	47.2

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: O'Connell St- Factory St - Roundabout

14S1091200 PNUR
Post Development Thursday PM
O'Connell St/ Factory St
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	56	0.0	0.816	9.5	LOS A	14.8	103.5	0.68	0.58	47.0
2	T	1011	0.0	0.816	8.7	LOS A	14.8	103.5	0.68	0.55	46.9
3	R	1	0.0	0.816	12.8	LOS A	14.8	103.5	0.68	0.66	45.4
Approach		1067	0.0	0.816	8.7	LOS A	14.8	103.5	0.68	0.55	46.9
East: Factory Street											
4	L	28	0.0	0.171	11.2	LOS A	0.9	6.1	0.53	0.74	46.0
5	T	102	0.0	0.171	10.5	LOS A	0.9	6.1	0.53	0.69	46.5
6	R	1	0.0	0.171	14.5	LOS B	0.9	6.1	0.53	0.85	43.6
Approach		132	0.0	0.171	10.7	LOS A	0.9	6.1	0.53	0.71	46.4
North: O'Connell Street											
7	L	87	0.0	0.413	7.9	LOS A	4.0	27.7	0.32	0.58	48.4
8	T	480	0.0	0.413	7.1	LOS A	4.0	27.7	0.32	0.52	48.8
9	R	1	0.0	0.413	11.2	LOS A	4.0	27.7	0.32	0.74	46.1
Approach		568	0.0	0.413	7.3	LOS A	4.0	27.7	0.32	0.53	48.7
West: Factory Street											
10	L	38	0.0	0.228	19.2	LOS B	1.9	13.0	1.00	0.90	39.4
11	T	44	0.0	0.228	18.4	LOS B	1.9	13.0	1.00	0.90	39.5
12	R	6	0.0	0.228	22.5	LOS B	1.9	13.0	1.00	0.90	37.9
Approach		88	0.0	0.228	19.1	LOS B	1.9	13.0	1.00	0.90	39.3
All Vehicles		1856	0.0	0.816	8.9	LOS A	14.8	103.5	0.57	0.57	47.0

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: O'Connell St- Factory St - Signals

14S1091200 PNUR
 Post Development Thursday PM
 O'Connell St/ Factory St
 Signals - Fixed Time Cycle Time = 60 seconds (Practical Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	56	0.0	0.889	29.9	LOS C	35.7	250.2	0.92	1.11	34.9
2	T	1011	0.0	0.889	21.7	LOS B	35.7	250.2	0.92	1.03	35.4
Approach		1066	0.0	0.889	22.2	LOS B	35.7	250.2	0.92	1.03	35.4
East: Factory Street											
4	L	28	0.0	0.369	32.3	LOS C	3.5	24.5	0.92	0.81	33.2
5	T	102	0.0	0.369	24.2	LOS B	3.5	24.5	0.92	0.73	33.7
Approach		131	0.0	0.369	25.9	LOS B	3.5	24.5	0.92	0.75	33.6
North: O'Connell Street											
7	L	87	0.0	0.475	14.9	LOS B	9.0	63.2	0.58	0.93	44.4
8	T	480	0.0	0.475	6.7	LOS A	9.0	63.2	0.58	0.52	47.8
Approach		567	0.0	0.475	8.0	LOS A	9.0	63.2	0.58	0.58	47.3
West: Factory Street											
10	L	38	0.0	0.268	31.9	LOS C	2.3	16.3	0.90	0.78	32.8
11	T	44	0.0	0.268	23.7	LOS B	2.3	16.3	0.90	0.70	33.4
12	R	6	0.0	0.268	32.1	LOS C	2.3	16.3	0.90	0.79	32.8
Approach		88	0.0	0.268	27.8	LOS B	2.3	16.3	0.90	0.74	33.1
All Vehicles		1853	0.0	0.889	18.4	LOS B	35.7	250.2	0.82	0.86	38.0

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
P3	Across E approach	53	6.5	LOS A	0.0	0.0	0.47	0.47
P5	Across N approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
P7	Across W approach	53	6.5	LOS A	0.0	0.0	0.47	0.47
All Pedestrians		212	15.4	LOS B			0.68	0.68

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
 Pedestrian movement LOS values are based on average delay per pedestrian movement.
 Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: O'Connell St- Fennell St - Roundabout

14S1091200 PNUR
 Future Saturday
 O'Connell St/ Fennell St
 Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	188	0.0	0.299	8.1	LOS A	1.7	11.9	0.12	0.66	48.8
2	T	648	0.0	0.299	6.9	LOS A	1.7	11.9	0.12	0.53	49.9
3	R	11	0.0	0.299	11.0	LOS A	1.7	11.8	0.12	0.84	46.3
Approach		847	0.0	0.299	7.2	LOS A	1.7	11.9	0.12	0.57	49.6
East: Fennell Street											
4	L	13	0.0	0.042	12.6	LOS A	0.2	1.4	0.69	0.79	44.6
5	T	7	0.0	0.042	11.8	LOS A	0.2	1.4	0.69	0.76	44.9
6	R	2	0.0	0.042	15.9	LOS B	0.2	1.4	0.69	0.86	42.4
Approach		22	0.0	0.042	12.6	LOS A	0.2	1.4	0.69	0.79	44.5
North: O'Connell Street											
7	L	9	0.0	0.408	9.3	LOS A	2.5	17.7	0.43	0.71	47.9
8	T	868	0.0	0.408	8.1	LOS A	2.5	17.7	0.43	0.61	48.2
9	R	23	0.0	0.408	12.2	LOS A	2.5	17.7	0.43	0.80	45.7
Approach		901	0.0	0.408	8.2	LOS A	2.5	17.7	0.43	0.62	48.1
West: Fennell Street											
10	L	27	0.0	0.285	11.2	LOS A	1.6	11.4	0.63	0.77	45.5
11	T	16	0.0	0.285	10.5	LOS A	1.6	11.4	0.63	0.74	45.8
12	R	172	0.0	0.285	14.5	LOS B	1.6	11.4	0.63	0.83	43.2
Approach		215	0.0	0.285	13.8	LOS A	1.6	11.4	0.63	0.81	43.6
All Vehicles		1985	0.0	0.408	8.4	LOS A	2.5	17.7	0.32	0.62	48.1

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 Roundabout Capacity Model: SIDRA Standard.
 SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: O'Connell St- Barney St - Roundabout

14S1091200 PNUR
Future Saturday
O'Connell St/ Barney St
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	94	0.0	0.533	9.6	LOS A	5.0	35.1	0.63	0.66	46.9
2	T	343	0.0	0.533	8.9	LOS A	5.0	35.1	0.63	0.62	46.9
3	R	139	0.0	0.533	12.9	LOS A	5.0	35.1	0.63	0.73	45.0
Approach		576	0.0	0.533	10.0	LOS A	5.0	35.1	0.63	0.65	46.4
East: Barney Street											
4	L	505	0.0	0.683	11.3	LOS A	7.2	50.2	0.58	0.72	45.7
5	T	113	0.0	0.683	10.5	LOS A	7.2	50.2	0.58	0.68	46.1
6	R	92	0.0	0.683	14.6	LOS B	7.2	50.2	0.58	0.80	43.4
Approach		709	0.0	0.683	11.6	LOS A	7.2	50.2	0.58	0.73	45.5
North: O'Connell Street											
7	L	9	0.0	0.121	9.5	LOS A	0.7	5.0	0.52	0.67	47.6
8	T	102	0.0	0.121	8.7	LOS A	0.7	5.0	0.52	0.62	47.7
9	R	1	0.0	0.121	12.8	LOS A	0.7	5.0	0.52	0.78	45.2
Approach		113	0.0	0.121	8.8	LOS A	0.7	5.0	0.52	0.63	47.7
West: New Road From Development											
10	L	34	0.0	0.258	12.3	LOS A	1.8	12.3	0.77	0.80	44.4
11	T	9	0.0	0.258	11.5	LOS A	1.8	12.3	0.77	0.78	44.7
12	R	136	0.0	0.258	15.6	LOS B	1.8	12.3	0.77	0.84	42.3
Approach		179	0.0	0.258	14.8	LOS B	1.8	12.3	0.77	0.83	42.8
All Vehicles		1577	0.0	0.683	11.2	LOS A	7.2	50.2	0.62	0.70	45.6

Level of Service (LOS) Method: Delay (RTA NSW).

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model used.

Processed: Wednesday, 1 October 2014 11:34:13 AM

SIDRA INTERSECTION 5.1.13.2093

Project: P:\14S1000-1099\14S1091200 PNUR - Rezoning\Modelling\SIDRA\14S1091200sid_SIDRA Future

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SIDRA
INTERSECTION

MOVEMENT SUMMARY

Site: O'Connell St- Barney St - Signals

14S1091200 PNUR
 Future Saturday
 O'Connell St/ Barney St
 Signals - Fixed Time Cycle Time = 60 seconds (Practical Cycle Time)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	94	0.0	0.485	20.2	LOS B	8.9	62.4	0.74	0.89	40.3
2	T	343	0.0	0.485	12.0	LOS A	8.9	62.4	0.74	0.64	42.2
3	R	139	0.0	0.249	20.8	LOS B	2.7	18.9	0.77	0.77	38.0
Approach		576	0.0	0.485	15.5	LOS B	8.9	62.4	0.74	0.71	40.8
East: Barney Street											
4	L	505	0.0	0.466	15.9	LOS B	8.5	59.6	0.61	0.80	41.7
5	T	113	0.0	0.478	16.9	LOS B	4.7	32.9	0.81	0.67	37.6
6	R	92	0.0	0.478	25.3	LOS B	4.7	32.9	0.81	0.84	36.4
Approach		709	0.0	0.478	17.3	LOS B	8.5	59.6	0.67	0.78	40.2
North: O'Connell Street											
7	L	9	0.0	0.273	30.0	LOS C	2.8	19.9	0.87	0.82	34.6
8	T	102	0.0	0.273	21.8	LOS B	2.8	19.9	0.87	0.69	35.4
9	R	1	0.0	0.273	30.1	LOS C	2.8	19.9	0.87	0.83	34.6
Approach		113	0.0	0.273	22.6	LOS B	2.8	19.9	0.87	0.70	35.3
West: New Road From Development											
10	L	34	0.0	0.069	23.0	LOS B	0.9	6.1	0.71	0.75	37.1
11	T	9	0.0	0.069	14.8	LOS B	0.9	6.1	0.71	0.53	38.8
12	R	136	0.0	0.331	22.3	LOS B	2.9	20.1	0.73	0.79	37.1
Approach		179	0.0	0.331	22.0	LOS B	2.9	20.1	0.73	0.77	37.2
All Vehicles		1577	0.0	0.485	17.5	LOS B	8.9	62.4	0.72	0.75	39.7

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	18.4	LOS B	0.1	0.1	0.78	0.78
P3	Across E approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
P5	Across N approach	53	16.9	LOS B	0.1	0.1	0.75	0.75
P7	Across W approach	53	24.3	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		212	21.0	LOS C			0.83	0.83

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
 Pedestrian movement LOS values are based on average delay per pedestrian movement.
 Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: O'Connell St- Dunlop St - Roundabout

14S1091200 PNUR
 Future Saturday
 O'Connell St/ Dunlop St
 Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street South											
1	L	31	0.0	0.403	7.7	LOS A	3.1	22.0	0.18	0.61	48.9
2	T	552	0.0	0.403	6.9	LOS A	3.1	22.0	0.18	0.53	49.6
3	R	13	0.0	0.403	11.0	LOS A	3.1	22.0	0.18	0.80	46.3
Approach		595	0.0	0.403	7.1	LOS A	3.1	22.0	0.18	0.54	49.4
East: Dunlop Street											
4	L	9	0.0	0.043	13.6	LOS A	0.3	1.8	0.77	0.75	43.8
5	T	14	0.0	0.043	12.9	LOS A	0.3	1.8	0.77	0.73	44.0
6	R	1	0.0	0.043	17.0	LOS B	0.3	1.8	0.77	0.80	41.8
Approach		24	0.0	0.043	13.3	LOS A	0.3	1.8	0.77	0.74	43.8
North: O'Connell Street											
7	L	5	0.0	0.560	8.3	LOS A	6.0	42.2	0.44	0.59	47.9
8	T	728	0.0	0.560	7.5	LOS A	6.0	42.2	0.44	0.53	48.1
9	R	16	0.0	0.560	11.6	LOS A	6.0	42.2	0.44	0.72	46.0
Approach		749	0.0	0.560	7.6	LOS A	6.0	42.2	0.44	0.54	48.1
West: Dunlop Street											
10	L	20	0.0	0.109	11.8	LOS A	0.7	4.9	0.68	0.72	45.2
11	T	34	0.0	0.109	11.1	LOS A	0.7	4.9	0.68	0.69	45.5
12	R	29	0.0	0.109	15.1	LOS B	0.7	4.9	0.68	0.78	43.0
Approach		83	0.0	0.109	12.7	LOS A	0.7	4.9	0.68	0.73	44.5
All Vehicles		1452	0.0	0.560	7.8	LOS A	6.0	42.2	0.35	0.55	48.3

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 Roundabout Capacity Model: SIDRA Standard.
 SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: O'Connell St- Factory St - Signals

14S1091200 PNUR
 Future Saturday
 O'Connell St/ Factory St
 Signals - Fixed Time Cycle Time = 65 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	42	0.0	0.500	14.6	LOS B	10.4	72.9	0.56	0.96	44.7
2	T	586	0.0	0.500	6.5	LOS A	10.4	72.9	0.56	0.50	48.5
Approach		628	0.0	0.500	7.0	LOS A	10.4	72.9	0.56	0.53	48.2
East: Factory Street											
4	L	41	0.0	0.322	34.8	LOS C	3.0	21.2	0.92	0.79	31.6
5	T	63	0.0	0.322	26.7	LOS B	3.0	21.2	0.92	0.72	32.1
Approach		104	0.0	0.322	29.9	LOS C	3.0	21.2	0.92	0.75	31.9
North: O'Connell Street											
7	L	165	0.0	0.617	15.5	LOS B	14.4	100.6	0.64	0.92	43.9
8	T	604	0.0	0.617	7.3	LOS A	14.4	100.6	0.64	0.58	46.8
Approach		769	0.0	0.617	9.0	LOS A	14.4	100.6	0.64	0.65	46.2
West: Factory Street											
10	L	11	0.0	0.395	35.4	LOS C	3.5	24.5	0.93	0.80	31.7
11	T	92	0.0	0.395	27.2	LOS B	3.5	24.5	0.93	0.74	32.1
12	R	16	0.0	0.395	35.6	LOS C	3.5	24.5	0.93	0.81	31.7
Approach		118	0.0	0.395	29.1	LOS C	3.5	24.5	0.93	0.75	32.0
All Vehicles		1620	0.0	0.617	11.1	LOS A	14.4	100.6	0.65	0.62	44.2

Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	26.8	LOS C	0.1	0.1	0.91	0.91
P3	Across E approach	53	6.0	LOS A	0.0	0.0	0.43	0.43
P5	Across N approach	53	26.8	LOS C	0.1	0.1	0.91	0.91
P7	Across W approach	53	6.0	LOS A	0.0	0.0	0.43	0.43
All Pedestrians		212	16.4	LOS B			0.67	0.67

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
 Pedestrian movement LOS values are based on average delay per pedestrian movement.
 Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: O'Connell St- Factory St - Roundabout

14S1091200 PNUR
 Future Saturday
 O'Connell St/ Factory St
 Roundabout

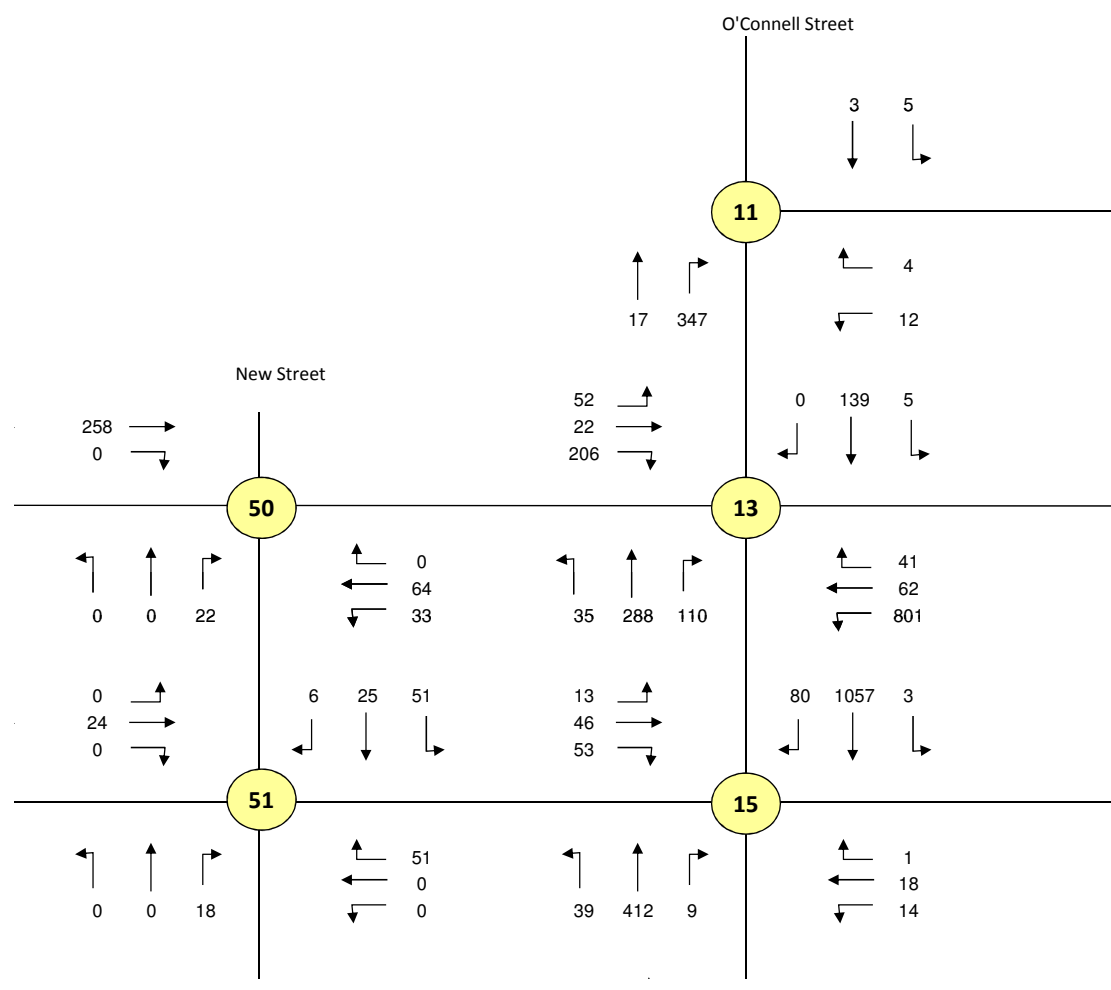
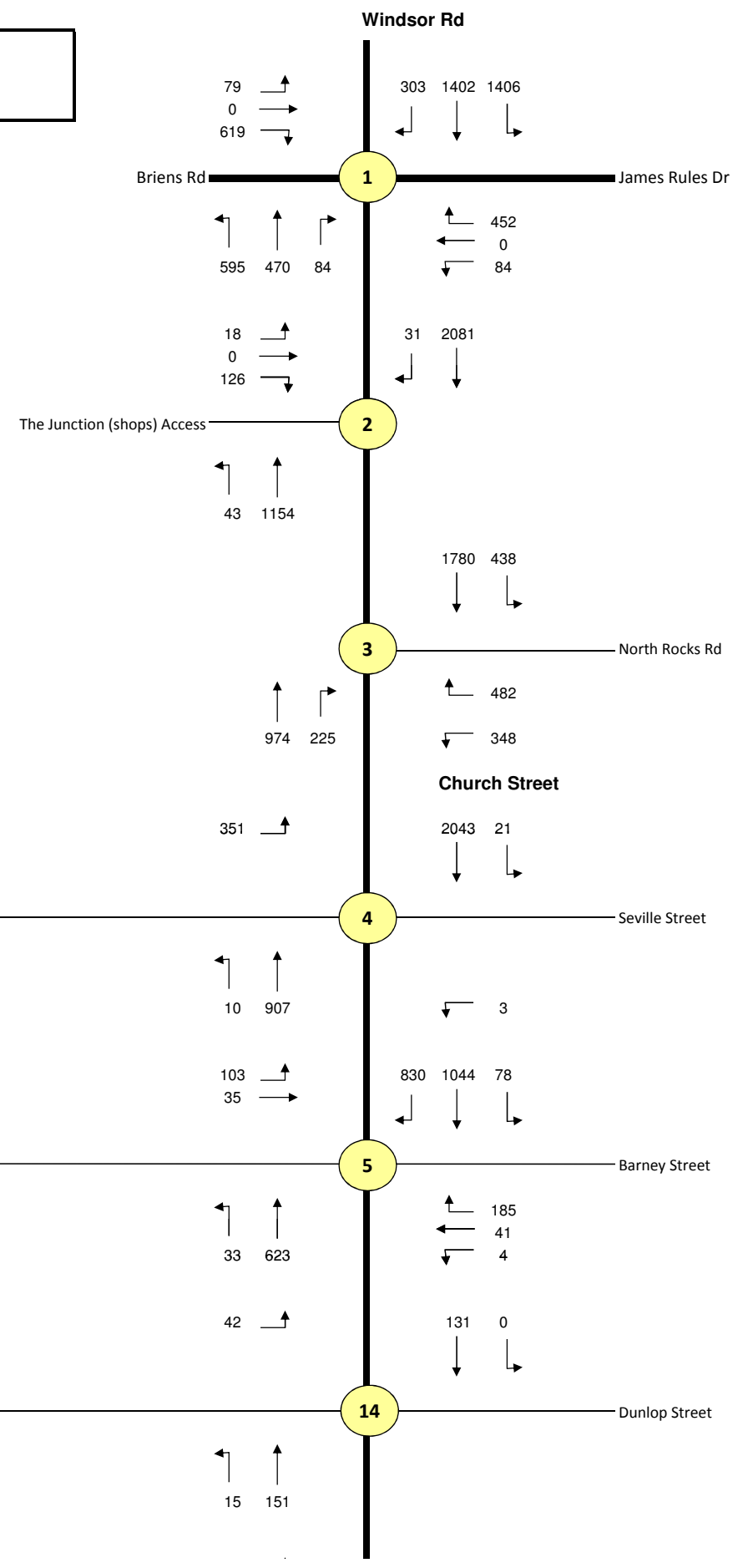
Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: O'Connell Street											
1	L	42	0.0	0.464	8.1	LOS A	4.1	28.8	0.30	0.60	48.5
2	T	586	0.0	0.464	7.3	LOS A	4.1	28.8	0.30	0.53	48.9
3	R	1	0.0	0.464	11.4	LOS A	4.1	28.8	0.30	0.76	46.1
Approach		629	0.0	0.464	7.4	LOS A	4.1	28.8	0.30	0.53	48.9
East: Factory Street											
4	L	41	0.0	0.163	12.4	LOS A	0.9	6.1	0.60	0.78	44.9
5	T	63	0.0	0.163	11.7	LOS A	0.9	6.1	0.60	0.74	45.2
6	R	1	0.0	0.163	15.7	LOS B	0.9	6.1	0.60	0.86	42.6
Approach		105	0.0	0.163	12.0	LOS A	0.9	6.1	0.60	0.75	45.1
North: O'Connell Street											
7	L	165	0.0	0.614	8.8	LOS A	7.0	49.2	0.58	0.60	47.3
8	T	604	0.0	0.614	8.0	LOS A	7.0	49.2	0.58	0.56	47.3
9	R	1	0.0	0.614	12.1	LOS A	7.0	49.2	0.58	0.70	45.7
Approach		771	0.0	0.614	8.2	LOS A	7.0	49.2	0.58	0.57	47.3
West: Factory Street											
10	L	11	0.0	0.160	12.3	LOS A	1.1	7.9	0.73	0.74	45.1
11	T	92	0.0	0.160	11.5	LOS A	1.1	7.9	0.73	0.71	45.3
12	R	16	0.0	0.160	15.6	LOS B	1.1	7.9	0.73	0.80	42.9
Approach		118	0.0	0.160	12.2	LOS A	1.1	7.9	0.73	0.73	44.9
All Vehicles		1623	0.0	0.614	8.4	LOS A	7.0	49.2	0.48	0.58	47.6

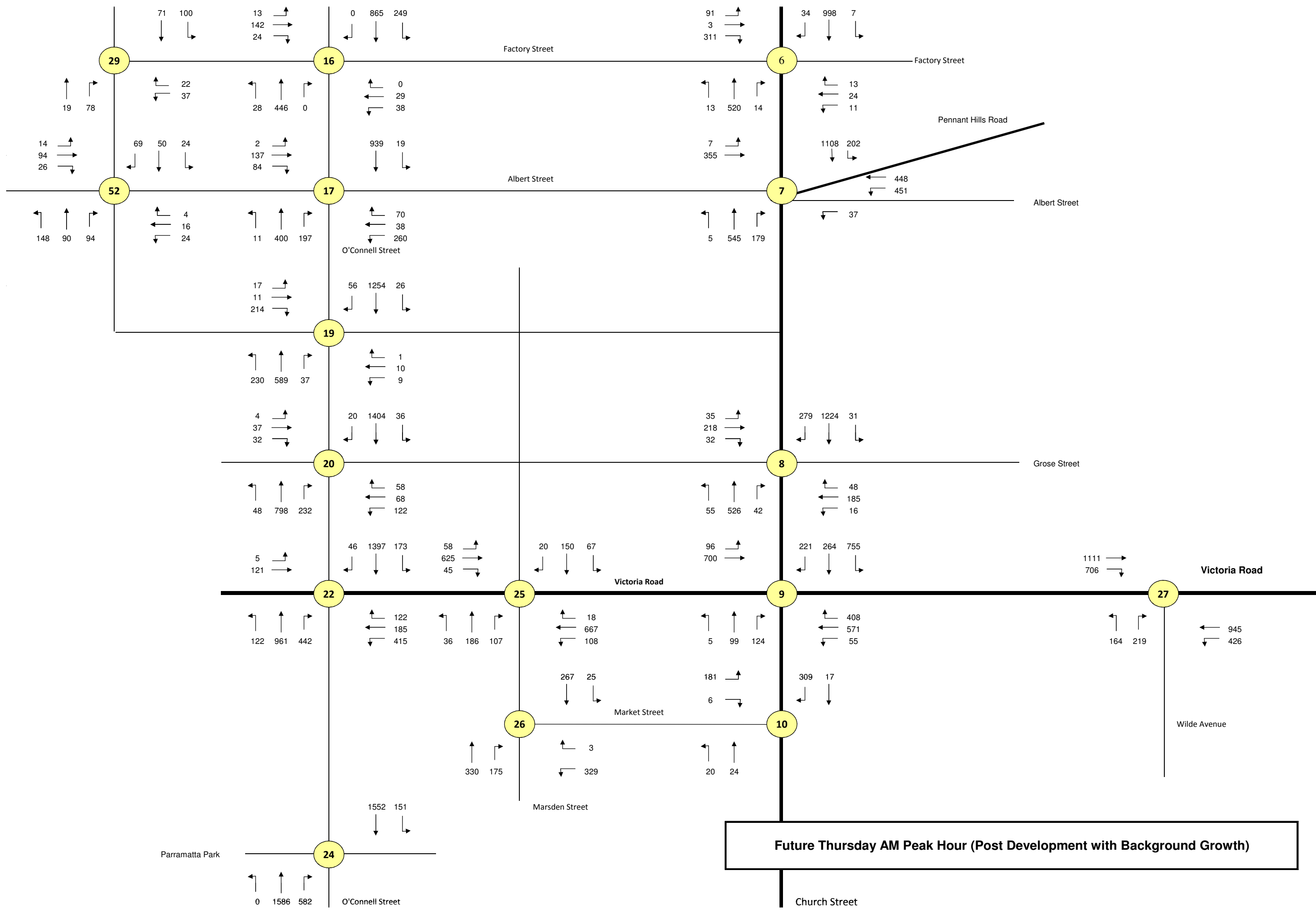
Level of Service (LOS) Method: Delay (RTA NSW).
 Vehicle movement LOS values are based on average delay per movement
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 Roundabout Capacity Model: SIDRA Standard.
 SIDRA Standard Delay Model used.

Appendix C

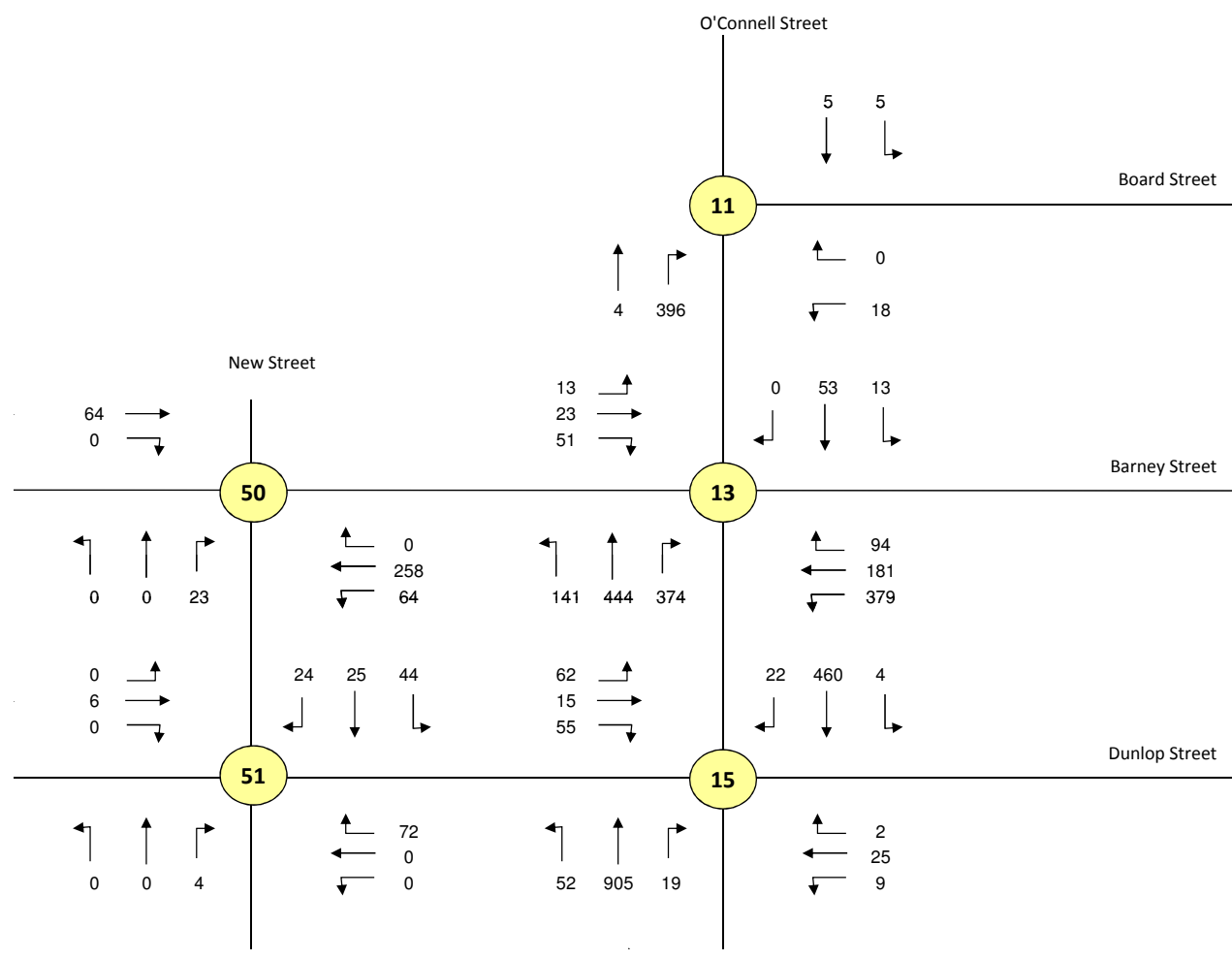
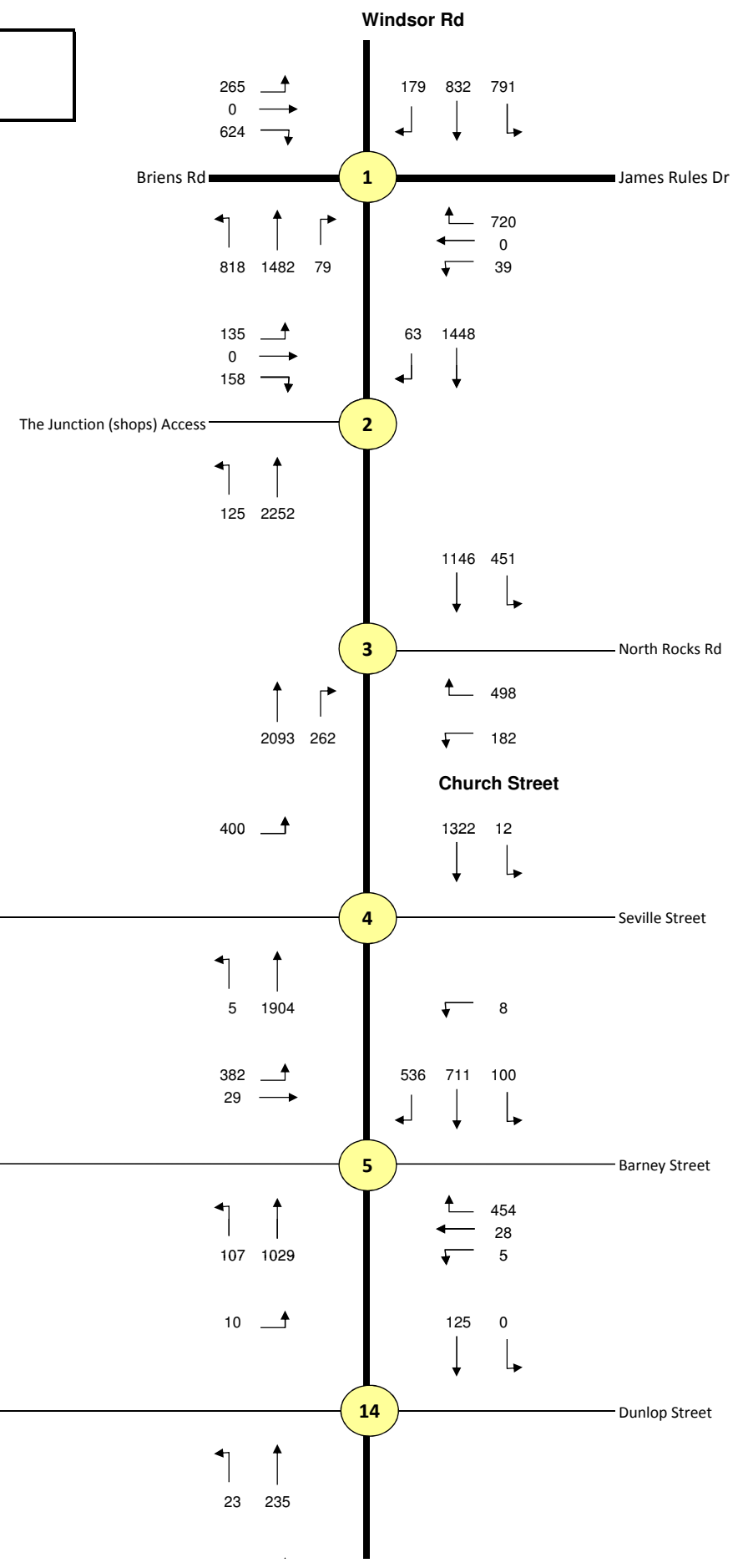
Post Development Intersection Turning Movement Diagrams

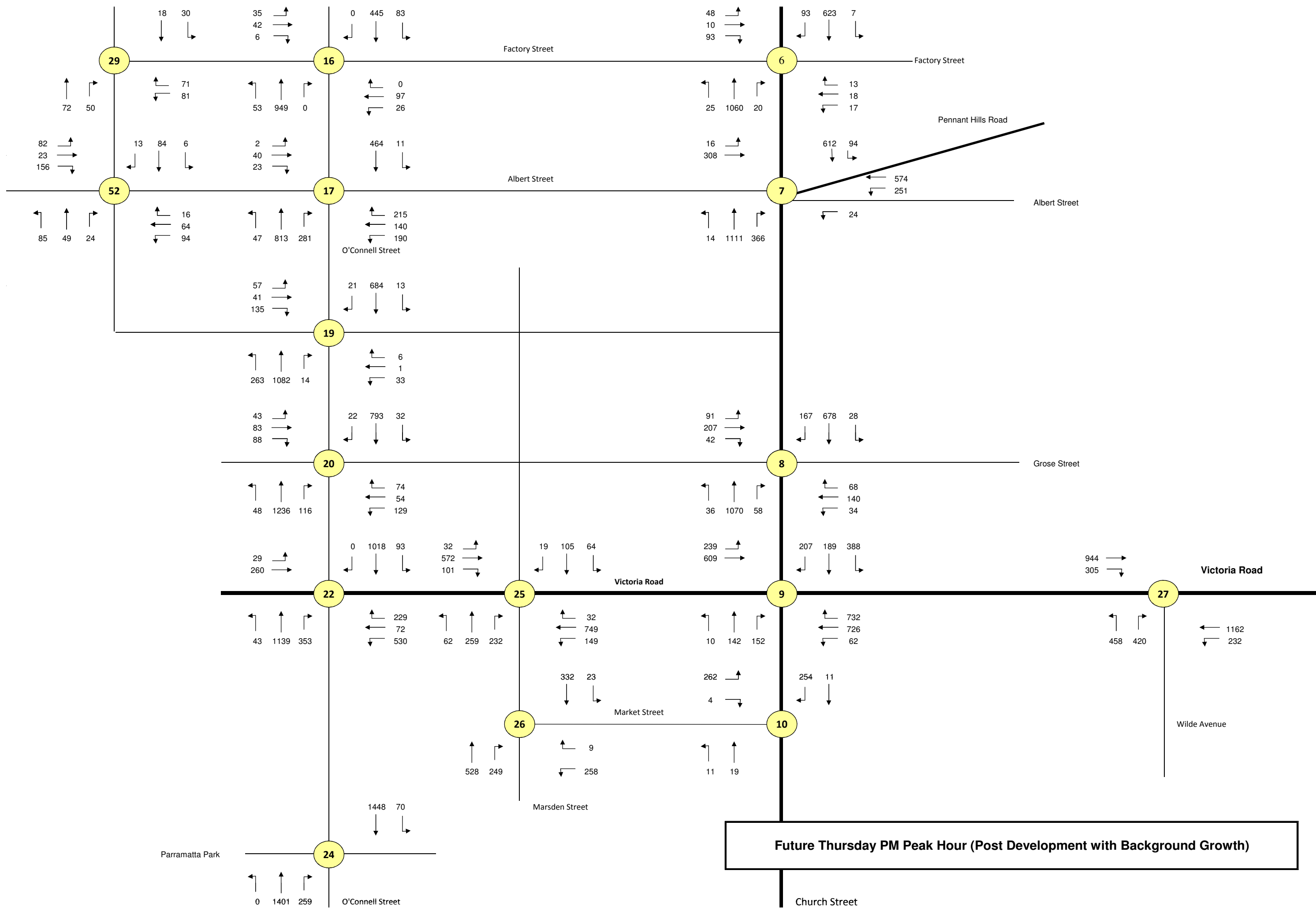
Future Thursday AM Peak Hour (Post Development with Background Growth)





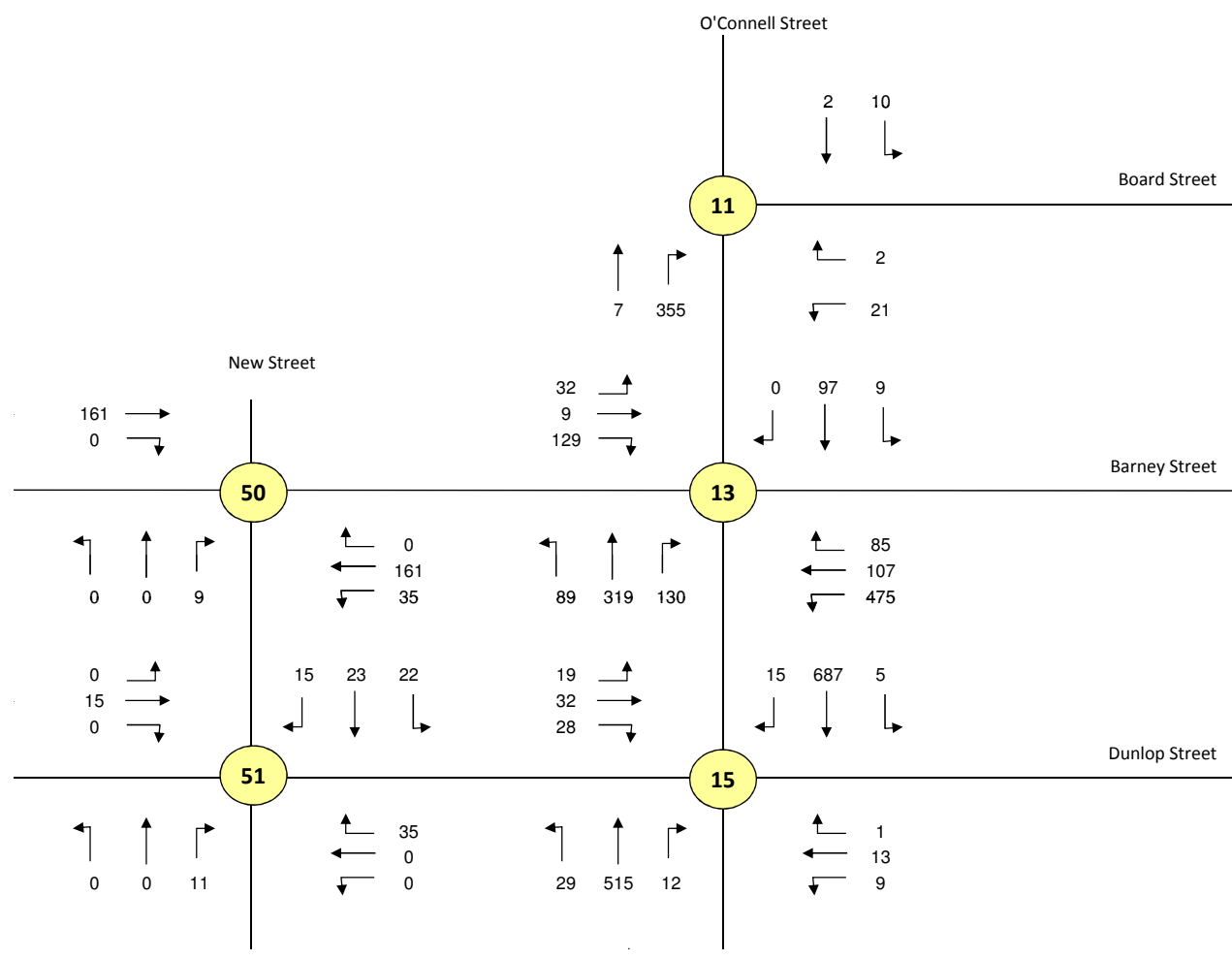
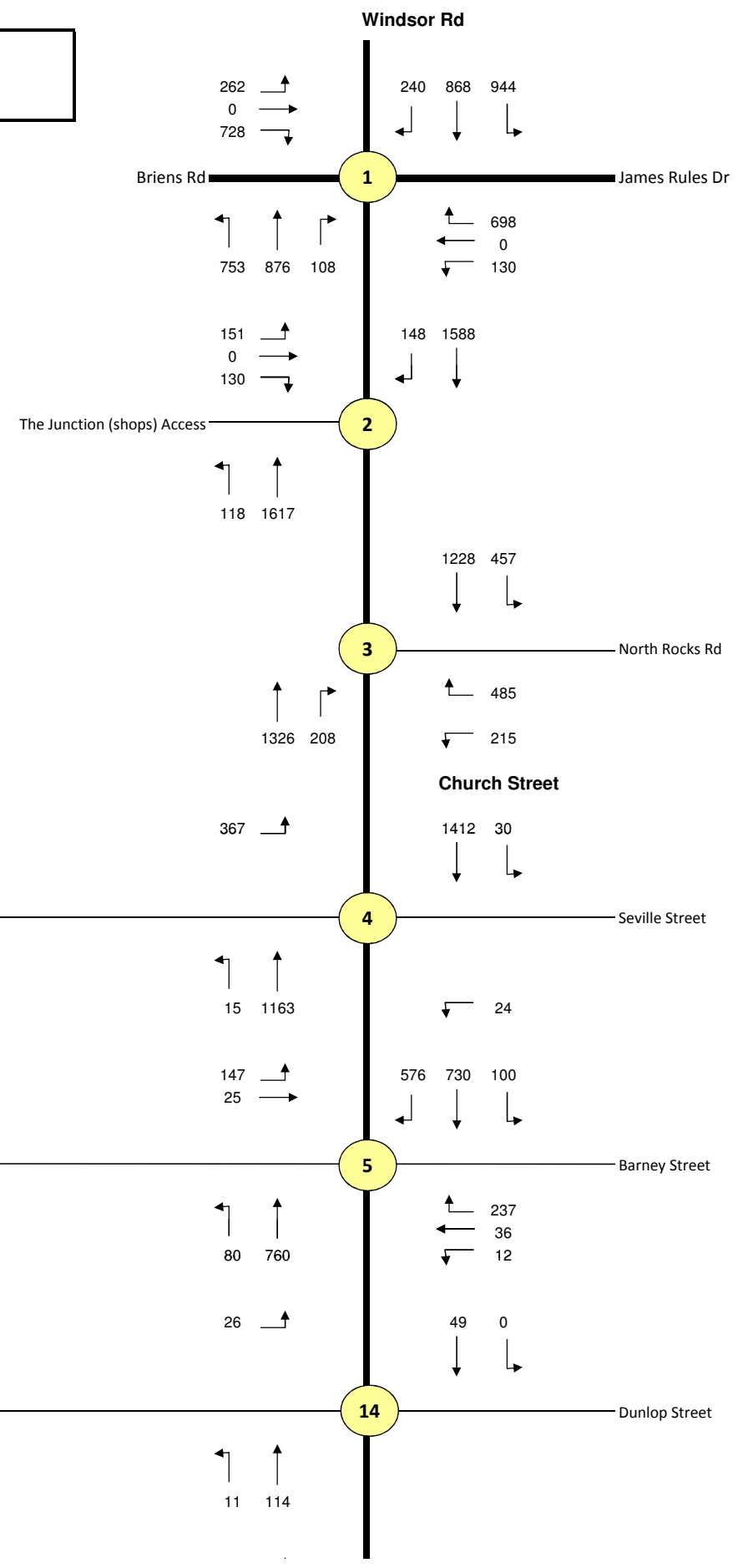
Future Thursday PM Peak Hour (Post Development with Background Growth)

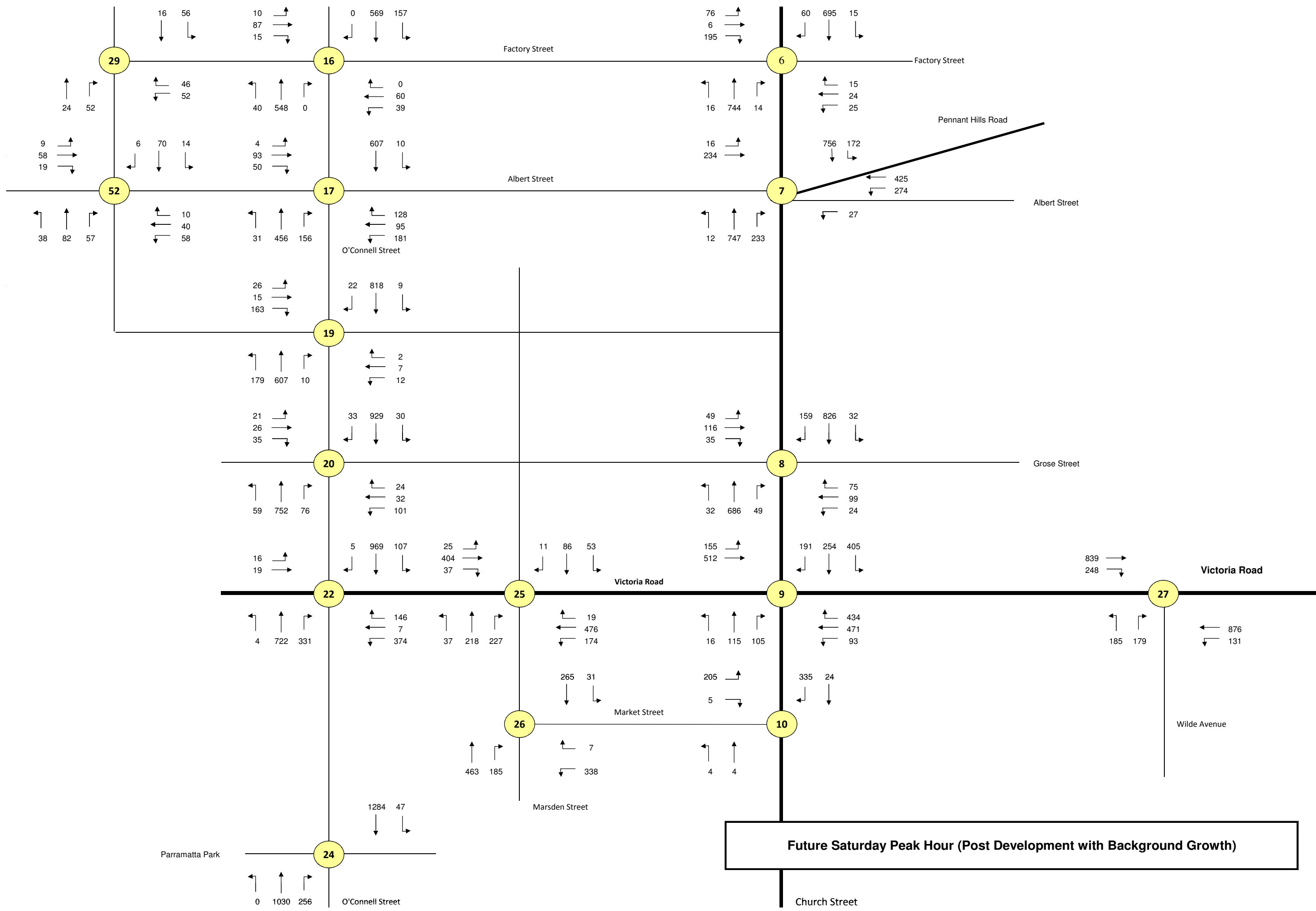




Future Thursday PM Peak Hour (Post Development with Background Growth)

Future Saturday Peak Hour (Post Development with Background Growth)





Appendix D

Linsig Modelling Process

D.1 Modelling Process

The LinSig models were built with the aims of representing the existing traffic conditions and forming the basis for the future development and options testing. These models were calibrated using RMS provided and site-measured data to ensure that any proposed scenario can be fully compared to a reliable baseline. On-site observations were also undertaken in order to get better understanding of the network operation in the study area.

D.1.1 Software

The LinSig models were built using LinSig version 3.2.

LinSig is a computer software package for the assessment and design of traffic signal intersections either individually or as a network of multiple intersections. It is generally used to construct a model of the intersection or network which can then be used to assess different designs and methods of operation. It can also be used to optimise traffic signal timings and offsets for individual intersections or at network level on the basis of traffic delay or Practical Reserve Capacity (PRC).

LinSig is best suited to the assessment of smaller networks; where the modelled intersections are operate in the same SCATS sub-system with similar cycle timing. For a larger corridor it can be split into separate LinSig models to remain appropriate for use. The corridor splitting is normally aligned with SCATS sub-systems and therefore does not compromise the evaluation procedure.

D.1.2 Model Extents

The modelled intersections are shown in Figure D- 1.

Existing intersection operations in PNUR was modelled using a combination of LinSig 3.2 and SIDRA Intersection 5.1. The breakup of the existing study area intersections was selected using existing SCATS linking data as well as consideration of the traffic streams and implication of the traffic queue on the road corridors. Other signalised/ priority controlled intersections which not covered in the LinSig models were then modelled with SIDRA intersection and assessed individually.

Figure D- 1: Model Coverage

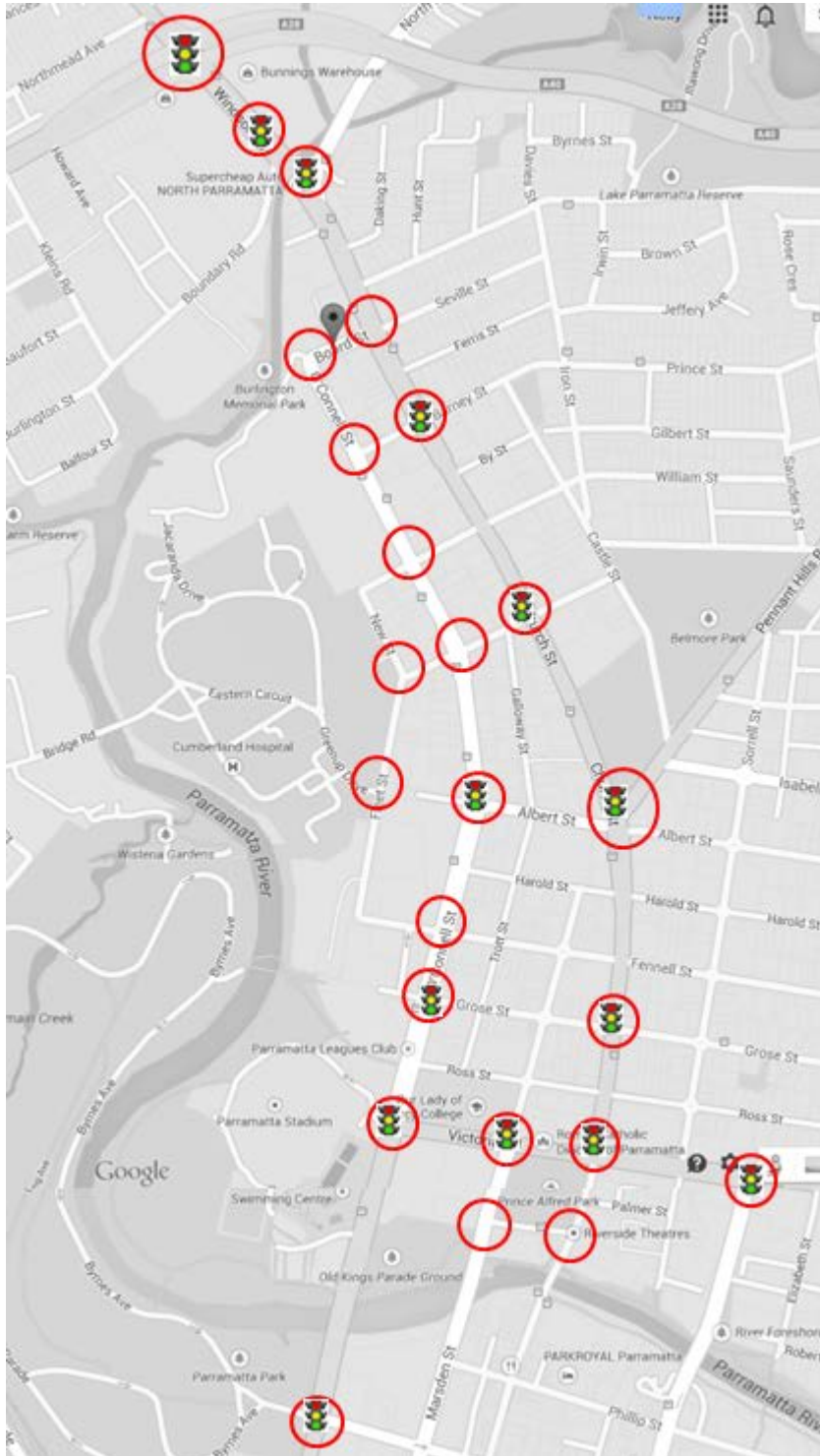


Figure D- 2: Model Screenshot – Part 1. Parramatta North Modelling – Church Street North

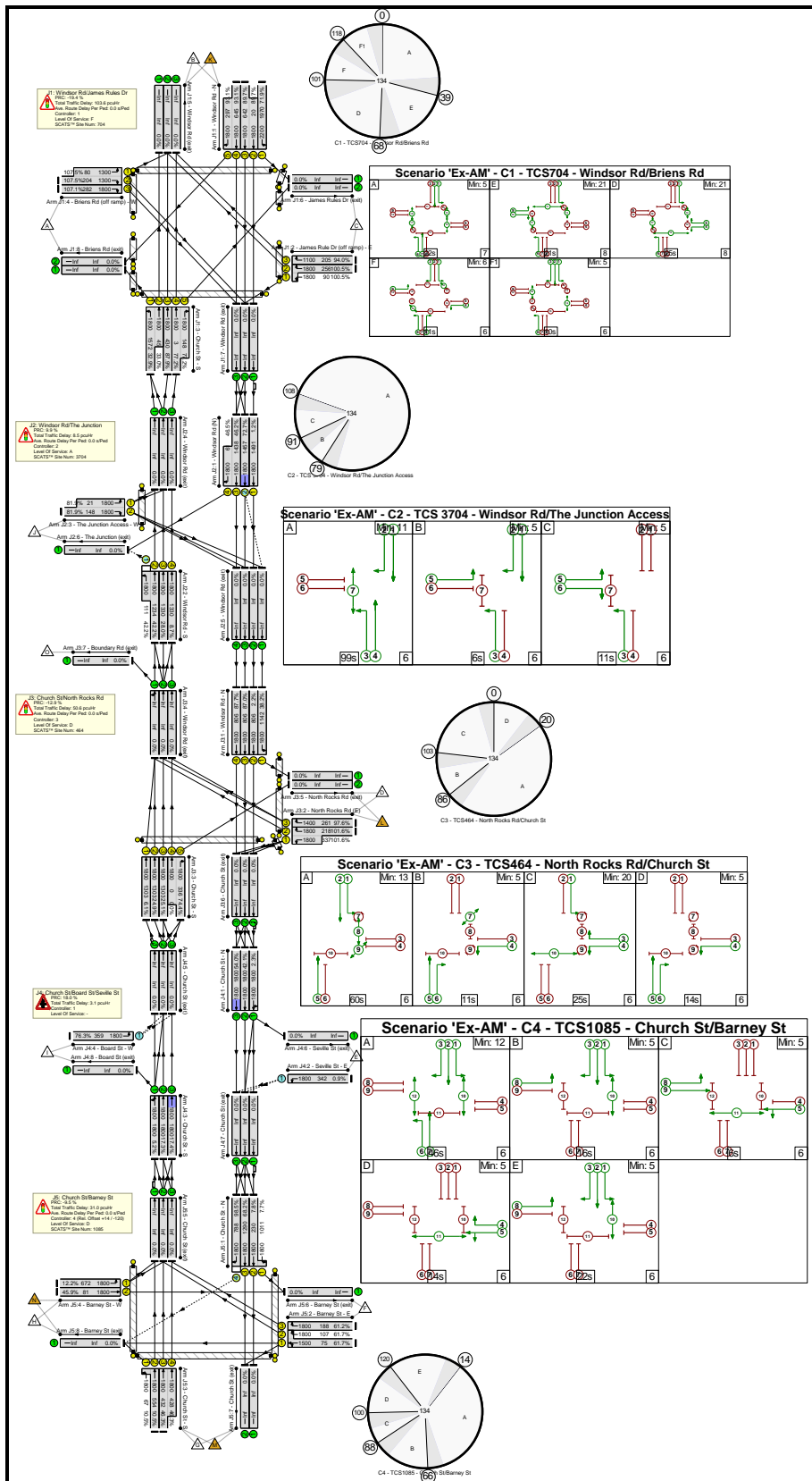


Figure D- 3: Model Screenshot – Part 2. Parramatta North - Pennant Hills Road

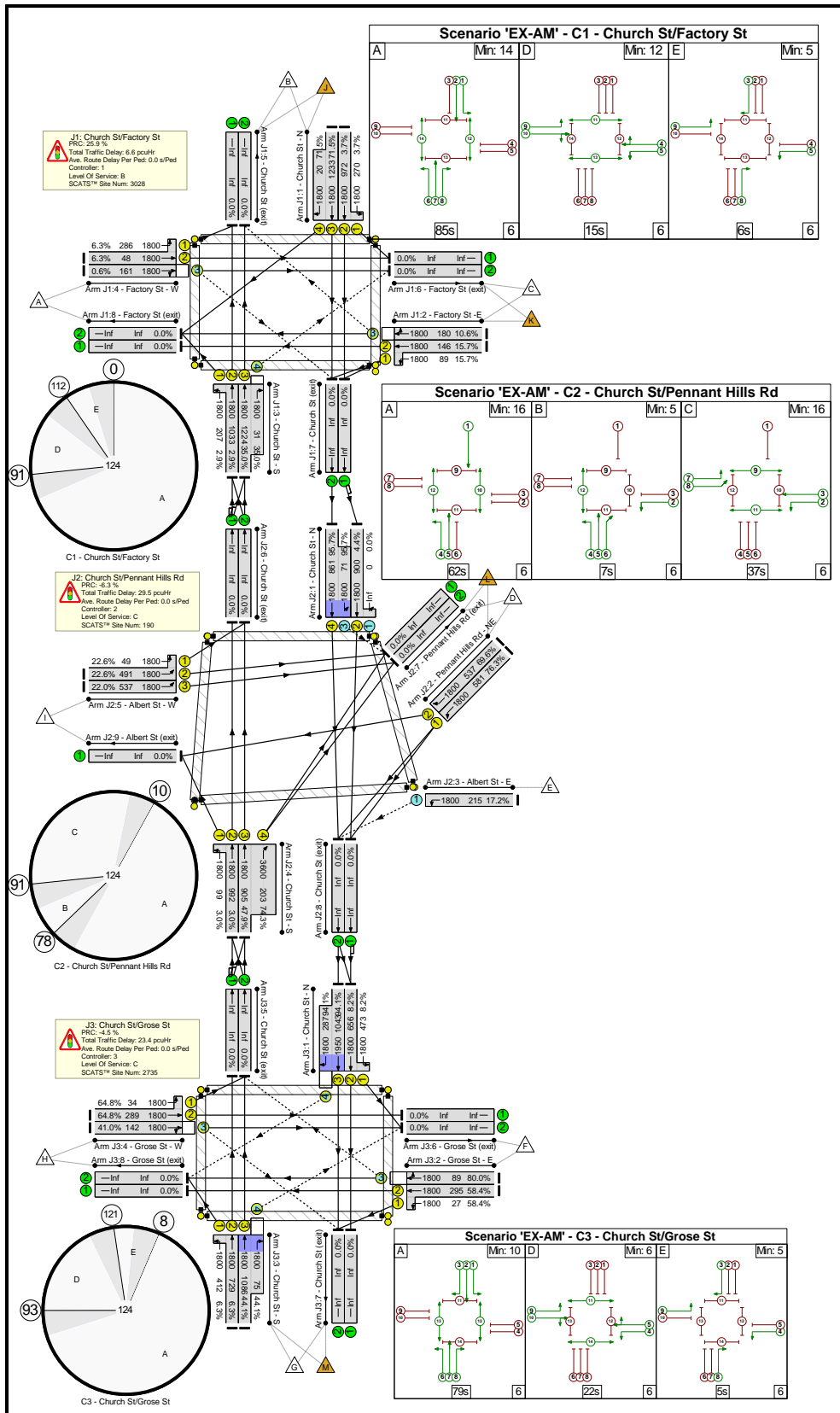
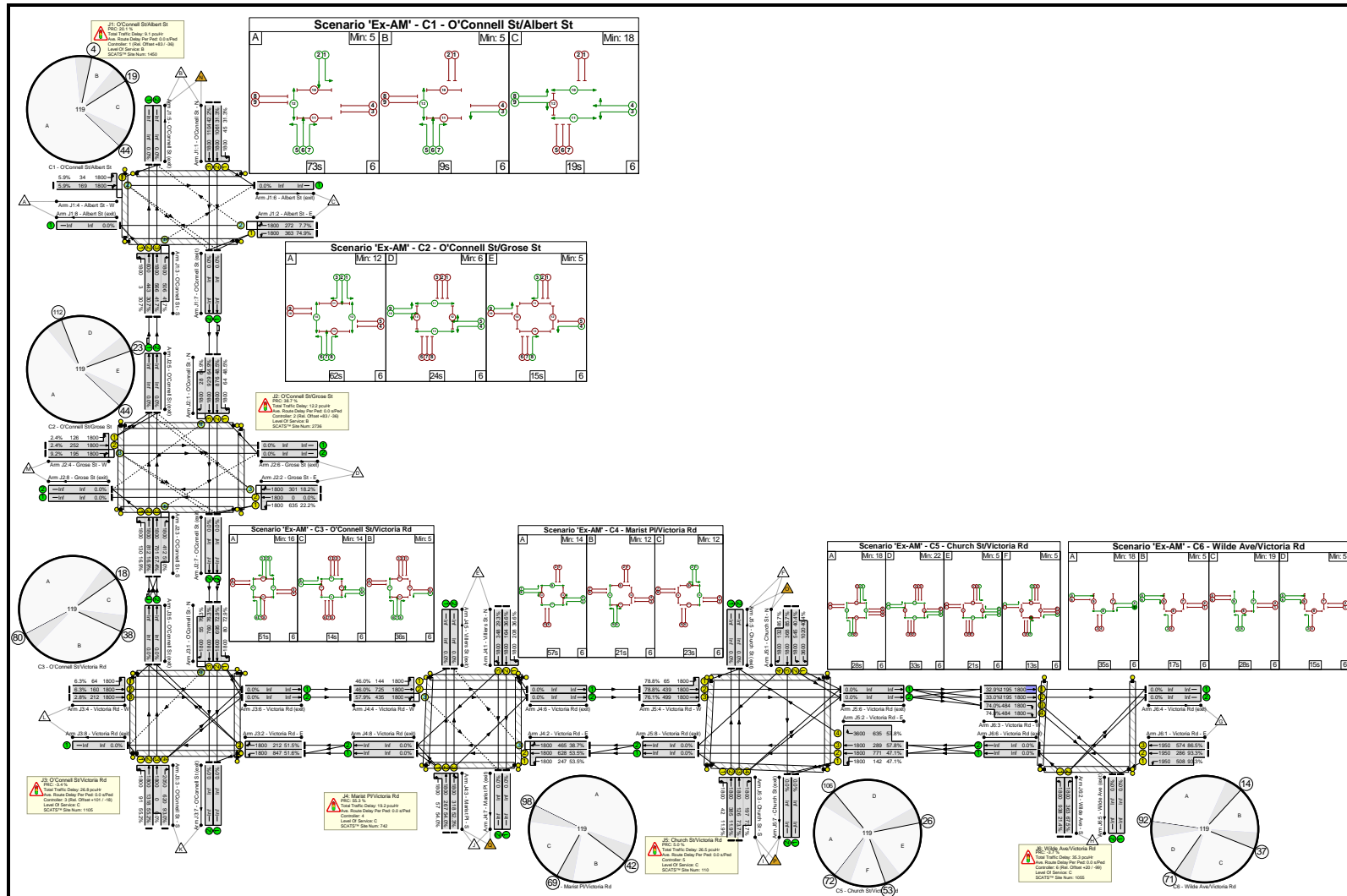


Figure D- 4: Model Screenshot – Part 3. Parramatta North – Victoria Road



D.2 Modelling Development

D.2.1 Base Assumptions

For the purpose of the LinSig analysis the following key assumptions have been made:

- Given that traffic flow in LinSig are represented in passenger car units (pcu), the following conversion was adopted for the existing traffic volumes:
 - Car = 1pcu
 - Bus = 2pcu
 - Heavy vehicle = 2pcu.
- Standard LinSig saturation flow values of 1,800 were generally adopted for through and turning lanes respectively.
- Lane lengths have been based on the existing intersection layout with short lanes used to represent how road space is currently used.
- Phase sequence arrangements, durations and cycle time for the existing models were input based on SCATS IDM and offset information provided by RMS, as well as a site inspection of the study corridor.
- Phase inter-green (i.e. combined red and amber) times of 6 seconds have been applied to all intersections, except at James Rules Drive, Windsor Road Interchange.
- A start lag of 4 seconds has been applied to left-turning vehicle movements that run simultaneously with pedestrian movements to represent the delay to vehicles caused by pedestrians.
- De-silver queue thresholds were adopted to ensure that LinSig reported the realistic queue length results.

D.2.2 Data

The models were developed and calibrated using the following data provided by RMS and AusTraffic:

- Turning movement count data for all signalised intersections identified in Figure D-1 and selected priority controlled intersections. Count data was provided for a typical Thursday from 7:00am to 9:00am, 4:00pm to 6:00pm and for a typical Saturday from 12:00pm to 2:00pm.
- Queue length data at all turning movement count locations for the same time periods.
- SCATS IDM data.
- SCATS linking and offset information.

In addition, site visits were undertaken to observe the intersection performance and general traffic behaviour within the study area and ensuring that the models have been coded to accurately represent operating conditions.

D.2.3 Temporal Coverage

After a review of the data for each intersection, the following peak hour were determined for the study area and applied to all models in the study area:

- Thursday AM Peak: 7:45am to 8:45am
- Thursday PM Peak: 4:30pm to 5:30pm
- Saturday Peak: 12:00pm to 1:00pm

D.2.4 Modelling Scenarios

Three different scenarios were modelled in this assessment; existing condition, future scenario under existing configurations and future scenario with conceptual improvement upgrades.

The existing condition was modelled with LinSig delay based traffic assignment method and calibrated to represent the on-site operating conditions. The existing condition model is then used as the base model for future model and options testing.

The future scenario (under existing configuration) was modelled based on the base model with future development trips and general traffic growth added on the existing network. The phasing of model was optimised to represent the variation on phase time due to the increase of traffic volume in the network.

Future scenario with conceptual improvement upgrades scenario was modelled based on future scenario and tested with conceptual upgrades. The purpose of this scenario is to provide conceptual improvements in order to accommodate the potential future traffic in the study area.

D.3 Modelling Results

Network performance of the intersections in the study area is provided in Appendix E.

The results in Appendix E also summarise the observed and modelled queue length and comparison with different scenarios.

Appendix E

Linsig Modelling Results

Table 1. LinSig results Summary - Existing Condition

Intersections	Approach	Existing Thursday AM Peak				Existing Thursday PM Peak				Existing Saturday Peak				
		Level of Service	Average Delay (sec)	Modelled Queue (m)	Observed Max Queue (m)	Level of Service	Average Delay (sec)	Modelled Queue (m)	Observed Max Queue (m)	Level of Service	Average Delay (sec)	Modelled Queue (m)	Observed Max Queue (m)	
PNUR - Church Street North	1. Windsor Road and Cumberland Highway	F	73	155	210	F	119	164	162	F	83	128	270	
	East - James Rules Drive			129	102			311	114+			94	108	
	South - Windsor Road			93	66			196	108			115	60	
	West - Cumberland Highway			158	198			144	126			178	126	
PNUR - Church Street North	22. Church Street and The Junction Access	A	10	98	24	B	19	74	66	B	19	72	60	
	South - Windsor Road			31	72			127	90			120	78	
	West - The Junction Access			37	30			41	48			31	36	
PNUR - Church Street North	2. Church Street and North Rocks Road	D	50	141	102	B	26	53	90	C	33	89	96	
	East - North Rocks Road			167	246			94	96			109	84	
	South - Church Street			46	60			57	180			37	48	
PNUR - Church Street North	4. Church Street, Barney Street	C	40	107	102	D	47	94	60	C	33	55	78	
	East - Barney Street			36	78			71	72			41	36	
	South - Church Street			53	72			104	102			69	78	
	West - Barney Street			10	18			81	78			23	36	
PNUR - Pennant Hills Road	9. Church Street and Factory Street	B	16	115	108	A	13	53	108	A	14	69	54	
	East - Factory Street			6	24			6	24			6	18	
	South - Church Street			17	54			86	84			35	90	
	West - Factory Street			6	12			6	18			6	24	
PNUR - Pennant Hills Road	11. Church Street, Albert Street and Pennant Hills Road	C	40	127	78	B	29	98	72	B	26	86	54	
	North - Church Street			72	36			52	60			43	36	
	NorthEast - Pennant Hills Road			81	66			201	78			37	66	
	South - Church Street			23	60			23	42			13	24	
PNUR - Pennant Hills Road	14. Church Street and Grose Street	C	35	127	144	C	30	40	114	B	24	58	150	
	East - Grose Street			37	66			23	48			23	60	
	South - Church Street			48	36			138	66			69	66	
	West - Grose Street			46	42			37	30			23	30	
PNUR - Victoria Road	10. O'Connell Street and Albert Street	B	19	48	84	A	14	22	30	B	17	25	60	
	East - Albert Street			49	54			35	48			33	48	
	South - O'Connell Street			17	30			26	54			12	30	
	West - Albert Street			2	6			2	18			2	6	
	PNUR - Victoria Road	13. O'Connell Street and Grose Street	B	21	58	60	B	21	32	54	B	17	31	48
		East - Grose Street			20	24			22	30			20	24
South - O'Connell Street		40			48	69			60	37			36	
West - Grose Street		6			6	12			24	12			66	
PNUR - Victoria Road	15. O'Connell Street and Victoria Road	C	31	115	90	C	30	81	78	C	35	98	72	
	East - Victoria Road			75	78			129	78			81	84	
	South - O'Connell Street			138	162			104	108			95	42	
	West - Stadium Carpark Access			3	18			6	12			3	6	
PNUR - Victoria Road	18. Victoria Road and Marsden Street	C	37	20	36	D	51	17	30	C	39	13	54	
	North - Villiers Street			26	90			115	108			71	90	
	East - Victoria Road			32	54			58	90			46	78	
	South - Marsden Street			75	30			81	42			58	48	
PNUR - Victoria Road	16. Church Street and Victoria Road	C	32	86	54	D	49	86	72	E	62	78	66	
	East - Victoria Road			95	66			109	60			37	54	
	South - Church Street			35	42			40	54			23	30	
	West - Victoria Road			46	66			98	78			63	72	
PNUR - Victoria Road	17. Victoria Road and Wilde Avenue	C	40	104	96	C	34	81	90	B	25	52	60	
	East - Victoria Road			46	84			86	90			36	54	
	South - Wilde Avenue			121	72			40	84			18	48	

Table 2. LinSig results Summary - Future Scenario

Intersections	Approach	Future Scenario - Thursday AM Peak			Future Scenario - Thursday PM Peak			Future Scenario - Saturday Peak		
		Level of Service	Average Delay (sec)	Modelled Queue (m)	Level of Service	Average Delay (sec)	Modelled Queue (m)	Level of Service	Average Delay (sec)	Modelled Queue (m)
PNUR - Church Street North	1. Windsor Road and Cumberland Highway			272			386			432
				191			171			153
		F	109	185	F	150	270	F	106	129
				198			308			116
PNUR - Church Street North	22. Church Street and The Junction Access			119			17			40
				59			126			90
		A	10	31	A	13	40	A	15	29
				189			90			93
PNUR - Church Street North	2. Church Street and North Rocks Road			127			71			71
				85			82			46
		D	47		B	26		C	29	
				137			142			97
PNUR - Church Street North	4. Church Street, Barney Street			36			101			49
				98			447			86
		C	39	12	F	109	74	C	40	20
				167			68			91
PNUR - Pennant Hills Road	9. Church Street and Factory Street			6			6			6
				29			49			33
		F	139	437	B	21	16	B	25	40
				788			71			98
PNUR - Pennant Hills Road	11. Church Street, Albert Street and Pennant Hills Road			125			569			93
				82			564			51
		F	148	32	F	173	26	C	35	19
				273			68			86
PNUR - Pennant Hills Road	14. Church Street and Grose Street			46			95			26
				58			267			87
		D	54	72	E	71	74	B	28	25
				75			29			38
PNUR - Victoria Road	10. O'Connell Street and Albert Street			42			56			30
				36			44			25
		B	28	43	B	24	12	B	22	23
				44			35			32
PNUR - Victoria Road	13. O'Connell Street and Grose Street			35			32			21
				33			76			41
		B	19	12	B	21	26	A	13	9
				204			97			93
PNUR - Victoria Road	15. O'Connell Street and Victoria Road			117			98			86
				231			134			71
		F	72	14	C	32	40	B	26	6
				25			18			14
PNUR - Victoria Road	18. Victoria Road and Marsden Street			41			40			35
				35			63			45
		C	34	87	C	41	86	C	34	67
				120			197			66
PNUR - Victoria Road	16. Church Street and Victoria Road			169			193			129
				30			50			24
		D	47	118	E	69	151	C	33	66
				99			119			79
PNUR - Victoria Road	17. Victoria Road and Wilde Avenue			57			94			39
				135			38			26
		C	32		C	37		B	27	

Table 3. LinSig results Summary - Future Scenario with conceptual upgrades

Intersections	Approach	Future upgrades - Thursday AM Peak			Future upgrades - Thursday PM Peak			Future upgrades - Saturday Peak			
		Level of Service	Average Delay (sec)	Modelled Queue (m)	Level of Service	Average Delay (sec)	Modelled Queue (m)	Level of Service	Average Delay (sec)	Modelled Queue (m)	
PNUR - Church Street North	1. Windsor Road and Cumberland Highway	North - Windsor Road East - James Rules Drive South - Windsor Road West - Cumberland Highway	F	114	265 196 148 204	F	169	380 198 240 384	F	106	371 158 235 130
	22. Church Street and The Junction Access	North - Windsor Road South - Windsor Road West - The Junction Access	A	9	109 51 31	A	12	26 69 40	A	14	66 63 30
	2. Church Street and North Rocks Road	North - Windsor Road East - North Rocks Road South - Church Street	D	48	190 143 78	B	26	93 68 137	B	28	133 81 89
	3. Church Street, Board Street and Seville Street	South - Church Street West - Board Street	A	9	29 65	B	17	110 95	A	9	41 70
4. Church Street, Barney Street	North - Church Street East - Barney Street South - Church Street West - Barney Street	C	35	99 33 86 12	D	49	109 78 154 86	C	39	132 38 105 20	
PNUR - Pennant Hills Road	9. Church Street and Factory Street	North - Church Street East - Factory Street South - Church Street West - Factory Street	C	35	69 6 40 69	B	21	83 6 47 20	B	25	91 6 33 40
	11. Church Street, Albert Street and Pennant Hills Road	North - Church Street NorthEast - Pennant Hills Road South - Church Street West - Albert Street	C	32	49 86 86 29	C	37	132 128 138 23	C	35	101 91 53 18
	14. Church Street and Grose Street	North - Church Street East - Grose Street South - Church Street West - Grose Street	B	26	75 39 63 55	B	26	51 24 69 36	B	28	92 24 88 25
PNUR - Victoria Road	10. O'Connell Street and Albert Street	North - O'Connell Street East - Albert Street South - O'Connell Street West - Albert Street	C	29	75 40 35 43	B	24	29 58 38 12	B	22	37 30 24 23
	13. O'Connell Street and Grose Street	North - O'Connell Street East - Grose Street South - O'Connell Street West - Grose Street	B	18	42 37 35 12	B	21	35 32 81 26	A	13	31 21 44 9
	15. O'Connell Street and Victoria Road	North - O'Connell Street East - Victoria Road South - O'Connell Street West - Stadium Carpark Access	D	44	167 98 122 92	C	34	98 81 155 53	B	26	90 86 58 35
	18. Victoria Road and Marsden Street	North - Villiers Street East - Victoria Road South - Marsden Street West - Victoria Road	C	36	25 47 35 112	C	42	19 48 63 96	C	35	14 40 46 71
	16. Church Street and Victoria Road	North - Church Street East - Victoria Road South - Church Street West - Victoria Road	D	44	110 9 69 112	D	50	98 14 97 109	C	35	73 9 50 60
	17. Victoria Road and Wilde Avenue	East - Victoria Road South - Wilde Avenue West - Victoria Road	C	32	96 60 131	C	37	117 91 39	B	24	67 40 18

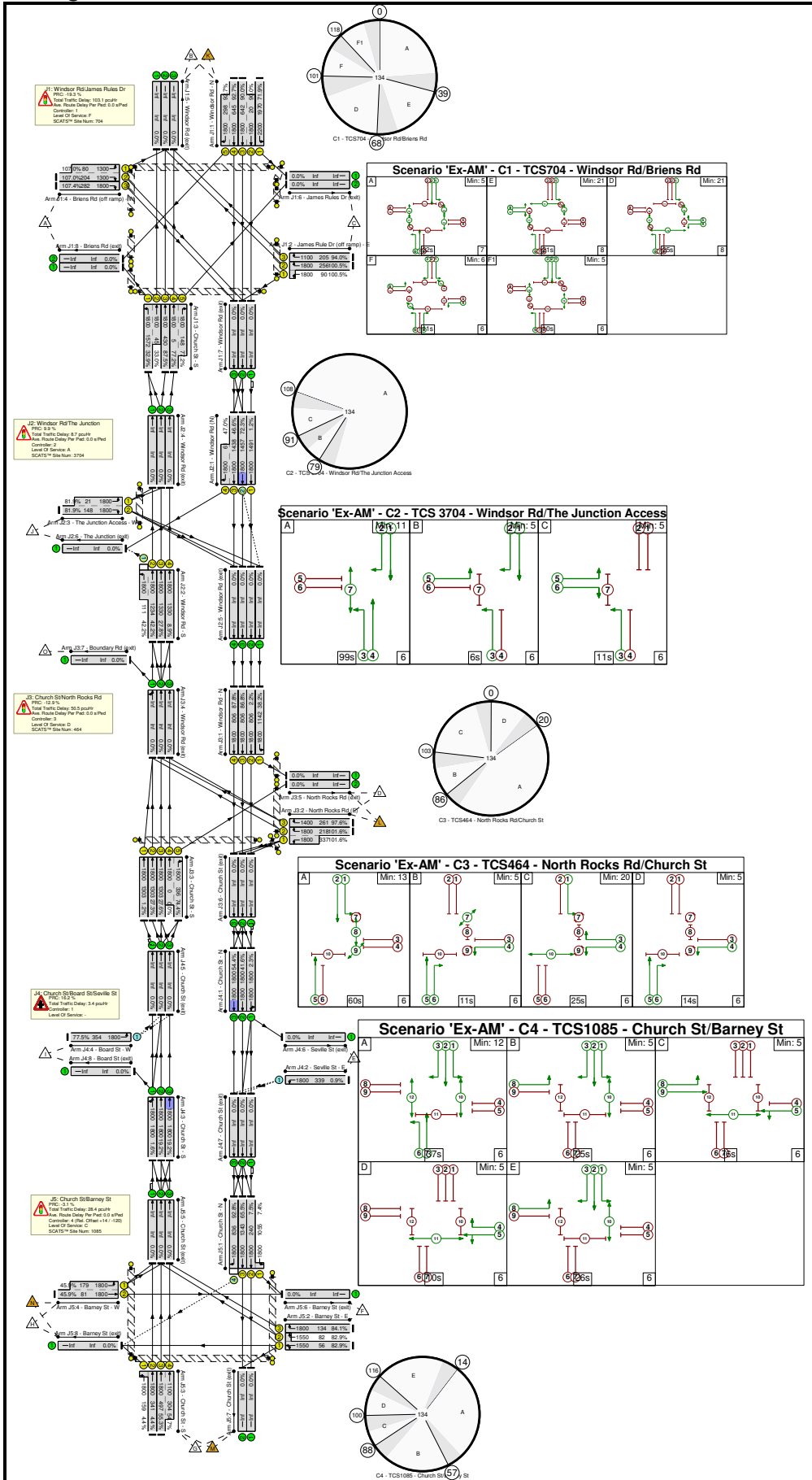
GTA Basic Results Summary

User and Project Details

Project:	14S1091200 PNUR – Rezoning
Title:	Parramatta North Modelling - North
File name:	141008Ing_Parramatta North modelling_North_EX-AM.lsg3x
Company:	GTA Consultants Sydney
Address:	Lv6, 15 Help Street CHATSWOOD NSW 2067

GTA Basic Results Summary

Scenario 1: 'Ex-AM' (FG1: 'Existing AM', Plan 1: 'Existing - AM')
 Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - North	-	-	-	107.4%	-	-
J1: Windsor Rd/James Rules Dr	-	-	-	107.4%	-	-
1/1	Windsor Rd - N Left	U	1416	71.9%	5.3	16.6
1/3+1/2	Windsor Rd - N Ahead	U	596	90.0 : 90.0%	64.5	24.4
1/4+1/5	Windsor Rd - N Ahead Right	U	874	92.7 : 92.7%	66.9	26.8
2/2+2/1	James Rule Dr (off ramp) - E Right Left	U	347	100.5 : 100.5%	153.7	22.4
2/3	James Rule Dr (off ramp) - E Right	U	193	94.0%	138.3	11.6
3/1+3/2	Church St - S Ahead Left	U	534	32.9 : 33.0%	2.0	0.6
3/3	Church St - S Ahead	U	376	87.5%	60.3	16.2
3/4+3/5	Church St - S Ahead Right	U	118	77.2 : 77.2%	126.0	5.8
4/2+4/1	Briens Rd (off ramp) - W Left Right	U	304	107.0 : 107.0%	234.5	23.7
4/3	Briens Rd (off ramp) - W Right	U	303	107.4%	254.1	27.4
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
Ped Link: P5	P6	-	0	0.0%	-	-
Ped Link: P6	P7	-	0	0.0%	-	-
Ped Link: P7	P8	-	0	0.0%	-	-
Ped Link: P8	P5	-	0	0.0%	-	-
J2: Windsor Rd/The Junction	-	-	-	81.9%	-	-
1/1	Windsor Rd (N) Ahead	U	18	1.2%	1.3	0.0
1/2	Windsor Rd (N) Ahead	O	1073	72.3%	7.8	17.1
1/3+1/4	Windsor Rd (N) Ahead Right	U	714	46.6 : 47.0%	2.9	1.6
2/2+2/1	Windsor Rd - S Ahead Left	U+O	570	42.2 : 42.2%	5.7	5.4
2/3	Windsor Rd - S Ahead	U	370	27.8%	5.1	2.3
2/4	Windsor Rd - S Ahead	U	118	8.9%	4.8	0.7
3/2+3/1	The Junction Access - W Left Right	U	138	81.9 : 81.9%	110.9	6.4

GTA Basic Results Summary

Ped Link: P1	P1	-	0	0.0%	-	-
J3: Church St/North Rocks Rd	-	-	-	101.6%	-	-
1/1	Windsor Rd - N Left	U	444	38.2%	6.3	5.4
1/2	Windsor Rd - N Ahead	U	18	2.2%	5.0	0.2
1/3	Windsor Rd - N Ahead	U	712	86.8%	35.3	24.6
1/4	Windsor Rd - N Ahead	U	723	87.8%	37.4	23.8
2/2+2/1	North Rocks Rd (E) Right Left	U	565	101.6 : 101.6%	130.7	29.1
2/3	North Rocks Rd (E) Right	U	255	97.6%	147.2	16.0
3/1	Church St - S Ahead	U	15	1.2%	9.8	0.2
3/2	Church St - S Ahead	U	356	27.3%	5.1	3.5
3/3	Church St - S Ahead	U	360	27.6%	5.2	3.8
3/5+3/4	Church St - S Ahead Right	U	250	74.4 : 0.0%	51.1	8.0
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Church St/Board St/Seville St	-	-	-	77.5%	-	-
1/1	Church St - N Left Ahead	U	41	2.3%	1.0	0.0
1/2	Church St - N Ahead	U	759	41.6%	1.7	0.4
1/3	Church St - N Ahead	U	996	54.4%	2.7	4.5
2/1	Seville St - E Left	O	3	0.9%	9.6	0.0
3/1	Church St - S Ahead Left	U	29	1.6%	1.0	0.0
3/2	Church St - S Ahead	U	345	19.2%	1.2	0.1
3/3	Church St - S Ahead	U	345	19.2%	1.2	0.1
4/1	Board St - W Left	O	274	77.5%	26.4	5.9
J5: Church St/Barney St	-	-	-	92.8%	-	-
1/2+1/1	Church St - N Left Ahead	U	97	7.5 : 7.4%	11.2	1.3
1/3	Church St - N Ahead	U	893	65.5%	16.9	16.1
1/4	Church St - N Right	O	788	92.8%	40.1	18.6
2/1+2/2	Barney St - E Right Left Ahead	U	114	82.9 : 82.9%	123.5	5.5

GTA Basic Results Summary

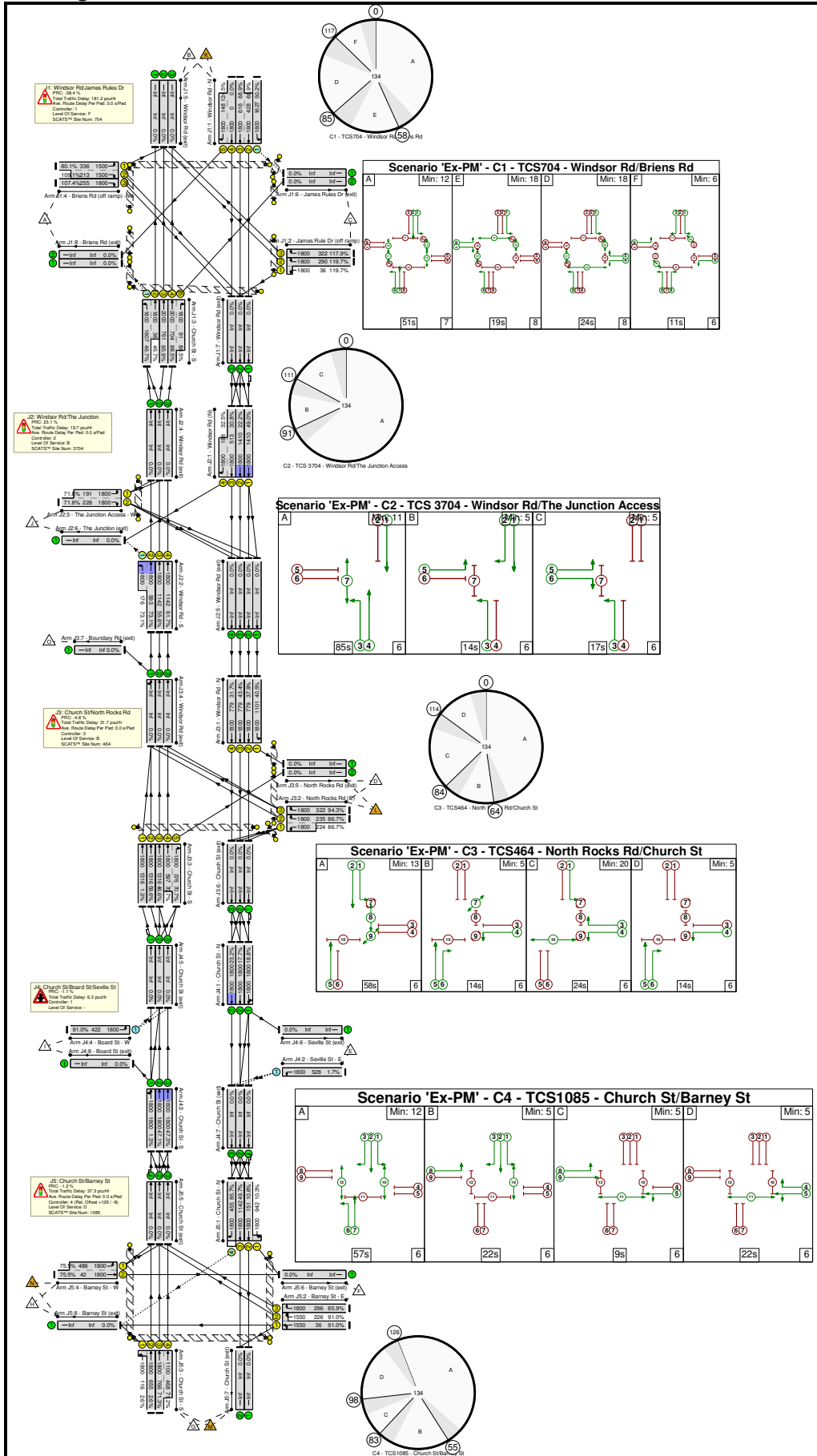
2/3	Barney St - E Right	U	113	84.1%	131.2	6.3
3/2+3/1	Church St - S Ahead Left	U	22	4.4 : 4.4%	40.2	0.4
3/3+3/4	Church St - S Ahead	U	441	55.3 : 54.7%	46.4	9.3
4/2+4/1	Barney St - W Left Ahead	U	119	45.9 : 45.9%	40.0	1.8
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - TCS704 - Windsor Rd/Briens Rd	PRC for Signalled Lanes (%):	-19.3	Total Delay for Signalled Lanes (pcuHr):	103.15	Cycle Time (s):	134
C2 - TCS 3704 - Windsor Rd/The Junction Access	PRC for Signalled Lanes (%):	9.9	Total Delay for Signalled Lanes (pcuHr):	8.69	Cycle Time (s):	134
C3 - TCS464 - North Rocks Rd/Church St	PRC for Signalled Lanes (%):	-12.9	Total Delay for Signalled Lanes (pcuHr):	50.54	Cycle Time (s):	134
C4 - TCS1085 - Church St/Barney St	PRC for Signalled Lanes (%):	-3.1	Total Delay for Signalled Lanes (pcuHr):	28.36	Cycle Time (s):	134
	PRC Over All Lanes (%):	-19.3	Total Delay Over All Lanes(pcuHr):	194.11		

GTA Basic Results Summary

User and Project Details

Project:	14S1091200 PNUR – Rezoning
Title:	Parramatta North Modelling - North
File name:	141008Ing_Parramatta North modelling_North_EX_PM_SAT.lsg3x
Company:	GTA Consultants Sydney
Address:	Lv6, 15 Help Street CHATSWOOD NSW 2067

Scenario 1: 'Ex-PM' (FG1: 'Existing PM', Plan 2: 'Existing - PM')
Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - North	-	-	-	124.5%	-	-
J1: Windsor Rd/James Rules Dr	-	-	-	124.5%	-	-
1/1	Windsor Rd - N Left	O	817	50.2%	3.3	5.7
1/3+1/2	Windsor Rd - N Ahead	U	719	68.9 : 68.9%	37.9	13.8
1/4+1/5	Windsor Rd - N Ahead Right	U	184	0.0 : 124.5%	488.3	28.6
2/2+2/1	James Rule Dr (off ramp) - E Right Left	U	390	119.7 : 119.7%	404.2	53.9
2/3	James Rule Dr (off ramp) - E Right	U	380	117.9%	381.8	48.1
3/1+3/2	Church St - S Ahead Left	O+U	768	46.7 : 46.7%	2.8	8.5
3/3	Church St - S Ahead	U	730	95.9%	72.1	34.1
3/4+3/5	Church St - S Ahead Right	U	704	88.5 : 88.5%	41.7	9.5
4/1+4/2	Briens Rd (off ramp) - W Left Right	U	501	80.1 : 109.1%	149.5	23.5
4/3	Briens Rd (off ramp) - W Right	U	274	107.4%	257.8	25.1
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
Ped Link: P5	P6	-	0	0.0%	-	-
Ped Link: P6	P7	-	0	0.0%	-	-
Ped Link: P7	P8	-	0	0.0%	-	-
Ped Link: P8	P4	-	0	0.0%	-	-
J2: Windsor Rd/The Junction	-	-	-	73.1%	-	-
1/1	Windsor Rd (N) Ahead	U	707	49.0%	4.7	12.9
1/2	Windsor Rd (N) Ahead	U	326	22.2%	1.9	0.3
1/3+1/4	Windsor Rd (N) Ahead Right	U	235	30.8 : 32.5%	17.7	2.5
2/2+2/1	Windsor Rd - S Ahead Left	U+O	855	73.1 : 73.1%	21.3	22.1
2/3	Windsor Rd - S Ahead	U	635	55.6%	9.1	11.8
2/4	Windsor Rd - S Ahead	U	704	61.7%	28.8	20.9
3/2+3/1	The Junction Access - W Left Right	U	301	71.8 : 71.8%	62.8	7.1

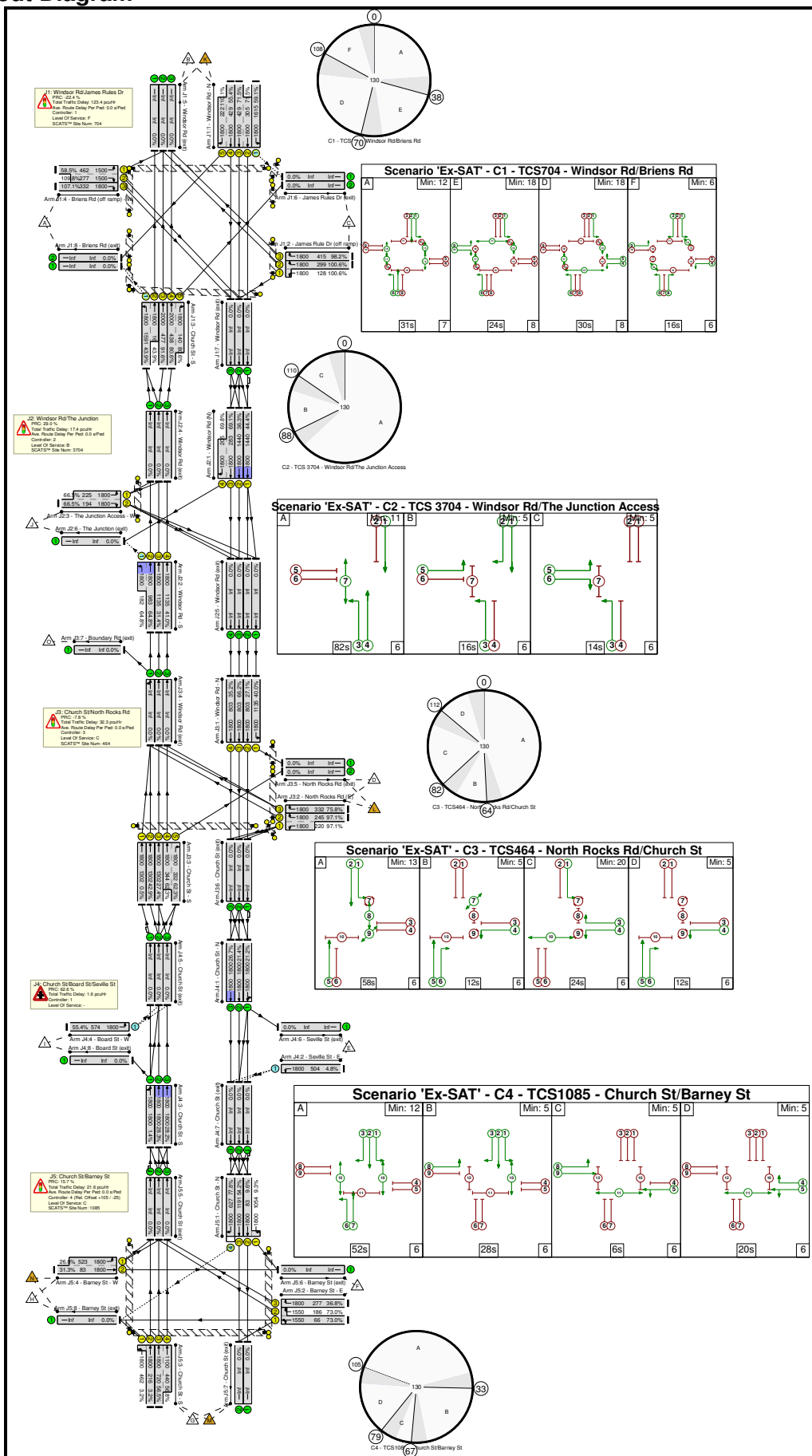
GTA Basic Results Summary

Ped Link: P1	P1	-	0	0.0%	-	-
J3: Church St/North Rocks Rd	-	-	-	94.3%	-	-
1/1	Windsor Rd - N Left	U	462	40.5%	5.5	3.9
1/2	Windsor Rd - N Ahead	U	295	37.9%	12.1	1.7
1/3	Windsor Rd - N Ahead	U	351	43.4%	32.4	8.0
1/4	Windsor Rd - N Ahead	U	261	31.7%	37.1	9.2
2/2+2/1	North Rocks Rd (E) Right Left	U	398	86.7 : 86.7%	65.0	12.2
2/3	North Rocks Rd (E) Right	U	304	94.3%	116.6	16.4
3/1	Church St - S Ahead	U	17	1.3%	8.8	0.2
3/2	Church St - S Ahead	U	784	59.6%	9.4	9.9
3/3	Church St - S Ahead	U	613	46.6%	7.0	5.5
3/5+3/4	Church St - S Ahead Right	U	688	70.7 : 70.7%	21.7	8.5
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Church St/Board St/Seville St	-	-	-	91.0%	-	-
1/1	Church St - N Left Ahead	U	339	18.8%	1.2	0.1
1/2	Church St - N Ahead	U	329	17.7%	1.2	0.1
1/3	Church St - N Ahead	U	433	23.2%	1.3	0.3
2/1	Seville St - E Left	O	9	1.7%	3.5	0.0
3/1	Church St - S Ahead Left	U	24	1.3%	1.0	0.0
3/2	Church St - S Ahead	U	848	47.1%	1.9	0.4
3/3	Church St - S Ahead	U	851	47.3%	1.9	0.4
4/1	Board St - W Left	O	384	91.0%	46.7	16.6
J5: Church St/Barney St	-	-	-	91.0%	-	-
1/2+1/1	Church St - N Left Ahead	U	116	10.6 : 10.3%	9.0	0.8
1/3	Church St - N Ahead	U	582	49.7%	10.1	5.3
1/4	Church St - N Right	O	400	85.7%	53.4	16.3
2/1+2/2	Barney St - E Right Left Ahead	U	239	91.0 : 91.0%	112.2	12.4

GTA Basic Results Summary

2/3	Barney St - E Right	U	254	85.9%	92.9	11.9
3/2+3/1	Church St - S Ahead Left	U	20	2.6 : 2.6%	25.2	0.4
3/3+3/4	Church St - S Ahead	U	879	71.3 : 71.2%	36.8	17.9
4/2+4/1	Barney St - W Left Ahead	U	399	75.5 : 75.5%	58.9	13.9
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - TCS704 - Windsor Rd/Briens Rd	PRC for Signalled Lanes (%):	-38.4	Total Delay for Signalled Lanes (pcuHr):	181.18	Cycle Time (s):	134
C2 - TCS 3704 - Windsor Rd/The Junction Access	PRC for Signalled Lanes (%):	23.1	Total Delay for Signalled Lanes (pcuHr):	19.70	Cycle Time (s):	134
C3 - TCS464 - North Rocks Rd/Church St	PRC for Signalled Lanes (%):	-4.8	Total Delay for Signalled Lanes (pcuHr):	31.72	Cycle Time (s):	134
C4 - TCS1085 - Church St/Barney St	PRC for Signalled Lanes (%):	-1.2	Total Delay for Signalled Lanes (pcuHr):	37.32	Cycle Time (s):	134
	PRC Over All Lanes (%):	-38.4	Total Delay Over All Lanes(pcuHr):	276.19		

GTA Basic Results Summary
Scenario 2: 'Ex-SAT' (FG2: 'Existing SAT', Plan 3: 'Existing - SAT')
Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - North	-	-	-	110.1%	-	-
J1: Windsor Rd/James Rules Dr	-	-	-	110.1%	-	-
1/1	Windsor Rd - N Left	O	954	59.1%	4.1	8.1
1/3+1/2	Windsor Rd - N Ahead	U	525	71.5 : 71.5%	52.9	11.4
1/4+1/5	Windsor Rd - N Ahead Right	U	482	55.4 : 110.1%	151.3	22.3
2/2+2/1	James Rule Dr (off ramp) - E Right Left	U	430	100.6 : 100.6%	140.8	26.3
2/3	James Rule Dr (off ramp) - E Right	U	408	98.2%	124.0	23.0
3/1+3/2	Church St - S Ahead Left	O+U	706	43.9 : 43.9%	3.2	2.3
3/3	Church St - S Ahead	U	437	91.6%	74.3	19.7
3/4+3/5	Church St - S Ahead Right	U	466	80.6 : 80.6%	57.2	7.1
4/1+4/2	Briens Rd (off ramp) - W Left Right	U	574	58.5 : 109.8%	142.4	27.2
4/3	Briens Rd (off ramp) - W Right	U	356	107.1%	239.3	30.8
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
Ped Link: P5	P6	-	0	0.0%	-	-
Ped Link: P6	P7	-	0	0.0%	-	-
Ped Link: P7	P8	-	0	0.0%	-	-
Ped Link: P8	P4	-	0	0.0%	-	-
J2: Windsor Rd/The Junction	-	-	-	69.8%	-	-
1/1	Windsor Rd (N) Ahead	U	656	44.4%	5.0	12.6
1/2	Windsor Rd (N) Ahead	U	544	36.3%	2.3	0.6
1/3+1/4	Windsor Rd (N) Ahead Right	U	352	69.1 : 69.8%	35.1	6.2
2/2+2/1	Windsor Rd - S Ahead Left	U+O	755	64.8 : 64.8%	21.3	20.8
2/3	Windsor Rd - S Ahead	U	356	31.4%	7.3	6.1
2/4	Windsor Rd - S Ahead	U	466	41.0%	24.3	10.7
3/2+3/1	The Junction Access - W Left Right	U	279	66.5 : 66.5%	58.4	5.4

GTA Basic Results Summary

Ped Link: P1	P1	-	0	0.0%	-	-
J3: Church St/North Rocks Rd	-	-	-	97.1%	-	-
1/1	Windsor Rd - N Left	U	471	40.0%	8.8	6.5
1/2	Windsor Rd - N Ahead	U	218	27.1%	3.7	0.3
1/3	Windsor Rd - N Ahead	U	553	66.2%	42.4	15.5
1/4	Windsor Rd - N Ahead	U	291	35.2%	36.9	9.4
2/2+2/1	North Rocks Rd (E) Right Left	U	452	97.1 : 97.1%	101.3	19.1
2/3	North Rocks Rd (E) Right	U	252	75.8%	71.9	10.1
3/1	Church St - S Ahead	U	7	0.5%	6.6	0.1
3/2	Church St - S Ahead	U	559	42.9%	5.4	5.6
3/3	Church St - S Ahead	U	356	27.4%	5.8	4.4
3/5+3/4	Church St - S Ahead Right	U	421	62.3 : 62.3%	22.7	6.4
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Church St/Board St/Seville St	-	-	-	55.4%	-	-
1/1	Church St - N Left Ahead	U	386	21.2%	1.3	0.1
1/2	Church St - N Ahead	U	397	21.4%	1.3	0.1
1/3	Church St - N Ahead	U	493	26.7%	1.5	0.6
2/1	Seville St - E Left	O	24	4.8%	3.8	0.0
3/1	Church St - S Ahead Left	U	25	1.4%	1.0	0.0
3/2	Church St - S Ahead	U	509	28.3%	1.4	0.2
3/3	Church St - S Ahead	U	508	28.2%	1.4	0.2
4/1	Board St - W Left	O	318	55.4%	7.8	3.1
J5: Church St/Barney St	-	-	-	77.8%	-	-
1/2+1/1	Church St - N Left Ahead	U	109	9.6 : 9.3%	12.1	1.2
1/3	Church St - N Ahead	U	661	54.2%	14.2	8.2
1/4	Church St - N Right	O	499	77.8%	35.4	9.6
2/1+2/2	Barney St - E Right Left Ahead	U	184	73.0 : 73.0%	76.7	7.2

GTA Basic Results Summary

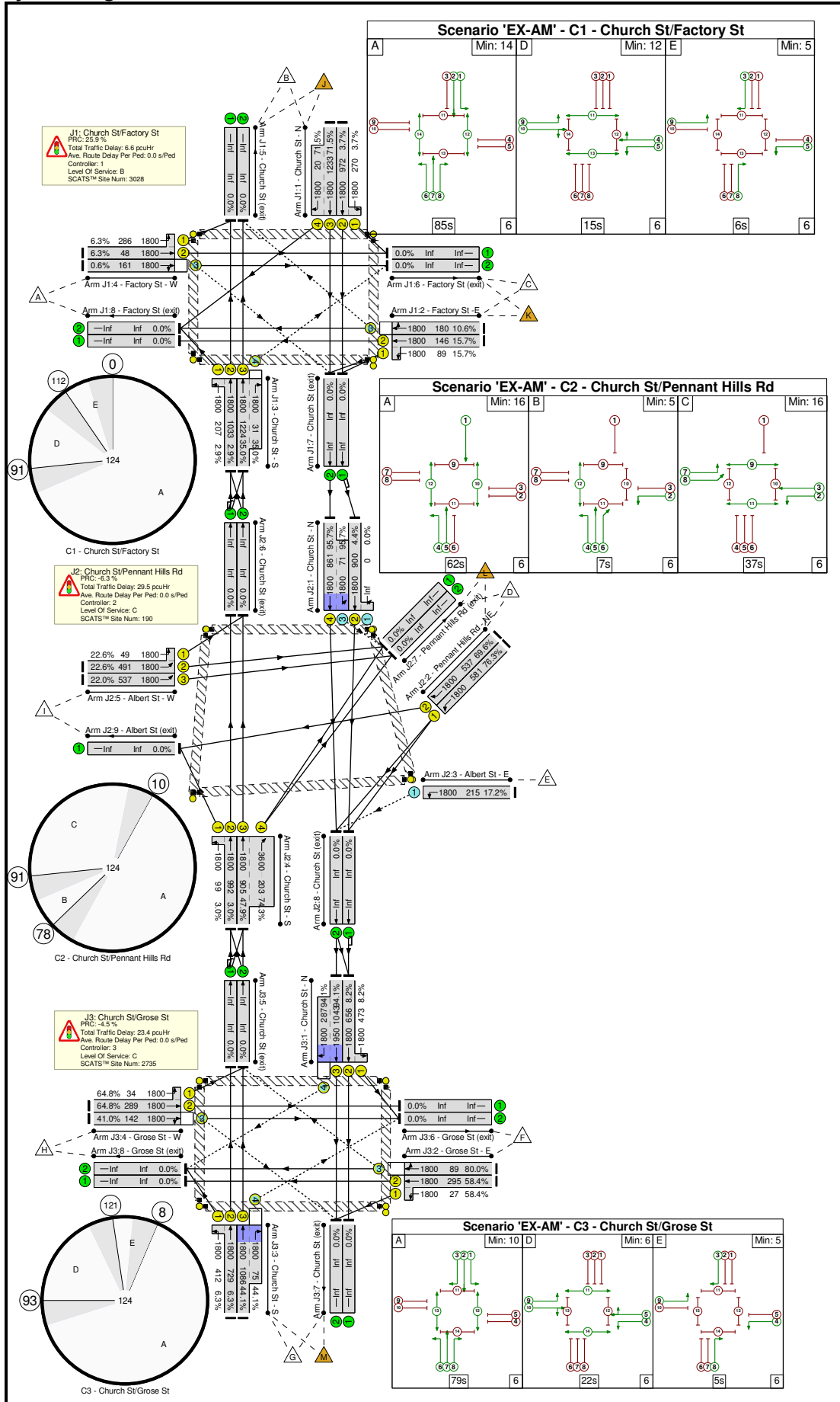
2/3	Barney St - E Right	U	102	36.8%	59.6	3.6
3/2+3/1	Church St - S Ahead Left	U	22	3.2 : 3.2%	28.1	0.4
3/3+3/4	Church St - S Ahead	U	657	56.5 : 56.8%	33.8	12.0
4/2+4/1	Barney St - W Left Ahead	U	166	31.3 : 26.8%	42.0	4.0
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - TCS704 - Windsor Rd/Briens Rd	PRC for Signalled Lanes (%):	-22.4	Total Delay for Signalled Lanes (pcuHr):	123.37	Cycle Time (s):	130
C2 - TCS 3704 - Windsor Rd/The Junction Access	PRC for Signalled Lanes (%):	29.0	Total Delay for Signalled Lanes (pcuHr):	17.37	Cycle Time (s):	130
C3 - TCS464 - North Rocks Rd/Church St	PRC for Signalled Lanes (%):	-7.8	Total Delay for Signalled Lanes (pcuHr):	32.32	Cycle Time (s):	130
C4 - TCS1085 - Church St/Barney St	PRC for Signalled Lanes (%):	15.7	Total Delay for Signalled Lanes (pcuHr):	21.59	Cycle Time (s):	130
	PRC Over All Lanes (%):	-22.4	Total Delay Over All Lanes(pcuHr):	196.24		

GTA Basic Results Summary

User and Project Details

Project:	14S1091200 PNUR – Rezoning
Title:	Parramatta North Modelling - PHR
Location:	Pennant Hills Rd
File name:	140909Ing_Parramatta North modelling_PHR_EX.lsg3x

Scenario 1: 'EX-AM' (FG1: 'Existing AM', Plan 1: 'Network Control Plan 1')
Network Layout Diagram



GTA Basic Results Summary

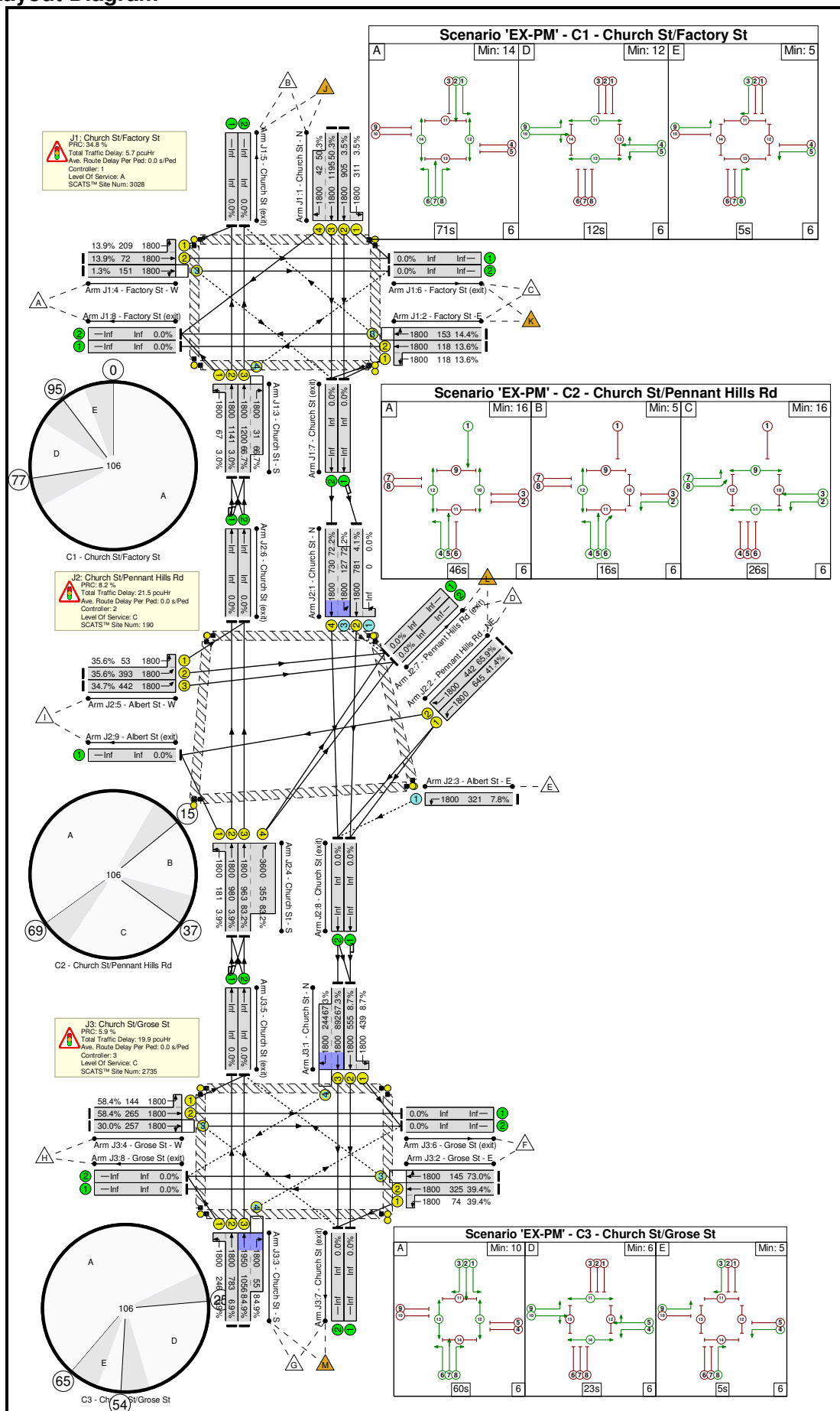
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - PHR	-	-	-	95.7%	-	-
J1: Church St/Factory St	-	-	-	71.5%	-	-
1/2+1/1	Church St - N Left Ahead	U	46	3.7 : 3.7%	8.1	0.4
1/3+1/4	Church St - N Ahead Right	U	895	71.5 : 71.5%	17.7	19.8
2/2+2/1	Factory St -E Left Ahead	U	37	15.7 : 15.7%	55.0	0.8
2/3	Factory St -E Right Ahead	O	19	10.6%	60.2	0.6
3/2+3/1	Church St - S Ahead Left	U	36	2.9 : 2.9%	10.7	0.5
3/3+3/4	Church St - S Ahead Right	U+O	439	35.0 : 35.0%	6.9	2.9
4/2+4/1	Factory St - W Left Ahead	U	21	6.3 : 6.3%	48.3	0.5
4/3	Factory St - W Ahead Right	O	1	0.6%	60.5	0.0
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J2: Church St/Pennant Hills Rd	-	-	-	95.7%	-	-
1/2+1/1	Church St - N U-Turn Ahead	U+O	40	4.4 : 0.0%	16.9	0.6
1/4+1/3	Church St - N U-Turn Ahead	U+O	892	95.7 : 95.7%	48.3	21.5
2/1	Pennant Hills Rd - NE Left	U	443	76.3%	48.2	11.7
2/2	Pennant Hills Rd - NE Right	U	374	69.6%	49.4	12.5
3/1	Albert St - E Left	O	37	17.2%	10.2	0.1
4/2+4/1	Church St - S Ahead Left	U	33	3.0 : 3.0%	11.6	0.4
4/3+4/4	Church St - S Ahead Right	U	585	47.9 : 74.3%	21.9	14.1
5/2+5/1	Albert St - W Left Left2	U	122	22.6 : 22.6%	37.0	3.2
5/3	Albert St - W Left	U	118	22.0%	37.0	3.2
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-

GTA Basic Results Summary

J3: Church St/Grose St	-	-	-	94.1%	-	-
1/2+1/1	Church St - N Left Ahead	U	93	8.2 : 8.2%	9.1	0.6
1/3+1/4	Church St - N Ahead Right	U+O	1251	94.1 : 94.1%	29.1	21.9
2/2+2/1	Grose St - E Left Ahead	U	188	58.4 : 58.4%	59.3	6.5
2/3	Grose St - E Right Ahead	O	71	80.0%	145.2	4.0
3/2+3/1	Church St - S Ahead Left	U	72	6.3 : 6.3%	10.6	0.6
3/3+3/4	Church St - S Ahead Right	U+O	512	44.1 : 44.1%	15.2	8.3
4/2+4/1	Grose St - W Left Ahead	U	209	64.8 : 64.8%	62.0	7.5
4/3	Grose St - W Ahead Right	O	58	41.0%	70.4	2.2
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	2	-	0	0.0%	-	-
Ped Link: P3	3	-	0	0.0%	-	-
Ped Link: P4	4	-	0	0.0%	-	-
C1 - Church St/Factory St	PRC for Signalled Lanes (%):	25.9	Total Delay for Signalled Lanes (pcuHr):	6.64	Cycle Time (s):	124
C2 - Church St/Pennant Hills Rd	PRC for Signalled Lanes (%):	-6.3	Total Delay for Signalled Lanes (pcuHr):	29.35	Cycle Time (s):	124
C3 - Church St/Grose St	PRC for Signalled Lanes (%):	-4.5	Total Delay for Signalled Lanes (pcuHr):	23.43	Cycle Time (s):	124
	PRC Over All Lanes (%):	-6.3	Total Delay Over All Lanes(pcuHr):	59.52		

GTA Basic Results Summary
Scenario 2: 'EX-PM' (FG2: 'Existing PM', Plan 1: 'Network Control Plan 1')
Network Layout Diagram



GTA Basic Results Summary

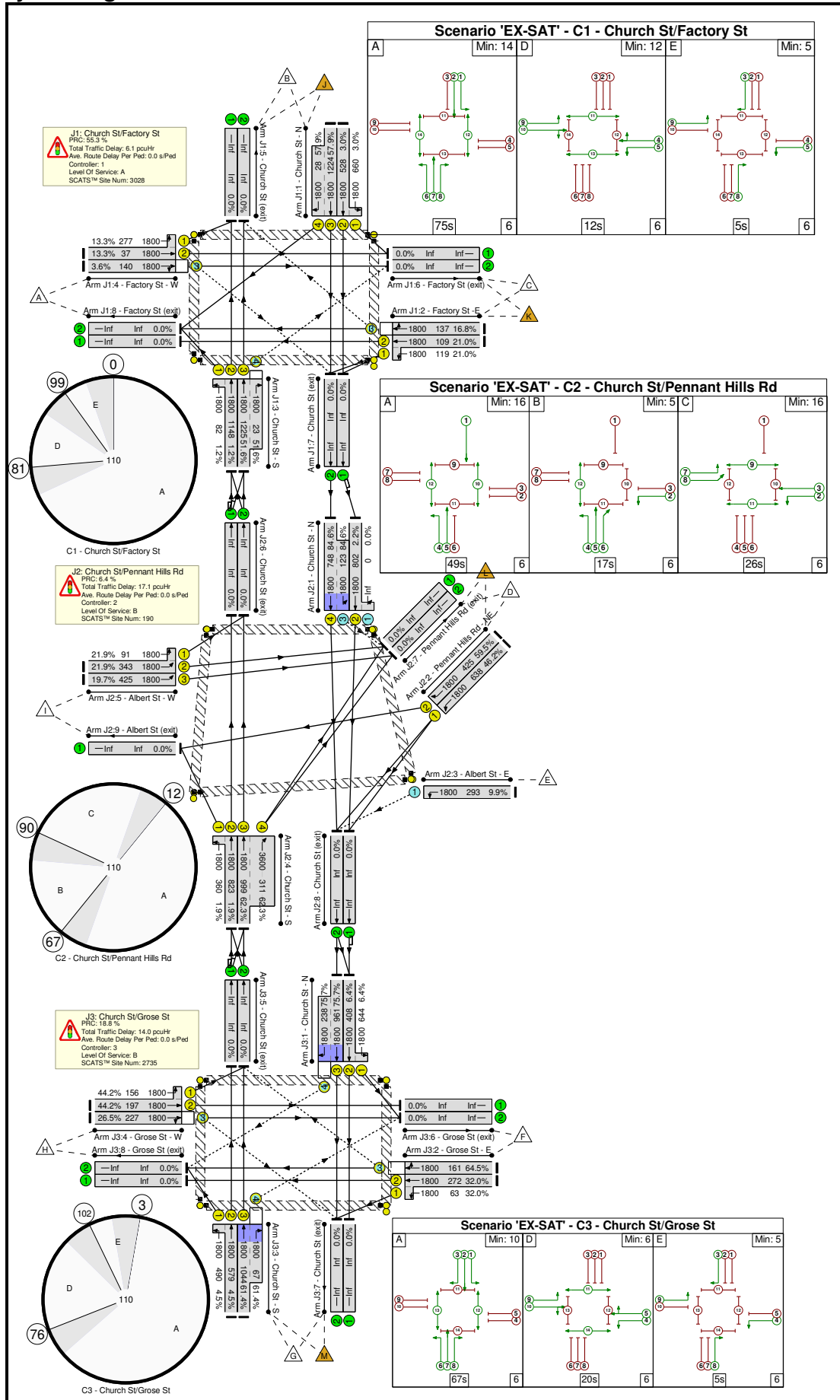
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - PHR	-	-	-	84.9%	-	-
J1: Church St/Factory St	-	-	-	66.7%	-	-
1/2+1/1	Church St - N Left Ahead	U	43	3.5 : 3.5%	7.8	0.3
1/3+1/4	Church St - N Ahead Right	U	622	50.3 : 50.3%	13.0	9.2
2/2+2/1	Factory St -E Left Ahead	U	32	13.6 : 13.6%	48.0	0.5
2/3	Factory St -E Right Ahead	O	22	14.4%	56.7	0.7
3/2+3/1	Church St - S Ahead Left	U	36	3.0 : 3.0%	4.4	0.2
3/3+3/4	Church St - S Ahead Right	U+O	822	66.7 : 66.7%	9.1	15.1
4/2+4/1	Factory St - W Left Ahead	U	39	13.9 : 13.9%	45.3	0.8
4/3	Factory St - W Ahead Right	O	2	1.3%	55.1	0.1
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J2: Church St/Pennant Hills Rd	-	-	-	83.2%	-	-
1/2+1/1	Church St - N U-Turn Ahead	U+O	32	4.1 : 0.0%	15.6	0.6
1/4+1/3	Church St - N U-Turn Ahead	U+O	619	72.2 : 72.2%	35.5	16.8
2/1	Pennant Hills Rd - NE Left	U	267	41.4%	23.9	5.4
2/2	Pennant Hills Rd - NE Right	U	291	65.9%	47.8	8.6
3/1	Albert St - E Left	O	25	7.8%	6.1	0.0
4/2+4/1	Church St - S Ahead Left	U	45	3.9 : 3.9%	8.2	0.4
4/3+4/4	Church St - S Ahead Right	U	1096	83.2 : 83.2%	20.0	35.5
5/2+5/1	Albert St - W Left Left2	U	159	35.6 : 35.6%	39.3	4.0
5/3	Albert St - W Left	U	153	34.7%	39.2	4.0
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-

GTA Basic Results Summary

J3: Church St/Grose St	-	-	-	84.9%	-	-
1/2+1/1	Church St - N Left Ahead	U	86	8.7 : 8.7%	10.0	0.6
1/3+1/4	Church St - N Ahead Right	U+O	765	67.3 : 67.3%	15.1	6.9
2/2+2/1	Grose St - E Left Ahead	U	157	39.4 : 39.4%	41.4	4.0
2/3	Grose St - E Right Ahead	O	106	73.0%	91.5	4.2
3/2+3/1	Church St - S Ahead Left	U	71	6.9 : 6.9%	12.6	0.7
3/3+3/4	Church St - S Ahead Right	U+O	944	84.9 : 84.9%	29.4	24.1
4/2+4/1	Grose St - W Left Ahead	U	239	58.4 : 58.4%	44.6	6.4
4/3	Grose St - W Ahead Right	O	77	30.0%	47.0	2.2
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	2	-	0	0.0%	-	-
Ped Link: P3	3	-	0	0.0%	-	-
Ped Link: P4	4	-	0	0.0%	-	-
C1 - Church St/Factory St	PRC for Signalled Lanes (%):	34.8	Total Delay for Signalled Lanes (pcuHr):	5.74	Cycle Time (s):	106
C2 - Church St/Pennant Hills Rd	PRC for Signalled Lanes (%):	8.2	Total Delay for Signalled Lanes (pcuHr):	21.48	Cycle Time (s):	106
C3 - Church St/Grose St	PRC for Signalled Lanes (%):	5.9	Total Delay for Signalled Lanes (pcuHr):	19.88	Cycle Time (s):	106
	PRC Over All Lanes (%):	5.9	Total Delay Over All Lanes(pcuHr):	47.15		

GTA Basic Results Summary
Scenario 3: 'EX-SAT' (FG3: 'Existing SAT', Plan 1: 'Network Control Plan 1')
Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - PHR	-	-	-	84.6%	-	-
J1: Church St/Factory St	-	-	-	57.9%	-	-
1/2+1/1	Church St - N Left Ahead	U	36	3.0 : 3.0%	8.0	0.2
1/3+1/4	Church St - N Ahead Right	U	725	57.9 : 57.9%	13.5	11.9
2/2+2/1	Factory St -E Left Ahead	U	48	21.0 : 21.0%	51.1	0.8
2/3	Factory St -E Right Ahead	O	23	16.8%	60.4	0.7
3/2+3/1	Church St - S Ahead Left	U	15	1.2 : 1.2%	10.0	0.2
3/3+3/4	Church St - S Ahead Right	U+O	644	51.6 : 51.6%	9.0	5.7
4/2+4/1	Factory St - W Left Ahead	U	42	13.3 : 13.3%	45.7	1.0
4/3	Factory St - W Ahead Right	O	5	3.6%	58.3	0.2
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J2: Church St/Pennant Hills Rd	-	-	-	84.6%	-	-
1/2+1/1	Church St - N U-Turn Ahead	U+O	18	2.2 : 0.0%	19.0	0.3
1/4+1/3	Church St - N U-Turn Ahead	U+O	737	84.6 : 84.6%	28.1	15.0
2/1	Pennant Hills Rd - NE Left	U	295	46.2%	26.0	6.3
2/2	Pennant Hills Rd - NE Right	U	253	59.5%	47.7	7.5
3/1	Albert St - E Left	O	29	9.9%	6.8	0.1
4/2+4/1	Church St - S Ahead Left	U	23	1.9 : 1.9%	7.0	0.1
4/3+4/4	Church St - S Ahead Right	U	817	62.3 : 62.3%	16.6	6.5
5/2+5/1	Albert St - W Left Left2	U	95	21.9 : 21.9%	39.3	2.2
5/3	Albert St - W Left	U	84	19.7%	38.9	2.2
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-

GTA Basic Results Summary

J3: Church St/Grose St	-	-	-	75.7%	-	-
1/2+1/1	Church St - N Left Ahead	U	67	6.4 : 6.4%	10.7	0.4
1/3+1/4	Church St - N Ahead Right	U+O	908	75.7 : 75.7%	15.5	10.3
2/2+2/1	Grose St - E Left Ahead	U	107	32.0 : 32.0%	45.4	2.8
2/3	Grose St - E Right Ahead	O	104	64.5%	78.9	3.9
3/2+3/1	Church St - S Ahead Left	U	48	4.5 : 4.5%	11.1	0.3
3/3+3/4	Church St - S Ahead Right	U+O	682	61.4 : 61.4%	17.2	12.3
4/2+4/1	Grose St - W Left Ahead	U	156	44.2 : 44.2%	45.9	3.9
4/3	Grose St - W Ahead Right	O	60	26.5%	51.5	1.8
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	2	-	0	0.0%	-	-
Ped Link: P3	3	-	0	0.0%	-	-
Ped Link: P4	4	-	0	0.0%	-	-
C1 - Church St/Factory St	PRC for Signalled Lanes (%):	55.3	Total Delay for Signalled Lanes (pcuHr):	6.13	Cycle Time (s):	110
C2 - Church St/Pennant Hills Rd	PRC for Signalled Lanes (%):	6.4	Total Delay for Signalled Lanes (pcuHr):	17.08	Cycle Time (s):	110
C3 - Church St/Grose St	PRC for Signalled Lanes (%):	18.8	Total Delay for Signalled Lanes (pcuHr):	13.99	Cycle Time (s):	110
	PRC Over All Lanes (%):	6.4	Total Delay Over All Lanes(pcuHr):	37.25		

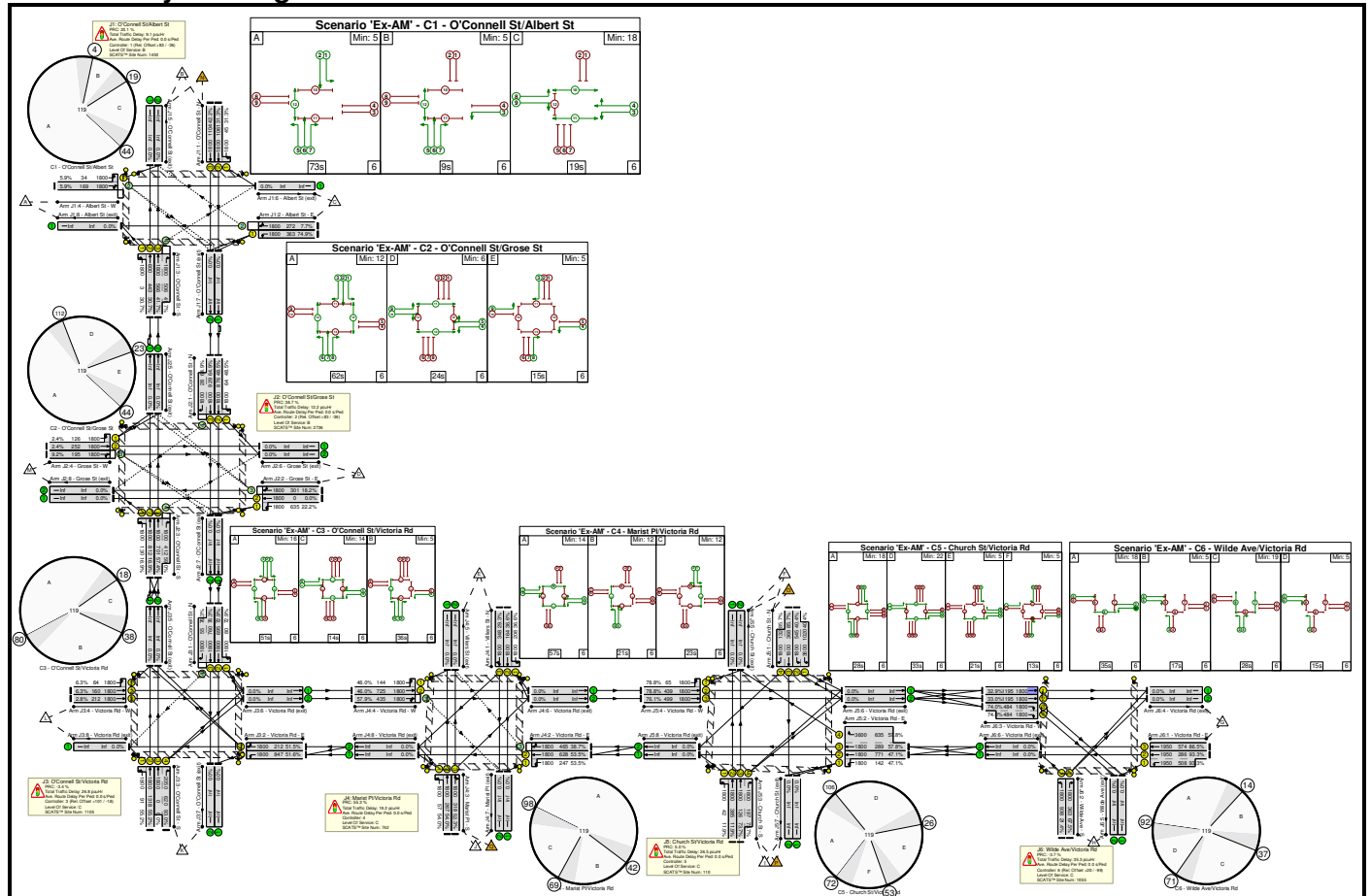
GTA Basic Results Summary

User and Project Details

Project:	14S1091200 PNUR - Rezoning
Title:	Parramatta North Modelling - Victoria Road
Location:	North Parramatta - Victoria Road
File name:	140910Ing_Parramatta North modelling_South_EX-AM_PM_SAT.lsg3x

Scenario 1: 'Ex-AM' (FG1: 'Existing AM', Plan 1: 'Existing AM')

Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - Victoria Road	-	-	-	93.3%	-	-
J1: O'Connell St/Albert St	-	-	-	74.9%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	346	31.3 : 31.3%	13.3	5.6
1/3	O'Connell St - N Ahead	U	466	42.2%	14.8	8.4
2/1	Albert St - E Left	U	272	74.9%	58.8	8.6
2/2	Albert St - E Right Ahead	O	21	7.7%	49.9	0.6
3/2+3/1	O'Connell St - S Ahead Left	U	137	30.7 : 30.7%	6.4	2.8
3/3+3/4	O'Connell St - S Ahead Right	U+O	447	41.7 : 41.7%	6.2	1.4
4/2+4/1	Albert St - W Left Ahead Right	O+U	12	5.9 : 5.9%	53.1	0.3
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
J2: O'Connell St/Grose St	-	-	-	64.9%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	456	48.5 : 48.5%	16.2	7.4
1/3+1/4	O'Connell St - N Ahead Right	U+O	621	64.9 : 64.9%	18.6	10.4
2/2+2/1	Grose St - E Left Ahead	U	141	0.0 : 22.2%	30.7	3.4
2/3	Grose St - E Right Ahead	O	55	18.2%	47.6	1.6
3/2+3/1	O'Connell St - S Ahead Left	U	159	16.9 : 16.9%	14.5	2.2
3/3+3/4	O'Connell St - S Ahead Right	U+O	645	57.4 : 59.0%	22.4	6.8
4/2+4/1	Grose St - W Left Ahead	U	9	2.4 : 2.4%	39.1	0.2
4/3	Grose St - W Ahead Right	O	18	9.2%	49.6	0.5
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J3: O'Connell St/Victoria Rd	-	-	-	93.0%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	565	72.9 : 72.9%	35.9	18.5
1/3+1/4	O'Connell St - N Ahead Right	U+O	622	76.3 : 76.3%	23.2	20.1

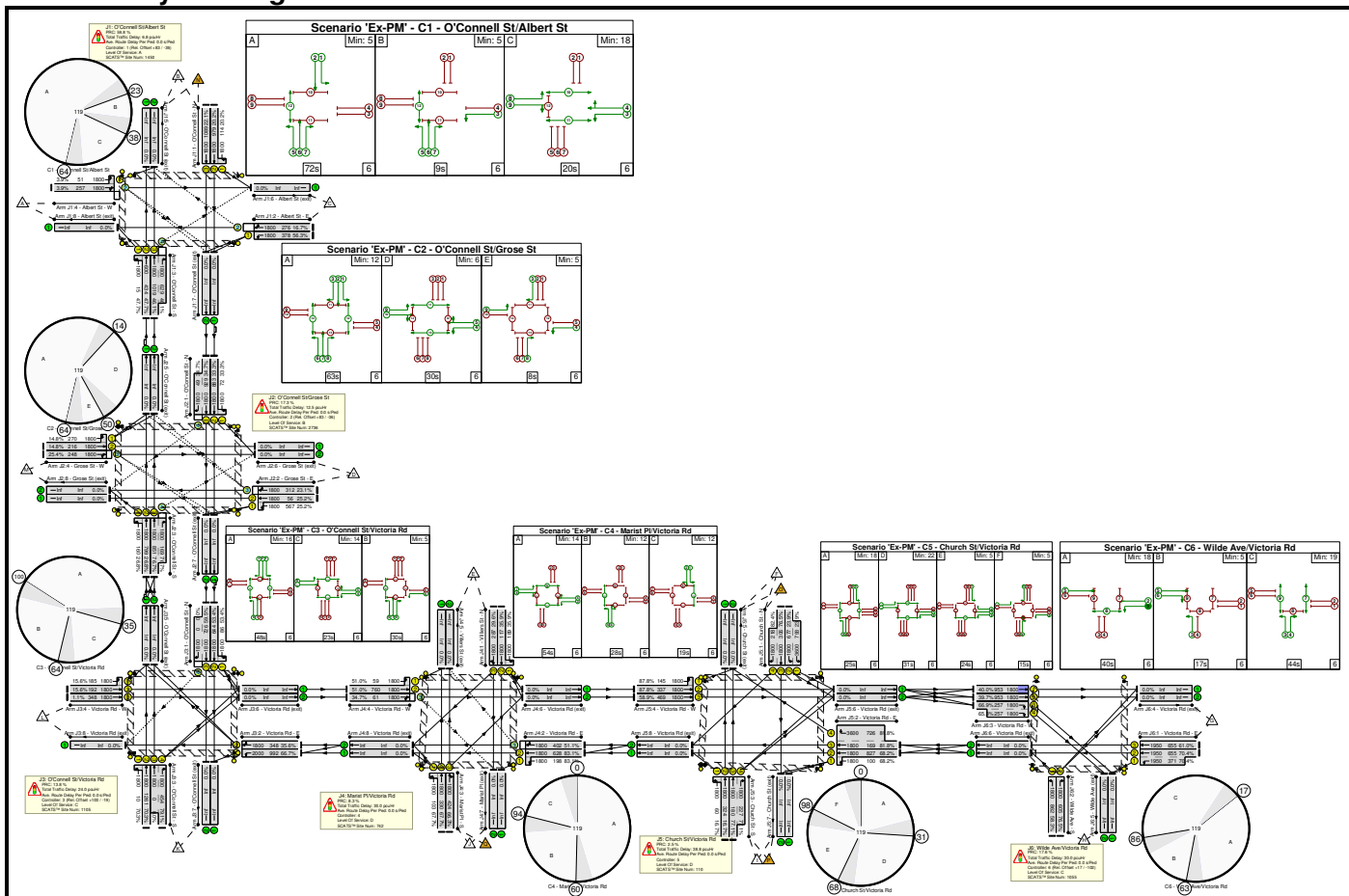
GTA Basic Results Summary

2/1	Victoria Rd - E Left	U	437	51.6%	13.8	13.2
2/2	Victoria Rd - E Right Ahead	U	109	51.5%	56.6	2.4
3/2+3/1	O'Connell St - S Ahead Left	U	778	55.2 : 55.2%	7.8	10.3
3/4+3/3	O'Connell St - S Ahead Right	U	577	93.0 : 0.0%	73.7	23.8
4/2+4/1	Victoria Rd - W Left Ahead	U	14	6.3 : 6.3%	55.3	0.3
4/3	Victoria Rd - W Ahead	U	6	2.8%	55.5	0.2
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Marist Pl/Victoria Rd	-	-	-	57.9%	-	-
1/2+1/1	Villiers St - N Left Ahead	U	136	36.6 : 36.6%	48.4	3.4
1/3	Villiers St - N Ahead Right	U	102	29.3%	48.4	3.1
2/2+2/1	Victoria Rd - E Left Ahead	U	468	53.5 : 53.5%	14.3	3.8
2/3	Victoria Rd - E Right Ahead	O	180	38.7%	22.2	4.5
3/2+3/1	Marist Pl - S Ahead Left	U	175	54.0 : 54.0%	56.3	5.6
3/3	Marist Pl - S Ahead Right	U	166	52.3%	56.2	5.5
4/2+4/1	Victoria Rd - W Left Ahead	U	399	46.0 : 46.0%	42.6	13.1
4/3	Victoria Rd - W Ahead Right	O	252	57.9%	42.0	8.1
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J5: Church St/Victoria Rd	-	-	-	85.7%	-	-
1/2+1/1	Church St - N Left	U	632	40.4 : 40.4%	15.6	6.1
1/3+1/4	Church St - N Ahead Right	U	428	85.7 : 85.7%	69.2	13.6
2/2+2/1	Victoria Rd - E Left Ahead	U	430	47.1 : 47.1%	4.7	4.5
2/3+2/4	Victoria Rd - E Right Ahead	U	534	57.8 : 57.8%	25.6	16.6
3/2+3/1	Church St - S Ahead Left	U	51	11.9 : 11.9%	40.7	1.3
3/3+3/4	Church St - S Ahead Right	U	238	73.7 : 73.7%	66.2	6.0

GTA Basic Results Summary

4/2+4/1	Victoria Rd - W Left Ahead	U	397	78.8 : 78.8%	22.3	7.8
4/3	Victoria Rd - W Ahead	U	380	76.1%	36.0	7.6
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J6: Wilde Ave/Victoria Rd	-	-	-	93.3%	-	-
1/2+1/1	Victoria Rd - E Left Ahead	U	741	93.3 : 93.3%	67.7	21.0
1/3	Victoria Rd - E Ahead	U	496	86.5%	61.3	18.4
2/1	Wilde Ave - S Left	U	201	21.4%	13.4	3.0
2/2	Wilde Ave - S Right	U	245	67.5%	58.9	8.4
3/1	Victoria Rd - W Ahead	U	393	32.9%	10.0	4.0
3/2	Victoria Rd - W Ahead	U	394	33.0%	10.0	4.0
3/3+3/4	Victoria Rd - W Right	U	716	74.0 : 74.0%	29.9	21.5
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - O'Connell St/Albert St	PRC for Signalled Lanes (%):	20.1	Total Delay for Signalled Lanes (pcuHr):	9.13	Cycle Time (s):	119
C2 - O'Connell St/Grose St	PRC for Signalled Lanes (%):	38.7	Total Delay for Signalled Lanes (pcuHr):	12.20	Cycle Time (s):	119
C3 - O'Connell St/Victoria Rd	PRC for Signalled Lanes (%):	-3.4	Total Delay for Signalled Lanes (pcuHr):	26.84	Cycle Time (s):	119
C4 - Marist Pl/Victoria Rd	PRC for Signalled Lanes (%):	55.3	Total Delay for Signalled Lanes (pcuHr):	19.16	Cycle Time (s):	119
C5 - Church St/Victoria Rd	PRC for Signalled Lanes (%):	5.0	Total Delay for Signalled Lanes (pcuHr):	26.53	Cycle Time (s):	119
C6 - Wilde Ave/Victoria Rd	PRC for Signalled Lanes (%):	-3.7	Total Delay for Signalled Lanes (pcuHr):	35.27	Cycle Time (s):	119
	PRC Over All Lanes (%):	-3.7	Total Delay Over All Lanes(pcuHr):	129.13		

GTA Basic Results Summary
Scenario 2: 'Ex-PM' (FG2: 'Existing PM', Plan 2: 'Existing PM')
Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - Victoria Road	-	-	-	87.8%	-	-
J1: O'Connell St/Albert St	-	-	-	56.3%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	221	20.2 : 20.2%	12.6	3.3
1/3	O'Connell St - N Ahead	U	241	22.1%	12.8	3.8
2/1	Albert St - E Left	U	213	56.3%	46.5	6.1
2/2	Albert St - E Right Ahead	O	46	16.7%	50.6	1.4
3/2+3/1	O'Connell St - S Ahead Left	U	214	47.7 : 47.7%	9.5	4.6
3/3+3/4	O'Connell St - S Ahead Right	U+O	760	46.1 : 46.1%	5.1	3.1
4/2+4/1	Albert St - W Left Ahead Right	O+U	12	3.9 : 3.9%	48.6	0.3
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
J2: O'Connell St/Grose St	-	-	-	76.7%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	318	33.3 : 33.3%	14.9	5.6
1/3+1/4	O'Connell St - N Ahead Right	U+O	339	34.7 : 34.7%	14.8	5.2
2/2+2/1	Grose St - E Left Ahead	U	157	25.2 : 25.2%	32.6	3.8
2/3	Grose St - E Right Ahead	O	72	23.1%	45.7	2.1
3/2+3/1	O'Connell St - S Ahead Left	U	257	26.8 : 26.8%	15.0	3.9
3/3+3/4	O'Connell St - S Ahead Right	U+O	783	76.7 : 76.7%	22.2	11.9
4/2+4/1	Grose St - W Left Ahead	U	72	14.8 : 14.8%	34.3	1.0
4/3	Grose St - W Ahead Right	O	63	25.4%	48.1	1.8
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J3: O'Connell St/Victoria Rd	-	-	-	79.1%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	390	53.4 : 53.4%	33.2	12.2
1/3+1/4	O'Connell St - N Ahead Right	U+O	432	59.5 : 0.0%	32.9	13.7

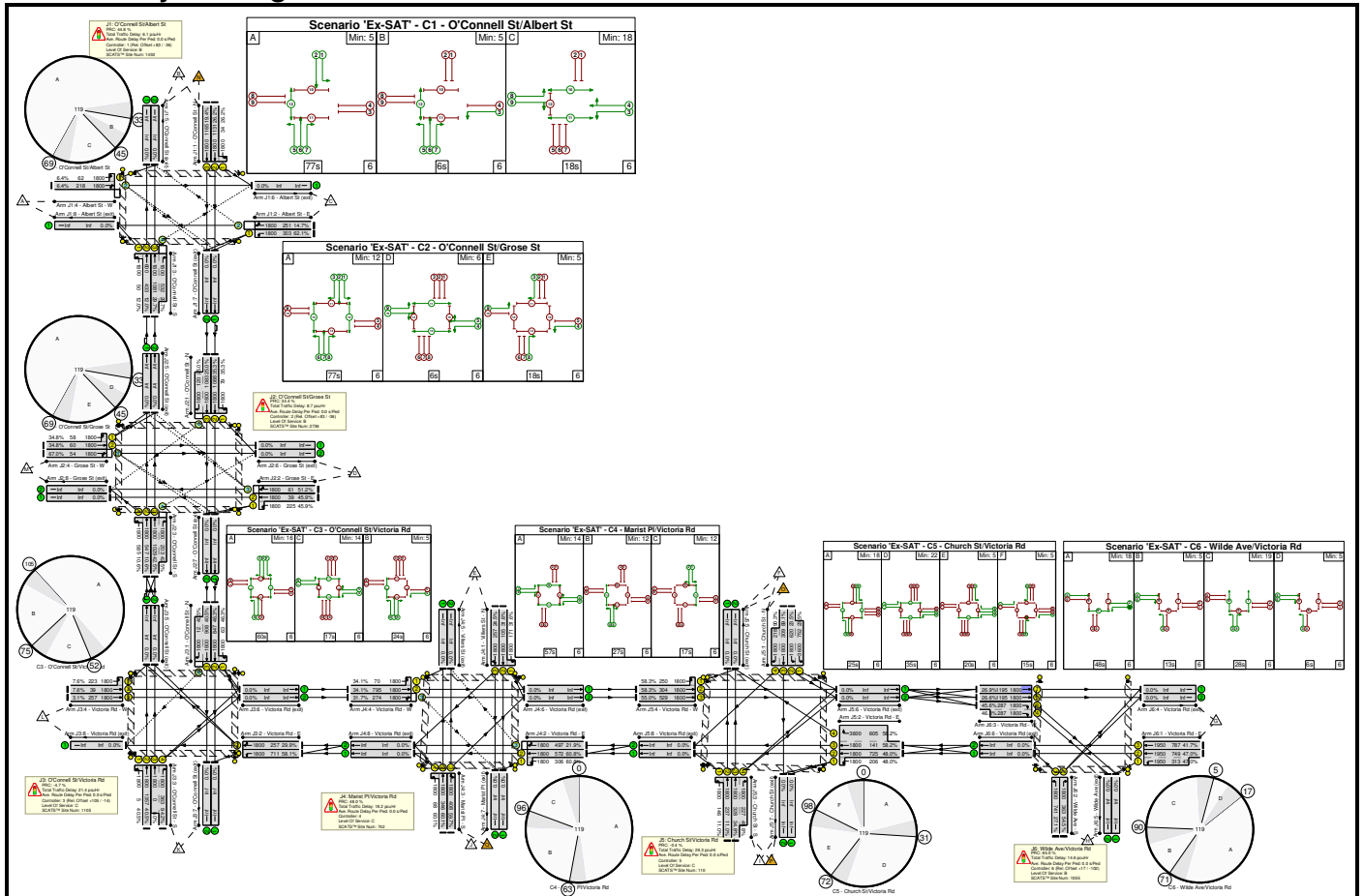
GTA Basic Results Summary

2/1	Victoria Rd - E Left	U	661	66.7%	20.8	22.5
2/2	Victoria Rd - E Right Ahead	U	124	35.6%	62.1	3.2
3/2+3/1	O'Connell St - S Ahead Left	U	894	70.3 : 70.3%	15.0	18.3
3/4+3/3	O'Connell St - S Ahead Right	U	359	79.1 : 0.0%	59.9	12.9
4/2+4/1	Victoria Rd - W Left Ahead	U	59	15.6 : 15.6%	45.1	0.9
4/3	Victoria Rd - W Ahead	U	4	1.1%	44.4	0.1
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Marist Pl/Victoria Rd	-	-	-	83.1%	-	-
1/2+1/1	Villiers St - N Left Ahead	U	110	35.9 : 35.9%	53.0	2.9
1/3	Villiers St - N Ahead Right	U	85	29.6%	53.0	2.7
2/2+2/1	Victoria Rd - E Left Ahead	U	687	83.1 : 83.1%	55.8	19.9
2/3	Victoria Rd - E Right Ahead	O	205	51.1%	49.0	5.4
3/2+3/1	Marist Pl - S Ahead Left	U	293	67.7 : 67.7%	53.7	9.4
3/3	Marist Pl - S Ahead Right	U	281	66.3%	53.7	9.3
4/2+4/1	Victoria Rd - W Left Ahead	U	418	51.0 : 51.0%	40.8	13.5
4/3	Victoria Rd - W Ahead Right	O	21	34.7%	73.2	0.4
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J5: Church St/Victoria Rd	-	-	-	87.8%	-	-
1/2+1/1	Church St - N Left	U	352	23.9 : 23.9%	14.3	2.5
1/3+1/4	Church St - N Ahead Right	U	414	76.5 : 82.4%	61.9	8.9
2/2+2/1	Victoria Rd - E Left Ahead	U	632	68.2 : 68.2%	11.5	18.7
2/3+2/4	Victoria Rd - E Right Ahead	U	732	81.8 : 81.8%	46.8	10.8
3/2+3/1	Church St - S Ahead Left	U	64	16.7 : 16.7%	44.2	1.6
3/3+3/4	Church St - S Ahead Right	U	314	77.1 : 77.1%	64.6	7.2

GTA Basic Results Summary

4/2+4/1	Victoria Rd - W Left Ahead	U	423	87.8 : 87.8%	49.9	16.6
4/3	Victoria Rd - W Ahead	U	276	58.9%	84.5	9.8
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J6: Wilde Ave/Victoria Rd	-	-	-	76.5%	-	-
1/2+1/1	Victoria Rd - E Left Ahead	U	722	70.4 : 70.4%	39.9	14.4
1/3	Victoria Rd - E Ahead	U	400	61.0%	40.0	11.8
2/1	Wilde Ave - S Left	U	503	58.3%	22.3	10.3
2/2	Wilde Ave - S Right	U	463	76.5%	47.7	15.2
3/1	Victoria Rd - W Ahead	U	381	40.0%	14.1	5.1
3/2	Victoria Rd - W Ahead	U	378	39.7%	14.1	5.1
3/3+3/4	Victoria Rd - W Right	U	340	66.9 : 65.3%	56.6	6.6
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - O'Connell St/Albert St	PRC for Signalled Lanes (%):	59.8	Total Delay for Signalled Lanes (pcuHr):	6.83	Cycle Time (s):	119
C2 - O'Connell St/Grose St	PRC for Signalled Lanes (%):	17.3	Total Delay for Signalled Lanes (pcuHr):	12.48	Cycle Time (s):	119
C3 - O'Connell St/Victoria Rd	PRC for Signalled Lanes (%):	13.8	Total Delay for Signalled Lanes (pcuHr):	23.98	Cycle Time (s):	119
C4 - Marist Pl/Victoria Rd	PRC for Signalled Lanes (%):	8.3	Total Delay for Signalled Lanes (pcuHr):	30.03	Cycle Time (s):	119
C5 - Church St/Victoria Rd	PRC for Signalled Lanes (%):	2.5	Total Delay for Signalled Lanes (pcuHr):	38.82	Cycle Time (s):	119
C6 - Wilde Ave/Victoria Rd	PRC for Signalled Lanes (%):	17.6	Total Delay for Signalled Lanes (pcuHr):	30.01	Cycle Time (s):	119
	PRC Over All Lanes (%):	2.5	Total Delay Over All Lanes(pcuHr):	142.15		

GTA Basic Results Summary
Scenario 3: 'Ex-SAT' (FG3: 'Existing SAT', Plan 3: 'Existing SAT')
Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - Victoria Road	-	-	-	94.2%	-	-
J1: O'Connell St/Albert St	-	-	-	62.1%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	305	26.2 : 26.2%	11.0	4.4
1/3	O'Connell St - N Ahead	U	226	19.4%	10.4	3.1
2/1	Albert St - E Left	U	188	62.1%	56.7	5.8
2/2	Albert St - E Right Ahead	O	37	14.7%	52.8	1.1
3/2+3/1	O'Connell St - S Ahead Left	U	58	12.0 : 12.0%	6.6	0.2
3/3+3/4	O'Connell St - S Ahead Right	U+O	479	29.7 : 29.7%	4.7	2.0
4/2+4/1	Albert St - W Left Ahead Right	O+U	18	6.4 : 6.4%	51.1	0.4
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
J2: O'Connell St/Grose St	-	-	-	67.0%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	412	35.3 : 35.3%	9.3	5.4
1/3+1/4	O'Connell St - N Ahead Right	U+O	301	25.0 : 25.0%	7.9	3.0
2/2+2/1	Grose St - E Left Ahead	U	121	45.9 : 45.9%	59.6	3.5
2/3	Grose St - E Right Ahead	O	31	51.2%	115.5	1.5
3/2+3/1	O'Connell St - S Ahead Left	U	120	10.6 : 10.6%	9.1	0.7
3/3+3/4	O'Connell St - S Ahead Right	U+O	523	42.5 : 42.5%	9.5	6.4
4/2+4/1	Grose St - W Left Ahead	U	41	34.8 : 34.8%	69.0	0.9
4/3	Grose St - W Ahead Right	O	36	67.0%	151.1	2.1
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J3: O'Connell St/Victoria Rd	-	-	-	94.2%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	421	46.3 : 46.3%	18.7	11.3
1/3+1/4	O'Connell St - N Ahead Right	U+O	373	40.5 : 40.5%	25.1	17.4

GTA Basic Results Summary

2/1	Victoria Rd - E Left	U	413	58.1%	33.6	14.2
2/2	Victoria Rd - E Right Ahead	U	77	29.9%	65.4	2.4
3/2+3/1	O'Connell St - S Ahead Left	U	552	40.5 : 40.5%	7.3	6.6
3/4+3/3	O'Connell St - S Ahead Right	U	342	94.2 : 0.0%	103.4	16.5
4/2+4/1	Victoria Rd - W Left Ahead	U	20	7.6 : 7.6%	51.6	0.5
4/3	Victoria Rd - W Ahead	U	8	3.1%	51.4	0.2
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Marist Pl/Victoria Rd	-	-	-	60.8%	-	-
1/2+1/1	Villiers St - N Left Ahead	U	87	31.6 : 31.6%	54.6	2.2
1/3	Villiers St - N Ahead Right	U	63	24.5%	54.6	2.0
2/2+2/1	Victoria Rd - E Left Ahead	U	534	60.8 : 60.8%	30.7	12.7
2/3	Victoria Rd - E Right Ahead	O	109	21.9%	29.0	2.3
3/2+3/1	Marist Pl - S Ahead Left	U	249	60.1 : 60.1%	51.7	7.9
3/3	Marist Pl - S Ahead Right	U	244	59.7%	52.0	7.9
4/2+4/1	Victoria Rd - W Left Ahead	U	295	34.1 : 34.1%	29.7	9.9
4/3	Victoria Rd - W Ahead Right	O	87	31.7%	41.1	2.9
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J5: Church St/Victoria Rd	-	-	-	90.3%	-	-
1/2+1/1	Church St - N Left	U	323	23.5 : 23.5%	16.0	2.6
1/3+1/4	Church St - N Ahead Right	U	472	89.1 : 90.3%	75.8	13.6
2/2+2/1	Victoria Rd - E Left Ahead	U	447	48.0 : 48.0%	7.3	6.5
2/3+2/4	Victoria Rd - E Right Ahead	U	434	58.2 : 58.2%	40.6	6.1
3/2+3/1	Church St - S Ahead Left	U	42	11.0 : 11.0%	43.9	0.7
3/3+3/4	Church St - S Ahead Right	U	227	34.8 : 49.8%	49.5	3.8

GTA Basic Results Summary

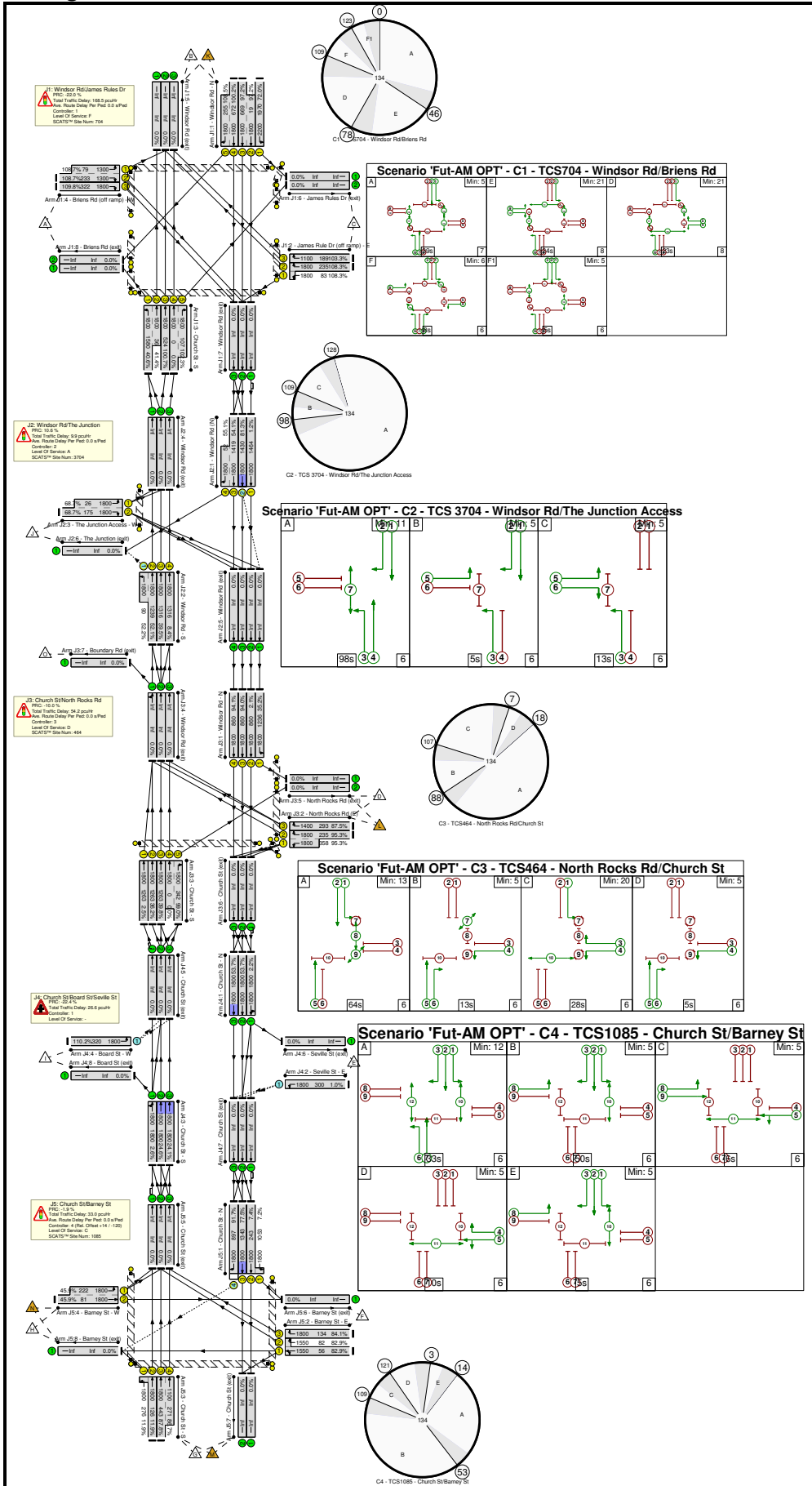
4/2+4/1	Victoria Rd - W Left Ahead	U	323	58.3 : 58.3%	31.3	11.1
4/3	Victoria Rd - W Ahead	U	291	55.0%	69.9	10.2
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J6: Wilde Ave/Victoria Rd	-	-	-	54.5%	-	-
1/2+1/1	Victoria Rd - E Left Ahead	U	499	47.0 : 47.0%	29.0	8.9
1/3	Victoria Rd - E Ahead	U	328	41.7%	29.4	8.1
2/1	Wilde Ave - S Left	U	201	27.1%	20.8	3.9
2/2	Wilde Ave - S Right	U	198	54.5%	53.4	6.4
3/1	Victoria Rd - W Ahead	U	322	26.9%	8.3	3.2
3/2	Victoria Rd - W Ahead	U	318	26.6%	8.4	3.2
3/3+3/4	Victoria Rd - W Right	U	264	45.6 : 46.3%	31.4	3.1
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - O'Connell St/Albert St	PRC for Signalled Lanes (%):	44.8	Total Delay for Signalled Lanes (pcuHr):	6.07	Cycle Time (s):	119
C2 - O'Connell St/Grose St	PRC for Signalled Lanes (%):	34.4	Total Delay for Signalled Lanes (pcuHr):	8.70	Cycle Time (s):	119
C3 - O'Connell St/Victoria Rd	PRC for Signalled Lanes (%):	-4.7	Total Delay for Signalled Lanes (pcuHr):	21.38	Cycle Time (s):	119
C4 - Marist Pl/Victoria Rd	PRC for Signalled Lanes (%):	48.0	Total Delay for Signalled Lanes (pcuHr):	18.24	Cycle Time (s):	119
C5 - Church St/Victoria Rd	PRC for Signalled Lanes (%):	-0.4	Total Delay for Signalled Lanes (pcuHr):	29.27	Cycle Time (s):	119
C6 - Wilde Ave/Victoria Rd	PRC for Signalled Lanes (%):	65.0	Total Delay for Signalled Lanes (pcuHr):	14.58	Cycle Time (s):	119
	PRC Over All Lanes (%):	-4.7	Total Delay Over All Lanes(pcuHr):	98.24		

GTA Basic Results Summary

User and Project Details

Project:	14S1091200 PNUR – Rezoning
Title:	Parramatta North Modelling - North
File name:	141008Ing_Parramatta North modelling_North_FUT-AM.lsg3x
Company:	GTA Consultants Sydney
Address:	Lv6, 15 Help Street CHATSWOOD NSW 2067

**Scenario 2: 'Fut-AM OPT' (FG1: 'Future AM + Dev (Sensitivity)', Plan 1: 'Existing - AM')
Network Layout Diagram**



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - North	-	-	-	110.2%	-	-
J1: Windsor Rd/James Rules Dr	-	-	-	109.8%	-	-
1/1	Windsor Rd - N Left	U	1418	72.0%	5.3	16.6
1/3+1/2	Windsor Rd - N Ahead	U	668	97.2 : 97.2%	89.3	32.9
1/4+1/5	Windsor Rd - N Ahead Right	U	950	100.2 : 108.5%	134.5	47.3
2/2+2/1	James Rule Dr (off ramp) - E Right Left	U	345	108.3 : 108.3%	254.2	33.2
2/3	James Rule Dr (off ramp) - E Right	U	195	103.3%	221.7	16.2
3/1+3/2	Church St - S Ahead Left	U	669	40.6 : 41.4%	2.4	0.9
3/3	Church St - S Ahead	U	537	100.7%	124.9	32.1
3/4+3/5	Church St - S Ahead Right	U	112	0.0 : 102.3%	263.4	10.1
4/2+4/1	Briens Rd (off ramp) - W Left Right	U	339	108.7 : 108.7%	251.9	28.3
4/3	Briens Rd (off ramp) - W Right	U	354	109.8%	278.8	34.5
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
Ped Link: P5	P6	-	0	0.0%	-	-
Ped Link: P6	P7	-	0	0.0%	-	-
Ped Link: P7	P8	-	0	0.0%	-	-
Ped Link: P8	P5	-	0	0.0%	-	-
J2: Windsor Rd/The Junction	-	-	-	81.3%	-	-
1/1	Windsor Rd (N) Ahead	U	18	1.2%	1.3	0.0
1/2	Windsor Rd (N) Ahead	O	1197	81.3%	10.2	20.7
1/3+1/4	Windsor Rd (N) Ahead Right	U	823	54.1 : 55.1%	3.2	1.4
2/2+2/1	Windsor Rd - S Ahead Left	U+O	706	52.1 : 52.2%	8.3	10.3
2/3	Windsor Rd - S Ahead	U	530	39.5%	6.4	7.6
2/4	Windsor Rd - S Ahead	U	112	8.4%	4.2	0.9
3/2+3/1	The Junction Access - W Left Right	U	138	68.7 : 68.7%	84.6	5.4

GTA Basic Results Summary

Ped Link: P1	P1	-	0	0.0%	-	-
J3: Church St/North Rocks Rd	-	-	-	99.0%	-	-
1/1	Windsor Rd - N Left	U	447	35.2%	6.0	3.0
1/2	Windsor Rd - N Ahead	U	18	2.1%	4.6	0.1
1/3	Windsor Rd - N Ahead	U	829	94.0%	48.1	32.9
1/4	Windsor Rd - N Ahead	U	835	94.1%	52.8	32.6
2/2+2/1	North Rocks Rd (E) Right Left	U	565	95.3 : 95.3%	81.5	22.1
2/3	North Rocks Rd (E) Right	U	256	87.5%	93.6	12.2
3/1	Church St - S Ahead	U	32	2.5%	6.5	0.3
3/2	Church St - S Ahead	U	470	36.2%	5.7	3.2
3/3	Church St - S Ahead	U	516	39.8%	5.6	3.4
3/5+3/4	Church St - S Ahead Right	U	245	99.0 : 0.0%	147.1	14.7
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Church St/Board St/Seville St	-	-	-	110.2%	-	-
1/1	Church St - N Left Ahead	U	41	2.2%	1.0	0.0
1/2	Church St - N Ahead	U	986	53.7%	2.2	0.6
1/3	Church St - N Ahead	U	996	53.7%	2.9	1.6
2/1	Seville St - E Left	O	3	1.0%	14.3	0.0
3/1	Church St - S Ahead Left	U	46	2.6%	1.0	0.0
3/2	Church St - S Ahead	U	442	24.6%	1.3	0.2
3/3	Church St - S Ahead	U	434	24.1%	1.3	0.2
4/1	Board St - W Left	O	353	110.2%	253.9	59.7
J5: Church St/Barney St	-	-	-	91.7%	-	-
1/2+1/1	Church St - N Left Ahead	U	96	7.4 : 7.2%	6.9	0.6
1/3	Church St - N Ahead	U	1067	77.5%	12.8	11.7
1/4	Church St - N Right	O	842	91.7%	32.6	23.8
2/1+2/2	Barney St - E Right Left Ahead	U	114	82.9 : 82.9%	123.5	5.5

GTA Basic Results Summary

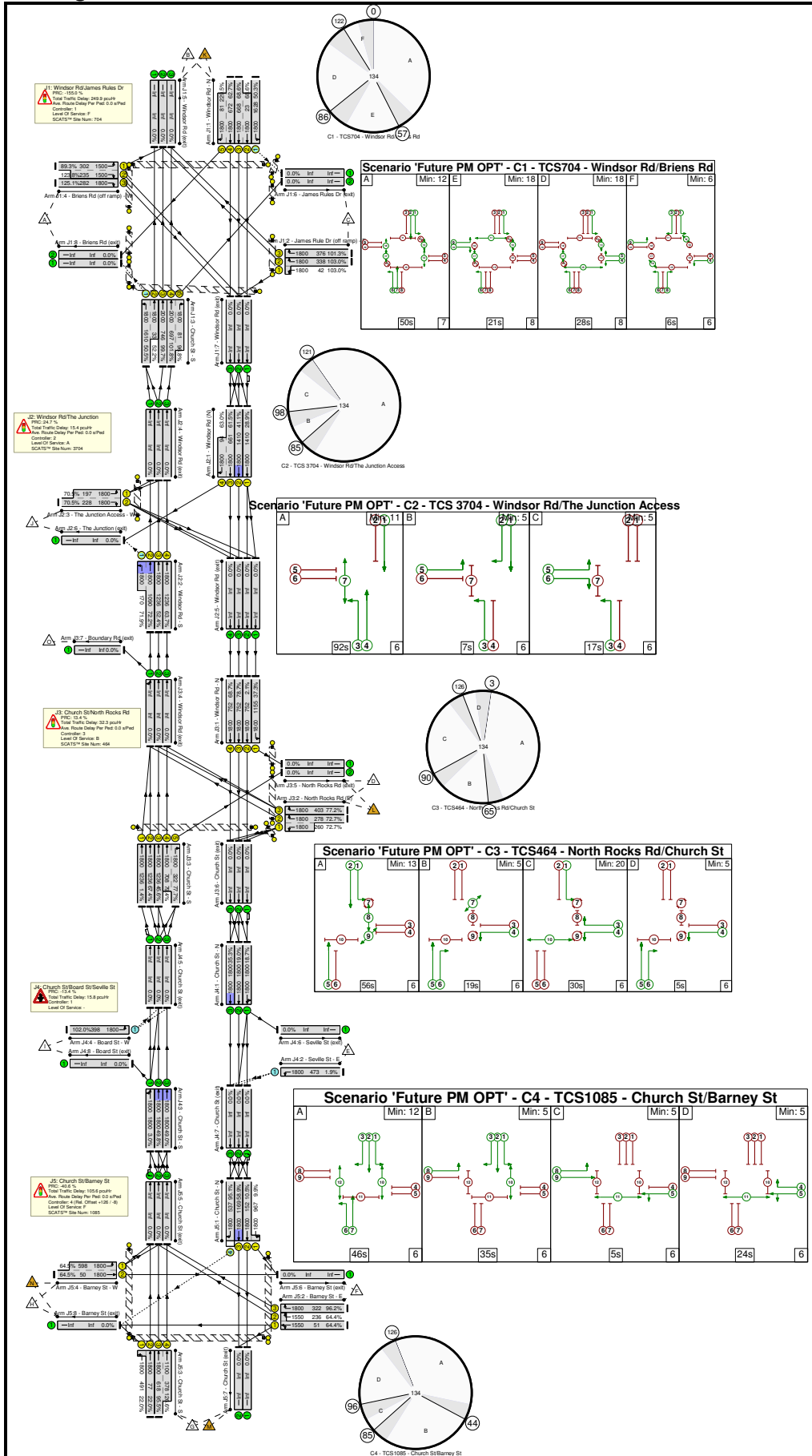
2/3	Barney St - E Right	U	113	84.1%	131.2	6.3
3/2+3/1	Church St - S Ahead Left	U	48	11.9 : 11.9%	45.9	1.0
3/3+3/4	Church St - S Ahead	U	624	87.8 : 86.7%	67.1	17.1
4/2+4/1	Barney St - W Left Ahead	U	139	45.9 : 45.9%	34.9	1.8
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - TCS704 - Windsor Rd/Briens Rd	PRC for Signalled Lanes (%):	-22.0	Total Delay for Signalled Lanes (pcuHr):	168.46	Cycle Time (s):	134
C2 - TCS 3704 - Windsor Rd/The Junction Access	PRC for Signalled Lanes (%):	10.6	Total Delay for Signalled Lanes (pcuHr):	9.88	Cycle Time (s):	134
C3 - TCS464 - North Rocks Rd/Church St	PRC for Signalled Lanes (%):	-10.0	Total Delay for Signalled Lanes (pcuHr):	54.18	Cycle Time (s):	134
C4 - TCS1085 - Church St/Barney St	PRC for Signalled Lanes (%):	-1.9	Total Delay for Signalled Lanes (pcuHr):	32.95	Cycle Time (s):	134
	PRC Over All Lanes (%):	-22.4	Total Delay Over All Lanes(pcuHr):	292.09		

GTA Basic Results Summary

User and Project Details

Project:	14S1091200 PNUR – Rezoning
Title:	Parramatta North Modelling - North
File name:	141008Ing_Parramatta North modelling_North_FUT-PMSAT.lsg3x
Company:	GTA Consultants Sydney
Address:	Lv6, 15 Help Street CHATSWOOD NSW 2067

Scenario 3: 'Future PM OPT' (FG1: 'Future PM + Dev (Sensitivity)', Plan 2: 'Existing - PM')
Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - North	-	-	-	229.5%	-	-
J1: Windsor Rd/James Rules Dr	-	-	-	229.5%	-	-
1/1	Windsor Rd - N Left	O	818	50.3%	3.3	5.7
1/3+1/2	Windsor Rd - N Ahead	U	474	68.6 : 68.6%	43.2	15.3
1/4+1/5	Windsor Rd - N Ahead Right	U	606	62.7 : 229.5%	402.7	67.2
2/2+2/1	James Rule Dr (off ramp) - E Right Left	U	391	103.0 : 103.0%	178.3	29.7
2/3	James Rule Dr (off ramp) - E Right	U	381	101.3%	159.6	25.4
3/1+3/2	Church St - S Ahead Left	O+U	857	50.5 : 52.2%	2.7	8.1
3/3	Church St - S Ahead	U	790	99.7%	102.0	40.6
3/4+3/5	Church St - S Ahead Right	U	801	101.8 : 96.8%	113.5	46.9
4/1+4/2	Briens Rd (off ramp) - W Left Right	U	561	89.3 : 123.8%	293.0	48.2
4/3	Briens Rd (off ramp) - W Right	U	353	125.1%	481.7	53.6
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
Ped Link: P5	P6	-	0	0.0%	-	-
Ped Link: P6	P7	-	0	0.0%	-	-
Ped Link: P7	P8	-	0	0.0%	-	-
Ped Link: P8	P4	-	0	0.0%	-	-
J2: Windsor Rd/The Junction	-	-	-	72.2%	-	-
1/1	Windsor Rd (N) Ahead	U	442	28.9%	2.5	0.8
1/2	Windsor Rd (N) Ahead	U	626	41.1%	2.7	1.0
1/3+1/4	Windsor Rd (N) Ahead Right	U	514	61.5 : 63.0%	12.3	2.9
2/2+2/1	Windsor Rd - S Ahead Left	U+O	941	72.2 : 71.9%	12.3	10.4
2/3	Windsor Rd - S Ahead	U	694	52.4%	7.5	5.3
2/4	Windsor Rd - S Ahead	U	801	63.7%	14.6	21.9
3/2+3/1	The Junction Access - W Left Right	U	300	70.5 : 70.5%	64.5	6.9

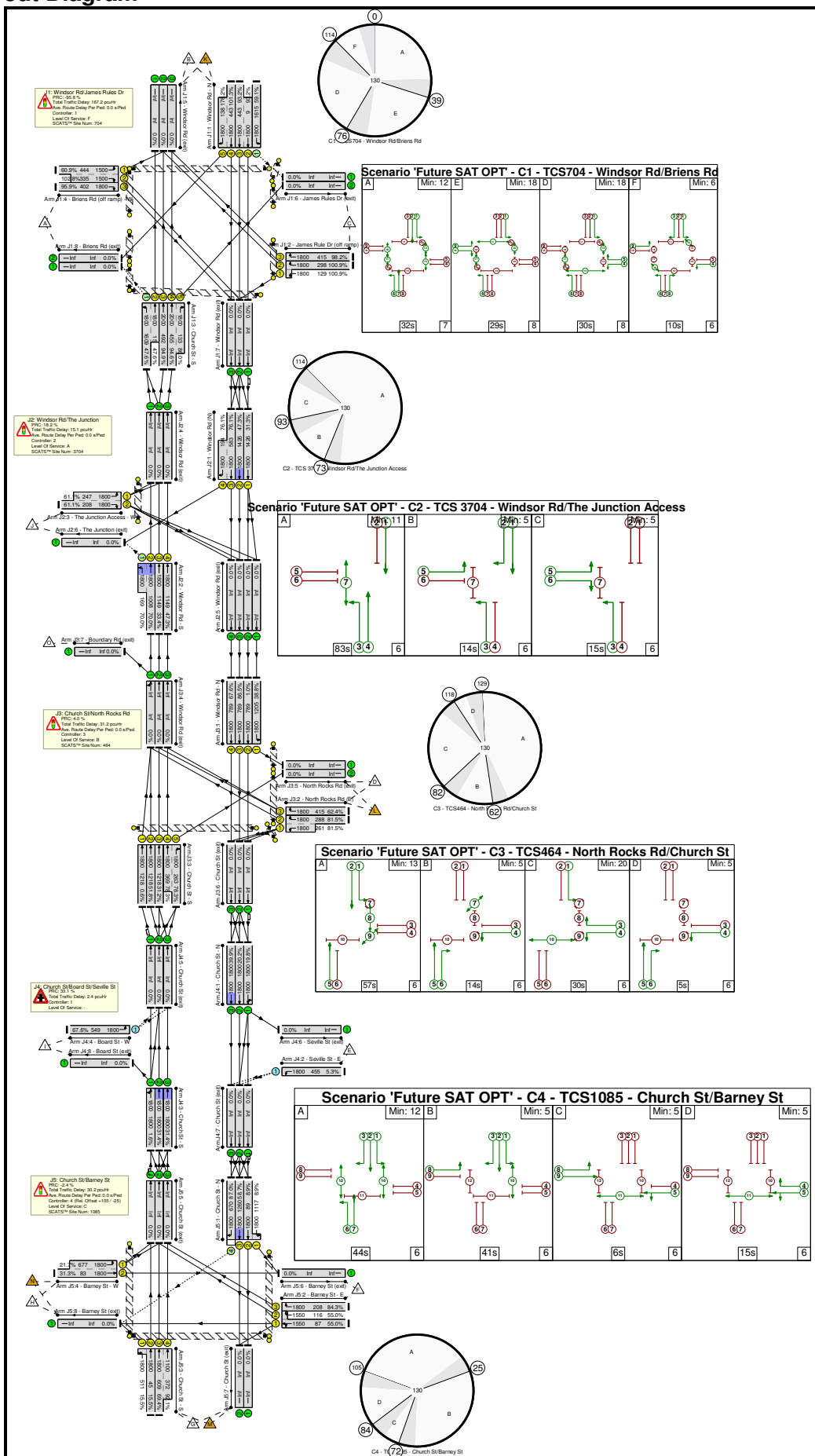
GTA Basic Results Summary

Ped Link: P1	P1	-	0	0.0%	-	-
J3: Church St/North Rocks Rd	-	-	-	79.4%	-	-
1/1	Windsor Rd - N Left	U	465	37.3%	6.0	5.8
1/2	Windsor Rd - N Ahead	U	16	2.1%	19.0	0.2
1/3	Windsor Rd - N Ahead	U	638	78.7%	33.6	12.3
1/4	Windsor Rd - N Ahead	U	560	68.7%	37.7	15.6
2/2+2/1	North Rocks Rd (E) Right Left	U	391	72.7 : 72.7%	46.0	9.6
2/3	North Rocks Rd (E) Right	U	311	77.2%	67.7	12.4
3/1	Church St - S Ahead	U	17	1.4%	10.7	0.2
3/2	Church St - S Ahead	U	871	67.4%	12.6	14.3
3/3	Church St - S Ahead	U	609	45.6%	6.9	7.0
3/5+3/4	Church St - S Ahead Right	U	837	77.7 : 79.4%	25.0	11.0
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Church St/Board St/Seville St	-	-	-	102.0%	-	-
1/1	Church St - N Left Ahead	U	360	18.7%	1.2	0.1
1/2	Church St - N Ahead	U	364	19.0%	1.2	0.1
1/3	Church St - N Ahead	U	679	35.3%	1.5	0.3
2/1	Seville St - E Left	O	9	1.9%	3.9	0.0
3/1	Church St - S Ahead Left	U	54	3.0%	1.0	0.0
3/2	Church St - S Ahead	U	939	49.8%	2.0	0.5
3/3	Church St - S Ahead	U	940	49.0%	2.0	0.5
4/1	Board St - W Left	O	406	102.0%	126.9	44.8
J5: Church St/Barney St	-	-	-	126.6%	-	-
1/2+1/1	Church St - N Left Ahead	U	118	10.5 : 9.9%	8.9	0.6
1/3	Church St - N Ahead	U	735	58.9%	10.1	5.7
1/4	Church St - N Right	O	546	95.1%	67.7	24.7
2/1+2/2	Barney St - E Right Left Ahead	U	185	64.4 : 64.4%	67.6	7.0

GTA Basic Results Summary

2/3	Barney St - E Right	U	310	96.2%	127.0	17.6
3/2+3/1	Church St - S Ahead Left	U	125	22.0 : 22.0%	37.7	3.4
3/3+3/4	Church St - S Ahead	U	1068	95.5 : 126.6%	244.8	77.8
4/2+4/1	Barney St - W Left Ahead	U	418	64.5 : 64.5%	46.6	12.9
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - TCS704 - Windsor Rd/Briens Rd	PRC for Signalled Lanes (%):	-155.0	Total Delay for Signalled Lanes (pcuHr):	249.94	Cycle Time (s):	134
C2 - TCS 3704 - Windsor Rd/The Junction Access	PRC for Signalled Lanes (%):	24.7	Total Delay for Signalled Lanes (pcuHr):	15.35	Cycle Time (s):	134
C3 - TCS464 - North Rocks Rd/Church St	PRC for Signalled Lanes (%):	13.4	Total Delay for Signalled Lanes (pcuHr):	32.27	Cycle Time (s):	134
C4 - TCS1085 - Church St/Barney St	PRC for Signalled Lanes (%):	-40.6	Total Delay for Signalled Lanes (pcuHr):	105.55	Cycle Time (s):	134
	PRC Over All Lanes (%):	-155.0	Total Delay Over All Lanes(pcuHr):	418.93		

GTA Basic Results Summary
Scenario 4: 'Future SAT OPT' (FG2: 'Future SAT + Dev (Sensitivity)', Plan 3: 'Existing - SAT')
Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - North	-	-	-	176.2%	-	-
J1: Windsor Rd/James Rules Dr	-	-	-	176.2%	-	-
1/1	Windsor Rd - N Left	O	954	59.1%	4.1	8.1
1/3+1/2	Windsor Rd - N Ahead	U	421	93.2 : 93.2%	91.7	19.7
1/4+1/5	Windsor Rd - N Ahead Right	U	693	101.3 : 176.2%	389.1	75.1
2/2+2/1	James Rule Dr (off ramp) - E Right Left	U	431	100.9 : 100.9%	143.0	26.6
2/3	James Rule Dr (off ramp) - E Right	U	408	98.2%	124.0	23.0
3/1+3/2	Church St - S Ahead Left	O+U	773	47.6 : 47.6%	2.5	0.7
3/3	Church St - S Ahead	U	467	94.9%	100.0	22.5
3/4+3/5	Church St - S Ahead Right	U	544	94.6 : 86.0%	70.0	21.8
4/1+4/2	Briens Rd (off ramp) - W Left Right	U	614	60.9 : 102.8%	78.3	19.3
4/3	Briens Rd (off ramp) - W Right	U	385	95.9%	110.8	20.2
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
Ped Link: P5	P6	-	0	0.0%	-	-
Ped Link: P6	P7	-	0	0.0%	-	-
Ped Link: P7	P8	-	0	0.0%	-	-
Ped Link: P8	P4	-	0	0.0%	-	-
J2: Windsor Rd/The Junction	-	-	-	76.1%	-	-
1/1	Windsor Rd (N) Ahead	U	452	31.3%	2.7	1.3
1/2	Windsor Rd (N) Ahead	U	680	47.3%	3.4	2.2
1/3+1/4	Windsor Rd (N) Ahead Right	U	597	76.1 : 76.1%	19.5	6.9
2/2+2/1	Windsor Rd - S Ahead Left	U+O	823	70.0 : 70.0%	14.4	15.7
2/3	Windsor Rd - S Ahead	U	384	33.4%	5.6	1.5
2/4	Windsor Rd - S Ahead	U	544	47.3%	18.6	14.1
3/2+3/1	The Junction Access - W Left Right	U	278	61.1 : 61.1%	55.7	5.1

GTA Basic Results Summary

Ped Link: P1	P1	-	0	0.0%	-	-
J3: Church St/North Rocks Rd	-	-	-	86.5%	-	-
1/1	Windsor Rd - N Left	U	473	38.8%	7.4	6.9
1/2	Windsor Rd - N Ahead	U	8	1.0%	13.8	0.1
1/3	Windsor Rd - N Ahead	U	688	86.5%	41.0	16.1
1/4	Windsor Rd - N Ahead	U	538	67.6%	41.7	14.8
2/2+2/1	North Rocks Rd (E) Right Left	U	448	81.5 : 81.5%	52.5	12.3
2/3	North Rocks Rd (E) Right	U	259	62.4%	56.3	9.2
3/1	Church St - S Ahead	U	7	0.6%	7.5	0.1
3/2	Church St - S Ahead	U	631	51.8%	6.6	6.6
3/3	Church St - S Ahead	U	380	31.2%	4.9	3.3
3/5+3/4	Church St - S Ahead Right	U	495	78.3 : 78.3%	28.8	8.0
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Church St/Board St/Seville St	-	-	-	67.6%	-	-
1/1	Church St - N Left Ahead	U	359	19.8%	1.2	0.1
1/2	Church St - N Ahead	U	365	20.2%	1.3	0.1
1/3	Church St - N Ahead	U	723	39.9%	1.7	0.6
2/1	Seville St - E Left	O	24	5.3%	4.2	0.0
3/1	Church St - S Ahead Left	U	29	1.6%	1.0	0.0
3/2	Church St - S Ahead	U	565	31.4%	1.5	0.2
3/3	Church St - S Ahead	U	565	31.4%	1.5	0.2
4/1	Board St - W Left	O	371	67.6%	12.5	6.1
J5: Church St/Barney St	-	-	-	92.1%	-	-
1/2+1/1	Church St - N Left Ahead	U	108	8.9 : 8.9%	10.3	1.2
1/3	Church St - N Ahead	U	745	58.7%	13.4	9.3
1/4	Church St - N Right	O	587	87.0%	45.5	16.9
2/1+2/2	Barney St - E Right Left Ahead	U	112	55.0 : 55.0%	70.6	3.6

GTA Basic Results Summary

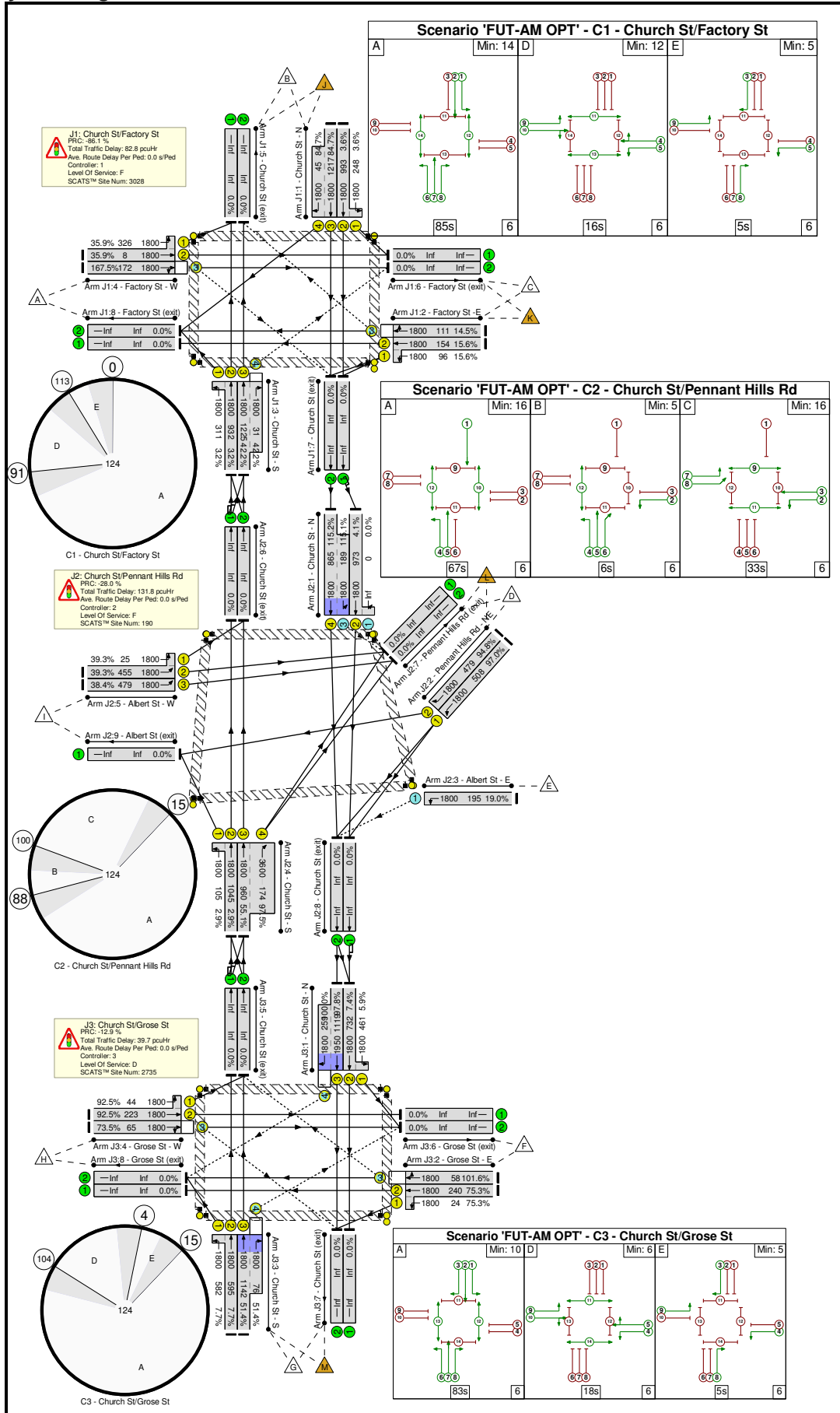
2/3	Barney St - E Right	U	175	84.3%	104.5	8.5
3/2+3/1	Church St - S Ahead Left	U	86	15.5 : 15.5%	36.3	2.2
3/3+3/4	Church St - S Ahead	U	766	69.4 : 92.1%	47.3	14.9
4/2+4/1	Barney St - W Left Ahead	U	173	31.3 : 21.7%	33.2	3.5
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - TCS704 - Windsor Rd/Briens Rd	PRC for Signalled Lanes (%):	-95.8	Total Delay for Signalled Lanes (pcuHr):	167.19	Cycle Time (s):	130
C2 - TCS 3704 - Windsor Rd/The Junction Access	PRC for Signalled Lanes (%):	18.2	Total Delay for Signalled Lanes (pcuHr):	15.14	Cycle Time (s):	130
C3 - TCS464 - North Rocks Rd/Church St	PRC for Signalled Lanes (%):	4.0	Total Delay for Signalled Lanes (pcuHr):	31.19	Cycle Time (s):	130
C4 - TCS1085 - Church St/Barney St	PRC for Signalled Lanes (%):	-2.4	Total Delay for Signalled Lanes (pcuHr):	30.21	Cycle Time (s):	130
	PRC Over All Lanes (%):	-95.8	Total Delay Over All Lanes(pcuHr):	246.12		

GTA Basic Results Summary

User and Project Details

Project:	14S1091200 PNUR – Rezoning
Title:	Parramatta North Modelling - PHR
File name:	141001Ing_Parramatta North modelling_PHR_FUT.lsg3x
Company:	GTA Consultants Sydney
Address:	Lv6, 15 Help Street CHATSWOOD NSW 2067

Scenario 4: 'FUT-AM OPT' (FG1: 'Future AM + Dev (Sensitivity)', Plan 1: 'Network Control Plan 1')
Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - PHR	-	-	-	167.5%	-	-
J1: Church St/Factory St	-	-	-	167.5%	-	-
1/2+1/1	Church St - N Left Ahead	U	45	3.6 : 3.6%	8.1	0.4
1/3+1/4	Church St - N Ahead Right	U	1068	84.7 : 84.7%	25.0	29.1
2/2+2/1	Factory St -E Left Ahead	U	39	15.6 : 15.6%	53.9	0.8
2/3	Factory St -E Right Ahead	O	16	14.5%	66.9	0.6
3/2+3/1	Church St - S Ahead Left	U	40	3.2 : 3.2%	10.1	0.5
3/3+3/4	Church St - S Ahead Right	U+O	530	42.2 : 42.2%	8.9	4.7
4/2+4/1	Factory St - W Left Ahead	U	120	35.9 : 35.9%	52.6	3.9
4/3	Factory St - W Ahead Right	O	288	167.5%	891.0	76.1
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J2: Church St/Pennant Hills Rd	-	-	-	115.2%	-	-
1/2+1/1	Church St - N U-Turn Ahead	U+O	40	4.1 : 0.0%	14.0	0.6
1/4+1/3	Church St - N U-Turn Ahead	U+O	1329	115.2 : 115.1%	288.4	137.1
2/1	Pennant Hills Rd - NE Ahead	U	493	97.0%	100.3	21.7
2/2	Pennant Hills Rd - NE Right	U	454	94.8%	93.0	21.4
3/1	Albert St - E Left	O	37	19.0%	11.4	0.1
4/2+4/1	Church St - S Ahead Left	U	33	2.9 : 2.9%	10.1	0.4
4/3+4/4	Church St - S Ahead Right	U	700	55.1 : 97.5%	22.1	14.3
5/2+5/1	Albert St - W Left Left2	U	189	39.3 : 39.3%	43.4	5.6
5/3	Albert St - W Left	U	184	38.4%	43.3	5.5
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-

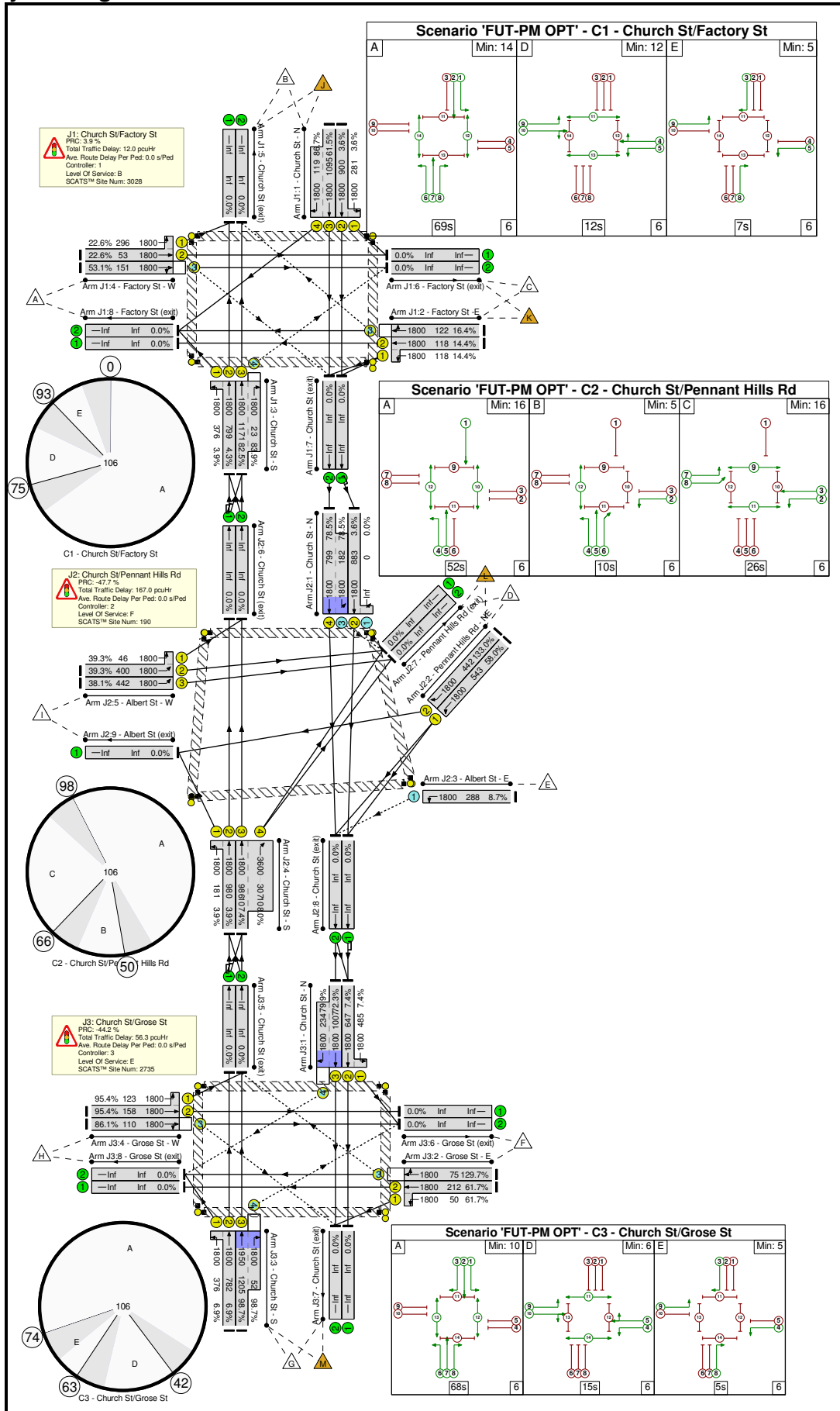
GTA Basic Results Summary

J3: Church St/Grose St	-	-	-	101.6%	-	-
1/2+1/1	Church St - N Left Ahead	U	88	7.4 : 5.9%	7.1	0.5
1/3+1/4	Church St - N Ahead Right	U+O	1573	97.8 : 100.0%	46.8	47.4
2/2+2/1	Grose St - E Left Ahead	U	199	75.3 : 75.3%	76.4	7.9
2/3	Grose St - E Right Ahead	O	59	101.6%	316.9	5.9
3/2+3/1	Church St - S Ahead Left	U	91	7.7 : 7.7%	9.3	0.6
3/3+3/4	Church St - S Ahead Right	U+O	626	51.4 : 51.4%	14.5	10.0
4/2+4/1	Grose St - W Left Ahead	U	247	92.5 : 92.5%	113.5	12.5
4/3	Grose St - W Ahead Right	O	48	73.5%	150.1	2.7
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	2	-	0	0.0%	-	-
Ped Link: P3	3	-	0	0.0%	-	-
Ped Link: P4	4	-	0	0.0%	-	-
C1 - Church St/Factory St	PRC for Signalled Lanes (%):	-86.1	Total Delay for Signalled Lanes (pcuHr):	82.84	Cycle Time (s):	124
C2 - Church St/Pennant Hills Rd	PRC for Signalled Lanes (%):	-28.0	Total Delay for Signalled Lanes (pcuHr):	131.67	Cycle Time (s):	124
C3 - Church St/Grose St	PRC for Signalled Lanes (%):	-12.9	Total Delay for Signalled Lanes (pcuHr):	39.71	Cycle Time (s):	124
	PRC Over All Lanes (%):	-86.1	Total Delay Over All Lanes(pcuHr):	254.33		

GTA Basic Results Summary

Scenario 5: 'FUT-PM OPT' (FG2: 'Future PM + Dev (Sensitivity)', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



GTA Basic Results Summary

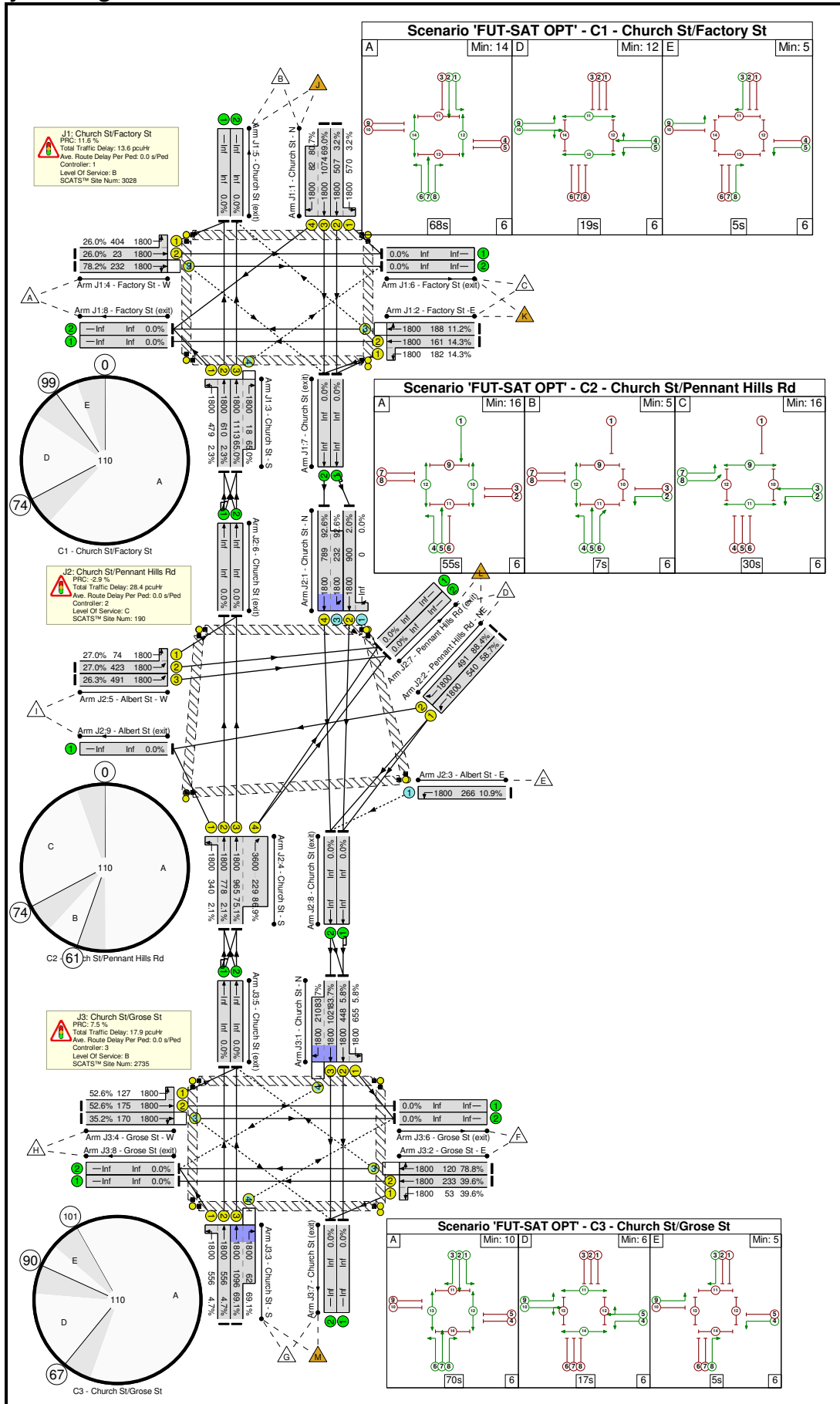
Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - PHR	-	-	-	133.0%	-	-
J1: Church St/Factory St	-	-	-	86.7%	-	-
1/2+1/1	Church St - N Left Ahead	U	42	3.6 : 3.6%	8.6	0.3
1/3+1/4	Church St - N Ahead Right	U	776	61.5 : 86.7%	19.5	11.9
2/2+2/1	Factory St -E Left Ahead	U	34	14.4 : 14.4%	47.2	0.5
2/3	Factory St -E Right Ahead	O	20	16.4%	60.4	0.6
3/2+3/1	Church St - S Ahead Left	U	50	4.3 : 3.9%	9.7	0.4
3/3+3/4	Church St - S Ahead Right	U+O	1083	82.5 : 83.9%	15.6	8.5
4/2+4/1	Factory St - W Left Ahead	U	79	22.6 : 22.6%	43.4	1.9
4/3	Factory St - W Ahead Right	O	80	53.1%	70.7	2.7
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J2: Church St/Pennant Hills Rd	-	-	-	133.0%	-	-
1/2+1/1	Church St - N U-Turn Ahead	U+O	32	3.6 : 0.0%	21.2	0.6
1/4+1/3	Church St - N U-Turn Ahead	U+O	770	78.5 : 78.5%	23.4	12.3
2/1	Pennant Hills Rd - NE Ahead	U	315	58.0%	33.8	7.2
2/2	Pennant Hills Rd - NE Right	U	587	133.0%	545.8	98.8
3/1	Albert St - E Left	O	25	8.7%	6.9	0.1
4/2+4/1	Church St - S Ahead Left	U	45	3.9 : 3.9%	6.2	0.2
4/3+4/4	Church St - S Ahead Right	U	1412	107.4 : 108.0%	170.9	98.0
5/2+5/1	Albert St - W Left Left2	U	175	39.3 : 39.3%	40.0	4.5
5/3	Albert St - W Left	U	168	38.1%	39.9	4.4
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-

GTA Basic Results Summary

J3: Church St/Grose St	-	-	-	129.7%	-	-
1/2+1/1	Church St - N Left Ahead	U	84	7.4 : 7.4%	9.7	0.5
1/3+1/4	Church St - N Ahead Right	U+O	915	72.3 : 79.9%	20.2	11.9
2/2+2/1	Grose St - E Left Ahead	U	162	61.7 : 61.7%	58.6	5.0
2/3	Grose St - E Right Ahead	O	97	129.7%	571.1	16.5
3/2+3/1	Church St - S Ahead Left	U	80	6.9 : 6.9%	9.2	0.6
3/3+3/4	Church St - S Ahead Right	U+O	1240	98.7 : 98.7%	59.0	46.4
4/2+4/1	Grose St - W Left Ahead	U	268	95.4 : 95.4%	117.4	12.8
4/3	Grose St - W Ahead Right	O	95	86.1%	137.9	5.1
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	2	-	0	0.0%	-	-
Ped Link: P3	3	-	0	0.0%	-	-
Ped Link: P4	4	-	0	0.0%	-	-
C1 - Church St/Factory St	PRC for Signalled Lanes (%):	3.9	Total Delay for Signalled Lanes (pcuHr):	12.03	Cycle Time (s):	106
C2 - Church St/Pennant Hills Rd	PRC for Signalled Lanes (%):	-47.7	Total Delay for Signalled Lanes (pcuHr):	166.99	Cycle Time (s):	106
C3 - Church St/Grose St	PRC for Signalled Lanes (%):	-44.2	Total Delay for Signalled Lanes (pcuHr):	56.29	Cycle Time (s):	106
	PRC Over All Lanes (%):	-47.7	Total Delay Over All Lanes(pcuHr):	235.35		

GTA Basic Results Summary
Scenario 6: 'FUT-SAT OPT' (FG3: 'Future SAT + Dev (Sensitivity)', Plan 1: 'Network Control Plan 1')
Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - PHR	-	-	-	92.6%	-	-
J1: Church St/Factory St	-	-	-	80.7%	-	-
1/2+1/1	Church St - N Left Ahead	U	34	3.2 : 3.2%	10.8	0.2
1/3+1/4	Church St - N Ahead Right	U	807	69.0 : 80.7%	21.9	15.8
2/2+2/1	Factory St -E Left Ahead	U	49	14.3 : 14.3%	41.3	0.7
2/3	Factory St -E Right Ahead	O	21	11.2%	49.3	0.6
3/2+3/1	Church St - S Ahead Left	U	25	2.3 : 2.3%	12.6	0.2
3/3+3/4	Church St - S Ahead Right	U+O	735	65.0 : 65.0%	11.8	5.8
4/2+4/1	Factory St - W Left Ahead	U	111	26.0 : 26.0%	40.2	2.9
4/3	Factory St - W Ahead Right	O	181	78.2%	78.8	7.0
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J2: Church St/Pennant Hills Rd	-	-	-	92.6%	-	-
1/2+1/1	Church St - N U-Turn Ahead	U+O	18	2.0 : 0.0%	17.0	0.3
1/4+1/3	Church St - N U-Turn Ahead	U+O	946	92.6 : 92.6%	33.1	17.1
2/1	Pennant Hills Rd - NE Ahead	U	317	58.7%	37.1	7.2
2/2	Pennant Hills Rd - NE Right	U	434	88.4%	66.6	16.1
3/1	Albert St - E Left	O	29	10.9%	7.6	0.1
4/2+4/1	Church St - S Ahead Left	U	23	2.1 : 2.1%	9.0	0.2
4/3+4/4	Church St - S Ahead Right	U	923	75.1 : 86.9%	21.8	8.8
5/2+5/1	Albert St - W Left Left2	U	134	27.0 : 27.0%	36.4	3.2
5/3	Albert St - W Left	U	129	26.3%	36.3	3.3
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-

GTA Basic Results Summary

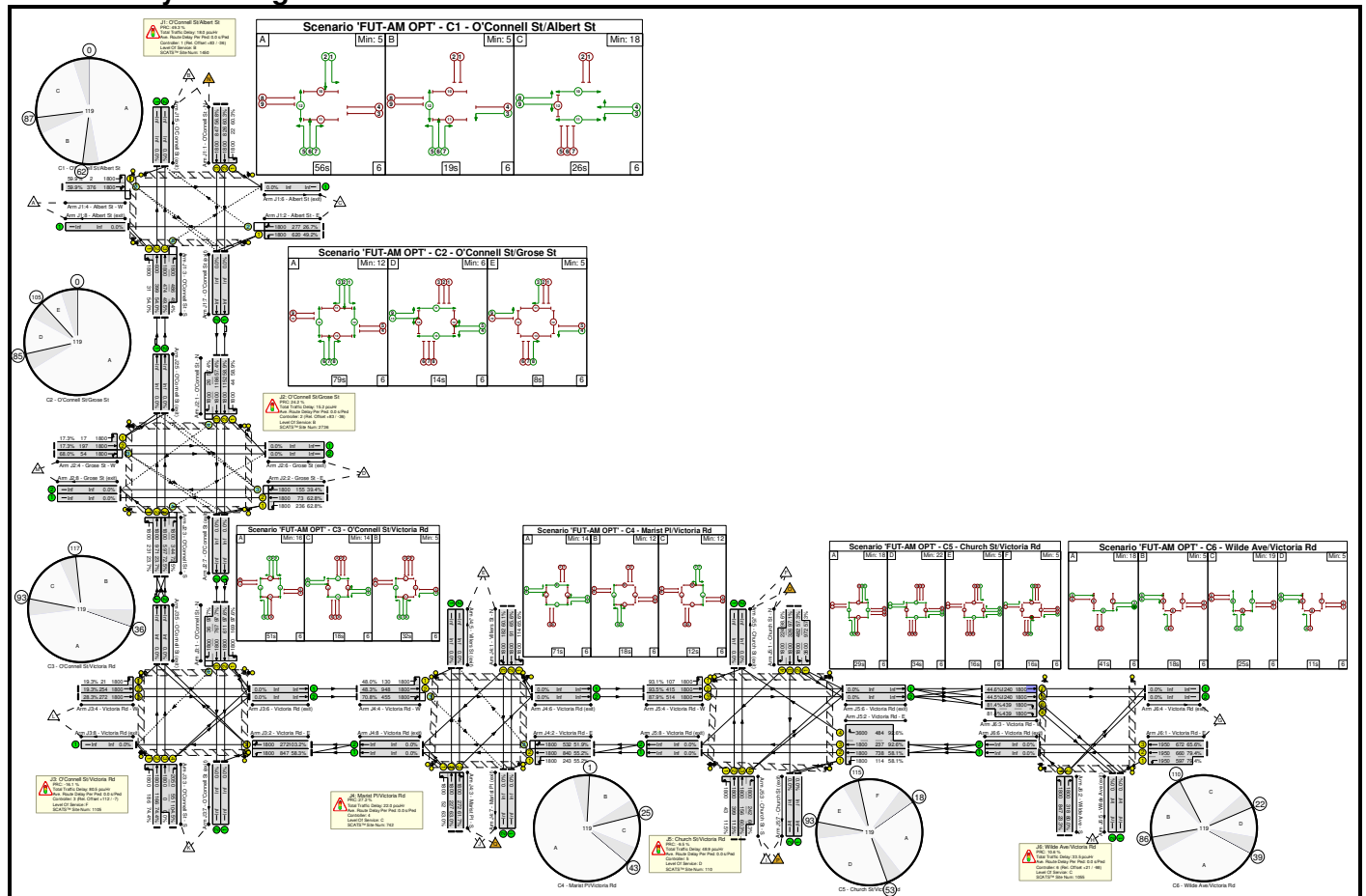
J3: Church St/Grose St	-	-	-	83.7%	-	-
1/2+1/1	Church St - N Left Ahead	U	64	5.8 : 5.8%	10.3	0.5
1/3+1/4	Church St - N Ahead Right	U+O	1031	83.7 : 83.7%	19.9	15.0
2/2+2/1	Grose St - E Left Ahead	U	113	39.6 : 39.6%	50.6	3.2
2/3	Grose St - E Right Ahead	O	95	78.8%	114.1	4.5
3/2+3/1	Church St - S Ahead Left	U	52	4.7 : 4.7%	9.9	0.3
3/3+3/4	Church St - S Ahead Right	U+O	801	69.1 : 69.1%	17.6	15.2
4/2+4/1	Grose St - W Left Ahead	U	159	52.6 : 52.6%	52.0	4.3
4/3	Grose St - W Ahead Right	O	60	35.2%	60.6	2.0
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	2	-	0	0.0%	-	-
Ped Link: P3	3	-	0	0.0%	-	-
Ped Link: P4	4	-	0	0.0%	-	-
C1 - Church St/Factory St	PRC for Signalled Lanes (%):	11.6	Total Delay for Signalled Lanes (pcuHr):	13.55	Cycle Time (s):	110
C2 - Church St/Pennant Hills Rd	PRC for Signalled Lanes (%):	-2.9	Total Delay for Signalled Lanes (pcuHr):	28.36	Cycle Time (s):	110
C3 - Church St/Grose St	PRC for Signalled Lanes (%):	7.5	Total Delay for Signalled Lanes (pcuHr):	17.87	Cycle Time (s):	110
	PRC Over All Lanes (%):	-2.9	Total Delay Over All Lanes(pcuHr):	59.84		

GTA Basic Results Summary

User and Project Details

Project:	14S1091200 PNUR – Rezoning
Title:	Parramatta North Modelling - Victoria Road
Location:	North Parramatta - Victoria Road
File name:	141001Ing_Parramatta North modelling_South_FUT.lsg3x

Scenario 4: 'FUT-AM OPT' (FG1: 'Future AM + Dev (Sensitivity)', Plan 1: 'Existing AM') Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - Victoria Road	-	-	-	104.5%	-	-
J1: O'Connell St/Albert St	-	-	-	60.3%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	511	60.3 : 60.3%	28.6	13.1
1/3	O'Connell St - N Ahead	U	481	56.8%	27.7	12.0
2/1	Albert St - E Left	U	305	49.2%	29.6	7.3
2/2	Albert St - E Right Ahead	O	74	26.7%	48.1	2.2
3/2+3/1	O'Connell St - S Ahead Left	U	233	54.0 : 54.0%	15.5	3.0
3/3+3/4	O'Connell St - S Ahead Right	U+O	476	49.5 : 49.4%	17.7	6.3
4/2+4/1	Albert St - W Left Ahead Right	O+U	226	59.9 : 59.9%	54.3	7.4
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
J2: O'Connell St/Grose St	-	-	-	72.5%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	705	58.9 : 58.9%	9.8	7.5
1/3+1/4	O'Connell St - N Ahead Right	U+O	696	57.4 : 57.4%	10.0	7.6
2/2+2/1	Grose St - E Left Ahead	U	194	62.8 : 62.8%	59.1	6.1
2/3	Grose St - E Right Ahead	O	61	39.4%	69.7	2.2
3/2+3/1	O'Connell St - S Ahead Left	U	286	23.7 : 23.7%	8.4	2.5
3/3+3/4	O'Connell St - S Ahead Right	U+O	684	72.5 : 72.5%	22.4	5.8
4/2+4/1	Grose St - W Left Ahead	U	37	17.3 : 17.3%	56.6	1.1
4/3	Grose St - W Ahead Right	O	37	68.0%	145.9	2.1
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J3: O'Connell St/Victoria Rd	-	-	-	104.5%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	761	97.6 : 97.6%	69.3	34.4
1/3+1/4	O'Connell St - N Ahead Right	U+O	784	97.7 : 97.7%	70.3	35.4

GTA Basic Results Summary

2/1	Victoria Rd - E Left	U	494	58.3%	25.9	16.6
2/2	Victoria Rd - E Right Ahead	U	281	103.2%	168.4	20.4
3/2+3/1	O'Connell St - S Ahead Left	U	1005	74.4 : 74.4%	13.5	20.0
3/4+3/3	O'Connell St - S Ahead Right	U	576	104.5 : 0.0%	176.0	40.1
4/2+4/1	Victoria Rd - W Left Ahead	U	53	19.3 : 19.3%	52.2	1.6
4/3	Victoria Rd - W Ahead	U	77	28.3%	54.0	2.4
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Marist Pl/Victoria Rd	-	-	-	70.8%	-	-
1/2+1/1	Villiers St - N Left Ahead	U	135	65.6 : 65.6%	75.6	4.4
1/3	Villiers St - N Ahead Right	U	109	60.1%	75.5	4.2
2/2+2/1	Victoria Rd - E Left Ahead	U	598	55.2 : 55.2%	13.7	6.2
2/3	Victoria Rd - E Right Ahead	O	276	51.9%	24.1	7.1
3/2+3/1	Marist Pl - S Ahead Left	U	176	63.0 : 63.0%	64.3	6.0
3/3	Marist Pl - S Ahead Right	U	168	61.7%	64.3	6.0
4/2+4/1	Victoria Rd - W Left Ahead	U	538	48.3 : 48.0%	25.0	15.1
4/3	Victoria Rd - W Ahead Right	O	329	70.8%	33.4	7.8
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J5: Church St/Victoria Rd	-	-	-	98.6%	-	-
1/2+1/1	Church St - N Left	U	833	57.3 : 57.3%	18.5	9.0
1/3+1/4	Church St - N Ahead Right	U	537	97.1 : 98.6%	106.6	20.9
2/2+2/1	Victoria Rd - E Left Ahead	U	495	58.1 : 58.1%	6.6	5.7
2/3+2/4	Victoria Rd - E Right Ahead	U	667	92.6 : 92.6%	52.8	29.4
3/2+3/1	Church St - S Ahead Left	U	51	11.5 : 11.5%	39.7	1.3
3/3+3/4	Church St - S Ahead Right	U	240	60.3 : 60.3%	54.9	5.3

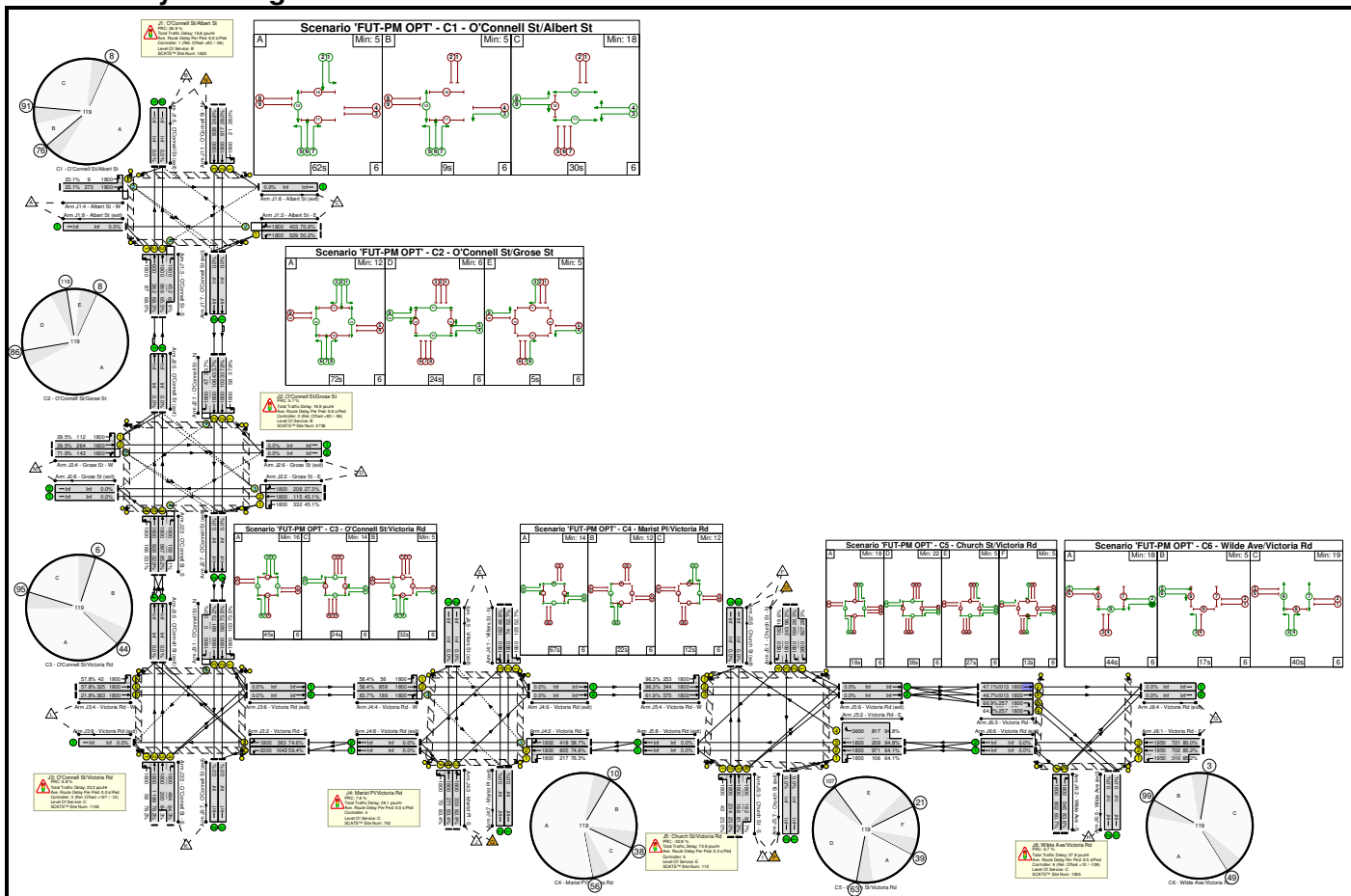
GTA Basic Results Summary

4/2+4/1	Victoria Rd - W Left Ahead	U	503	93.5 : 93.1%	51.4	20.6
4/3	Victoria Rd - W Ahead	U	459	87.9%	54.3	18.0
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J6: Wilde Ave/Victoria Rd	-	-	-	81.4%	-	-
1/2+1/1	Victoria Rd - E Left Ahead	U	998	79.4 : 79.4%	43.0	17.3
1/3	Victoria Rd - E Ahead	U	441	65.6%	40.8	13.2
2/1	Wilde Ave - S Left	U	197	23.3%	16.5	3.4
2/2	Wilde Ave - S Right	U	254	80.0%	73.7	9.9
3/1	Victoria Rd - W Ahead	U	563	44.6%	9.9	5.8
3/2	Victoria Rd - W Ahead	U	561	44.5%	9.9	5.7
3/3+3/4	Victoria Rd - W Right	U	714	81.4 : 81.4%	37.7	23.5
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - O'Connell St/Albert St	PRC for Signalled Lanes (%):	49.3	Total Delay for Signalled Lanes (pcuHr):	18.00	Cycle Time (s):	119
C2 - O'Connell St/Grose St	PRC for Signalled Lanes (%):	24.2	Total Delay for Signalled Lanes (pcuHr):	15.22	Cycle Time (s):	119
C3 - O'Connell St/Victoria Rd	PRC for Signalled Lanes (%):	-16.1	Total Delay for Signalled Lanes (pcuHr):	80.51	Cycle Time (s):	119
C4 - Marist Pl/Victoria Rd	PRC for Signalled Lanes (%):	27.2	Total Delay for Signalled Lanes (pcuHr):	21.98	Cycle Time (s):	119
C5 - Church St/Victoria Rd	PRC for Signalled Lanes (%):	-9.5	Total Delay for Signalled Lanes (pcuHr):	48.89	Cycle Time (s):	119
C6 - Wilde Ave/Victoria Rd	PRC for Signalled Lanes (%):	10.6	Total Delay for Signalled Lanes (pcuHr):	33.52	Cycle Time (s):	119
	PRC Over All Lanes (%):	-16.1	Total Delay Over All Lanes(pcuHr):	218.12		

GTA Basic Results Summary

Scenario 5: 'FUT-PM OPT' (FG2: 'Future PM + Dev (Sensitivity)', Plan 2: 'Existing PM')

Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - Victoria Road	-	-	-	119.6%	-	-
J1: O'Connell St/Albert St	-	-	-	70.9%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	263	28.0 : 28.0%	18.6	5.0
1/3	O'Connell St - N Ahead	U	231	24.6%	18.2	4.3
2/1	Albert St - E Left	U	266	50.2%	36.5	6.6
2/2	Albert St - E Right Ahead	O	286	70.9%	56.4	9.7
3/2+3/1	O'Connell St - S Ahead Left	U	308	68.3 : 68.0%	21.0	7.6
3/3+3/4	O'Connell St - S Ahead Right	U+O	932	65.5 : 65.6%	12.8	7.1
4/2+4/1	Albert St - W Left Ahead Right	O+U	65	23.1 : 23.1%	43.2	1.8
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
J2: O'Connell St/Grose St	-	-	-	85.2%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	412	37.8 : 37.8%	12.4	6.1
1/3+1/4	O'Connell St - N Ahead Right	U+O	375	33.7 : 33.7%	13.0	5.4
2/2+2/1	Grose St - E Left Ahead	U	202	45.1 : 45.1%	44.6	5.5
2/3	Grose St - E Right Ahead	O	57	27.3%	57.4	1.9
3/2+3/1	O'Connell St - S Ahead Left	U	362	32.9 : 33.1%	10.7	5.3
3/3+3/4	O'Connell St - S Ahead Right	U+O	978	85.2 : 85.1%	20.9	13.3
4/2+4/1	Grose St - W Left Ahead	U	111	29.5 : 29.5%	44.7	2.9
4/3	Grose St - W Ahead Right	O	103	71.9%	92.3	4.5
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J3: O'Connell St/Victoria Rd	-	-	-	84.3%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	504	73.5 : 73.5%	37.4	16.7
1/3+1/4	O'Connell St - N Ahead Right	U+O	498	73.2 : 0.0%	39.5	16.9

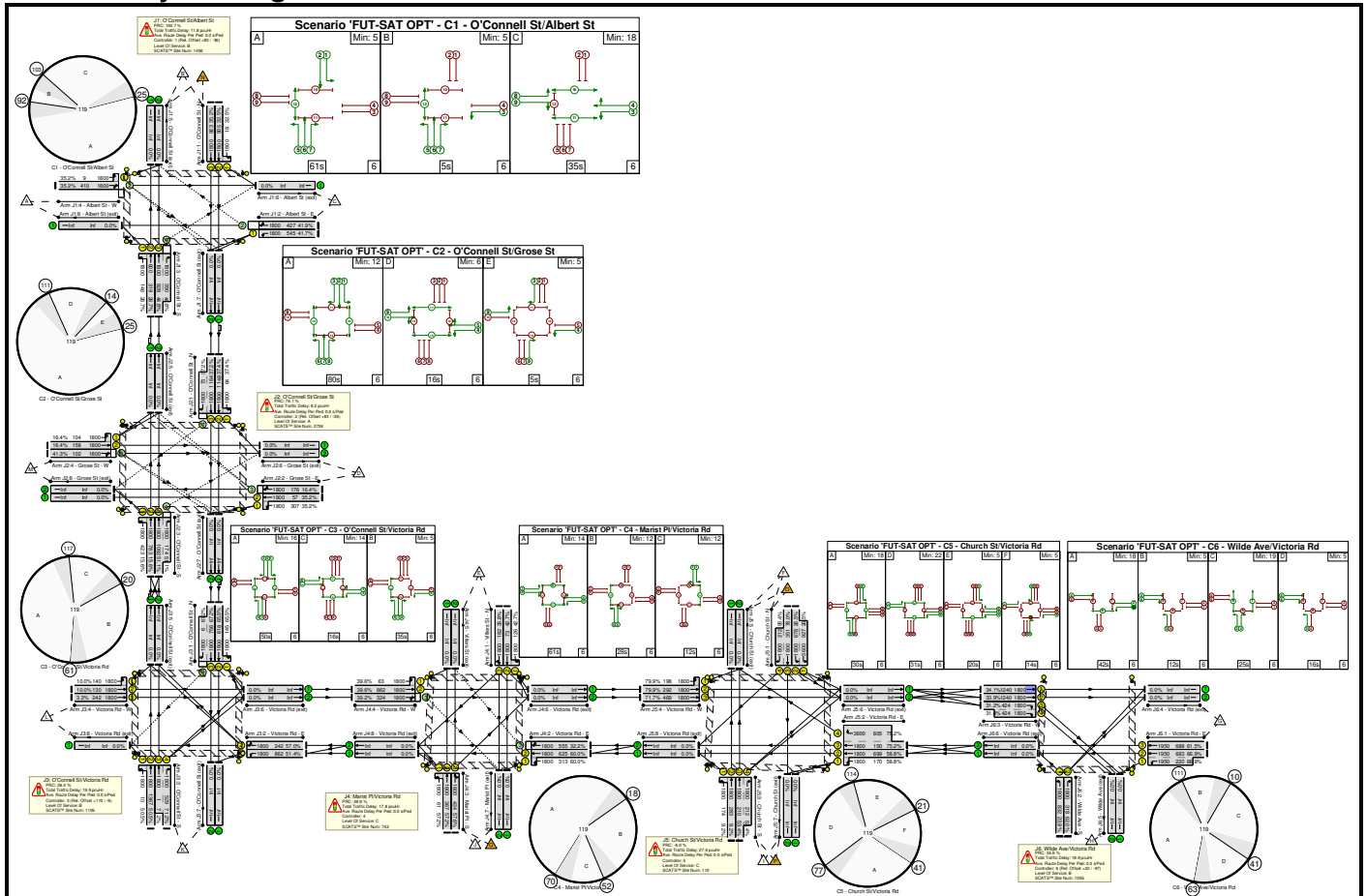
GTA Basic Results Summary

2/1	Victoria Rd - E Left	U	644	59.4%	12.4	17.0
2/2	Victoria Rd - E Right Ahead	U	278	74.6%	47.8	5.9
3/2+3/1	O'Connell St - S Ahead Left	U	983	78.2 : 78.2%	18.4	23.3
3/4+3/3	O'Connell St - S Ahead Right	U	577	84.3 : 84.3%	46.8	15.3
4/2+4/1	Victoria Rd - W Left Ahead	U	212	57.8 : 57.8%	54.3	6.9
4/3	Victoria Rd - W Ahead	U	79	21.8%	46.0	2.3
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Marist Pl/Victoria Rd	-	-	-	83.7%	-	-
1/2+1/1	Villiers St - N Left Ahead	U	105	52.7 : 52.7%	69.0	3.2
1/3	Villiers St - N Ahead Right	U	85	46.8%	69.0	3.1
2/2+2/1	Victoria Rd - E Left Ahead	U	792	74.6 : 76.3%	13.4	6.7
2/3	Victoria Rd - E Right Ahead	O	255	58.7%	34.2	7.0
3/2+3/1	Marist Pl - S Ahead Left	U	284	83.4 : 83.4%	75.9	11.1
3/3	Marist Pl - S Ahead Right	U	276	82.9%	76.1	11.0
4/2+4/1	Victoria Rd - W Left Ahead	U	593	58.4 : 58.4%	30.0	15.0
4/3	Victoria Rd - W Ahead Right	O	158	83.7%	80.7	5.0
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J5: Church St/Victoria Rd	-	-	-	119.6%	-	-
1/2+1/1	Church St - N Left	U	430	28.3 : 28.3%	16.7	4.1
1/3+1/4	Church St - N Ahead Right	U	451	96.2 : 119.6%	256.5	34.3
2/2+2/1	Victoria Rd - E Left Ahead	U	690	64.1 : 64.1%	6.7	16.5
2/3+2/4	Victoria Rd - E Right Ahead	U	972	94.8 : 94.8%	56.1	33.6
3/2+3/1	Church St - S Ahead Left	U	64	23.0 : 23.0%	52.9	1.8
3/3+3/4	Church St - S Ahead Right	U	305	81.2 : 93.7%	86.9	8.7

GTA Basic Results Summary

4/2+4/1	Victoria Rd - W Left Ahead	U	575	96.3 : 96.3%	67.5	26.2
4/3	Victoria Rd - W Ahead	U	356	61.9%	43.1	12.1
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J6: Wilde Ave/Victoria Rd	-	-	-	85.2%	-	-
1/2+1/1	Victoria Rd - E Left Ahead	U	862	85.2 : 85.2%	44.5	20.7
1/3	Victoria Rd - E Ahead	U	577	80.0%	45.7	18.9
2/1	Wilde Ave - S Left	U	487	60.7%	25.5	10.6
2/2	Wilde Ave - S Right	U	455	83.6%	57.8	16.4
3/1	Victoria Rd - W Ahead	U	477	47.1%	14.5	6.3
3/2	Victoria Rd - W Ahead	U	473	46.7%	14.4	6.2
3/3+3/4	Victoria Rd - W Right	U	337	66.9 : 64.2%	56.4	6.6
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - O'Connell St/Albert St	PRC for Signalled Lanes (%):	26.9	Total Delay for Signalled Lanes (pcuHr):	15.58	Cycle Time (s):	119
C2 - O'Connell St/Grose St	PRC for Signalled Lanes (%):	5.7	Total Delay for Signalled Lanes (pcuHr):	16.94	Cycle Time (s):	119
C3 - O'Connell St/Victoria Rd	PRC for Signalled Lanes (%):	6.8	Total Delay for Signalled Lanes (pcuHr):	33.17	Cycle Time (s):	119
C4 - Marist Pl/Victoria Rd	PRC for Signalled Lanes (%):	7.6	Total Delay for Signalled Lanes (pcuHr):	29.12	Cycle Time (s):	119
C5 - Church St/Victoria Rd	PRC for Signalled Lanes (%):	-32.8	Total Delay for Signalled Lanes (pcuHr):	73.91	Cycle Time (s):	119
C6 - Wilde Ave/Victoria Rd	PRC for Signalled Lanes (%):	5.7	Total Delay for Signalled Lanes (pcuHr):	37.85	Cycle Time (s):	119
	PRC Over All Lanes (%):	-32.8	Total Delay Over All Lanes(pcuHr):	206.56		

GTA Basic Results Summary
Scenario 6: 'FUT-SAT OPT' (FG3: 'Future SAT + Dev (Sensitivity)', Plan 3: 'Existing SAT')
Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - Victoria Road	-	-	-	95.4%	-	-
J1: O'Connell St/Albert St	-	-	-	44.8%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	300	32.5 : 32.5%	19.8	6.0
1/3	O'Connell St - N Ahead	U	325	35.2%	20.3	6.6
2/1	Albert St - E Left	U	227	41.7%	35.4	5.3
2/2	Albert St - E Right Ahead	O	179	41.9%	42.7	5.2
3/2+3/1	O'Connell St - S Ahead Left	U	124	26.7 : 26.7%	11.4	0.7
3/3+3/4	O'Connell St - S Ahead Right	U+O	591	44.8 : 44.8%	11.5	4.3
4/2+4/1	Albert St - W Left Ahead Right	O+U	147	35.2 : 35.2%	40.1	4.0
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
J2: O'Connell St/Grose St	-	-	-	51.1%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	453	37.4 : 37.4%	8.9	5.5
1/3+1/4	O'Connell St - N Ahead Right	U+O	460	37.2 : 37.2%	8.2	4.6
2/2+2/1	Grose St - E Left Ahead	U	128	35.2 : 35.2%	49.4	3.7
2/3	Grose St - E Right Ahead	O	29	16.4%	59.1	0.9
3/2+3/1	O'Connell St - S Ahead Left	U	188	15.6 : 15.6%	7.1	1.6
3/3+3/4	O'Connell St - S Ahead Right	U+O	647	51.1 : 51.1%	10.3	7.1
4/2+4/1	Grose St - W Left Ahead	U	43	16.4 : 16.4%	51.1	0.8
4/3	Grose St - W Ahead Right	O	42	41.3%	79.1	1.6
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J3: O'Connell St/Victoria Rd	-	-	-	71.2%	-	-
1/2+1/1	O'Connell St - N Left Ahead	U	500	65.5 : 65.5%	28.8	15.5
1/3+1/4	O'Connell St - N Ahead Right	U+O	512	67.2 : 67.2%	28.6	16.1

GTA Basic Results Summary

2/1	Victoria Rd - E Left	U	443	51.4%	22.4	14.9
2/2	Victoria Rd - E Right Ahead	U	138	57.0%	48.2	4.7
3/2+3/1	O'Connell St - S Ahead Left	U	695	50.5 : 50.5%	8.0	9.2
3/4+3/3	O'Connell St - S Ahead Right	U	378	71.2 : 71.2%	49.0	12.3
4/2+4/1	Victoria Rd - W Left Ahead	U	27	10.0 : 10.0%	52.4	0.5
4/3	Victoria Rd - W Ahead	U	8	3.3%	52.7	0.2
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Marist Pl/Victoria Rd	-	-	-	60.0%	-	-
1/2+1/1	Villiers St - N Left Ahead	U	85	42.7 : 42.7%	65.4	2.4
1/3	Villiers St - N Ahead Right	U	65	35.8%	65.3	2.3
2/2+2/1	Victoria Rd - E Left Ahead	U	563	60.0 : 60.0%	16.6	6.0
2/3	Victoria Rd - E Right Ahead	O	179	32.2%	28.3	4.3
3/2+3/1	Marist Pl - S Ahead Left	U	245	57.2 : 57.2%	49.7	7.6
3/3	Marist Pl - S Ahead Right	U	244	57.6%	50.2	7.8
4/2+4/1	Victoria Rd - W Left Ahead	U	366	39.6 : 39.6%	31.8	11.6
4/3	Victoria Rd - W Ahead Right	O	127	39.2%	31.0	3.2
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J5: Church St/Victoria Rd	-	-	-	95.4%	-	-
1/2+1/1	Church St - N Left	U	426	26.5 : 26.5%	14.1	3.3
1/3+1/4	Church St - N Ahead Right	U	476	78.0 : 95.4%	64.4	11.4
2/2+2/1	Victoria Rd - E Left Ahead	U	511	58.8 : 58.8%	7.4	9.7
2/3+2/4	Victoria Rd - E Right Ahead	U	568	75.2 : 75.2%	36.3	22.4
3/2+3/1	Church St - S Ahead Left	U	42	9.2 : 9.2%	39.0	0.7
3/3+3/4	Church St - S Ahead Right	U	225	53.4 : 53.4%	51.6	4.1

GTA Basic Results Summary

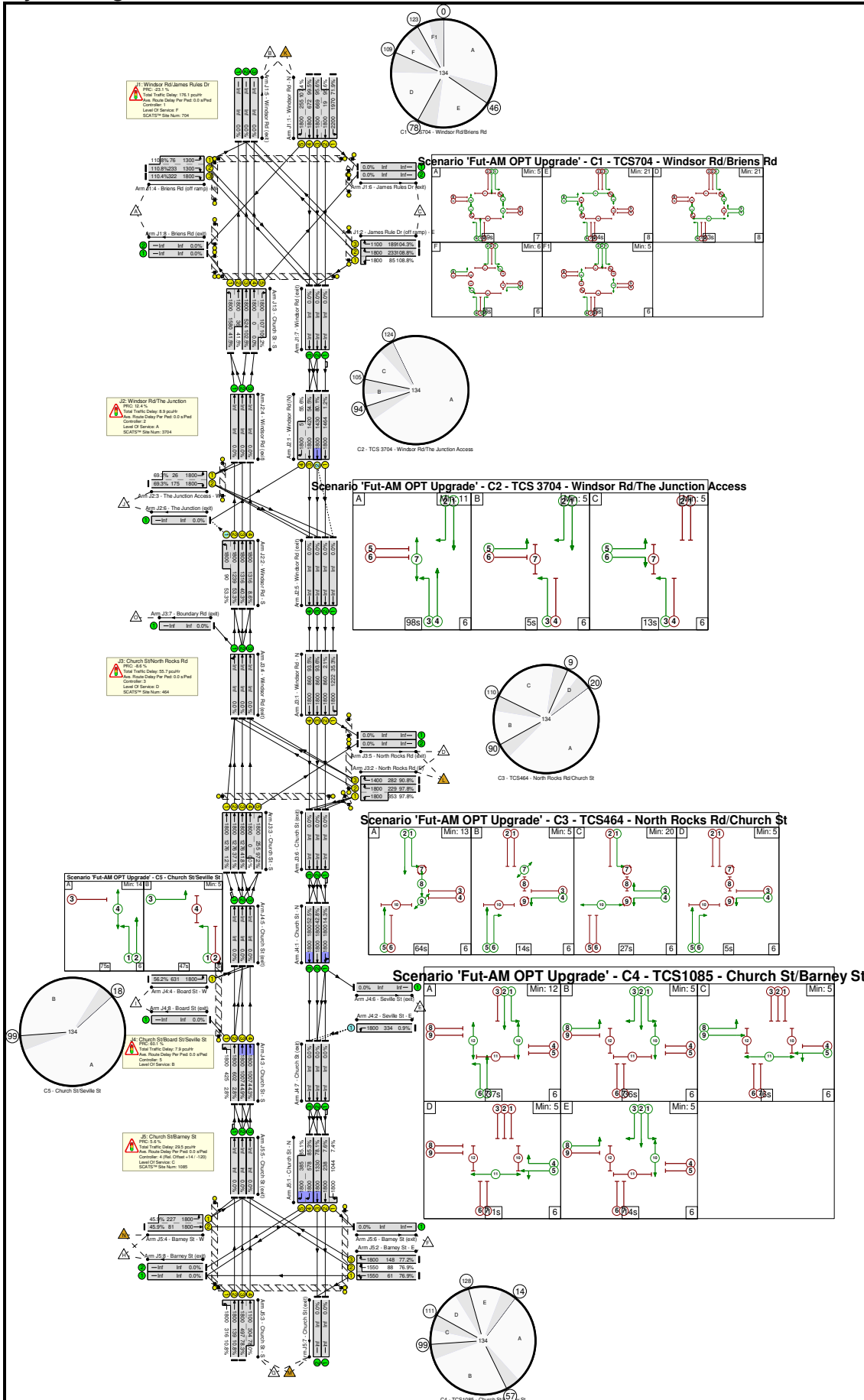
4/2+4/1	Victoria Rd - W Left Ahead	U	391	79.9 : 79.9%	21.7	4.0
4/3	Victoria Rd - W Ahead	U	336	71.7%	49.6	11.4
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J6: Wilde Ave/Victoria Rd	-	-	-	66.9%	-	-
1/2+1/1	Victoria Rd - E Left Ahead	U	604	66.9 : 66.9%	37.9	13.7
1/3	Victoria Rd - E Ahead	U	423	61.5%	38.6	12.3
2/1	Wilde Ave - S Left	U	199	23.9%	17.1	3.5
2/2	Wilde Ave - S Right	U	197	62.0%	60.0	6.8
3/1	Victoria Rd - W Ahead	U	423	34.1%	8.6	4.5
3/2	Victoria Rd - W Ahead	U	420	33.9%	8.5	4.5
3/3+3/4	Victoria Rd - W Right	U	265	31.2 : 31.4%	24.1	2.8
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - O'Connell St/Albert St	PRC for Signalled Lanes (%):	100.7	Total Delay for Signalled Lanes (pcuHr):	11.76	Cycle Time (s):	119
C2 - O'Connell St/Grose St	PRC for Signalled Lanes (%):	76.1	Total Delay for Signalled Lanes (pcuHr):	8.17	Cycle Time (s):	119
C3 - O'Connell St/Victoria Rd	PRC for Signalled Lanes (%):	26.4	Total Delay for Signalled Lanes (pcuHr):	19.88	Cycle Time (s):	119
C4 - Marist Pl/Victoria Rd	PRC for Signalled Lanes (%):	49.9	Total Delay for Signalled Lanes (pcuHr):	17.83	Cycle Time (s):	119
C5 - Church St/Victoria Rd	PRC for Signalled Lanes (%):	-6.0	Total Delay for Signalled Lanes (pcuHr):	27.63	Cycle Time (s):	119
C6 - Wilde Ave/Victoria Rd	PRC for Signalled Lanes (%):	34.6	Total Delay for Signalled Lanes (pcuHr):	18.90	Cycle Time (s):	119
	PRC Over All Lanes (%):	-6.0	Total Delay Over All Lanes(pcuHr):	104.16		

GTA Basic Results Summary

User and Project Details

Project:	14S1091200 PNUR – Rezoning
Title:	Parramatta North Modelling - North
File name:	141008Ing_Parramatta North modelling_North_FUT-AM_upgrade.lsg3x
Company:	GTA Consultants Sydney
Address:	Lv6, 15 Help Street CHATSWOOD NSW 2067

Scenario 3: 'Fut-AM OPT Upgrade' (FG1: 'Future AM + Dev (Sensitivity)', Plan 1: 'Existing - AM') Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - North	-	-	-	110.8%	-	-
J1: Windsor Rd/James Rules Dr	-	-	-	110.8%	-	-
1/1	Windsor Rd - N Left	U	1417	71.9%	5.3	16.6
1/3+1/2	Windsor Rd - N Ahead	U	657	95.6 : 95.6%	80.4	30.6
1/4+1/5	Windsor Rd - N Ahead Right	U	942	99.5 : 107.4%	131.2	46.1
2/2+2/1	James Rule Dr (off ramp) - E Right Left	U	347	108.8 : 108.8%	260.8	34.0
2/3	James Rule Dr (off ramp) - E Right	U	197	104.3%	233.9	17.0
3/1+3/2	Church St - S Ahead Left	U	671	41.5 : 41.5%	2.3	0.7
3/3	Church St - S Ahead	U	537	102.5%	149.5	35.8
3/4+3/5	Church St - S Ahead Right	U	113	0.0 : 105.2%	292.8	11.3
4/2+4/1	Briens Rd (off ramp) - W Left Right	U	342	110.8 : 110.8%	281.0	31.3
4/3	Briens Rd (off ramp) - W Right	U	356	110.4%	287.3	35.5
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
Ped Link: P5	P6	-	0	0.0%	-	-
Ped Link: P6	P7	-	0	0.0%	-	-
Ped Link: P7	P8	-	0	0.0%	-	-
Ped Link: P8	P5	-	0	0.0%	-	-
J2: Windsor Rd/The Junction	-	-	-	80.1%	-	-
1/1	Windsor Rd (N) Ahead	U	18	1.2%	1.3	0.0
1/2	Windsor Rd (N) Ahead	O	1182	80.1%	9.6	18.9
1/3+1/4	Windsor Rd (N) Ahead Right	U	832	54.5 : 55.6%	3.3	1.6
2/2+2/1	Windsor Rd - S Ahead Left	U+O	708	53.3 : 53.3%	5.6	8.8
2/3	Windsor Rd - S Ahead	U	530	40.3%	4.1	4.0
2/4	Windsor Rd - S Ahead	U	113	8.6%	3.1	0.5
3/2+3/1	The Junction Access - W Left Right	U	139	69.3 : 69.3%	85.1	5.4

GTA Basic Results Summary

Ped Link: P1	P1	-	0	0.0%	-	-
J3: Church St/North Rocks Rd	-	-	-	97.8%	-	-
1/1	Windsor Rd - N Left	U	445	35.3%	6.1	3.5
1/2	Windsor Rd - N Ahead	U	18	2.1%	4.3	0.1
1/3	Windsor Rd - N Ahead	U	828	93.6%	47.6	33.0
1/4	Windsor Rd - N Ahead	U	833	93.5%	49.4	31.2
2/2+2/1	North Rocks Rd (E) Right Left	U	569	97.8 : 97.8%	96.5	24.9
2/3	North Rocks Rd (E) Right	U	256	90.8%	105.7	13.0
3/1	Church St - S Ahead	U	15	1.2%	8.2	0.1
3/2	Church St - S Ahead	U	474	37.1%	7.6	5.4
3/3	Church St - S Ahead	U	533	41.8%	6.9	5.3
3/5+3/4	Church St - S Ahead Right	U	248	97.2 : 0.0%	123.1	13.5
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Church St/Board St/Seville St	-	-	-	56.2%	-	-
1/1	Church St - N Left Ahead	U	263	14.3%	1.2	0.1
1/2	Church St - N Ahead	U	786	42.8%	1.7	0.4
1/3	Church St - N Ahead	U	975	52.5%	2.7	1.5
2/1	Seville St - E Left	O	3	0.9%	5.4	0.0
3/2+3/1	Church St - S Ahead Left	U	29	2.8 : 2.8%	3.6	0.1
3/3	Church St - S Ahead	U	452	44.9%	10.5	5.1
3/4	Church St - S Ahead	U	446	44.3%	10.1	4.7
4/1	Board St - W Left	U	355	56.2%	41.7	11.3
Ped Link: P1	p1	-	0	0.0%	-	-
J5: Church St/Barney St	-	-	-	85.3%	-	-
1/2+1/1	Church St - N Left Ahead	U	97	7.6 : 7.4%	10.2	1.0
1/3	Church St - N Ahead	U	1066	78.1%	18.5	17.2
1/4+1/5	Church St - N Right	U	843	85.3 : 85.1%	24.3	9.7

GTA Basic Results Summary

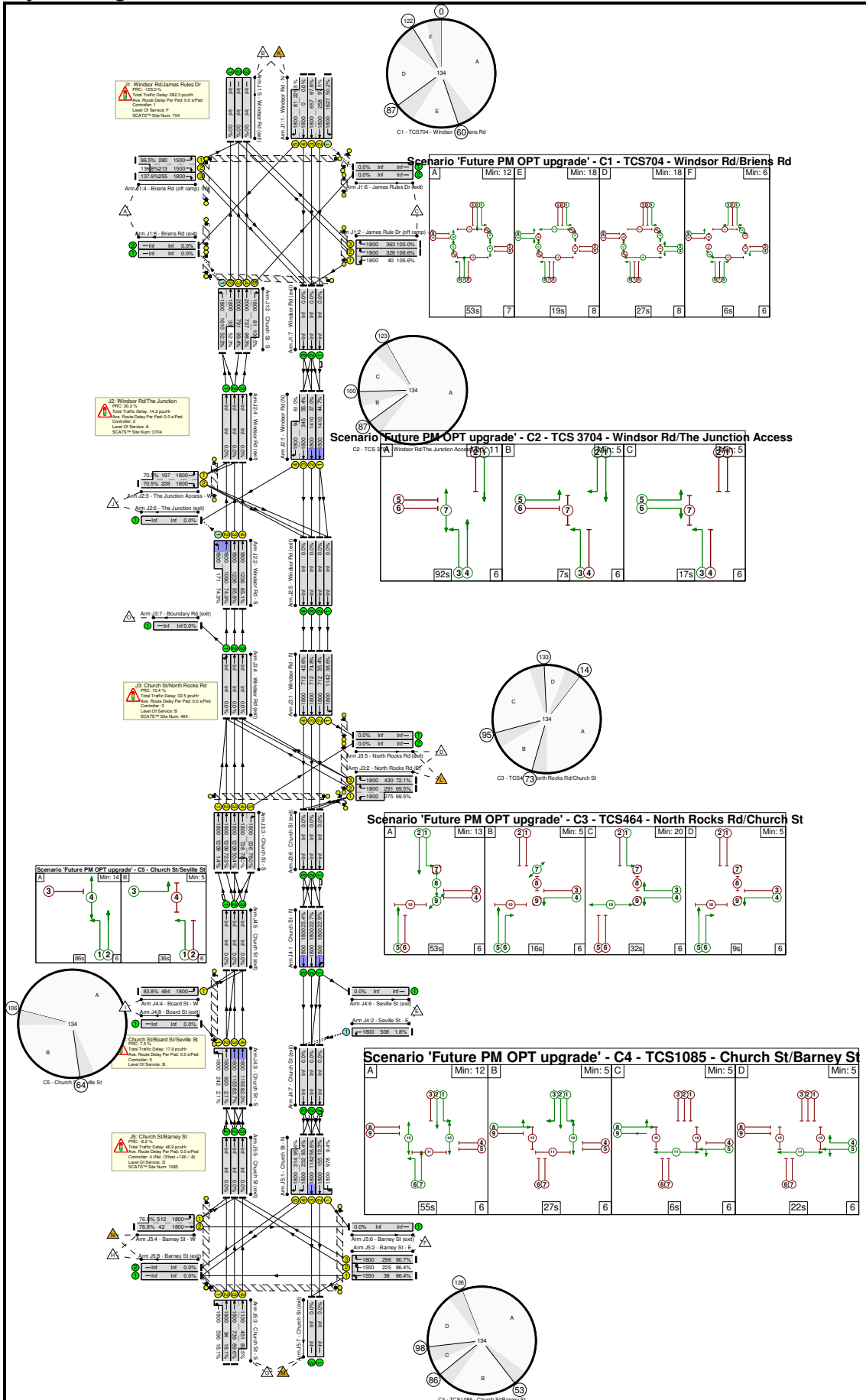
2/1+2/2	Barney St - E Right Left Ahead	U	115	76.9 : 76.9%	105.4	5.0
2/3	Barney St - E Right	U	114	77.2%	109.1	5.7
3/2+3/1	Church St - S Ahead Left	U	49	10.8 : 10.8%	42.2	1.0
3/3+3/4	Church St - S Ahead	U	626	78.3 : 78.0%	54.9	15.0
4/2+4/1	Barney St - W Left Ahead	U	141	45.9 : 45.9%	35.7	1.9
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - TCS704 - Windsor Rd/Briens Rd	PRC for Signalled Lanes (%):	-23.1	Total Delay for Signalled Lanes (pcuHr):	176.05	Cycle Time (s):	134
C2 - TCS 3704 - Windsor Rd/The Junction Access	PRC for Signalled Lanes (%):	12.4	Total Delay for Signalled Lanes (pcuHr):	8.89	Cycle Time (s):	134
C3 - TCS464 - North Rocks Rd/Church St	PRC for Signalled Lanes (%):	-8.6	Total Delay for Signalled Lanes (pcuHr):	55.74	Cycle Time (s):	134
C4 - TCS1085 - Church St/Barney St	PRC for Signalled Lanes (%):	5.6	Total Delay for Signalled Lanes (pcuHr):	29.47	Cycle Time (s):	134
C5 - Church St/Seville St	PRC for Signalled Lanes (%):	60.1	Total Delay for Signalled Lanes (pcuHr):	6.70	Cycle Time (s):	134
	PRC Over All Lanes (%):	-23.1	Total Delay Over All Lanes(pcuHr):	278.04		

GTA Basic Results Summary

User and Project Details

Project:	14S1091200 PNUR – Rezoning
Title:	Parramatta North Modelling - North
File name:	141008Ing_Parramatta North modelling_North_FUT-PM-SAT_upgrade.lsg3x
Company:	GTA Consultants Sydney
Address:	Lv6, 15 Help Street CHATSWOOD NSW 2067

**Scenario 1: 'Future PM OPT upgrade' (FG1: 'Future PM + Dev (Sensitivity)', Plan 2: 'Existing - PM')
Network Layout Diagram**



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - North	-	-	-	229.5%	-	-
J1: Windsor Rd/James Rules Dr	-	-	-	229.5%	-	-
1/1	Windsor Rd - N Left	O	817	50.2%	3.3	5.7
1/3+1/2	Windsor Rd - N Ahead	U	893	97.6 : 97.6%	77.5	35.2
1/4+1/5	Windsor Rd - N Ahead Right	U	185	0.0 : 229.5%	1218.7	66.0
2/2+2/1	James Rule Dr (off ramp) - E Right Left	U	390	106.6 : 106.6%	224.6	34.5
2/3	James Rule Dr (off ramp) - E Right	U	381	105.0%	206.6	30.2
3/1+3/2	Church St - S Ahead Left	O+U	859	52.3 : 52.3%	2.8	0.9
3/3	Church St - S Ahead	U	786	99.4%	91.2	41.8
3/4+3/5	Church St - S Ahead Right	U	805	98.3 : 100.5%	77.4	39.6
4/1+4/2	Briens Rd (off ramp) - W Left Right	U	561	96.5 : 136.8%	350.3	56.6
4/3	Briens Rd (off ramp) - W Right	U	352	137.9%	624.2	66.8
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
Ped Link: P5	P6	-	0	0.0%	-	-
Ped Link: P6	P7	-	0	0.0%	-	-
Ped Link: P7	P8	-	0	0.0%	-	-
Ped Link: P8	P4	-	0	0.0%	-	-
J2: Windsor Rd/The Junction	-	-	-	74.9%	-	-
1/1	Windsor Rd (N) Ahead	U	678	44.7%	3.1	4.5
1/2	Windsor Rd (N) Ahead	U	602	37.0%	2.6	0.9
1/3+1/4	Windsor Rd (N) Ahead Right	U	299	55.4 : 61.0%	19.9	2.7
2/2+2/1	Windsor Rd - S Ahead Left	U+O	944	74.9 : 74.9%	10.7	9.4
2/3	Windsor Rd - S Ahead	U	690	55.8%	6.7	5.0
2/4	Windsor Rd - S Ahead	U	805	65.1%	11.0	12.0
3/2+3/1	The Junction Access - W Left Right	U	300	70.5 : 70.5%	64.5	6.9

GTA Basic Results Summary

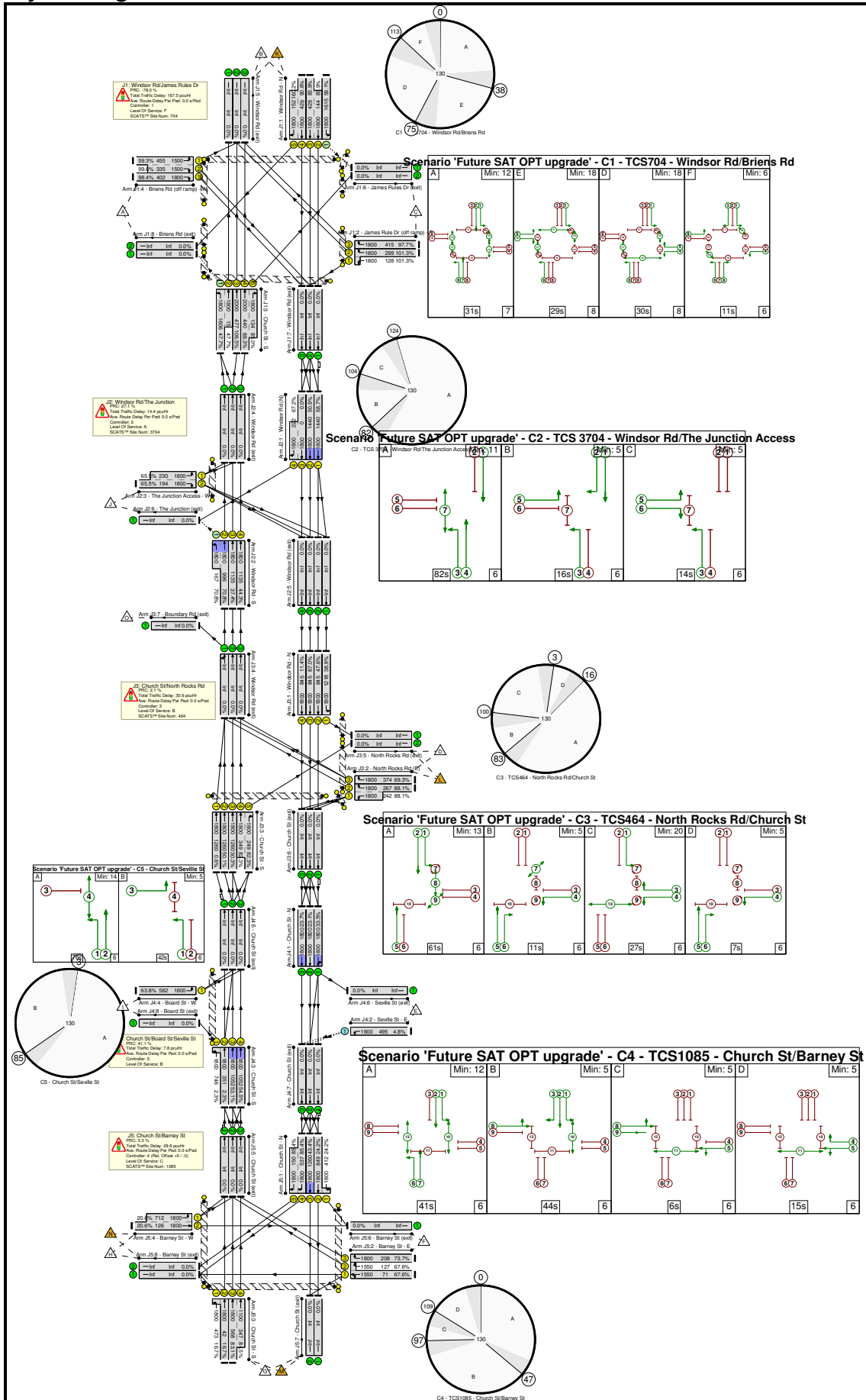
Ped Link: P1	P1	-	0	0.0%	-	-
J3: Church St/North Rocks Rd	-	-	-	78.0%	-	-
1/1	Windsor Rd - N Left	U	465	36.6%	6.7	5.5
1/2	Windsor Rd - N Ahead	U	252	35.4%	11.3	1.2
1/3	Windsor Rd - N Ahead	U	612	74.8%	41.9	16.1
1/4	Windsor Rd - N Ahead	U	347	42.6%	45.9	10.2
2/2+2/1	North Rocks Rd (E) Right Left	U	393	69.5 : 69.5%	42.3	9.1
2/3	North Rocks Rd (E) Right	U	310	72.1%	61.6	11.9
3/1	Church St - S Ahead	U	17	1.4%	6.2	0.1
3/2	Church St - S Ahead	U	874	72.3%	16.0	23.9
3/3	Church St - S Ahead	U	609	50.4%	8.5	9.7
3/5+3/4	Church St - S Ahead Right	U	838	78.0 : 78.0%	24.0	12.8
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Church St/Board St/Seville St	-	-	-	83.8%	-	-
1/1	Church St - N Left Ahead	U	442	22.9%	1.3	0.2
1/2	Church St - N Ahead	U	445	22.7%	1.3	0.1
1/3	Church St - N Ahead	U	515	25.4%	1.5	0.6
2/1	Seville St - E Left	O	9	1.8%	3.6	0.0
3/2+3/1	Church St - S Ahead Left	U	24	2.1 : 2.1%	7.1	0.2
3/3	Church St - S Ahead	U	967	83.7%	18.3	18.7
3/4	Church St - S Ahead	U	947	82.0%	18.1	19.1
4/1	Board St - W Left	U	405	83.8%	67.8	16.6
Ped Link: P1	p1	-	0	0.0%	-	-
J5: Church St/Barney St	-	-	-	95.6%	-	-
1/2+1/1	Church St - N Left Ahead	U	117	10.3 : 9.4%	11.7	0.9
1/3	Church St - N Ahead	U	734	56.6%	13.5	7.9
1/4+1/5	Church St - N Right	U	547	85.4 : 95.6%	53.5	19.0

GTA Basic Results Summary

2/1+2/2	Barney St - E Right Left Ahead	U	227	86.4 : 86.4%	97.6	10.8
2/3	Barney St - E Right	U	268	90.7%	106.2	13.6
3/2+3/1	Church St - S Ahead Left	U	125	18.1 : 18.1%	30.5	3.0
3/3+3/4	Church St - S Ahead	U	1066	89.6 : 89.5%	50.4	26.8
4/2+4/1	Barney St - W Left Ahead	U	425	76.8 : 76.8%	56.1	15.0
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - TCS704 - Windsor Rd/Briens Rd	PRC for Signalled Lanes (%):	-155.0	Total Delay for Signalled Lanes (pcuHr):	282.33	Cycle Time (s):	134
C2 - TCS 3704 - Windsor Rd/The Junction Access	PRC for Signalled Lanes (%):	20.2	Total Delay for Signalled Lanes (pcuHr):	14.24	Cycle Time (s):	134
C3 - TCS464 - North Rocks Rd/Church St	PRC for Signalled Lanes (%):	15.4	Total Delay for Signalled Lanes (pcuHr):	32.50	Cycle Time (s):	134
C4 - TCS1085 - Church St/Barney St	PRC for Signalled Lanes (%):	-6.2	Total Delay for Signalled Lanes (pcuHr):	46.95	Cycle Time (s):	134
C5 - Church St/Seville St	PRC for Signalled Lanes (%):	7.5	Total Delay for Signalled Lanes (pcuHr):	17.36	Cycle Time (s):	134
	PRC Over All Lanes (%):	-155.0	Total Delay Over All Lanes(pcuHr):	393.87		

GTA Basic Results Summary

Scenario 2: 'Future SAT OPT upgrade' (FG2: 'Future SAT + Dev (Sensitivity)', Plan 3: 'Existing - SAT')
Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - North	-	-	-	160.2%	-	-
J1: Windsor Rd/James Rules Dr	-	-	-	160.2%	-	-
1/1	Windsor Rd - N Left	O	954	59.1%	4.1	8.1
1/3+1/2	Windsor Rd - N Ahead	U	481	83.9 : 83.9%	63.9	14.8
1/4+1/5	Windsor Rd - N Ahead Right	U	633	90.6 : 160.2%	368.6	64.6
2/2+2/1	James Rule Dr (off ramp) - E Right Left	U	433	101.3 : 101.3%	148.4	27.5
2/3	James Rule Dr (off ramp) - E Right	U	406	97.7%	120.6	22.5
3/1+3/2	Church St - S Ahead Left	O+U	773	47.7 : 47.7%	2.3	0.7
3/3	Church St - S Ahead	U	508	106.5%	215.6	40.9
3/4+3/5	Church St - S Ahead Right	U	503	88.3 : 85.0%	64.3	12.2
4/1+4/2	Briens Rd (off ramp) - W Left Right	U	604	59.3 : 99.8%	45.9	13.6
4/3	Briens Rd (off ramp) - W Right	U	395	98.4%	127.2	22.6
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
Ped Link: P5	P6	-	0	0.0%	-	-
Ped Link: P6	P7	-	0	0.0%	-	-
Ped Link: P7	P8	-	0	0.0%	-	-
Ped Link: P8	P4	-	0	0.0%	-	-
J2: Windsor Rd/The Junction	-	-	-	70.8%	-	-
1/1	Windsor Rd (N) Ahead	U	847	58.7%	5.5	11.4
1/2	Windsor Rd (N) Ahead	U	733	50.9%	2.7	0.8
1/3+1/4	Windsor Rd (N) Ahead Right	U	149	0.0 : 67.2%	69.6	6.3
2/2+2/1	Windsor Rd - S Ahead Left	U+O	823	70.8 : 70.8%	12.0	11.0
2/3	Windsor Rd - S Ahead	U	425	37.4%	9.4	4.1
2/4	Windsor Rd - S Ahead	U	503	44.3%	9.7	8.8
3/2+3/1	The Junction Access - W Left Right	U	278	65.5 : 65.5%	57.7	5.3

GTA Basic Results Summary

Ped Link: P1	P1	-	0	0.0%	-	-
J3: Church St/North Rocks Rd	-	-	-	88.1%	-	-
1/1	Windsor Rd - N Left	U	473	38.8%	6.6	4.0
1/2	Windsor Rd - N Ahead	U	403	47.6%	20.8	9.7
1/3	Windsor Rd - N Ahead	U	735	87.0%	35.2	23.1
1/4	Windsor Rd - N Ahead	U	96	11.4%	32.4	3.5
2/2+2/1	North Rocks Rd (E) Right Left	U	448	88.1 : 88.1%	65.2	14.1
2/3	North Rocks Rd (E) Right	U	259	69.3%	63.0	9.7
3/1	Church St - S Ahead	U	7	0.6%	8.1	0.1
3/2	Church St - S Ahead	U	631	50.1%	8.2	6.2
3/3	Church St - S Ahead	U	382	30.3%	5.3	2.5
3/5+3/4	Church St - S Ahead Right	U	492	82.3 : 82.3%	34.4	15.5
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J4: Church St/Board St/Seville St	-	-	-	63.8%	-	-
1/1	Church St - N Left Ahead	U	605	33.5%	2.1	5.4
1/2	Church St - N Ahead	U	415	23.1%	1.3	0.1
1/3	Church St - N Ahead	U	427	23.7%	1.3	0.2
2/1	Seville St - E Left	O	24	4.8%	3.8	0.0
3/2+3/1	Church St - S Ahead Left	U	25	2.3 : 2.3%	3.3	0.0
3/3	Church St - S Ahead	U	559	53.1%	8.0	7.1
3/4	Church St - S Ahead	U	574	54.5%	6.9	5.0
4/1	Board St - W Left	U	371	63.8%	46.0	12.2
Ped Link: P1	p1	-	0	0.0%	-	-
J5: Church St/Barney St	-	-	-	85.4%	-	-
1/2+1/1	Church St - N Left Ahead	U	306	24.2 : 24.2%	8.8	2.4
1/3	Church St - N Ahead	U	547	43.4%	9.6	5.8
1/4+1/5	Church St - N Right	U	587	85.4 : 85.4%	44.9	23.0

GTA Basic Results Summary

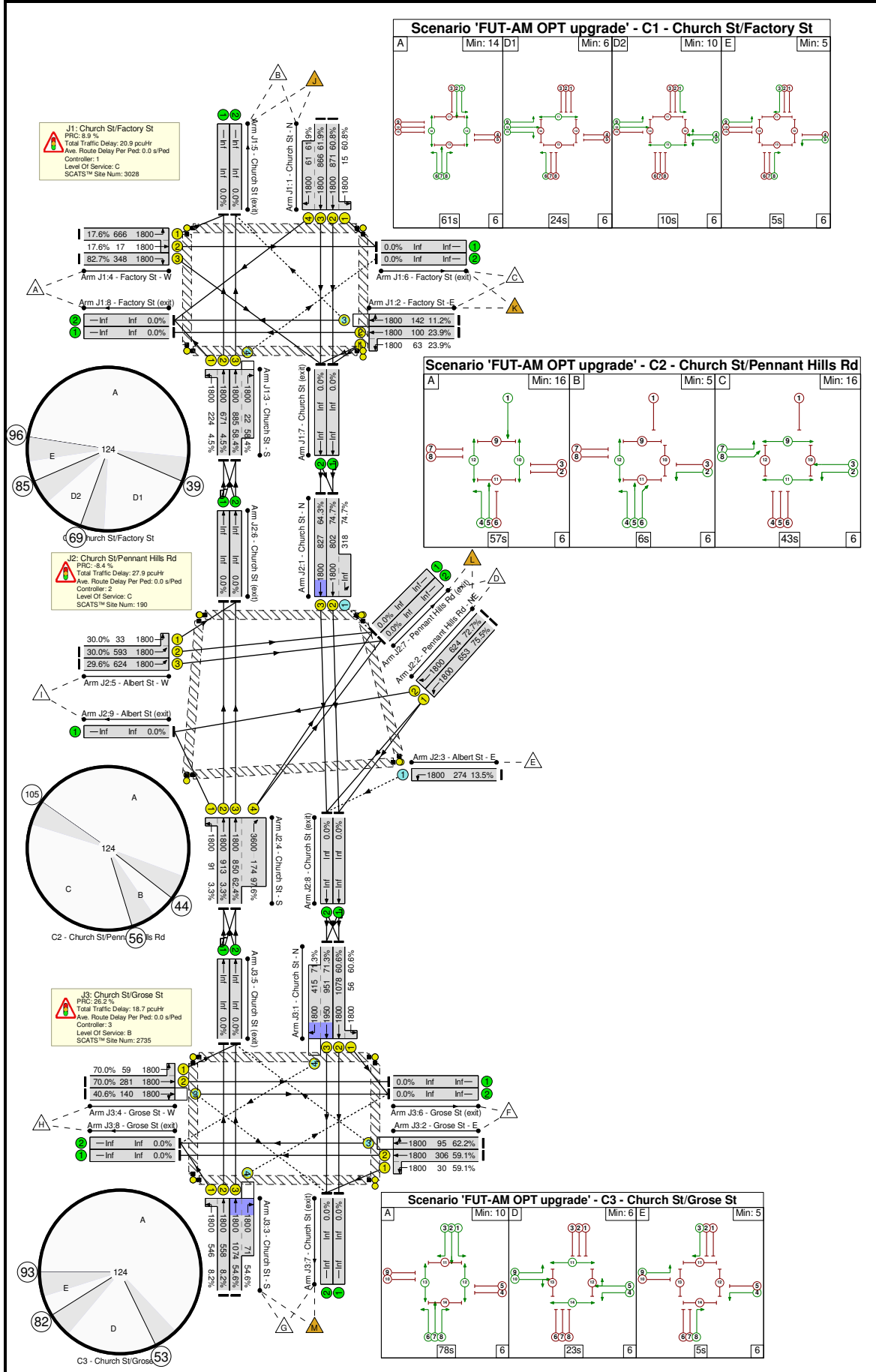
2/1+2/2	Barney St - E Right Left Ahead	U	134	67.6 : 67.6%	80.2	5.1
2/3	Barney St - E Right	U	153	73.7%	87.0	6.6
3/2+3/1	Church St - S Ahead Left	U	86	16.7 : 16.7%	38.9	2.3
3/3+3/4	Church St - S Ahead	U	765	83.1 : 84.5%	53.0	18.2
4/2+4/1	Barney St - W Left Ahead	U	173	20.6 : 20.6%	25.4	3.4
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
C1 - TCS704 - Windsor Rd/Briens Rd	PRC for Signalled Lanes (%):	-78.0	Total Delay for Signalled Lanes (pcuHr):	167.47	Cycle Time (s):	130
C2 - TCS 3704 - Windsor Rd/The Junction Access	PRC for Signalled Lanes (%):	27.1	Total Delay for Signalled Lanes (pcuHr):	14.38	Cycle Time (s):	130
C3 - TCS464 - North Rocks Rd/Church St	PRC for Signalled Lanes (%):	2.1	Total Delay for Signalled Lanes (pcuHr):	30.61	Cycle Time (s):	130
C4 - TCS1085 - Church St/Barney St	PRC for Signalled Lanes (%):	5.3	Total Delay for Signalled Lanes (pcuHr):	29.62	Cycle Time (s):	130
C5 - Church St/Seville St	PRC for Signalled Lanes (%):	41.1	Total Delay for Signalled Lanes (pcuHr):	7.11	Cycle Time (s):	130
	PRC Over All Lanes (%):	-78.0	Total Delay Over All Lanes(pcuHr):	249.88		

GTA Basic Results Summary

User and Project Details

Project:	14S1091200 PNUR – Rezoning
Title:	Parramatta North Modelling - PHR
File name:	141001Ing_Parramatta North modelling_PHR_FUT-AM_upgrade.lsg3x
Company:	GTA Consultants Sydney
Address:	Lv6, 15 Help Street CHATSWOOD NSW 2067

Scenario 1: 'FUT-AM OPT upgrade' (FG1: 'Future AM + Dev (Sensitivity)', Plan 1: 'Network Control Plan 1')
Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - PHR	-	-	-	97.6%	-	-
J1: Church St/Factory St	-	-	-	82.7%	-	-
1/2+1/1	Church St - N Left Ahead	U	539	60.8 : 60.8%	28.0	14.1
1/3+1/4	Church St - N Ahead Right	U	574	61.9 : 61.9%	30.2	14.1
2/2+2/1	Factory St -E Left Ahead	U	39	23.9 : 23.9%	65.1	0.9
2/3	Factory St -E Right Ahead	O	16	11.2%	67.4	0.6
3/2+3/1	Church St - S Ahead Left	U	40	4.5 : 4.5%	20.5	0.7
3/3+3/4	Church St - S Ahead Right	U+O	530	58.4 : 58.4%	24.4	7.6
4/1+4/2	Factory St - W Left Ahead	U	120	17.6 : 17.6%	28.9	2.8
4/3	Factory St - W Right	U	288	82.7%	75.8	11.7
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J2: Church St/Pennant Hills Rd	-	-	-	97.6%	-	-
1/2+1/1	Church St - N U-Turn Ahead	U+O	837	74.7 : 74.7%	17.7	8.8
1/3	Church St - N Ahead	U	532	64.3%	23.8	8.1
2/1	Pennant Hills Rd - NE Ahead	U	493	75.5%	43.9	13.3
2/2	Pennant Hills Rd - NE Right	U	454	72.7%	45.8	14.9
3/1	Albert St - E Left	O	37	13.5%	7.6	0.1
4/2+4/1	Church St - S Ahead Left	U	33	3.3 : 3.3%	13.2	0.4
4/3+4/4	Church St - S Ahead Right	U	700	62.4 : 97.6%	24.9	15.1
5/2+5/1	Albert St - W Left Left2	U	188	30.0 : 30.0%	33.6	4.9
5/3	Albert St - W Left	U	185	29.6%	33.6	4.8
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-

GTA Basic Results Summary

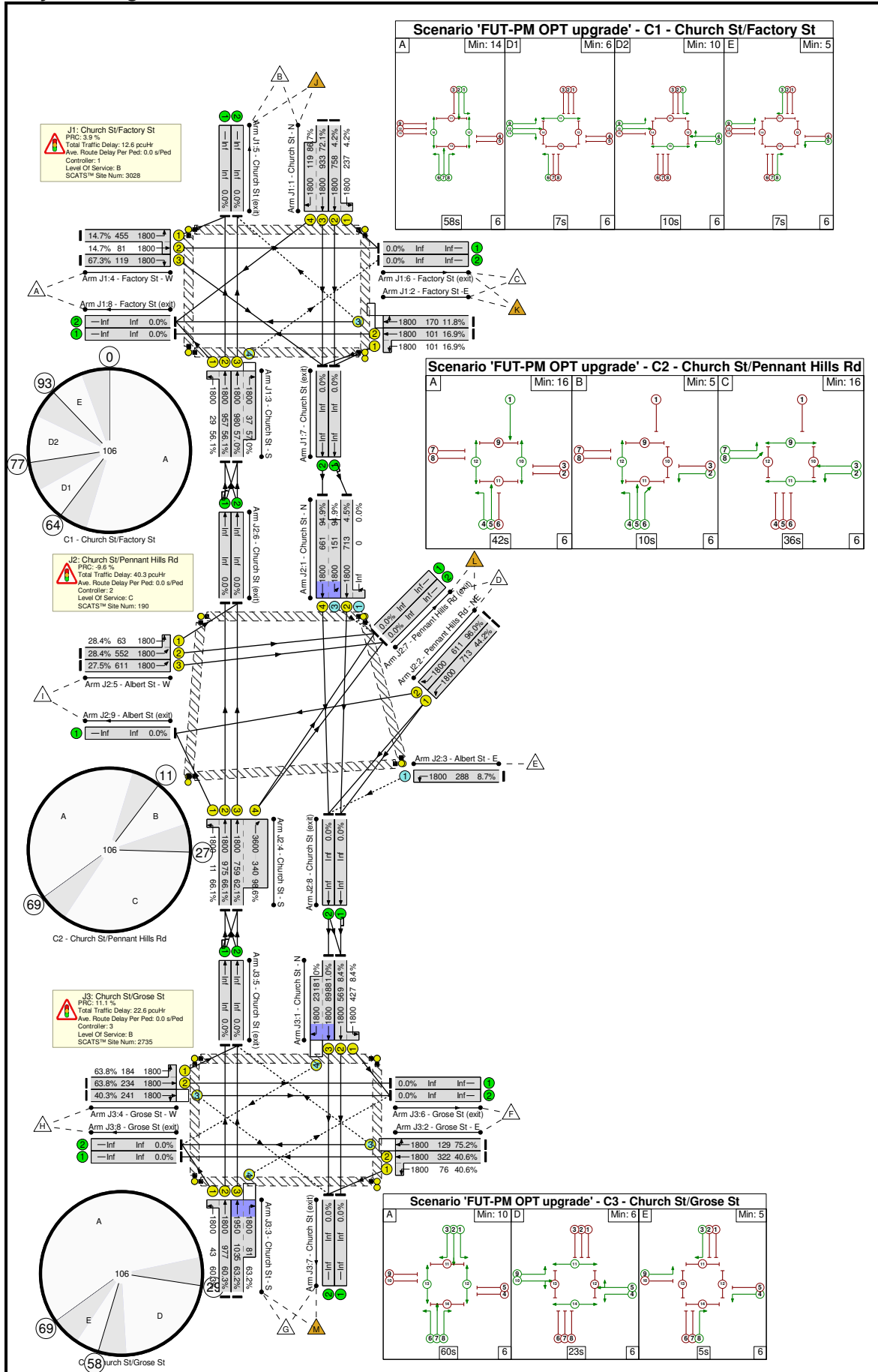
J3: Church St/Grose St	-	-	-	71.3%	-	-
1/2+1/1	Church St - N Left Ahead	U	687	60.6 : 60.6%	11.8	9.4
1/3+1/4	Church St - N Ahead Right	U+O	974	71.3 : 71.3%	11.4	13.6
2/2+2/1	Grose St - E Left Ahead	U	199	59.1 : 59.1%	58.3	6.9
2/3	Grose St - E Right Ahead	O	59	62.2%	107.0	2.5
3/2+3/1	Church St - S Ahead Left	U	91	8.2 : 8.2%	11.3	0.7
3/3+3/4	Church St - S Ahead Right	U+O	626	54.6 : 54.6%	16.3	11.3
4/2+4/1	Grose St - W Left Ahead	U	238	70.0 : 70.0%	62.9	8.5
4/3	Grose St - W Ahead Right	O	57	40.6%	71.7	2.2
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	2	-	0	0.0%	-	-
Ped Link: P3	3	-	0	0.0%	-	-
Ped Link: P4	4	-	0	0.0%	-	-
C1 - Church St/Factory St	PRC for Signalled Lanes (%):	8.9	Total Delay for Signalled Lanes (pcuHr):	20.86	Cycle Time (s):	124
C2 - Church St/Pennant Hills Rd	PRC for Signalled Lanes (%):	-8.4	Total Delay for Signalled Lanes (pcuHr):	27.86	Cycle Time (s):	124
C3 - Church St/Grose St	PRC for Signalled Lanes (%):	26.2	Total Delay for Signalled Lanes (pcuHr):	18.73	Cycle Time (s):	124
	PRC Over All Lanes (%):	-8.4	Total Delay Over All Lanes(pcuHr):	67.53		

GTA Basic Results Summary

User and Project Details

Project:	14S1091200 PNUR – Rezoning
Title:	Parramatta North Modelling - PHR
File name:	141001Ing_Parramatta North modelling_PHR_FUT-PM_upgrade.lsg3x
Company:	GTA Consultants Sydney
Address:	Lv6, 15 Help Street CHATSWOOD NSW 2067

Scenario 1: 'FUT-PM OPT upgrade' (FG2: 'Future PM + Dev (Sensitivity)', Plan 1: 'Network Control Plan 1')
Network Layout Diagram



GTA Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Demand Flow (pcu)	Deg Sat (%)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: Parramatta North Modelling - PHR	-	-	-	98.6%	-	-
J1: Church St/Factory St	-	-	-	86.7%	-	-
1/2+1/1	Church St - N Left Ahead	U	42	4.2 : 4.2%	11.4	0.4
1/3+1/4	Church St - N Ahead Right	U	776	72.1 : 86.7%	28.0	15.6
2/2+2/1	Factory St -E Left Ahead	U	34	16.9 : 16.9%	50.8	0.6
2/3	Factory St -E Right Ahead	O	20	11.8%	56.3	0.6
3/2+3/1	Church St - S Ahead Left	U	553	56.1 : 56.1%	9.6	9.8
3/3+3/4	Church St - S Ahead Right	U+O	580	57.0 : 57.0%	9.0	7.7
4/1+4/2	Factory St - W Left Ahead	U	79	14.7 : 14.7%	31.9	1.6
4/3	Factory St - W Right	U	80	67.3%	92.5	3.3
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-
J2: Church St/Pennant Hills Rd	-	-	-	98.6%	-	-
1/2+1/1	Church St - N U-Turn Ahead	U+O	32	4.5 : 0.0%	17.3	0.6
1/4+1/3	Church St - N U-Turn Ahead	U+O	770	94.9 : 94.9%	62.5	26.3
2/1	Pennant Hills Rd - NE Ahead	U	315	44.2%	22.5	6.0
2/2	Pennant Hills Rd - NE Right	U	587	96.0%	80.1	24.3
3/1	Albert St - E Left	O	25	8.7%	6.9	0.1
4/2+4/1	Church St - S Ahead Left	U	651	66.1 : 66.1%	16.0	7.7
4/3+4/4	Church St - S Ahead Right	U	806	62.1 : 98.6%	26.6	24.5
5/2+5/1	Albert St - W Left Left2	U	175	28.4 : 28.4%	29.7	3.8
5/3	Albert St - W Left	U	168	27.5%	29.6	3.8
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	P2	-	0	0.0%	-	-
Ped Link: P3	P3	-	0	0.0%	-	-
Ped Link: P4	P4	-	0	0.0%	-	-

GTA Basic Results Summary

J3: Church St/Grose St	-	-	-	81.0%	-	-
1/2+1/1	Church St - N Left Ahead	U	84	8.4 : 8.4%	10.3	0.5
1/3+1/4	Church St - N Ahead Right	U+O	915	81.0 : 81.0%	23.2	9.9
2/2+2/1	Grose St - E Left Ahead	U	162	40.6 : 40.6%	41.6	4.2
2/3	Grose St - E Right Ahead	O	97	75.2%	100.4	4.1
3/2+3/1	Church St - S Ahead Left	U	615	60.3 : 60.3%	19.5	12.5
3/3+3/4	Church St - S Ahead Right	U+O	705	63.2 : 63.2%	19.4	13.2
4/2+4/1	Grose St - W Left Ahead	U	266	63.8 : 63.8%	46.0	7.2
4/3	Grose St - W Ahead Right	O	97	40.3%	51.3	2.9
Ped Link: P1	P1	-	0	0.0%	-	-
Ped Link: P2	2	-	0	0.0%	-	-
Ped Link: P3	3	-	0	0.0%	-	-
Ped Link: P4	4	-	0	0.0%	-	-
C1 - Church St/Factory St	PRC for Signalled Lanes (%):	3.9	Total Delay for Signalled Lanes (pcuHr):	12.65	Cycle Time (s):	106
C2 - Church St/Pennant Hills Rd	PRC for Signalled Lanes (%):	-9.6	Total Delay for Signalled Lanes (pcuHr):	40.24	Cycle Time (s):	106
C3 - Church St/Grose St	PRC for Signalled Lanes (%):	11.1	Total Delay for Signalled Lanes (pcuHr):	22.63	Cycle Time (s):	106
	PRC Over All Lanes (%):	-9.6	Total Delay Over All Lanes(pcuHr):	75.57		

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