John Hunter Health and Innovation Precinct

State Significant Development Application
Transport Impact Assessment

Prepared by: GTA Consultants (Group) Pty Ltd for Health Infrastructure
on 14/05/2021
Reference: N169773
Issue #: D

GTAconsultants now Stantec

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Quality Record

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EXECUTIVE SUMMARY

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GTA Consultants (GTA) was commissioned by Health Infrastructure to undertake a transport and traffic impact assessment of the internal road operations and the surrounding road network to identify the potential impact and mitigation measures associated with the proposed John Hunter Health and Innovation Precinct (JHHIP).

The John Hunter Health Campus is located within Hunter New England Local Health District (HNELHD) and comprises John Hunter Hospital, John Hunter Children's Hospital, the Royal Newcastle Centre (RNC), the Rankin Park Rehabilitation Unit and the Nexus Unit (Children and Adolescent Mental Health Unit). It currently has around 3,900 full time equivalent (FTE) staff across HNELHD, HealthShare NSW and pathology. Newcastle Private Hospital and Hunter Medical Research Institute (HMRI) are located adjacent to John Hunter Hospital respectively on its eastern and north western side.

The John Hunter Health Campus is located along Lookout Road in New Lambton Heights, approximately eight kilometres west of Newcastle. Jacaranda Drive and Kookaburra Circuit are internal roads within the hospital campus which connect with Lookout Road. The Lookout Road/ Kookaburra Circuit signalised intersection functions as the main access to the hospital, with all movements in and out of the hospital permitted. The Lookout Road/ Jacaranda Drive intersection functions as a secondary access, with only right turn movements into the hospital permitted, recent modifications to the intersection now allow both right and left turn movements out of the hospital.

Parking occupancy surveys were completed for the hospital campus in August 2019. The surveys indicate there is currently approximately 3,500 parking spaces for the John Hunter Health Campus, while a further 285 spaces are provided for HMRI and 360 spaces are provided for Newcastle Private Hospital. Parking demand for the John Hunter Health Campus was observed to be high, with peak parking demand for all campus users (including loading, emergency and fleet vehicles) around 3,026 spaces (87 per cent occupied).

Traffic surveys were also completed at key intersections surrounding the hospital in March 2019. The results indicate that the site currently generates approximately 1,800 vehicles per hour in the AM peak (7:30am to 8:30am) and 1,600 vehicles per hour in the PM peak (3:15pm to 4:15pm).

Transport Impact Assessment

In June 2019, the NSW Government announced a significant expansion of the John Hunter and John Hunter Children's Hospitals with the $780 million John Hunter Health and Innovation Precinct (JHHIP) project. The project will deliver updated and enhanced facilities providing additional capacity to meet the demand of the Greater Newcastle, Hunter New England, and northern NSW Regions. The JHHIP will enable a more integrated service encouraging partnership with key health, education and research partners from within and beyond the immediate region.

A new access road would connect with the proposed Newcastle Inner City Bypass which will run between Rankin Park and Jesmond for a length of 3.4 kilometres to the west of the hospital. The bypass will assist in alleviating demand on Lookout Road whilst also redirecting the majority of traffic to the north.

A new multi-level car park is proposed below the proposed acute services building. Two car park accesses (separated for inbound and outbound), are proposed along the northern access road intended to be primarily used by staff, visitors familiar with the site and service vehicles, if required. One car park access is proposed along Kookaburra Circuit, intended to be primarily used by public who have dropped off at the Emergency Department.

The acute services building will provide a total of nine ambulance parking bays which are designed in accordance with NSW Ambulance Specifications for Hospitals. Four parking spaces will also be provided within this area which are designated for authorised vehicles only.

The Emergency Department drop off area operates in a clockwise circulation where vehicles can enter from Kookaburra Circuit and either drop off parallel adjacent to the Emergency Department entrance or in designated angle parking spaces. Once the drop off has occurred vehicles can either exit back onto Kookaburra Circuit or proceed to the semi-basement car park ramp to access parkingand entering the acute services building.

The redevelopment of the drop off area adjacent to the expanded main entrance on the southern side of the existing John Hunter Hospital would operate in a clockwise circulation where vehicles can enter from Kookaburra Circuit and either drop off parallel adjacent to the main entrance or in designated angle parking spaces. Once the drop off has occurred vehicles can exit back onto Kookaburra Circuit to proceed to adjacent available visitor parking. Access to the drop off area is available from either the proposed connection to the bypass or through Kookaburra Circuit from Lookout Road.

Parking spaces are designed to be 2.6 metres wide by 5.4 metres long which would cater for both staff and visitor parking requirements to meet the Health Infrastructure guidelines. Accessible parking spaces are designed to be 2.6 metres wide by 5.4 metres long with an adjacent 2.4 metres wide by 5.4 metres long shared zone. Internal aisle widths are designed to be six metres which meets the minimum requirement of 5.8 metres under AS/NZS2890.1.

The traffic generation rates for hospitals referenced in the Transport for NSW (formally Roads and Maritime Services) Guide to Traffic Generating Developments 2002 (The Guide 2002) have been applied to the redevelopment, with the AM peak factored up based on the existing traffic generation of the site. Based on an increase in clinical services outlined in the JHHIP Clinical Services Plan 2031 and future staff projections provided by Hunter New England Local Health District, the proposed development could ultimately generate an increase of around 265 trips in the AM peak hour and 199 trips in the PM peak hour.

Forecasted traffic volumes for the road network surrounding the hospital precinct were sourced from the Newcastle Inner City Bypass Environmental Impact Statement Supplementary Traffic and Transport Assessment[1], prepared by Roads and Maritime Services in April 2018, and used to forecast background traffic volume growth along Lookout Road for year of opening (2026) and 10 year horizon (2036), as well as to re-distribute traffic across the precinct.

Analysis of the JHHIP development traffic following construction of the Newcastle Inner City Bypass shows that performance of intersections along Lookout Road will significantly improve post development, and key internal intersections expected to operate well, with little to no delay or queuing.

Primarily, following full development of the site in the 10 year post opening scenario (2036), overall intersection delay for Lookout Road/ Kookaburra Circuit is expected to reduce by up to 16 and 27 seconds respectively in the AM and PM peak periods compared to existing, with the north west approach (Kookaburra Circuit) access improving from a Level of Service F to Level of Service C in the PM peak period.

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[1] Newcastle Inner City Bypass – Rankin Park to Jesmond, Technical Paper 2 Supplementary Traffic and Transport Assessment, Aurecon and Roads and Maritime, April 2018

With the bypass in place and the upgraded internal road network associated with the redevelopment, the modelling indicates that key intersections within the hospital internal road network will operate well with significant spare capacity to accommodate future growth and development within the precinct. It would be recommended that key routes to and from future development zones be linked through the bypass to discourage further traffic circulating through the hospital frontage to/ from Lookout Road.

A Parking Demand Study Report was prepared by GTA Consultants in April 2020 to understand the parking requirements of the JHHIP. The study was completed using a first principles analysis based on the relationship between current and future staffing levels, as well as student, visitor and patient demands. The parking demand study identified that the proposed JHHIP should provide for an additional 754 parking spaces on site.

The development will provide an uplift of around 900 spaces across the site to accommodate parking demand generated by the JHHIP and to alleviate some of the existing parking shortfall. These will be provided via a combination of basement car park and at-grade spaces.

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1. INTRODUCTION

01

1.1. Background and Proposal

As part of the NSW Budget 2019/ 20, $780 million funding has been committed for the John Hunter Health and Innovation Precinct (JHHIP). The project will deliver updated and enhanced health facilities providing extra capacity to meet the demand of the community.

The JHHIP project will provide a new acute service building to the north of the existing hospital, housing expanded and enhanced facilities for a range of health services including an expanded Emergency Department, expanded and enhanced critical care services, inpatient services, support services and women's services. It will also enable more integrated services with key health, education and research partners. The project will also include refurbishment works to support the relocation of existing departments and facilitate connectivity through the hospital campus.

A new access road would connect with the proposed Newcastle Inner City Bypass which will run between Rankin Park and Jesmond for a length of 3.4 kilometres to the west of the hospital. The bypass will assist in alleviating demand on Lookout Road whilst also redirecting the majority of traffic to the north.

A new multi-storey car park is proposed below the proposed acute services building. The car park is to support future growth associated with the JHHIP, as well as to allow for the relocation of existing on-site car parking displaced during the redevelopment.

The existing Main Entrance to the hospital has been redesigned to accommodate a redeveloped drop off and pick up area with the Emergency Department and associated drop off/ pick up and ambulance bays being relocated to the new ASB.

GTA was commissioned by Health Infrastructure to prepare a transport impact assessment for the proposed car park to support the JHHIP redevelopment.

1.2. Purpose of the Report

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

- a detailed review of existing traffic and parking conditions both on-site and surrounding the site
- suitability of the proposed parking in terms of supply (quantum) and layout
- the traffic generating characteristics of the proposed development
- suitability of the proposed access arrangements for the site
- the transport impact of the development proposal on the surrounding road network and internal precinct road network.

1.3. Response to SEARs

The Transport and Accessibility Impact Assessment is required by the Secretary's Environmental Assessment Requirements (SEARs) for SSD 9351535. Table 1.1 identifies the SEARs and relevant reference within this report.

Table 1.1: SEARs and relevant report reference

SEARs detail	Relevant report section
Transport and Accessibility	
Include a transport and accessibility impact assessment, which includes, but is not limited to the following: • analysis of the existing transport network including: o road hierarchy o pedestrian, cycle and public transport infrastructure o details of current daily and peak hour vehicle movements based on traffic surveys and/ or existing traffic studies relevant to the locality o existing performance levels of nearby intersections utilising appropriate traffic modelling methods (such as SIDRA network modelling).	Section 2
• details of the proposed development, including: o a map of the proposed access which identifies public roads, bus routes, footpaths and cycleways o vehicular access arrangements, including for service and emergency vehicles and loading/unloading, including swept path analysis demonstrating the largest design vehicle entering and leaving the site and moving in each direction through intersections along the proposed transport routes o car parking, bicycle parking and end-of-trip facilities o drop-off / pick-up zone(s)/arrangements o pedestrian or road infrastructure improvements or safety measures o loading and service facilities.	Section 3.1, 5.2, 5.3, 5.9, 5.10, 7.1.2
• analysis of the impacts due to the operation of the proposed development, including: o proposed modal split for all users of the development including vehicle, pedestrian, cyclist, public transport and other sustainable travel modes o estimated total daily and peak hour vehicle, public transport, freight, service vehicle, cyclist and pedestrian trip generation for staff and visitors o a clear explanation and justification of the: ▪ assumed growth rate applied ▪ volume and distribution of proposed trips to be generated ▪ type and frequency of design vehicles accessing the site o details of performance of nearby intersections with the additional traffic generated by the development both at the commencement of operation and in a 10-year time period (using SIDRA network modelling or similar traffic model as required by TfNSW) o cumulative traffic impacts from any surrounding approved development(s) o traffic and safety impacts on public transport, pedestrian and cyclists, including at the proposed access and drop off / drop off zone(s) o adequacy of existing / proposed pedestrian, bicycle and public transport infrastructure to accommodate the development and enable convenient and safe access to and from the site for all users o adequacy of car parking and bicycle parking provisions when assessed against the relevant car / bicycle parking codes and standards o adequacy of the drop-off / pick-up zone(s), including any related queuing o adequacy and loading and servicing provisions to meet estimated daily and peak hour freight and servicing demand.	Section 4, 5, 6.3, 6.4, 6.5, 6.6, 6.7, 7.1

SEARs detail	Relevant report section
• measures to ameliorate any adverse traffic and transport impacts due to the development based on the above analysis, including: o travel demand management strategies to encourage sustainable and active transport (such as a Green Travel Plan and / or specific Workplace Travel Plan) o infrastructure improvement, including details of timing and method of delivery o freight and servicing management measures to minimise transport network impacts (such as a preliminary Delivery and Servicing Management Plan).	Section 6.1
• a preliminary operational traffic and access management plan for the site, the drop-off/ pick-up zone(s) and bus bay(s)	Section 5
• analysis of the impacts of the traffic generated during construction of the proposed development, including: o construction vehicle routes, types, volumes and swept path o construction program (duration and milestones) o on-site car parking and access arrangements for construction, emergency and construction worker vehicles o cumulative impacts associated with other construction activities in the locality o road safety at identified intersections near the site due to conflicts between construction vehicles and existing traffic, public transport, pedestrians and cyclists in the locality o measures to mitigate impacts, including to ensure the safety of pedestrian and cyclists during construction.	Section 8
Relevant Policies and Guidelines	
• Guide to Traffic Generating Developments (Roads and Maritime Services, 2002) • EIS Guidelines - Road and Related Facilities (Department of Urban Affairs and Planning (DUAP), 1996) • Cycling Aspects of Austroads Guides • NSW Planning Guidelines for Walking and Cycling (Department of Infrastructure, Planning and Natural Resources (DIPNR), 2004) • Guide to Traffic Management Part 12: Integrated Transport Assessments for Developments (Austroads, 2020) • Australian Standard 2890.2 Parking facilities, Part 2: Off-Street commercial vehicle facilities (AS 2890.2) • Australian Standard 2890.3 Parking facilities, Part 3: Bicycle parking (AS 2890.3) • Future Transport Strategy 2056 • Hunter Regional Plan 2036 • Greater Newcastle Metropolitan Plan 2036 (specifically the John Hunter Hospital Catalyst Area)	Section 6.3, 7, 4.1
Consultation	
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, relevant special interest groups, including local Aboriginal land councils and registered Aboriginal stakeholders and affected landowners. In particular, you must consult with: • the relevant Council • Transport for NSW.	See Section 2.5.3, 2.5.4, 5.4, 5.9, 8.12.2

1.4. References

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

- an assessment of the site and its surrounds
- JHHIP Car Parking Demand Study, GTA Consultants, April 2020
- JHHIP Green Travel Plan, GTA, now Stantec, April 2021
- Newcastle Local Environmental Plan 2012 (LEP 2012)
- Newcastle Development Control Plan 2012 (DCP 2012)
- Transport for NSW (formally Roads and Maritime Services) Guide to Traffic Generating Developments 2002 (Guide 2002)
- Sustainable Hospital Car Park Investment Program Volume 3, Hospital Car Park Design Guidelines V1.2, Health Infrastructure, May 2019
- Newcastle Inner City Bypass – Rankin Park to Jesmond Environmental Impact Statement, Technical Paper 2 Traffic and Transport Assessment, Aurecon and Roads and Maritime, November 2016
- Newcastle Inner City Bypass – Rankin Park to Jesmond, Technical Paper 2 Supplementary Traffic and Transport Assessment, Aurecon and Roads and Maritime, April 2018.

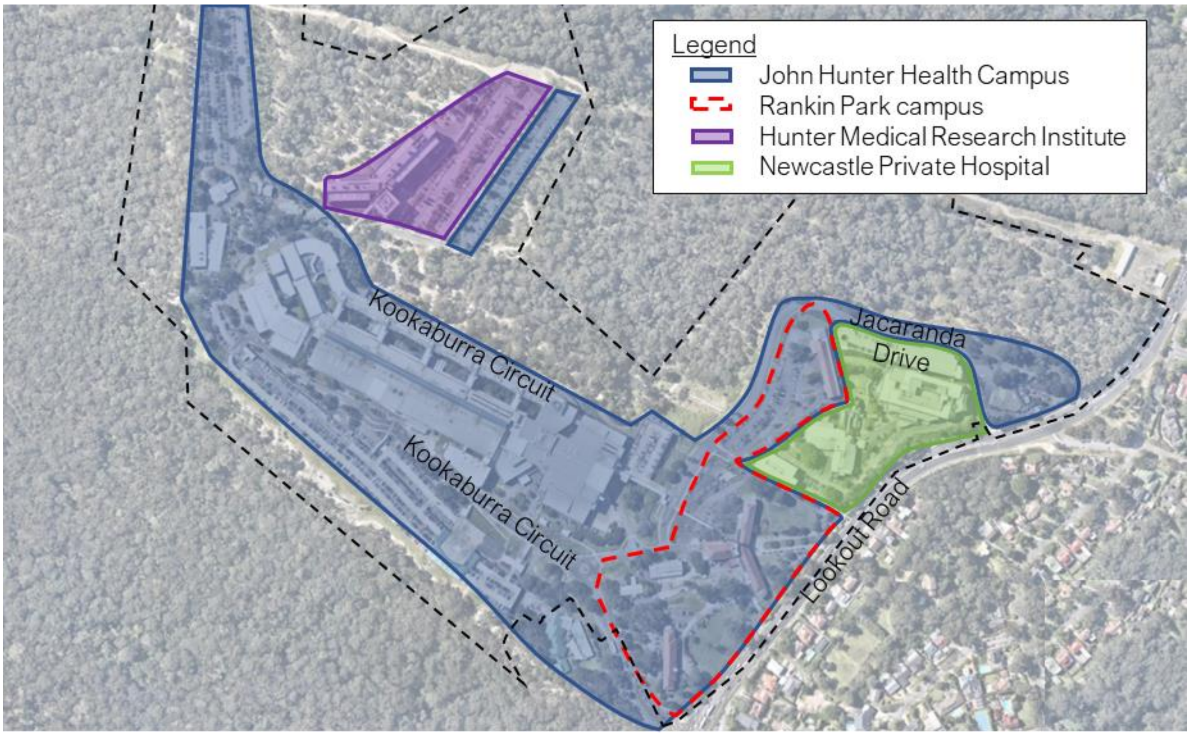
2. EXISTING CONDITIONS

02

2.1. Overview

The John Hunter Health Campus (JHHC) is located on Lookout Road, Lambton Heights, NSW, and is located within Hunter New England Local Health District (HNELHD). The JHHC comprises John Hunter Hospital, John Hunter Children's Hospital, the Royal Newcastle Centre, the Rankin Park Rehabilitation Unit (Rankin Park Campus) and the Nexus Unit (Children & Adolescent Mental Health Unit). It currently has around 3,900 full time equivalent (FTE) staff across HNELHD, HealthShare NSW and pathology. Newcastle Private Hospital and Hunter Medical Research Institute (HMRI) are respectively located adjacent to the JHHC on its eastern and north-western side, as shown in Figure 2.1.

Figure 2.1: John Hunter Health Campus



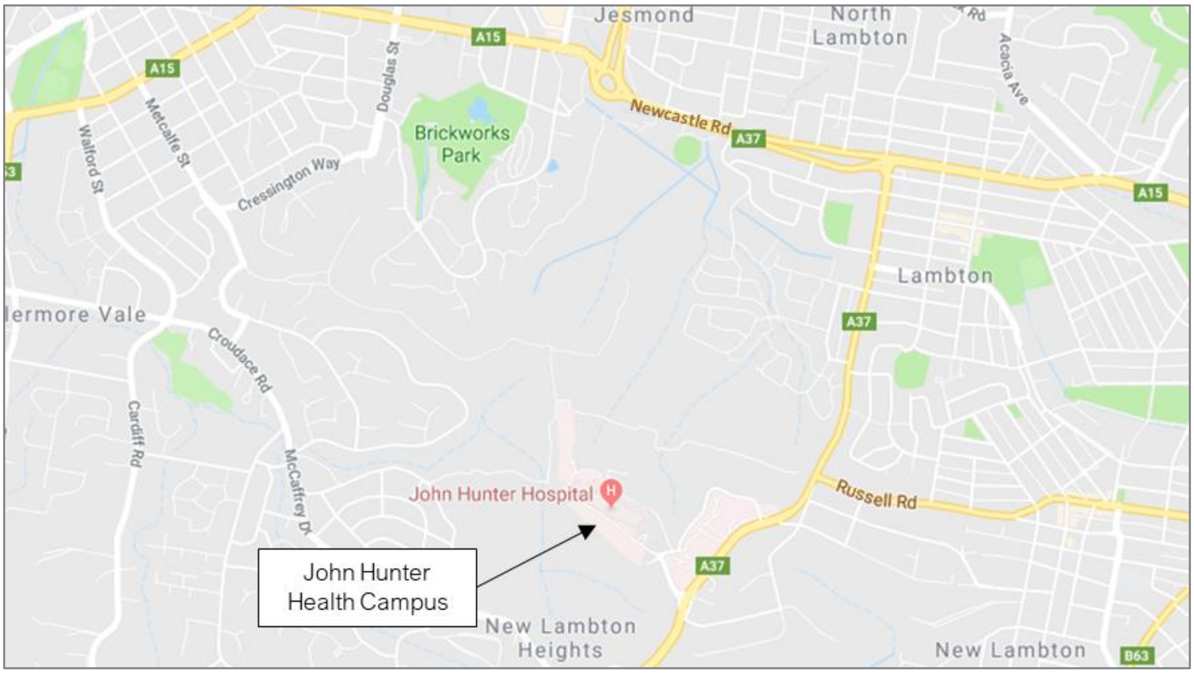
Base image source: Near map

The site is serviced by parking for up to 3,500 on-site parking spaces, outlined further in Section 2.4.

The site currently has a land use classification as SP2 – Infrastructure under the Newcastle LEP 2012 and its surrounding properties predominantly include low density residential, environmental management and special infrastructure uses. Land to the north of the site is Zoned E3 Environmental.

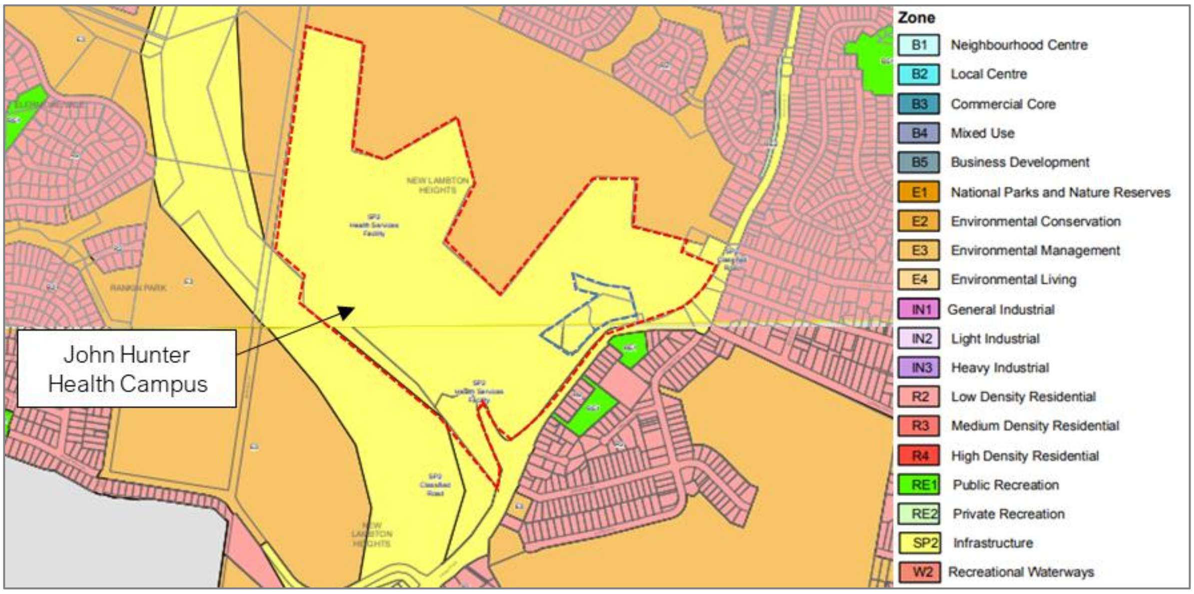
The location of the campus and its surrounding environs is shown in Figure 2.2, while the LEP land use map is shown in Figure 2.3.

Figure 2.2: Subject site and its environs



Base image source: Google Maps

Figure 2.3: Land use map



Base image source: LZN002F & LZN002G, Newcastle Council LEP 2012

2.2. Road Network

2.2.1. Lookout Road

Lookout Road is classified as a State Road in the Roads and Maritime Schedule of Classified Roads and State and Regional Roads versions 2011/ 1. It is aligned in a north south direction and is a two-way road, near the site Lookout Road is configured with two travel lanes in each direction and auxiliary right-hand turning lanes on approach to signalised intersections.

Lookout Road has a sign posted speed limit of 60 kilometres per hour and carries around 48,000 vehicles per day[2].

2.2.2. Kookaburra Circuit

Kookaburra Circuit functions as a local road that provides the primary staff and visitor access to the John Hunter Health Campus and associated parking facilities. It circulates around the John Hunter Hospital and is predominately aligned in an east-west direction. Between Jacaranda Drive and the northern most access from the southwestern carpark on the southern side of the building, it is a two-way road configured with one travel lane in each direction. North of the northern most access from the southwestern carpark, it is a one-way road configured with one travel lane circulating northbound then eastbound with one parking lane in the direction of travel. Kerbside parking is permitted for fleet and service permit holders only.

Kookaburra Circuit has a sign posted speed limit of 40 kilometres per hour and carries around 14,000 vehicles per day[1] immediately west of Lookout Road.

2.2.3. Jacaranda Drive

Jacaranda Drive functions as a local road that provides a secondary access for staff and visitors to John Hunter Hospital, Newcastle Private Hospital and the surrounding health precinct. It is aligned in a north-south direction and connects Kookaburra Circuit with Lookout Road north of Newcastle Private Hospital. It is a two-way road, configured with one travel lane in each direction.

Jacaranda Drive has a sign posted speed limit of 40 kilometres per hour and carries around 2,000 vehicles per day[1], immediately west of Lookout Road.

Figure 2.4 and Figure 2.5 provide an overview of the road network and access arrangements surrounding the site.

[2] Based on the peak hour traffic counts undertaken by GTA in March 2019 and assuming a peak-to-daily ratio of eight per cent for arterial roads and 10 per cent for local roads.

Figure 2.4: Existing road network

Base image source: Nearmap accessed April 2019

Figure 2.5: Existing access arrangements

Source: BVN – November 2020

2.3. Traffic Surveys

2.3.1. Lookout Road

Traffic movement surveys were undertaken on Thursday 21 March 2019 during the following peak periods:

- 6:00am to 10:00am
- 3:00pm to 7:00pm.

The following intersections were included in the traffic survey:

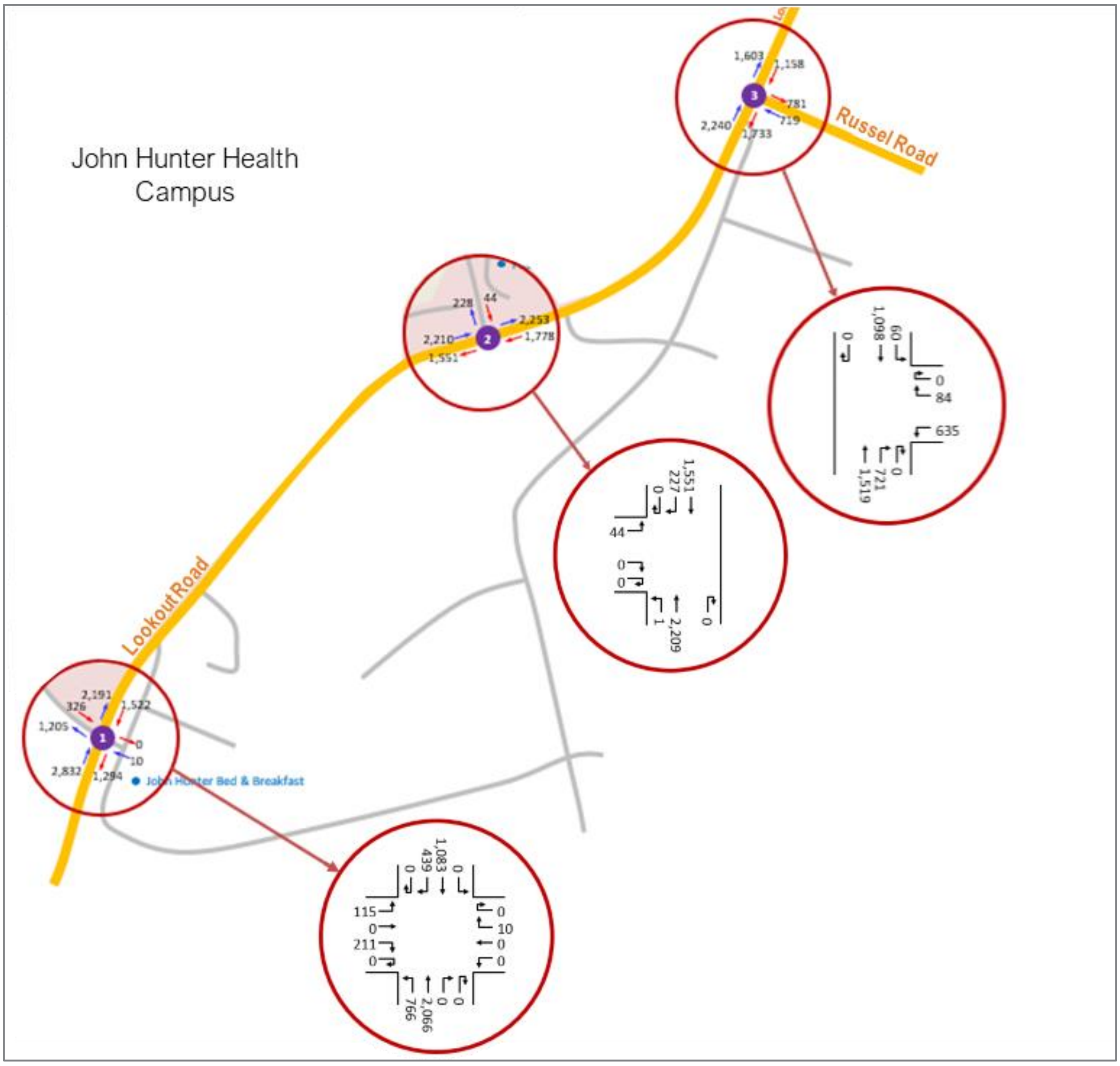
- Lookout Road/ Russell Street (signalised intersection)
- Lookout Road/ Jacaranda Drive (signalised intersection)
- Lookout Road/ Kookaburra Circuit (signalised intersection).

The actual AM and PM peak hours were found as follows:

- 7:30am to 8:30am
- 3:15pm to 4:15pm.

The AM and PM traffic volumes are respectively summarised in Figure 2.6 and Figure 2.7, with full results contained in Appendix A. It is noted that at the time of the surveys, the right turn from Jacaranda Drive onto Lookout Road was not open. This is discussed further in Section 2.5.3.

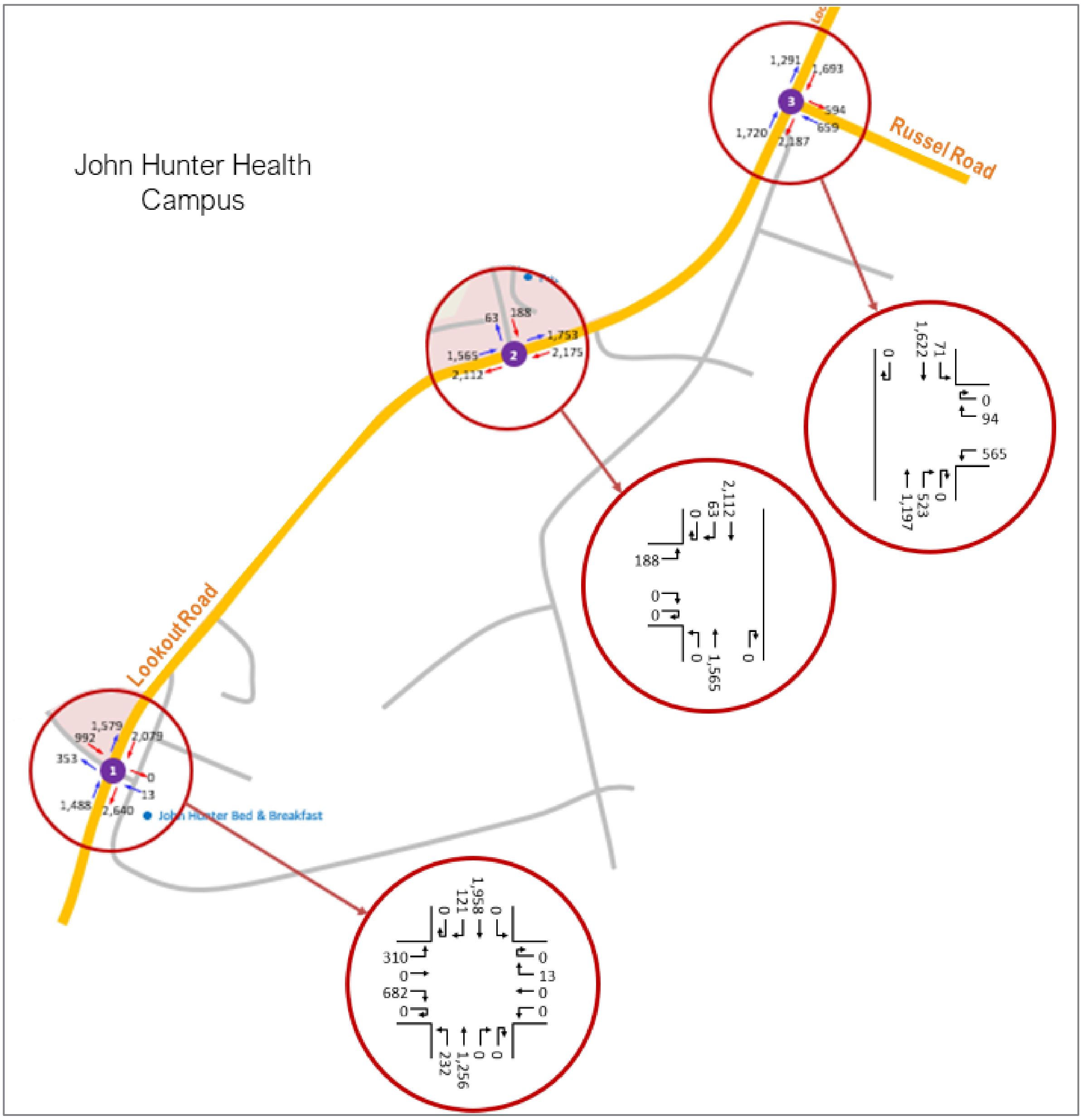
Figure 2.6: Existing AM peak hour traffic volumes – Lookout Road [1]



Base image source: N4852 John Hunter Hospital IC-flow diagram (Re-counting), Matrix, prepared 8 April 2019

[1] At the time of the surveys, right turn from Jacaranda Drive onto Lookout Road was not open. Notwithstanding, existing condition SIDRA intersection analysis detailed in Section 2.5 considers the re-distribution of some traffic from Kookaburra Circuit to Jacaranda Drive based on review of SCATS intersection counts following the opening of the right turn.

Figure 2.7: Existing PM peak hour traffic volumes – Lookout Road [1]

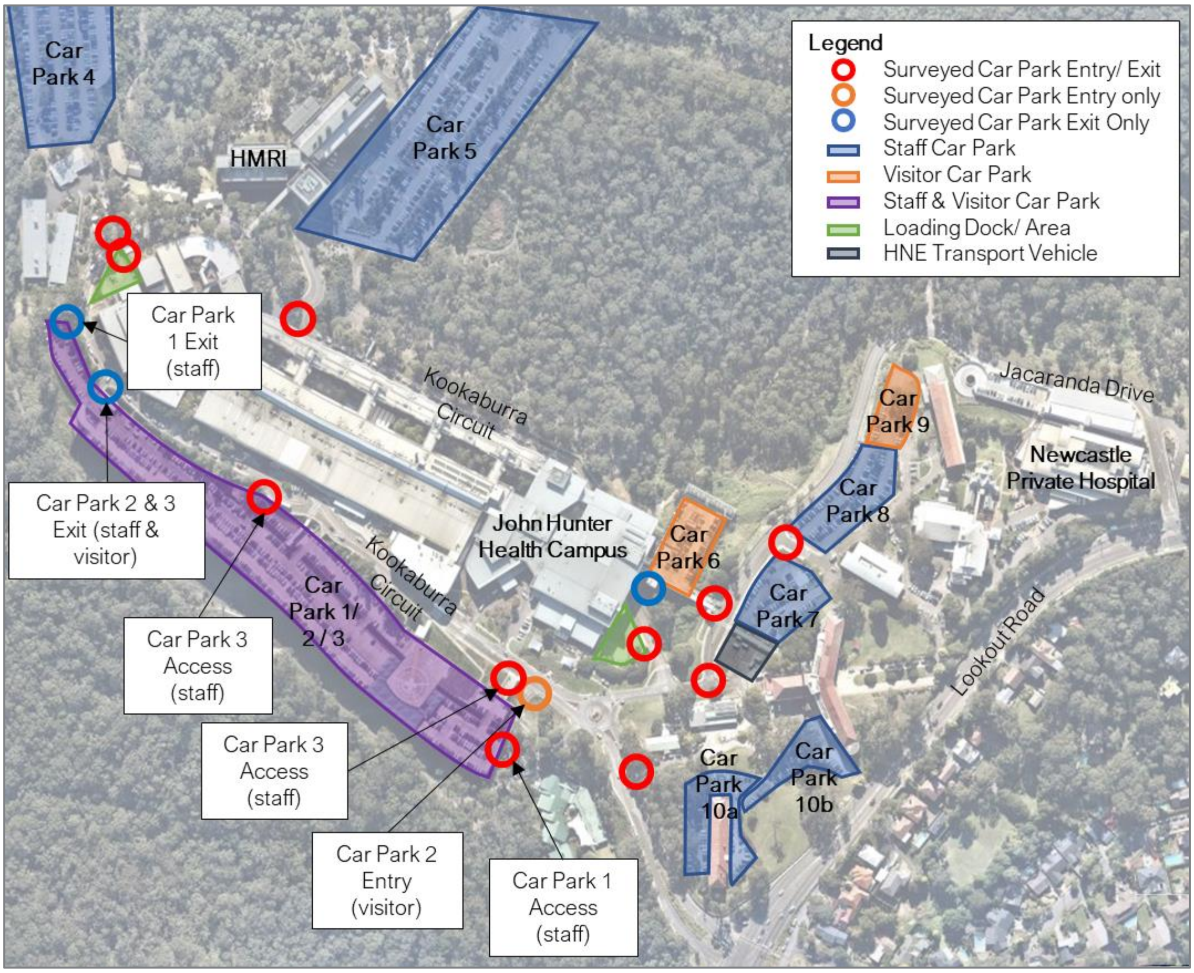


Base image source: N4852 John Hunter Hospital IC-flow diagram (Re-counting), Matrix, prepared 8 April 2019
[1] At the time of the surveys, right turn from Jacaranda Drive onto Lookout Road was not open. Notwithstanding, existing condition SIDRA intersection analysis detailed in Section 2.5 considers the re-distribution of some traffic from Kookaburra Circuit to Jacaranda Drive based on review of SCATS intersection counts following the opening of the right turn.

2.3.2. Internal Intersections and Car Park Accesses

In addition, surveys of the internal intersections within the John Hunter Health Campus and the car parking accesses (including some cross over for HMRI and Newcastle Private car park access) were completed during the nominated peak periods. An overview of the survey locations is illustrated in Figure 2.8.

Figure 2.8: John Hunter Health Campus car park survey overview



Base image source: Nearmap

The actual AM and PM peak hours were consistent with the Lookout Road intersection surveys, as follows:

- 7:30am to 8:30am
- 3:15pm to 4:15pm.

The corresponding number of vehicle movements into and out of the car parking facilities during the AM and PM peak hours are detailed in Table 2.1.

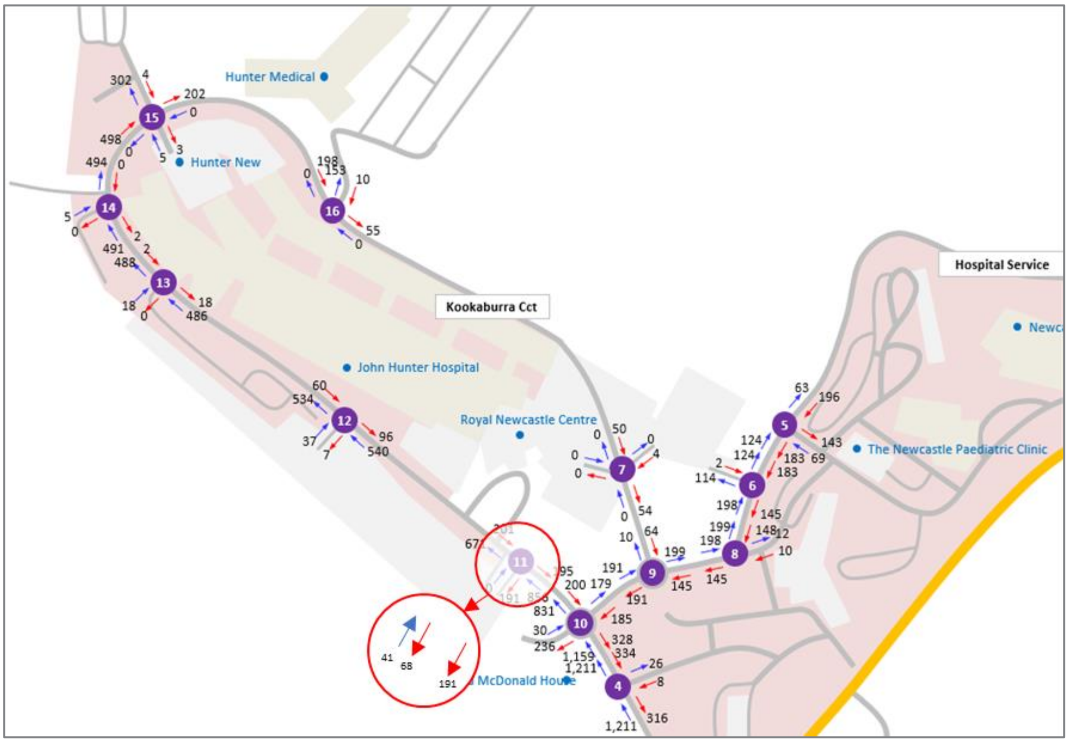
Table 2.1: John Hunter Health Campus car park traffic generation

Car Park	Description	AM Peak Hour (7:30am to 8:30am)			PM Peak Hour (3:15pm to 4:15pm)		
		In	Out	Total	In	Out	Total
Car Park 1	Staff	236	35	271	25	153	178
Car Park 2	Visitor	191	0	191	124	0	124
Car Park 3	Staff	75	78	153	28	96	124
Car Park 2/ 3	Staff/ Visitor	0	18	18	0	238	238
Car Park 4	Staff	302	4	306	4	175	179
Car Park 5[1]	Staff	153	10	163	6	108	114
Car Park 6	Visitor	114	6	120	21	82	103
Car Park 7/ 8/ 9/ Newcastle Private[2]	Staff/ Visitor	143	69	212	104	216	320
Car Park 10a/ 10b[3]	Staff	26	8	34	2	49	51
HNELHD Transport Vehicle		12	10	22	10	13	23
John Hunter Loading Dock	Service Vehicles	0	0	0	0	0	0
Pathology North Loading Dock	Service Vehicles	3	5	8	4	6	10
Total[1]		**1255**	**243**	**1498**	**328**	**1136**	**1464**

[1] Combined access to Car Park 5 controlled by HMRI and HNELHD. Based on existing car parking numbers, up to 66 per cent of traffic could be attributed to HMRI.
[2] Combined access provided via Tea House Road to Car Park 7 (staff parking), 8 (staff parking) and 9 (visitor parking), in addition to the Newcastle Private hospital car park. Based on existing car parking numbers, up to 55 per cent of traffic could be attributed to Newcastle Private hospital.
[3] Access may also be provided via Tea House Drive or through the HNE Transport Compound however this is considered unlikely.

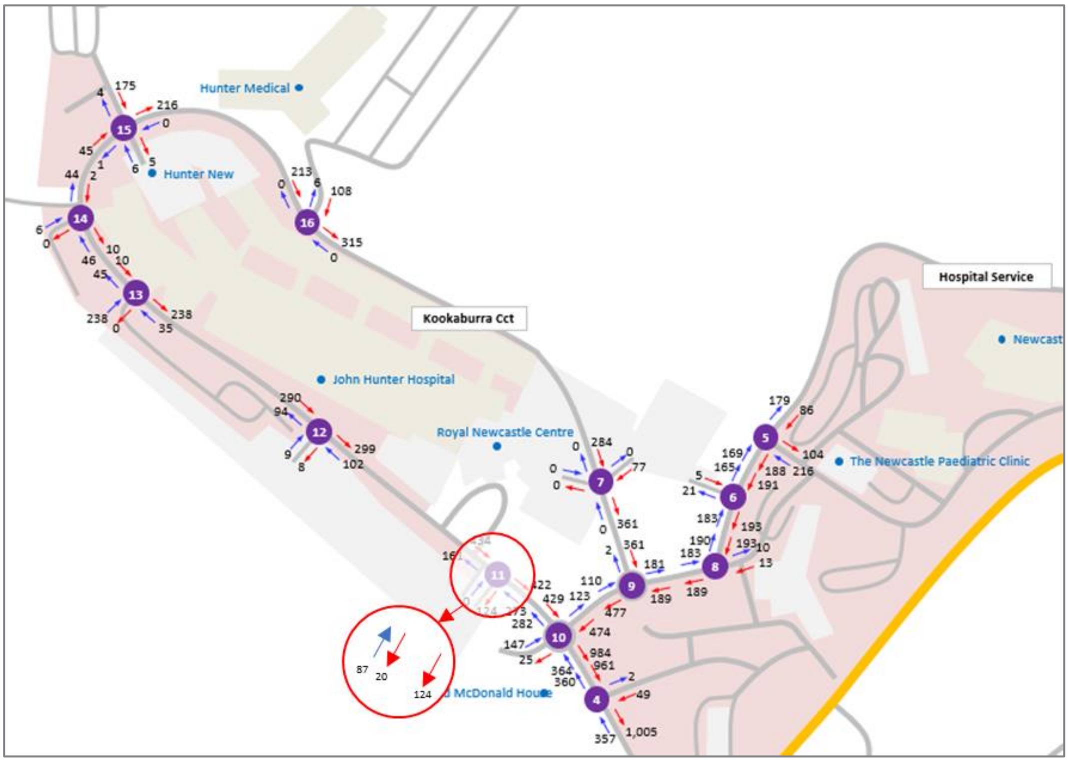
The AM and PM traffic volumes are respectively summarised in Figure 2.9 and Figure 2.10.

Figure 2.9: Existing AM peak hour traffic volumes – John Hunter Health Campus



Base image source: N4852 John Hunter Hospital IC-flow diagram (Re-counting), Matrix, prepared 8 April 2019

Figure 2.10: Existing PM peak hour traffic volumes – John Hunter Health Campus



Base image source: N4852 John Hunter Hospital IC-flow diagram (Re-counting), Matrix, prepared 8 April 2019

2.4. Car Parking

2.4.1. On-Street Parking Supply

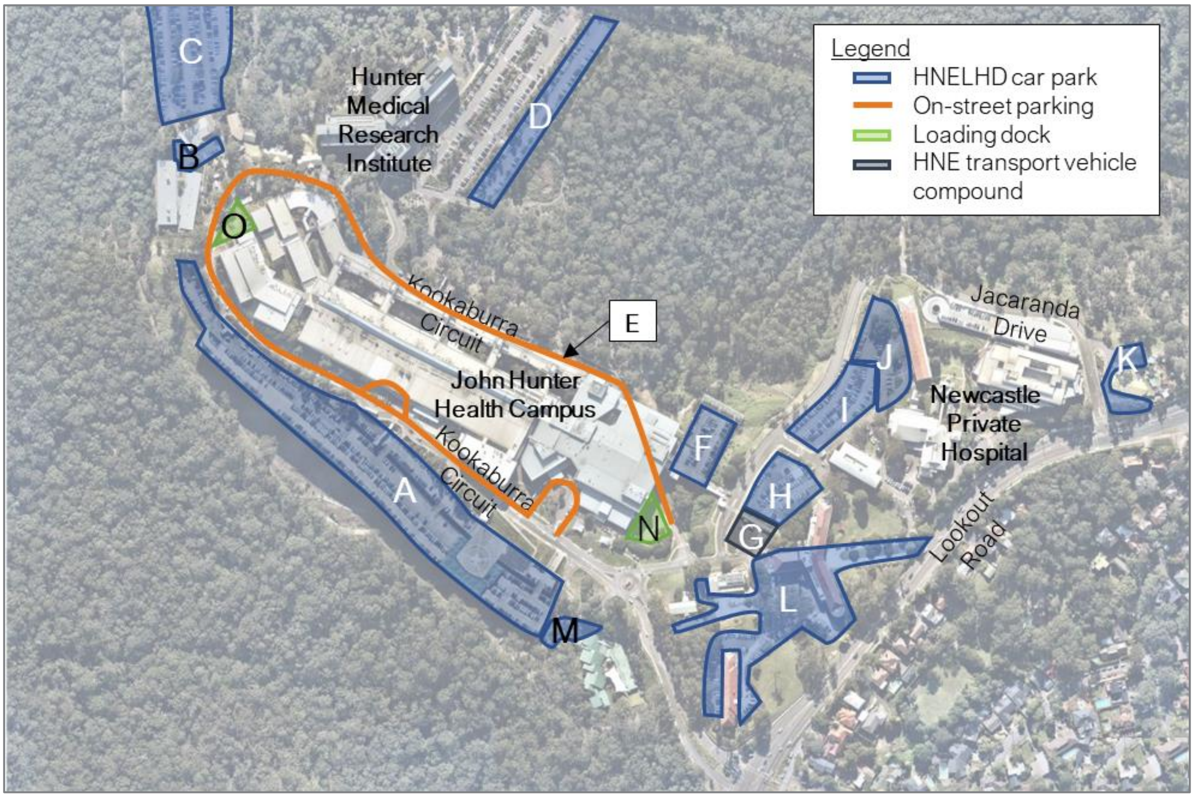
Minimal all-day on street parking is provided within the surrounding local streets, with majority of the streets in proximity of the campus designated as '2P' parking areas, where all spaces are 2P unless otherwise signed. Approximately 10 all day parking spaces are provided along Ridgeway Road near Lookout Road, with all remaining spaces being 2P.

Demand for 2P spaces is generally low, with demand assumed to primarily be associated with the surrounding residential houses rather than the campus. This is assumed to be due to the steep gradients, limited pedestrian path infrastructure and extended walking times (minimum of 10 minutes) between the 2P on-street spaces and campus encouraging patients and visitors to the campus to park on site instead.

2.4.2. On-Site Parking Supply

GTA compiled an inventory of all on-site car parking in August 2019, including all John Hunter Health Campus car parking operated by HNELHD, as well as car parking operated by HMRI and Newcastle Private Hospital. The HNELHD car parking areas are shown indicatively in Figure 2.11, with the breakdown of the car parking supply and corresponding restrictions detailed in Table 2.2.

Figure 2.11:HNELHD parking facilities



Base image source: Nearmap

Table 2.2: HNELHD parking supply[12]

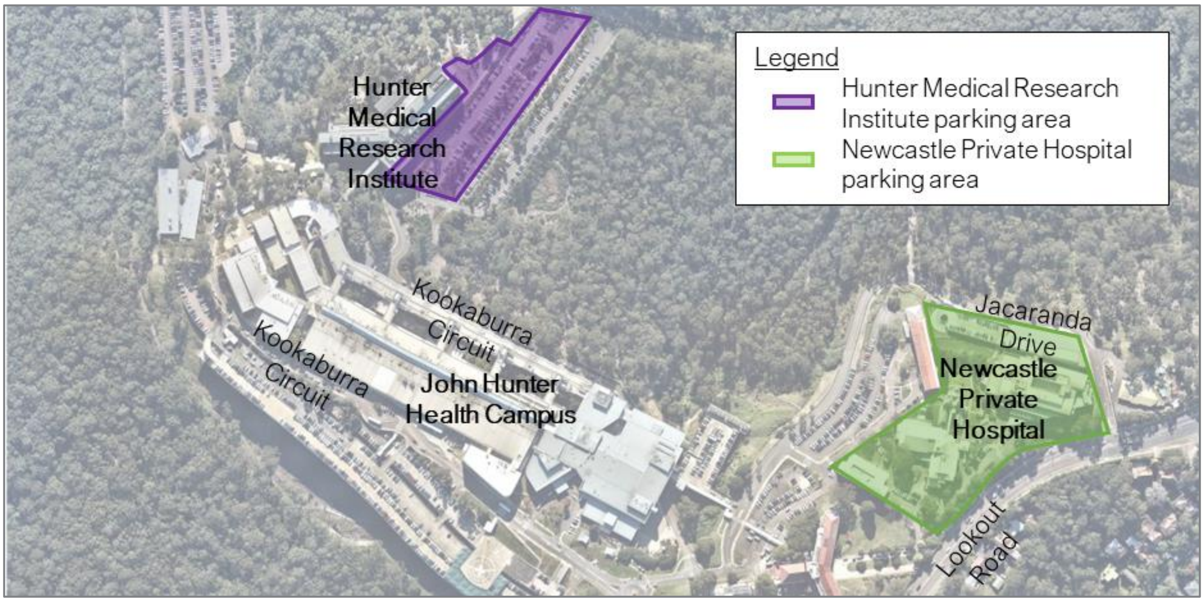
Car Parking Area	Location	Staff (General Access)	Staff (Restricted Access)	VMO	Fleet	Visitor (General Access)	Other[1]	Total Supply
Car Park 1, 2, 3	A	1,100		14	40	640		**1,794**
Forensic Science	B		7				8	**15**
Car Park 4	C	577						**577**
Car Park 5 (lowest level)	D	146						**146**
Kookaburra Circuit	E			9	30		69	**108**
Car Park 6	F			20		324	1	**345**
HNELHD Transport Vehicle Compound	G		1		14		5	**20**
Car Park 7	H	37			32			**69**
Car Park 8	I	107						**107**
Car Park 9 (incl. the Lodge Entrance)	J		25		4	23	3	**55**
Child Care Centre	K		7				10	**17**
Car Park 10 A, B	L	88	74		8	16	5	**191**
Ronald McDonald House	M						20	**20**
Loading Dock	N						11	**11**
Pathology North	O						19	**19**
Total		**2,055**	**114**	**43**	**128**	**1,003**	**151**	**3,494**

[1] Includes authorised visitors, short term/ pick up and drop off visitor parking, emergency/ patient transport, service vehicles, loading zones, security vehicles, police vehicles and taxi zones.

The inventory identified a total of approximately 3,500 parking spaces available, with around 1,000 spaces available to the public (general access), 2,200 spaces for staff and 300 spaces for VMO, fleet and other vehicles.

The HMRI and Newcastle Private Hospital car parking areas are shown indicatively in Figure 2.12, with the breakdown of the car parking supply and corresponding restrictions detailed in Table 2.3.

Figure 2.12:HMRI and Newcastle Private Hospital parking facilities



Base image source: Nearmap

Table 2.3: HMRI and Newcastle Private Hospital car parking supply

Entity	Staff (General Access)	Staff (Restricted Access)	VMO	Fleet	Visitor	Other[1]	Total Supply
HMRI	238	1	0	0	30	16	285
Newcastle Private Hospital	104	9	0	0	223	24	360

[1] Includes authorised vehicles, short term/ pick up and drop off visitor parking and construction/ contractor/ courier/ delivery vehicles

The inventory identified a total of approximately 285 parking spaces allocated to HMRI, with around 30 spaces available to the public (restricted access) and 239 spaces for staff. The inventory also identified a total of approximately 360 parking spaces allocated to the Newcastle Private Hospital, with around 223 spaces available to the public (general and restricted access) and 103 spaces for staff.

2.4.3. On-Site Parking Demand

Parking demand surveys were undertaken across the entire site including HNELHD, HMRI and Newcastle Private parking facilities on Thursday 15 August 2019 between 7:00am and 4:00pm.

Results indicate that peak parking demand for HNELHD car parking facilities occurs around 1pm, with demand for approximately 3,026 car parking spaces which equates to around 87 per cent of the campus parking supply being occupied (noting 59 HNELHD spaces were not included in the demand surveys, primarily including pathology north and general loading spaces).

2.5. Road Network Performance

2.5.1. Site Observations

Analysis of the traffic volumes detailed in Section 2.3 indicates the following:

- there is a high volume of traffic in peak periods travelling between Lookout Road and Russell Street, including:
  - 720 and 520 right turning vehicles from Lookout Road into Russell Street in the AM and PM peak, respectively
  - 630 and 560 left turning vehicles from Russell Street into Lookout Road in the AM and PM peak, respectively.
- there is a high volume of traffic in peak periods travelling through Kookaburra Circuit obtaining access to Lookout Road in the PM peak hour, including:
  - 115 right turning vehicles from the Car Park 1 Access
  - 396 vehicles traveling straight through from Kookaburra Circuit north-west approach
  - 450 left turning vehicles from Kookaburra Circuit north-east approach.

As a result of these volumes, the following was observed:

- at the Lookout Road/ Russell Street intersection, the southern approach only provides one right turning bay, resulting in significant queueing traveling back to the Lookout Road/ Jacaranda Drive intersection
- competing movements at the Kookaburra Circuit/ Car Park 1 Access roundabout creates excessive queuing and delays to vehicles leaving the Hospital/ generally traveling through the Hospital internal road network. This is made worse by the following:
  - turning restrictions at Jacaranda Drive forcing drivers traveling south to use the Kookaburra Circuit intersection only[3]
  - one-way direction of travel along a portion of Kookaburra Circuit increases traffic volumes on the north-eastern approach to the roundabout. This approach must give way to the high volumes of traffic entering the roundabout from their right, increasing queues and delays at this location.

Figure 2.13 and Figure 2.14 respectively illustrate queuing on Russell Street, 260 metres east of Lookout Road, and Kookaburra Circuit, 270 metres west of Lookout Road, during the PM peak hour.

[3] In response to existing congestion present within the health campus, right turn at Jacaranda Drive has since been opened in consultation with Transport for NSW

Figure 2.13: Russell Street queue, 260m east Lookout Road

Figure 2.14: Kookaburra Circuit, 270m west Lookout Road

2.5.2. Traffic Growth

Transport for NSW is planning to extend the Newcastle Inner City Bypass between Rankin Park and Jesmond, for a length of 3.4 kilometres. The proposed bypass aims to improve performance of the existing travel route between Rankin Park and Jesmond with the objective to meet future traffic demand, reduce travel times and improve road safety. The bypass is discussed in further detail in Section 2.8.

Due to changing traffic patterns across 2020 (due to the COVID-19 pandemic), as well as future changes to road network conditions prior to the opening of the JHHIP, 2019 traffic volumes are considered appropriate for the purposes of modelling existing conditions for this assessment. Impacts of the bypass to future traffic conditions, including changes to background traffic volumes, is discussed further in Section 2.8 and 6.

2.5.3. Jacaranda Drive right turn

At the time of traffic surveys, the right turn from Jacaranda Drive onto Lookout Road was not open. Notwithstanding, existing condition SIDRA intersection analysis detailed in Section 2.5 considers the re-distribution of some traffic from Kookaburra Circuit to Jacaranda Drive based on review of SCATS intersection counts at each site access from February 2021 following the opening of the right turn. It is noted that the process of calibrating the existing condition model to represent existing condition and future condition following opening of the right turn from Jacaranda Drive included extensive consultation with Transport for NSW with various SIDRA modelling reviews by the Transport for NSW modelling team.

2.5.4. Intersection Operation

The operation of the key intersections within the study area have been assessed using SIDRA INTERSECTION[4] (SIDRA), a computer-based modelling package which calculates intersection performance.

The commonly used measure of intersection performance, as defined by Transport for NSW (formally Roads and Maritime Services), is vehicle delay. SIDRA determines the average delay that vehicles encounter and provides a measure of the level of service.

Table 2.4 shows the criteria that SIDRA adopts in assessing the level of service.

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[4] Program used under license from Akcelik & Associates Pty Ltd.

Table 2.4: SIDRA level of service 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

As noted, this process included extensive consultation with Transport for NSW with various SIDRA modelling reviews by the Transport for NSW modelling team resulting in agreement from Transport for NSW that the SIDRA model appropriately represented existing conditions, including with the proposed opening of the Jacaranda Drive right turn movement.

Table 2.5 presents a summary of the existing operation of the intersections, with full results presented in Appendix B of this report.

Table 2.5: Existing operating conditions

Intersection	Peak	Approach	Degree of Saturation (DoS)	Average Delay (sec)	Average Queue (m)	Level of Service (LoS)
Lookout Road/ Kookaburra Circuit (signalised)	AM	South-East	0.37	80	3	F
		North-East	0.95	31	87	C
		North-West	0.52	51	49	D
		South-West	0.95	41	341	C
		Overall	**0.95**	**38**	**341**	**C**
	PM	South-East	0.06	57	4	E
		North-East	0.94	31	285	C
		North-West	0.98	91	180	F
		South-West	0.75	27	151	B
		Overall	**0.98**	**42**	**285**	**C**
Lookout Road/ Jacaranda Drive (signalised)	AM	North-East	0.93	15	97	B
		North-West	0.12	51	10	D
		South-West	0.92	16	251	B
		Overall	**0.93**	**16**	**251**	**B**
	PM	North-East	0.78	6	99	A
		North-West	0.44	50	45	D
		South-West	0.69	6	79	A
		Overall	**0.78**	**8**	**99**	**A**
Lookout Road/ Russell Road/ Croudace Street (signalised)[1]	AM	South-East	0.90	28	115	B
		North-East	0.97	82	218	F
		South-West	0.97	24	194	B
		Overall	**0.97**	**41**	**218**	**C**
	PM	South-East	0.95	45	148	D
		North-East	0.94	57	278	E
		South-West	0.96	28	186	B
		Overall	**0.96**	**43**	**278**	**D**

[1] No traffic volumes were recorded on the north-west approach into/ out of 156A Croudace Street, New Lambton Heights. This approach has therefore been removed from analysis

Based on the results outlined in Table 2.5, the intersection of Lookout Road/ Kookaburra Circuit is currently approaching capacity in peak conditions. The south-west and north east approaches experience notable average queuing of 340 and 290 metres respectively in the AM and PM peak hours. Furthermore, the north-west approach (Kookaburra Circuit) experiences notable queuing and delays in the PM peak hour due to the high volume of vehicles exiting the hospital.

The intersection of Lookout Road/ Jacaranda Drive currently operates well and with spare capacity in peak conditions. The south-west approach experiences notable queuing in the AM peak period. Observations show that vehicles typically queue in the right-hand lane in preparation to turn right at the Lookout Road/ Russell Street intersection.

The intersection of Lookout Road/ Russell Street currently operates near capacity in peak conditions. The south-west approach experiences notable queuing in peak conditions due to the high volume of right turning vehicles. It is noted that delays and queuing for through movements are considered satisfactory at this approach. Furthermore, the north-east approach (Croudace Street) experiences notable queuing and delays in peak conditions. The south-east approach (Russell Road) right turn also experiences notable delays in peak conditions.

2.6. Public Transport and Bicycle Network

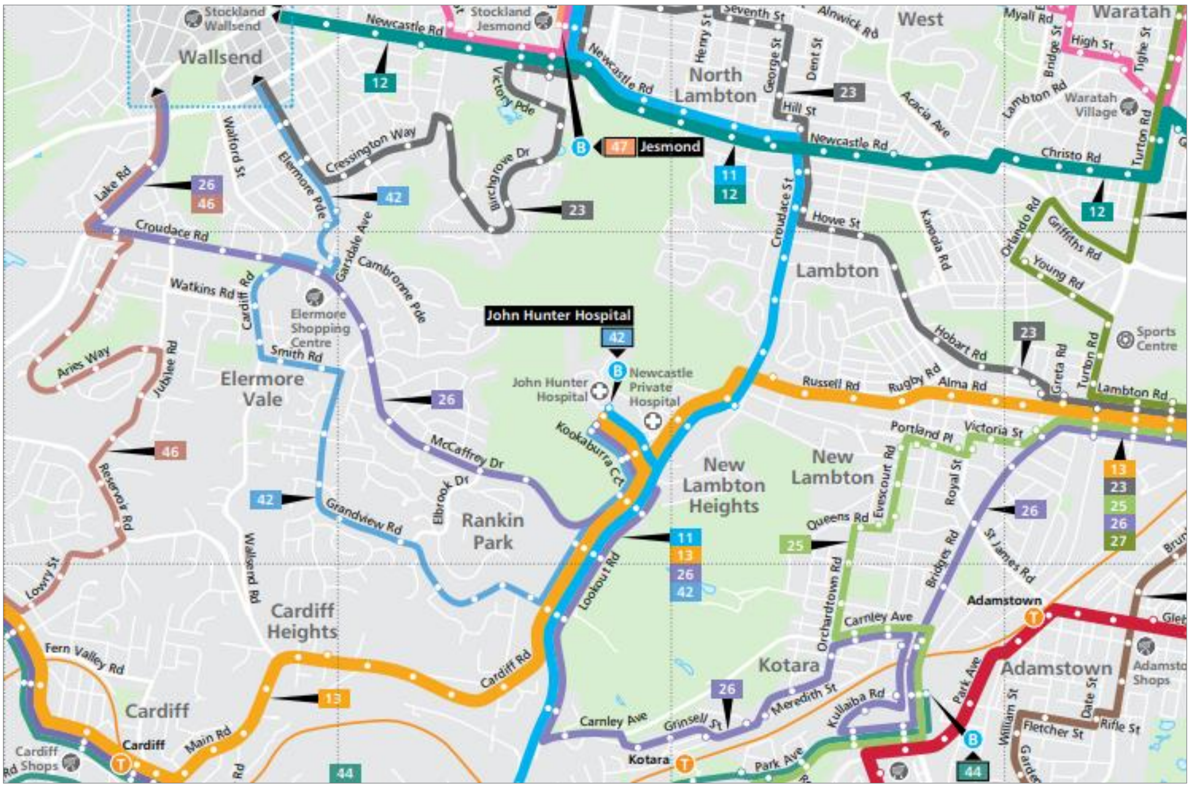
A bus stop is provided at the main hospital entrance at the southern side of the building along Kookaburra Circuit. Buses servicing this stop provide convenient connections with key local and regional destinations, including Newcastle Central Business District, Broadmeadow, Charlestown and Glendale. Several services connect with railway stations, including Cardiff Railway Station, providing connection to the Central Coast and Sydney.

A review of the bus routes available at the John Hunter Health Campus is summarised in Table 2.6 and shown indicatively in Figure 2.15.

Table 2.6: Bus Services

Route number	Route description	Location of stop	Frequency on/ off-peak
11	Charlestown to Newcastle	Main Hospital Entrance along Kookaburra Circuit	Every 15 mins
13	Newcastle to Glendale		Every 15 mins
26	Newcastle West to Wallsend		30 mins/ 1 hour
42	John Hunter Hospital to Wallsend		Hourly between 6am and 6pm

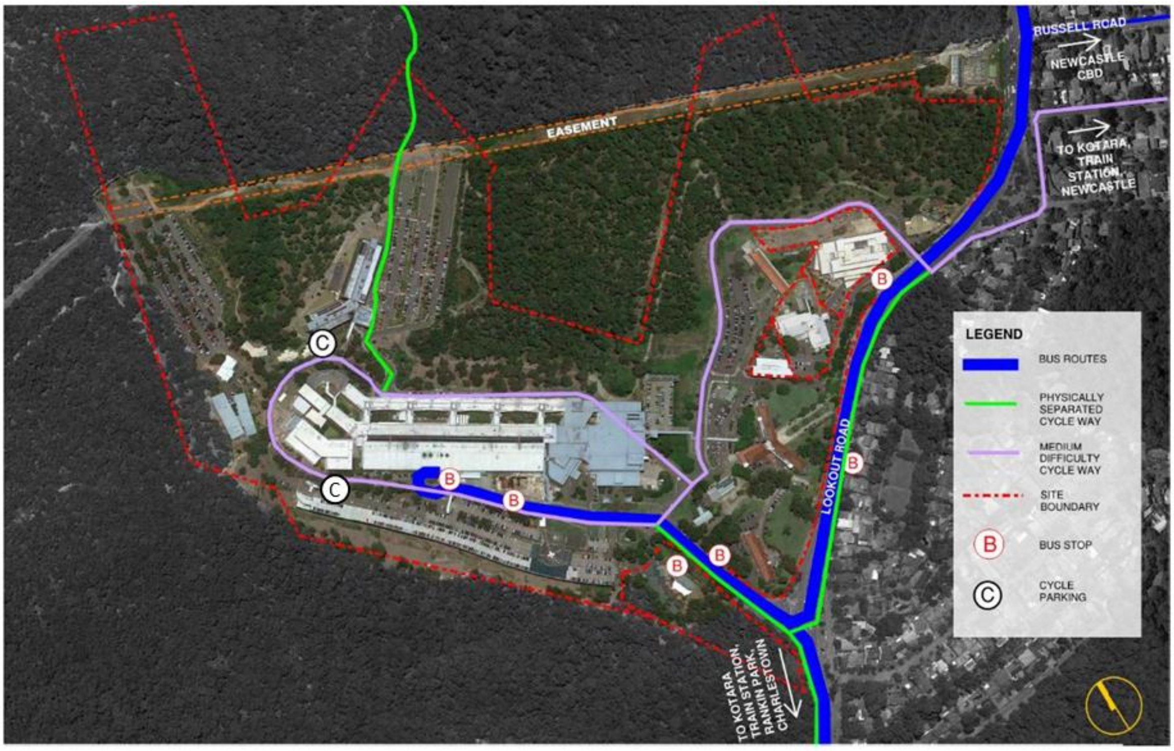
Figure 2.15:Surrounding public transport network



Base image source: Newcastle and Lake Macquarie Region Network, Newcastle Transport, accessed 21 February 2021

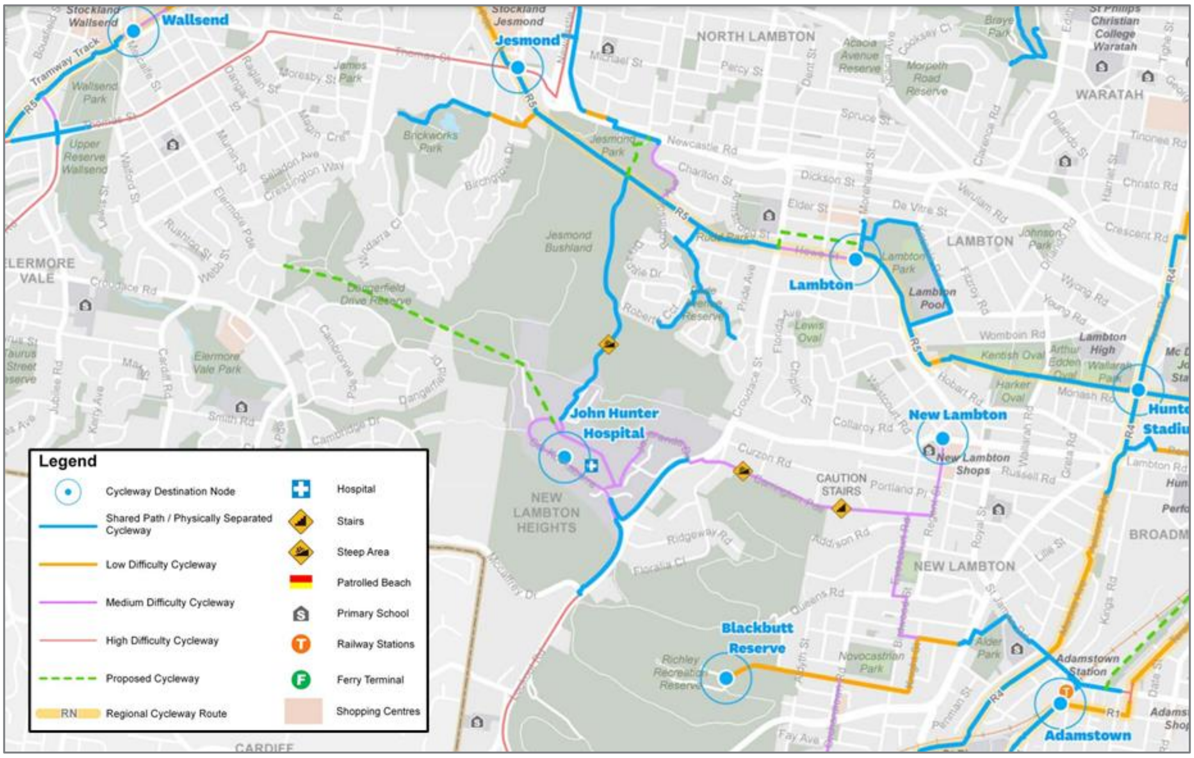
Figure 2.16 provides an understanding of the existing bus and cycle access routes within the John Hunter Health Campus and Figure 2.17 details the existing and proposed cycle network near the Campus.

Figure 2.16: Existing bus and cycle access and circulation plan



Base image Source: JACOBS 190503_JHHIP Interim MP Study

Figure 2.17:Newcastle Cycleways



Source: https://newcastle.nsw.gov.au/Newcastle/media/Documents/Cycling%20and%20Walking/Newcastle-Cycleways-LGA-Map-WEB.pdf, accessed 21 February 2021

2.7. Local Context

The Journey to Work (JTW) data published by Transport for NSW's Transport Performance and Analytics from 2016 Census data provides an understanding of the travel patterns to/ from the site and surrounding area.

The smallest geographical area for which JTW data is available is a Travel Zone. The relevant Travel Zone used for this assessment is 6323, shown in Figure 2.18.

Figure 2.18: Travel Zone containing John Hunter Health Campus

Base map source: https://www.transport.nsw.gov.au/data-and-research/forecasts-and-projections/travel-zone-explorer, accessed 8 April 2019.

The JTW data indicates that a total of 4,056 persons work within the selected Travel Zone. This Travel Zone's main source of employment is the John Hunter Health Campus and hence the JTW can be used as an indicative representation of the existing mode-share.

Table 2.7 shows the distribution of travel modes by the workers employed in the Travel Zone, adjusted for those who did not work or worked at home, which indicates that of the people that travel to work around 92 per cent of workers travel to the area by private vehicle as a driver or passenger, including one per cent by motorbike.

Table 2.7: JTW travel modes by workers to the selected Travel Zone

Travel Mode	Mode Share Split (%)
Vehicle Driver	86
Vehicle Passenger	5
Motorcycle	1
Bus	3
Train	0.5
Walk	1.5
Cycle	2
Other mode or mode not stated	1

The JTW data also indicates that around 51 per cent of workers travelling to the Travel Zone originate from the Newcastle Area, while Lake Macquarie (east and west) accounts for 34 per cent, Hunter Valley (excluding Newcastle) for 12 per cent, Central Coast for one per cent and remaining areas (Sydney and Mid North Coast) for two per cent.

2.8. Proposed Newcastle Inner City Bypass Overview

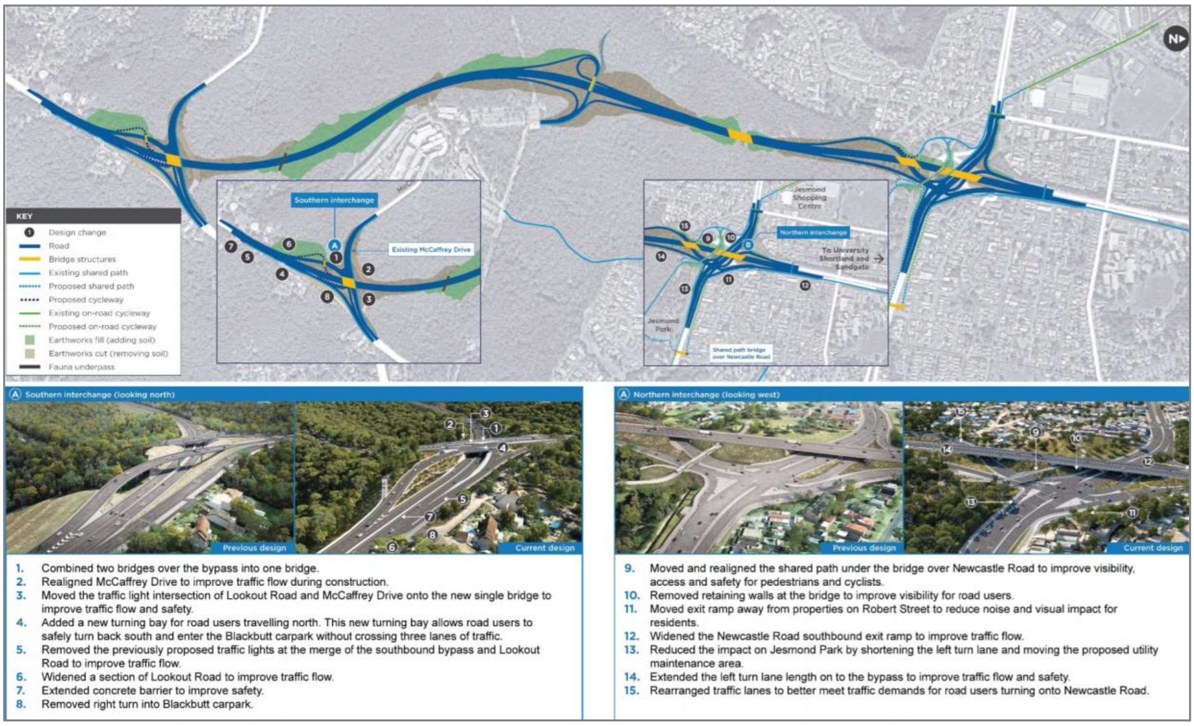
2.8.1. Overview

Transport for NSW is planning to extend the Newcastle Inner City Bypass between Rankin Park and Jesmond, for a length of 3.4 kilometres. The project comprises the following:

- new four-lane divided road between the intersection of Lookout Road/ McCaffrey Drive and Newcastle Road/ Main Road to the west of the John Hunter Health Campus
- full interchange at the John Hunter Health Campus near the existing car park 4
- northern interchange at Newcastle Road, southern interchange at Lookout Road
- upgrades to the Lookout Road/ McCaffrey Drive intersection to improve capacity
- off-road provision for pedestrians and cyclists, including a shared path over the John Hunter Interchange, connecting to existing tracks west of the proposed road.

The proposed bypass aims to improve performance of the existing travel route between Rankin Park and Jesmond with the objective to meet future traffic demand, reduce travel times and improve road safety. Department of Infrastructure identifies the project is expected to finish mid 2025. The proposed arrangement near the site is shown in Figure 2.19.

Figure 2.19:Newcastle Inner City Bypass between Rankin Park and Jesmond – improvements to proposed design



Base image source: Newcastle Inner City Bypass – Rankin Park to Jesmond Project Update, Transport for NSW, July 2020

2.8.2. Potential Impact to Lookout Road

The proposed bypass aims to provide relief for the existing route of Lookout Road (along the John Hunter Health Campus site frontage), Croudace Street and Newcastle Road.

The analysis for the proposed bypass was prepared using a microsimulation model. The analysis was based on inputs from the Transport for NSW (formerly Roads and Maritime) Lower Hunter Traffic Model of forecast traffic demand information, in addition to extensive traffic surveys of the study area. Preliminary analysis completed by AURECON in 2016[5] considered a half interchange at the John Hunter Health Campus, providing access to and from the north only. Supplementary analysis was completed in 2018[6] considering a full interchange.

The forecast daily volumes at key locations external to and within the Health Campus road network, with and without the proposed bypass, are respectively detailed in Table 2.8 and Table 2.9.

[5] Newcastle Inner City Bypass – Rankin Park to Jesmond Environmental Impact Statement, Technical Paper 2 Traffic and Transport Assessment, prepared by Aurecon for Roads and Maritime dated November 2016

[6] Newcastle Inner City Bypass – Rankin Park to Jesmond, Technical Paper 2 Supplementary Traffic and Transport Assessment, prepared by Aurecon for Roads and Maritime dated April 2018

Table 2.8: Forecast daily volumes on key locations external to the Health Campus, with and without the Bypass (Aurecon and Roads and Maritime, 2018)

Location	2014			2020			2030		
	No project	With bypass	Change	No project	With bypass	Change	No project	With bypass	Change
Croudace Street, north of Elder Street	41,800	23,900	-17,900	43,900	25,100	-18,800	47,300	27,100	-20,200
Lookout Road, south of Russell Road	48,700	30,500	-18,200	51,500	32,500	-19,000	56,400	36,000	-20,400
Lookout Road, north of McCaffrey Drive	49,400	29,700	-19,700	52,500	31,900	-20,600	57,700	35,500	-22,200
Russell Road, east of Lookout Road	16,200	15,300	-900	17,600	16,800	-800	20,100	19,400	-700

Source: Figure 3-2 out of Newcastle Inner City Bypass – Rankin Park to Jesmond, Technical Paper 2 Supplementary Traffic and Transport Assessment, page 18 and 19 prepared by Aurecon for Roads and Maritime dated April 2018

Table 2.9: Forecast daily volumes on key locations internal to the hospital, Health Campus the Bypass (Aurecon and Roads and Maritime, 2018)

Location	2014			2020			2030		
	No project	With bypass	Change	No project	With bypass	Change	No project	With bypass	Change
Jacaranda Drive	2,700	2,700	0	2,700	2,700	0	2,800	2,800	0
Kookaburra Circuit	15,300	5,900	-9,400	16,200	6,300	-9,900	17,900	6,800	-11,100
Bypass connection	0	9,400	+9,400	0	10,000	+10,000	0	11,100	+11,100

Source: Figure 3-1 and 3-2 out of Newcastle Inner City Bypass – Rankin Park to Jesmond, Technical Paper 2 Supplementary Traffic and Transport Assessment, page 15, 18 and 19 prepared by Aurecon for Roads and Maritime dated April 2018

Table 2.8 and Table 2.9 indicate the following:

- the proposed bypass is expected to substantially reduce traffic on Lookout Road north of McCaffrey Drive by about 39 per cent in 2020, from 52,500 vehicles to 31,900 vehicles
- the proposed hospital interchange is expected to significantly reduce traffic on the existing John Hunter Health Campus access (Kookaburra Circuit) by 62 per cent in 2020, from 16,200 vehicles to 6,300 vehicles

- the proposed bypass is expected to significantly reduce traffic on Croudace Street north of Elder Street by about 43 per cent in 2020, from 43,900 vehicles to 25,100 vehicles
- the proposed bypass is expected to reduce traffic on Russell Road east of Lookout Road by about 5 per cent in 2020, from 17,600 vehicles to 16,800 vehicles.

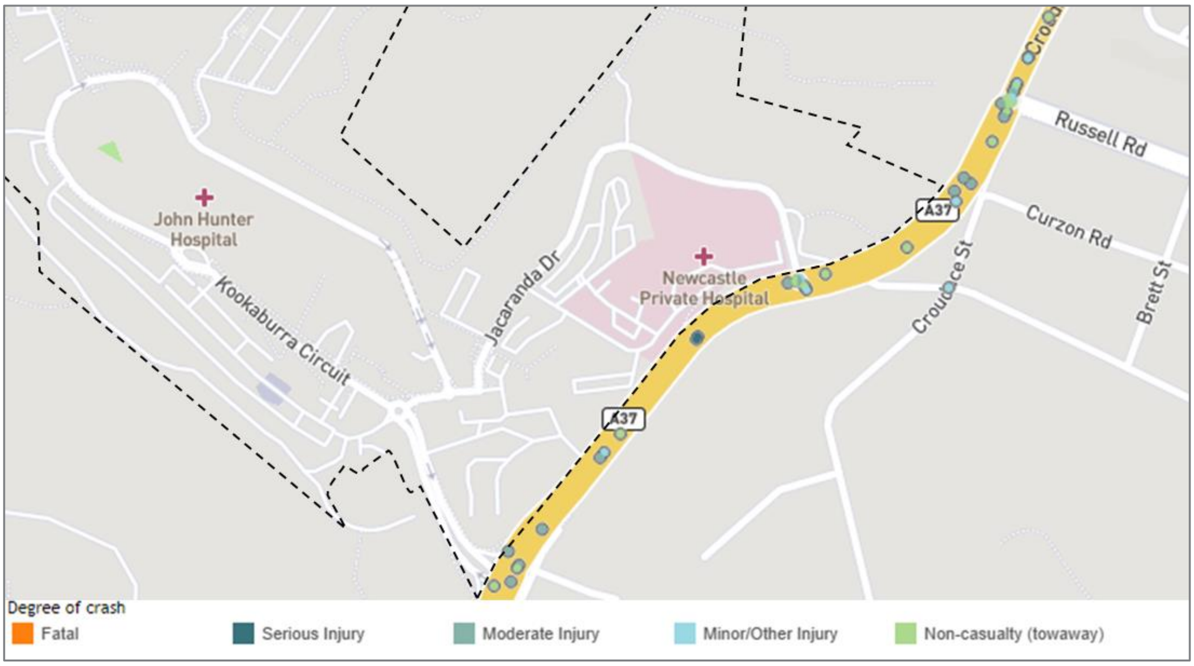
Furthermore, travel times are predicted to reduce by up to 73 per cent northbound and up to 79 per cent southbound for the bypass route. Travel times along the existing route (i.e. from Lookout Road near Grandview to Newcastle Inner City Bypass north of Newcastle Road) are predicted to reduce by up to 23 per cent northbound and up to 48 per cent southbound.

The reduced congestion will decrease the high number of crashes currently occurring along Lookout Road, improving road safety.

2.9. Crash History

An analysis of the most recent five-year period of available crash data between 2014 and 2018 has been undertaken based on the crash data supplied by Transport for NSW Centre for Road Safety for Lookout Road near the site. The locations and severity of the crash data is shown in Figure 2.20.

Figure 2.20: Transport for NSW Centre for Road Safety historical crash data



Source: https://roadsafety.transport.nsw.gov.au, accessed September 2020

Figure 2.20 indicates that 39 crashes have occurred along Lookout Road near the site. A closer review of these crashes indicates that the most reoccurring of these are rear-end crashes (63 per cent), which are typical crashes for urban intersections.

The Lookout Road/ Kookaburra Circuit intersection saw five crashes, including moderate injury and non-casualty (towaway). These crashes involved a vehicle veering off the carriageway into an object/ parked vehicle, a vehicle colliding with a turning vehicle in the opposite direction with the remaining crashes rear end crashes.

The Lookout Road/ Jacaranda Drive intersection saw eight crashes, including moderate injury, non-casualty (towaway) and minor/ other injury. This intersection saw crashes whereby a vehicle collides with a turning vehicle in the opposite direction, a vehicle collides with another vehicle whilst emerging from a turning lane with the remaining crashes rear end crashes.

The Lookout Road/ Russell Road intersection saw ten crashes, including moderate injury, non-casualty (towaway) and minor/ other injury. These crashes involved a vehicle veering off the carriageway into an object/ parked vehicle, vehicles colliding with another vehicle whilst emerging from a turning lane with the remaining crashes rear end crashes.

Based on the above, the available crash data at this location does not indicate that the proposal will compromise the safety of the surrounding road environment.

3. DEVELOPMENT PROPOSAL

03

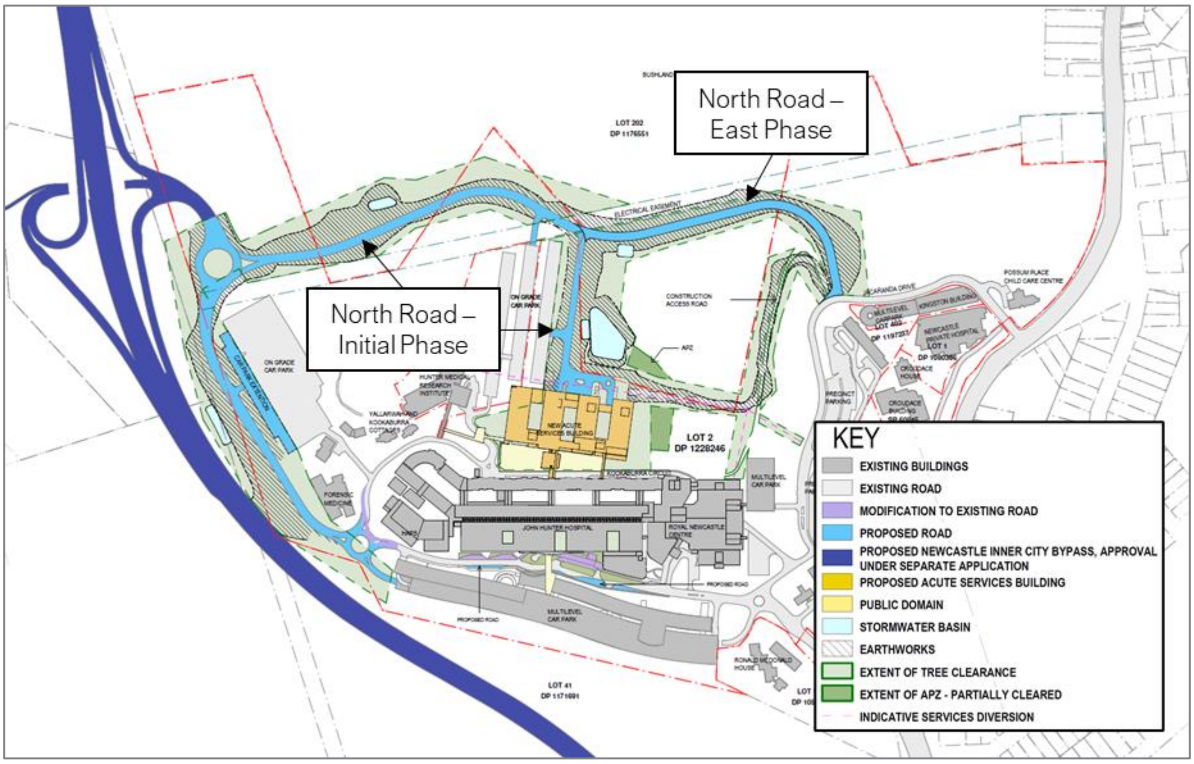
3.1. Overview

The development includes the proposed Acute Services Building (ASB) to the north of the existing hospital building which will accommodate the new Emergency Department (ED) and a multi-storey car park below the proposed ASB and a proposed internal road network linking the precinct to the Newcastle Inner City Bypass. The project will also include refurbishment works to support the relocation of existing departments and facilitate connectivity through the hospital campus.

A summary of the proposal site layout is provided in Figure 3.1, with the overarching site access plan shown in Figure 3.2 and Figure 3.3.

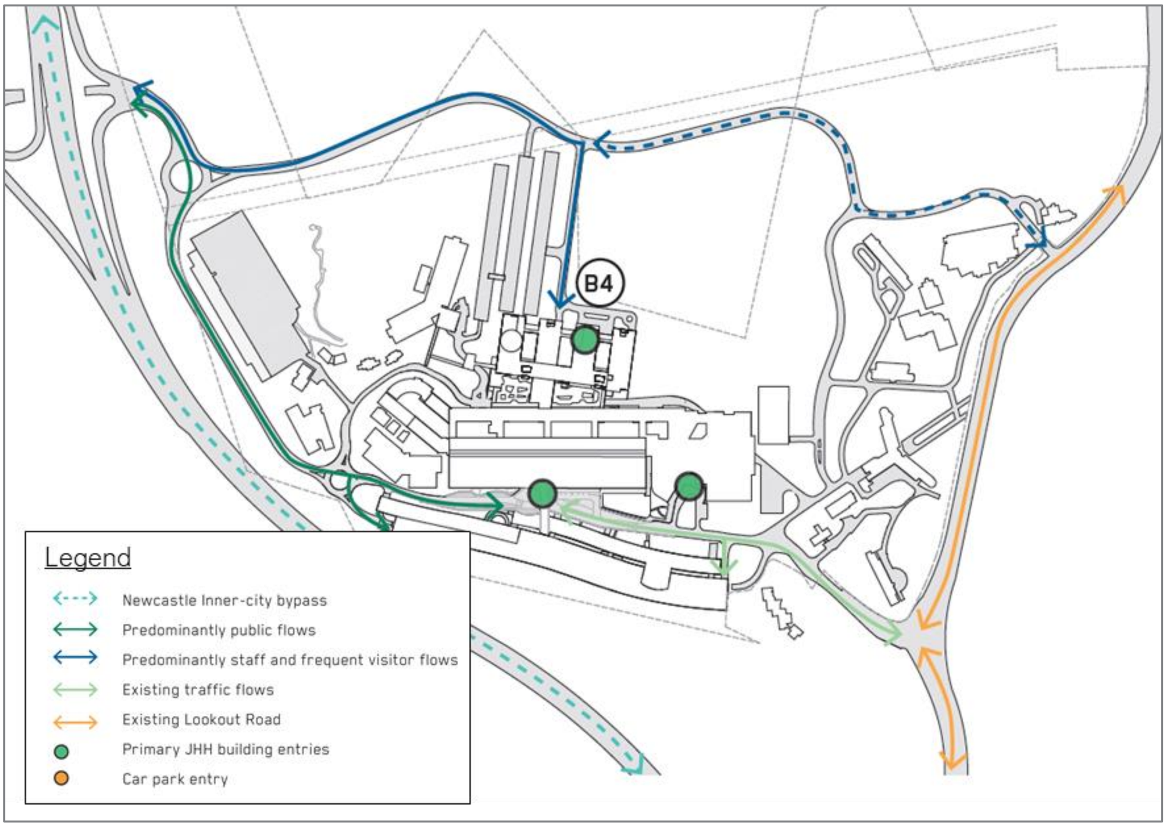
The project includes for the full site development including northern road network that will be delivered as part of a phased development. The “initial phase” will enable the project to meet timelines for the ASB to be operational and provide critical health services for the region. The later “North Road – East Phase” completes the campus wide infrastructure setting up the delivery of the future precinct vision.

Figure 3.1: Proposal site layout



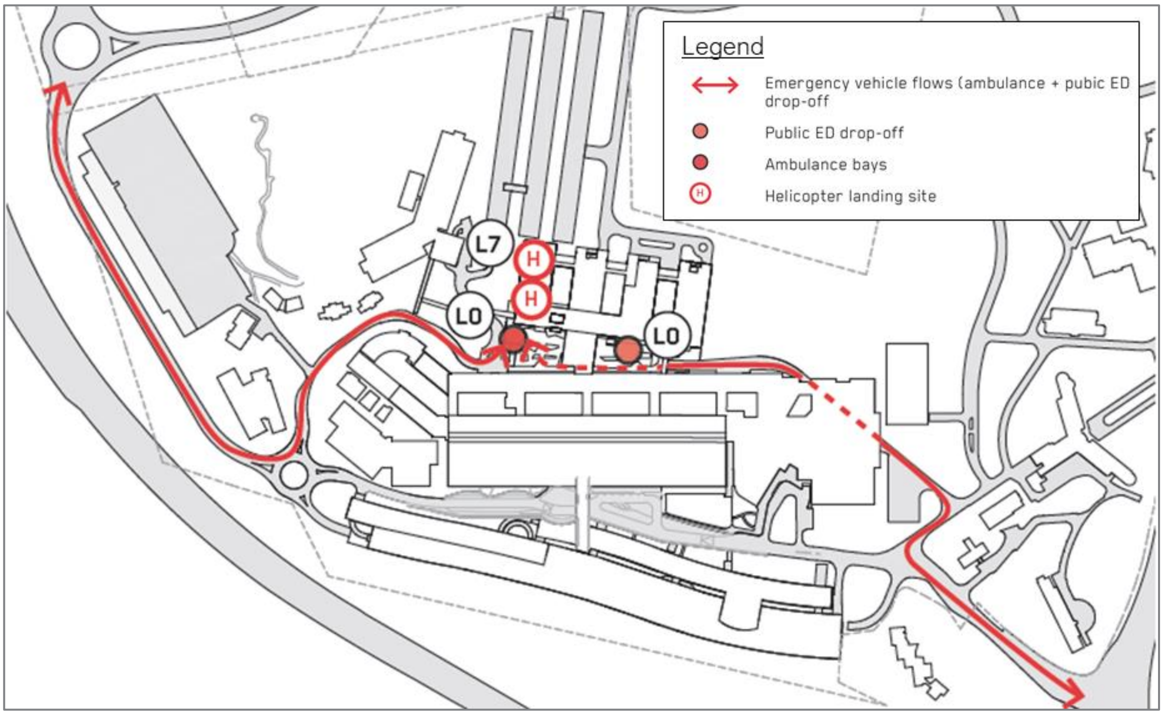
Source: SSDA Concept Proposed Site Plan, drawing number AR_C0-A22 NL-X0 Issue 1, prepared by BVN dated March 2021

Figure 3.2: Overarching access plan – general vehicles



Source: Section 5.6 Helipad + Emergency Vehicles, JHHIP, SSDA Architectural Design Statement, 9 March 2021

Figure 3.3: Overarching access plan – emergency vehicles



Source: Section 5.6 Helipad + Emergency Vehicles, JHHIP, SSDA Architectural Design Statement, 9 March 2021

4. PARKING AND SERVICING

04

4.1. Car Parking Requirements

A Parking Demand Study Report was prepared by GTA Consultants in April 2020 to understand the parking requirements of the JHHIP. The study was completed using a first principles analysis based on the relationship between current and future staffing levels, as well as student, visitor and patient demands. Section 3.4 and 4.1 of the Parking Demand Study also considers parking requirements set out in the Newcastle Development Control Plan (DCP) 2012.

The parking demand study identified that the proposed JHHIP should provide for an additional 754 parking spaces on site by 2031/32, comprising 517 staff spaces, 9 VMO spaces, 25 fleet spaces and 203 public spaces.

The development will provide an uplift of around 900 spaces across the site to accommodate parking demand generated by the JHHIP, and to alleviate some of the existing parking shortfall. These will be provided via a combination of basement car park and at-grade spaces.

A reconciliation of car parking lost and gained across the site is contained in Table 4.1, noting the approximate parking supply per parking area may be subject to change during detailed design, with an overall uplift of around 900 spaces to be delivered as part of the development.

Table 4.1: Car parking reconciliation[1]

Description	Location	Parking Supply Changes (approx..)
Loss	Car Park 5 (HMRI)	-9
	Car Park 5 (HNELHD)	-6
	Kookaburra Circuit	-68
	Car Park 4	- 98
	Car Park 1	- 63
Gain	Car Park 3 (Helipad conversion)	+70
	Car Park 4	+ 129
	ASB	+ 933
Net change		+917[1]

[1] Supply is approximate as quantum of parking within each area, including ASB, may be subject to change during detailed design, with an overall uplift of around 900 spaces to be delivered as part of the development.

At this stage, the ASB car park is designed to be agnostic between public and staff. However, the ASB car park is proposed to primarily accommodate staff parking, with existing staff parking spaces located in car parks 1 and 3 proposed to be converted for use by others (public, service vehicles, fleet) to ensure the appropriate quantum of parking is provided per user to satisfy future demand requirements.

The ASB car park will also include appropriate infrastructure for electric vehicle charging stations to be installed.

4.2. Accessible Spaces

The accessible car parking requirements for different development types are set out in the Building Code of Australia (BCA), 2014.

Table 4.2: Disabled parking requirement (BCA 2014)

Class 9a [1]	No. of car parking spaces required
(a) Hospital (non-outpatient area)	1 space for every 100 car parking spaces or part thereof
(b) Hospital (outpatient area)	
(i) up to 1000 car parking spaces; and	1 space for every 50 car parking spaces or part thereof
(ii) for each additional 100 car parking spaces or part thereof in excess of 1000 car parking spaces	1 space
(c) Nursing home	1 space for every 100 car parking spaces or part thereof
(d) Clinic of day surgery not forming part of a hospital	1 space for every 100 car parking spaces or part thereof

[1] Class 9a is defined in the BDA 2004 as a *health care building*

Based on an uplift of 900 spaces across site, the proposal will be required to provide an additional nine to 18 accessible parking spaces, depending on the proposed split between non-outpatient and outpatient areas to be compliant with the BCA. The proposed ASB provides 16 accessible spaces which provides for a mix of non-outpatient and outpatient areas in accordance with the BCA.

Accessible spaces are designed to be 2.5 metres wide and 5.4 metres long with an adjacent shared area of 2.5 metres wide by 5.4 metres next to the parking space in accordance with the SHCPIP Hospital Car Park Guidelines.

4.3. Motorcycle Parking

DCP 2012 requires one motorcycle parking space to be provided per ten car parking spaces (10 per cent of total spaces). Currently the hospital provides for 35 motorcycle parking spaces (19 staff and 14 public), equating to one per cent of total parking supply. These spaces currently experience moderate to high demand for parking.

Based on an uplift of 900 spaces across site, the proposal is required to provide a minimum of 90 motorcycle spaces. This is met with the provision of 122 motorcycle spaces within the ASB car park, with the spaces designed to be 1.2 metres wide and 2.5 metres long in line with AS/ NZS2890.1:2004 requirements.

4.4. Loading and Servicing

The hospital is currently supported by a loading dock on Kookaburra Circuit near its intersection with Jacaranda Drive. The loading dock is able to accommodate five vehicles including articulated vehicles within formal loading bays, with further capacity for at least six B99 service vehicles to park to the north of the formal loading bays. The dock originally had seven loading bays however two spaces are permanently occupied by cardboard/ plastic bailers.

A Logistics Review was prepared by ARUP to understand potential loading requirements of the JHHIP[7]. The review concluded that the existing dock is expected to accommodate the uplift in loading demands generated by the JHHIP, noting a dock management system is proposed to be implemented to ensure loading demands can be appropriately scheduled and monitored. As such, no additional loading bays are proposed with the development.

[7] JHHIP, Draft Logistics and Waste Management Recommendations Report, ARUP, 15 March 2021

5. DESIGN REVIEW

05

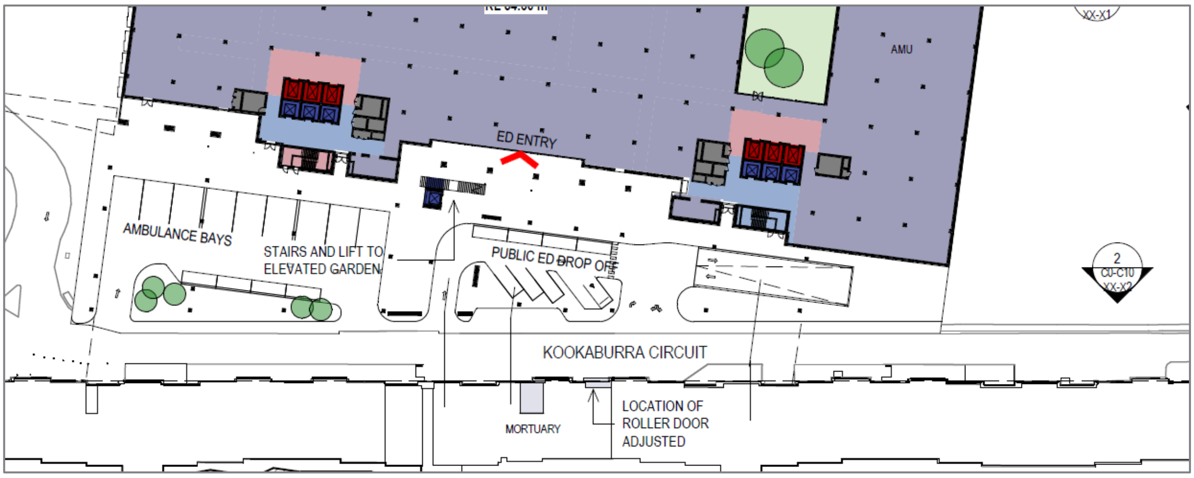
5.1. Ambulance Area

The ASB will provide a total of nine ambulance parking bays of which one of these bays would be a dedicated retrieval bay. These spaces are designed in accordance with NSW Ambulance Specifications for Hospitals. Four parking spaces will also be provided within this area which are designated for authorised vehicles only. Ambulances will reverse into the parking bays.

A swept path assessment has been completed indicating bariatric ambulance[8] access to all but the eastern most ambulance space, as outlined in Appendix C.

Figure 5.1 provides an understanding of the ambulance parking area in relation to the new ASB.

Figure 5.1: ASB Ambulance and Emergency Department Drop Off Areas



Source: BVN Plan AR_C0-B10 L0-00 issue B issued March 2021

5.2. Emergency Department Drop-Off/ Pick-Up

The proposed Emergency Department drop off and pick up area provides for a total of eight public spaces including one accessible space. Additional accessible spaces would also be provided within the basement car park close to the lift core. A swept path assessment has been completed confirming adequate manoeuvring area is provided for a B99 vehicle (largest probable vehicle that isn't van/ truck) to circulate through the drop off and pick up area and either enter into the basement car park or exit back onto Kookaburra Circuit. Refer to Appendix C.

The drop off area operates in a clockwise circulation where vehicles can enter from Kookaburra Circuit and either drop off parallel adjacent to the Emergency Department entrance or in designated angle parking spaces. Once the drop off has occurred vehicles can either exit back onto Kookaburra Circuit or proceed to the basement car park ramp to access parking suitable for leaving the vehicle and entering the ASB.

The four parallel spaces in the drop off and pick up area are proposed to be signposted as a 'no parking' area and therefore would allow vehicles to stand for a maximum of two minutes. The other three standard angled spaces are proposed to be restricted to 15 minute parking. The drop off and pick up area would also be

[8] A Bariatric Patient is a patient whose weight/girth exceeds the safe working load limit of a standard Ambulance stretcher (Ambulance NSW). A bariatric ambulance is longer and taller than a standard ambulance to accommodate the stretcher dimensions.

utilised by taxis or ride share vehicles as needed. These vehicles would arrive based on a call out and are not proposed to be waiting within the campus area.

Figure 5.1 provides an understanding of the drop off area and ramp to basement parking within the new ASB.

5.3. Main (Southern) Hospital Entrance Drop-Off/ Pick-Up

With the development of the new ASB, opportunities arise for redeveloping the main hospital entrance on the southern side of the existing hospital building. The removal of ambulance spaces creates additional area to improve the drop off and pick up arrangement and Figure 5.2 provides the proposed arrangement.

The drop off area operates in a clockwise circulation where vehicles can enter from Kookaburra Circuit and drop off parallel adjacent to the main entrance. Once the drop off has occurred vehicles can exit back onto Kookaburra Circuit to proceed to adjacent available visitor parking suitable for leaving the vehicle and entering the hospital. Access to the drop off area is available from either the proposed connection to the bypass or through Kookaburra Circuit from Lookout Road. A swept path assessment has been completed for the main entrance drop off area confirming appropriate manoeuvring area is provided for B99 vehicles and bariatric ambulances to circulate through the drop-off area and exit back onto Kookaburra Circuit. Refer to Appendix C for the compliance review.

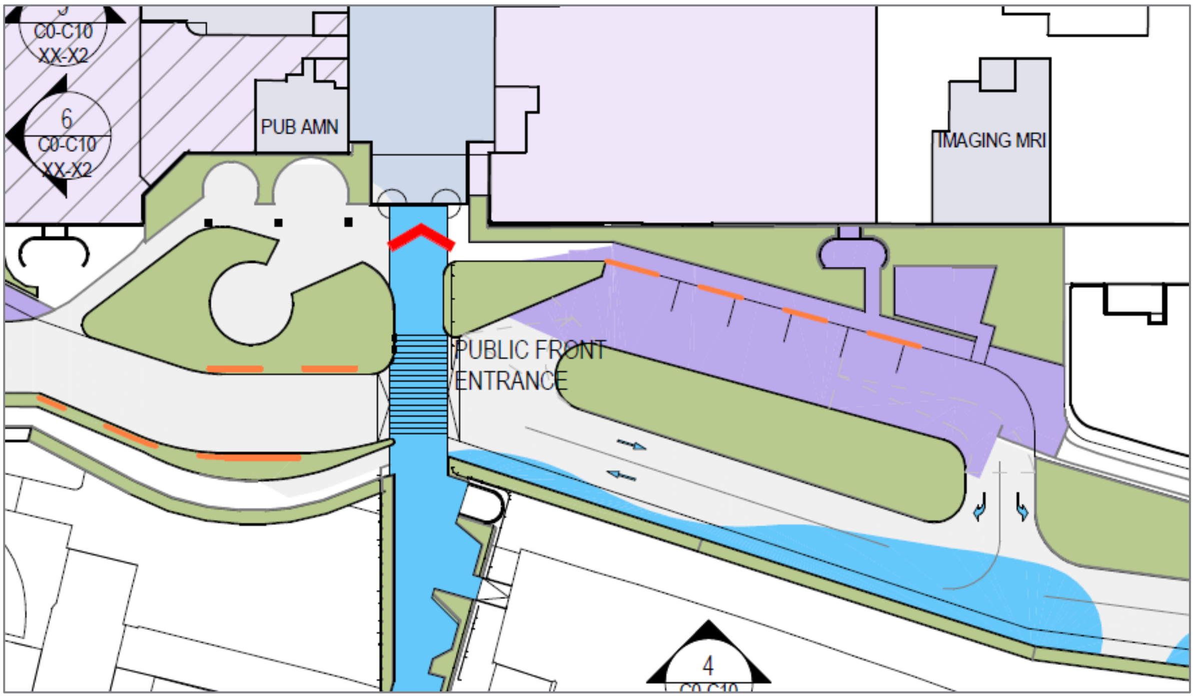
The pick up and drop off area is able to accommodate up to six cars, with the area complying with the dimensional requirements in AS/NZS2890.1:2004. No kerb or gutter is proposed in this area so that parking spaces are flush with the adjacent footpath. This results in these spaces being suitable for accessible drop off and pick up. Bollards are proposed to be placed between the pedestrian area and parking spaces to provide physical separation between pedestrians and vehicles.

The drop off and pick up area is proposed to be signposted as a ‘no parking’ area and therefore would allow vehicles to stand for a maximum of two minutes.

The drop off and pick up area would also be utilised by taxis or ride share vehicles as needed. These vehicles would arrive based on a call out and are not proposed to be waiting within the campus area.

A raised pedestrian zebra crossing facility is proposed immediately west of the drop-off and pick-up loop across Kookaburra Circuit similar to the existing arrangement to provide a designated connection between the available visitor parking and the main entrance. The raised pedestrian zebra crossing would be designed with a maximum profile of 75mm high to slow traffic while being suitable for buses to traverse and therefore maintaining access for buses along Kookaburra Circuit.

Figure 5.2: Southern Main Entrance Drop Off Area



Source: BVN Plan AR_C0-B10 L2-00 Issue 5 issued March 2021

5.4. Bus Stops

Currently one bus stop is provided at the main entrance on Kookaburra Circuit. As vehicles currently only enter and exit from Lookout Road the bus has a turnaround area within Kookaburra Circuit. With the proposed connection through to the new bypass it is expected the bus services would potentially change at some stage in the future to allow services to enter and exit in both directions.

Consultation with Transport for NSW in October 2020 and February 2021 indicates TfNSW is currently planning for future high frequency bus routes across Newcastle. The work is not yet complete, however it is expected future bus services could enter the JHHIP via the Newcastle Inner City bypass.

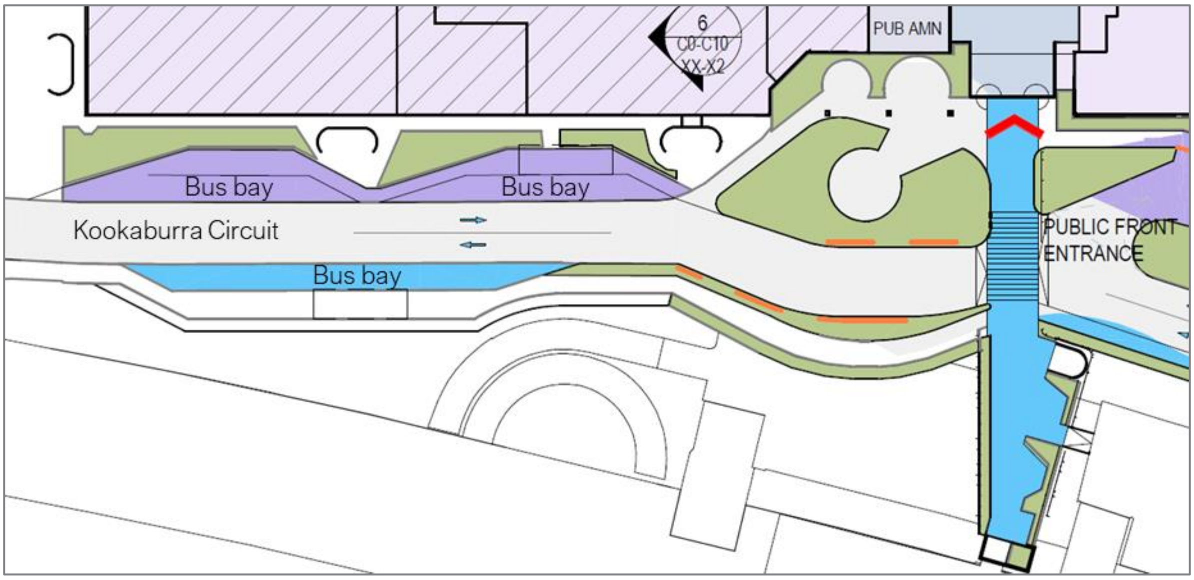
As such, an additional bus bay has been incorporated into the design to allow for services in both directions. Figure 5.3 details the proposed location of the bus stops, which includes bus stops on both sides of the Kookaburra Circuit which accommodate up to two buses each.

An additional bus bay on the southern side of Kookaburra Circuit, as shown in the current design, provides flexibility for potential bus services to enter and continue through the site or services to continue to turn around and depart the site from the direction they arrived. If new services continue through the site (enter via bypass and exit via Lookout Road, or vice versa) then bus bays on both sides would be required. Should bus services continue to turn around on site to depart from the direction they arrive, then there is the option to have both bus bays on the northern side of the road.

Community buses currently travel to the hospital and it is understood this activity will continue in the future, with the new bus zones able to accommodate community buses. Given there is currently only one bus zone provided on site and the design provides the ability to accommodate up to four 12.5 metre buses, ample capacity has been provided to accommodate required pick-up and drop-off activities generated by the JHHIP by both public buses and community buses. This includes accommodating short-term layover space for any future bus routes that may terminate in the hospital.

To accommodate existing services and potential new bus services, swept path advice has been provided for the design of the proposed roundabout and the existing roundabout on Kookaburra Circuit to accommodate a u-turning bus.

Figure 5.3: Proposed bus stop locations



Source: BVN Plan AR_C0-B10 L2-00 Issue 5 issued March 2021

5.5. Mortuary Access

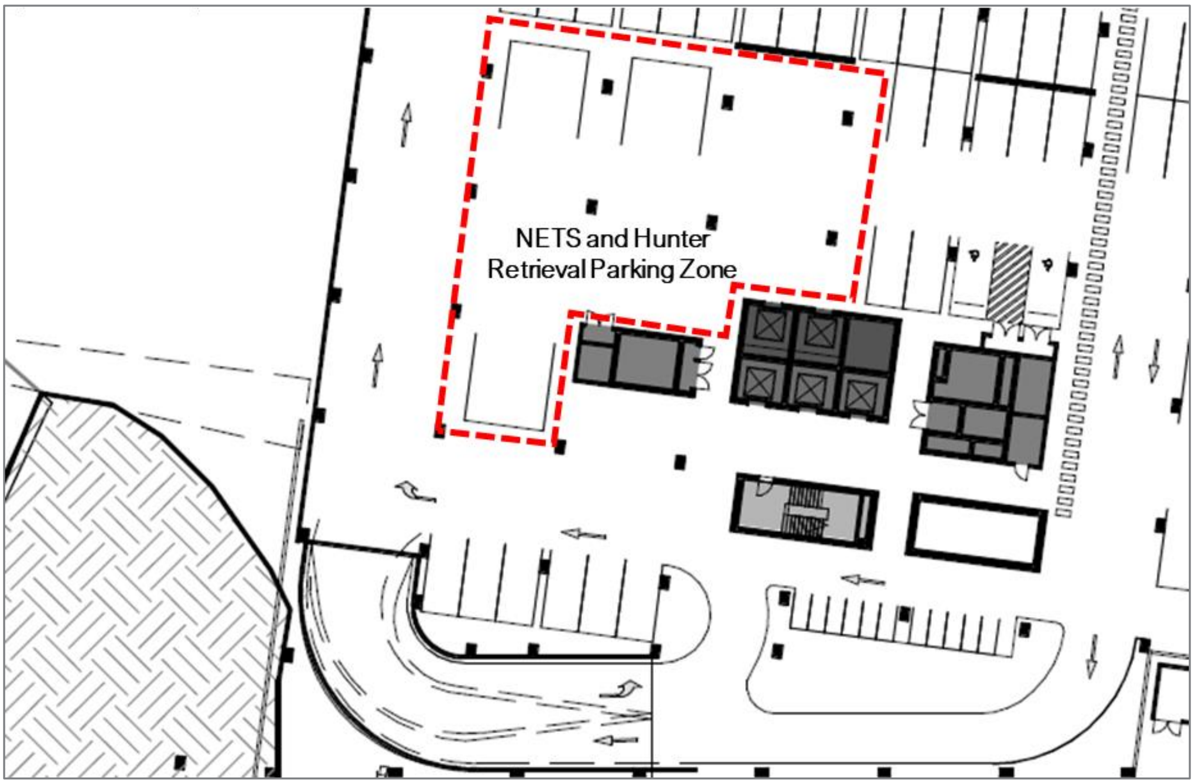
The existing vehicle access to the mortuary has been reviewed and modified to extend the garage further north to allow for the roller door to close while maintaining adequate space to load via the rear of the vehicle. It is noted that there is no proposed change to the existing mortuary services, however these minor modifications are recommendation due to the adjacent revised traffic conditions. The proposed modifications are considered acceptable from a traffic perspective and allow vehicles exiting the mortuary to pull out slightly and have adequate sight lines to traffic along Kookaburra Circuit before entering the travel lanes. It is noted that with the relocation of the Emergency Department and the conversion of Kookaburra Circuit to two-way, there is a chance that ambulances would be approaching the ED from the east along the mortuary frontage while a vehicle is reversing into the garage. In the event of this rare event given the low frequency of mortuary vehicle movements, ambulances would be able to temporarily travel onto the opposite side of the road to go around the mortuary vehicle under emergency lights.

5.6. Newborn and Paediatric Emergency Transport Service Parking

A number of options have been considered for relocating parking for Newborn and Paediatric Emergency Transport Service (NETS) vehicles from Kookaburra Circuit to inside the ASB car park. NETS parking for three vehicles is proposed within the ASB on the western side of Basement 1, ensuring a minimum height clearance of 3.8 metres is provided in line with NSW Ambulance requirements. A swept path assessment has confirmed NETS vehicles are able to enter into this secure area in a forward direction, reverse into each bay and exit in a forward direction.

The proposed NETS vehicle parking area is shown in Figure 5.4.

Figure 5.4: Proposed NETS parking area in Basement 1 of the ASB car park



Base image source: BVN AR_C0-B10 B1-00 Issue 4 issued March 2021

5.7. Kookaburra Circuit

Kookaburra Circuit currently operates as a one-way loop (traveling clockwise) from the Car Park 2 exit through to Jacaranda Drive. It is proposed to convert Kookaburra Circuit to two-way for its entire length. Swept path assessments have been prepared to determine the impact of large vehicles using Kookaburra Circuit. It is understood that the largest vehicle would be a 19m semi-trailer, however, this is expected to be an infrequent occurrence. The current width of Kookaburra Circuit does not allow for a 19m truck and an ambulance to pass, however, a more common occurrence is likely to be a 12.5m rigid truck. Swept path assessments provided in Appendix C of a 12.5m truck passing an ambulance identifies that this can be accommodated.

An operational policy will be prepared to manage vehicle movements, in the event that a 19m semi-trailer is required to use Kookaburra Circuit. This will include the requirement to complete movements at designated times and in consultation with the Emergency Department to ensure no impact to ambulances. This will also consider the management of approach routes to ensure ambulances have right of way, with ambulances arriving from the west and semi-trailers arriving from the east.

5.8. Sight Distance Review

In assessing the desirable sight distance requirements of the proposed ambulance, ED drop off and car park access intersections along Kookaburra Circuit, reference has been made to the Austroads Guide to Road Design (AGRD) Part 3: Geometric Design and Part 4A: Unsignalised and Signalised Intersections. The internal road network is currently sign posted with a 40 kilometres per hour speed limit. The recommended Safe Intersection Sight Distance (SISD) based on a driver reaction time of 2.5 seconds, which is desirable rather than the minimum is 73 metres.

This desirable sight distance can be achieved for the ambulance exit, ED pick up/drop off area and ASB carpark access.

5.9. Planned Internal Road Network

The existing Kookaburra Circuit would connect to the new western road, adjacent to car park 4 (Figure 2.8) through a new roundabout. This roundabout would provide a new access to car park 1 in the location of the existing car park exit. Further consideration will be required regarding boom gate locations at this new access to avoid queues extending into the new roundabout.

Another new roundabout is also proposed to the north west of car park 4 to provide a connection to the bypass interchange and the new northern road which provides connection to the northern side of the new ASB building and the main access for the proposed ASB car park.

The primary need for the northern road is to enable access from the Newcastle Inner-City Bypass directly to the JHHIP. The inclusion of a bypass to the JHHIP forms a critical assumption and design feature of the bypass (being delivered by Transport for NSW) to respond to a strategic need for direct access to the Hospital. The existing local road network in New Lambton Heights is currently at capacity which has ongoing impact on the ability of the JHHIP to perform its critical care functions and limits the ability for the Hospital to grow to service community needs. The connection to the bypass will enable greater accessibility to the Health Campus and reduce operational impacts on the local traffic network. It will also enable for an increase in capacity at the JHHIP which is identified as a key strategy in the Greater Newcastle Metropolitan Plan 2036 “Grow health precincts and connect the health network”.

Construction of the Newcastle Inner City Bypass and JHHIP interchange will change the way vehicles access the site, and integration of the new road network will be an important element for the traffic circulation both to the new ASB and around the greater precinct. As such, the site wide road network considers the precinct vision that includes delivery of new primary western and northern access roads to improve traffic circulation around the site.

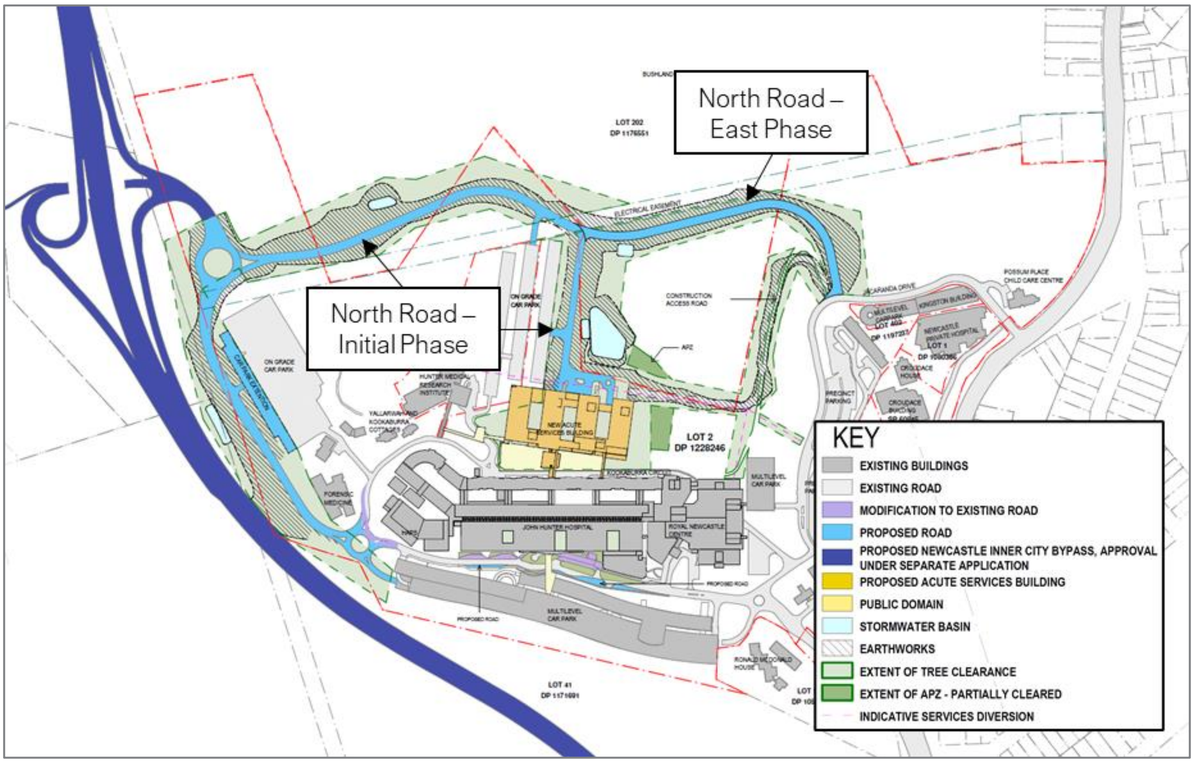
The northern road will also provide greater separation of traffic user flows and will free up the constrained ring road, which currently funnels all staff and public users around the Campus and past key locations, such as the main entry. The northern road will enable the separation of staff and public to enable the Campus to functionally operate and to allow the ground plane experience to better reflect the needs of users.

It is noted that the northern road network will be delivered as part of a phased development. The “initial phase” will enable the project to meet timelines for the ASB to be operational and provide critical health services for the region. The later “North Road – East Phase” completes the campus wide infrastructure setting up the delivery of the future precinct vision.

The East Phase road will further integrate the Campus with the surrounding road network and will further improve traffic operation by reducing the demand on the ring road. It would ultimately provide an alternative access between the ASB and Lookout Road. The East Phase road is also required to enable greater access opportunities and will facilitate further growth and capacity for health uses within the Campus into the future. Accordingly, the proposal will facilitate future health uses on the site and is consistent with the NSW State Priorities, Greater Newcastle Metropolitan Plan and Hunter Regional Plan by providing opportunities for future precinct activation and increased and improved health facilities.

Figure 5.5 provides an overview of the proposed new roads, and existing road upgrades within the hospital precinct.

Figure 5.5: Planned Internal Road Network Improvements



Baes image source: SSDA Concept Proposed Site Plan, drawing number AR_C0-A22 NL-X0 Issue 3, prepared by BVN dated March 2021

Two car park accesses are proposed to the new road along the northern side of basement level 4 of the new ASB. The primary patient access will be provided via a ramp from Kookaburra Circuit into basement level 1. This will allow visitors to the ED to drop off patients prior to entering the car park and reduces the need for vehicles to circulate around the hospital between drop off and public parking areas as described in Section 5.2.

Figure 5.6 and Figure 5.7 provide an indicative layout and lane configuration for the proposed roundabouts.

The roundabout providing connection to the bypass interchange has been designed to accommodate additional precinct growth. Design of this roundabout has also been prepared in consultation with and endorsed by Transport for NSW as part of coordination works for the Newcastle Inner City Bypass.

Figure 5.6: Proposed Roundabout Configuration (connection to bypass link)

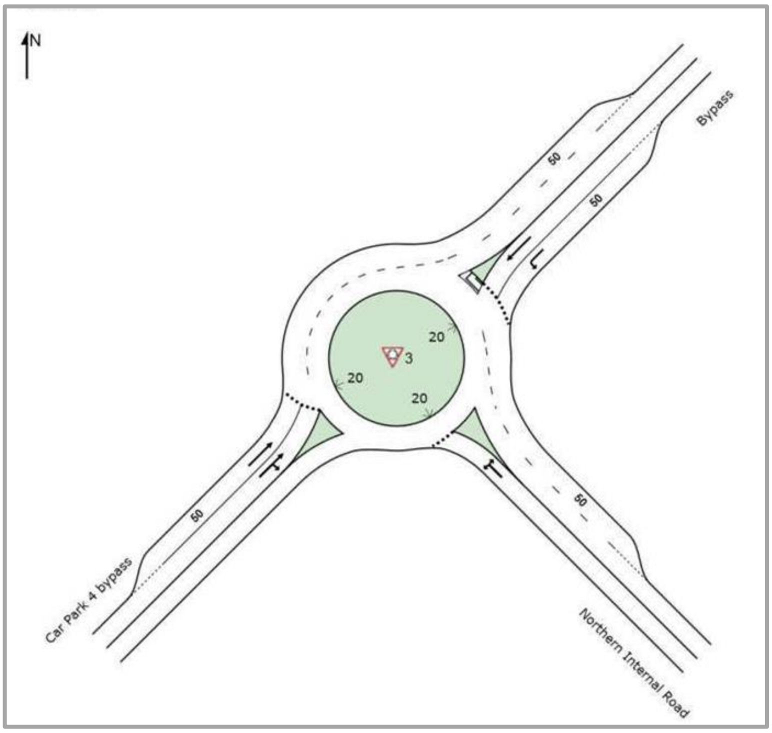
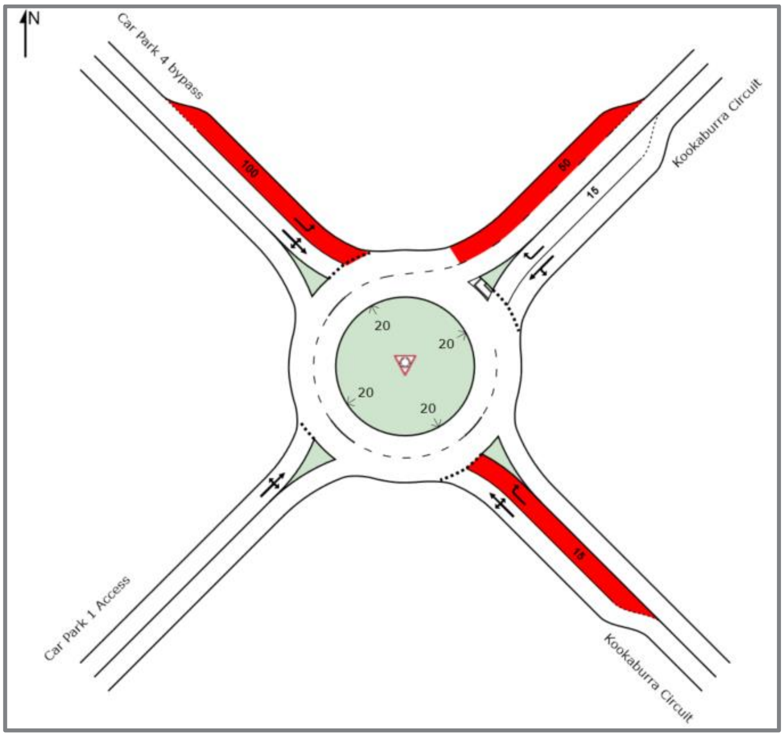


Figure 5.7: Proposed Roundabout Configuration (Kookaburra Circuit)



A swept path assessment has been completed confirming suitable access for NSW Fire Appliance vehicles to get to the ASB along the new northern road and Kookaburra Circuit via the two proposed roundabouts. The swept path assessment is provided in Appendix C.

5.10. Proposed ASB Car Park

The design of the car park seeks to meet the requirements outlined in the following documents:

- Australian Standard for Off Street Car Parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009)
- Sustainable Hospital Car Park Investment Program (SHCPIP) Volume 3, Hospital Car Park Design Guidelines V1.2, Health Infrastructure, May 2019.

GTA has reviewed the car park layout with consideration to the following :

- bay and aisle width
- adjacent structures
- turnaround facilities
- circulation roads and ramps
- ramp grades
- internal queuing and queuing on entry/ exit
- pick-up/ set-down area
- parking for persons with disabilities
- visibility
- boom gate locations
- pedestrian circulation and wayfinding.

The review of the above elements indicates that the new car park is consistent with the abovementioned Australian Standards and Guidelines and is expected to operate satisfactorily. From a traffic engineering perspective, the design meets the briefed requirements, however recommended adjustments as outlined in Appendix C improve circulation, visibility, pedestrian access and service vehicle requirements which can be addressed during detailed design. These recommendations have no substantial impact to the car park design and primarily ensure efficient and practical circulation of pedestrians and vehicles throughout the car park. The road and lane arrangement external to the ASB car park accesses on the Basement 4 level will also be further developed during the design development stage.

Standard parking spaces are designed to be at least 2.6 metres wide by 5.4 metres long which would cater for both staff and visitor parking requirements to meet the Health Infrastructure guidelines. Internal two-way aisle widths have generally been designed to be a minimum of six metres which meets the minimum requirement of 5.8 metres under AS/NZS2890.1:2004. The location of shear walls throughout the car park has resulted in the requirement for some spaces to be marked as small car parking spaces. Overall, the number of small parking spaces represents around 13 per cent of the total parking provision in the ASB car park, which is less than the maximum permissible requirement of 15 per cent as specified in the SHCPIP Hospital Car Park Design Guidelines and is considered acceptable. Refer to Appendix C for the compliance review.

6. TRAFFIC IMPACT

06

6.1. Overview

Traffic modelling results presented in Section 2.5 of this report indicate that the intersections of Lookout Road/ Kookaburra Circuit and Lookout Road/ Russell Road are effectively already at capacity, with overall intersection Degree of Saturation of between 0.95 and 0.98 during both the AM and PM road network peak hours. As such, the modelling assumes the bypass will be completed in line with the JHHIP opening.

Department of Infrastructure identifies the Newcastle Inner City Bypass (Rankin Park to Jesmond) project is expected to finish mid 2025. This is prior to the anticipated date for completing the JHHIP ASB project.

Additionally the project team have developed a contingency plan as an interim solution in the event the Bypass is not opened prior to completion of the ASB. This considers no uplift in clinical capacity from the current operational benchmark should the bypass not be operational on day one of the ASB opening. This would mitigate risk of any additional traffic impact on the road network until the bypass is operational.

6.2. Existing Site Traffic Generation

As detailed in Section 2.3, traffic surveys were undertaken surrounding the hospital. Based on these surveys the hospital precinct currently generates around 1,803 vehicles per hour in the AM peak (7:30am to 8:30am) and 1,596 vehicles per hour in the PM peak (3:15pm to 4:15pm). This includes traffic associated with the private hospital and HMRI. It is assumed that 84 per cent of traffic is associated with the John Hunter Health Campus, based on the ratio between car parking allocated to HNELHD, HMRI and Newcastle Private Hospital.

Therefore, the John Hunter Health Campus currently generates around 1,522 vehicles per hour in the AM peak (7:30am to 8:30am) and 1,347 vehicles per hour in the PM peak (3:15pm to 4:15pm). This excludes any potential traffic generated from on street parking areas to the south of Lookout Road.

6.3. Future Site Traffic Generation

The Transport for NSW (formerly Roads and Maritime) Guide to Traffic Generating Developments (2002) has been referenced to understand the impact of the proposed development. The rate considered to be the most appropriate for this site is the rate provided for private hospitals.

The following trip generation rates based on the number of beds and the average number of staff per weekday shift:

- Peak Vehicle Trips (PVT) = -14.69 + 0.69B + 0.31ASDS
- Morning Vehicle Trips (MVT) = -10.21 + 0.47B + 0.06ASDS
- Evening Vehicle Trips (EVT) = -2.84 + 0.25B + 0.40ASDS.

where ‘B’ represents the number of beds proposed and ‘ASDS’ is the average staff per day shift.

Where staffing numbers are unknown, the following trip generation rates can be suggest however noting that these rates are less accurate:

Peak Vehicle Trips (PVT) = -22.07 +1.04*B

Morning Vehicle Trips (MVT) = -12.41 + 0.57*B

Evening Vehicle Trips (EVT) = -11.96 + 0.69*B.

The trip generation rates were developed using survey data collected by Roads and Maritime in 1994 from 19 private hospitals across the Sydney region. The hospitals surveyed had between 30 to 99 beds and an average day shift workforce of between 10 and 102 employees.

Of the 19 hospitals surveyed, the majority recorded their respective daily traffic peak (PVT) between 3:00pm and 4:00pm.

This time period generally coincided with a staff shift change at the surveyed hospitals and coincides with the start of the on-road peak in the vicinity of the site. Therefore, the PVT has been utilised as the design traffic generation rate to overlap with the network peak.

It is noted that for the purposes of traffic modelling, Roads and Maritime recommend using ASDS (average staff per day shift) in lieu of staff FTE as staff FTE does not provide an indication of the number of staff to be on site during a weekday shift and resultant number of staff likely to be traveling to/ from the hospital during peak periods. ASDS has been estimated based on data provided by the HNELHD and HealthShare NSW. Review of these data sources indicate that up to 3,432 staff on site during a weekday shift.

Traffic generation has been estimated based on the Clinical Services Plan (CSP) 2031 which details an increase of approximately 156 beds to a total of 923 beds in 2031/32. Future staff projections have also been based on the growth in FTE staff as per HNELHD forecasting. This is subject to change however current projections indicate no increase to staff numbers until 2027and a 7.5 per cent increase by 2036. As such, an ASDS of 3,432 in 2026 and 3,689 in 2036 has been adopted for the purpose of this assessment.

Using the Guide 2002 traffic generation rates based on staff and bed numbers on the existing hospital results in a traffic generation estimate of 543 and 1,574 vehicle trips in the AM and PM peak hours respectively. The traffic surveys completed at the hospital indicate that the hospital generates 2.8 times more traffic than the Guide 2002 traffic generation estimates in the AM peak hour and 0.9 times less in the PM peak hour.

A summary of the trip generation estimates for the JHHIP based on the Guide 2002 traffic generation rates is provided in Table 6.1.

Table 6.1: 2036 traffic generation estimates [2]

Method	Year of opening (2026)		10 year horizon (2036)	
	Morning Vehicle Trips	Peak Vehicle Trips [1]	Morning Vehicle Trips	Peak Vehicle Trips [1]
Guide 2002 (based on indicative number of beds and staff)	81	119	97	199
Guide 2002 (based on indicative number of beds only)	99	180	99	180

[1] the majority of hospitals surveyed recorded their respective PVT between 3:00pm and 4:00pm. This time period generally coincided with a staff shift change at the surveyed hospitals and coincides with the start of the on-road peak in the vicinity of the site.
[2] As bed and staffing numbers are approximate, traffic generation and modelling relates to an uplift of around 170 beds.

As shown above, the Guide 2002 rates suggest the number of additional beds estimated in the CSP 2031 and future staff projections based on the JHHC Workforce Plan has the potential of generating an additional 97 trips in the AM peak hour and 199 trips in the PM peak hour in 2036. As discussed previously, the existing hospital is generating more traffic than these rates suggest in the AM peak hour. Factoring the AM peak hour up based on existing survey data at the hospital results in a more accurate traffic generation estimate in the AM peak hour of 223 additional trips in 2026 and 265 additional trips in 2036.

Based on the traffic surveys completed at the hospital, the traffic assignment between entering and exiting vehicles is detailed at Table 6.2.

Table 6.2: Traffic generation estimates – traffic assignment

Design Year	Peak Period	Traffic Assignment		Traffic Generation		
		IN	OUT	IN	OUT	TOTAL
2026	Weekday AM	79%	21%	176	47	223
	Weekday PM	26%	74%	31	88	119
2036	Weekday AM	79%	21%	209	56	265
	Weekday PM	26%	74%	52	147	199

6.4. Background traffic growth

Forecasted traffic volumes for the road network surrounding the hospital precinct were sourced from the Newcastle Inner City Bypass Environmental Impact Statement[9], prepared by Roads and Maritime Services in April 2018. The forecast traffic volumes were used to forecast background traffic volume reductions along Lookout Road, as well as to re-distribute traffic across the precinct.

The following key growth rates have been adopted in this assessment:

- traffic on Lookout Road north of McCaffrey Drive reduced by up to 39 per cent
- traffic on the existing John Hunter Health Campus access (Kookaburra Circuit) reduced by around 62 per cent
- traffic on Croudace Street north of Russell Road reduced by up to 43 per cent
- traffic on Russell Road east of Lookout Road reduced by around five per cent.

6.5. Distribution and Assignment

The directional distribution and assignment of traffic generated by the proposed development will be influenced by a number of factors, including the:

- configuration of the existing and future arterial road network in the immediate vicinity of the site
- existing operation of intersections providing access between the local and arterial road network
- distribution of households in the vicinity of the site
- likely distribution of staff and patient/ visitor residences in relation to the site
- configuration of access points to the site.

Furthermore, traffic distribution has been based on forecast traffic volumes per John Hunter Health Campus access road following implementation of the bypass as outlined in Table 2.9. The relative distribution of traffic is detailed in Table 6.3.

[9] Newcastle Inner City Bypass – Rankin Park to Jesmond Environmental Impact Statement, Technical Paper 2 Supplementary Traffic and Transport Assessment, Figure 5-2 page 49, Aurecon for Roads and Maritime, April 2018

Table 6.3: Distribution of traffic at John Hunter Health Campus accesses

Access Road	2020	2030	2040
Jacaranda Drive	14%	14%	13%
Kookaburra Circuit	33%	33%	33%
Hospital bypass connection	53%	54%	54%

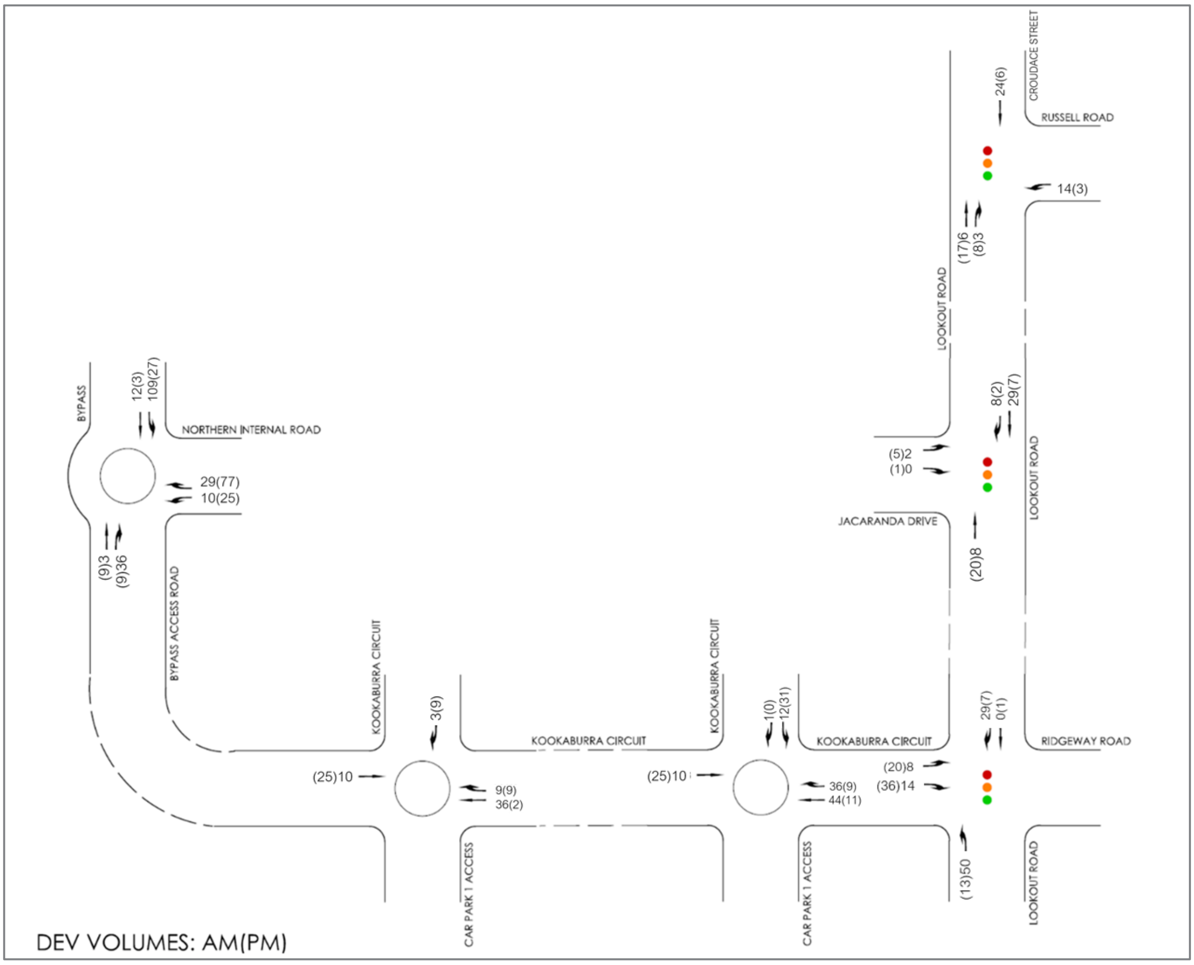
Having consideration to the above and for the purposes of estimating vehicle movements, existing traffic movements within the hospital precinct have been broadly redistributed, assuming 62 per cent of vehicles currently entering from Lookout Road redirect to enter the site from the proposed bypass. It is noted that a connection to the bypass is assumed to be in place for both the with and without development scenarios assessed.

To ensure the balance of traffic flows across the site generally align with the split in Table 6.3, GTA applied the following traffic distribution assumptions regarding additional traffic generated by the redevelopment:

- 58 per cent of additional traffic travel from the proposed bypass
- 42 per cent of additional traffic travel from Lookout Road
  - 38 per cent traffic travel via Kookaburra Circuit
  - 4 per cent traffic travel via Jacaranda Drive.
- 100 per cent of additional traffic travel to/ from the proposed Car Park
  - 90 per cent via the northern access road
  - 10 per cent via Kookaburra Circuit, with access provided near the Emergency Department drop off.

Based on the above, Figure 6.1 shows the future AM and PM peak hour traffic volumes including the additional traffic generated from the redevelopment.

Figure 6.1: AM and PM peak hour development traffic volumes

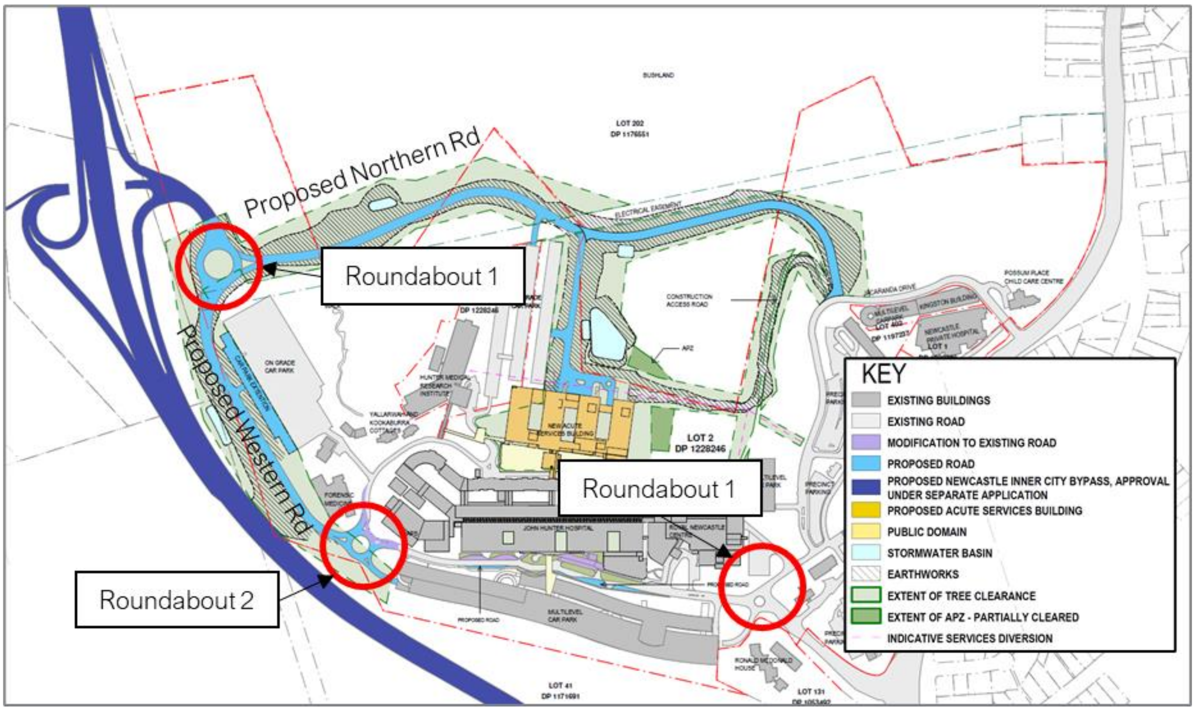


6.6. Traffic Impact

6.6.1. Key internal intersections assessed

To ensure the proposed internal road layout and proposed intersection designs are robust, the future operation of both Lookout Road and key internal intersections has been assessed. The key internal roundabouts are highlight in Figure 6.2.

Figure 6.2: Traffic impact – key internal intersections assessed



Base image source: Site Plan, drawing number AR_C0-A22 NL-X0 Issue 1, prepared by BVN dated March 2021

6.6.2. Intersection performance

This section provides a brief overview of road network performance results for the year of opening (2026), with and without development, and ten year design scenario (2036), with and without development. As discussed, this section assumes the bypass will be constructed prior to the JHHIP opening. A summary of impact of the development is presented in Section 6.6.3, with full results presented in Appendix B of this report.

Table 6.4 presents a summary of the future operation of the intersections at the year of opening (2026), without the development.

Table 6.4: Year of opening (2026) operating conditions – Without development

Intersection	Peak	Approach	Degree of Saturation (DoS)	Average Delay (sec)	Average Queue (m)	Level of Service (LoS)
Lookout Road/ Kookaburra Circuit (signalised)	AM	Overall	0.70	21	155	B
	PM	Overall	0.60	16	84	B
Lookout Road/ Jacaranda Drive (signalised)	AM	Overall	0.93	11	73	A
	PM	Overall	0.52	9	45	A
Lookout Road/ Russell Road/ Croudace Street (signalised)	AM	Overall	0.84	24	126	B
	PM	Overall	0.77	29	128	C
Roundabout 1	AM	South-East[1]	0.13	11	2	A
	PM	South-East[1]	0.5	11	1	A
Roundabout 2	AM	South-East[1]	0.27	6	4	A
	PM	North-East[1]	0.03	6	1	A
Roundabout 3	AM	South-East[1]	0.01	9	1	A
	PM	South-East[1]	0.10	7	1	A

[1] Reported on worst movement in intersection

Table 6.4 indicates that following opening of the bypass in the 2026 growth scenario, overall intersection delay for Lookout Road/ Kookaburra Circuit is expected to reduce by 17 and 28 seconds respectively in the AM and PM peak periods compared to existing, with the north west approach (Hospital access) improving from a level of service F to level of service C in the PM peak period. Overall intersection delay for Lookout Road/ Russell Road is expected to reduce by 16 and 14 seconds respectively. The overall intersection delay for the intersection of Lookout Road/ Jacaranda Drive is expected to improve from a level of service B to level of service A in the AM peak period and continue operating at a level of service A in the PM peak.

Table 6.5 presents a summary of the future operation of the intersections at the year of opening (2026), following full development of the site.

Table 6.5: Year of opening (2026) operating conditions – With development

Intersection	Peak	Approach	Degree of Saturation (DoS)	Average Delay (sec)	Average Queue (m)	Level of Service (LoS)
Lookout Road/ Kookaburra Circuit (signalised)	AM	Overall	0.70	22	155	B
	PM	Overall	0.61	17	92	B
Lookout Road/ Jacaranda Drive (signalised)	AM	Overall	0.96	11	80	A
	PM	Overall	0.55	8	43	A
Lookout Road/ Russell Road/ Croudace Street (signalised)	AM	Overall	0.86	25	135	B
	PM	Overall	0.78	28	129	B
Roundabout 1	AM	South-East[1]	0.16	11	3	A
	PM	North-East[1]	0.06	11	1	A
Roundabout 2	AM	South-East[1]	0.03	7	1	A
	PM	North-East[1]	0.04	6	1	A
Roundabout 3	AM	South-East[1]	0.07	10	1	A
	PM	South-East[1]	0.19	7	3	A

[1] Reported on worst movement in intersection

Table 6.5 indicates that at the year of opening, the JHHIP is expected to have a minor impact to road network performance, with a maximum increase of delays of up to one second. Key intersections within the precinct are expected to operate well with ample spare capacity in both peak periods.

Table 6.6 presents a summary of the future operation of the intersections in the 2036 growth scenario, without the development.

Table 6.6: 2036 operating conditions – Without development

Intersection	Peak	Approach	Degree of Saturation (DoS)	Average Delay (sec)	Average Queue (m)	Level of Service (LoS)
Lookout Road/ Kookaburra Circuit (signalised)	AM	Overall	0.76	22	182	B
	PM	Overall	0.64	15	98	B
Lookout Road/ Jacaranda Drive (signalised)	AM	Overall	0.93	11	73	A
	PM	Overall	0.57	9	57	A
Lookout Road/ Russell Road/ Croudace Street (signalised)	AM	Overall	0.94	34	204	C
	PM	Overall	0.87	34	161	C
Roundabout 1	AM	South-East[1]	0.13	11	2	A
	PM	South-East[1]	0.05	11	1	A
Roundabout 2	AM	South-East[1]	0.27	6	4	A
	PM	North-East[1]	0.03	6	1	A
Roundabout 3	AM	South-East[1]	0.02	9	1	A
	PM	South-East[1]	0.01	7	1	A

[1] Reported on worst movement in intersection

Table 6.6 indicates that following opening of the bypass in the 2036 growth scenario, overall road network performance is expected to remain similar to 2026, with the exception of the Lookout Road/ Russell Road intersection where delays are expected to increase by up to 10 seconds. This is expected noting that the bypass is expected to reduce traffic along Russell Road by only five per cent in comparison to up to 39 per cent along Lookout Road. Notwithstanding, the intersection is expected to operate with a level of service C.

Table 6.6 presents a summary of the future operation of the intersections in the 2036 growth scenario, following full development of the site.

Table 6.7: 2036 operating conditions – With development

Intersection	Peak	Approach	Degree of Saturation (DoS)	Average Delay (sec)	Average Queue (m)	Level of Service (LoS)
Lookout Road/ Kookaburra Circuit (signalised)	AM	Overall	0.78	22	182	B
	PM	Overall	0.66	17	102	B
Lookout Road/ Jacaranda Drive (signalised)	AM	Overall	0.96	11	80	A
	PM	Overall	0.57	9	54	A
Lookout Road/ Russell Road/ Croudace Street (signalised)	AM	Overall	0.98	37	215	C
	PM	Overall	0.88	35	168	C
Roundabout 1	AM	South-East[1]	0.16	11	3	A
	PM	North-East[1]	0.06	11	1	A
Roundabout 2	AM	North-East[1]	0.03	7	1	A
	PM	North-East[1]	0.04	6	1	A
Roundabout 3	AM	South-East[1]	0.07	10	1	A
	PM	South-East[1]	0.19	7	3	A

[1] Reported on worst movement in intersection

Table 6.7 indicates that in the 10 year growth scenario, the JHHIP is expected to have a minor impact to road network performance, with increase of delays up to three seconds compared to the without development scenario. Key intersections within the precinct are expected to operate well with ample spare capacity in both peak periods.

6.6.3. Summary of impacts

Table 6.4 through to Table 6.7 indicate that following the implementation of the Newcastle Inner City Bypass and following full development of the JHHIP (including full delivery of the northern road), the performance of Lookout Road intersections are expected to significantly improve compared to the existing condition. In the 10 year growth scenario from year of opening (2036), overall intersection delay for Lookout Road/ Kookaburra Circuit reduced by 16 and 25 seconds respectively in the AM and PM peak period compared to existing, with the north west approach (Hospital access) improving from a level of service F to level of service B in the PM peak period. Overall intersection delay for Lookout Road/ Russell Road reduced by 4 and 8 seconds respectively and the intersection of Lookout Road/ Jacaranda Drive is expected to continue operating at a Level of Service A overall.

With the bypass in place and with the proposed upgrades to the internal road network, the modelling indicates that key intersections within the hospital internal road network will operate well with significant spare capacity to accommodate future growth and development within the precinct. It would be recommended that key routes to and from future development zones be linked through the bypass to discourage further traffic circulating through the hospital frontage to/from Lookout Road.

Furthermore, traffic modelling has been completed considering the northern road initial phase only (i.e. no access to Jacaranda Drive) and indicates that key intersections within the hospital internal road network will operate well with significant spare capacity.

6.7. Broader Network

The anticipated intersection performance of the Lookout Road/ Cardiff Road and Lookout Road/ Charlestown Road/ Carnley Road intersections are outlined in the Supplementary Traffic and Transport Assessment (April 2018) as discussed throughout this report. Appendix A provides a detailed summary of the intersection performance during the AM and PM peak periods with and without the bypass development in 2014, 2020 and 2030. It is noted that both of these intersections are located immediately south of the southern Newcastle Inner City Bypass interchange with McCaffrey Street and are therefore key access points to the bypass. As such, traffic volumes are generally expected to increase by between nine and 18 per cent at both intersections following opening of the bypass, as outlined in Table 6.8.

Table 6.8: 2030 traffic volumes with and without bypass

Intersection	AM peak hour			PM peak hour		
	Without bypass	With bypass	Change in volumes	Without bypass	With bypass	Change in volumes
Lookout Road/ Cardiff Road	4281	5062	18%	4639	5344	15%
Charlestown road/ Lookout Road/ Carnley Road	5141	5769	12%	5315	5776	9%

Based on the existing directional split of traffic accessing the hospital, around 55 per cent of development traffic is expected to travel from the south, equating to around 140 and 115 vehicles respectively in the AM and PM peak periods. This represents around two to three per cent of traffic accessing both intersections in both peak periods, assuming that all traffic continues traveling south and does not turn at the Grandview Road/ Lookout Road intersection. It is noted that the traffic modelling completed for the bypass included traffic generated by the JHHIP however the volume of traffic considered is unknown. As such, the JHHIP could be expected to increase traffic volumes at these intersections by a maximum of two per cent during peak periods. This is a marginal increase in traffic and these volumes are unlikely to affect the overall performance of each intersection.

7. SUSTAINABLE TRANSPORT INFRASTRUCTURE

07

7.1. Walking and Cycling Network

7.1.1. Pedestrian Facilities

The proposed development works hard to ensure pedestrians and cyclists have remained a key consideration. The design includes a high level of pedestrian amenity that will ensure good activation of the public domain between the ASB and the existing Campus. This includes an expansive concourse over Kookaburra Circuit, connecting the ASB to the John Hunter Hospital, as well as the implementation of a central north-south pedestrian spine between Level 02 of the ASB and the main hospital entrance on the southern side of the existing hospital building. The central spine will provide an efficient, legible cross campus pedestrian connection between the ASB and facilities near the main entrance, including car parking and bus stops.

7.1.2. Cyclist Facilities

DCP 2012 sets out design controls for the provision of bicycle parking with hospital requirements summarised in Table 7.1.

Table 7.1: DCP 2012 bicycle parking requirements

Site Location	Bicycle Parking Rate	Number of Staff	Bicycle Parking Requirement
Proposed ASB	1 space/ 10 staff for staff (Class 2)	Additional 236 FTE	24
	1 space/ 10 staff for visitors (Class 3)		24

Based on Table 7.1, it is recommended that 24 bicycle parking spaces are provided for staff and 24 bicycle parking spaces are provided for visitors within the ASB.

DCP 2012 also requires new developments that have an estimated cost of more than $250,000 to provide “end of trip” facilities for employees at the following rates:

- one personal secure locker for each bicycle parking space
- one shower cubicle, with ancillary change rooms, per 12 bicycle parking spaces (or part thereof over four spaces) with a minimum of one shower and change facility.

A summary of the recommended bicycle parking facilities for the proposed ASB are outlined in Table 7.2.

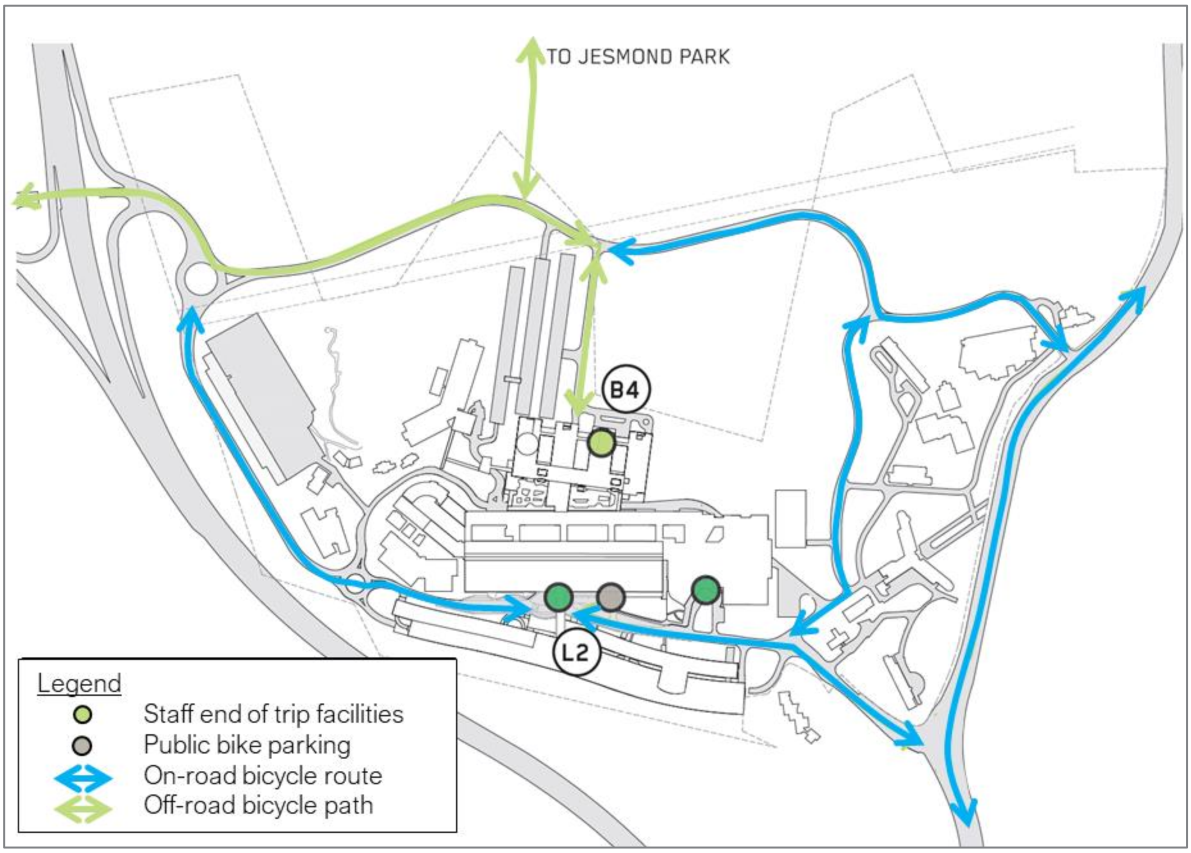
Table 7.2: Summary of recommended bicycle parking facilities

Site Location	Use	Bicycle Parking Provision	End of Trip Facilities
ASB	Staff	24	24 lockers, 2 showers
	Visitor	24	N/A

The ASB proposed end of trip facilities on Basement 4, with a minimum of 24 secure bicycle spaces to be provided along with six showers (three for men and three for women) and a minimum of 24 lockers. In addition, a minimum of 24 publicly accessible bicycle parking spaces in the form of bicycle racks are proposed adjacent to the pick-up and drop-off area near the main (southern) hospital entry. Bicycle parking in both areas will be designed in accordance with AS2890.3:2015.

The proposed cycling network and location of bicycle parking facilities are illustrated in Figure 7.1. This includes bicycle parking and end of trip facilities for staff within the ASB car park, as well as visitor parking in the form of bicycle racks at the main entrance along Kookaburra Circuit.

Figure 7.1: Overarching access plan – bicycle facilities and network



Source: Section 5.6 Bikes Access, JHHIP, SSDA Architectural Design Statement, 9 March 2021

The location of bicycle parking facilities considers connections to the existing and proposed cycling network illustrated in Figure 2.17, including:

- proposed cycleway between the JHHIP, across the bypass hospital interchange through Dangerfield Drive Reserve and connecting to Elemore Parade
- existing cycleway between the north-western edge of HMRI car park (car park 5) through Jesmond Bushland to Newcastle Road
- existing cycleways along Lookout Road/ Carrington Parade.

It is recommended that end of trip facilities/ bicycle parking facilities are high quality to encourage staff and visitors to cycle to the hospital.

7.2. Green Travel Plan

A facility such as a hospital generates a significant level of transport demand, primarily for private vehicle trips. Travel Demand Management (TDM) aims to modify travel decisions rather than providing costly infrastructure and additional transport services to support the current and future transport demands.

TDM has the following key objectives:

- reduce the need to travel
- reduce the amount of travel
- reduce the impact of travel.

In this regard, a Green Travel Plan (GTP) is a tool that hospitals can use to manage the transport mode choices of their staff. The plan aims to promote and encourage sustainable travel and reduce reliance on the private vehicle. The GTP comprises a list of strategies aimed at encouraging walking, cycling, public transport and car-pooling for travel to and from work and aims at a shift away from the reliance on single occupant vehicle travel.

A GTP for the JHHIP site has been developed. The GTP intends to influence travel behaviour for both staff and visitors to the hospital and to be a tool that HNELHD can use to engage with Transport for NSW regarding potential improvements to bus services to JHHIP.

8. OVERVIEW CONSTRUCTION TRAFFIC MANAGEMENT PLAN

08

8.1. Overview

This overview of construction traffic impacts associated with construction activity aims to ensure the safety of all workers and road users in the vicinity of the construction site. The primary objectives of the Construction Traffic Management Plan (CTMP) are as follows:

- To identify the need for adequate and compliant traffic management requirements within the vicinity of the JHHIP.
- To ensure continuous, safe and efficient movement of traffic for both the general public and construction workers.
- Establishment of a safe pedestrian environment in the vicinity of the site.
- To inform the Contractor and set the ground rules for managing the construction traffic associated with the construction site.

8.2. Key Objectives

The overall principles of traffic management during the construction activity include:

- Provide an appropriate and convenient environment for pedestrians.
- Minimise the impact on pedestrian movements.
- Maintain appropriate capacity for pedestrians at all times on footpaths around the site.
- Maintain appropriate public transport access.
- Maintain current levels of parking within the precinct.
- Maintain permanent access to/ from the hospital accesses for emergency services.
- Restrict construction vehicle movements to designated routes to/ from the site.
- Manage and control construction vehicle activity in the vicinity of the site.
- Minimise impacts to general traffic in the vicinity of the site.

8.3. Description and Duration of Works

The construction of the proposed development involves enabling works and main works. A description of the works is provided below:

<u>Enabling Works:</u>

- construction access roads
- in-ground services diversion/ reticulation
- civil infrastructure works, including but not limited to
    - site Clearing
    - bulk Earthworks
    - detention and Sedimentation Basins & controls
- mine Seam Injection
- shoring.

Main Works:

- construction of new Acute Services Building including new link connections with the existing John Hunter Hospital
- refurbishment of existing facility
- civil infrastructure works, including but not limited to:
  - construction of Internal road network
  - works to existing at-grade car parking.
- landscape works
- new Hospital entry canopy
- link bridge to the HMRI.

The expected duration of the works is likely to be 2022 through to 2025. Anticipated staging and peak construction periods will be outlined in the detailed Construction Traffic Management Plan.

8.4. Anticipated Work Hours

Construction work would be undertaken in accordance with development consent conditions. The proposed standard work hours are as follows:

- Monday to Friday: 7:00am to 6:00pm
- Saturday: 8:00am to 1:00pm
- Sundays and public holidays: No work.

In addition, extended hours are also proposed for normal construction activities as follows:

- Monday to Friday: 6:00am to 7:00am
- Saturday: 1:00pm to 5:00pm.

The works are critical public infrastructure being delivered to provide essential health services to the local Newcastle, Hunter New England Local Health District and Northern NSW communities. Extended construction hours are needed in order to:

- reduce the length of the project in order to meet the critical project delivery timeframes driven by:
  - the need to provide clinical services to meet the significant forecast population growth, ageing population and Socio-economic status of residents within the JHHIP's tertiary catchment
  - the need to replace current infrastructure to provide contemporary patient centred models of care in the delivery of Level 6 tertiary services
  - significant increased demand for acute, sub-acute and ambulatory health services.
- ensure construction vehicles can avoid travelling through peak road network times and shift changeover times to reduce the impact on the surrounding road network
- minimise the impact on hospital operations during core business hours such as planned surgery and outpatient clinics.

8.5. Construction Vehicle Access

The Preliminary Construction Management Plan describes one of the key objectives of construction will be to manage the flow of materials/ equipment into and out of the construction site with minimal impact on existing hospital operations and congestion of the surrounding road network.

The construction program for the JHHIP is indicatively expected to take 6 years for Phase 1A and 1B to be completed. The ring road is current at capacity servicing the operational needs of the Campus and cannot accommodate sustained construction traffic and accordingly an alternative solution is required to enable the construction program to be carried out, while also allowing the live Hospital operational environment to continue without interruption.

It is not feasible for the construction access to be located along the proposed northern road alignment as access to the ASB will be disrupted during road construction. Postponing access to the ASB until the completion of northern road construction in order to avoid installing the construction access will result in significant time delays to the ASB delivery which cannot be accommodated. This route would also disrupt general hospital traffic operations along Kookaburra Circuit.

As such, the existing fire trail located on the northern edge of Jacaranda Drive near car park 9 is proposed to be upgraded to provide a dedicated construction vehicle access road to/ from the northern aspect of the works site, where the main site compound is proposed to be located. By utilising the existing (part cleared) fire trail, this also assists with reducing environmental impacts while still enabling a viable construction access.

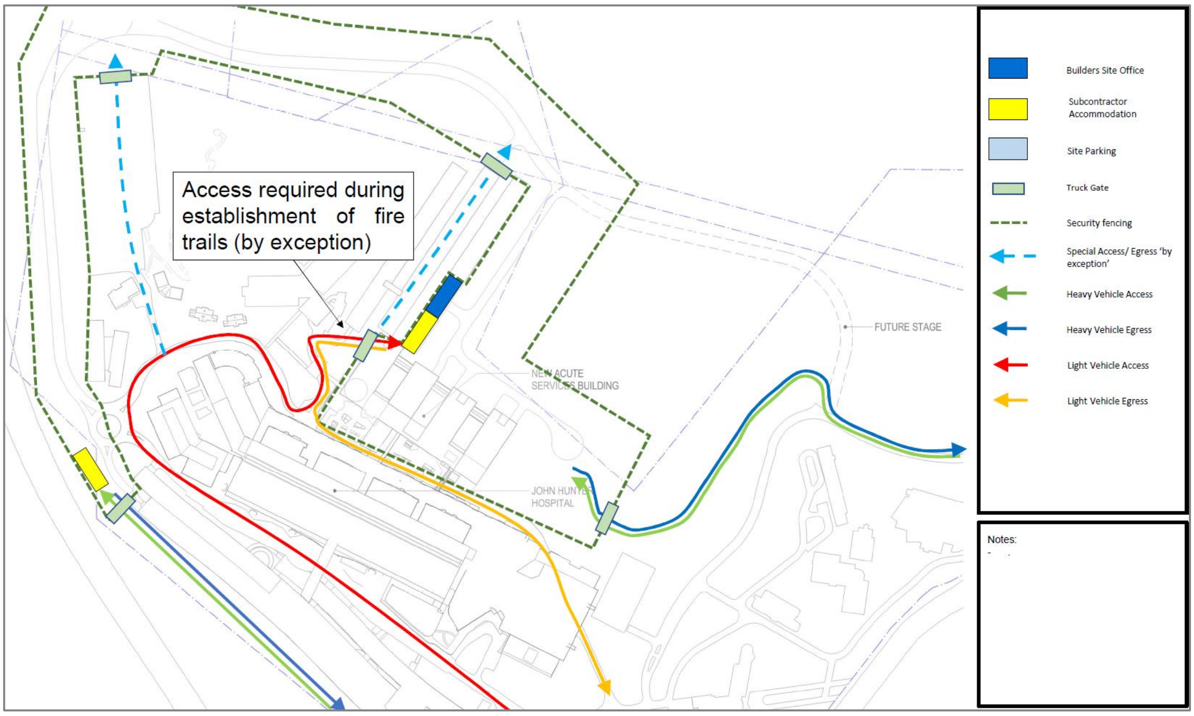
Construction vehicles will use the Lookout Road/ Jacaranda Drive intersection to access the dedicated construction access road to minimise the length of time vehicles travel on the hospital road network. Due to existing geometric constraints, vehicles cannot turn left into Jacaranda Drive from Lookout Road. Therefore, all heavy vehicles would be instructed to arrive from the north.

An additional site compound is proposed at the western edge of car park 1 to provide convenient access for construction works associated with the internal road network near car park 1 and 4. Vehicular access is proposed via the existing fire trail located on the southern edge of car park 1, accessed from the Kookaburra Circuit roundabout south-western leg. This intersection leg currently provides access into/ out of staff car park 1 and is considered adequate for interaction of heavy vehicles noting the regular user nature of staff of this road segment. It is intended for construction vehicles will use the Lookout Road/ Kookaburra Circuit intersection to access the dedicated construction access road to minimise the length of time vehicles travel on the hospital road network.

Prior to establishment of the fire trails as construction vehicle accesses, construction access via light vehicles is proposed via the HMRI car park. It is intended these movements will be temporary only.

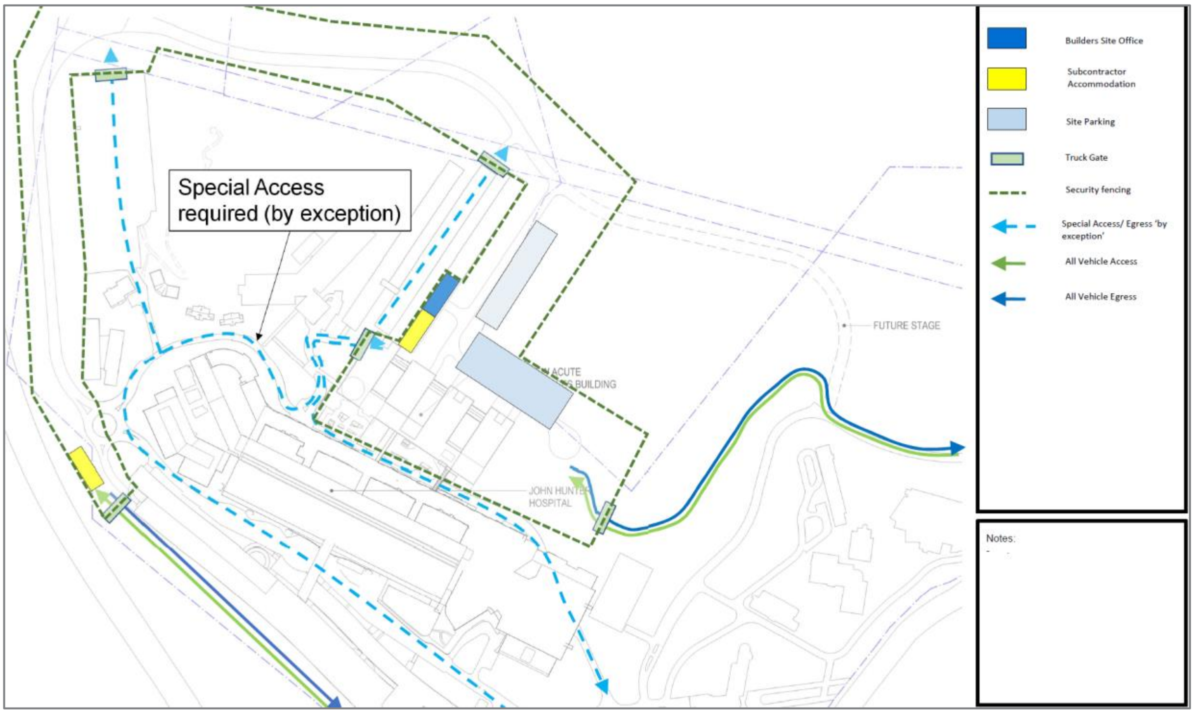
The proposed site access arrangements during early and enabling works and main works are detailed respectively in Figure 8.1 and Figure 8.2.

Figure 8.1: Construction site access (early and enabling works)



Source: Draft Appendix C - Main Works - ASB Staging Diagrams & Strategies, Lendlease

Figure 8.2: Construction site access (main works)



Draft Appendix C - Main Works - ASB Staging Diagrams & Strategies, Lendlease

8.6. Construction Workers and Parking

The anticipated number of construction workers is currently unknown. Given the site's proximity to public transport services, workers will be encouraged to use public transport to access the site where practical. During site induction, workers will be informed of the existing bus network servicing the site. Appropriate arrangements will be made for any equipment/ tool storage and drop-off requirements. Notwithstanding, a small amount of parking may be available on site, this will be limited to the construction compound. Construction workers will not be allowed to park within the JHHC, associated road network or on surrounding streets. Construction worker arrivals and departures will be minimised during peak hours. Health Infrastructure will work with the contractor to explore further initiatives such as park and ride shuttle bus services and encourage car-pooling.

Any construction worker arrivals and departures by vehicle would be outside of road network peak hours and as such is unlikely to impact the surrounding road network.

8.7. On-street Works Zone

It is not anticipated that an on-street Works Zone would be required during the works.

If a Works Zone is required, the contractor would be required to obtain approval from the relevant authority (Council, Transport for NSW).

8.8. Light and Heavy Vehicle Generation

During the early works, it is expected a total of 15 to 20 heavy vehicles could access the site, with peak activity potentially increasing to 30 to 40 heavy vehicles per day. This would increase during the main works stage, with up to 120 heavy vehicles per day expected. These movements would likely be spread across the day and would include vehicles such as a concrete, articulated haul or delivery trucks.

Light vehicle traffic generation would be largely generated by construction worker traffic movements to and from the site. As mentioned previously, the number of construction workers for both stages is currently unknown. Notwithstanding, limited parking will be provided on-site, with workers to be encouraged to use public transport to access the site. As such, light vehicle traffic generation associated with construction workers will be minor. Further to this, any construction worker traffic movements will generally be outside of peak periods.

Once the Contractor is engaged on this project an understanding of construction traffic vehicle generation will be determined and a detailed CTMP provided.

8.9. Approach and Departure Routes

Truck movements will be restricted to designated routes and confined to the State and Regional Roads. Truck routes to/ from the site, as indicated below, have been identified with the aim of minimising the impact of construction traffic on roads near the site. Truck drivers will be advised of the designated truck routes to/ from the site.

The directional distribution and assignment of traffic generated by the development will be influenced by a number of factors, most notably the origin/ destination of materials, configuration of access points to the site and the configuration of the arterial road network in the immediate vicinity of the site.

As noted, vehicles accessing the Jacaranda Drive fire trail will be limited to arriving from the north only, as no left turn is permitted from Lookout Road from the south. All turning movements are permitted at the Lookout Road/ Kookaburra Circuit intersection.

The approach and departure routes are detailed as follows:

Approach

- North:
  - Newcastle Inner City Bypass, Newcastle Road, Lookout Road
  - Turton Road, Newcastle Road, Lookout Road
  - Griffiths Road, Newcastle Road, Lookout Road.
- South:
  - Newcastle Inner City Bypass, Charlestown Road, Lookout Road (light vehicles only).

Departure

- North:
  - Lookout Road, Newcastle Road, Newcastle Inner City Bypass
  - Lookout Road, Turton Road, Newcastle Road
  - Lookout Road, Newcastle Road, Griffiths Road.
- South:
  - Lookout Road, Charlestown Road, Newcastle Inner City Bypass.

The approach and departure routes are shown in Figure 8.3 and Figure 8.4.

Figure 8.3: Approach Route

Base image source: Nearmap

Figure 8.4: Departure Route

Base image source: Nearmap

8.10. Road Safety Review

The intersection of Lookout Road and Kookaburra Circuit is currently the main access location to the John Hunter Health Campus a secondary access is provided through the intersection of Lookout Road and Jacaranda Drive. To minimise the impact to the hospital access and operations, construction access for the Enabling works as detailed in the preliminary Construction Management Plan, will be through the intersection of Lookout Road and Jacaranda Drive.

Recent modifications have occurred at this intersection to allow for vehicles to turn right out of Jacaranda Drive to travel south on Lookout Road. With these modifications due to the existing geometric constraints at the intersection vehicles are still restricted from turning left into Jacaranda Drive from Lookout Road. Therefore, to ensure that access to, and operation of the John Hunter Health Campus is not adversely impacted from construction vehicles arriving from the south, it is recommended that all heavy vehicle access be from the north only and through the Jacaranda Drive intersection. It is also noted that the intersection modifications cater for vehicles up to 12.5 metre HRV. As part of the CTMP to be prepared by the contractor it is recommended that if larger vehicles are required that a review is undertaken as to appropriate traffic control measures that may be required to enable larger vehicles requiring access to the site to ensure there is no conflict with oncoming traffic. The proposed extended work hours would also assist with allowing larger construction vehicle deliveries to occur outside of peak times, thus minimising the impact on hospital operations.

As outlined in Section 2.9 the Lookout Road/ Jacaranda Drive intersection saw eight crashes over a five year period where the majority of crashes were rear end crashes. Until the bypass is operational the congestion on Lookout Road during peak periods is such that it is recommended the majority of construction vehicle access occurs outside of peak periods. With this mitigation measure in place, as well as with permitted extended work hours to allow adequate time for construction vehicles to travel to site outside of peaks hours, it is expected that any adverse road safety impact would be minimal.

8.11. Pedestrian and Cyclist Access

Footpath closures are not expected, however should this be required by the contractor the impact would be managed through the CTMP.

The construction activities are not expected to impact existing public transport services near the site.

Pedestrian and cyclist movements within and adjacent to the site would be maintained at all times. Fencing will be provided around the work site at all times to ensure separation of pedestrians from the work site.

Should pedestrian facilities be impacted, alternative pedestrian access complete with signage will be provided, and pedestrian/ traffic movements will be managed by an accredited traffic controller if required.

Should any unforeseen activities require the temporary closure of any pedestrian thoroughfares, a Traffic Control Plan (TCP) will need to be developed and submitted for approval by Council.

8.12. Construction Traffic Impacts

8.12.1.Overview

As mentioned, limited construction worker parking will be provided on site within the construction compound, with workers encouraged to use public transport to travel to and from the site. As such, the anticipated light vehicle traffic generation for the proposed construction works is expected to be minor and would have a minimal impact on the surrounding road network. Health Infrastructure will work with the contractor to consider providing an offsite parking facility and using a shuttle bus for access of construction workers to the site due to the highly constrained road network. This will be further detailed once the Contractor is engaged and the detailed CTMP prepared.

Heavy vehicle movements will be spread across day. Assuming a conservative rate of 20 per cent daily truck volumes occur during peak hour results in up to 20 vehicles in each peak period. However, noting the already constrained road network with limited ability to accommodate increased traffic volumes, any heavy vehicle volumes will experience delays exiting/ entering the site and would impact the already congested environment. Therefore, it is recommended that minimal heavy vehicles arrive or depart the site during peak periods. The proposed extended work hours are therefore critical to ensuring deliveries can occur outside of peak periods, therefore minimising the construction traffic impact on hospital operations. Further consultation will be undertaken with HNELHD to coordinate their preferences based on time of peak shift changeover and included by the Contractor in the final CTMP. The final CTMP will also detail ongoing monitoring of conditions so truck departure/ arrival times can respond to any changing conditions.

As such, given only a minimal volume of construction vehicles should access the site during peak periods, construction works are expected to have a minimal impact on the surrounding road network.

Access to the subject site and adjacent buildings by emergency vehicles would not be affected by the works as road and footpath frontages would be unaffected.

Consequently, any potential impacts on emergency access would be effectively managed throughout the works.

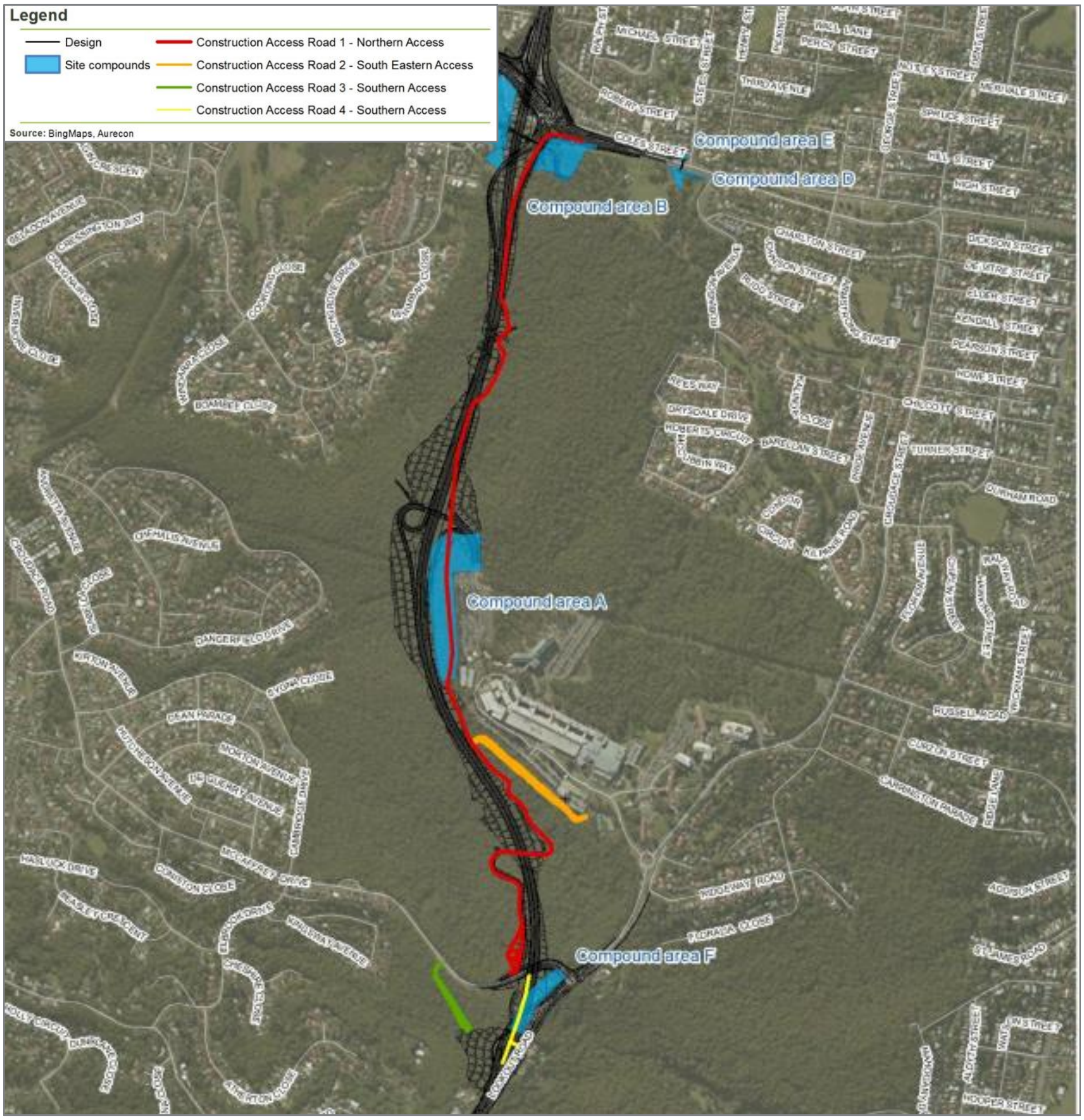
8.12.2.Cumulative Construction Impacts

Transport for NSW is planning to extend the Newcastle Inner City Bypass between Rankin Park and Jesmond, for a length of 3.4 kilometres. The project received environmental approval from the minister of planning in February 2019 and early works have begun with the construction of a shared path bridge across Newcastle Road.

The anticipated construction impacts and construction traffic management measures are outlined in the Traffic and Transport Assessment (Aurecon 2016) and Supplementary Traffic and Transport Assessment (April 2018) as discussed throughout this report.

The assessments indicate that the majority of construction traffic movements are expected to be contained within the project's construction boundary with the exception of deliveries to site, disposal of waste and construction worker travel. The site layout and key construction site accesses are illustrated in Figure 8.5.

Figure 8.5: Newcastle Inner City Bypass Rankin Park to Jesmond – construction access roads



Source: Figure 4-1 and 3-2 out of Newcastle Inner City Bypass – Rankin Park to Jesmond, Technical Paper 2 Supplementary Traffic and Transport Assessment, page 53 prepared by Aurecon for Roads and Maritime dated April 2018

The assessment indicates that the Newcastle Inner City Bypass development is expected to generate up to 50 two-way vehicle trips along Lookout Road at its frontage to John Hunter Health Campus during the AM and PM road network peak periods during peak construction. This results in an approximate one per cent increase in overall traffic volumes and is not expected to affect the level of service at the intersections servicing these roads.

Notwithstanding, traffic generated by the JHHIP enabling and main works will be minimised during peak periods, particularly during construction of the Bypass, to ensure the development does not exasperate the existing constrained conditions.

Consultation with City of Newcastle Council in October 2020 and review of approved or planned development in the area indicates there are no other major developments planned that may contribute to cumulative construction traffic along Lookout Road.

8.13. Potential Mitigation Measures During Construction

The following proposed traffic management principles would be adopted during the construction period:

- A traffic management plan would be developed by the contractor and incorporated into the Construction Environmental Management Plan (CEMP).
- Allowing extended work hours to allow for reduce the number of deliveries occurring during peak periods.
- Until the bypass is operational the congestion on Lookout Road during peak periods is such that it is recommended any construction vehicle access occurs outside of peak periods. As such, disruption to all road users during the construction period would be kept to a minimum.
- Construction and delivery vehicles entering or leaving the JHHIP site compound would use arterial roads wherever possible. Vehicle deliveries would be restricted to nominated times within the approved Construction Traffic Management Plan (CTMP).
- Construction workers will not be allowed to park within the JHHC or associated road network.
- Opportunities should be investigated to provide an offsite parking facility for construction workers and utilising a shuttle bus to access the site.
- A detailed CTMP would be developed by the contractor.

9. CONCLUSION

09

CONCLUSION

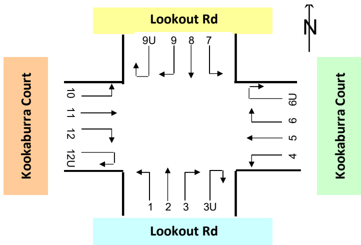
Based on the analysis and discussions presented within this report, the following conclusions are made:

1. The John Hunter Health Campus is reasonably well serviced by public transport, with a bus stop provided at the main hospital entrance providing convenient connections with key local and regional destinations.
2. The traffic assessment indicates that Lookout Road along the site frontage experiences notable queuing and delays in peak periods.
3. The Newcastle Inner City Bypass between Rankin Park and Jesmond will provide relief for Lookout Road. In addition, the bypass will provide a full interchange to the west of the John Hunter Health Campus, providing further relief from the congested Lookout Road/ Kookaburra Circuit intersection.
4. The key transport elements of the proposal are:
   - A new acute service building to be located to the north of the existing hospital building which includes a multi-level car park.
   - New western and northern access roads to connect the Newcastle Inner City Bypass and the ASB. The northern road network will be delivered as part of a phased development. The “initial phase” will enable the project to meet timelines for the ASB to be operational and provide critical health services for the region. The later “North Road – East Phase” completes the campus wide infrastructure setting up the delivery of the future precinct vision. The later North Road – East phase has been included for the purposes of modelling.
5. The proposal will provide an uplift of around 900 spaces across the site, via a combination of basement car park and at-grade spaces, as well as through the conversion of the existing helipad in car park 3 to car parking spaces, complying with the recommendations outlined in the Parking Demand Study to provide an uplift 754 parking spaces and to alleviate some of the existing parking shortfall.
6. The site is expected to generate up to an additional 265 and 199 vehicle trips in the AM and PM peak hours respectively.
7. To assess the adequacy of the internal road network and capacity of the external road network to support the development, analysis has been undertaken to include background traffic growth and the proposed JHHIP at year of opening (2026) and 10 years post opening (2036).
8. The project team have developed a contingency plan as an interim solution in the event the Bypass is not opened prior to completion of the ASB. This considers no uplift in clinical capacity from the current operational benchmark should the bypass not be operational on day one of the ASB opening. This would mitigate risk of any additional traffic impact on the road network until the bypass is operational.
9. Following completion of the bypass, there would be adequate capacity in the surrounding road network to cater for the additional traffic generated by the proposed development at year of opening and 10 years post opening. Key intersections within the hospital internal road network will also operate well with significant spare capacity to accommodate future growth and development within the precinct.

A. TRAFFIC SURVEYS

A

Job No.	: N4852
Client	: GTA
Suburb	: John Hunter Hospital
Location	: 1. Lookout Rd / Kookaburra Court
Day/Date	: Thurs, 21st March 2019
Weather	: Fine
Description	: Classified Intersection Count
	: Hourly Summary

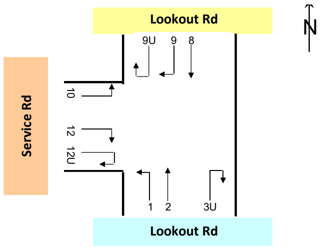


Approach	Lookout Rd												Kookaburra Court											
Direction	Direction 1 (Left Turn)			Direction 2 (Through)			Direction 3 (Right Turn)			Direction 3U (U Turn)			Direction 4 (Left Turn)			Direction 5 (Through)			Direction 6 (Right Turn)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	509	12	**521**	1,403	66	**1,469**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	1	**1**	0	0	**0**
6:15 to 7:15	563	12	**575**	1,542	62	**1,604**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	0	1	**1**	0	0	**0**
6:30 to 7:30	611	13	**624**	1,724	55	**1,779**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	4	0	**4**	0	0	**0**
6:45 to 7:45	612	16	**628**	1,860	46	**1,906**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	7	0	**7**	0	0	**0**
7:00 to 8:00	640	14	**654**	1,960	39	**1,999**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	10	0	**10**	0	0	**0**
7:15 to 8:15	710	14	**724**	2,011	48	**2,059**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	11	0	**11**	0	0	**0**
7:30 to 8:30	749	17	**766**	2,016	50	**2,066**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	10	0	**10**	0	0	**0**
7:45 to 8:45	722	15	**737**	1,975	48	**2,023**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	9	0	**9**	0	0	**0**
8:00 to 9:00	679	15	**694**	1,898	63	**1,961**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	7	0	**7**	0	0	**0**
8:15 to 9:15	624	16	**640**	1,827	60	**1,887**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	8	0	**8**	0	0	**0**
8:30 to 9:30	541	11	**552**	1,668	61	**1,729**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	8	0	**8**	0	0	**0**
8:45 to 9:45	495	12	**507**	1,546	66	**1,612**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	9	0	**9**	0	0	**0**
9:00 to 10:00	424	12	**436**	1,405	54	**1,459**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	11	0	**11**	0	0	**0**
AM Totals	**2,252**	**53**	**2,305**	**6,666**	**222**	**6,888**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**28**	**1**	**29**	**0**	**0**	**0**
15:00 to 16:00	237	8	**245**	1,245	49	**1,294**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	9	1	**10**	0	0	**0**
15:15 to 16:15	223	9	**232**	1,209	47	**1,256**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	12	1	**13**	0	0	**0**
15:30 to 16:30	220	10	**230**	1,190	46	**1,236**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	12	1	**13**	0	0	**0**
15:45 to 16:45	227	11	**238**	1,196	37	**1,233**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	11	1	**12**	0	0	**0**
16:00 to 17:00	204	10	**214**	1,198	29	**1,227**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	12	0	**12**	0	0	**0**
16:15 to 17:15	201	10	**211**	1,192	28	**1,220**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	10	0	**10**	0	0	**0**
16:30 to 17:30	184	10	**194**	1,141	20	**1,161**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	9	0	**9**	0	0	**0**
16:45 to 17:45	164	11	**175**	1,139	18	**1,157**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	6	0	**6**	0	0	**0**
17:00 to 18:00	153	11	**164**	1,096	13	**1,109**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	8	0	**8**	0	0	**0**
17:15 to 18:15	148	11	**159**	1,102	11	**1,113**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	7	0	**7**	0	0	**0**
17:30 to 18:30	144	12	**156**	1,056	13	**1,069**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	8	0	**8**	0	0	**0**
17:45 to 18:45	139	9	**148**	1,007	7	**1,014**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	8	0	**8**	0	0	**0**
18:00 to 19:00	134	13	**147**	958	8	**966**	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	4	0	**4**	0	0	**0**
PM Totals	**728**	**42**	**770**	**4,497**	**99**	**4,596**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**33**	**1**	**34**	**0**	**0**	**0**

Approach	Lookout Rd												Kookaburra Court											
Direction	Direction 7 (Left Turn)			Direction 8 (Through)			Direction 9 (Right Turn)			Direction 9U (U Turn)			Direction 10 (Left Turn)			Direction 11 (Through)			Direction 12 (Right Turn)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	0	0	**0**	598	38	**636**	266	5	**271**	0	0	**0**	41	6	**47**	0	0	**0**	78	11	**89**	0	0	**0**
6:15 to 7:15	0	0	**0**	699	52	**751**	319	5	**324**	0	0	**0**	58	5	**63**	0	0	**0**	76	11	**87**	0	0	**0**
6:30 to 7:30	0	0	**0**	759	57	**816**	374	5	**379**	0	0	**0**	93	8	**101**	0	0	**0**	110	10	**120**	0	0	**0**
6:45 to 7:45	0	0	**0**	838	57	**895**	380	6	**386**	0	0	**0**	121	13	**134**	0	0	**0**	156	11	**167**	0	0	**0**
7:00 to 8:00	0	0	**0**	919	63	**982**	398	3	**401**	0	0	**0**	127	12	**139**	0	0	**0**	173	10	**183**	0	0	**0**
7:15 to 8:15	0	0	**0**	961	63	**1,024**	425	5	**430**	0	0	**0**	130	12	**142**	0	0	**0**	193	13	**206**	0	0	**0**
7:30 to 8:30	0	0	**0**	1,022	61	**1,083**	433	6	**439**	0	0	**0**	104	11	**115**	0	0	**0**	198	13	**211**	0	0	**0**
7:45 to 8:45	0	0	**0**	1,014	61	**1,075**	445	6	**451**	0	0	**0**	78	9	**87**	0	0	**0**	174	14	**188**	0	0	**0**
8:00 to 9:00	0	0	**0**	1,004	57	**1,061**	420	7	**427**	0	0	**0**	87	9	**96**	0	0	**0**	165	17	**182**	0	0	**0**
8:15 to 9:15	0	0	**0**	1,077	53	**1,130**	425	8	**433**	0	0	**0**	104	10	**114**	0	0	**0**	164	14	**178**	0	0	**0**
8:30 to 9:30	0	0	**0**	1,077	59	**1,136**	406	8	**414**	0	0	**0**	116	9	**125**	0	0	**0**	156	19	**175**	0	0	**0**
8:45 to 9:45	0	0	**0**	1,153	62	**1,215**	363	8	**371**	0	0	**0**	127	8	**135**	0	0	**0**	146	17	**163**	0	0	**0**
9:00 to 10:00	0	0	**0**	1,136	52	**1,188**	314	8	**322**	0	0	**0**	137	9	**146**	0	0	**0**	160	16	**176**	0	0	**0**
AM Totals	**0**	**0**	**0**	**3,657**	**210**	**3,867**	**1,398**	**23**	**1,421**	**0**	**0**	**0**	**392**	**36**	**428**	**0**	**0**	**0**	**576**	**54**	**630**	**0**	**0**	**0**
15:00 to 16:00	0	0	**0**	1,831	62	**1,893**	115	6	**121**	0	0	**0**	294	7	**301**	0	0	**0**	626	10	**636**	0	0	**0**
15:15 to 16:15	0	0	**0**	1,904	54	**1,958**	114	7	**121**	0	0	**0**	305	5	**310**	0	0	**0**	674	8	**682**	0	0	**0**
15:30 to 16:30	0	0	**0**	1,917	47	**1,964**	107	6	**113**	0	0	**0**	309	6	**315**	0	0	**0**	689	11	**700**	0	0	**0**
15:45 to 16:45	0	0	**0**	1,983	38	**2,021**	90	6	**96**	0	0	**0**	293	6	**299**	0	0	**0**	672	11	**683**	0	0	**0**
16:00 to 17:00	0	0	**0**	2,011	29	**2,040**	99	6	**105**	0	0	**0**	300	6	**306**	0	0	**0**	666	10	**676**	0	0	**0**
16:15 to 17:15	0	0	**0**	2,016	23	**2,039**	94	5	**99**	0	0	**0**	288	6	**294**	0	0	**0**	646	10	**656**	0	0	**0**
16:30 to 17:30	0	0	**0**	2,064	21	**2,085**	88	6	**94**	0	0	**0**	278	6	**284**	0	0	**0**	653	8	**661**	0	0	**0**
16:45 to 17:45	0	0	**0**	2,064	17	**2,081**	93	6	**99**	0	0	**0**	291	5	**296**	0	0	**0**	635	9	**644**	0	0	**0**
17:00 to 18:00	0	0	**0**	2,149	15	**2,164**	101	6	**107**	0	0	**0**	273	6	**279**	0	0	**0**	548	11	**559**	0	0	**0**
17:15 to 18:15	0	0	**0**	2,031	15	**2,046**	89	7	**96**	0	0	**0**	259	5	**264**	0	0	**0**	473	13	**486**	0	0	**0**
17:30 to 18:30	0	0	**0**	1,884	9	**1,893**	85	6	**91**	0	0	**0**	240	6	**246**	0	0	**0**	368	14	**382**	0	0	**0**
17:45 to 18:45	0	0	**0**	1,640	12	**1,652**	86	6	**92**	0	0	**0**	207	6	**213**	0	0	**0**	290	13	**303**	0	0	**0**
18:00 to 19:00	0	0	**0**	1,355	10	**1,365**	78	7	**85**	0	0	**0**	202	6	**208**	0	0	**0**	268	11	**279**	0	0	**0**
PM Totals	**0**	**0**	**0**	**7,346**	**116**	**7,462**	**393**	**25**	**418**	**0**	**0**	**0**	**1,069**	**25**	**1,094**	**0**	**0**	**0**	**2,108**	**42**	**2,150**	**0**	**0**	**0**

Job No. : N4852
Client : GTA
Suburb : John Hunter Hospital
Location : 2. Lookout Rd / Service Rd

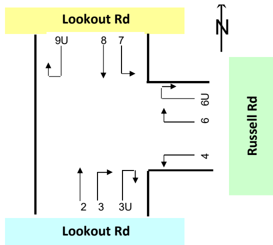
Day/Date : Thurs, 21st March 2019
Weather : Fine
Description : Classified Intersection Count
: Hourly Summary



Approach	Lookout Rd								
Direction	Direction 1 (Left Turn)			Direction 2 (Through)			Direction 3U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	0	0	0	1,455	72	1,527	0	0	0
6:15 to 7:15	0	0	0	1,581	69	1,650	0	0	0
6:30 to 7:30	0	0	0	1,802	67	1,869	0	0	0
6:45 to 7:45	0	0	0	1,957	60	2,017	0	0	0
7:00 to 8:00	0	1	1	2,018	51	2,069	0	0	0
7:15 to 8:15	0	1	1	2,150	60	2,210	0	0	0
7:30 to 8:30	0	1	1	2,147	62	2,209	0	0	0
7:45 to 8:45	0	1	1	2,057	59	2,116	0	0	0
8:00 to 9:00	0	0	0	2,069	74	2,143	0	0	0
8:15 to 9:15	0	0	0	1,944	70	2,014	0	0	0
8:30 to 9:30	0	0	0	1,802	68	1,870	0	0	0
8:45 to 9:45	2	0	2	1,711	73	1,784	0	0	0
9:00 to 10:00	3	0	3	1,541	63	1,604	0	0	0
AM Totals	**3**	**1**	**4**	**7,083**	**260**	**7,343**	**0**	**0**	**0**
15:00 to 16:00	0	0	0	1,535	56	1,591	0	0	0
15:15 to 16:15	0	0	0	1,513	52	1,565	0	0	0
15:30 to 16:30	0	0	0	1,524	52	1,576	0	0	0
15:45 to 16:45	0	0	0	1,518	43	1,561	0	0	0
16:00 to 17:00	0	0	0	1,486	35	1,521	0	0	0
16:15 to 17:15	0	0	0	1,482	32	1,514	0	0	0
16:30 to 17:30	0	0	0	1,416	25	1,441	0	0	0
16:45 to 17:45	0	0	0	1,448	23	1,471	0	0	0
17:00 to 18:00	0	0	0	1,429	19	1,448	0	0	0
17:15 to 18:15	0	0	0	1,392	16	1,408	0	0	0
17:30 to 18:30	0	0	0	1,335	17	1,352	0	0	0
17:45 to 18:45	0	0	0	1,241	14	1,255	0	0	0
18:00 to 19:00	0	0	0	1,157	12	1,169	0	0	0
PM Totals	**0**	**0**	**0**	**5,607**	**122**	**5,729**	**0**	**0**	**0**

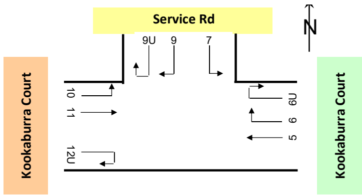
Approach	Lookout Rd									Service Rd								
Direction	Direction 8 (Through)			Direction 9 (Right Turn)			Direction 9U (U Turn)			Direction 10 (Left Turn)			Direction 12 (Right Turn)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	879	41	920	149	1	150	0	0	0	19	0	19	0	0	0	0	0	0
6:15 to 7:15	1,023	51	1,074	166	1	167	0	0	0	17	0	17	0	0	0	0	0	0
6:30 to 7:30	1,130	53	1,183	142	1	143	0	0	0	18	0	18	0	0	0	0	0	0
6:45 to 7:45	1,214	56	1,270	157	1	158	0	0	0	28	0	28	0	0	0	0	0	0
7:00 to 8:00	1,301	59	1,360	188	0	188	0	0	0	31	0	31	0	0	0	0	0	0
7:15 to 8:15	1,399	68	1,467	212	0	212	0	0	0	37	0	37	0	0	0	0	0	0
7:30 to 8:30	1,484	67	1,551	227	0	227	0	0	0	44	0	44	0	0	0	0	0	0
7:45 to 8:45	1,489	67	1,556	207	2	209	0	0	0	42	0	42	0	0	0	0	0	0
8:00 to 9:00	1,434	62	1,496	158	3	161	0	0	0	37	0	37	0	0	0	0	0	0
8:15 to 9:15	1,473	57	1,530	142	5	147	0	0	0	38	0	38	0	0	0	0	0	0
8:30 to 9:30	1,478	54	1,532	126	5	131	0	0	0	39	0	39	0	0	0	0	0	0
8:45 to 9:45	1,469	56	1,525	121	3	124	0	0	0	43	0	43	0	0	0	0	0	0
9:00 to 10:00	1,428	50	1,478	122	2	124	0	0	0	55	0	55	0	0	0	0	0	0
AM Totals	**5,042**	**212**	**5,254**	**617**	**6**	**623**	**0**	**0**	**0**	**142**	**0**	**142**	**0**	**0**	**0**	**0**	**0**	**0**
15:00 to 16:00	1,984	64	2,048	64	1	65	0	0	0	172	1	173	0	0	0	0	0	0
15:15 to 16:15	2,054	58	2,112	62	1	63	0	0	0	187	1	188	0	0	0	0	0	0
15:30 to 16:30	2,030	53	2,083	58	0	58	0	0	0	193	1	194	0	0	0	0	0	0
15:45 to 16:45	2,075	42	2,117	50	0	50	0	0	0	183	1	184	0	0	0	0	0	0
16:00 to 17:00	2,097	34	2,131	43	0	43	0	0	0	166	0	166	0	0	0	0	0	0
16:15 to 17:15	2,065	26	2,091	42	0	42	0	0	0	180	0	180	0	0	0	0	0	0
16:30 to 17:30	2,139	25	2,164	45	0	45	0	0	0	175	0	175	0	0	0	0	0	0
16:45 to 17:45	2,104	22	2,126	46	0	46	0	0	0	195	0	195	0	0	0	0	0	0
17:00 to 18:00	2,183	21	2,204	49	0	49	0	0	0	172	0	172	0	0	0	0	0	0
17:15 to 18:15	2,087	22	2,109	41	0	41	0	0	0	143	0	143	0	0	0	0	0	0
17:30 to 18:30	1,904	15	1,919	42	0	42	0	0	0	116	0	116	0	0	0	0	0	0
17:45 to 18:45	1,694	18	1,712	35	0	35	0	0	0	66	0	66	0	0	0	0	0	0
18:00 to 19:00	1,418	18	1,436	27	0	27	0	0	0	53	0	53	0	0	0	0	0	0
PM Totals	**7,682**	**137**	**7,819**	**183**	**1**	**184**	**0**	**0**	**0**	**563**	**1**	**564**	**0**	**0**	**0**	**0**	**0**	**0**

Job No.	: N4852
Client	: GTA
Suburb	: John Hunter Hospital
Location	: 3. Lookout Rd / Russell Rd
Day/Date	: Thurs, 21st March 2019
Weather	: Fine
Description	: Classified Intersection Count
	: Hourly Summary



Approach	Lookout Rd									Russell Rd								
Direction	Direction 2 (Through)			Direction 3 (Right Turn)			Direction 3U (U Turn)			Direction 4 (Left Turn)			Direction 6 (Right Turn)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	1,152	59	**1,211**	286	10	**296**	0	0	**0**	282	6	**288**	44	3	**47**	0	0	**0**
6:15 to 7:15	1,204	55	**1,259**	364	11	**375**	0	0	**0**	350	9	**359**	60	2	**62**	0	0	**0**
6:30 to 7:30	1,350	55	**1,405**	432	10	**442**	0	0	**0**	387	11	**398**	64	3	**67**	0	0	**0**
6:45 to 7:45	1,413	45	**1,458**	549	14	**563**	0	0	**0**	437	17	**454**	75	1	**76**	0	0	**0**
7:00 to 8:00	1,421	37	**1,458**	597	13	**610**	0	0	**0**	525	20	**545**	82	2	**84**	0	0	**0**
7:15 to 8:15	1,494	38	**1,532**	672	20	**692**	0	0	**0**	575	19	**594**	81	3	**84**	0	0	**0**
7:30 to 8:30	1,482	37	**1,519**	698	23	**721**	0	0	**0**	619	16	**635**	82	2	**84**	0	0	**0**
7:45 to 8:45	1,426	35	**1,461**	652	20	**672**	0	0	**0**	598	14	**612**	87	2	**89**	0	0	**0**
8:00 to 9:00	1,387	47	**1,434**	711	24	**735**	0	0	**0**	535	12	**547**	92	3	**95**	0	0	**0**
8:15 to 9:15	1,288	45	**1,333**	654	23	**677**	0	0	**0**	503	15	**518**	90	3	**93**	0	0	**0**
8:30 to 9:30	1,177	45	**1,222**	665	21	**686**	0	0	**0**	481	15	**496**	95	5	**100**	0	0	**0**
8:45 to 9:45	1,117	53	**1,170**	634	19	**653**	0	0	**0**	451	13	**464**	86	7	**93**	0	0	**0**
9:00 to 10:00	1,052	47	**1,099**	534	15	**549**	0	0	**0**	418	12	**430**	86	5	**91**	0	0	**0**
AM Totals	**5,012**	**190**	**5,202**	**2,128**	**62**	**2,190**	**0**	**0**	**0**	**1,760**	**50**	**1,810**	**304**	**13**	**317**	**0**	**0**	**0**
15:00 to 16:00	1,187	39	**1,226**	532	14	**546**	0	0	**0**	531	26	**557**	90	5	**95**	0	0	**0**
15:15 to 16:15	1,158	39	**1,197**	510	13	**523**	0	0	**0**	541	24	**565**	93	1	**94**	0	0	**0**
15:30 to 16:30	1,170	39	**1,209**	507	16	**523**	0	0	**0**	576	22	**598**	96	1	**97**	0	0	**0**
15:45 to 16:45	1,173	32	**1,205**	468	16	**484**	0	0	**0**	575	12	**587**	92	2	**94**	0	0	**0**
16:00 to 17:00	1,202	28	**1,230**	373	9	**382**	0	0	**0**	566	11	**577**	93	1	**94**	0	0	**0**
16:15 to 17:15	1,279	24	**1,303**	315	7	**322**	0	0	**0**	588	8	**596**	87	2	**89**	0	0	**0**
16:30 to 17:30	1,280	18	**1,298**	256	5	**261**	0	0	**0**	574	7	**581**	81	2	**83**	0	0	**0**
16:45 to 17:45	1,319	17	**1,336**	300	3	**303**	0	0	**0**	611	7	**618**	90	2	**92**	0	0	**0**
17:00 to 18:00	1,224	10	**1,234**	382	6	**388**	0	0	**0**	614	6	**620**	94	2	**96**	0	0	**0**
17:15 to 18:15	1,089	10	**1,099**	463	5	**468**	0	0	**0**	594	8	**602**	97	1	**98**	0	0	**0**
17:30 to 18:30	935	10	**945**	528	6	**534**	0	0	**0**	564	8	**572**	96	1	**97**	0	0	**0**
17:45 to 18:45	799	7	**806**	497	8	**505**	0	0	**0**	485	8	**493**	90	1	**91**	0	0	**0**
18:00 to 19:00	730	6	**736**	466	7	**473**	0	0	**0**	430	7	**437**	82	1	**83**	0	0	**0**
PM Totals	**4,343**	**83**	**4,426**	**1,753**	**36**	**1,789**	**0**	**0**	**0**	**2,141**	**50**	**2,191**	**359**	**9**	**368**	**0**	**0**	**0**

Approach	Lookout Rd								
Direction	Direction 7 (Left Turn)			Direction 8 (Through)			Direction 9U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	28	2	**30**	714	45	**759**	0	0	**0**
6:15 to 7:15	38	3	**41**	783	49	**832**	0	0	**0**
6:30 to 7:30	42	4	**46**	864	49	**913**	0	0	**0**
6:45 to 7:45	56	3	**59**	882	46	**928**	0	0	**0**
7:00 to 8:00	61	2	**63**	942	40	**982**	0	0	**0**
7:15 to 8:15	60	1	**61**	1,008	46	**1,054**	0	0	**0**
7:30 to 8:30	59	1	**60**	1,050	48	**1,098**	0	0	**0**
7:45 to 8:45	61	1	**62**	1,062	51	**1,113**	0	0	**0**
8:00 to 9:00	61	1	**62**	1,019	53	**1,072**	0	0	**0**
8:15 to 9:15	71	3	**74**	1,116	50	**1,166**	0	0	**0**
8:30 to 9:30	67	3	**70**	1,093	45	**1,138**	0	0	**0**
8:45 to 9:45	58	4	**62**	1,127	46	**1,173**	0	0	**0**
9:00 to 10:00	52	4	**56**	1,129	40	**1,169**	0	0	**0**
AM Totals	**202**	**9**	**211**	**3,804**	**178**	**3,982**	**0**	**0**	**0**
15:00 to 16:00	76	1	**77**	1,531	39	**1,570**	0	0	**0**
15:15 to 16:15	71	0	**71**	1,587	35	**1,622**	0	0	**0**
15:30 to 16:30	63	0	**63**	1,545	30	**1,575**	0	0	**0**
15:45 to 16:45	53	0	**53**	1,555	26	**1,581**	0	0	**0**
16:00 to 17:00	48	0	**48**	1,605	23	**1,628**	0	0	**0**
16:15 to 17:15	50	0	**50**	1,554	18	**1,572**	0	0	**0**
16:30 to 17:30	64	0	**64**	1,599	18	**1,617**	0	0	**0**
16:45 to 17:45	68	0	**68**	1,545	16	**1,561**	0	0	**0**
17:00 to 18:00	77	0	**77**	1,561	15	**1,576**	0	0	**0**
17:15 to 18:15	80	0	**80**	1,477	13	**1,490**	0	0	**0**
17:30 to 18:30	70	0	**70**	1,333	7	**1,340**	0	0	**0**
17:45 to 18:45	71	0	**71**	1,204	9	**1,213**	0	0	**0**
18:00 to 19:00	67	0	**67**	1,004	10	**1,014**	0	0	**0**
PM Totals	**268**	**1**	**269**	**5,701**	**87**	**5,788**	**0**	**0**	**0**



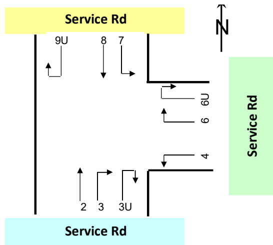
Job No. : N4852
Client : GTA
Suburb : John Hunter Hospital
Location : 4. Internal Intersection 1

Day/Date : Thurs, 21st March 2019
Weather : Fine
Description : Classified Intersection Count
: Hourly Summary

Approach	Kookaburra Court								
Direction	Direction 5 (Through)			Direction 6 (Right Turn)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	777	17	**794**	0	0	**0**	0	0	**0**
6:15 to 7:15	888	16	**904**	0	0	**0**	0	0	**0**
6:30 to 7:30	995	18	**1,013**	0	0	**0**	0	0	**0**
6:45 to 7:45	1,001	22	**1,023**	0	0	**0**	0	0	**0**
7:00 to 8:00	1,044	16	**1,060**	0	0	**0**	0	0	**0**
7:15 to 8:15	1,142	19	**1,161**	0	0	**0**	0	0	**0**
7:30 to 8:30	1,189	22	**1,211**	0	0	**0**	0	0	**0**
7:45 to 8:45	1,170	21	**1,191**	0	0	**0**	0	0	**0**
8:00 to 9:00	1,102	23	**1,125**	0	0	**0**	0	0	**0**
8:15 to 9:15	1,039	25	**1,064**	0	0	**0**	0	0	**0**
8:30 to 9:30	949	20	**969**	0	0	**0**	0	0	**0**
8:45 to 9:45	871	20	**891**	0	0	**0**	0	0	**0**
9:00 to 10:00	757	20	**777**	0	0	**0**	0	0	**0**
AM Totals	**3,680**	**76**	**3,756**	**0**	**0**	**0**	**0**	**0**	**0**
15:00 to 16:00	354	14	**368**	0	0	**0**	0	0	**0**
15:15 to 16:15	341	16	**357**	0	0	**0**	0	0	**0**
15:30 to 16:30	331	16	**347**	0	0	**0**	0	0	**0**
15:45 to 16:45	316	17	**333**	0	0	**0**	0	0	**0**
16:00 to 17:00	308	16	**324**	0	0	**0**	0	0	**0**
16:15 to 17:15	296	15	**311**	0	0	**0**	0	0	**0**
16:30 to 17:30	277	16	**293**	0	0	**0**	0	0	**0**
16:45 to 17:45	262	16	**278**	0	0	**0**	0	0	**0**
17:00 to 18:00	254	17	**271**	0	0	**0**	0	0	**0**
17:15 to 18:15	233	18	**251**	0	0	**0**	0	0	**0**
17:30 to 18:30	228	18	**246**	0	0	**0**	0	0	**0**
17:45 to 18:45	222	16	**238**	0	0	**0**	0	0	**0**
18:00 to 19:00	213	20	**233**	0	0	**0**	0	0	**0**
PM Totals	**1,129**	**67**	**1,196**	**0**	**0**	**0**	**0**	**0**	**0**

Approach	Service Rd									Kookaburra Court								
Direction	Direction 7 (Left Turn)			Direction 9 (Right Turn)			Direction 9U (U Turn)			Direction 10 (Left Turn)			Direction 11 (Through)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	1	1	**2**	0	0	**0**	0	0	**0**	46	0	**46**	118	16	**134**	0	0	**0**
6:15 to 7:15	1	1	**2**	0	0	**0**	0	0	**0**	43	0	**43**	131	15	**146**	0	0	**0**
6:30 to 7:30	2	1	**3**	0	0	**0**	0	0	**0**	37	0	**37**	209	18	**227**	0	0	**0**
6:45 to 7:45	6	0	**6**	0	0	**0**	0	0	**0**	25	0	**25**	283	24	**307**	0	0	**0**
7:00 to 8:00	7	0	**7**	0	0	**0**	0	0	**0**	29	0	**29**	298	22	**320**	0	0	**0**
7:15 to 8:15	7	0	**7**	0	0	**0**	0	0	**0**	32	0	**32**	316	24	**340**	0	0	**0**
7:30 to 8:30	7	1	**8**	0	0	**0**	0	0	**0**	26	0	**26**	286	22	**308**	0	0	**0**
7:45 to 8:45	2	1	**3**	0	0	**0**	0	0	**0**	33	0	**33**	236	22	**258**	0	0	**0**
8:00 to 9:00	2	1	**3**	0	0	**0**	0	0	**0**	26	0	**26**	246	25	**271**	0	0	**0**
8:15 to 9:15	4	1	**5**	0	0	**0**	0	0	**0**	26	0	**26**	267	24	**291**	0	0	**0**
8:30 to 9:30	4	0	**4**	0	0	**0**	0	0	**0**	26	0	**26**	268	28	**296**	0	0	**0**
8:45 to 9:45	8	0	**8**	0	0	**0**	0	0	**0**	19	0	**19**	271	26	**297**	0	0	**0**
9:00 to 10:00	8	0	**8**	0	0	**0**	0	0	**0**	14	0	**14**	288	25	**313**	0	0	**0**
AM Totals	**18**	**2**	**20**	**0**	**0**	**0**	**0**	**0**	**0**	**115**	**0**	**115**	**950**	**88**	**1,038**	**0**	**0**	**0**
15:00 to 16:00	39	0	**39**	0	0	**0**	0	0	**0**	1	0	**1**	909	17	**926**	3	0	**3**
15:15 to 16:15	49	0	**49**	0	0	**0**	0	0	**0**	2	0	**2**	941	15	**956**	3	0	**3**
15:30 to 16:30	47	0	**47**	0	0	**0**	0	0	**0**	1	0	**1**	922	17	**939**	3	0	**3**
15:45 to 16:45	41	0	**41**	0	0	**0**	0	0	**0**	1	0	**1**	907	17	**924**	3	0	**3**
16:00 to 17:00	41	0	**41**	0	0	**0**	0	0	**0**	1	0	**1**	916	16	**932**	1	0	**1**
16:15 to 17:15	41	0	**41**	0	0	**0**	0	0	**0**	0	0	**0**	881	14	**895**	1	0	**1**
16:30 to 17:30	37	0	**37**	0	0	**0**	0	0	**0**	1	0	**1**	897	16	**913**	1	0	**1**
16:45 to 17:45	30	0	**30**	0	0	**0**	0	0	**0**	1	0	**1**	882	15	**897**	1	0	**1**
17:00 to 18:00	25	0	**25**	0	0	**0**	0	0	**0**	1	0	**1**	781	17	**798**	0	0	**0**
17:15 to 18:15	10	0	**10**	0	0	**0**	0	0	**0**	1	0	**1**	720	18	**738**	0	0	**0**
17:30 to 18:30	6	0	**6**	0	0	**0**	0	0	**0**	1	0	**1**	601	18	**619**	1	0	**1**
17:45 to 18:45	4	0	**4**	0	0	**0**	0	0	**0**	2	0	**2**	494	18	**512**	2	0	**2**
18:00 to 19:00	2	0	**2**	0	0	**0**	0	0	**0**	2	0	**2**	467	17	**484**	2	0	**2**
PM Totals	**107**	**0**	**107**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**5**	**3,073**	**67**	**3,140**	**6**	**0**	**6**

Job No.	: N4852
Client	: GTA
Suburb	: John Hunter Hospital
Location	: 5. Internal Intersection 2
Day/Date	: Thurs, 21st March 2019
Weather	: Fine
Description	: Classified Intersection Count
	: Hourly Summary

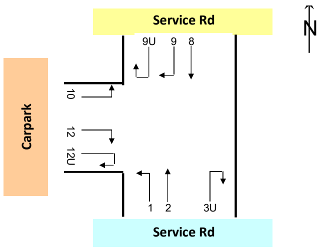


Approach	Service Rd									Service Rd								
Direction	Direction 2 (Through)			Direction 3 (Right Turn)			Direction 3U (U Turn)			Direction 4 (Left Turn)			Direction 6 (Right Turn)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	29	0	**29**	135	0	**135**	0	0	**0**	18	2	**20**	12	0	**12**	0	0	**0**
6:15 to 7:15	29	0	**29**	131	0	**131**	0	0	**0**	23	1	**24**	9	0	**9**	0	0	**0**
6:30 to 7:30	27	0	**27**	97	0	**97**	1	0	**1**	26	0	**26**	8	0	**8**	0	0	**0**
6:45 to 7:45	30	1	**31**	78	0	**78**	1	0	**1**	32	0	**32**	14	0	**14**	0	0	**0**
7:00 to 8:00	24	1	**25**	67	0	**67**	1	0	**1**	40	0	**40**	16	0	**16**	0	0	**0**
7:15 to 8:15	34	1	**35**	75	0	**75**	1	0	**1**	39	0	**39**	21	0	**21**	0	0	**0**
7:30 to 8:30	35	1	**36**	88	0	**88**	0	0	**0**	42	0	**42**	27	0	**27**	0	0	**0**
7:45 to 8:45	31	0	**31**	91	0	**91**	0	0	**0**	42	0	**42**	27	0	**27**	0	0	**0**
8:00 to 9:00	28	0	**28**	104	0	**104**	1	0	**1**	39	1	**40**	24	0	**24**	0	0	**0**
8:15 to 9:15	22	0	**22**	113	0	**113**	2	0	**2**	48	2	**50**	23	0	**23**	0	0	**0**
8:30 to 9:30	23	0	**23**	125	0	**125**	2	0	**2**	56	3	**59**	24	0	**24**	0	0	**0**
8:45 to 9:45	21	0	**21**	136	0	**136**	2	0	**2**	58	3	**61**	27	0	**27**	0	0	**0**
9:00 to 10:00	24	0	**24**	133	0	**133**	2	0	**2**	64	2	**66**	30	0	**30**	0	0	**0**
AM Totals	**105**	**1**	**106**	**439**	**0**	**439**	**4**	**0**	**4**	**161**	**5**	**166**	**82**	**0**	**82**	**0**	**0**	**0**
15:00 to 16:00	90	0	**90**	70	0	**70**	1	0	**1**	144	0	**144**	73	1	**74**	0	0	**0**
15:15 to 16:15	100	0	**100**	68	0	**68**	1	0	**1**	137	0	**137**	78	1	**79**	0	0	**0**
15:30 to 16:30	123	0	**123**	61	0	**61**	2	0	**2**	111	0	**111**	49	1	**50**	0	0	**0**
15:45 to 16:45	140	0	**140**	61	0	**61**	1	0	**1**	83	0	**83**	42	0	**42**	0	0	**0**
16:00 to 17:00	149	0	**149**	51	0	**51**	1	0	**1**	73	0	**73**	43	0	**43**	0	0	**0**
16:15 to 17:15	162	0	**162**	38	0	**38**	1	0	**1**	74	0	**74**	46	0	**46**	0	0	**0**
16:30 to 17:30	148	0	**148**	33	0	**33**	0	0	**0**	71	0	**71**	46	0	**46**	0	0	**0**
16:45 to 17:45	139	0	**139**	25	0	**25**	0	0	**0**	63	0	**63**	45	0	**45**	0	0	**0**
17:00 to 18:00	99	0	**99**	26	0	**26**	0	0	**0**	56	0	**56**	36	0	**36**	0	0	**0**
17:15 to 18:15	76	0	**76**	38	0	**38**	0	0	**0**	52	0	**52**	27	0	**27**	0	0	**0**
17:30 to 18:30	57	0	**57**	37	0	**37**	0	0	**0**	47	0	**47**	28	0	**28**	0	0	**0**
17:45 to 18:45	30	0	**30**	36	0	**36**	1	0	**1**	47	0	**47**	21	0	**21**	0	0	**0**
18:00 to 19:00	24	0	**24**	37	0	**37**	1	0	**1**	43	0	**43**	24	0	**24**	0	0	**0**
PM Totals	**362**	**0**	**362**	**184**	**0**	**184**	**3**	**0**	**3**	**316**	**0**	**316**	**176**	**1**	**177**	**0**	**0**	**0**

Approach	Service Rd								
Direction	Direction 7 (Left Turn)			Direction 8 (Through)			Direction 9U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	88	0	**88**	35	1	**36**	0	0	**0**
6:15 to 7:15	82	0	**82**	40	1	**41**	0	0	**0**
6:30 to 7:30	58	0	**58**	51	1	**52**	0	0	**0**
6:45 to 7:45	39	0	**39**	71	1	**72**	0	0	**0**
7:00 to 8:00	46	0	**46**	88	1	**89**	0	0	**0**
7:15 to 8:15	52	0	**52**	129	1	**130**	0	0	**0**
7:30 to 8:30	55	0	**55**	140	1	**141**	0	0	**0**
7:45 to 8:45	56	2	**58**	127	1	**128**	0	0	**0**
8:00 to 9:00	54	3	**57**	109	0	**109**	0	0	**0**
8:15 to 9:15	61	3	**64**	76	2	**78**	0	0	**0**
8:30 to 9:30	56	3	**59**	66	2	**68**	0	0	**0**
8:45 to 9:45	62	1	**63**	62	2	**64**	0	0	**0**
9:00 to 10:00	67	0	**67**	55	2	**57**	0	0	**0**
AM Totals	**255**	**3**	**258**	**287**	**4**	**291**	**0**	**0**	**0**
15:00 to 16:00	36	1	**37**	50	0	**50**	0	0	**0**
15:15 to 16:15	35	1	**36**	50	0	**50**	0	0	**0**
15:30 to 16:30	28	0	**28**	53	0	**53**	0	0	**0**
15:45 to 16:45	18	0	**18**	69	0	**69**	0	0	**0**
16:00 to 17:00	13	0	**13**	85	0	**85**	0	0	**0**
16:15 to 17:15	11	0	**11**	91	0	**91**	0	0	**0**
16:30 to 17:30	10	0	**10**	98	0	**98**	2	0	**2**
16:45 to 17:45	12	0	**12**	87	0	**87**	2	0	**2**
17:00 to 18:00	13	0	**13**	70	0	**70**	2	0	**2**
17:15 to 18:15	14	0	**14**	58	0	**58**	2	0	**2**
17:30 to 18:30	18	0	**18**	46	0	**46**	0	0	**0**
17:45 to 18:45	17	0	**17**	40	0	**40**	0	0	**0**
18:00 to 19:00	16	0	**16**	36	0	**36**	0	0	**0**
PM Totals	**78**	**1**	**79**	**241**	**0**	**241**	**2**	**0**	**2**

Job No. : N4852
Client : GTA
Suburb : John Hunter Hospital
Location : 6. Internal Intersection 3

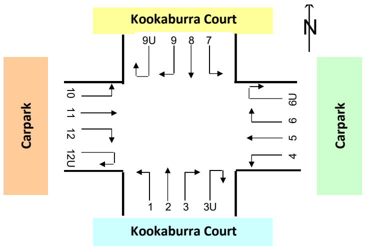
Day/Date : Thurs, 21st March 2019
Weather : Fine
Description : Classified Intersection Count
: Hourly Summary



Approach	Service Rd								
Direction	Direction 1 (Left Turn)			Direction 2 (Through)			Direction 3U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	23	0	**23**	161	0	**161**	0	0	**0**
6:15 to 7:15	26	0	**26**	156	0	**156**	0	0	**0**
6:30 to 7:30	40	0	**40**	122	0	**122**	0	0	**0**
6:45 to 7:45	41	0	**41**	106	1	**107**	0	0	**0**
7:00 to 8:00	51	0	**51**	89	1	**90**	0	0	**0**
7:15 to 8:15	63	0	**63**	107	1	**108**	0	0	**0**
7:30 to 8:30	76	0	**76**	121	1	**122**	0	0	**0**
7:45 to 8:45	80	0	**80**	118	0	**118**	0	0	**0**
8:00 to 9:00	75	0	**75**	130	0	**130**	0	0	**0**
8:15 to 9:15	73	0	**73**	135	0	**135**	0	0	**0**
8:30 to 9:30	62	0	**62**	146	0	**146**	0	0	**0**
8:45 to 9:45	63	0	**63**	158	0	**158**	0	0	**0**
9:00 to 10:00	80	0	**80**	156	0	**156**	0	0	**0**
AM Totals	**229**	**0**	**229**	**536**	**1**	**537**	**0**	**0**	**0**
15:00 to 16:00	21	0	**21**	159	0	**159**	0	0	**0**
15:15 to 16:15	19	0	**19**	164	0	**164**	0	0	**0**
15:30 to 16:30	18	0	**18**	179	0	**179**	0	0	**0**
15:45 to 16:45	16	0	**16**	197	0	**197**	0	0	**0**
16:00 to 17:00	11	0	**11**	195	0	**195**	0	0	**0**
16:15 to 17:15	9	0	**9**	195	0	**195**	0	0	**0**
16:30 to 17:30	8	0	**8**	175	0	**175**	0	0	**0**
16:45 to 17:45	5	0	**5**	156	0	**156**	0	0	**0**
17:00 to 18:00	4	0	**4**	119	0	**119**	0	0	**0**
17:15 to 18:15	2	0	**2**	107	0	**107**	0	0	**0**
17:30 to 18:30	0	0	**0**	87	0	**87**	0	0	**0**
17:45 to 18:45	0	0	**0**	61	0	**61**	0	0	**0**
18:00 to 19:00	1	0	**1**	56	0	**56**	0	0	**0**
PM Totals	**37**	**0**	**37**	**529**	**0**	**529**	**0**	**0**	**0**

Approach	Service Rd									Carpark								
Direction	Direction 8 (Through)			Direction 9 (Right Turn)			Direction 9U (U Turn)			Direction 10 (Left Turn)			Direction 12 (Right Turn)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	45	3	**48**	13	0	**13**	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**
6:15 to 7:15	53	3	**56**	15	0	**15**	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**
6:30 to 7:30	65	1	**66**	18	0	**18**	0	0	**0**	0	0	**0**	1	0	**1**	0	0	**0**
6:45 to 7:45	92	1	**93**	17	0	**17**	0	0	**0**	1	0	**1**	1	0	**1**	0	0	**0**
7:00 to 8:00	102	1	**103**	27	0	**27**	0	0	**0**	2	0	**2**	1	0	**1**	0	0	**0**
7:15 to 8:15	133	1	**134**	36	0	**36**	0	0	**0**	2	0	**2**	0	0	**0**	0	0	**0**
7:30 to 8:30	144	1	**145**	38	0	**38**	0	0	**0**	2	0	**2**	0	0	**0**	0	0	**0**
7:45 to 8:45	127	1	**128**	42	0	**42**	0	0	**0**	3	0	**3**	0	0	**0**	0	0	**0**
8:00 to 9:00	118	0	**118**	30	0	**30**	0	0	**0**	2	0	**2**	1	0	**1**	0	0	**0**
8:15 to 9:15	98	0	**98**	27	0	**27**	0	0	**0**	3	0	**3**	1	0	**1**	0	0	**0**
8:30 to 9:30	97	0	**97**	27	0	**27**	0	0	**0**	3	0	**3**	1	0	**1**	0	0	**0**
8:45 to 9:45	92	0	**92**	29	0	**29**	0	0	**0**	2	0	**2**	1	0	**1**	0	0	**0**
9:00 to 10:00	95	1	**96**	26	0	**26**	0	0	**0**	2	0	**2**	0	0	**0**	0	0	**0**
AM Totals	**360**	**5**	**365**	**96**	**0**	**96**	**0**	**0**	**0**	**6**	**0**	**6**	**3**	**0**	**3**	**0**	**0**	**0**
15:00 to 16:00	193	4	**197**	3	0	**3**	0	0	**0**	1	0	**1**	2	0	**2**	0	0	**0**
15:15 to 16:15	188	1	**189**	2	0	**2**	0	0	**0**	1	0	**1**	4	0	**4**	0	0	**0**
15:30 to 16:30	166	0	**166**	4	0	**4**	0	0	**0**	4	0	**4**	3	0	**3**	0	0	**0**
15:45 to 16:45	151	0	**151**	7	0	**7**	0	0	**0**	3	0	**3**	3	0	**3**	0	0	**0**
16:00 to 17:00	158	0	**158**	7	0	**7**	0	0	**0**	3	0	**3**	2	0	**2**	0	0	**0**
16:15 to 17:15	159	0	**159**	7	0	**7**	0	0	**0**	4	0	**4**	0	0	**0**	0	0	**0**
16:30 to 17:30	165	0	**165**	5	0	**5**	0	0	**0**	2	0	**2**	0	0	**0**	0	0	**0**
16:45 to 17:45	148	0	**148**	2	0	**2**	0	0	**0**	2	0	**2**	0	0	**0**	0	0	**0**
17:00 to 18:00	121	0	**121**	2	0	**2**	0	0	**0**	2	0	**2**	1	0	**1**	0	0	**0**
17:15 to 18:15	110	0	**110**	3	0	**3**	0	0	**0**	3	0	**3**	1	0	**1**	0	0	**0**
17:30 to 18:30	89	0	**89**	4	0	**4**	0	0	**0**	5	0	**5**	1	0	**1**	0	0	**0**
17:45 to 18:45	83	0	**83**	3	0	**3**	0	0	**0**	6	0	**6**	1	0	**1**	0	0	**0**
18:00 to 19:00	78	0	**78**	4	0	**4**	0	0	**0**	6	0	**6**	0	0	**0**	0	0	**0**
PM Totals	**550**	**4**	**554**	**16**	**0**	**16**	**0**	**0**	**0**	**12**	**0**	**12**	**5**	**0**	**5**	**0**	**0**	**0**

Job No.	: N4852
Client	: GTA
Suburb	: John Hunter Hospital
Location	: 7. Internal Intersection 4
Day/Date	: Thurs, 21st March 2019
Weather	: Fine
Description	: Classified Intersection Count
	: Hourly Summary

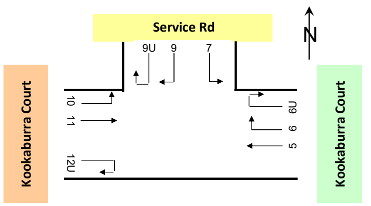


Approach	Kookaburra Court												Carpark											
Direction	Direction 1 (Left Turn)			Direction 2 (Through)			Direction 3 (Right Turn)			Direction 3U (U Turn)			Direction 4 (Left Turn)			Direction 5 (Through)			Direction 6 (Right Turn)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
6:15 to 7:15	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
6:30 to 7:30	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0
6:45 to 7:45	1	0	1	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0
7:00 to 8:00	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0
7:15 to 8:15	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0
7:30 to 8:30	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0
7:45 to 8:45	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0
8:00 to 9:00	0	0	0	0	0	0	0	0	0	0	0	0	12	0	12	0	0	0	0	0	0	0	0	0
8:15 to 9:15	0	0	0	0	0	0	0	0	0	0	0	0	15	0	15	0	0	0	0	0	0	0	0	0
8:30 to 9:30	0	0	0	0	0	0	0	0	0	0	0	0	17	0	17	0	0	0	0	0	0	0	0	0
8:45 to 9:45	0	0	0	0	0	0	0	0	0	0	0	0	22	0	22	0	0	0	0	0	0	0	0	0
9:00 to 10:00	0	0	0	0	0	0	0	0	0	0	0	0	23	0	23	0	0	0	0	0	0	0	0	0
AM Totals	1	0	1	0	0	0	0	0	0	0	0	0	38	0	38	0	0	0	0	0	0	0	0	0
15:00 to 16:00	0	0	0	0	0	0	0	0	0	0	0	0	79	0	79	0	0	0	0	0	0	0	0	0
15:15 to 16:15	0	0	0	0	0	0	0	0	0	0	0	0	77	0	77	0	0	0	0	0	0	0	0	0
15:30 to 16:30	0	0	0	0	0	0	0	0	0	0	0	0	80	0	80	0	0	0	0	0	0	0	0	0
15:45 to 16:45	0	0	0	0	0	0	0	0	0	0	0	0	74	0	74	0	0	0	0	0	0	0	0	0
16:00 to 17:00	0	0	0	0	0	0	0	0	0	0	0	0	74	0	74	0	0	0	0	0	0	0	0	0
16:15 to 17:15	0	0	0	0	0	0	0	0	0	0	0	0	77	0	77	0	0	0	0	0	0	0	0	0
16:30 to 17:30	0	0	0	0	0	0	0	0	0	0	0	0	66	0	66	0	0	0	0	0	0	0	0	0
16:45 to 17:45	0	0	0	0	0	0	0	0	0	0	0	0	52	0	52	0	0	0	0	0	0	0	0	0
17:00 to 18:00	0	0	0	0	0	0	0	0	0	0	0	0	40	0	40	0	0	0	0	0	0	0	0	0
17:15 to 18:15	0	0	0	1	0	1	0	0	0	0	0	0	28	0	28	0	0	0	0	0	0	0	0	0
17:30 to 18:30	0	0	0	1	0	1	0	0	0	0	0	0	25	0	25	0	0	0	0	0	0	0	0	0
17:45 to 18:45	0	0	0	1	0	1	0	0	0	0	0	0	26	0	26	0	0	0	0	0	0	0	0	0
18:00 to 19:00	0	0	0	1	0	1	0	0	0	0	0	0	25	0	25	0	0	0	0	0	0	0	0	0
PM Totals	0	0	0	1	0	1	0	0	0	0	0	0	218	0	218	0	0	0	0	0	0	0	0	0

Approach	Kookaburra Court												Carpark											
Direction	Direction 7 (Left Turn)			Direction 8 (Through)			Direction 9 (Right Turn)			Direction 9U (U Turn)			Direction 10 (Left Turn)			Direction 11 (Through)			Direction 12 (Right Turn)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	0	0	0	12	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 to 7:15	0	0	0	15	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 to 7:30	0	0	0	25	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 to 7:45	0	0	0	31	2	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 to 8:00	0	0	0	41	2	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 to 8:15	0	0	0	46	3	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 to 8:30	0	0	0	47	3	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 to 8:45	0	0	0	43	1	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 to 9:00	0	0	0	46	1	47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 to 9:15	0	0	0	55	0	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 to 9:30	0	0	0	62	1	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 to 9:45	0	0	0	68	2	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 to 10:00	0	0	0	72	2	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Totals	0	0	0	171	5	176	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 to 16:00	0	0	0	273	2	275	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
15:15 to 16:15	0	0	0	282	2	284	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 to 16:30	0	0	0	296	2	298	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 to 16:45	0	0	0	292	2	294	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 to 17:00	0	0	0	283	1	284	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15 to 17:15	0	0	0	260	0	260	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30 to 17:30	0	0	0	250	0	250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 to 17:45	0	0	0	296	0	296	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00 to 18:00	0	0	0	256	0	256	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 to 18:15	0	0	0	247	0	247	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 to 18:30	0	0	0	199	0	199	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 to 18:45	0	0	0	116	0	116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00 to 19:00	0	0	0	96	0	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Totals	0	0	0	908	3	911	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0

Job No. : N4852
Client : GTA
Suburb : John Hunter Hospital
Location : 8. Internal Intersection 5

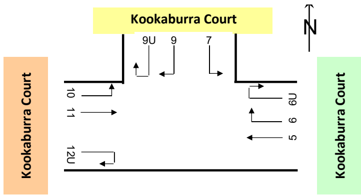
Day/Date : Thurs, 21st March 2019
Weather : Fine
Description : Classified Intersection Count
: Hourly Summary



Approach	Kookaburra Court								
Direction	Direction 5 (Through)			Direction 6 (Right Turn)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	1	1	2	5	0	5	0	0	0
6:15 to 7:15	2	1	3	3	0	3	0	0	0
6:30 to 7:30	2	2	4	5	0	5	0	0	0
6:45 to 7:45	2	2	4	4	0	4	0	0	0
7:00 to 8:00	5	1	6	5	0	5	0	0	0
7:15 to 8:15	5	1	6	7	0	7	0	0	0
7:30 to 8:30	5	0	5	5	0	5	0	0	0
7:45 to 8:45	5	0	5	4	0	4	0	0	0
8:00 to 9:00	2	0	2	2	0	2	0	0	0
8:15 to 9:15	2	1	3	0	0	0	0	0	0
8:30 to 9:30	1	1	2	2	0	2	0	0	0
8:45 to 9:45	3	1	4	2	0	2	0	0	0
9:00 to 10:00	5	1	6	3	0	3	0	0	0
AM Totals	**13**	**3**	**16**	**15**	**0**	**15**	**0**	**0**	**0**
15:00 to 16:00	4	0	4	8	0	8	0	0	0
15:15 to 16:15	4	0	4	9	0	9	0	0	0
15:30 to 16:30	4	0	4	7	0	7	0	0	0
15:45 to 16:45	4	0	4	7	0	7	0	0	0
16:00 to 17:00	3	0	3	9	0	9	0	0	0
16:15 to 17:15	1	0	1	9	0	9	0	0	0
16:30 to 17:30	1	0	1	8	0	8	0	0	0
16:45 to 17:45	0	0	0	6	0	6	0	0	0
17:00 to 18:00	0	0	0	3	0	3	0	0	0
17:15 to 18:15	0	0	0	1	0	1	0	0	0
17:30 to 18:30	0	0	0	2	0	2	0	0	0
17:45 to 18:45	1	0	1	1	0	1	0	0	0
18:00 to 19:00	2	0	2	1	0	1	0	0	0
PM Totals	**9**	**0**	**9**	**21**	**0**	**21**	**0**	**0**	**0**

Approach	Service Rd									Kookaburra Court								
Direction	Direction 7 (Left Turn)			Direction 9 (Right Turn)			Direction 9U (U Turn)			Direction 10 (Left Turn)			Direction 11 (Through)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	6	1	7	39	2	41	0	0	0	182	0	182	11	1	12	0	0	0
6:15 to 7:15	9	1	10	45	2	47	0	0	0	179	0	179	11	1	12	0	0	0
6:30 to 7:30	9	1	10	55	0	55	0	0	0	161	0	161	9	0	9	0	0	0
6:45 to 7:45	10	1	11	83	0	83	0	0	0	146	1	147	3	0	3	0	0	0
7:00 to 8:00	9	0	9	95	1	96	0	0	0	139	1	140	3	0	3	0	0	0
7:15 to 8:15	8	0	8	127	1	128	0	0	0	167	1	168	3	1	4	0	0	0
7:30 to 8:30	8	0	8	139	1	140	0	0	0	193	1	194	3	1	4	0	0	0
7:45 to 8:45	7	0	7	125	1	126	0	0	0	195	0	195	4	1	5	0	0	0
8:00 to 9:00	6	0	6	116	1	117	0	0	0	207	0	207	2	1	3	0	0	0
8:15 to 9:15	6	1	7	96	3	99	0	0	0	210	0	210	2	0	2	0	0	0
8:30 to 9:30	4	1	5	98	4	102	0	0	0	210	0	210	4	0	4	0	0	0
8:45 to 9:45	3	1	4	91	4	95	0	0	0	223	0	223	4	0	4	0	0	0
9:00 to 10:00	3	1	4	94	3	97	0	0	0	236	0	236	6	0	6	0	0	0
AM Totals	**24**	**2**	**26**	**344**	**7**	**351**	**0**	**0**	**0**	**764**	**1**	**765**	**22**	**2**	**24**	**0**	**0**	**0**
15:00 to 16:00	7	0	7	190	0	190	1	0	1	172	0	172	4	0	4	0	0	0
15:15 to 16:15	7	0	7	185	0	185	1	0	1	180	0	180	3	0	3	0	0	0
15:30 to 16:30	7	0	7	161	0	161	1	0	1	195	0	195	3	0	3	0	0	0
15:45 to 16:45	6	0	6	141	0	141	1	0	1	210	0	210	3	0	3	0	0	0
16:00 to 17:00	8	0	8	149	0	149	0	0	0	201	0	201	2	0	2	0	0	0
16:15 to 17:15	7	0	7	141	0	141	0	0	0	193	0	193	2	0	2	0	0	0
16:30 to 17:30	7	0	7	154	0	154	0	0	0	174	0	174	3	0	3	0	0	0
16:45 to 17:45	5	0	5	146	0	146	0	0	0	157	0	157	3	0	3	0	0	0
17:00 to 18:00	1	0	1	121	0	121	0	0	0	123	0	123	3	0	3	1	0	1
17:15 to 18:15	1	0	1	117	0	117	0	0	0	112	0	112	3	0	3	1	0	1
17:30 to 18:30	1	0	1	91	0	91	0	0	0	89	0	89	2	0	2	1	0	1
17:45 to 18:45	1	0	1	86	0	86	0	0	0	62	0	62	1	0	1	1	0	1
18:00 to 19:00	1	0	1	78	0	78	0	0	0	58	0	58	1	0	1	0	0	0
PM Totals	**17**	**0**	**17**	**538**	**0**	**538**	**1**	**0**	**1**	**554**	**0**	**554**	**10**	**0**	**10**	**1**	**0**	**1**

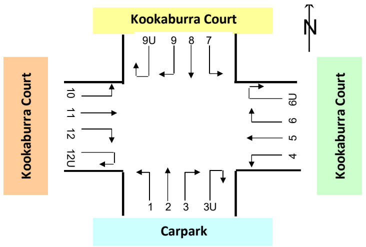
Job No.	: N4852
Client	: GTA
Suburb	: John Hunter Hospital
Location	: 9. Internal Intersection 6
Day/Date	: Thurs, 21st March 2019
Weather	: Fine
Description	: Classified Intersection Count
	: Hourly Summary



Approach	Kookaburra Court								
Direction	Direction 5 (Through)			Direction 6 (Right Turn)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	41	1	**42**	0	2	**2**	0	0	**0**
6:15 to 7:15	45	1	**46**	0	3	**3**	0	0	**0**
6:30 to 7:30	55	0	**55**	1	2	**3**	0	0	**0**
6:45 to 7:45	81	0	**81**	1	1	**2**	0	0	**0**
7:00 to 8:00	94	1	**95**	2	1	**3**	0	0	**0**
7:15 to 8:15	130	1	**131**	2	0	**2**	0	0	**0**
7:30 to 8:30	143	1	**144**	1	0	**1**	0	0	**0**
7:45 to 8:45	127	1	**128**	1	0	**1**	0	0	**0**
8:00 to 9:00	115	0	**115**	1	0	**1**	0	0	**0**
8:15 to 9:15	94	2	**96**	3	1	**4**	0	0	**0**
8:30 to 9:30	93	3	**96**	4	1	**5**	0	0	**0**
8:45 to 9:45	89	3	**92**	4	1	**5**	1	0	**1**
9:00 to 10:00	95	3	**98**	3	1	**4**	3	0	**3**
AM Totals	**345**	**5**	**350**	**6**	**4**	**10**	**3**	**0**	**3**
15:00 to 16:00	192	0	**192**	2	0	**2**	2	0	**2**
15:15 to 16:15	189	0	**189**	0	0	**0**	0	0	**0**
15:30 to 16:30	167	0	**167**	0	0	**0**	0	0	**0**
15:45 to 16:45	145	0	**145**	0	0	**0**	0	0	**0**
16:00 to 17:00	148	0	**148**	1	0	**1**	0	0	**0**
16:15 to 17:15	140	0	**140**	1	0	**1**	0	0	**0**
16:30 to 17:30	154	0	**154**	1	0	**1**	0	0	**0**
16:45 to 17:45	150	0	**150**	1	0	**1**	0	0	**0**
17:00 to 18:00	124	0	**124**	0	0	**0**	0	0	**0**
17:15 to 18:15	120	0	**120**	1	0	**1**	0	0	**0**
17:30 to 18:30	92	0	**92**	1	0	**1**	0	0	**0**
17:45 to 18:45	84	0	**84**	2	0	**2**	0	0	**0**
18:00 to 19:00	77	0	**77**	2	0	**2**	0	0	**0**
PM Totals	**541**	**0**	**541**	**5**	**0**	**5**	**2**	**0**	**2**

Approach	Kookaburra Court									Kookaburra Court								
Direction	Direction 7 (Left Turn)			Direction 9 (Right Turn)			Direction 9U (U Turn)			Direction 10 (Left Turn)			Direction 11 (Through)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	4	0	**4**	8	3	**11**	0	0	**0**	2	4	**6**	186	0	**186**	0	0	**0**
6:15 to 7:15	5	0	**5**	13	3	**16**	0	0	**0**	5	4	**9**	184	0	**184**	0	0	**0**
6:30 to 7:30	5	0	**5**	22	5	**27**	0	0	**0**	5	4	**9**	163	0	**163**	0	0	**0**
6:45 to 7:45	8	0	**8**	29	7	**36**	0	0	**0**	6	3	**9**	137	1	**138**	0	0	**0**
7:00 to 8:00	9	0	**9**	37	6	**43**	0	0	**0**	8	2	**10**	132	1	**133**	0	0	**0**
7:15 to 8:15	14	1	**15**	41	6	**47**	0	0	**0**	7	1	**8**	153	1	**154**	0	0	**0**
7:30 to 8:30	16	1	**17**	43	4	**47**	0	0	**0**	6	3	**9**	181	1	**182**	0	0	**0**
7:45 to 8:45	14	1	**15**	41	4	**45**	0	0	**0**	6	3	**9**	183	0	**183**	0	0	**0**
8:00 to 9:00	13	1	**14**	53	5	**58**	0	0	**0**	4	3	**7**	191	0	**191**	0	0	**0**
8:15 to 9:15	8	0	**8**	67	4	**71**	0	0	**0**	4	4	**8**	201	0	**201**	0	0	**0**
8:30 to 9:30	9	0	**9**	75	7	**82**	0	0	**0**	3	2	**5**	199	0	**199**	0	0	**0**
8:45 to 9:45	16	0	**16**	77	6	**83**	0	0	**0**	3	2	**5**	207	0	**207**	0	0	**0**
9:00 to 10:00	23	0	**23**	78	6	**84**	0	0	**0**	4	3	**7**	214	0	**214**	0	0	**0**
AM Totals	**49**	**1**	**50**	**176**	**20**	**196**	**0**	**0**	**0**	**18**	**12**	**30**	**723**	**1**	**724**	**0**	**0**	**0**
15:00 to 16:00	72	0	**72**	289	2	**291**	0	0	**0**	3	0	**3**	103	0	**103**	0	0	**0**
15:15 to 16:15	73	0	**73**	287	1	**288**	0	0	**0**	2	0	**2**	108	0	**108**	0	0	**0**
15:30 to 16:30	92	0	**92**	290	1	**291**	0	0	**0**	1	0	**1**	104	0	**104**	0	0	**0**
15:45 to 16:45	101	0	**101**	274	1	**275**	0	0	**0**	0	0	**0**	110	0	**110**	0	0	**0**
16:00 to 17:00	104	0	**104**	252	0	**252**	0	0	**0**	0	0	**0**	95	0	**95**	0	0	**0**
16:15 to 17:15	107	0	**107**	228	0	**228**	0	0	**0**	0	0	**0**	86	0	**86**	0	0	**0**
16:30 to 17:30	94	0	**94**	214	0	**214**	0	0	**0**	1	0	**1**	80	0	**80**	1	0	**1**
16:45 to 17:45	96	0	**96**	257	0	**257**	0	0	**0**	1	0	**1**	61	0	**61**	1	0	**1**
17:00 to 18:00	62	0	**62**	235	0	**235**	0	0	**0**	1	0	**1**	61	0	**61**	1	0	**1**
17:15 to 18:15	56	0	**56**	229	0	**229**	0	0	**0**	1	0	**1**	56	0	**56**	2	0	**2**
17:30 to 18:30	41	0	**41**	192	0	**192**	0	0	**0**	2	0	**2**	48	0	**48**	1	0	**1**
17:45 to 18:45	20	0	**20**	124	0	**124**	0	0	**0**	3	0	**3**	41	0	**41**	1	0	**1**
18:00 to 19:00	15	0	**15**	111	0	**111**	0	0	**0**	3	0	**3**	42	0	**42**	1	0	**1**
PM Totals	**253**	**0**	**253**	**887**	**2**	**889**	**0**	**0**	**0**	**7**	**0**	**7**	**301**	**0**	**301**	**2**	**0**	**2**

Job No.	: N4852
Client	: GTA
Suburb	: John Hunter Hospital
Location	: 10. Kookaburra Court / Carpark
Day/Date	: Thurs, 21st March 2019
Weather	: Fine
Description	: Classified Intersection Count
	: Hourly Summary

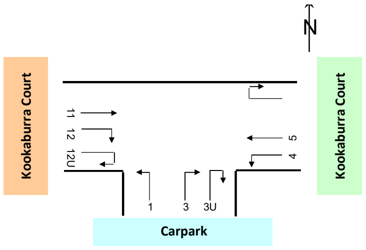


Approach	Carpark												Kookaburra Court											
Direction	Direction 1 (Left Turn)			Direction 2 (Through)			Direction 3 (Right Turn)			Direction 3U (U Turn)			Direction 4 (Left Turn)			Direction 5 (Through)			Direction 6 (Right Turn)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	0	0	**0**	20	0	**20**	4	0	**4**	0	0	**0**	65	0	**65**	439	13	**452**	177	4	**181**	69	0	**69**
6:15 to 7:15	1	0	**1**	21	0	**21**	8	0	**8**	0	0	**0**	90	0	**90**	532	11	**543**	178	5	**183**	65	0	**65**
6:30 to 7:30	4	0	**4**	14	0	**14**	16	0	**16**	0	0	**0**	122	0	**122**	620	13	**633**	158	4	**162**	57	1	**58**
6:45 to 7:45	6	0	**6**	13	0	**13**	23	0	**23**	0	0	**0**	149	0	**149**	620	17	**637**	134	4	**138**	45	1	**46**
7:00 to 8:00	7	0	**7**	13	0	**13**	24	0	**24**	0	0	**0**	177	0	**177**	657	13	**670**	134	3	**137**	46	1	**47**
7:15 to 8:15	6	0	**6**	12	0	**12**	27	0	**27**	0	0	**0**	199	0	**199**	696	16	**712**	154	2	**156**	54	1	**55**
7:30 to 8:30	4	0	**4**	7	0	**7**	18	1	**19**	0	0	**0**	208	0	**208**	723	15	**738**	161	1	**162**	51	0	**51**
7:45 to 8:45	3	0	**3**	2	0	**2**	12	1	**13**	0	0	**0**	198	0	**198**	722	15	**737**	159	0	**159**	57	0	**57**
8:00 to 9:00	2	0	**2**	0	0	**0**	12	1	**13**	0	0	**0**	159	0	**159**	686	17	**703**	164	0	**164**	51	0	**51**
8:15 to 9:15	5	0	**5**	0	0	**0**	5	1	**6**	0	0	**0**	118	0	**118**	670	18	**688**	170	1	**171**	46	0	**46**
8:30 to 9:30	6	0	**6**	2	0	**2**	7	0	**7**	0	0	**0**	80	0	**80**	647	18	**665**	179	2	**181**	41	0	**41**
8:45 to 9:45	6	0	**6**	4	0	**4**	7	0	**7**	0	0	**0**	61	0	**61**	596	18	**614**	187	2	**189**	28	0	**28**
9:00 to 10:00	7	0	**7**	4	0	**4**	6	0	**6**	0	0	**0**	44	0	**44**	542	18	**560**	188	2	**190**	25	0	**25**
AM Totals	**16**	**0**	**16**	**37**	**0**	**37**	**46**	**1**	**47**	**0**	**0**	**0**	**445**	**0**	**445**	**2,324**	**61**	**2,385**	**663**	**9**	**672**	**191**	**1**	**192**
15:00 to 16:00	18	0	**18**	12	0	**12**	108	0	**108**	0	0	**0**	23	0	**23**	226	15	**241**	83	0	**83**	26	0	**26**
15:15 to 16:15	16	0	**16**	16	0	**16**	115	0	**115**	0	0	**0**	19	0	**19**	226	16	**242**	80	0	**80**	23	0	**23**
15:30 to 16:30	18	0	**18**	18	0	**18**	131	0	**131**	0	0	**0**	17	0	**17**	223	16	**239**	71	0	**71**	26	0	**26**
15:45 to 16:45	20	0	**20**	25	0	**25**	165	0	**165**	0	0	**0**	12	0	**12**	210	17	**227**	71	0	**71**	28	0	**28**
16:00 to 17:00	14	0	**14**	26	0	**26**	184	0	**184**	0	0	**0**	11	0	**11**	209	16	**225**	58	0	**58**	29	0	**29**
16:15 to 17:15	17	0	**17**	28	0	**28**	204	0	**204**	0	0	**0**	16	0	**16**	216	15	**231**	46	0	**46**	31	0	**31**
16:30 to 17:30	16	0	**16**	27	0	**27**	207	0	**207**	0	0	**0**	20	0	**20**	200	16	**216**	37	0	**37**	31	0	**31**
16:45 to 17:45	14	0	**14**	20	0	**20**	171	0	**171**	0	0	**0**	20	0	**20**	208	15	**223**	28	0	**28**	23	0	**23**
17:00 to 18:00	17	0	**17**	18	0	**18**	140	0	**140**	0	0	**0**	19	0	**19**	213	17	**230**	30	0	**30**	20	0	**20**
17:15 to 18:15	17	0	**17**	15	0	**15**	97	0	**97**	0	0	**0**	14	0	**14**	186	18	**204**	35	0	**35**	15	0	**15**
17:30 to 18:30	15	0	**15**	14	0	**14**	79	0	**79**	0	0	**0**	8	0	**8**	190	18	**208**	34	0	**34**	14	0	**14**
17:45 to 18:45	12	0	**12**	10	0	**10**	66	0	**66**	0	0	**0**	7	0	**7**	180	17	**197**	33	0	**33**	18	0	**18**
18:00 to 19:00	8	0	**8**	8	0	**8**	59	0	**59**	0	0	**0**	4	0	**4**	170	20	**190**	35	0	**35**	14	0	**14**
PM Totals	**57**	**0**	**57**	**64**	**0**	**64**	**491**	**0**	**491**	**0**	**0**	**0**	**57**	**0**	**57**	**818**	**68**	**886**	**206**	**0**	**206**	**89**	**0**	**89**

Approach	Kookaburra Court												Kookaburra Court											
Direction	Direction 7 (Left Turn)			Direction 8 (Through)			Direction 9 (Right Turn)			Direction 9U (U Turn)			Direction 10 (Left Turn)			Direction 11 (Through)			Direction 12 (Right Turn)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	18	3	**21**	3	1	**4**	29	0	**29**	0	0	**0**	6	1	**7**	81	12	**93**	2	0	**2**	6	0	**6**
6:15 to 7:15	22	4	**26**	3	1	**4**	35	0	**35**	0	0	**0**	10	0	**10**	86	11	**97**	2	0	**2**	7	0	**7**
6:30 to 7:30	37	6	**43**	3	0	**3**	40	0	**40**	1	0	**1**	8	0	**8**	144	13	**157**	0	0	**0**	7	0	**7**
6:45 to 7:45	52	6	**58**	8	0	**8**	56	0	**56**	1	0	**1**	10	0	**10**	196	16	**212**	2	0	**2**	8	0	**8**
7:00 to 8:00	60	5	**65**	13	0	**13**	60	1	**61**	1	0	**1**	10	0	**10**	201	15	**216**	2	0	**2**	5	0	**5**
7:15 to 8:15	69	4	**73**	22	0	**22**	78	1	**79**	1	0	**1**	9	0	**9**	208	17	**225**	2	0	**2**	4	0	**4**
7:30 to 8:30	72	2	**74**	26	0	**26**	83	1	**84**	1	0	**1**	9	0	**9**	167	17	**184**	2	0	**2**	5	0	**5**
7:45 to 8:45	71	4	**75**	21	0	**21**	70	1	**71**	1	0	**1**	10	0	**10**	125	17	**142**	0	0	**0**	5	0	**5**
8:00 to 9:00	87	6	**93**	14	0	**14**	60	0	**60**	1	0	**1**	11	0	**11**	126	18	**144**	0	0	**0**	3	0	**3**
8:15 to 9:15	106	6	**112**	6	0	**6**	47	1	**48**	1	0	**1**	13	0	**13**	136	17	**153**	1	0	**1**	4	0	**4**
8:30 to 9:30	116	10	**126**	11	0	**11**	40	1	**41**	0	0	**0**	19	0	**19**	135	17	**152**	1	0	**1**	10	0	**10**
8:45 to 9:45	119	9	**128**	14	0	**14**	31	1	**32**	0	0	**0**	17	0	**17**	141	17	**158**	1	0	**1**	9	0	**9**
9:00 to 10:00	127	8	**135**	14	0	**14**	29	1	**30**	0	0	**0**	31	0	**31**	155	17	**172**	2	0	**2**	12	0	**12**
AM Totals	**292**	**22**	**314**	**44**	**1**	**45**	**178**	**2**	**180**	**2**	**0**	**2**	**58**	**1**	**59**	**563**	**62**	**625**	**6**	**0**	**6**	**26**	**0**	**26**
15:00 to 16:00	453	2	**455**	10	0	**10**	19	0	**19**	0	0	**0**	19	0	**19**	349	15	**364**	0	0	**0**	4	0	**4**
15:15 to 16:15	449	1	**450**	6	0	**6**	18	0	**18**	0	0	**0**	27	0	**27**	382	14	**396**	0	0	**0**	6	0	**6**
15:30 to 16:30	435	1	**436**	2	0	**2**	14	0	**14**	0	0	**0**	29	0	**29**	347	16	**363**	0	0	**0**	3	0	**3**
15:45 to 16:45	391	1	**392**	0	0	**0**	17	0	**17**	0	0	**0**	31	0	**31**	343	16	**359**	0	0	**0**	2	0	**2**
16:00 to 17:00	371	0	**371**	0	0	**0**	15	0	**15**	0	0	**0**	28	0	**28**	346	16	**362**	0	0	**0**	4	0	**4**
16:15 to 17:15	338	0	**338**	0	0	**0**	18	0	**18**	0	0	**0**	28	0	**28**	327	14	**341**	0	0	**0**	3	0	**3**
16:30 to 17:30	344	0	**344**	0	0	**0**	23	0	**23**	0	0	**0**	30	0	**30**	350	16	**366**	0	0	**0**	5	0	**5**
16:45 to 17:45	388	0	**388**	1	0	**1**	29	0	**29**	0	0	**0**	24	0	**24**	324	15	**339**	0	0	**0**	7	0	**7**
17:00 to 18:00	344	0	**344**	1	0	**1**	29	0	**29**	0	0	**0**	26	0	**26**	303	17	**320**	0	0	**0**	5	0	**5**
17:15 to 18:15	337	0	**337**	2	0	**2**	25	0	**25**	0	0	**0**	17	0	**17**	286	18	**304**	0	0	**0**	5	0	**5**
17:30 to 18:30	265	0	**265**	2	0	**2**	27	0	**27**	0	0	**0**	12	0	**12**	247	18	**265**	0	0	**0**	4	0	**4**
17:45 to 18:45	188	0	**188**	1	0	**1**	22	0	**22**	0	0	**0**	8	0	**8**	236	18	**254**	0	0	**0**	3	0	**3**
18:00 to 19:00	170	0	**170**	1	0	**1**	22	0	**22**	0	0	**0**	6	0	**6**	238	17	**255**	0	0	**0**	3	0	**3**
PM Totals	**1,338**	**2**	**1,340**	**12**	**0**	**12**	**85**	**0**	**85**	**0**	**0**	**0**	**79**	**0**	**79**	**1,236**	**65**	**1,301**	**0**	**0**	**0**	**16**	**0**	**16**

Job No. : N4852
Client : GTA
Suburb : John Hunter Hospital
Location : 11. Internal Intersection 8

Day/Date : Thurs, 21st March 2019
Weather : Fine
Description : Classified Intersection Count
: Hourly Summary



Approach	Carpark									Kookaburra Court								
Direction	Direction 1 (Left Turn)			Direction 3 (Right Turn)			Direction 3U (U Turn)			Direction 4 (Left Turn)			Direction 5 (Through)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	0	0	0	0	0	0	0	0	0	72	0	72	402	12	414	0	0	0
6:15 to 7:15	0	0	0	0	0	0	0	0	0	92	0	92	481	11	492	0	0	0
6:30 to 7:30	0	0	0	0	0	0	0	0	0	105	0	105	567	13	580	0	0	0
6:45 to 7:45	0	0	0	0	0	0	0	0	0	106	0	106	588	17	605	0	0	0
7:00 to 8:00	0	0	0	0	0	0	0	0	0	119	0	119	607	15	622	0	0	0
7:15 to 8:15	0	0	0	0	0	0	0	0	0	148	0	148	641	17	658	0	0	0
7:30 to 8:30	0	0	0	0	0	0	0	0	0	185	0	185	653	18	671	0	0	0
7:45 to 8:45	0	0	0	0	0	0	0	0	0	242	0	242	584	18	602	0	0	0
8:00 to 9:00	0	0	0	0	0	0	0	0	0	278	0	278	509	20	529	0	0	0
8:15 to 9:15	0	0	0	0	0	0	0	0	0	290	0	290	470	22	492	0	0	0
8:30 to 9:30	0	0	0	0	0	0	0	0	0	301	0	301	411	20	431	0	0	0
8:45 to 9:45	0	0	0	0	0	0	0	0	0	291	0	291	353	20	373	0	0	0
9:00 to 10:00	0	0	0	0	0	0	0	0	0	272	0	272	303	19	322	0	0	0
AM Totals	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**741**	**0**	**741**	**1,821**	**66**	**1,887**	**0**	**0**	**0**
15:00 to 16:00	0	0	0	0	0	0	0	0	0	107	0	107	150	15	165	0	0	0
15:15 to 16:15	0	0	0	0	0	0	0	0	0	112	0	112	145	16	161	0	0	0
15:30 to 16:30	1	0	1	0	0	0	0	0	0	110	0	110	136	16	152	0	0	0
15:45 to 16:45	1	0	1	0	0	0	0	0	0	100	0	100	132	17	149	0	0	0
16:00 to 17:00	1	0	1	0	0	0	0	0	0	99	0	99	134	16	150	0	0	0
16:15 to 17:15	1	0	1	0	0	0	0	0	0	94	0	94	141	15	156	0	0	0
16:30 to 17:30	0	0	0	0	0	0	0	0	0	94	0	94	131	16	147	0	0	0
16:45 to 17:45	0	0	0	0	0	0	0	0	0	106	0	106	126	15	141	0	0	0
17:00 to 18:00	0	0	0	0	0	0	0	0	0	115	0	115	115	17	132	0	0	0
17:15 to 18:15	0	0	0	0	0	0	0	0	0	106	0	106	101	18	119	0	0	0
17:30 to 18:30	0	0	0	0	0	0	0	0	0	100	0	100	106	18	124	0	0	0
17:45 to 18:45	0	0	0	0	0	0	0	0	0	88	0	88	111	17	128	0	0	0
18:00 to 19:00	0	0	0	0	0	0	0	0	0	84	0	84	109	20	129	0	0	0
PM Totals	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**405**	**0**	**405**	**508**	**68**	**576**	**0**	**0**	**0**

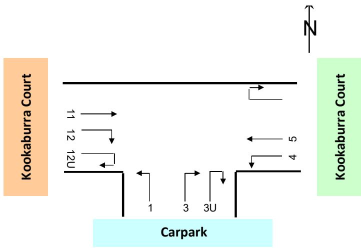
Approach	Kookaburra Court								
Direction	Direction 11 (Through)			Direction 12 (Right Turn)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	91	14	105	5	0	5	0	0	0
6:15 to 7:15	101	12	113	5	0	5	0	0	0
6:30 to 7:30	153	13	166	6	0	6	0	0	0
6:45 to 7:45	204	16	220	6	0	6	0	0	0
7:00 to 8:00	207	15	222	7	0	7	0	0	0
7:15 to 8:15	212	17	229	7	0	7	0	0	0
7:30 to 8:30	178	17	195	6	0	6	0	0	0
7:45 to 8:45	138	17	155	8	0	8	0	0	0
8:00 to 9:00	127	17	144	8	0	8	0	0	0
8:15 to 9:15	143	17	160	11	0	11	0	0	0
8:30 to 9:30	155	16	171	14	0	14	0	0	0
8:45 to 9:45	159	16	175	15	0	15	0	0	0
9:00 to 10:00	201	18	219	19	0	19	0	0	0
AM Totals	**626**	**64**	**690**	**39**	**0**	**39**	**0**	**0**	**0**
15:00 to 16:00	365	15	380	12	0	12	0	0	0
15:15 to 16:15	408	14	422	12	0	12	0	0	0
15:30 to 16:30	372	16	388	9	0	9	0	0	0
15:45 to 16:45	369	16	385	10	0	10	0	0	0
16:00 to 17:00	371	16	387	11	0	11	0	0	0
16:15 to 17:15	364	14	378	9	0	9	0	0	0
16:30 to 17:30	382	16	398	12	0	12	0	0	0
16:45 to 17:45	355	15	370	9	0	9	0	0	0
17:00 to 18:00	336	17	353	6	0	6	0	0	0
17:15 to 18:15	299	19	318	8	0	8	0	0	0
17:30 to 18:30	264	18	282	6	0	6	0	0	0
17:45 to 18:45	245	18	263	7	0	7	0	0	0
18:00 to 19:00	246	18	264	7	0	7	0	0	0
PM Totals	**1,318**	**66**	**1,384**	**36**	**0**	**36**	**0**	**0**	**0**

Job No. : N4852
Client : GTA
Suburb : John Hunter Hospital
Location : 11. Carpark Access

Day/Date : Thurs, 21st March 2019
Weather : Fine
Description : Classified Intersection Count
: Hourly Summary

Approach	Carpark Access					
Direction	IN			OUT		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	85	0	**85**	8	0	**8**
6:15 to 7:15	113	0	**113**	9	0	**9**
6:30 to 7:30	132	0	**132**	29	0	**29**
6:45 to 7:45	131	0	**131**	54	0	**54**
7:00 to 8:00	111	0	**111**	65	0	**65**
7:15 to 8:15	86	0	**86**	62	0	**62**
7:30 to 8:30	68	0	**68**	41	0	**41**
7:45 to 8:45	56	0	**56**	19	0	**19**
8:00 to 9:00	41	0	**41**	8	0	**8**
8:15 to 9:15	40	0	**40**	7	0	**7**
8:30 to 9:30	39	0	**39**	7	0	**7**
8:45 to 9:45	27	0	**27**	4	0	**4**
9:00 to 10:00	19	0	**19**	6	0	**6**
AM Totals	**256**	**0**	**256**	**87**	**0**	**87**
15:00 to 16:00	27	0	**27**	73	0	**73**
15:15 to 16:15	20	0	**20**	87	0	**87**
15:30 to 16:30	16	0	**16**	82	0	**82**
15:45 to 16:45	13	0	**13**	77	0	**77**
16:00 to 17:00	10	0	**10**	80	0	**80**
16:15 to 17:15	8	0	**8**	78	0	**78**
16:30 to 17:30	8	0	**8**	83	0	**83**
16:45 to 17:45	9	0	**9**	77	0	**77**
17:00 to 18:00	6	0	**6**	70	0	**70**
17:15 to 18:15	7	0	**7**	53	0	**53**
17:30 to 18:30	9	0	**9**	45	0	**45**
17:45 to 18:45	20	0	**20**	35	0	**35**
18:00 to 19:00	25	0	**25**	25	0	**25**
PM Totals	**68**	**0**	**68**	**248**	**0**	**248**

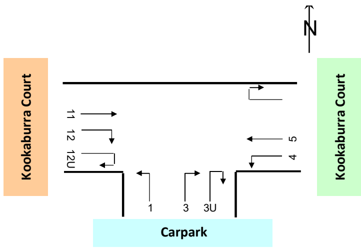
Job No.	: N4852
Client	: GTA
Suburb	: John Hunter Hospital
Location	: 12. Internal Intersection 9
Day/Date	: Thurs, 21st March 2019
Weather	: Fine
Description	: Classified Intersection Count
	: Hourly Summary



Approach	Carpark									Kookaburra Court								
Direction	Direction 1 (Left Turn)			Direction 3 (Right Turn)			Direction 3U (U Turn)			Direction 4 (Left Turn)			Direction 5 (Through)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	0	0	**0**	8	0	**8**	0	0	**0**	2	0	**2**	273	12	**285**	0	0	**0**
6:15 to 7:15	0	0	**0**	7	0	**7**	0	0	**0**	1	0	**1**	315	11	**326**	0	0	**0**
6:30 to 7:30	2	0	**2**	26	0	**26**	0	0	**0**	0	0	**0**	374	13	**387**	0	0	**0**
6:45 to 7:45	3	0	**3**	43	0	**43**	0	0	**0**	2	0	**2**	384	16	**400**	0	0	**0**
7:00 to 8:00	3	0	**3**	49	0	**49**	0	0	**0**	6	0	**6**	432	15	**447**	0	0	**0**
7:15 to 8:15	3	0	**3**	52	0	**52**	0	0	**0**	7	0	**7**	487	17	**504**	0	0	**0**
7:30 to 8:30	1	0	**1**	36	0	**36**	0	0	**0**	7	0	**7**	515	18	**533**	0	0	**0**
7:45 to 8:45	0	0	**0**	19	0	**19**	0	0	**0**	5	0	**5**	468	19	**487**	0	0	**0**
8:00 to 9:00	1	0	**1**	12	0	**12**	0	0	**0**	2	0	**2**	405	19	**424**	0	0	**0**
8:15 to 9:15	2	0	**2**	10	0	**10**	0	0	**0**	1	0	**1**	360	20	**380**	0	0	**0**
8:30 to 9:30	2	0	**2**	8	0	**8**	0	0	**0**	3	0	**3**	303	19	**322**	0	0	**0**
8:45 to 9:45	2	0	**2**	6	0	**6**	0	0	**0**	5	0	**5**	261	19	**280**	0	0	**0**
9:00 to 10:00	1	0	**1**	6	0	**6**	0	0	**0**	7	0	**7**	214	19	**233**	0	0	**0**
AM Totals	**5**	**0**	**5**	**75**	**0**	**75**	**0**	**0**	**0**	**17**	**0**	**17**	**1,324**	**65**	**1,389**	**0**	**0**	**0**
15:00 to 16:00	0	0	**0**	10	0	**10**	0	0	**0**	8	0	**8**	72	15	**87**	0	0	**0**
15:15 to 16:15	0	0	**0**	9	0	**9**	0	0	**0**	8	0	**8**	78	16	**94**	0	0	**0**
15:30 to 16:30	0	0	**0**	9	0	**9**	0	0	**0**	9	0	**9**	73	16	**89**	0	0	**0**
15:45 to 16:45	0	0	**0**	9	0	**9**	0	0	**0**	9	0	**9**	64	17	**81**	0	0	**0**
16:00 to 17:00	1	0	**1**	8	0	**8**	0	0	**0**	5	0	**5**	71	16	**87**	0	0	**0**
16:15 to 17:15	1	0	**1**	13	0	**13**	0	0	**0**	2	0	**2**	65	15	**80**	0	0	**0**
16:30 to 17:30	1	0	**1**	12	0	**12**	0	0	**0**	2	0	**2**	67	16	**83**	0	0	**0**
16:45 to 17:45	1	0	**1**	16	0	**16**	0	0	**0**	3	0	**3**	68	14	**82**	0	0	**0**
17:00 to 18:00	0	0	**0**	16	0	**16**	0	0	**0**	4	0	**4**	64	17	**81**	0	0	**0**
17:15 to 18:15	0	0	**0**	11	0	**11**	0	0	**0**	8	0	**8**	63	17	**80**	0	0	**0**
17:30 to 18:30	0	0	**0**	15	0	**15**	0	0	**0**	11	0	**11**	60	18	**78**	0	0	**0**
17:45 to 18:45	0	0	**0**	12	0	**12**	0	0	**0**	14	0	**14**	57	18	**75**	0	0	**0**
18:00 to 19:00	6	0	**6**	16	0	**16**	0	0	**0**	16	0	**16**	52	19	**71**	0	0	**0**
PM Totals	**7**	**0**	**7**	**50**	**0**	**50**	**0**	**0**	**0**	**33**	**0**	**33**	**259**	**67**	**326**	**0**	**0**	**0**

Approach	Kookaburra Court								
Direction	Direction 11 (Through)			Direction 12 (Right Turn)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	43	13	**56**	0	0	**0**	0	0	**0**
6:15 to 7:15	43	11	**54**	0	0	**0**	0	0	**0**
6:30 to 7:30	53	12	**65**	0	0	**0**	0	0	**0**
6:45 to 7:45	54	15	**69**	0	0	**0**	0	0	**0**
7:00 to 8:00	47	14	**61**	0	0	**0**	0	0	**0**
7:15 to 8:15	50	16	**66**	0	0	**0**	0	0	**0**
7:30 to 8:30	43	17	**60**	0	0	**0**	0	0	**0**
7:45 to 8:45	55	17	**72**	0	0	**0**	0	0	**0**
8:00 to 9:00	66	18	**84**	0	0	**0**	0	0	**0**
8:15 to 9:15	83	18	**101**	0	0	**0**	0	0	**0**
8:30 to 9:30	98	16	**114**	0	0	**0**	0	0	**0**
8:45 to 9:45	109	16	**125**	0	0	**0**	0	0	**0**
9:00 to 10:00	149	16	**165**	1	0	**1**	0	0	**0**
AM Totals	**305**	**61**	**366**	**1**	**0**	**1**	**0**	**0**	**0**
15:00 to 16:00	253	14	**267**	0	0	**0**	0	0	**0**
15:15 to 16:15	276	14	**290**	0	0	**0**	0	0	**0**
15:30 to 16:30	247	16	**263**	0	0	**0**	0	0	**0**
15:45 to 16:45	238	16	**254**	0	0	**0**	0	0	**0**
16:00 to 17:00	241	16	**257**	0	0	**0**	0	0	**0**
16:15 to 17:15	234	15	**249**	0	0	**0**	0	0	**0**
16:30 to 17:30	235	16	**251**	0	0	**0**	0	0	**0**
16:45 to 17:45	216	15	**231**	0	0	**0**	0	0	**0**
17:00 to 18:00	202	18	**220**	0	0	**0**	0	0	**0**
17:15 to 18:15	183	19	**202**	0	0	**0**	0	0	**0**
17:30 to 18:30	167	19	**186**	0	0	**0**	0	0	**0**
17:45 to 18:45	171	19	**190**	0	0	**0**	0	0	**0**
18:00 to 19:00	180	18	**198**	0	0	**0**	0	0	**0**
PM Totals	**876**	**66**	**942**	**0**	**0**	**0**	**0**	**0**	**0**

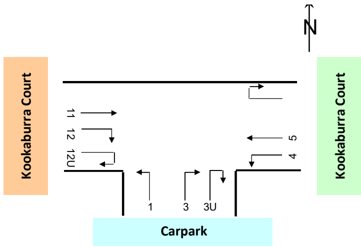
Job No.	: N4852
Client	: GTA
Suburb	: John Hunter Hospital
Location	: 13. Internal Intersection 10
Day/Date	: Thurs, 21st March 2019
Weather	: Fine
Description	: Classified Intersection Count
	: Hourly Summary



Approach	Carpark									Kookaburra Court								
Direction	Direction 1 (Left Turn)			Direction 3 (Right Turn)			Direction 3U (U Turn)			Direction 4 (Left Turn)			Direction 5 (Through)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	1	0	1	9	0	9	0	0	0	0	0	0	242	1	243	0	0	0
6:15 to 7:15	1	0	1	12	0	12	0	0	0	0	0	0	279	1	280	0	0	0
6:30 to 7:30	1	0	1	19	0	19	0	0	0	0	0	0	333	1	334	0	0	0
6:45 to 7:45	0	0	0	19	0	19	0	0	0	0	0	0	355	1	356	0	0	0
7:00 to 8:00	1	0	1	19	0	19	0	0	0	0	0	0	392	1	393	0	0	0
7:15 to 8:15	1	0	1	18	0	18	0	0	0	0	0	0	449	1	450	0	0	0
7:30 to 8:30	2	0	2	16	0	16	0	0	0	0	0	0	485	1	486	0	0	0
7:45 to 8:45	2	0	2	23	0	23	0	0	0	0	0	0	436	1	437	0	0	0
8:00 to 9:00	4	0	4	27	0	27	0	0	0	0	0	0	369	0	369	0	0	0
8:15 to 9:15	6	0	6	37	0	37	0	0	0	0	0	0	323	1	324	0	0	0
8:30 to 9:30	11	0	11	48	0	48	0	0	0	0	0	0	253	2	255	0	0	0
8:45 to 9:45	13	0	13	56	0	56	0	0	0	0	0	0	213	2	215	0	0	0
9:00 to 10:00	15	0	15	102	0	102	0	0	0	0	0	0	170	2	172	0	0	0
AM Totals	**21**	**0**	**21**	**157**	**0**	**157**	**0**	**0**	**0**	**0**	**0**	**0**	**1,173**	**4**	**1,177**	**0**	**0**	**0**
15:00 to 16:00	11	0	11	212	0	212	0	0	0	0	0	0	33	1	34	0	0	0
15:15 to 16:15	10	0	10	228	0	228	0	0	0	0	0	0	34	1	35	0	0	0
15:30 to 16:30	12	0	12	203	0	203	0	0	0	0	0	0	28	0	28	0	0	0
15:45 to 16:45	10	0	10	180	0	180	0	0	0	0	0	0	23	0	23	0	0	0
16:00 to 17:00	7	0	7	180	0	180	0	0	0	0	0	0	30	0	30	0	0	0
16:15 to 17:15	3	0	3	172	0	172	0	0	0	0	0	0	25	0	25	0	0	0
16:30 to 17:30	3	0	3	162	0	162	0	0	0	0	0	0	24	0	24	0	0	0
16:45 to 17:45	4	0	4	154	0	154	0	0	0	0	0	0	25	0	25	0	0	0
17:00 to 18:00	4	0	4	143	0	143	0	0	0	0	0	0	20	0	20	0	0	0
17:15 to 18:15	6	0	6	127	0	127	0	0	0	0	0	0	19	0	19	0	0	0
17:30 to 18:30	7	0	7	122	0	122	0	0	0	0	0	0	22	0	22	0	0	0
17:45 to 18:45	8	0	8	133	0	133	0	0	0	0	0	0	20	0	20	0	0	0
18:00 to 19:00	11	0	11	144	0	144	0	0	0	0	0	0	22	0	22	0	0	0
PM Totals	**33**	**0**	**33**	**679**	**0**	**679**	**0**	**0**	**0**	**0**	**0**	**0**	**105**	**1**	**106**	**0**	**0**	**0**

Approach	Kookaburra Court								
Direction	Direction 11 (Through)			Direction 12 (Right Turn)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	1	0	1	0	0	0	0	0	0
6:15 to 7:15	2	0	2	0	0	0	0	0	0
6:30 to 7:30	2	0	2	0	0	0	0	0	0
6:45 to 7:45	3	0	3	0	0	0	0	0	0
7:00 to 8:00	2	0	2	0	0	0	0	0	0
7:15 to 8:15	1	0	1	0	0	0	0	0	0
7:30 to 8:30	2	0	2	0	0	0	0	0	0
7:45 to 8:45	3	0	3	0	0	0	0	0	0
8:00 to 9:00	3	0	3	0	0	0	0	0	0
8:15 to 9:15	4	0	4	0	0	0	0	0	0
8:30 to 9:30	4	0	4	0	0	0	0	0	0
8:45 to 9:45	5	0	5	0	0	0	0	0	0
9:00 to 10:00	5	0	5	0	0	0	0	0	0
AM Totals	**11**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**
15:00 to 16:00	7	0	7	0	0	0	0	0	0
15:15 to 16:15	10	0	10	0	0	0	0	0	0
15:30 to 16:30	8	0	8	0	0	0	0	0	0
15:45 to 16:45	11	0	11	0	0	0	0	0	0
16:00 to 17:00	15	0	15	0	0	0	0	0	0
16:15 to 17:15	17	0	17	0	0	0	0	0	0
16:30 to 17:30	27	0	27	0	0	0	0	0	0
16:45 to 17:45	23	0	23	0	0	0	0	0	0
17:00 to 18:00	23	0	23	0	0	0	0	0	0
17:15 to 18:15	20	0	20	0	0	0	0	0	0
17:30 to 18:30	10	0	10	0	0	0	0	0	0
17:45 to 18:45	11	0	11	0	0	0	0	0	0
18:00 to 19:00	10	0	10	0	0	0	0	0	0
PM Totals	**55**	**0**	**55**	**0**	**0**	**0**	**0**	**0**	**0**

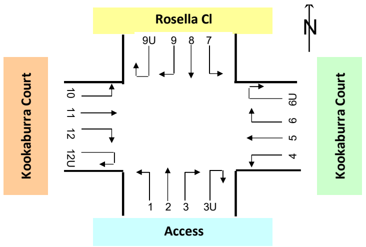
Job No.	: N4852
Client	: GTA
Suburb	: John Hunter Hospital
Location	: 14. Internal Intersection 11
Day/Date	: Thurs, 21st March 2019
Weather	: Fine
Description	: Classified Intersection Count
	: Hourly Summary



Approach	Carpark									Kookaburra Court								
Direction	Direction 1 (Left Turn)			Direction 3 (Right Turn)			Direction 3U (U Turn)			Direction 4 (Left Turn)			Direction 5 (Through)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	240	2	**242**	1	0	**1**
6:15 to 7:15	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	275	1	**276**	1	0	**1**
6:30 to 7:30	0	0	**0**	0	0	**0**	0	0	**0**	0	0	**0**	338	1	**339**	1	0	**1**
6:45 to 7:45	3	0	**3**	1	0	**1**	0	0	**0**	0	0	**0**	362	1	**363**	1	0	**1**
7:00 to 8:00	3	0	**3**	1	0	**1**	0	0	**0**	0	0	**0**	399	1	**400**	0	0	**0**
7:15 to 8:15	3	0	**3**	1	0	**1**	0	0	**0**	0	0	**0**	459	1	**460**	0	0	**0**
7:30 to 8:30	3	0	**3**	2	0	**2**	0	0	**0**	0	0	**0**	490	1	**491**	0	0	**0**
7:45 to 8:45	0	0	**0**	3	0	**3**	0	0	**0**	0	0	**0**	441	1	**442**	0	0	**0**
8:00 to 9:00	0	0	**0**	3	0	**3**	0	0	**0**	0	0	**0**	373	0	**373**	0	0	**0**
8:15 to 9:15	1	0	**1**	3	0	**3**	0	0	**0**	0	0	**0**	329	1	**330**	0	0	**0**
8:30 to 9:30	1	0	**1**	3	0	**3**	0	0	**0**	0	0	**0**	263	2	**265**	0	0	**0**
8:45 to 9:45	1	0	**1**	3	0	**3**	0	0	**0**	0	0	**0**	225	2	**227**	0	0	**0**
9:00 to 10:00	1	0	**1**	3	0	**3**	0	0	**0**	0	0	**0**	186	2	**188**	0	0	**0**
AM Totals	**4**	**0**	**4**	**7**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**1,198**	**5**	**1,203**	**1**	**0**	**1**
15:00 to 16:00	2	0	**2**	5	0	**5**	0	0	**0**	0	0	**0**	43	1	**44**	1	0	**1**
15:15 to 16:15	2	0	**2**	4	0	**4**	0	0	**0**	0	0	**0**	41	1	**42**	4	0	**4**
15:30 to 16:30	1	0	**1**	2	0	**2**	0	0	**0**	0	0	**0**	37	0	**37**	5	0	**5**
15:45 to 16:45	2	0	**2**	4	0	**4**	0	0	**0**	0	0	**0**	30	0	**30**	5	0	**5**
16:00 to 17:00	1	0	**1**	6	0	**6**	0	0	**0**	0	0	**0**	32	0	**32**	8	0	**8**
16:15 to 17:15	1	0	**1**	8	0	**8**	0	0	**0**	0	0	**0**	25	0	**25**	5	0	**5**
16:30 to 17:30	3	0	**3**	14	0	**14**	0	0	**0**	0	0	**0**	24	0	**24**	4	0	**4**
16:45 to 17:45	2	0	**2**	11	0	**11**	0	0	**0**	0	0	**0**	27	0	**27**	3	0	**3**
17:00 to 18:00	2	0	**2**	13	0	**13**	0	0	**0**	0	0	**0**	24	0	**24**	0	0	**0**
17:15 to 18:15	2	0	**2**	12	0	**12**	0	0	**0**	0	0	**0**	24	0	**24**	0	0	**0**
17:30 to 18:30	0	0	**0**	7	0	**7**	0	0	**0**	0	0	**0**	28	0	**28**	0	0	**0**
17:45 to 18:45	1	0	**1**	9	0	**9**	0	0	**0**	0	0	**0**	26	0	**26**	0	0	**0**
18:00 to 19:00	1	0	**1**	7	0	**7**	0	0	**0**	0	0	**0**	31	0	**31**	0	0	**0**
PM Totals	**6**	**0**	**6**	**31**	**0**	**31**	**0**	**0**	**0**	**0**	**0**	**0**	**130**	**1**	**131**	**9**	**0**	**9**

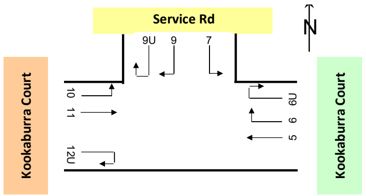
Approach	Kookaburra Court								
Direction	Direction 11 (Through)			Direction 12 (Right Turn)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	1	0	**1**	0	0	**0**	0	0	**0**
6:15 to 7:15	2	0	**2**	0	0	**0**	0	0	**0**
6:30 to 7:30	2	0	**2**	0	0	**0**	0	0	**0**
6:45 to 7:45	1	0	**1**	0	0	**0**	0	0	**0**
7:00 to 8:00	1	0	**1**	0	0	**0**	0	0	**0**
7:15 to 8:15	0	0	**0**	0	0	**0**	0	0	**0**
7:30 to 8:30	0	0	**0**	0	0	**0**	0	0	**0**
7:45 to 8:45	0	0	**0**	0	0	**0**	0	0	**0**
8:00 to 9:00	0	0	**0**	0	0	**0**	0	0	**0**
8:15 to 9:15	0	0	**0**	0	0	**0**	0	0	**0**
8:30 to 9:30	0	0	**0**	0	0	**0**	0	0	**0**
8:45 to 9:45	0	0	**0**	0	0	**0**	0	0	**0**
9:00 to 10:00	0	0	**0**	0	0	**0**	0	0	**0**
AM Totals	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**
15:00 to 16:00	1	0	**1**	0	0	**0**	0	0	**0**
15:15 to 16:15	2	0	**2**	0	0	**0**	0	0	**0**
15:30 to 16:30	1	0	**1**	0	0	**0**	0	0	**0**
15:45 to 16:45	2	0	**2**	0	0	**0**	0	0	**0**
16:00 to 17:00	2	0	**2**	0	0	**0**	0	0	**0**
16:15 to 17:15	5	0	**5**	0	0	**0**	0	0	**0**
16:30 to 17:30	10	0	**10**	0	0	**0**	0	0	**0**
16:45 to 17:45	9	0	**9**	0	0	**0**	0	0	**0**
17:00 to 18:00	9	0	**9**	0	0	**0**	0	0	**0**
17:15 to 18:15	6	0	**6**	0	0	**0**	0	0	**0**
17:30 to 18:30	1	0	**1**	0	0	**0**	0	0	**0**
17:45 to 18:45	1	0	**1**	0	0	**0**	0	0	**0**
18:00 to 19:00	1	0	**1**	0	0	**0**	0	0	**0**
PM Totals	**13**	**0**	**13**	**0**	**0**	**0**	**0**	**0**	**0**

Job No.	: N4852
Client	: GTA
Suburb	: John Hunter Hospital
Location	: 15. Internal Intersection 12
Day/Date	: Thurs, 21st March 2019
Weather	: Fine
Description	: Classified Intersection Count
	: Hourly Summary



Approach	Access												Kookaburra Court											
Direction	Direction 1 (Left Turn)			Direction 2 (Through)			Direction 3 (Right Turn)			Direction 3U (U Turn)			Direction 4 (Left Turn)			Direction 5 (Through)			Direction 6 (Right Turn)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 to 7:15	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 to 7:30	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 to 7:45	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 to 8:00	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 to 8:15	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 to 8:30	0	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 to 8:45	0	0	0	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 to 9:00	0	0	0	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 to 9:15	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 to 9:30	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 to 9:45	0	0	0	0	0	0	3	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 to 10:00	0	0	0	0	0	0	4	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM Totals	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**1**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
15:00 to 16:00	0	0	0	0	0	0	11	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 to 16:15	0	0	0	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 to 16:30	0	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 to 16:45	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 to 17:00	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15 to 17:15	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30 to 17:30	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 to 17:45	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00 to 18:00	5	0	5	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 to 18:15	4	0	4	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 to 18:30	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 to 18:45	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00 to 19:00	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Totals	**5**	**0**	**5**	**0**	**0**	**0**	**15**	**0**	**15**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Approach	Rosella Cl												Kookaburra Court											
Direction	Direction 7 (Left Turn)			Direction 8 (Through)			Direction 9 (Right Turn)			Direction 9U (U Turn)			Direction 10 (Left Turn)			Direction 11 (Through)			Direction 12 (Right Turn)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	2	0	2	0	0	0	0	0	0	0	0	0	170	0	170	68	1	69	0	0	0	0	0	0
6:15 to 7:15	4	0	4	0	0	0	1	0	1	0	0	0	201	0	201	73	1	74	2	0	2	0	0	0
6:30 to 7:30	4	0	4	0	0	0	1	0	1	0	0	0	244	0	244	87	1	88	2	0	2	0	0	0
6:45 to 7:45	2	0	2	0	0	0	1	0	1	0	0	0	262	0	262	100	1	101	2	0	2	0	0	0
7:00 to 8:00	3	0	3	0	0	0	1	0	1	0	0	0	269	0	269	126	1	127	4	0	4	0	0	0
7:15 to 8:15	3	0	3	0	0	0	0	0	0	0	0	0	299	0	299	157	1	158	3	0	3	0	0	0
7:30 to 8:30	4	0	4	0	0	0	0	0	0	0	0	0	302	0	302	192	1	193	3	0	3	0	0	0
7:45 to 8:45	5	0	5	0	0	0	0	0	0	0	0	0	231	0	231	217	1	218	3	0	3	0	0	0
8:00 to 9:00	13	0	13	0	0	0	0	0	0	0	0	0	160	0	160	215	0	215	1	0	1	0	0	0
8:15 to 9:15	20	0	20	0	0	0	0	0	0	0	0	0	105	0	105	219	2	221	1	0	1	0	0	0
8:30 to 9:30	22	0	22	0	0	0	0	0	0	0	0	0	50	0	50	213	2	215	2	1	3	0	0	0
8:45 to 9:45	22	0	22	0	0	0	0	0	0	0	0	0	34	0	34	168	2	170	2	1	3	0	0	0
9:00 to 10:00	16	0	16	0	0	0	0	0	0	0	0	0	27	0	27	130	2	132	6	1	7	0	0	0
AM Totals	**34**	**0**	**34**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**626**	**0**	**626**	**539**	**4**	**543**	**11**	**1**	**12**	**0**	**0**	**0**
15:00 to 16:00	154	0	154	0	0	0	0	0	0	0	0	0	3	0	3	35	1	36	4	0	4	0	0	0
15:15 to 16:15	173	0	173	1	0	1	1	0	1	0	0	0	4	0	4	36	1	37	4	0	4	0	0	0
15:30 to 16:30	148	0	148	1	0	1	1	0	1	0	0	0	5	0	5	33	0	33	4	0	4	0	0	0
15:45 to 16:45	143	0	143	1	0	1	2	0	2	0	0	0	3	0	3	29	0	29	2	0	2	0	0	0
16:00 to 17:00	134	0	134	1	0	1	3	0	3	0	0	0	4	0	4	28	0	28	3	0	3	0	0	0
16:15 to 17:15	135	0	135	0	0	0	3	0	3	0	0	0	4	0	4	21	0	21	2	0	2	1	0	1
16:30 to 17:30	153	0	153	0	0	0	7	0	7	0	0	0	3	0	3	19	0	19	2	0	2	1	0	1
16:45 to 17:45	140	0	140	0	0	0	6	0	6	0	0	0	3	0	3	20	0	20	3	0	3	1	0	1
17:00 to 18:00	133	0	133	0	0	0	5	0	5	0	0	0	3	0	3	18	0	18	3	0	3	1	0	1
17:15 to 18:15	100	0	100	0	0	0	5	0	5	0	0	0	2	0	2	20	0	20	3	0	3	0	0	0
17:30 to 18:30	62	0	62	0	0	0	1	0	1	0	0	0	2	0	2	23	0	23	4	0	4	0	0	0
17:45 to 18:45	34	0	34	0	0	0	1	0	1	0	0	0	7	0	7	18	0	18	3	0	3	0	0	0
18:00 to 19:00	26	0	26	0	0	0	1	0	1	0	0	0	6	0	6	25	0	25	3	0	3	0	0	0
PM Totals	**447**	**0**	**447**	**1**	**0**	**1**	**9**	**0**	**9**	**0**	**0**	**0**	**16**	**0**	**16**	**106**	**1**	**107**	**13**	**0**	**13**	**1**	**0**	**1**



Job No. : N4852
Client : GTA
Suburb : John Hunter Hospital
Location : 16. Internal Intersection 13

Day/Date : Thurs, 21st March 2019
Weather : Fine
Description : Classified Intersection Count
: Hourly Summary

Approach	Kookaburra Court								
Direction	Direction 5 (Through)			Direction 6 (Right Turn)			Direction 6U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	0	0	**0**	0	0	**0**	0	0	**0**
6:15 to 7:15	0	0	**0**	0	0	**0**	0	0	**0**
6:30 to 7:30	0	0	**0**	0	0	**0**	0	0	**0**
6:45 to 7:45	0	0	**0**	0	0	**0**	0	0	**0**
7:00 to 8:00	0	0	**0**	0	0	**0**	0	0	**0**
7:15 to 8:15	0	0	**0**	0	0	**0**	0	0	**0**
7:30 to 8:30	0	0	**0**	0	0	**0**	0	0	**0**
7:45 to 8:45	0	0	**0**	0	0	**0**	0	0	**0**
8:00 to 9:00	0	0	**0**	0	0	**0**	0	0	**0**
8:15 to 9:15	0	0	**0**	0	0	**0**	0	0	**0**
8:30 to 9:30	0	0	**0**	0	0	**0**	0	0	**0**
8:45 to 9:45	0	0	**0**	0	0	**0**	0	0	**0**
9:00 to 10:00	0	0	**0**	0	0	**0**	0	0	**0**
AM Totals	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
15:00 to 16:00	0	0	**0**	0	0	**0**	0	0	**0**
15:15 to 16:15	0	0	**0**	0	0	**0**	0	0	**0**
15:30 to 16:30	0	0	**0**	0	0	**0**	0	0	**0**
15:45 to 16:45	0	0	**0**	0	0	**0**	0	0	**0**
16:00 to 17:00	0	0	**0**	0	0	**0**	0	0	**0**
16:15 to 17:15	0	0	**0**	0	0	**0**	0	0	**0**
16:30 to 17:30	0	0	**0**	0	0	**0**	0	0	**0**
16:45 to 17:45	0	0	**0**	0	0	**0**	0	0	**0**
17:00 to 18:00	0	0	**0**	0	0	**0**	0	0	**0**
17:15 to 18:15	0	0	**0**	0	0	**0**	0	0	**0**
17:30 to 18:30	0	0	**0**	0	0	**0**	0	0	**0**
17:45 to 18:45	0	0	**0**	0	0	**0**	0	0	**0**
18:00 to 19:00	0	0	**0**	0	0	**0**	0	0	**0**
PM Totals	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Approach	Service Rd									Kookaburra Court								
Direction	Direction 7 (Left Turn)			Direction 9 (Right Turn)			Direction 9U (U Turn)			Direction 10 (Left Turn)			Direction 11 (Through)			Direction 12U (U Turn)		
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total
6:00 to 7:00	1	0	**1**	0	0	**0**	0	0	**0**	51	1	**52**	14	0	**14**	0	0	**0**
6:15 to 7:15	1	0	**1**	0	0	**0**	0	0	**0**	54	1	**55**	19	0	**19**	0	0	**0**
6:30 to 7:30	1	0	**1**	0	0	**0**	0	0	**0**	68	1	**69**	26	0	**26**	0	0	**0**
6:45 to 7:45	6	1	**7**	0	0	**0**	0	0	**0**	79	1	**80**	27	0	**27**	0	0	**0**
7:00 to 8:00	6	1	**7**	0	0	**0**	0	0	**0**	104	1	**105**	35	0	**35**	0	0	**0**
7:15 to 8:15	7	2	**9**	0	0	**0**	0	0	**0**	122	1	**123**	42	0	**42**	0	0	**0**
7:30 to 8:30	8	2	**10**	0	0	**0**	0	0	**0**	152	1	**153**	45	0	**45**	0	0	**0**
7:45 to 8:45	5	1	**6**	0	0	**0**	0	0	**0**	176	1	**177**	49	0	**49**	0	0	**0**
8:00 to 9:00	7	1	**8**	0	0	**0**	0	0	**0**	173	0	**173**	54	0	**54**	0	0	**0**
8:15 to 9:15	5	0	**5**	0	0	**0**	0	0	**0**	189	0	**189**	55	0	**55**	0	0	**0**
8:30 to 9:30	10	1	**11**	0	0	**0**	0	0	**0**	184	0	**184**	57	1	**58**	0	0	**0**
8:45 to 9:45	14	1	**15**	0	0	**0**	0	0	**0**	150	0	**150**	60	1	**61**	0	0	**0**
9:00 to 10:00	13	1	**14**	0	0	**0**	0	0	**0**	111	0	**111**	63	1	**64**	0	0	**0**
AM Totals	**27**	**3**	**30**	**0**	**0**	**0**	**0**	**0**	**0**	**439**	**2**	**441**	**166**	**1**	**167**	**0**	**0**	**0**
15:00 to 16:00	86	0	**86**	0	0	**0**	0	0	**0**	9	0	**9**	192	2	**194**	0	0	**0**
15:15 to 16:15	108	0	**108**	0	0	**0**	0	0	**0**	6	0	**6**	206	1	**207**	0	0	**0**
15:30 to 16:30	110	0	**110**	0	0	**0**	0	0	**0**	5	0	**5**	185	1	**186**	0	0	**0**
15:45 to 16:45	121	0	**121**	0	0	**0**	0	0	**0**	1	0	**1**	180	0	**180**	0	0	**0**
16:00 to 17:00	118	0	**118**	0	0	**0**	0	0	**0**	2	0	**2**	168	0	**168**	0	0	**0**
16:15 to 17:15	112	0	**112**	0	0	**0**	0	0	**0**	5	0	**5**	161	0	**161**	0	0	**0**
16:30 to 17:30	119	0	**119**	0	0	**0**	0	0	**0**	6	0	**6**	159	0	**159**	0	0	**0**
16:45 to 17:45	108	0	**108**	0	0	**0**	0	0	**0**	8	0	**8**	156	0	**156**	0	0	**0**
17:00 to 18:00	100	0	**100**	0	0	**0**	0	0	**0**	8	0	**8**	149	0	**149**	0	0	**0**
17:15 to 18:15	80	0	**80**	0	0	**0**	0	0	**0**	5	0	**5**	118	0	**118**	0	0	**0**
17:30 to 18:30	57	0	**57**	0	0	**0**	0	0	**0**	5	0	**5**	116	0	**116**	0	0	**0**
17:45 to 18:45	45	0	**45**	0	0	**0**	0	0	**0**	2	0	**2**	73	0	**73**	0	0	**0**
18:00 to 19:00	32	0	**32**	0	0	**0**	0	0	**0**	4	0	**4**	66	0	**66**	0	0	**0**
PM Totals	**336**	**0**	**336**	**0**	**0**	**0**	**0**	**0**	**0**	**23**	**0**	**23**	**575**	**2**	**577**	**0**	**0**	**0**

B.SIDRA OUTPUTS

B

USER REPORT FOR NETWORK SITE

Project: 210408sid-N169772 JHHIP existing conditions w. RT

Template: Movement Summaries

Site: 3756 [2. Lookout Road / Kookaburra Circuit AM Peak 3756]

Network: 54 [AM Network - Existing w. RT]

Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: TCS 2016 - Revised
Reference Phase: Phase A
Input Phase Sequence: A, B, BP, C
Output Phase Sequence: A, B, BP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Lookout Road														
23	R2	11	0.0	11	0.0	0.368	80.4	LOS F	0.5	3.3	1.00	0.66	1.00	1.2
Approach		11	0.0	11	0.0	0.368	80.4	LOS F	0.5	3.3	1.00	0.66	1.00	1.2
NorthEast: Lookout Road														
25	T1	1145	5.6	1145	5.6	0.485	10.3	LOS A	11.8	86.7	0.59	0.53	0.59	49.9
26	R2	439	1.4	439	1.4	0.951	85.3	LOS F	10.2	72.4	1.00	1.00	1.43	18.7
Approach		1584	4.4	1584	4.4	0.951	31.1	LOS C	11.8	86.7	0.70	0.66	0.82	36.1
NorthWest: Southern Hospital access														
27	L2	121	9.6	121	9.6	0.521	45.8	LOS D	6.5	48.5	0.89	0.80	0.89	12.1
29	R2	217	6.3	217	6.3	0.521	54.5	LOS D	6.5	48.5	0.94	0.80	0.94	22.1
Approach		338	7.5	338	7.5	0.521	51.4	LOS D	6.5	48.5	0.92	0.80	0.92	19.4
SouthWest: Lookout Road														
30	L2	806	2.2	806	2.2	0.583	9.2	LOS A	9.9	70.7	0.44	0.71	0.44	46.8
31	T1	2066	2.4	2066	2.4	0.951	52.9	LOS D	47.7	340.5	1.00	1.09	1.20	18.9
Approach		2872	2.4	2872	2.4	0.951	40.7	LOS C	47.7	340.5	0.84	0.98	0.98	24.3
All Vehicles		4805	3.4	4805	3.4	0.951	38.3	LOS C	47.7	340.5	0.80	0.86	0.93	28.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P6	NorthEast Full Crossing	41	58.3	LOS E	0.1	0.1	0.95	0.95
P7	NorthWest Full Crossing	21	58.2	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		62	58.3	LOS E			0.95	0.95

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.

Site: 4069 [3. Lookout Road / Jacaranda Drive AM Peak 4069]   Network: 54 [AM Network - Existing w. RT]

Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Two-Phase
Reference Phase: Phase A
Input Phase Sequence: A, B, CP, C
Output Phase Sequence: A, B, CP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Lookout Road														
5	T1	1633	4.3	1633	4.3	0.571	5.5	LOS A	13.3	96.9	0.36	0.33	0.36	46.4
6	R2	239	0.0	239	0.0	0.929	82.8	LOS F	10.5	73.2	1.00	0.94	1.25	12.5
Approach		1872	3.8	1872	3.8	0.929	15.4	LOS B	13.3	96.9	0.44	0.41	0.47	33.1
North: Jacaranda Drive														
7	L2	46	0.0	46	0.0	0.116	48.4	LOS D	1.4	10.1	0.84	0.73	0.84	5.2
9	R2	5	0.0	5	0.0	0.092	75.0	LOS F	0.2	1.5	0.99	0.64	0.99	3.3
Approach		52	0.0	52	0.0	0.116	51.1	LOS D	1.4	10.1	0.86	0.72	0.86	4.9
West: Lookout Road														
11	T1	2325	2.8	2325	2.8	0.923	16.1	LOS B	35.0	250.7	0.62	0.64	0.69	37.7
Approach		2325	2.8	2325	2.8	0.923	16.1	LOS B	35.0	250.7	0.62	0.64	0.69	37.7
All Vehicles		4248	3.2	4248	3.2	0.929	16.2	LOS B	35.0	250.7	0.54	0.54	0.60	35.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	25	58.2	LOS E	0.1	0.1	0.95	0.95
P4	West Full Crossing	32	58.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		57	58.3	LOS E			0.95	0.95

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.

Site: 1782 [4. Lookout Road / Russell Road AM Peak 1782]

Network: 54 [AM Network - Existing w. RT]

Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Sequence1
Reference Phase: Phase A
Input Phase Sequence: A, B, CP, C, D
Output Phase Sequence: A, B, CP, C, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Russell Road														
21	L2	668	2.5	668	2.5	0.659	20.8	LOS B	16.1	114.8	0.74	0.81	0.74	36.0
23	R2	88	2.4	88	2.4	0.899	85.0	LOS F	4.0	28.3	1.00	0.96	1.51	23.9
Approach		757	2.5	757	2.5	0.899	28.3	LOS B	16.1	114.8	0.77	0.83	0.83	32.8
NorthEast: Croudace Street														
24	L2	60	1.7	60	1.7	0.971	87.6	LOS F	29.8	216.0	1.00	1.19	1.39	24.4
25	T1	1098	4.4	1098	4.4	0.971	82.0	LOS F	29.9	217.5	1.00	1.20	1.39	15.2
Approach		1158	4.2	1158	4.2	0.971	82.3	LOS F	29.9	217.5	1.00	1.20	1.39	15.8
SouthWest: Lookout Road														
31	T1	1599	2.4	1599	2.4	0.511	5.0	LOS A	12.6	90.1	0.44	0.41	0.44	54.1
32	R2	721	3.2	721	3.2	0.974	65.3	LOS E	27.0	194.2	1.00	1.04	1.36	25.3
Approach		2320	2.7	2320	2.7	0.974	23.7	LOS B	27.0	194.2	0.61	0.61	0.73	39.5
All Vehicles		4235	3.1	4235	3.1	0.974	40.6	LOS C	29.9	217.5	0.75	0.81	0.93	29.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
P6	NorthEast Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
All Pedestrians		21	58.2	LOS E			0.95	0.95

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.

USER REPORT FOR NETWORK SITE

Project: 210408sid-N169772 JHHIP existing conditions w. RT

Template: Movement Summaries

Site: 3756 [2. Lookout Road / Kookaburra Circuit PM Peak 3756]

Network: 55 [PM Network - Existing w. RT]

Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: TCS 2016 - Revised
Reference Phase: Phase A
Input Phase Sequence: A, B, BP, C
Output Phase Sequence: A, B, BP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Lookout Road														
23	R2	14	7.7	14	7.7	0.063	56.9	LOS E	0.5	3.5	0.91	0.68	0.91	1.6
Approach		14	7.7	14	7.7	0.063	56.9	LOS E	0.5	3.5	0.91	0.68	0.91	1.6
NorthEast: Lookout Road														
25	T1	2082	2.7	2082	2.7	0.943	29.2	LOS C	39.8	285.0	0.82	0.87	0.95	38.1
26	R2	127	5.8	127	5.8	0.394	62.0	LOS E	3.4	25.1	0.97	0.77	0.97	22.8
Approach		2209	2.9	2209	2.9	0.943	31.1	LOS C	39.8	285.0	0.83	0.87	0.96	37.0
NorthWest: Southern Hospital access														
27	L2	310	1.6	310	1.6	0.981	86.9	LOS F	25.4	179.6	1.00	1.32	1.69	7.5
29	R2	682	1.2	682	1.2	0.981	92.3	LOS F	25.4	179.6	1.00	1.22	1.56	16.0
Approach		992	1.3	992	1.3	0.981	90.6	LOS F	25.4	179.6	1.00	1.25	1.60	13.8
SouthWest: Lookout Road														
30	L2	244	3.9	244	3.9	0.172	6.7	LOS A	1.1	8.1	0.19	0.61	0.19	49.3
31	T1	1322	3.7	1322	3.7	0.752	30.7	LOS C	20.9	151.4	0.89	0.81	0.89	26.6
Approach		1566	3.8	1566	3.8	0.752	27.0	LOS B	20.9	151.4	0.78	0.78	0.78	29.5
All Vehicles		4781	2.9	4781	2.9	0.981	42.2	LOS C	39.8	285.0	0.85	0.91	1.03	27.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P6	NorthEast Full Crossing	53	58.3	LOS E	0.2	0.2	0.95	0.95
P7	NorthWest Full Crossing	53	58.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		105	58.3	LOS E			0.95	0.95

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.

Site: 4069 [3. Lookout Road / Jacaranda Drive PM Peak 4069] Network: 55 [PM Network - Existing w. RT]

Site Category: -
Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Two-Phase
Reference Phase: Phase C
Input Phase Sequence: A, B, CP, C
Output Phase Sequence: A, B, CP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Lookout Road														
5	T1	2223	2.7	2223	2.7	0.779	4.0	LOS A	13.8	99.1	0.35	0.33	0.35	49.4
6	R2	66	1.6	66	1.6	0.213	56.1	LOS D	2.3	16.1	0.91	0.76	0.91	16.7
Approach		2289	2.7	2289	2.7	0.779	5.6	LOS A	13.8	99.1	0.36	0.34	0.36	46.2
North: Jacaranda Drive														
7	L2	198	0.5	198	0.5	0.437	47.1	LOS D	6.4	44.7	0.88	0.80	0.88	5.3
9	R2	21	0.0	21	0.0	0.259	73.1	LOS F	0.8	5.9	1.00	0.70	1.00	3.4
Approach		219	0.5	219	0.5	0.437	49.6	LOS D	6.4	44.7	0.89	0.79	0.89	5.0
West: Lookout Road														
11	T1	1647	3.3	1647	3.3	0.688	6.1	LOS A	11.0	79.2	0.33	0.31	0.33	48.9
Approach		1647	3.3	1647	3.3	0.688	6.1	LOS A	11.0	79.2	0.33	0.31	0.33	48.9
All Vehicles		4156	2.8	4156	2.8	0.779	8.1	LOS A	13.8	99.1	0.38	0.35	0.38	43.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	8	58.2	LOS E	0.0	0.0	0.95	0.95
P4	West Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
All Pedestrians		19	58.2	LOS E			0.95	0.95

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.

Site: 1782 [4. Lookout Road / Russell Road PM Peak 1782]

Network: 55 [PM Network - Existing w. RT]

Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Sequence1
Reference Phase: Phase A
Input Phase Sequence: A, B, CP, C
Output Phase Sequence: A, B, CP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Russell Road														
21	L2	595	4.2	595	4.2	0.839	37.8	LOS C	20.5	148.4	0.94	0.92	1.01	27.3
23	R2	94	1.1	94	1.1	0.947	92.6	LOS F	4.4	31.3	1.00	1.02	1.64	22.7
Approach		689	3.8	689	3.8	0.947	45.2	LOS D	20.5	148.4	0.95	0.93	1.10	26.1
NorthEast: Croudace Street														
24	L2	71	0.0	71	0.0	0.940	62.1	LOS E	38.8	276.6	1.00	1.08	1.21	29.8
25	T1	1622	2.2	1622	2.2	0.940	56.5	LOS D	39.0	277.9	1.00	1.08	1.21	19.7
Approach		1693	2.1	1693	2.1	0.940	56.7	LOS E	39.0	277.9	1.00	1.08	1.21	20.3
SouthWest: Lookout Road														
31	T1	1260	3.3	1260	3.3	0.405	5.8	LOS A	12.9	92.9	0.49	0.45	0.49	53.3
32	R2	523	2.5	523	2.5	0.955	82.7	LOS F	26.0	185.5	1.00	1.03	1.36	22.0
Approach		1783	3.0	1783	3.0	0.955	28.4	LOS B	26.0	185.5	0.64	0.62	0.74	37.1
All Vehicles		4165	2.8	4165	2.8	0.955	42.7	LOS D	39.0	277.9	0.84	0.86	0.99	28.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	16	58.2	LOS E	0.1	0.1	0.95	0.95
P6	NorthEast Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
All Pedestrians		26	58.2	LOS E			0.95	0.95

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.

USER REPORT FOR NETWORK SITE

Project: 201104sid-N169770 JHHIP Stage 1 SSDA report - 2026 without Dev

Template: Movement Summaries

Site: 3756 [2S. Lookout Rd / Kookaburra Ckt AM]

Network: 65 [AM Network - 2026 without Dev]

2026 without development
Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: TCS 2016 - Revised
Reference Phase: Phase A
Input Phase Sequence: A, B, BP, C
Output Phase Sequence: A, B, BP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Lookout Road														
23	R2	11	0.0	11	0.0	0.368	80.4	LOS F	0.5	3.3	1.00	0.66	1.00	1.2
Approach		11	0.0	11	0.0	0.368	80.4	LOS F	0.5	3.3	1.00	0.66	1.00	1.2
NorthEast: Lookout Road														
25	T1	936	5.5	936	5.5	0.365	11.7	LOS A	11.4	83.6	0.65	0.58	0.65	48.8
26	R2	167	1.4	167	1.4	0.303	59.7	LOS E	3.0	21.2	0.95	0.77	0.95	18.8
Approach		1103	4.9	1103	4.9	0.365	19.0	LOS B	11.4	83.6	0.69	0.61	0.69	42.8
NorthWest: Southern Hospital access														
27	L2	46	9.6	46	9.6	0.214	35.2	LOS C	2.0	14.9	0.74	0.71	0.74	14.5
29	R2	84	6.8	84	6.8	0.214	49.5	LOS D	2.0	14.9	0.86	0.73	0.86	23.2
Approach		131	7.8	131	7.8	0.214	44.4	LOS D	2.0	14.9	0.82	0.72	0.82	21.1
SouthWest: Lookout Road														
30	L2	306	2.2	306	2.2	0.206	6.4	LOS A	1.2	8.2	0.17	0.60	0.17	47.6
31	T1	1530	2.4	1530	2.4	0.704	23.6	LOS B	21.7	155.2	0.81	0.74	0.81	30.5
Approach		1836	2.4	1836	2.4	0.704	20.7	LOS B	21.7	155.2	0.70	0.71	0.70	32.5
All Vehicles		3080	3.5	3080	3.5	0.704	21.3	LOS B	21.7	155.2	0.70	0.68	0.70	36.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P6	NorthEast Full Crossing	41	58.3	LOS E	0.1	0.1	0.95	0.95
P7	NorthWest Full Crossing	21	58.2	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		62	58.3	LOS E			0.95	0.95

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.

Site: 4069 [3S. Lookout Rd / Jacaranda Dr AM]

Network: 65 [AM Network - 2026 without Dev]

2026 without development
Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Two-Phase
Reference Phase: Phase A
Input Phase Sequence: A, B, CP, C
Output Phase Sequence: A, B, CP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Lookout Road														
5	T1	1121	5.7	1121	5.7	0.395	3.6	LOS A	5.3	38.9	0.21	0.19	0.21	50.3
6	R2	239	0.0	239	0.0	0.929	83.6	LOS F	10.5	73.2	1.00	0.94	1.25	12.4
Approach		1360	4.7	1360	4.7	0.929	17.7	LOS B	10.5	73.2	0.35	0.32	0.40	31.1
North: Jacaranda Drive														
7	L2	41	0.0	41	0.0	0.103	48.2	LOS D	1.3	8.9	0.84	0.72	0.84	5.2
9	R2	5	0.0	5	0.0	0.092	75.0	LOS F	0.2	1.5	0.99	0.64	0.99	3.3
Approach		46	0.0	46	0.0	0.103	51.2	LOS D	1.3	8.9	0.85	0.71	0.85	4.9
West: Lookout Road														
11	T1	1672	3.8	1672	3.8	0.634	3.4	LOS A	6.3	45.3	0.21	0.19	0.21	53.3
Approach		1672	3.8	1672	3.8	0.634	3.4	LOS A	6.3	45.3	0.21	0.19	0.21	53.3
All Vehicles		3078	4.1	3078	4.1	0.929	10.4	LOS A	10.5	73.2	0.28	0.26	0.30	41.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	25	58.2	LOS E	0.1	0.1	0.95	0.95
P4	West Full Crossing	32	58.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		57	58.3	LOS E			0.95	0.95

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.

Site: 1782 [4S. Lookout Rd / Russell Rd AM]

Network: 65 [AM Network - 2026 without Dev]

2026 without development
Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Sequence1
Reference Phase: Phase A
Input Phase Sequence: A, B, CP, C, D
Output Phase Sequence: A, B, CP, C, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Russell Road														
21	L2	698	2.5	698	2.5	0.588	12.4	LOS A	11.4	81.3	0.53	0.74	0.53	42.9
23	R2	93	2.4	93	2.4	0.824	78.9	LOS F	4.0	28.2	1.00	0.90	1.32	25.0
Approach		791	2.5	791	2.5	0.824	20.2	LOS B	11.4	81.3	0.59	0.76	0.63	37.6
NorthEast: Croudace Street														
24	L2	63	1.7	63	1.7	0.833	63.6	LOS E	14.0	101.4	1.00	0.96	1.14	29.2
25	T1	638	4.4	638	4.4	0.833	58.0	LOS E	14.2	102.8	1.00	0.96	1.14	19.3
Approach		701	4.1	701	4.1	0.833	58.5	LOS E	14.2	102.8	1.00	0.96	1.14	20.5
SouthWest: Lookout Road														
31	T1	928	2.4	928	2.4	0.299	1.2	LOS A	2.0	14.2	0.09	0.08	0.09	58.5
32	R2	753	3.2	753	3.2	0.842	25.7	LOS B	17.6	126.3	0.96	0.90	1.00	38.4
Approach		1681	2.8	1681	2.8	0.842	12.1	LOS A	17.6	126.3	0.48	0.45	0.49	47.1
All Vehicles		3173	3.0	3173	3.0	0.842	24.4	LOS B	17.6	126.3	0.62	0.64	0.67	37.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
P6	NorthEast Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
All Pedestrians		21	58.2	LOS E			0.95	0.95

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.

Site: 1 [1R. Kookaburra Ckt - Roundabout 1 AM]

Network: 65 [AM Network - 2026 without Dev]

2025 without development
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Southern Hospital access														
21	L2	83	0.0	83	0.0	0.274	3.0	LOS A	0.7	5.0	0.33	0.38	0.33	35.2
22	T1	295	2.0	295	2.0	0.274	2.8	LOS A	0.7	5.0	0.33	0.38	0.33	33.7
23	R2	65	0.6	65	0.6	0.127	6.7	LOS A	0.3	1.9	0.34	0.61	0.34	28.0
23u	U	54	0.0	54	0.0	0.127	11.0	LOS A	0.3	1.9	0.34	0.61	0.34	31.9
Approach		497	1.3	497	1.3	0.274	4.2	LOS A	0.7	5.0	0.34	0.43	0.34	32.8
NorthEast: Kookaburra Circuit														
24	L2	22	4.5	22	4.5	0.127	2.4	LOS A	0.3	2.1	0.32	0.51	0.32	21.5
25	T1	21	0.0	21	0.0	0.127	2.1	LOS A	0.3	2.1	0.32	0.51	0.32	31.6
26	R2	104	1.2	104	1.2	0.127	5.8	LOS A	0.3	2.1	0.32	0.51	0.32	21.5
Approach		147	1.5	147	1.5	0.127	4.7	LOS A	0.3	2.1	0.32	0.51	0.32	23.4
NorthWest: Kookaburra Circuit														
27	L2	133	0.0	133	0.0	0.171	3.5	LOS A	0.3	2.3	0.30	0.45	0.30	29.2
28	T1	41	9.2	41	9.2	0.171	2.9	LOS A	0.3	2.3	0.30	0.45	0.30	36.6
29	R2	2	0.0	2	0.0	0.171	6.2	LOS A	0.3	2.3	0.30	0.45	0.30	29.8
Approach		176	2.2	176	2.2	0.171	3.4	LOS A	0.3	2.3	0.30	0.45	0.30	30.5
SouthWest: Car Park 1 Access														
30	L2	1	0.0	1	0.0	0.027	5.2	LOS A	0.0	0.4	0.53	0.61	0.53	22.4
31	T1	7	0.0	7	0.0	0.027	5.0	LOS A	0.0	0.4	0.53	0.61	0.53	16.6
32	R2	12	5.3	12	5.3	0.027	8.3	LOS A	0.0	0.4	0.53	0.61	0.53	22.4
Approach		20	3.0	20	3.0	0.027	6.9	LOS A	0.0	0.4	0.53	0.61	0.53	19.4
All Vehicles		840	1.6	840	1.6	0.274	4.2	LOS A	0.7	5.0	0.33	0.46	0.33	31.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 2 [2R. Kookaburra Ckt - Roundabout 2 AM]

Network: 65 [AM Network - 2026 without Dev]

Site Category: -
Roundabout

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Kookaburra Circuit														
21	L2	1	0.0	1	0.0	0.274	2.6	LOS A	0.5	3.6	0.31	0.28	0.31	23.1
22	T1	332	0.0	332	0.0	0.274	1.8	LOS A	0.5	3.6	0.31	0.28	0.31	37.2
23	R2	25	5.0	25	5.0	0.274	6.1	LOS A	0.5	3.6	0.31	0.29	0.31	36.5
Approach		358	0.4	358	0.4	0.274	2.1	LOS A	0.5	3.6	0.31	0.28	0.31	37.1
NorthEast: Kookaburra Circuit														
24	L2	23	0.0	23	0.0	0.025	3.8	LOS A	0.0	0.3	0.51	0.47	0.51	22.5
25	T1	1	0.0	1	0.0	0.025	3.2	LOS A	0.0	0.3	0.51	0.47	0.51	6.7
26	R2	37	0.0	37	0.0	0.030	6.8	LOS A	0.1	0.4	0.49	0.58	0.49	21.3
Approach		61	0.0	61	0.0	0.030	5.6	LOS A	0.1	0.4	0.50	0.54	0.50	20.7
NorthWest: Car Park 4 bypass														
27	L2	40	5.0	40	5.0	0.308	4.3	LOS A	0.7	4.8	0.12	0.33	0.12	21.0
28	T1	319	0.0	319	0.0	0.308	1.3	LOS A	0.7	4.8	0.12	0.32	0.12	37.8
29	R2	136	0.0	136	0.0	0.308	5.5	LOS A	0.7	4.8	0.12	0.32	0.12	20.6
Approach		495	0.4	495	0.4	0.308	2.7	LOS A	0.7	4.8	0.12	0.32	0.12	28.9
SouthWest: Car Park 1 Access														
30	L2	18	0.0	18	0.0	0.020	2.9	LOS A	0.0	0.2	0.44	0.43	0.44	24.1
Approach		18	0.0	18	0.0	0.020	2.9	LOS A	0.0	0.2	0.44	0.43	0.44	24.1
All Vehicles		932	0.4	932	0.4	0.308	2.7	LOS A	0.7	4.8	0.22	0.32	0.22	31.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 3 [3R. Bypass connection - Roundabout 3 AM]

Network: 65 [AM Network - 2026 without Dev]

2026 without development
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Northern Internal Road														
21	L2	4	0.0	4	0.0	0.013	5.3	LOS A	0.0	0.2	0.65	0.59	0.65	34.6
23	R2	6	0.0	6	0.0	0.013	9.1	LOS A	0.0	0.2	0.65	0.59	0.65	37.6
Approach		11	0.0	11	0.0	0.013	7.6	LOS A	0.0	0.2	0.65	0.59	0.65	36.5
NorthEast: Bypass														
24	L2	100	0.0	100	0.0	0.092	2.3	LOS A	0.2	1.2	0.21	0.33	0.21	38.6
25	T1	686	5.0	686	5.0	0.420	1.7	LOS A	1.2	8.6	0.23	0.23	0.23	33.9
Approach		786	4.4	786	4.4	0.420	1.8	LOS A	1.2	8.6	0.23	0.24	0.23	35.5
SouthWest: Car Park 4 bypass														
31	T1	208	0.0	208	0.0	0.116	1.2	LOS A	0.3	2.1	0.06	0.26	0.06	40.4
32	R2	61	0.0	61	0.0	0.116	5.5	LOS A	0.3	2.1	0.05	0.30	0.05	40.5
Approach		269	0.0	269	0.0	0.116	2.2	LOS A	0.3	2.1	0.06	0.27	0.06	40.5
All Vehicles		1066	3.2	1066	3.2	0.420	1.9	LOS A	1.2	8.6	0.19	0.25	0.19	37.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

USER REPORT FOR NETWORK SITE

Project: 201104sid-N169770 JHHIP Stage 1 SSDA report - 2026 without Dev

Template: Movement Summaries

Site: 3756 [2S. Lookout Rd / Kookaburra Ckt PM]

Network: 64 [PM Network - 2026 without Dev]

2026 without development
Site Category: -
Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: TCS 2016 - Revised
Reference Phase: Phase A
Input Phase Sequence: A, B, BP, C
Output Phase Sequence: A, B, BP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Lookout Road														
23	R2	1	7.7	1	7.7	0.013	67.9	LOS E	0.0	0.3	0.97	0.59	0.97	1.4
Approach		1	7.7	1	7.7	0.013	67.9	LOS E	0.0	0.3	0.97	0.59	0.97	1.4
NorthEast: Lookout Road														
25	T1	1504	2.6	1504	2.6	0.597	6.5	LOS A	8.7	62.5	0.32	0.30	0.32	53.2
26	R2	48	5.8	48	5.8	0.150	64.9	LOS E	1.3	9.7	0.99	0.73	0.99	17.8
Approach		1553	2.7	1553	2.7	0.597	8.3	LOS A	8.7	62.5	0.35	0.31	0.35	51.5
NorthWest: Southern Hospital access														
27	L2	118	1.6	118	1.6	0.512	26.1	LOS B	4.6	32.5	0.88	0.79	0.88	17.3
29	R2	259	1.2	259	1.2	0.512	45.2	LOS D	5.7	40.5	0.93	0.80	0.93	24.4
Approach		377	1.3	377	1.3	0.512	39.2	LOS C	5.7	40.5	0.92	0.79	0.92	23.1
SouthWest: Lookout Road														
30	L2	93	3.9	93	3.9	0.062	6.2	LOS A	0.3	1.9	0.14	0.58	0.14	47.9
31	T1	1022	3.7	1022	3.7	0.499	20.0	LOS B	12.3	89.0	0.68	0.61	0.68	33.0
Approach		1115	3.8	1115	3.8	0.499	18.9	LOS B	12.3	89.0	0.63	0.61	0.63	33.8
All Vehicles		3045	2.9	3045	2.9	0.597	16.0	LOS B	12.3	89.0	0.52	0.48	0.52	41.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P6	NorthEast Full Crossing	53	58.3	LOS E	0.2	0.2	0.95	0.95
P7	NorthWest Full Crossing	53	58.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		105	58.3	LOS E			0.95	0.95

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.

Site: 4069 [3S. Lookout Rd / Jacaranda Dr PM]

Network: 64 [PM Network - 2026 without Dev]

2026 without development
Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Two-Phase
Reference Phase: Phase C
Input Phase Sequence: A, B, CP, C
Output Phase Sequence: A, B, CP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Lookout Road														
5	T1	1551	2.7	1551	2.7	0.516	2.6	LOS A	5.3	37.9	0.19	0.18	0.19	52.6
6	R2	66	1.6	66	1.6	0.213	56.1	LOS D	2.2	15.3	0.87	0.75	0.87	16.7
Approach		1617	2.7	1617	2.7	0.516	4.8	LOS A	5.3	37.9	0.22	0.20	0.22	47.6
North: Jacaranda Drive														
7	L2	177	0.5	177	0.5	0.380	46.5	LOS D	5.6	39.4	0.86	0.79	0.86	5.3
9	R2	21	0.0	21	0.0	0.246	72.8	LOS F	0.8	5.9	1.00	0.70	1.00	3.4
Approach		198	0.5	198	0.5	0.380	49.3	LOS D	5.6	39.4	0.88	0.78	0.88	5.0
West: Lookout Road														
11	T1	1132	3.3	1132	3.3	0.459	6.7	LOS A	6.2	45.0	0.29	0.27	0.29	48.2
Approach		1132	3.3	1132	3.3	0.459	6.7	LOS A	6.2	45.0	0.29	0.27	0.29	48.2
All Vehicles		2946	2.8	2946	2.8	0.516	8.5	LOS A	6.2	45.0	0.29	0.26	0.29	42.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	8	58.2	LOS E	0.0	0.0	0.95	0.95
P4	West Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
All Pedestrians		19	58.2	LOS E			0.95	0.95

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.

Site: 1782 [4S. Lookout Rd / Russell Rd PM] — Network: 64 [PM Network - 2026 without Dev]

2026 without development
Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Sequence1
Reference Phase: Phase A
Input Phase Sequence: A, B, CP, C
Output Phase Sequence: A, B, CP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Russell Road														
21	L2	627	4.2	627	4.2	0.662	15.9	LOS B	12.5	91.0	0.64	0.78	0.64	39.8
23	R2	99	1.1	99	1.1	0.698	73.0	LOS F	4.0	28.3	1.00	0.82	1.11	26.1
Approach		726	3.8	726	3.8	0.698	23.6	LOS B	12.5	91.0	0.69	0.79	0.70	35.6
NorthEast: Croudace Street														
24	L2	75	0.0	75	0.0	0.771	46.8	LOS D	17.7	126.5	0.96	0.86	0.97	34.1
25	T1	942	3.0	942	3.0	0.771	41.2	LOS C	17.8	127.7	0.96	0.86	0.97	24.0
Approach		1017	2.8	1017	2.8	0.771	41.6	LOS C	17.8	127.7	0.96	0.86	0.97	25.1
SouthWest: Lookout Road														
31	T1	732	4.5	732	4.5	0.244	6.5	LOS A	7.3	53.1	0.50	0.44	0.50	52.5
32	R2	552	2.5	552	2.5	0.756	41.4	LOS C	17.8	127.1	0.90	0.86	0.90	31.8
Approach		1284	3.6	1284	3.6	0.756	21.5	LOS B	17.8	127.1	0.67	0.62	0.67	40.7
All Vehicles		3027	3.4	3027	3.4	0.771	28.8	LOS C	17.8	127.7	0.77	0.74	0.78	34.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	16	58.2	LOS E	0.1	0.1	0.95	0.95
P6	NorthEast Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
All Pedestrians		26	58.2	LOS E			0.95	0.95

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.

Site: 1 [1R. Kookaburra Ckt - Roundabout 1 PM]

Network: 64 [PM Network - 2026 without Dev]

2026 without development
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Southern Hospital access														
21	L2	7	0.0	7	0.0	0.082	3.1	LOS A	0.2	1.4	0.35	0.37	0.35	35.1
22	T1	97	2.0	97	2.0	0.082	2.9	LOS A	0.2	1.4	0.35	0.37	0.35	33.6
23	R2	32	0.6	32	0.6	0.053	6.6	LOS A	0.1	0.8	0.37	0.60	0.37	27.9
23u	U	24	0.0	24	0.0	0.053	10.9	LOS A	0.1	0.8	0.37	0.60	0.37	31.8
Approach		160	1.4	160	1.4	0.082	4.8	LOS A	0.2	1.4	0.36	0.45	0.36	31.9
NorthEast: Kookaburra Circuit														
24	L2	94	4.5	94	4.5	0.267	3.9	LOS A	0.7	5.0	0.55	0.63	0.55	19.1
25	T1	3	0.0	3	0.0	0.267	3.5	LOS A	0.7	5.0	0.55	0.63	0.55	29.6
26	R2	163	1.2	163	1.2	0.267	7.2	LOS A	0.7	5.0	0.55	0.63	0.55	19.1
Approach		260	2.4	260	2.4	0.267	5.9	LOS A	0.7	5.0	0.55	0.63	0.55	19.3
NorthWest: Kookaburra Circuit														
27	L2	141	0.0	141	0.0	0.305	3.5	LOS A	0.6	4.7	0.32	0.42	0.32	29.2
28	T1	185	9.2	185	9.2	0.305	2.9	LOS A	0.6	4.7	0.32	0.42	0.32	36.6
29	R2	1	0.0	1	0.0	0.305	6.2	LOS A	0.6	4.7	0.32	0.42	0.32	29.8
Approach		327	5.2	327	5.2	0.305	3.2	LOS A	0.6	4.7	0.32	0.42	0.32	32.9
SouthWest: Car Park 1 Access														
30	L2	1	0.0	1	0.0	0.086	4.4	LOS A	0.2	1.2	0.46	0.62	0.46	22.9
31	T1	17	0.0	17	0.0	0.086	4.2	LOS A	0.2	1.2	0.46	0.62	0.46	16.9
32	R2	55	5.3	55	5.3	0.086	7.4	LOS A	0.2	1.2	0.46	0.62	0.46	22.9
Approach		73	4.0	73	4.0	0.086	6.6	LOS A	0.2	1.2	0.46	0.62	0.46	20.7
All Vehicles		820	3.5	820	3.5	0.305	4.7	LOS A	0.7	5.0	0.42	0.51	0.42	30.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 2 [2R. Kookaburra Ckt - Roundabout 2 PM]

Network: 64 [PM Network - 2026 without Dev]

2026 without development
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Kookaburra Circuit														
21	L2	1	0.0	1	0.0	0.291	2.1	LOS A	0.6	4.3	0.17	0.22	0.17	23.3
22	T1	414	0.0	414	0.0	0.291	1.4	LOS A	0.6	4.3	0.17	0.22	0.17	37.9
23	R2	25	5.0	25	5.0	0.291	5.7	LOS A	0.6	4.3	0.17	0.23	0.17	37.1
Approach		440	0.3	440	0.3	0.291	1.6	LOS A	0.6	4.3	0.17	0.22	0.17	37.8
NorthEast: Kookaburra Circuit														
24	L2	23	0.0	23	0.0	0.022	3.0	LOS A	0.0	0.3	0.41	0.41	0.41	24.0
25	T1	1	0.0	1	0.0	0.022	2.4	LOS A	0.0	0.3	0.41	0.41	0.41	6.7
26	R2	37	0.0	37	0.0	0.027	6.2	LOS A	0.1	0.4	0.39	0.55	0.39	21.9
Approach		61	0.0	61	0.0	0.027	4.9	LOS A	0.1	0.4	0.40	0.49	0.40	21.4
NorthWest: Car Park 4 bypass														
27	L2	40	1.0	40	1.0	0.213	4.2	LOS A	0.4	2.8	0.10	0.23	0.10	21.1
28	T1	283	0.0	283	0.0	0.213	1.3	LOS A	0.4	2.8	0.10	0.23	0.10	39.2
29	R2	13	0.0	13	0.0	0.213	5.5	LOS A	0.4	2.8	0.10	0.23	0.10	20.9
Approach		336	0.1	336	0.1	0.213	1.8	LOS A	0.4	2.8	0.10	0.23	0.10	34.2
SouthWest: Car Park 1 Access														
30	L2	89	0.0	89	0.0	0.102	3.5	LOS A	0.2	1.3	0.49	0.52	0.49	22.2
Approach		89	0.0	89	0.0	0.102	3.5	LOS A	0.2	1.3	0.49	0.52	0.49	22.2
All Vehicles		926	0.2	926	0.2	0.291	2.1	LOS A	0.6	4.3	0.19	0.27	0.19	35.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 3 [3R. Bypass connection - Roundabout 3 PM]

Network: 64 [PM Network - 2026 without Dev]

2026 without development
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Northern Internal Road														
21	L2	43	0.0	43	0.0	0.098	2.7	LOS A	0.2	1.3	0.38	0.52	0.38	35.9
23	R2	71	0.0	71	0.0	0.098	6.5	LOS A	0.2	1.3	0.38	0.52	0.38	38.9
Approach		114	0.0	114	0.0	0.098	5.1	LOS A	0.2	1.3	0.38	0.52	0.38	37.8
NorthEast: Bypass														
24	L2	4	0.0	4	0.0	0.004	1.9	LOS A	0.0	0.0	0.03	0.31	0.03	39.1
25	T1	226	5.0	226	5.0	0.126	1.4	LOS A	0.3	2.0	0.02	0.18	0.02	36.7
Approach		231	4.9	231	4.9	0.126	1.4	LOS A	0.3	2.0	0.02	0.19	0.02	36.9
SouthWest: Car Park 4 bypass														
31	T1	649	0.0	649	0.0	0.310	1.5	LOS A	0.8	5.9	0.24	0.21	0.24	40.2
32	R2	2	0.0	2	0.0	0.310	5.7	LOS A	0.8	5.9	0.25	0.21	0.25	40.6
Approach		652	0.0	652	0.0	0.310	1.5	LOS A	0.8	5.9	0.24	0.21	0.24	40.2
All Vehicles		996	1.1	996	1.1	0.310	1.9	LOS A	0.8	5.9	0.21	0.24	0.21	39.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

USER REPORT FOR NETWORK SITE

Project: 201104sid-N169770 JHHIP Stage 1 SSDA report - 2026 with Dev

Template: Movement Summaries

Site: 3756 [2S. Lookout Rd / Kookaburra Ckt AM]

Network: 66 [AM Network - 2026 with Dev]

2026 with development
Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: TCS 2016 - Revised
Reference Phase: Phase A
Input Phase Sequence: A, B, BP, C
Output Phase Sequence: A, B, BP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Lookout Road														
23	R2	11	0.0	11	0.0	0.368	80.4	LOS F	0.5	3.3	1.00	0.66	1.00	1.2
Approach		11	0.0	11	0.0	0.368	80.4	LOS F	0.5	3.3	1.00	0.66	1.00	1.2
NorthEast: Lookout Road														
25	T1	936	5.5	936	5.5	0.368	11.6	LOS A	11.3	82.7	0.65	0.58	0.65	48.8
26	R2	196	1.4	196	1.4	0.355	60.3	LOS E	3.5	25.1	0.96	0.78	0.96	18.7
Approach		1132	4.8	1132	4.8	0.368	20.1	LOS B	11.3	82.7	0.70	0.61	0.70	42.0
NorthWest: Southern Hospital access														
27	L2	54	9.6	54	9.6	0.251	35.7	LOS C	2.4	17.7	0.75	0.72	0.75	14.3
29	R2	99	6.8	99	6.8	0.251	49.9	LOS D	2.4	17.6	0.87	0.74	0.87	23.1
Approach		153	7.8	153	7.8	0.251	44.9	LOS D	2.4	17.7	0.83	0.73	0.83	21.0
SouthWest: Lookout Road														
30	L2	360	2.2	360	2.2	0.244	6.5	LOS A	1.6	11.1	0.19	0.61	0.19	47.4
31	T1	1530	2.4	1530	2.4	0.704	23.6	LOS B	21.7	155.2	0.81	0.74	0.81	30.5
Approach		1890	2.4	1890	2.4	0.704	20.3	LOS B	21.7	155.2	0.69	0.71	0.69	32.8
All Vehicles		3185	3.5	3185	3.5	0.704	21.6	LOS B	21.7	155.2	0.70	0.68	0.70	35.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P6	NorthEast Full Crossing	41	58.3	LOS E	0.1	0.1	0.95	0.95
P7	NorthWest Full Crossing	21	58.2	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		62	58.3	LOS E			0.95	0.95

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.

Site: 4069 [3S. Lookout Rd / Jacaranda Dr AM]

Network: 66 [AM Network - 2026 with Dev]

2026 with development
Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Two-Phase
Reference Phase: Phase A
Input Phase Sequence: A, B, CP, C
Output Phase Sequence: A, B, CP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Lookout Road														
5	T1	1152	5.7	1152	5.7	0.406	4.0	LOS A	6.0	43.8	0.24	0.21	0.24	49.5
6	R2	247	0.0	247	0.0	0.962	90.4	LOS F	11.4	79.6	1.00	0.97	1.34	11.7
Approach		1399	4.7	1399	4.7	0.962	19.3	LOS B	11.4	79.6	0.37	0.35	0.43	29.8
North: Jacaranda Drive														
7	L2	43	0.0	43	0.0	0.108	48.3	LOS D	1.3	9.4	0.84	0.73	0.84	5.2
9	R2	5	0.0	5	0.0	0.092	75.0	LOS F	0.2	1.5	0.99	0.64	0.99	3.3
Approach		48	0.0	48	0.0	0.108	51.2	LOS D	1.3	9.4	0.85	0.72	0.85	4.9
West: Lookout Road														
11	T1	1680	3.8	1680	3.8	0.637	3.4	LOS A	6.4	45.9	0.21	0.19	0.21	53.2
Approach		1680	3.8	1680	3.8	0.637	3.4	LOS A	6.4	45.9	0.21	0.19	0.21	53.2
All Vehicles		3127	4.1	3127	4.1	0.962	11.3	LOS A	11.4	79.6	0.29	0.27	0.32	40.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	25	58.2	LOS E	0.1	0.1	0.95	0.95
P4	West Full Crossing	32	58.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		57	58.3	LOS E			0.95	0.95

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.

Site: 1782 [4S. Lookout Rd / Russell Rd AM] Network: 66 [AM Network - 2026 with Dev]

2026 with development
Site Category: -
Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Sequence1
Reference Phase: Phase A
Input Phase Sequence: A, B, CP, C, D
Output Phase Sequence: A, B, CP, C, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Russell Road														
21	L2	713	2.5	713	2.5	0.607	12.6	LOS A	12.0	85.9	0.55	0.75	0.55	42.7
23	R2	93	2.4	93	2.4	0.824	78.9	LOS F	4.0	28.2	1.00	0.90	1.32	25.0
Approach		805	2.5	805	2.5	0.824	20.3	LOS B	12.0	85.9	0.60	0.76	0.64	37.5
NorthEast: Croudace Street														
24	L2	63	1.7	63	1.7	0.832	62.7	LOS E	14.4	104.3	1.00	0.96	1.13	29.5
25	T1	661	4.4	661	4.4	0.832	57.1	LOS E	14.5	105.7	1.00	0.96	1.13	19.5
Approach		724	4.1	724	4.1	0.832	57.6	LOS E	14.5	105.7	1.00	0.96	1.13	20.7
SouthWest: Lookout Road														
31	T1	935	2.4	935	2.4	0.301	1.2	LOS A	2.2	15.5	0.09	0.08	0.09	58.4
32	R2	756	3.2	756	3.2	0.859	28.5	LOS C	18.8	135.4	0.98	0.92	1.04	37.0
Approach		1691	2.8	1691	2.8	0.859	13.4	LOS A	18.8	135.4	0.49	0.46	0.51	46.1
All Vehicles		3220	3.0	3220	3.0	0.859	25.1	LOS B	18.8	135.4	0.63	0.65	0.68	36.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
P6	NorthEast Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
All Pedestrians		21	58.2	LOS E			0.95	0.95

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.

Site: 1 [1R. Kookaburra Ckt - Roundabout 1 AM]   Network: 66 [AM Network - 2026 with Dev]

2026 with development
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Southern Hospital access														
21	L2	83	0.0	83	0.0	0.307	3.0	LOS A	0.8	5.8	0.34	0.38	0.34	35.2
22	T1	341	2.0	341	2.0	0.307	2.8	LOS A	0.8	5.8	0.34	0.38	0.34	33.6
23	R2	102	0.6	102	0.6	0.158	6.6	LOS A	0.4	2.5	0.34	0.61	0.34	27.7
23u	U	54	0.0	54	0.0	0.158	11.0	LOS A	0.4	2.5	0.34	0.61	0.34	31.5
Approach		580	1.3	580	1.3	0.307	4.3	LOS A	0.8	5.8	0.34	0.44	0.34	32.3
NorthEast: Kookaburra Circuit														
24	L2	35	4.5	35	4.5	0.140	2.5	LOS A	0.3	2.4	0.34	0.51	0.34	21.5
25	T1	21	0.0	21	0.0	0.140	2.2	LOS A	0.3	2.4	0.34	0.51	0.34	31.8
26	R2	105	1.2	105	1.2	0.140	5.8	LOS A	0.3	2.4	0.34	0.51	0.34	21.5
Approach		161	1.8	161	1.8	0.140	4.6	LOS A	0.3	2.4	0.34	0.51	0.34	23.3
NorthWest: Kookaburra Circuit														
27	L2	133	0.0	133	0.0	0.188	3.7	LOS A	0.4	2.6	0.35	0.47	0.35	29.1
28	T1	51	9.2	51	9.2	0.188	3.2	LOS A	0.4	2.6	0.35	0.47	0.35	36.5
29	R2	2	0.0	2	0.0	0.188	6.4	LOS A	0.4	2.6	0.35	0.47	0.35	29.7
Approach		185	2.5	185	2.5	0.188	3.6	LOS A	0.4	2.6	0.35	0.47	0.35	30.7
SouthWest: Car Park 1 Access														
30	L2	1	0.0	1	0.0	0.029	5.6	LOS A	0.1	0.4	0.56	0.64	0.56	21.8
31	T1	7	0.0	7	0.0	0.029	5.4	LOS A	0.1	0.4	0.56	0.64	0.56	16.4
32	R2	12	5.3	12	5.3	0.029	8.6	LOS A	0.1	0.4	0.56	0.64	0.56	21.8
Approach		20	3.0	20	3.0	0.029	7.3	LOS A	0.1	0.4	0.56	0.64	0.56	19.0
All Vehicles		946	1.7	946	1.7	0.307	4.3	LOS A	0.8	5.8	0.35	0.46	0.35	31.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 2 [2R. Kookaburra Ckt - Roundabout 2 AM] Network: 66 [AM Network - 2026 with Dev]

2026 with development
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Kookaburra Circuit														
21	L2	1	0.0	1	0.0	0.309	2.6	LOS A	0.6	4.2	0.32	0.29	0.32	23.0
22	T1	369	0.0	369	0.0	0.309	1.9	LOS A	0.6	4.2	0.32	0.29	0.32	37.1
23	R2	34	5.0	34	5.0	0.309	6.2	LOS A	0.6	4.2	0.32	0.30	0.32	36.4
Approach		404	0.4	404	0.4	0.309	2.2	LOS A	0.6	4.2	0.32	0.29	0.32	37.0
NorthEast: Kookaburra Circuit														
24	L2	25	0.0	25	0.0	0.027	3.9	LOS A	0.1	0.4	0.52	0.48	0.52	22.4
25	T1	1	0.0	1	0.0	0.027	3.3	LOS A	0.1	0.4	0.52	0.48	0.52	6.6
26	R2	41	0.0	41	0.0	0.034	6.9	LOS A	0.1	0.5	0.50	0.59	0.50	21.2
Approach		67	0.0	67	0.0	0.034	5.7	LOS A	0.1	0.5	0.51	0.55	0.51	20.7
NorthWest: Car Park 4 bypass														
27	L2	54	5.0	54	5.0	0.328	4.3	LOS A	0.8	5.3	0.14	0.33	0.14	21.0
28	T1	328	0.0	328	0.0	0.328	1.3	LOS A	0.8	5.3	0.14	0.32	0.14	37.9
29	R2	136	0.0	136	0.0	0.328	5.6	LOS A	0.8	5.3	0.14	0.32	0.14	20.6
Approach		518	0.5	518	0.5	0.328	2.7	LOS A	0.8	5.3	0.14	0.32	0.14	28.7
SouthWest: Car Park 1 Access														
30	L2	18	0.0	18	0.0	0.020	3.2	LOS A	0.0	0.2	0.46	0.45	0.46	23.3
Approach		18	0.0	18	0.0	0.020	3.2	LOS A	0.0	0.2	0.46	0.45	0.46	23.3
All Vehicles		1007	0.4	1007	0.4	0.328	2.7	LOS A	0.8	5.3	0.24	0.33	0.24	31.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 3 [3R. Bypass connection - Roundabout 3 AM]

Network: 66 [AM Network - 2026 with Dev]

2026 with development
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Northern Internal Road														
21	L2	14	0.0	14	0.0	0.070	5.6	LOS A	0.2	1.1	0.69	0.69	0.69	34.1
23	R2	40	0.0	40	0.0	0.070	9.5	LOS A	0.2	1.1	0.69	0.69	0.69	37.1
Approach		54	0.0	54	0.0	0.070	8.5	LOS A	0.2	1.1	0.69	0.69	0.69	36.4
NorthEast: Bypass														
24	L2	215	0.0	215	0.0	0.191	2.6	LOS A	0.4	2.9	0.29	0.37	0.29	38.4
25	T1	699	5.0	699	5.0	0.447	1.9	LOS A	1.3	9.7	0.32	0.26	0.32	32.7
Approach		914	3.8	914	3.8	0.447	2.1	LOS A	1.3	9.7	0.32	0.28	0.32	35.7
SouthWest: Car Park 4 bypass														
31	T1	212	0.0	212	0.0	0.146	1.4	LOS A	0.4	2.6	0.17	0.30	0.17	39.7
32	R2	99	0.0	99	0.0	0.146	5.6	LOS A	0.4	2.6	0.17	0.35	0.17	40.0
Approach		311	0.0	311	0.0	0.146	2.7	LOS A	0.4	2.6	0.17	0.31	0.17	39.9
All Vehicles		1278	2.7	1278	2.7	0.447	2.5	LOS A	1.3	9.7	0.30	0.31	0.30	37.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

USER REPORT FOR NETWORK SITE

Project: 201104sid-N169770 JHHIP Stage 1 SSDA report - 2026 with Dev

Template: Movement Summaries

Site: 3756 [2S. Lookout Rd / Kookaburra Ckt PM]

Network: 64 [PM Network - 2026 with Dev]

2026 with development
Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: TCS 2016 - Revised
Reference Phase: Phase A
Input Phase Sequence: A, B, BP, C
Output Phase Sequence: A, B, BP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Lookout Road														
23	R2	1	7.7	1	7.7	0.010	64.9	LOS E	0.0	0.3	0.96	0.59	0.96	1.4
Approach		1	7.7	1	7.7	0.010	64.9	LOS E	0.0	0.3	0.96	0.59	0.96	1.4
NorthEast: Lookout Road														
25	T1	1505	2.6	1505	2.6	0.613	7.1	LOS A	9.4	67.0	0.35	0.32	0.35	52.6
26	R2	56	5.8	56	5.8	0.172	65.1	LOS E	1.5	11.2	0.99	0.74	0.99	17.7
Approach		1561	2.7	1561	2.7	0.613	9.2	LOS A	9.4	67.0	0.37	0.33	0.37	50.7
NorthWest: Southern Hospital access														
27	L2	138	1.6	138	1.6	0.544	25.4	LOS B	5.2	36.6	0.89	0.80	0.89	17.6
29	R2	295	1.2	295	1.2	0.544	44.5	LOS D	6.6	46.6	0.93	0.80	0.93	24.6
Approach		433	1.3	433	1.3	0.544	38.4	LOS C	6.6	46.6	0.92	0.80	0.92	23.3
SouthWest: Lookout Road														
30	L2	106	3.9	106	3.9	0.072	6.2	LOS A	0.3	2.2	0.14	0.58	0.14	47.9
31	T1	1022	3.7	1022	3.7	0.513	21.4	LOS B	12.7	92.0	0.70	0.63	0.70	32.0
Approach		1128	3.8	1128	3.8	0.513	20.0	LOS B	12.7	92.0	0.65	0.62	0.65	33.0
All Vehicles		3124	2.9	3124	2.9	0.613	17.1	LOS B	12.7	92.0	0.55	0.50	0.55	40.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P6	NorthEast Full Crossing	53	58.3	LOS E	0.2	0.2	0.95	0.95
P7	NorthWest Full Crossing	53	58.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		105	58.3	LOS E			0.95	0.95

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.

Site: 4069 [3S. Lookout Rd / Jacaranda Dr PM]   Network: 64 [PM Network - 2026 with Dev]

2026 with development
Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Two-Phase
Reference Phase: Phase C
Input Phase Sequence: A, B, CP, C
Output Phase Sequence: A, B, CP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Lookout Road														
5	T1	1563	2.7	1563	2.7	0.520	2.7	LOS A	5.4	38.6	0.19	0.18	0.19	52.6
6	R2	68	1.6	68	1.6	0.220	56.2	LOS D	2.2	15.7	0.87	0.75	0.87	16.6
Approach		1632	2.7	1632	2.7	0.520	4.9	LOS A	5.4	38.6	0.22	0.20	0.22	47.5
North: Jacaranda Drive														
7	L2	182	0.5	182	0.5	0.398	46.6	LOS D	5.8	40.8	0.87	0.79	0.87	5.3
9	R2	22	0.0	22	0.0	0.258	72.9	LOS F	0.9	6.2	1.00	0.71	1.00	3.4
Approach		204	0.5	204	0.5	0.398	49.5	LOS D	5.8	40.8	0.88	0.78	0.88	5.0
West: Lookout Road														
11	T1	1153	3.3	1153	3.3	0.467	6.1	LOS A	5.9	42.8	0.27	0.25	0.27	49.0
Approach		1153	3.3	1153	3.3	0.467	6.1	LOS A	5.9	42.8	0.27	0.25	0.27	49.0
All Vehicles		2988	2.8	2988	2.8	0.520	8.4	LOS A	5.9	42.8	0.29	0.26	0.29	42.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	8	58.2	LOS E	0.0	0.0	0.95	0.95
P4	West Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
All Pedestrians		19	58.2	LOS E			0.95	0.95

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.

Site: 1782 [4S. Lookout Rd / Russell Rd PM] Network: 64 [PM Network - 2026 with Dev]

2026 with development
Site Category: -
Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Sequence1
Reference Phase: Phase A
Input Phase Sequence: A, B, CP, C
Output Phase Sequence: A, B, CP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Russell Road														
21	L2	632	4.2	632	4.2	0.673	16.0	LOS B	12.8	92.7	0.64	0.78	0.64	39.7
23	R2	99	1.1	99	1.1	0.776	76.0	LOS F	4.1	29.1	1.00	0.86	1.22	25.5
Approach		731	3.8	731	3.8	0.776	24.1	LOS B	12.8	92.7	0.69	0.79	0.72	35.3
NorthEast: Croudace Street														
24	L2	75	0.0	75	0.0	0.758	45.3	LOS D	17.4	124.7	0.95	0.85	0.95	34.6
25	T1	948	3.0	948	3.0	0.758	39.8	LOS C	17.5	125.9	0.95	0.84	0.95	24.6
Approach		1023	2.8	1023	2.8	0.758	40.2	LOS C	17.5	125.9	0.95	0.84	0.95	25.6
SouthWest: Lookout Road														
31	T1	749	4.5	749	4.5	0.247	6.1	LOS A	7.3	53.3	0.49	0.43	0.49	52.9
32	R2	560	2.5	560	2.5	0.767	41.7	LOS C	18.0	128.9	0.90	0.86	0.90	31.8
Approach		1309	3.7	1309	3.7	0.767	21.3	LOS B	18.0	128.9	0.66	0.62	0.66	40.8
All Vehicles		3063	3.4	3063	3.4	0.776	28.3	LOS B	18.0	128.9	0.77	0.74	0.77	34.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	16	58.2	LOS E	0.1	0.1	0.95	0.95
P6	NorthEast Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
All Pedestrians		26	58.2	LOS E			0.95	0.95

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.

Site: 1 [1R. Kookaburra Ckt - Roundabout 1 PM]

Network: 64 [PM Network - 2026 with Dev]

2026 with development
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Southern Hospital access														
21	L2	7	0.0	7	0.0	0.091	3.1	LOS A	0.2	1.5	0.36	0.37	0.36	35.1
22	T1	108	2.0	108	2.0	0.091	2.9	LOS A	0.2	1.5	0.36	0.37	0.36	33.5
23	R2	41	0.6	41	0.6	0.061	6.5	LOS A	0.1	1.0	0.37	0.60	0.37	27.7
23u	U	24	0.0	24	0.0	0.061	10.9	LOS A	0.1	1.0	0.37	0.60	0.37	31.5
Approach		181	1.4	181	1.4	0.091	4.8	LOS A	0.2	1.5	0.36	0.45	0.36	31.6
NorthEast: Kookaburra Circuit														
24	L2	126	4.5	126	4.5	0.309	4.2	LOS A	0.8	6.0	0.60	0.65	0.60	18.7
25	T1	3	0.0	3	0.0	0.309	3.8	LOS A	0.8	6.0	0.60	0.65	0.60	29.3
26	R2	163	1.2	163	1.2	0.309	7.5	LOS A	0.8	6.0	0.60	0.65	0.60	18.7
Approach		293	2.6	293	2.6	0.309	6.0	LOS A	0.8	6.0	0.60	0.65	0.60	18.9
NorthWest: Kookaburra Circuit														
27	L2	141	0.0	141	0.0	0.332	3.6	LOS A	0.7	5.3	0.34	0.43	0.34	29.2
28	T1	212	9.2	212	9.2	0.332	3.0	LOS A	0.7	5.3	0.34	0.43	0.34	36.6
29	R2	1	0.0	1	0.0	0.332	6.3	LOS A	0.7	5.3	0.34	0.43	0.34	29.8
Approach		354	5.5	354	5.5	0.332	3.2	LOS A	0.7	5.3	0.34	0.43	0.34	33.1
SouthWest: Car Park 1 Access														
30	L2	1	0.0	1	0.0	0.088	4.5	LOS A	0.2	1.2	0.48	0.63	0.48	22.7
31	T1	17	0.0	17	0.0	0.088	4.3	LOS A	0.2	1.2	0.48	0.63	0.48	16.8
32	R2	55	5.3	55	5.3	0.088	7.5	LOS A	0.2	1.2	0.48	0.63	0.48	22.7
Approach		73	4.0	73	4.0	0.088	6.7	LOS A	0.2	1.2	0.48	0.63	0.48	20.6
All Vehicles		900	3.6	900	3.6	0.332	4.7	LOS A	0.8	6.0	0.44	0.52	0.44	30.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 2 [2R. Kookaburra Ckt - Roundabout 2 PM]

Network: 64 [PM Network - 2026 with Dev]

2026 with development
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Kookaburra Circuit														
21	L2	1	0.0	1	0.0	0.303	2.1	LOS A	0.7	4.6	0.19	0.22	0.19	23.3
22	T1	423	0.0	423	0.0	0.303	1.4	LOS A	0.7	4.6	0.19	0.22	0.19	37.8
23	R2	27	5.0	27	5.0	0.303	5.7	LOS A	0.7	4.6	0.19	0.23	0.19	37.0
Approach		452	0.3	452	0.3	0.303	1.7	LOS A	0.7	4.6	0.19	0.22	0.19	37.7
NorthEast: Kookaburra Circuit														
24	L2	28	0.0	28	0.0	0.027	3.1	LOS A	0.1	0.4	0.43	0.43	0.43	23.7
25	T1	1	0.0	1	0.0	0.027	2.5	LOS A	0.1	0.4	0.43	0.43	0.43	6.7
26	R2	46	0.0	46	0.0	0.035	6.3	LOS A	0.1	0.5	0.41	0.56	0.41	21.8
Approach		76	0.0	76	0.0	0.035	5.1	LOS A	0.1	0.5	0.42	0.51	0.42	21.5
NorthWest: Car Park 4 bypass														
27	L2	43	1.0	43	1.0	0.233	4.2	LOS A	0.5	3.2	0.11	0.23	0.11	21.1
28	T1	309	0.0	309	0.0	0.233	1.3	LOS A	0.5	3.2	0.11	0.23	0.11	39.1
29	R2	13	0.0	13	0.0	0.233	5.5	LOS A	0.5	3.2	0.11	0.23	0.11	20.9
Approach		365	0.1	365	0.1	0.233	1.8	LOS A	0.5	3.2	0.11	0.23	0.11	34.3
SouthWest: Car Park 1 Access														
30	L2	89	0.0	89	0.0	0.104	3.6	LOS A	0.2	1.3	0.50	0.53	0.50	21.9
Approach		89	0.0	89	0.0	0.104	3.6	LOS A	0.2	1.3	0.50	0.53	0.50	21.9
All Vehicles		982	0.2	982	0.2	0.303	2.1	LOS A	0.7	4.6	0.21	0.28	0.21	35.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 3 [3R. Bypass connection - Roundabout 3 PM]

Network: 64 [PM Network - 2026 with Dev]

2026 with development
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Northern Internal Road														
21	L2	69	0.0	69	0.0	0.191	2.8	LOS A	0.4	2.9	0.41	0.55	0.41	35.7
23	R2	152	0.0	152	0.0	0.191	6.7	LOS A	0.4	2.9	0.41	0.55	0.41	38.6
Approach		221	0.0	221	0.0	0.191	5.5	LOS A	0.4	2.9	0.41	0.55	0.41	37.8
NorthEast: Bypass														
24	L2	33	0.0	33	0.0	0.028	2.0	LOS A	0.1	0.4	0.08	0.30	0.08	39.0
25	T1	229	5.0	229	5.0	0.133	1.4	LOS A	0.3	2.3	0.07	0.19	0.07	36.0
Approach		262	4.4	262	4.4	0.133	1.5	LOS A	0.3	2.3	0.07	0.20	0.07	37.1
SouthWest: Car Park 4 bypass														
31	T1	658	0.0	658	0.0	0.348	1.9	LOS A	1.0	6.9	0.38	0.28	0.38	39.5
32	R2	12	0.0	12	0.0	0.348	6.1	LOS A	1.0	6.9	0.39	0.27	0.39	40.1
Approach		669	0.0	669	0.0	0.348	2.0	LOS A	1.0	6.9	0.38	0.28	0.38	39.5
All Vehicles		1153	1.0	1153	1.0	0.348	2.6	LOS A	1.0	6.9	0.32	0.31	0.32	38.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

USER REPORT FOR NETWORK SITE

Project: 201004sid-N169770 JHHIP Stage 1 SSDA report - 2036 without Dev

Template: Movement Summaries

Site: 3756 [2S. Lookout Rd / Kookaburra Ckt AM]

Network: 65 [AM Network - 2036 without Dev]

Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: TCS 2016 - Revised
Reference Phase: Phase A
Input Phase Sequence: A, B, BP, C
Output Phase Sequence: A, B, BP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Lookout Road														
23	R2	11	0.0	11	0.0	0.368	80.4	LOS F	0.5	3.3	1.00	0.66	1.00	1.2
Approach		11	0.0	11	0.0	0.368	80.4	LOS F	0.5	3.3	1.00	0.66	1.00	1.2
NorthEast: Lookout Road														
25	T1	1031	5.5	1031	5.5	0.402	11.4	LOS A	12.5	91.4	0.63	0.57	0.63	49.0
26	R2	167	1.4	167	1.4	0.303	59.7	LOS E	3.0	21.3	0.95	0.77	0.95	18.8
Approach		1198	4.9	1198	4.9	0.402	18.2	LOS B	12.5	91.4	0.68	0.60	0.68	43.4
NorthWest: Southern Hospital access														
27	L2	46	9.6	46	9.6	0.213	35.8	LOS C	2.0	15.1	0.74	0.71	0.74	14.3
29	R2	84	6.8	84	6.8	0.213	49.7	LOS D	2.0	15.1	0.86	0.73	0.86	23.2
Approach		131	7.8	131	7.8	0.213	44.8	LOS D	2.0	15.1	0.82	0.72	0.82	21.0
SouthWest: Lookout Road														
30	L2	306	2.2	306	2.2	0.206	6.4	LOS A	1.2	8.2	0.17	0.60	0.17	47.6
31	T1	1685	2.4	1685	2.4	0.775	25.2	LOS B	25.5	182.3	0.86	0.79	0.86	29.5
Approach		1991	2.4	1991	2.4	0.775	22.3	LOS B	25.5	182.3	0.75	0.76	0.75	31.4
All Vehicles		3330	3.5	3330	3.5	0.775	21.9	LOS B	25.5	182.3	0.73	0.70	0.73	35.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P6	NorthEast Full Crossing	41	58.3	LOS E	0.1	0.1	0.95	0.95
P7	NorthWest Full Crossing	21	58.2	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		62	58.3	LOS E			0.95	0.95

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.

Site: 4069 [3S. Lookout Rd / Jacaranda Dr AM]

Network: 65 [AM Network - 2036 without Dev]

Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Two-Phase
Reference Phase: Phase A
Input Phase Sequence: A, B, CP, C
Output Phase Sequence: A, B, CP, C

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Lookout Road														
5	T1	1235	5.7	1235	5.7	0.435	4.7	LOS A	7.4	54.6	0.28	0.25	0.28	48.0
6	R2	239	0.0	239	0.0	0.929	83.8	LOS F	10.5	73.2	1.00	0.94	1.25	12.4
Approach		1474	4.7	1474	4.7	0.929	17.5	LOS B	10.5	73.2	0.39	0.36	0.43	31.2
North: Jacaranda Drive														
7	L2	41	0.0	41	0.0	0.103	48.2	LOS D	1.3	8.9	0.84	0.72	0.84	5.2
9	R2	5	0.0	5	0.0	0.092	75.0	LOS F	0.2	1.5	0.99	0.64	0.99	3.3
Approach		46	0.0	46	0.0	0.103	51.2	LOS D	1.3	8.9	0.85	0.71	0.85	4.9
West: Lookout Road														
11	T1	1841	3.8	1841	3.8	0.752	3.8	LOS A	9.0	64.7	0.27	0.25	0.27	52.7
Approach		1841	3.8	1841	3.8	0.752	3.8	LOS A	9.0	64.7	0.27	0.25	0.27	52.7
All Vehicles		3361	4.1	3361	4.1	0.929	10.5	LOS A	10.5	73.2	0.33	0.31	0.35	41.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	25	58.2	LOS E	0.1	0.1	0.95	0.95
P4	West Full Crossing	32	58.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		57	58.3	LOS E			0.95	0.95

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.

Site: 1782 [4S. Lookout Rd / Russell Rd AM]

Network: 65 [AM Network - 2036 without Dev]

Site Category: -
Signals - Fixed Time Coordinated   Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Sequence1
Reference Phase: Phase A
Input Phase Sequence: A, B, CP, C, D
Output Phase Sequence: A, B, CP, C, D

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Russell Road														
21	L2	795	2.5	795	2.5	0.675	14.3	LOS A	15.5	110.9	0.63	0.78	0.63	41.2
23	R2	105	2.4	105	2.4	0.937	90.2	LOS F	4.9	35.0	1.00	1.01	1.59	23.1
Approach		900	2.5	900	2.5	0.937	23.2	LOS B	15.5	110.9	0.67	0.80	0.74	35.7
NorthEast: Croudace Street														
24	L2	71	1.7	71	1.7	0.932	80.3	LOS F	17.6	127.5	1.00	1.11	1.35	25.6
25	T1	686	4.4	686	4.4	0.932	74.6	LOS F	17.8	129.3	1.00	1.11	1.35	16.2
Approach		757	4.1	757	4.1	0.932	75.2	LOS F	17.8	129.3	1.00	1.11	1.35	17.3
SouthWest: Lookout Road														
31	T1	999	2.4	999	2.4	0.322	1.2	LOS A	1.9	13.9	0.09	0.08	0.09	58.4
32	R2	857	3.2	857	3.2	0.944	46.7	LOS D	28.3	203.6	1.00	1.00	1.22	30.1
Approach		1856	2.8	1856	2.8	0.944	22.2	LOS B	28.3	203.6	0.51	0.51	0.61	40.3
All Vehicles		3513	3.0	3513	3.0	0.944	33.9	LOS C	28.3	203.6	0.66	0.71	0.80	32.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P5	SouthEast Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
P6	NorthEast Full Crossing	11	58.2	LOS E	0.0	0.0	0.95	0.95
All Pedestrians		21	58.2	LOS E			0.95	0.95

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.

Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Southern Hospital access														
21	L2	83	0.0	83	0.0	0.274	3.0	LOS A	0.7	5.0	0.33	0.38	0.33	35.2
22	T1	295	2.0	295	2.0	0.274	2.8	LOS A	0.7	5.0	0.33	0.38	0.33	33.7
23	R2	65	0.6	65	0.6	0.127	6.7	LOS A	0.3	1.9	0.34	0.61	0.34	28.0
23u	U	54	0.0	54	0.0	0.127	11.0	LOS A	0.3	1.9	0.34	0.61	0.34	31.9
Approach		497	1.3	497	1.3	0.274	4.2	LOS A	0.7	5.0	0.34	0.43	0.34	32.8
NorthEast: Kookaburra Circuit														
24	L2	22	4.5	22	4.5	0.127	2.4	LOS A	0.3	2.1	0.32	0.51	0.32	21.5
25	T1	21	0.0	21	0.0	0.127	2.1	LOS A	0.3	2.1	0.32	0.51	0.32	31.6
26	R2	104	1.2	104	1.2	0.127	5.8	LOS A	0.3	2.1	0.32	0.51	0.32	21.5
Approach		147	1.5	147	1.5	0.127	4.7	LOS A	0.3	2.1	0.32	0.51	0.32	23.4
NorthWest: Kookaburra Circuit														
27	L2	133	0.0	133	0.0	0.171	3.5	LOS A	0.3	2.3	0.30	0.45	0.30	29.2
28	T1	41	9.2	41	9.2	0.171	2.9	LOS A	0.3	2.3	0.30	0.45	0.30	36.6
29	R2	2	0.0	2	0.0	0.171	6.2	LOS A	0.3	2.3	0.30	0.45	0.30	29.8
Approach		176	2.2	176	2.2	0.171	3.4	LOS A	0.3	2.3	0.30	0.45	0.30	30.5
SouthWest: Car Park 1 Access														
30	L2	1	0.0	1	0.0	0.027	5.2	LOS A	0.0	0.4	0.53	0.61	0.53	22.4
31	T1	7	0.0	7	0.0	0.027	5.0	LOS A	0.0	0.4	0.53	0.61	0.53	16.6
32	R2	12	5.3	12	5.3	0.027	8.3	LOS A	0.0	0.4	0.53	0.61	0.53	22.4
Approach		20	3.0	20	3.0	0.027	6.9	LOS A	0.0	0.4	0.53	0.61	0.53	19.4
All Vehicles		840	1.6	840	1.6	0.274	4.2	LOS A	0.7	5.0	0.33	0.46	0.33	31.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: [2R. Kookaburra Ckt - Roundabout 2 AM]

Network: 65 [AM Network - 2036 without Dev]

Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Kookaburra Circuit														
21	L2	1	0.0	1	0.0	0.274	2.6	LOS A	0.5	3.6	0.31	0.28	0.31	23.1
22	T1	332	0.0	332	0.0	0.274	1.8	LOS A	0.5	3.6	0.31	0.28	0.31	37.2
23	R2	25	5.0	25	5.0	0.274	6.1	LOS A	0.5	3.6	0.31	0.29	0.31	36.5
Approach		358	0.4	358	0.4	0.274	2.1	LOS A	0.5	3.6	0.31	0.28	0.31	37.1
NorthEast: Kookaburra Circuit														
24	L2	23	0.0	23	0.0	0.025	3.8	LOS A	0.0	0.3	0.51	0.47	0.51	22.5
25	T1	1	0.0	1	0.0	0.025	3.2	LOS A	0.0	0.3	0.51	0.47	0.51	6.7
26	R2	37	0.0	37	0.0	0.030	6.8	LOS A	0.1	0.4	0.49	0.58	0.49	21.3
Approach		61	0.0	61	0.0	0.030	5.6	LOS A	0.1	0.4	0.50	0.54	0.50	20.7
NorthWest: Car Park 4 bypass														
27	L2	40	5.0	40	5.0	0.308	4.3	LOS A	0.7	4.8	0.12	0.33	0.12	21.0
28	T1	319	0.0	319	0.0	0.308	1.3	LOS A	0.7	4.8	0.12	0.32	0.12	37.8
29	R2	136	0.0	136	0.0	0.308	5.5	LOS A	0.7	4.8	0.12	0.32	0.12	20.6
Approach		495	0.4	495	0.4	0.308	2.7	LOS A	0.7	4.8	0.12	0.32	0.12	28.9
SouthWest: Car Park 1 Access														
30	L2	18	0.0	18	0.0	0.020	2.9	LOS A	0.0	0.2	0.44	0.43	0.44	24.1
Approach		18	0.0	18	0.0	0.020	2.9	LOS A	0.0	0.2	0.44	0.43	0.44	24.1
All Vehicles		932	0.4	932	0.4	0.308	2.7	LOS A	0.7	4.8	0.22	0.32	0.22	31.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: [3R. Bypass connection - Roundabout 3 AM]

Network: 65 [AM Network - 2036 without Dev]

Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Northern Internal Road														
21	L2	4	0.0	4	0.0	0.017	5.3	LOS A	0.0	0.3	0.66	0.61	0.66	34.4
23	R2	9	0.0	9	0.0	0.017	9.1	LOS A	0.0	0.3	0.66	0.61	0.66	37.4
Approach		14	0.0	14	0.0	0.017	8.0	LOS A	0.0	0.3	0.66	0.61	0.66	36.5
NorthEast: Bypass														
24	L2	100	0.0	100	0.0	0.092	2.3	LOS A	0.2	1.3	0.21	0.33	0.21	38.6
25	T1	686	5.0	686	5.0	0.420	1.7	LOS A	1.2	8.6	0.23	0.23	0.23	33.9
Approach		786	4.4	786	4.4	0.420	1.8	LOS A	1.2	8.6	0.23	0.24	0.23	35.5
SouthWest: Car Park 4 bypass														
31	T1	208	0.0	208	0.0	0.118	1.2	LOS A	0.3	2.1	0.07	0.26	0.07	40.4
32	R2	61	0.0	61	0.0	0.118	5.5	LOS A	0.3	2.1	0.07	0.30	0.07	40.5
Approach		269	0.0	269	0.0	0.118	2.2	LOS A	0.3	2.1	0.07	0.27	0.07	40.4
All Vehicles		1069	3.2	1069	3.2	0.420	1.9	LOS A	1.2	8.6	0.20	0.25	0.20	37.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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 is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.