WAGGA WAGGA HEALTH SERVICE REDEVELOPMENT
Changing more than the buildings

GTAconsultants

Wagga Wagga Base Hospital (WWBH) Schematic Development Transport Impact Assessment

Client / /	Health Infrastructure
Office / /	NSW
Reference / /	N138820
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NSW GOVERNMENT Health Infrastructure

Wagga Wagga Base Hospital (WWBH)

Schematic Development

Transport Impact Assessment

Issue: B 03/10/18

Client: Health Infrastructure
Reference: N138820
GTA Consultants Office: NSW

Quality Record

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Executive Summary

Summary of Existing Assets

Wagga Wagga Base Hospital (WWBH) is a 393-bed hospital located within the Murrumbidgee Local Health District (MLHD). WWBH currently has a total of 1,338 staff working across three shifts on a typical day. Adopting a factor of 0.6 of the total staff, the average staff per weekday shift (ASDS) is calculated to be 803.

Wagga Wagga is around 460 kilometres south west of Sydney and 245 kilometres west of Canberra along Edward Street (Sturt Highway), which connects to the Olympic Highway to the north and south. WWBH is located in the Wagga Wagga City Council (Council) Local Government Area (LGA) and provides public health services to the Riverina and Murray regions of NSW.

WWBH is located around one kilometre south west from the Wagga Wagga Town Centre. The surrounding properties predominantly include low to medium density residential uses, infrastructure, public and private recreation uses.

The existing WWBH is located at 260-280 Edward Street, Wagga Wagga, NSW 2650. The site occupies the block bounded by Edward Street, Docker Street, Lewis Drive, Peck Street, Yabtree Street, Yathong Street and Rawson Lane, with approximately 200-metre frontages to Edward Street and 260-metre frontages to Docker Street and Lewis Drive.

The WWBH Main Entrance is currently serviced by at least seven bus services operated by Busabout Wagga and Junee Buses. Two bus services operated by Busabout Wagga stop on the western side of Docker Street south of Hardy Avenue, the eastern side of Docker Street south of Darlow Street and the northern side of Edward Street east of Docker Street. These bus services provide local connections to Bourkelands, Glenfield Park, Springvale and Wagga Wagga. Each service generally provides services every 40 minutes during the peak hours and hourly services outside of peak hours on weekdays with only a limited number of services on weekends.

Access to WWBH is currently provided from all four surrounding roads of Edward Street, Docker Street, Brookong Avenue (emergency vehicle access only) and Murray Street. The main visitor access is from Edward Street via Lewis Drive while the ambulance access is directly from Docker Street, Rawson Lane and Lewis Drive.

The main staff parking access is from Lewis Drive via Edward Street and Doris Roy Lane via Murray Street. An additional parking area to the south of the site is accessible via Rawson Lane from Docker Street (left in/ left out only), with on-street parking along Yabtree Street and Yathong Avenue accessible via Lewis Drive and Murray Street.

The hospital has 398 car parking spaces at the time of survey in December 2017. The surveyed peak demand is equal to an occupancy of 340 spaces at 1:30pm with 58 vacant spaces (86 per cent occupancy). Based on the parking survey, 53 out of the 58 vacant spaces consist of parking spaces associated with UNSW (16 per cent), permit only (22 per cent) and authorised vehicles only (53 per cent), which are not accessible to the general public and all WWBH staff. This results in up to five spaces which are available to the general public.

A total of 489 on-street parking spaces is available near the hospital, with 428 spaces occupied and 61 spaces vacant (86 per cent occupancy).

The opening of the recently completed car parking facility near the new set-down/ pick-up zone provides 42 parking spaces. This results in the hospital now having a total of 440 off-street parking spaces.

The intersection of Edward Street/ Lewis Drive currently operates satisfactorily, with spare capacity on all approaches. The intersection of Edward Street/ Docker Street currently operates at capacity with level of service E during the PM peak hour while the intersection of Edward Street/ Murray Street operates at level of service F during both AM and PM peak hours.

Schematic Design Assessment

The scope of the schematic design project is to potentially address the WWBH Stage 3 redevelopment and improvements for a six-storey ambulatory care building, including a rooftop plant room, all above an undercroft parking level. The ambulatory care building provides 28 flexible aged care beds, 24 rehabilitation beds, 24 older person's mental health inpatient unit beds, 20 renal dialysis unit chairs plus four training chairs collocated with other extended hours services, ambulatory clinics, rehabilitation and allied health, comprising 60 bookable rooms and treatment spaces. The Stage 3 redevelopment also includes an education area including library, conference rooms (60 seats) and a lecture theatre (100 seats), workforce and office accommodation and provides extended hours services including hospital in the home, integrated care, rapid assessment clinic, after hours General Practitioners and infusions. The Stage 3 work is expected to be completed in November 2020.

Following several workshops with Health infrastructure (HI), MLHD and WWBH personnel, a schematic design has been confirmed for the WWBH Stage 3 development within the north-western corner of the site. This layout enables a smoother integration with the existing acute services, support services and education facilities while providing convenient access to the Stage 1 Mental Health facility. The layout also includes improved pedestrian facilities and accesses to accommodate future development.

The existing vehicle accesses to the WWBH are to be maintained via Edward Street (from Lewis Drive), Docker Street, Brookong Avenue (emergency vehicle access only) and Murray Street (from Yabtree Street and Yathong Street), Doris Roy Lane and Yabtree Street.

Access to the proposed undercroft car park is proposed via the existing driveway to the west of Lewis Drive from the circulation aisle of CP1. It is proposed that the existing driveway width be widened from 5.6-metres to 6.5-metres to CP1 with minor reconfigurations of the car parking spaces on the eastern end of CP1. Entry/exit to/ from the undercroft car park is to be located around 50 metres west of Lewis Drive to ensure that no entering vehicles associated with the undercroft car park will queue into Lewis Drive.

As part of the new on-grade car parking spaces to the northwest corner of Harvey House, it is proposed that the existing left-out only driveway be removed, and the left-in entry only be widened to accommodate two-way movements.

The proposed Stage 3 redevelopment of WWBH includes:

- An increase of 115 additional staff. This represents an additional average staff per weekday shift (ASDS) of 69
- An increase of 94 beds/ chairs/ rooms.

However, it is noted that 20 per cent of the 144 FTE (29 FTE) work off-site. As such, the net increase in FTE staff will be 115 which is equivalent to an ASDS of 69. Based on the increase of 115 FTE and 69 ASDS, there would be a total of 1,453 FTE and 872 ASDS when Stage 3 is fully operational in 2027.

The proposed site is expected to generate an additional 76 and 92 vehicle trips during the AM and PM peak hours respectively. The intersections of Edward Street/ Docker Street, Edward Street/ Murray Street and Edward Street/ Brookong Street would operate beyond its capacity under 2027 traffic conditions even without the additional traffic generated by the project. The Edward Street/ Docker Street intersection would operate at levels of service C and E during the AM and PM peak

hours, respectively, which are similar to the existing operating conditions during the PM peak hour with the lengthening of the turn lanes, reconfigurations of the full lanes and signal optimisation.

Consultation between HI, Roads and Maritime Services (Roads and Maritime) and Council has occurred, and it is acknowledged that improvements to the intersection of Edward Street and Murray Street are required to support current and future traffic conditions. Roads and Maritime are currently undertaking their own investigations of this intersection and a commitment between the three agencies was made on Thursday 27 September 2018 to meet regularly to determine an appropriate intersection arrangement of Edward Street and Murray Street that would be committed prior to the opening of Stage 3 that would support an overall level of service C operation in 2031.

The WWBH would maintain the existing loading arrangements on-site with access via Docker Street.

It also noted that a 19-metre articulated vehicle is used in delivering and decanting bulk oxygen to the WWBH with deliveries. Vehicle approach is currently via Yathong Street with vehicle departure to Docker Street via Rawson Lane.

Analysis of parking requirements was assessed based on staff numbers and bed/ chair/ room numbers. The proposed development would provide 95 additional spaces including 85 spaces for the hospital and 10 spaces for the Education Area.

As part of the SSD application, HI has committed to providing 100 additional spaces on site in addition to the existing 440 spaces available at the end of the Stage 2 Redevelopment work, as presented in the Final Business Case.

Table E1 provides a summary of the traffic and transport requirements for Stage 3 only, Stage 3 and multi-storey car park and the full masterplan, with the requirements for the multi-storey car park and the full masterplan to be investigated at a later stage.

Table E1: Traffic and transport requirements summary

Traffic and Transport Requirements	Stage 3 (only)	Stage 3 and Carpark	Full Masterplan
Parking	95 spaces	To be confirmed	
Traffic Impact	○ Intersection improvements to Edward Street/Murray Street in agreement with Roads and Maritime and Council. ○ Reconfiguration of the intersection of Docker Street/ Edward Street.	Intersection improvements to Edward Street/Murray Street in agreement with Roads and Maritime and Council.	

While it is recognised that the site's location somewhat limits the practicality of using sustainable transport modes, there remains potential for improved utilisation of public transport and associated provision of sustainable transport infrastructure.

Several opportunities exist to provide WWBH staff with incentives to consider alternative modes of travel to and from work. The following recommendations are high level strategies that would need to be developed in greater detail and through consultation with relevant stakeholders closer to the opening of the Stage 3 building:

- Staff accommodation
- Shuttle bus service
- Public transport
- Active travel
- Promote car-pooling.

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1. Introduction

1.1 Background

The objective of the Wagga Wagga Base Hospital (WWBH), Stage 3 Development Masterplan project, which forms part of the Murrumbidgee Local Health District (MLHD), is to undertake planning for the redevelopment of the hospital with the primary aim of responding to previously identified clinical priorities. This forms part of the strategic plan for the potential development of the remaining campus.

The WWBH Stage 3 consists of a six storey Ambulatory Care Building, including a rooftop Plant Room, all above an undercroft parking level. The Ambulatory Care Building will provide the following Units:

- 28 flexible Aged Care Beds, including four dedicated beds for Acute Delirium
- 24 Rehabilitation beds, including inpatient therapy and ADL facilities shared with the Aged Care and Older Persons Health inpatient units
- A 24 bed Older Person's Mental Health Inpatient Unit, including eight T-BASIS beds
- A 20 chair Renal Dialysis Unit plus four training chairs (two x HD and two x peritoneal) collocated with other Extended Hours Services
- Ambulatory Clinics, Rehabilitation and Allied Health, comprising 60 bookable (electronic patient flow management system) Interview / Consult rooms and Gym / Allied Health treatment spaces. Services accessing this area will include Primary and Community Health, Outpatients, Prosthetics and Orthotics, Mental Health, Drug and Alcohol, and Oral Health services (eight Dental Chairs)
- An education area including library, conference rooms (60 seats total) and a lecture theatre (100 seats)
- Extended Hours Services including Hospital in the Home, Integrated Care, Rapid Assessment Clinic, After Hours GP, and Infusions using 10 treatment spaces and six consultation rooms and shared support areas with renal dialysis
- Workforce and office accommodation will be provided for staff associated with Stage 3, refined through New Ways of Working (NWW)
- The NWW assessment will be also extended to Support Services staff, including Patient Flow, IT, Health Share, Health Information Services, Pastoral Care and Volunteer Services.

Following several workshops with Health infrastructure (HI), MLHD and WWBH personnel, the positioning of the Stage 3 development in the north-western corner of the site was selected as the preferred layout. This layout enables a smoother integration with the existing acute services, support services and education facilities while providing convenient access to the Stage 1 Mental Health facility. The layout also includes improved pedestrian facilities and accesses to accommodate future development.

Savills Australia, on behalf of Health Infrastructure (HI) engaged GTA Consultants (GTA) to provide traffic and transport input into the masterplan stage for the Stage 3 redevelopment of WWBH and to complete a transport impact assessment considering the masterplan and development schedule as part of the schematic development stage.

1.2 Purpose of this Report

This report sets out an assessment of the anticipated transport (traffic, parking, accessibility, pedestrian, constraints and opportunities) conditions/ situations near WWBH and provides strategic

design advice to ensure an appropriate transport network. This report also includes a detailed review of the Stage 3 development project and overall master planning requirements in terms of:

- Provision of parking supply to meet any such future demands
- Traffic generation of future demands
- Site accessibility
- Service vehicle requirements
- Pedestrian and mobility scooter considerations.

This report has been prepared as part of the Stage 3 Contract. Stage 3 initiatives, contained within the report, are to be delivered through the Stage 3 Main Works Design Finalisation Contract. Future initiatives, such as master planning, are to be considered in all Stage 3 design activities.

1.3 References

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

- An assessment of the site and its surrounds on Tuesday, 5 December 2017.
- Historical understanding of Wagga Wagga and its surrounds.
- Wagga Wagga Council Local Environmental Plan (LEP) 2010.
- Wagga Wagga Development Control Plan (DCP) 2010.
- Australian Standard, Parking Facilities, Part 1: Off-Street Car Parking AS 2890.1:2004.
- Australian Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities AS 2890.2:2002.
- Australian Standard, Parking Facilities, Part 6: Off-Street Parking for People with Disabilities AS 2890.6:2009.
- Roads and Maritime Services (Roads and Maritime) Guide to Traffic Generating Developments, 2002.
- Traffic surveys undertaken by Data Audit Systems on Tuesday, 5 December 2017 as referenced in the context of this report.
- Car parking surveys undertaken by GTA Consultants (GTA) on Tuesday, 5 December 2017 as referenced in the context of this report.
- Wagga Wagga Base Hospital Stage 3 Development Masterplan Report for Health Infrastructure, by Martin & Ollmann, V4 - 17 December 2017.
- Wagga Wagga Base Hospital Stage 3 Development Schematic Design Report for Health Infrastructure, by Martin & Ollmann, V2 - 28 March 2018.
- Stage 3 Development plans, Docker Street, Wagga Wagga NSW 2650, Wagga Wagga Health Service Redevelopment, by Martin & Ollmann, issued 1 May 2018 and 7 June 2018
- Building Code of Australia, 2014.
- Integrated Movement Study for City of Wagga Wagga December 2018, by URaP – TTW Pty Ltd.
- Other documents and data as referenced in this report.

1.4 Draft Future Transport Strategy 2056 and Supporting Plans

Reviews have been completed for the following supporting plans:

- Draft Future Transport Strategy 2056
- Draft Greater Sydney Services and Infrastructure Plan
- Draft Regional NSW Services and Infrastructure Plan
- Draft Greater Newcastle Future Transport Plan.

The reviews have shown that no transport projects would be delivered or currently underway near the site. Therefore, the projects identified within Wagga Wagga include:

- Kapooka Bridge Replacement and Olympic Highway Realignment - Bridges to the Bush - Program 1 with a new four lane road-over-rail bridge on the Olympic Highway at Kapooka includes realigning about 2.7 kilometres of the Olympic Highway and upgrading the Olympic Highway / Camp Access Road intersection.
- Fixing Country Road Round 2 - Eunony Bridge - Wagga Wagga High Productivity Freight Route Upgrade by upgrading existing road networks, encompassing the Eunony Bridge and the adjoining road network linking the Sturt Highway with the Bomen Business Park (north of the city) and the Olympic Highway.
- Shared Path cycleway alongside Kooringal Road between Plumpton Road and Hammond Avenue.

2. Existing Conditions

The existing WWBH is located at 260-280 Edward Street, Wagga Wagga, NSW 2650. The site occupies the block bounded by Edward Street, Docker Street, Lewis Drive, Peck Street, Yabtree Street, Yathong Street and Rawson Lane, with approximately 200-metre frontages to Edward Street and 260-metre frontages to Docker Street and Lewis Drive.

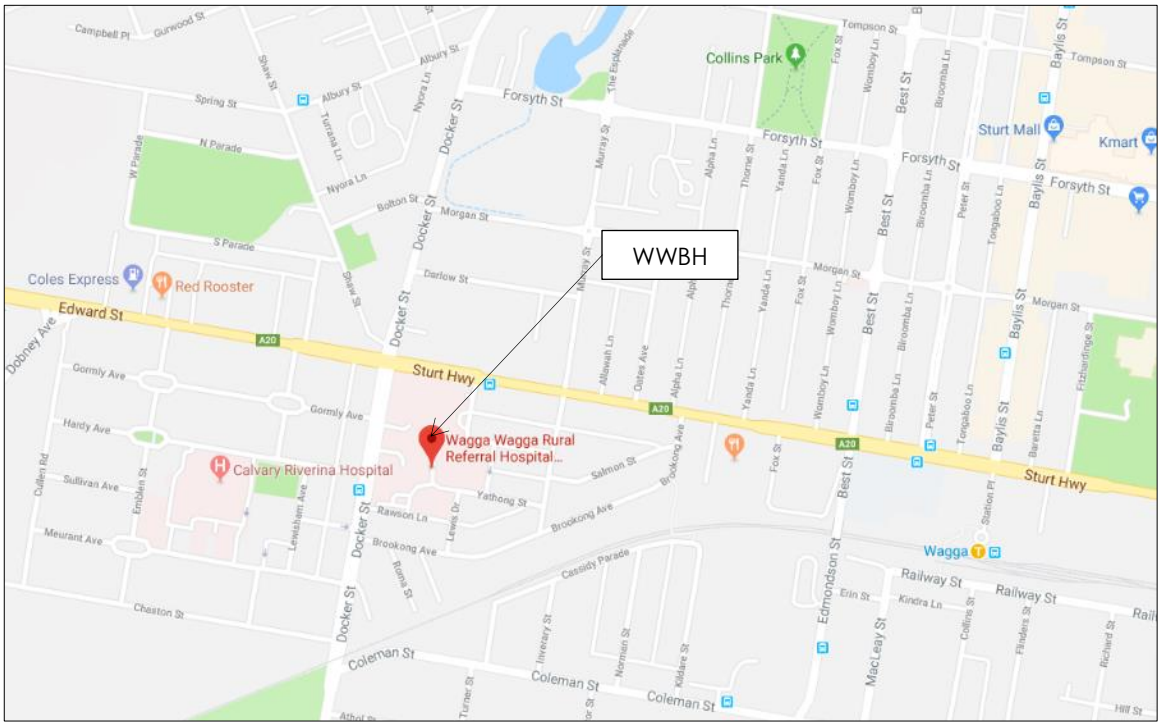
The site currently has a land use classification as SP2 – Infrastructure under the Wagga Wagga Local Environment Plan (LEP) 2010 and is labelled in the LEP as a "NSW Government" property type.

Wagga Wagga is around 460 kilometres south west of Sydney and 245 kilometres west of Canberra along Edward Street (Sturt Highway), which connects to the Olympic Highway in the north and south. WWBH is located in the Wagga Wagga City Council Local Government Area (LGA) and provides public health services to the Riverina and Murray regions of NSW.

WWBH is located around one kilometre south west from the Wagga Wagga Town Centre. The surrounding properties predominantly include low to medium density residential uses, infrastructure, public and private recreation uses.

The location of the subject site and its surrounding environs is shown in Figure 2.1.

Figure 2.1: Subject site and its environs



Basemap source: Google Maps (accessed 12/ 21/ 17)

WWBH is currently a 393 bed/ chair/ consulting room (room) facility and provides a wide range of services, including medical, surgical, critical care, maternity, paediatrics, rehabilitation, aged care, geriatric evaluation and management (GEM), mental health, procedural centre, angiography, emergency, renal unit and transit unit services.

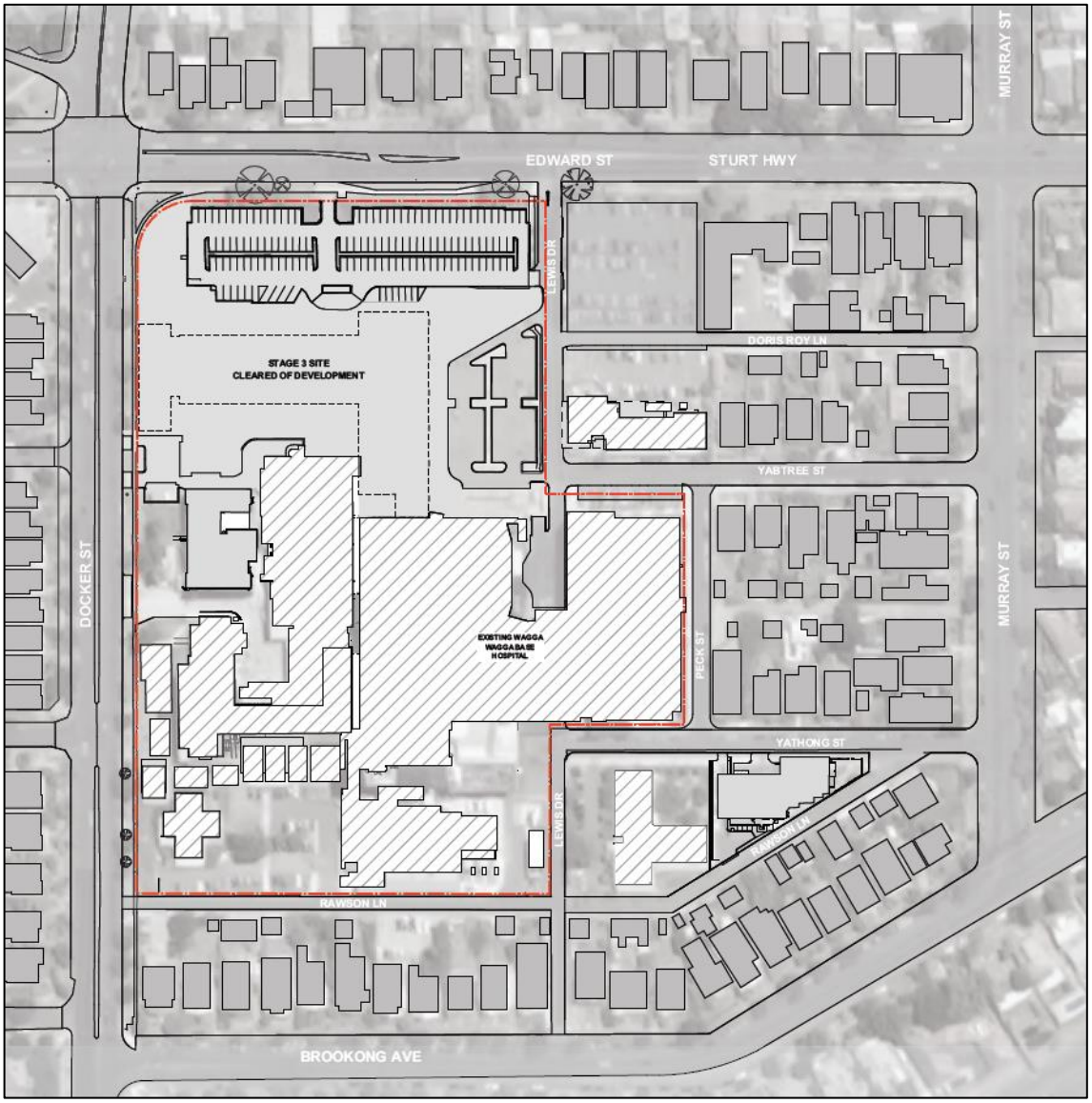
WWBH currently has a total of 1,338[1] staff working across three shifts on a typical day, as follows:

- Day: 8.00am to 4.30pm
- Evening: 4:30pm to 10:30pm
- Night: 10:30pm to 8.00am.

Adopting a factor of 0.6 of the total staff, the average staff per weekday shift (ASDS) is calculated to be 803.

The existing and proposed site plans of the WWBH site are provided in Figure 2.2 and Figure 2.3, respectively.

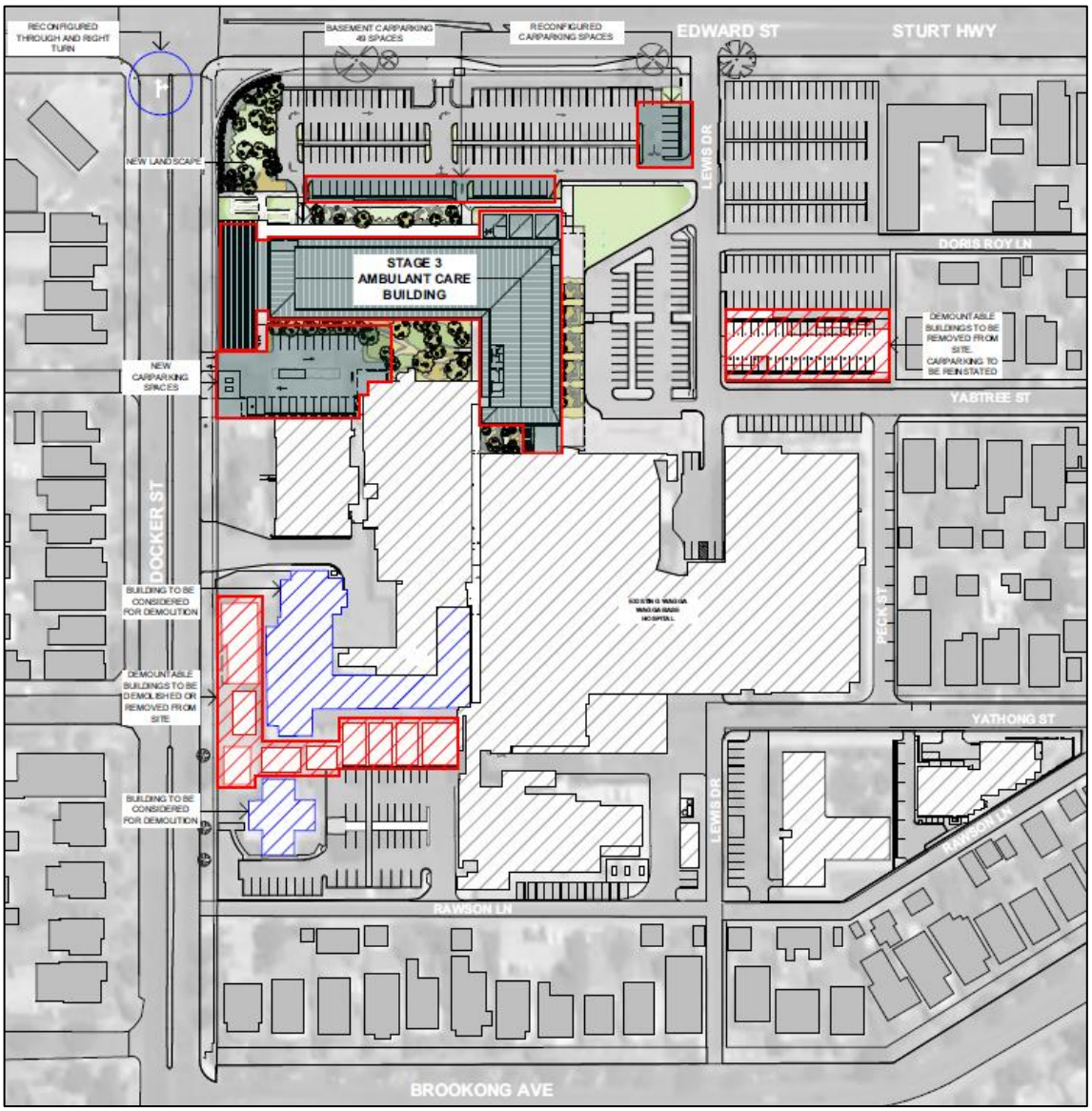
Figure 2.2: Existing WWBH site plan



Source: Wagga Wagga Health Service Redevelopment, Stage 3 Development, Site Plan, Drawing No. SSD-ACB-0400, Issue 01, Martin & Ollmann, 1 May 2018.

[1] Murrumbidgee Local Health District, Financial Impact Statement for Wagga Wagga Base Hospital Stage 3 Redevelopment – Section 5: Staffing Implications, received 17 January 2018.

Figure 2.3: Proposed WWBH layout



Source: Wagga Wagga Health Service Redevelopment, Stage 3 Development, Site Plan, Drawing No. SSD-ACB-0401, Issue 05, Martin & Ollmann, 1 May 2018.

2.1 Road Network

2.1.1 Adjoining Roads

Edward Street

Edward Street, shown in Figure 2.4 and Figure 2.5, functions as an arterial road in an east-west direction on the northern boundary of the site. Edward Street is a two-way road with two lanes in each direction, set within a 15-metre wide carriageway (approximately), with footpaths provided on both sides of the road. Kerbside parking is permitted on both sides of the road near the intersection with Murray Street under both unrestricted and two-hour (2P) time restrictions.

Edward Street carries approximately 10,200 vehicles per day in the westbound direction and 9,200 vehicles per day in the eastbound direction[2].

Figure 2.4: Edward Street (looking east)

Figure 2.5: Edward Street (looking west)

Docker Street

Docker Street, shown in Figure 2.6 and Figure 2.7, functions as a collector road in a north-south direction on the western boundary of the site. Adjacent to the hospital, Docker Street is a two-way road with two traffic lanes and one parking lane in each direction, set within an approximately 15-metre wide carriageway, with footpaths provided on both sides of the road and a posted speed limit of 50 km/ h. Kerbside parking is permitted on both sides of the road under 2P time restrictions.

Docker Street carries approximately 9,800 vehicles per day in the northbound direction and 8,400 vehicles per day in the southbound direction[3].

Figure 2.6: Docker Street (looking north)

Figure 2.7: Docker Street (looking south)

Murray Street

Murray Street, shown in Figure 2.8 and Figure 2.9, functions as a local street in a north south-direction to the east of the site. Murray Street is a two-way street with one traffic lane in each direction, set within an approximately 15-metre wide carriageway, with footpaths provided on both sides of the road. Unrestricted kerbside parking is permitted on both sides of the road.

2 Based on the peak hour traffic counts undertaken by Data Audit Systems on Tuesday on 5 December 2017 and assuming a peak-to-daily ratio of 8% for arterial roads and 10% for local roads.

3 Based on the peak hour traffic counts undertaken by Data Audit Systems on Tuesday on 5 December 2017 and assuming a peak-to-daily ratio of 8% for arterial roads and 10% for local roads.

Murray Street carries approximately 1,500 vehicles per day in the northbound direction and 760 vehicles per day in the southbound direction[4].

Figure 2.8: Murray Street (looking north)

Figure 2.9: Murray Street (looking south)

Brookong Avenue

Brookong Avenue, shown in Figure 2.10 and Figure 2.11, functions as a collector road in an east-west direction to the south of the site. Brookong Avenue is two-way street with one lane in each direction, set within an approximately 16-metre wide carriageway. A mixture of parallel and angled kerbside parking is permitted on both sides of the road, which is generally unrestricted.

Brookong Avenue carries approximately 3,500 vehicles per day in both directions[5].

Figure 2.10: Brookong Avenue (looking east)

Figure 2.11: Brookong Avenue (looking west)

Lewis Drive

Lewis Drive, shown in Figure 2.12 and Figure 2.13, functions as a local street in a north-south direction on the eastern boundary of the site. Lewis Drive is a one-way southbound travel only street with one lane, set within a carriageway width of about five metres and allows access to the existing car parking zone.

Lewis Drive carries approximately 1,300 vehicles per day in the southbound direction[6] during the survey period in December 2017. It is noted that Lewis Drive was converted to two-way street in

4 Based on the peak hour traffic counts undertaken by Data Audit Systems on Tuesday on 5 December 2017 and assuming a peak-to-daily ratio of 8% for arterial roads and 10% for local roads.
5 Based on the peak hour traffic counts undertaken by Council and assuming a peak-to-daily ratio of 8% for arterial roads and 10% for local roads.
6 Based on the peak hour traffic counts undertaken by Data Audit Systems on Tuesday on 5 December 2017 and assuming a peak-to-daily ratio of 8% for arterial roads and 10% for local roads.

January 2018. A new traffic survey will be completed at the intersection of Lewis Drive/ Edward Street to understand the two-way traffic flow along Lewis Drive.

Figure 2.12: Lewis Drive (looking north)

Figure 2.13: Lewis Drive (looking south)

Yabtree Street

Yabtree Street, shown in Figure 2.14 and Figure 2.15, functions as a local road and is aligned in an east-west direction to the east of the hospital. Yabtree Street is a two-way road with one lane in each direction, set within a carriageway of approximately eight metres wide. Parallel kerbside parking is permitted on the south side of the road, east of the connection road to Yathong Street.

Yabtree Street carries approximately 120 vehicles per day in the westbound direction and 750 vehicles per day in the eastbound direction[7].

Figure 2.14: Yabtree Street (looking east)

Figure 2.15: Yabtree Street (looking west)

Yathong Street

Yathong Street, shown in Figure 2.16 and Figure 2.17 functions as a local road and is aligned in an east-west direction to the east of the hospital. Yathong Street is a two-way road with one lane in each direction, set within a carriageway of approximately seven metres wide. Unrestricted parallel kerbside parking is permitted on the north side of the road.

Yathong Street carries approximately 500 vehicles per day in the westbound direction and 400 vehicles per day in the eastbound direction[8].

7 Based on the peak hour traffic counts undertaken by Data Audit Systems on Tuesday on 5 December 2017 and assuming a peak-to-daily ratio of 8% for arterial roads and 10% for local roads.

8 Based on the peak hour traffic counts undertaken by Data Audit Systems on Tuesday on 5 December 2017 and assuming a peak-to-daily ratio of 8% for arterial roads and 10% for local roads.

Figure 2.16: Yathong Street (looking east)

Figure 2.17: Yathong Street (looking west)

2.1.2 Surrounding Intersections

The following intersections currently exist near the site:

- Edward Street/ Docker Street (signalised)
- Edward Street/ Lewis Drive (priority controlled)
- Edward Street/ Murray Street (priority controlled)
- Docker Street/ Brookong Avenue (signalised)
- Murray Street/ Brookong Avenue (priority-controlled)
- Doris Roy Lane/ Murray Street (priority-controlled)
- Yabtree Street / Murray Street (priority-controlled)
- Yathong Street/ Murray Street (priority-controlled)
- Chaston Street/ Docker Street (priority-controlled)
- Rawson Lane/ Docker Street (priority-controlled)
- Hardy Avenue/ Docker Street (priority-controlled)
- Brookong Avenue/ Edward Street (priority-controlled).

2.2 Site Access and Traffic Generation

Access to WWBH is currently provided from all four surrounding roads of Edward Street, Docker Street, Brookong Avenue (emergency vehicle access only) and Murray Street. The main visitor access is from Edward Street via Lewis Drive while the ambulance access is directly from Docker Street, Rawson Lane and Lewis Drive.

The main staff parking access is from Lewis Drive via Edward Street and Doris Roy Lane via Murray Street. An additional parking area to the south of the site is accessible via Rawson Lane from Docker Street (left in/ left out only), with on-street parking along Yabtree Street and Yathong Avenue accessible via Lewis Drive and Murray Street.

The existing vehicle access to the main car parking area on the northwest corner of the site is 5.6 metres wide. The width of this access is not able to accommodate both entering and exiting vehicles from and to Lewis Drive, simultaneously, as shown in Figure 2.18 and Figure 2.19. The current arrangement creates delays and conflicts at times when two opposing vehicles approach the access, presenting a potential conflict for WWBH staff and visitors.

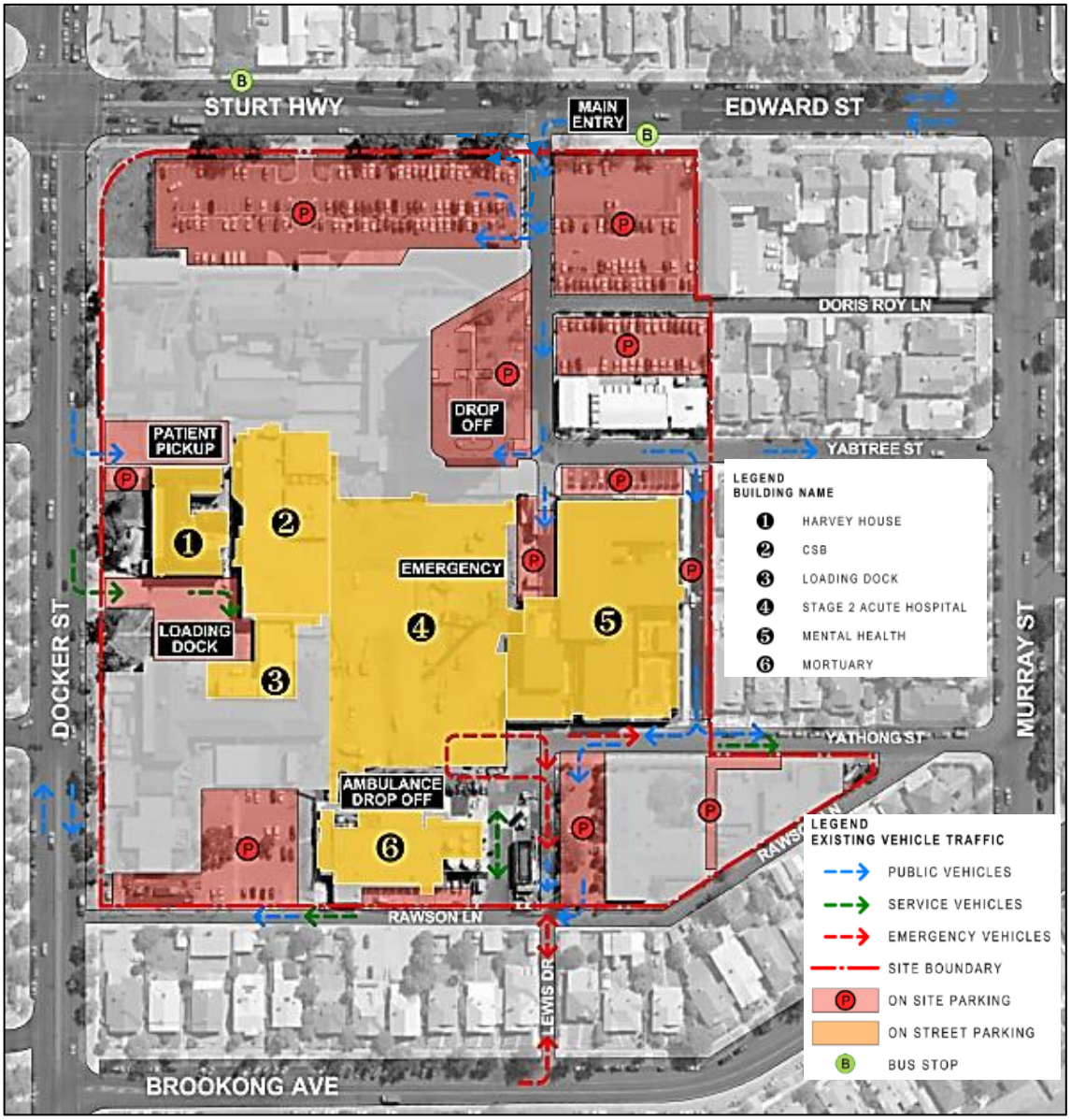
GTA undertook traffic surveys at the site access driveways during typical weekday AM and PM peak periods. Based on these results, the hospital's AM and PM peak hours occur between 8:15am and 9:15am and between 3:15pm and 4:15pm, respectively.

The existing site access driveways are shown in Figure 2.20.

Figure 2.18: Entering vehicle from Lewis Drive

Figure 2.19: Exiting vehicle to Lewis Drive

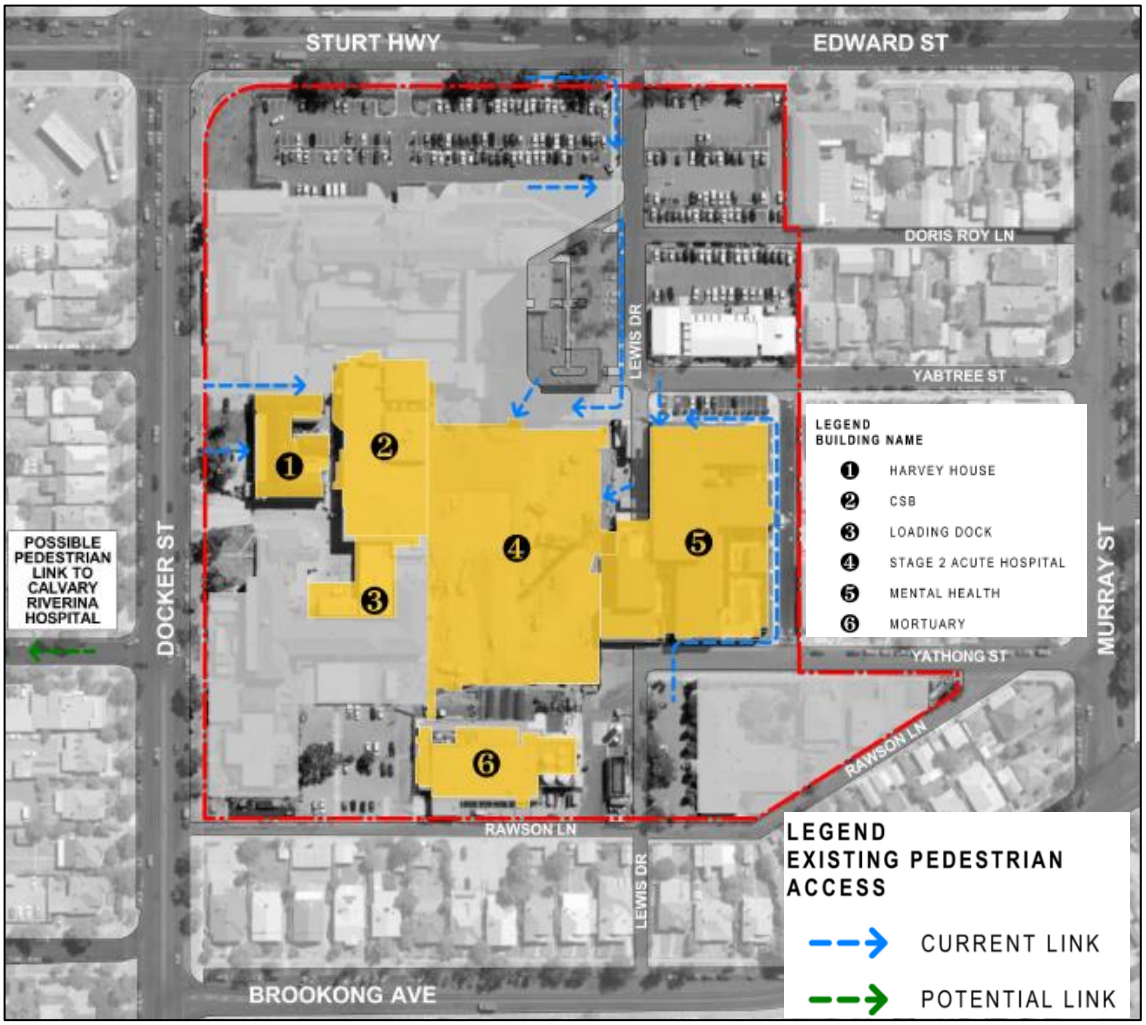
Figure 2.20: Existing traffic access



Source: Martin & Ollmann Architects, Stage 3 Development Masterplan Report, Wagga Wagga Base Hospital

The existing pedestrian accesses are shown in Figure 2.21.

Figure 2.21: Existing pedestrian access



Source: Martin & Ollmann Architects, Stage 3 Development Masterplan Report, Wagga Wagga Base Hospital

2.3 Traffic Volumes

Traffic movement counts where undertaken on Tuesday 5 December 2017, during the following peak periods:

- AM peak: 6:30am to 9:30am
- PM peak: 2:30am to 6:30pm.

The following intersections were included in the traffic survey:

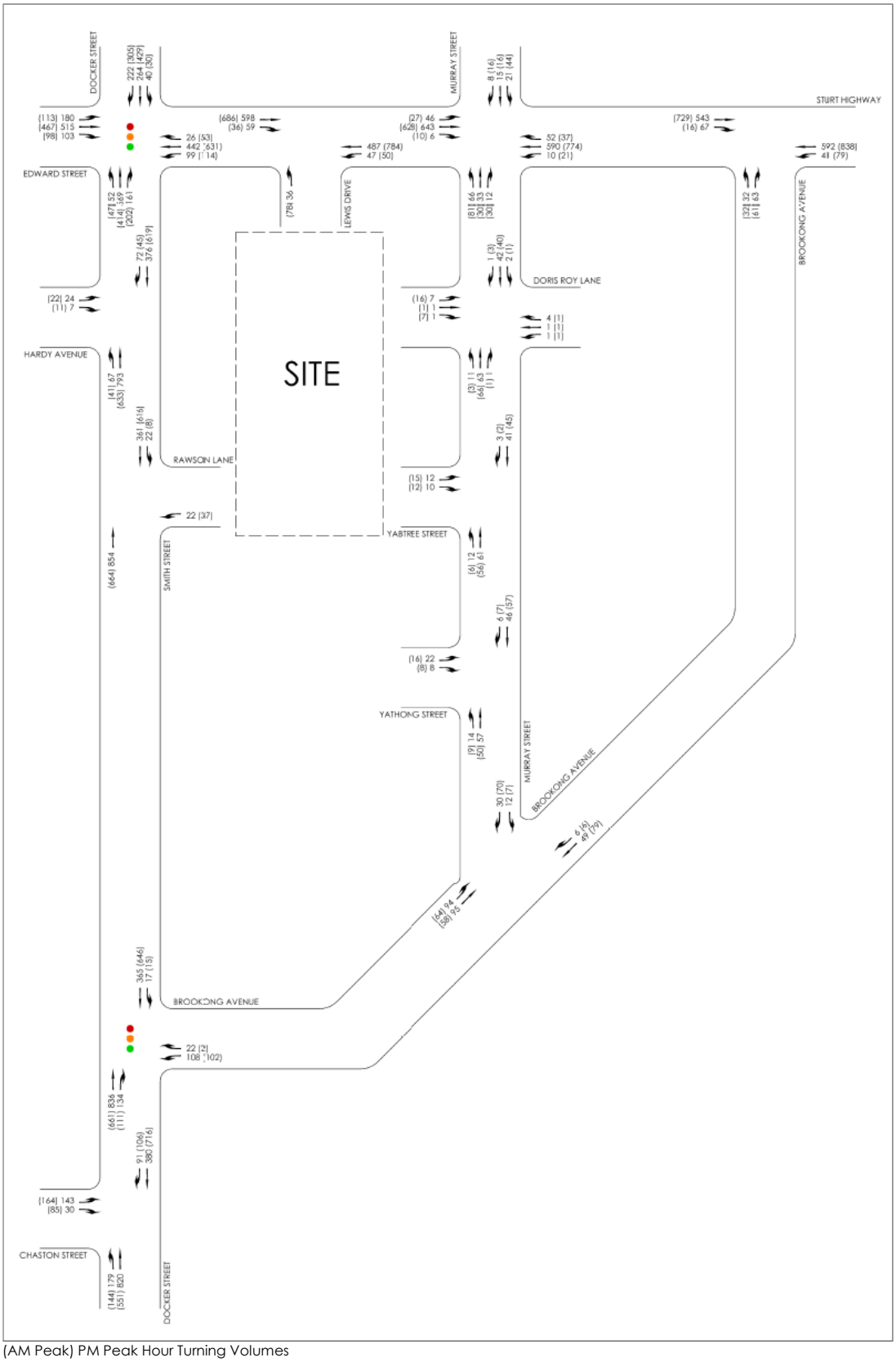
- Edward Street/ Docker Street
- Edward Street/ Lewis Drive
- Edward Street/ Murray Street
- Doris Roy Lane/ Lewis Drive
- Yabtree Street/ Peck Street
- Yathong Street/ Peck Street
- Murray Street/ Brookong Avenue
- Docker Street/ Brookong Avenue.

Further to the above, additional traffic movement counts where undertaken on Tuesday 27 March 2018:

- Edward Street/ Brookong Avenue
- Murray Street/ Doris Roy Lane
- Murray Street/ Yabtree Street
- Murray Street/ Yathong Street
- Docker Street/ Hardy Avenue
- Docker Street/ Rawson Lane
- Docker Street/ Chaston Street.

The AM and PM peak hour traffic volumes for the three key intersections around the site are summarised in Figure 2.22.

Figure 2.22: Existing weekday peak hour traffic volumes



(AM Peak) PM Peak Hour Turning Volumes

2.4 Intersection Operation

The operation of the key intersections within the study area have been assessed using SIDRA Intersection[9], a computer-based modelling package which calculates intersection performance.

The commonly used measure of intersection performance, as defined by Roads and Maritime Services (Roads and Maritime), is vehicle delay. SIDRA Intersection determines the average delay that vehicles encounter and provides a measure of the level of service. A level of service of D or better is generally considered acceptable operation.

Table 2.1 shows the criteria that SIDRA Intersection adopts in assessing the level of service.

Table 2.1: SIDRA Intersection level of service criteria

Level of service	Average delay per vehicle (secs/ veh)	Traffic signals, roundabout	Give way and stop sign
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Near capacity	Near capacity, accident study required
E	57 to 70	At capacity, at signals incidents will cause excessive delays	At capacity, requires other control mode
F	Greater than 70	Extra capacity required	Extreme delay, major treatment required

Table 2.2 presents a summary of the existing operation of the key intersections. These intersections have been modelled as a network rather than isolated intersections.

Table 2.2: Existing operating conditions

Intersection	Peak	Degree of saturation (DOS)	Average delay (sec)	95th percentile queue (m)	Level of service (LOS)
Edward Street/ Docker Street (signalised)	AM	0.76	42	145	C
	PM	0.92	67	351	E
Edward Street/ Lewis Drive[1]	AM	0.09	9	2	A
	PM	0.08	12	2	A
Edward Street/ Murray Street[1]	AM	0.59	88	15	F
	PM	0.62	71	18	F
Edward Street/ Brookong Avenue[1]	AM	1.08	168	114	F
	PM	1.07	144	55	F
Murray Street/ Dorris Roy Lane[1]	AM	0.01	8	1	A
	PM	0.03	8	1	A
Docker Street/ Hardy Avenue[1]	AM	0.05	26	1	B
	PM	0.07	25	2	B
Murray Street/ Yabtree Street[1]	AM	0.04	4	1	A
	PM	0.04	4	1	A
Docker Street/ Rawson Lane[1]	AM	0.03	6	1	A
	PM	0.04	6	1	A
	AM	0.03	5	1	A

Intersection	Peak	Degree of saturation (DOS)	Average delay (sec)	95th percentile queue (m)	Level of service (LOS)
Murray Street/ Yathong Street[1]	PM	0.04	5	1	A
Docker Street/ Brookong Avenue	AM	0.11	3	1	A
	PM	0.07	2	2	A
Murray Street/ Brookong Avenue[1]	AM	0.03	6	1	A
	PM	0.05	6	1	A
Docker Street/ Chaston Street[1]	AM	0.2	27	5	B
	PM	0.31	18	9	B

[1] Worst movement reported for unsignalised intersection.

Based on analysis and site observations, there is traffic congestion through Docker Street and Sturt Highway/ Edward Street, with the major signalised intersection of Edward Street/ Docker Street experiencing peak period queuing and delays during the PM peak hour.

The worst delay occurs on the northbound movement on Docker Street with an average delay of 79 seconds while the maximum vehicle queue of 351 metres occurs on the southbound movement on Docker Street during the PM peak hour. The vehicle queue along Sturt Highway/ Edward Street for the westbound movement extends past Lewis Drive in the PM peak.

Most of the congestion at the intersection of Edward Street/ Lewis Drive is influenced by the intersection of Edward Street/ Docker Street with the westbound Edward Street traffic affected by the intersection of Edward Street/ Docker Street. Notwithstanding that, the southbound right-turn is not affected by the westbound traffic due to the "KEEP CLEAR" pavement marking on the westbound Edward Street lanes.

The eastern and western legs of this intersection currently experience negligible queuing and delays during both the AM and PM peak periods. As such, there is remaining capacity at the intersection of Edward Street/ Lewis Drive, to cater for the traffic generated by the proposed development during the both AM and PM peak hours, with the improvements on the intersection of Edward Street/ Docker Street.

The northern and southern approaches of the intersection of Edward Street/ Murray Street currently operates overcapacity with level of service E and F during the AM and PM peak hours. These approaches experience up to 70-second and 66-second average delays respectively during the AM peak hour and up to up to 88-second and 71-second average delays respectively during the PM peak hour.

Similarly the intersection of Edward Street/ Brookong Avenue, the southern approach currently operates at a level of service F during the AM and PM peak hours, with the eastbound right-turning movement operating at a level of service F during the AM peak hour. These approaches are currently experiencing up to 168-second average delay with vehicle queues of up to 138 metres.

All other intersections near the site are currently operating at levels of service B or better.

2.5 Car Parking

2.5.1 Supply

WWBH currently has 11 car parking facilities with the location illustrated in Figure 2.23.

Figure 2.23: Car parking facilities

Source: Martin & Ollmann Architects, Stage 3 Development Masterplan Report, Wagga Wagga Base Hospital

The number of parking spaces for each car parking facility is as follows:

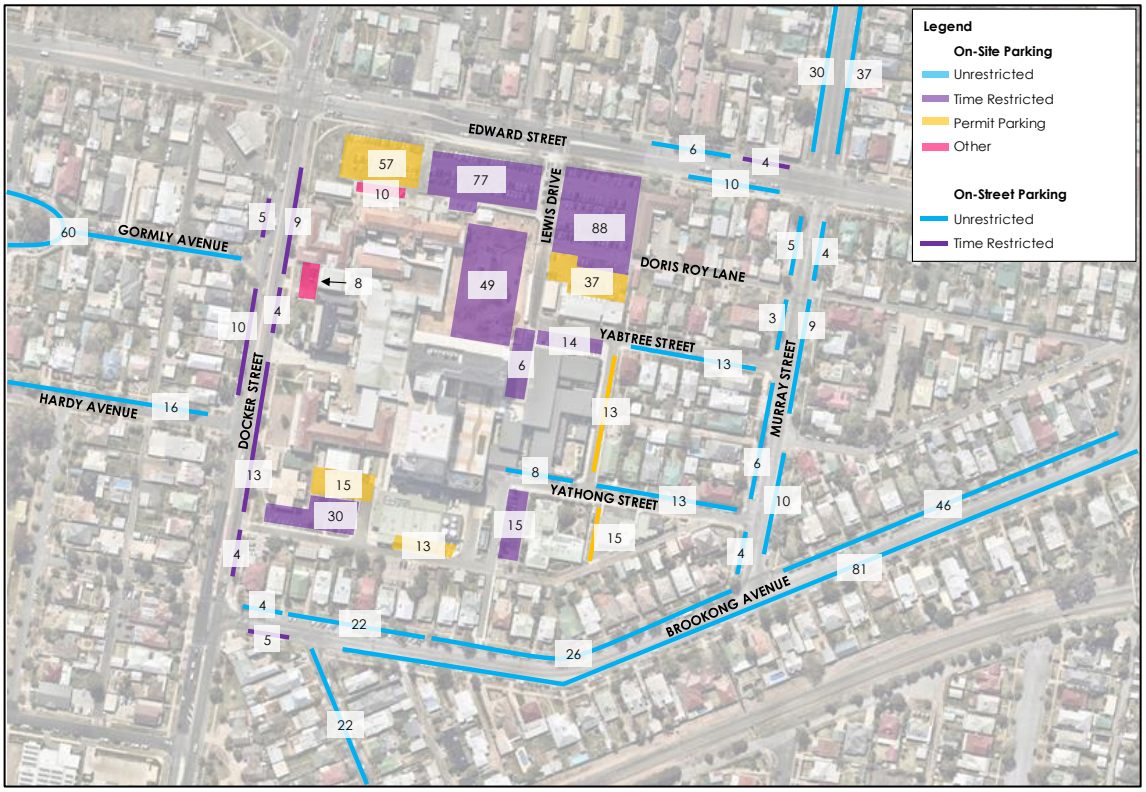
- CP1 138 spaces
- CP2 96 spaces
- CP3 35 spaces
- CP4 42 spaces
- CP5 14 spaces
- CP6 6 spaces
- CP7 15 spaces
- CP8 15 spaces
- CP9 13 spaces
- CP10 45 spaces
- CP11 8 spaces
- CP12 13 spaces.

A total of 440 spaces are provided on-site with 489 on-street parking spaces available near the hospital, which are within an acceptable walking distance of 400 metres. This equates to a total of 929 car parking spaces.

Currently a combination of on-site and on-street parking is used by hospital staff and patients/ visitors for WWBH as shown in Figure 2.24.

The surveyed on-street parking locations were determined in consultation with WWBH staff.

Figure 2.24: Surveyed car parking study area



Basemap source: Nearmap

It is noted that although the following streets have on-street parking facilities and are within 400 metres from WWBH, they are not included in the survey as they were observed to be highly utilised by surrounding residential and commercial uses:

- Salmon Street (both sides)
- Western side of Docker Street (between Meurant Avenue and Brookong Avenue)
- Dwyer Avenue (both sides)
- Lewisham Avenue (eastern side)
- Shaw Street (both sides)
- Docker Street (both sides between Edward Street and Darlow Street).

Based on the minor availability of on-street spaces, the exclusion of these roads would present a conservative approach in assessing the car parking requirement for the proposed development.

2.5.2 Demand

The hospital currently has 440 car parking spaces. The observed peak demand at 1:30pm has been used for the basis of the following parking demand assessment.

The peak demand was observed to be an occupancy of 340 spaces at 1:30pm with 58 vacant spaces (86 per cent occupancy). Based on the parking survey, 53 out of the 58 vacant spaces consist of parking spaces associated with UNSW (16 per cent), permit only (22 per cent) and authorised vehicles only (53 per cent), which are not accessible to the general public and all WWBH staff. This results in up to five spaces which are available to general public.

A total of 489 on-street parking spaces is available near the hospital, with 428 spaces occupied and 61 spaces vacant (86 per cent occupancy) during the peak hour of 1:30pm.

It is noted that a car parking occupancy of around 85 per cent is typically considered to represent theoretical capacity. This occupancy level represents the equilibrium and a good utilisation of car parking, and further given the dynamic nature of parking, provides the ability for drivers arriving to an area to find a car parking without excessive circulation.

The above is supported by the site observations indicating that off-street car parking for the hospital is approaching capacity and overflows to the adjacent streets.

With the surveyed peak demand at 1:30pm of 340 spaces, there is likely be 100 vacant off-street spaces (77 per cent occupancy).

Overall, there were observed to be a total of 768 occupied spaces and 161 vacant spaces during the peak hour. This represents an 83 per cent occupancy for on- and off-street parking for the hospital of 929 spaces.

Noting the above theoretical capacity, an 85 per cent occupancy of 929 on-site and on-street parking spaces represents 790 occupied spaces. With the peak demand at 768 spaces, there would be a theoretical supply (surplus) of 22 vacant spaces before the drivers have to circulate to find parking spaces, leading to increased congestion near WWBH.

As discussed, it is noted that there is minor availability of on-street spaces along Salmon Street, Dwyer Avenue, Lewisham Avenue and Shaw Street.

2.6 Bicycle Parking

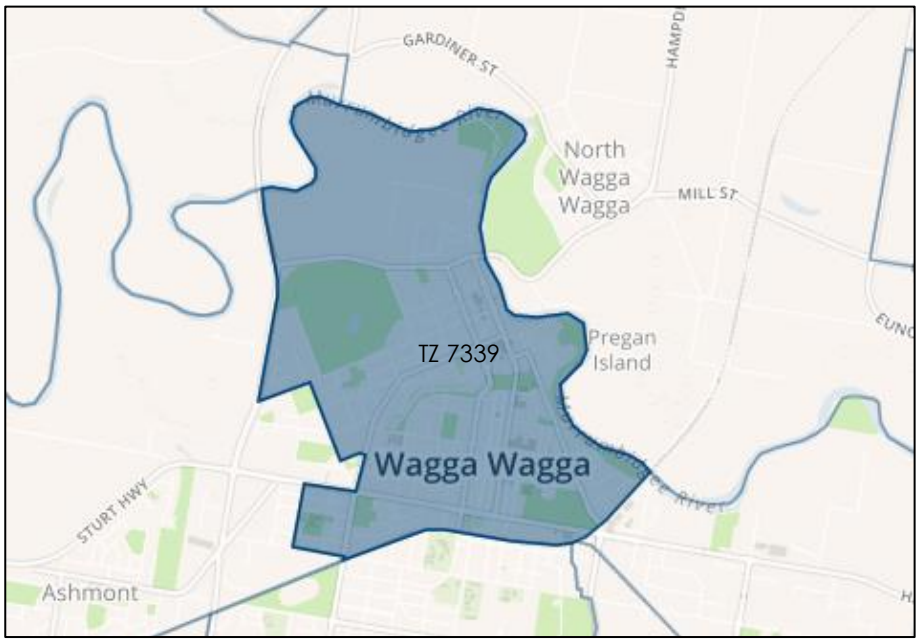
There is currently a bicycle storage area adjacent to the Support Services Building with 11 bicycle racks that can accommodate up to 16 bicycles for the use by staff.

Figure 2.25: Existing Bicycle Parking

2.7 Staff Travel Mode

2011 Census data from Bureau of Transport Statistics, shows the existing Journey to Work (JTW) patterns in the area. WWBH is contained in travel zone 7339 as shown in Figure 2.26.

Figure 2.26: Location and extents of travel zone 7339



Source: JTW Explorer, Bureau of Transport Statistics, 21/ 12/ 2017

JTW data as summarised in Table 2.3 indicates that the main mode of travel in the area is by car, with 82 per cent driving to work and eight per cent travelling as passengers in a vehicle.

Table 2.3: JTW, place of work at travel zone 7339

Mode	Mode share (per cent)
Vehicle driver	82
Vehicle passenger	8
Walked only	6
Train	0
Bus	1
Mode not stated	2
Other (Bicycle)	1
Total	**100**

Data source: JTW Explorer, Bureau of Transport Statistics, 21/12/2017

2.8 Public Transport

The WWBH Main Entrance is currently serviced by at least seven bus services (1W, 3W, 22, 24, 961, 962 and 963) operated by Busabout Wagga and Junee Buses. Two bus services operated by Busabout Wagga stop on the western side of Docker Street south of Hardy Avenue, the eastern side of Docker Street south of Darlow Street and the northern side of Edward Street east of Docker Street. These bus services provide local connections to Bourkelands, Glenfield Park, Springvale and Wagga Wagga. Each service generally provides services every 40 minutes during the peak hours and hourly services outside of peak hours on weekdays with only a limited number of services on weekends.

The average bus capacity has a combined seating and standing capacity of 80 passengers. On the basis of the site observations during the peak periods, there is abundantly spare capacity on existing bus services (more than 80 per cent capacity). The capacity is equivalent to approximately 60 passengers on each bus. Based on seven bus services, the overall remaining capacity is approximately 420 passengers.

The low usage of the existing bus services is also reflected in the JTW data as summarised in Table 2.3 which indicates only one per cent staff travel by bus.

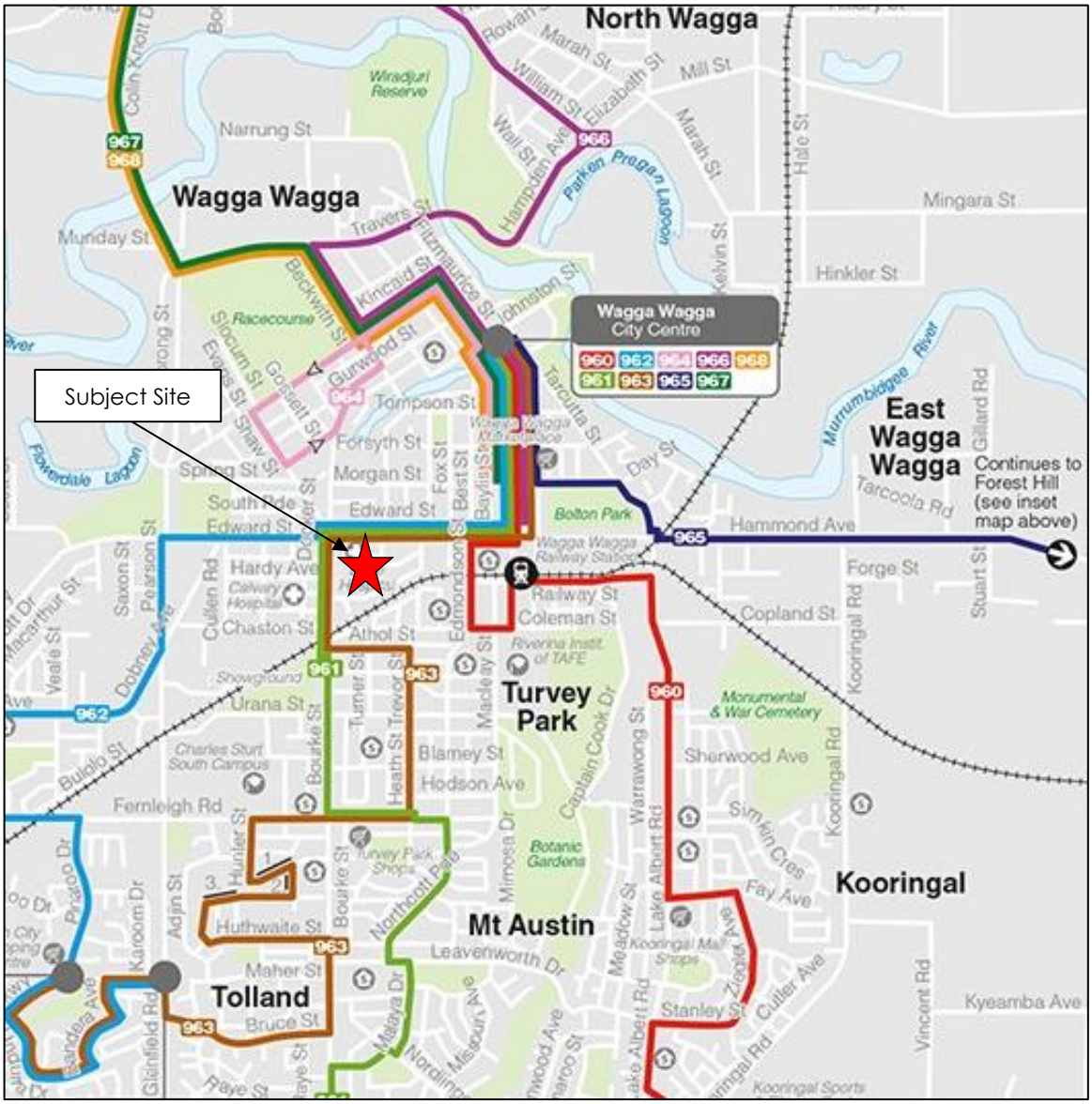
During the Integrated Movement Study for City of Wagga Wagga (2008), several issues were identified from a number of discussions and consultations with representatives from Ministry of Transport, Roads and Maritime, Fearnes Coaches, community transport and various departments within Council. These issues which are not related to capacity include:

- Very low levels of active and public transport in Wagga Wagga.
- Lack of public transport availability during after-hours and at weekends.
- Isolated suburbs within the Local Government Area (LGA) with minimal access to transport services.
- Bus services with long travel time.
- Lack of personal safety along certain bike routes within the LGA.
- Lack of appropriate transport services for elderly, people with disability and those economically disadvantaged.

Wagga Wagga Railway Station is located within one kilometre from the site on railway street and is serviced by the 622 and 624 service lines running from Wagga Wagga to Sydney Central and Melbourne twice a day for each line.

A review of the public transport available near the site is shown in Figure 2.27.

Figure 2.27: Surrounding bus network



Source: https:/ / busaboutwagga.com.au/ pdf/ wagga_wagga_network_map.pdf, accessed 28 November 2017

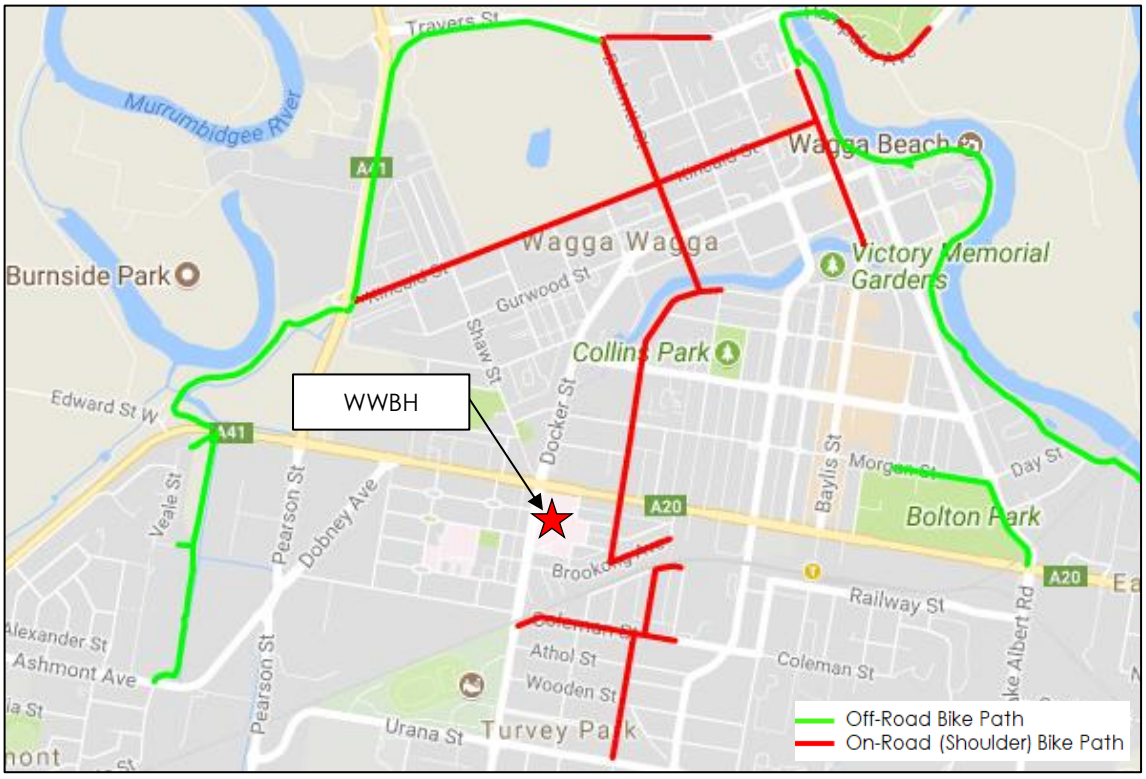
2.9 Pedestrian, Cycle and Scooter Infrastructure

Located on the fringe of the town centre and in close proximity to bus services and the railway station, WWBH is well-serviced by footpaths on all streets surrounding the site. Signalised pedestrian crossings and refuge islands provide good connectivity within the pedestrian network.

Employees and patrons are able to access the hospital by active transport and accordingly, the surrounding cycling network is shown in Figure 2.28. Key routes near the site include Murray Street with an on-road shoulder lane and Brookong Avenue having a dedicated cycling lane.

Wagga Wagga City Council is introducing the RECHARGE Scheme in partnership with RECHARGE Scheme Australia Limited. This scheme aims to facilitate mobility through providing designated electric scooters and wheelchair recharge outlets for people with restricted mobility and people with disabilities. Within the LGA, Wagga Wagga City Library, Wagga Civic Theatre and Seniors Community Centre are currently participating in the RECHARGE Scheme.

Figure 2.28: Surrounding cycling network



Source: Wagga Wagga City Council, accessed 28 November 2017

2.10 Crash Data

Crash data for the roads around WWBH has been obtained from TfNSW Centre for Road Safety – Crash and Casualty statistics LGA view. The crash data relates to the latest five-year period to December 2016.

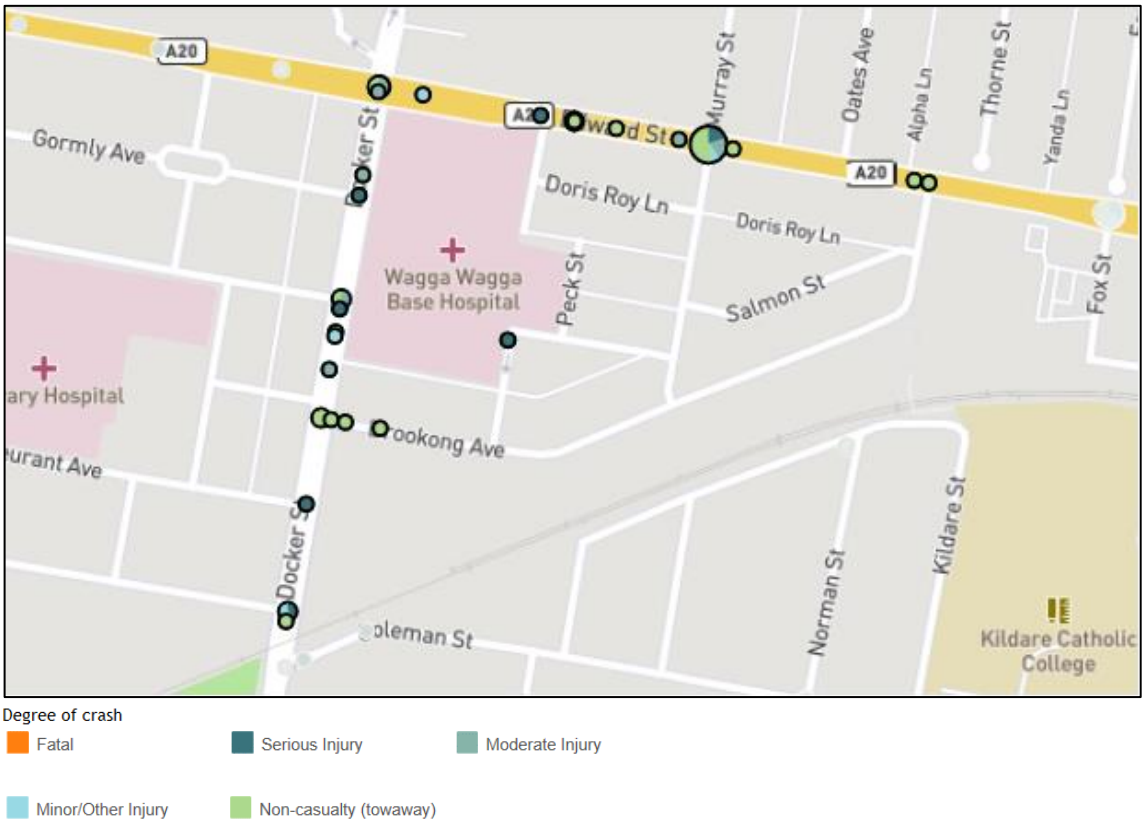
Within this period, 42 crashes occurred in vicinity of the hospital. The reported crashes do not include any fatalities. A summary of crash history is provided in the following and shown in Figure 2.29:

- 12 crashes occurred at the Edward Street/ Murray Street intersection with the following characteristics:
  - Five crashes involved vehicles crossing through traffic at intersections and resulting in serious injury.
  - Three crashes involved vehicles turning right at intersections and colliding with through traffic and resulting in serious injury.
  - Four crashes involved vehicles leaving the travel lane towards the left and hitting an object and vehicles turning left at an intersection and hitting an opposing vehicle within the side street crashes.
- Four crashes occurred at the Edward Street/ Lewis Drive intersection, resulting in serious injury and involved rear end, vehicles travelling through the intersection and hitting the rear of turning vehicles, vehicles changing lanes and hitting the rear end of vehicles turning right travelling in the same direction.
- One pedestrian injury occurred within the hospital site along Lewis Drive south of Yathong Street.
- Four crashes occurred on Docker Street/ Brookong Avenue intersection and involved vehicles leaving parking, vehicles parking, vehicles leaving the travel lane towards the

left and hitting an object and vehicles hitting the rear of left turning vehicles travelling in the same direction, resulting in non-casualty.

- Five crashes occurred on Docker Street/ Brookong Avenue intersection with four rear end crashes and one left rear crash. One pedestrian injury occurred in this intersection.
- Four crashes occurred on Docker Street between Brookong Avenue and Chaston Street with three typical intersection crashes and one off carriageway crash.
- Two crashes occurred on Sturt Highway/ Brookong Avenue intersection with one rear end crash and one crash involving a car leaving parking.

Figure 2.29: Crash history (2011-2016)



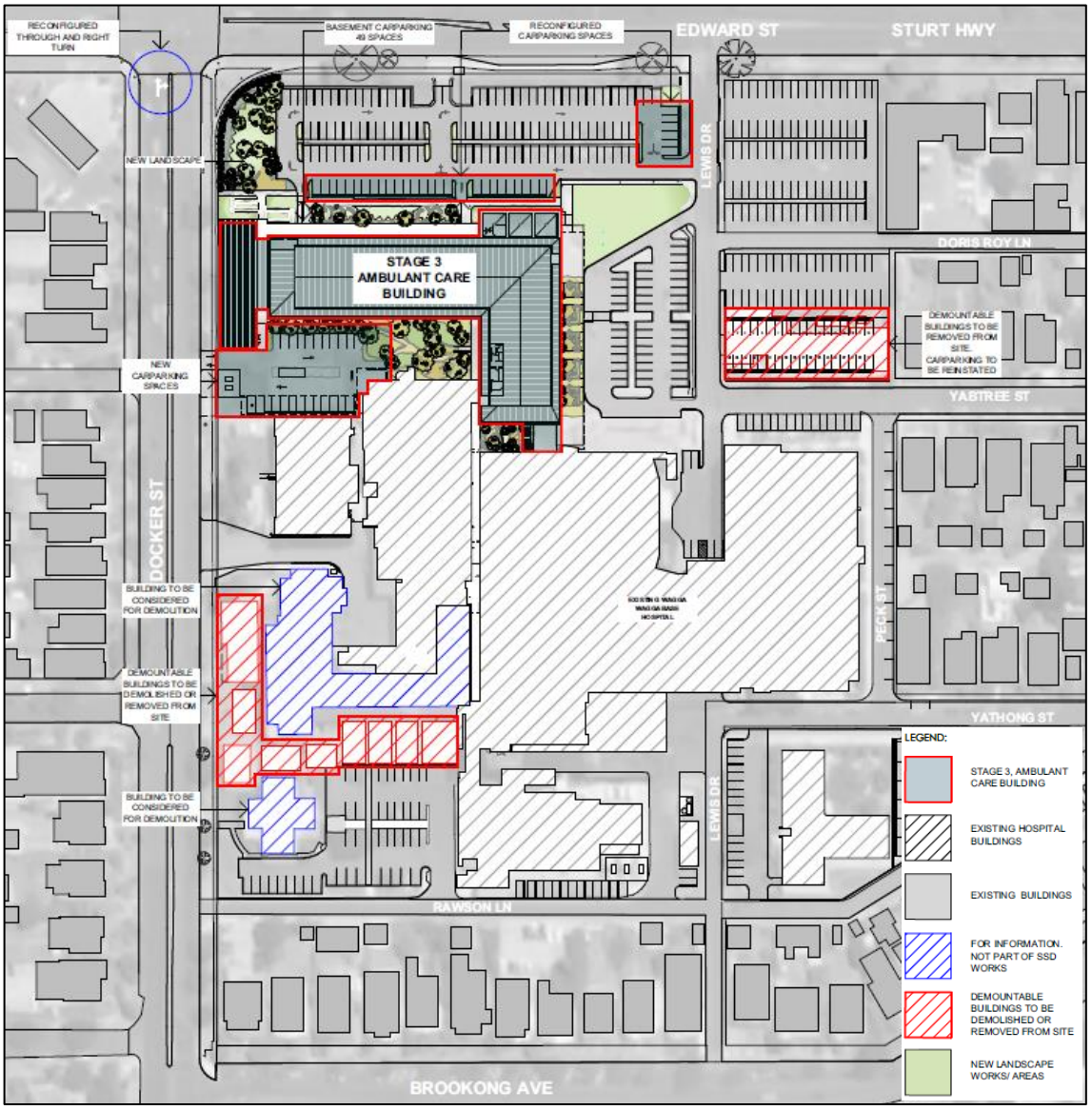
Source: TfNSW, accessed 21/ 12/ 2017

3. Development Proposal

3.1 Land Uses

Figure 3.1 provides an understanding of the proposed footprint for the preferred masterplan, with the expected uses and numbers of beds/ chairs/ rooms for Stage 3, summarised in Table 3.1.

Figure 3.1: Preferred Masterplan Layout



Source: Wagga Wagga Health Service Redevelopment, Stage 3 Development, Site Plan, Drawing No. SSD-ACB-0401, Issue 04, Martin & Ollmann, 20 April 2018.

Table 3.1: Proposed Stage 3 development schedule

Use	Unit	Size (beds/ chair/ rooms/m²)
Hospital	Aged care rehabilitation	8
	Aged care/ GEM	20
	Mental health	8
	Extended ambulatory care	10
	Renal unit	8
	Subtotal – beds/ chairs	**54**
	Consulting rooms	40
Subtotal		**94**
Education Area	Lecture theatre	379.2m²

The proposed Stage 3 development will result in an increase of 54 beds/ chairs and 40 rooms, which totals to 94 beds/ chairs/ rooms. At the completion of Stage 3 development, WWBH will have a total of 487 beds/ chairs/ rooms.

The projected additional fulltime equivalent (FTE) staff when Stage 3 is fully operational in 2027 is 1,482[10]. This equates to an ASDS of 890. The proposed Stage 3 development will result in an increase of 144 FTE staff. However, it is noted that 20 per cent of the 144 FTE (29 FTE) work off-site. As such, the net increase in FTE staff will be 115 which is equivalent to an ASDS of 69.

Based on the increase of 115 FTE and 69 ASDS, there will be a total of 1,453 FTE and 872 ASDS when Stage 3 is fully operational in 2027.

In addition to the above uses, the proposed Stage 3 development will include a 379.2 square metre lecture theatre.

Preliminary investigations have been undertaken with regards to the acquisition of roads including Lewis Drive, Doris Roy Lane, Yabtree Street and Yathong Street. Negotiations are to be progressed through the Stage 3 Main Works Contract.

3.2 Vehicle Access

It is proposed that the existing vehicle accesses to the WWBH to be maintained via Edward Street (from Lewis Drive), Docker Street, Brookong Avenue (emergency vehicle access only) and Murray Street (from Yabtree Street and Yathong Street).

Access to the proposed undercroft car park is proposed via the existing driveway to the west of Lewis Drive from the circulation aisle of CP1.

As part of the new on-grade car parking spaces on the northwest corner of Harvey House, it is proposed that the existing left-out only driveway be removed, and the left-in entry only be widened to accommodate two-way movements.

The proposed reconfiguration of the internal road network is further discussed in Section 5 of this report.

[10] Murrumbidgee Local Health District, Financial Impact Statement for Wagga Wagga Base Hospital Stage 3 Redevelopment – Section 5: Staffing Implications, received 17 January 2018.

3.3 Car Parking

3.3.1 Existing Car Parking Facilities

The existing at-grade car park car park facilities (CP1, CP2, CP3, CP4, CP5 and CP6) are currently accessed from Lewis Drive. To access the external road network vehicles do so via Lewis Drive, Doris Roy Lane and Yabtree Street.

3.3.2 New Car Parking Facilities (as part of SSD Application)

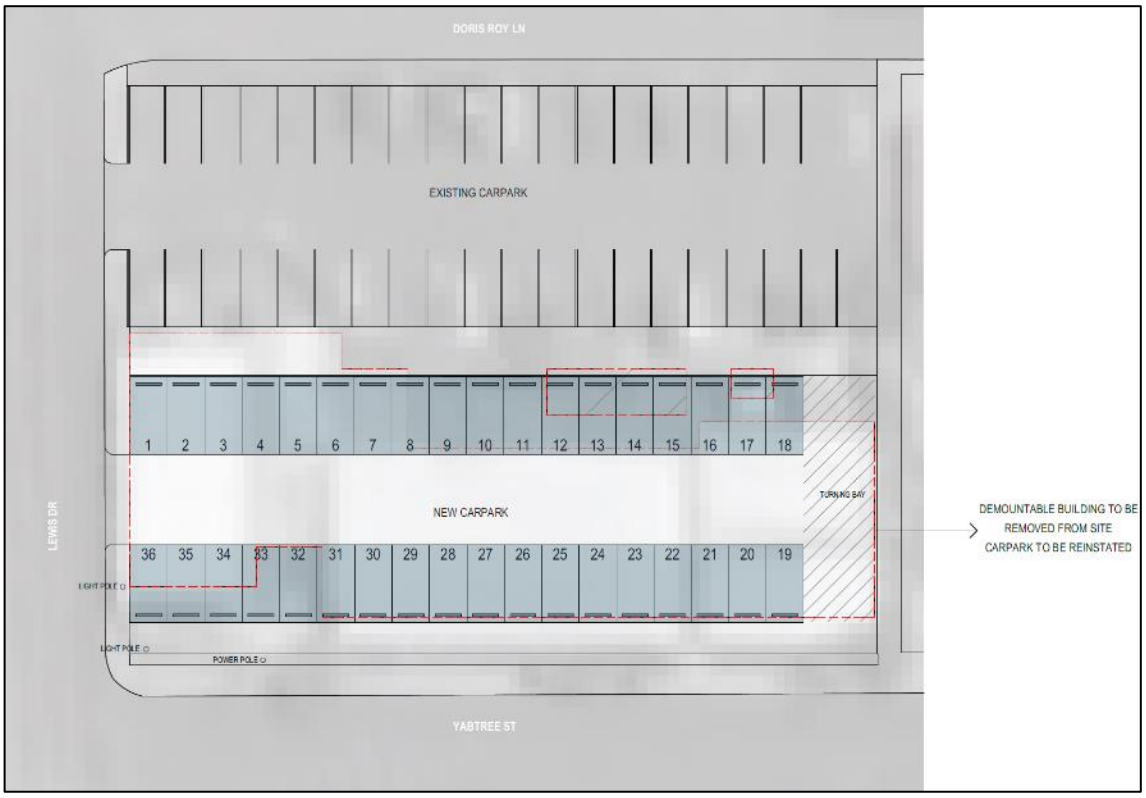
As part of the SSD application, a total of 100 additional spaces is to be provided on site via:

- The reinstatement of the car parking spaces under the existing demountable facilities located on the northeast corner of Lewis Drive and Yabtree Street after the building removal
- The reconfigured CP1
- The proposed Stage 3 parking
- The reconfigured ground level parking area north of Harvey House.

Reinstatement of Car Parking Spaces under Existing Demountable Facilities

The car parking spaces under the existing demountable facilities located south of CP3 will be reinstated after the building removal. With the reinstatement, the proposed car park on the northeast corner of Lewis Drive and Yabtree Street is to provide around 36 additional spaces on site. The reinstated car spaces are shown in Figure 3.2.

Figure 3.2: Proposed reinstated car parking spaces under existing demountable building (south of CP3)

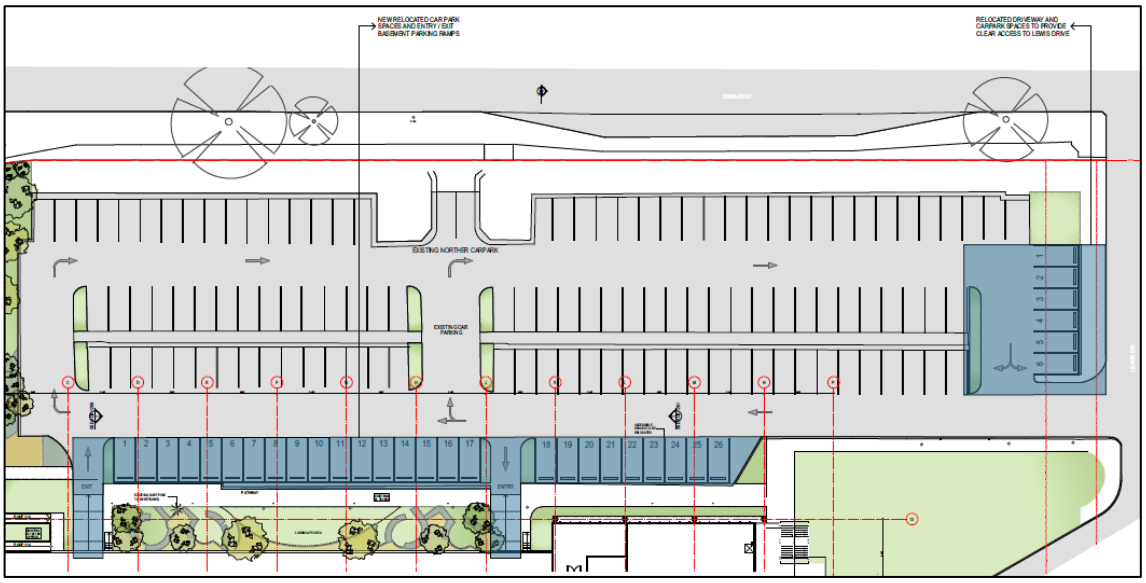


Source: Wagga Wagga Health Service Redevelopment, Stage 3 Development, General Arrangement – Corner of Lewis and Yabtree Carpark, Drawing No. SSD-ACB-1192, Issue 01, Martin & Ollmann, 20 April 2018.

Reconfigured CP1

The reconfiguration of CP1 upon the completion of Stage 3 works will result in a net increase in car spaces, as shown in Figure 3.3.

Figure 3.3: Proposed CP1 layout redesign and Stage 3 building car park accesses

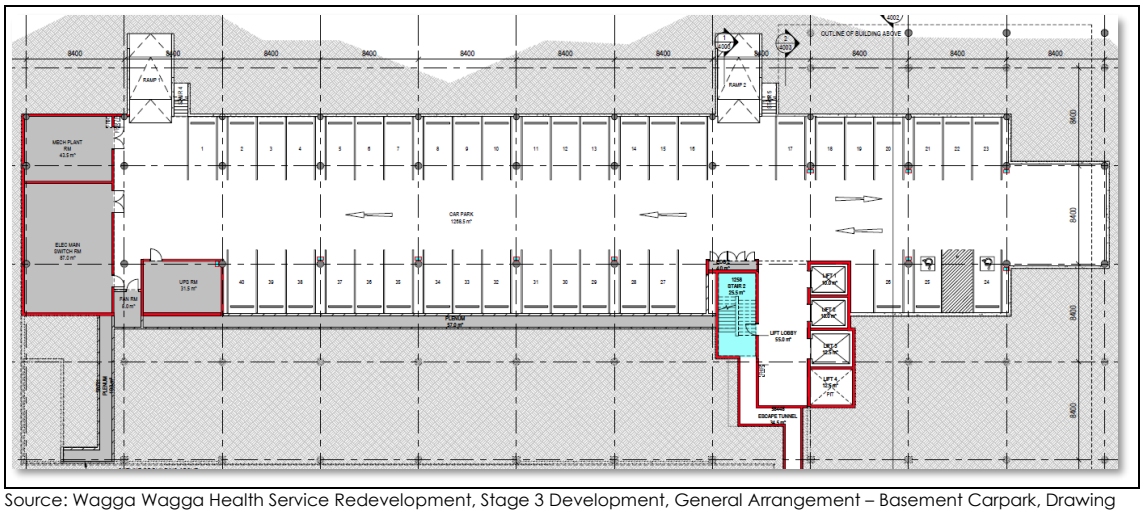


Source: Wagga Wagga Health Service Redevelopment, Stage 3 Development, General Arrangement – Northern Car Park, Drawing No. SSD-ACB-1190, Issue 03, Martin & Ollmann, 20 April 2018.

Proposed Undercroft Car Park

The preferred masterplan also proposes to provide an undercroft car park for the Stage 3 Ambulatory Care Zone and Research and Education Zone buildings. It is proposed to have an undercroft parking facility for the new Ambulatory Care building, as shown in Figure 3.4.

Figure 3.4: Proposed undercroft carpark



Source: Wagga Wagga Health Service Redevelopment, Stage 3 Development, General Arrangement – Basement Carpark, Drawing No. IA172202-ACB-RB-DRG-1500 Revision E – August 2018

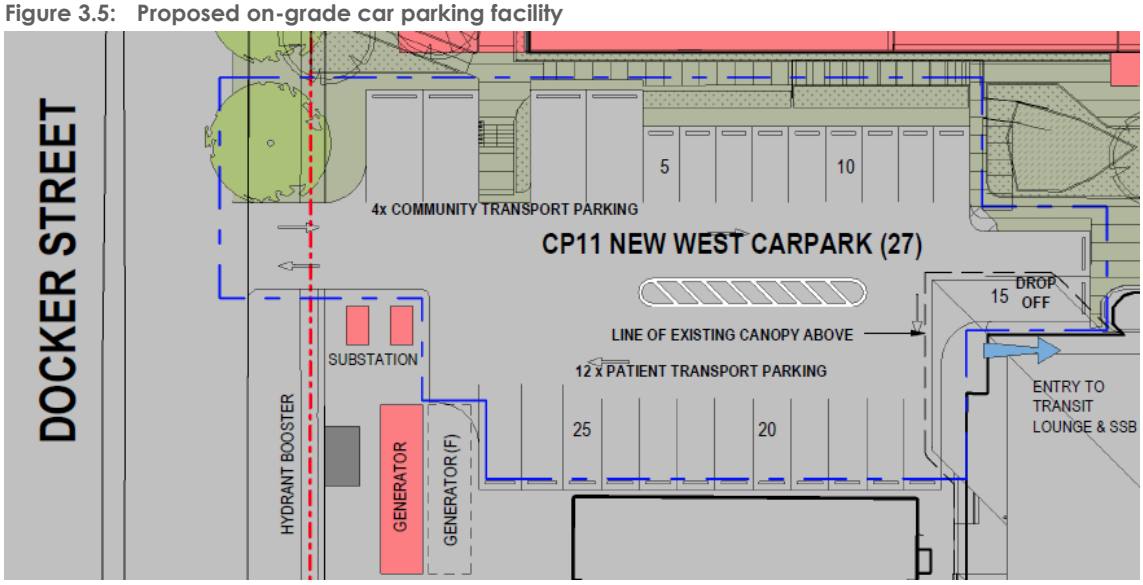
It is noted that the three disabled spaces will be displaced by the three disabled spaces within the recently completed CP4.

Reconfigured On-Grade Parking north of Harvey House

Additional on-grade car parking spaces (for transfer vehicle, patient transport and wash bay) are proposed to the north of Harvey House, as shown in Figure 3.5.

The provision of the on-grade car parking spaces will result in the loss of eight existing spaces located to the northwest corner of Harvey House. This equates to a net increase of around 18 spaces.

Figure 3.5: Proposed on-grade car parking facility



Source: Wagga Wagga Health Service Redevelopment, Stage 3 Development, IA172202-ACB-RB-DRG-0100 Rev 1.

Summary

In total, the new car parking facilities will provide a total of 100 additional car parking spaces. This is in addition to the existing 440 spaces available at the end of the Stage 2 Redevelopment work, as presented in the Final Business Case.

The car parking provision requirement is further discussed in Section 4 of this report.

The vehicle access arrangements for the proposed undercroft and on-grade car park is further discussed in Section 5 of this report.

3.4 Pedestrian Facilities

The existing pedestrian infrastructure and connections on-site will generally be maintained. The Rural Clinical School's administrative headquarters and Wagga Wagga teaching campus are located in Harvey House, within the grounds of the WWBH. The Notre Dame University is located 500 metres (seven-minute walk) to the west of the WWBH, on Hardy Avenue while the TAFE NSW Wagga Wagga is located about 1.5 kilometres (18-minute walk) to the southeast on Coleman Street.

At the location of the proposed new buildings, existing infrastructure will be replaced with new pedestrian links, including a path from the new development to the existing buildings. There is an opportunity to provide a pedestrian link to Calvary Riverina Hospital.

3.5 Bicycle Facilities

The development proposes 28 bicycle spaces to be located in the landscaped area between the proposed ambulatory care building and the new on-grade parking north of Harvey House as well as the proposed basement carpark adjacent to the lifts.

The bicycle parking will be designed in accordance with AS 2890.3 Parking facilities - Bicycle Parking Facilities. Bicycle parking and access will ensure that potential conflicts with vehicles are minimised. In addition, the bicycle parking is to be secure, convenient and located undercover with easy access from the street and building entries and to be located in accordance with Safer by Design and Crime Prevention Through Environmental Design (CPTED) principles (detailed in Section 6.7). Bicycle parking safety may be addressed by ensuring the facility is located to ensure passive surveillance (e.g. highly visible areas such as near building entries) and adequate lighting is provided.

The suitability of the bicycle provision is discussed in Section 4 of this report.

3.6 Scooter Facilities

It is proposed that WWBH participates in the RECHARGE Scheme and includes provision of charging station for electric mobility scooter or wheelchair.

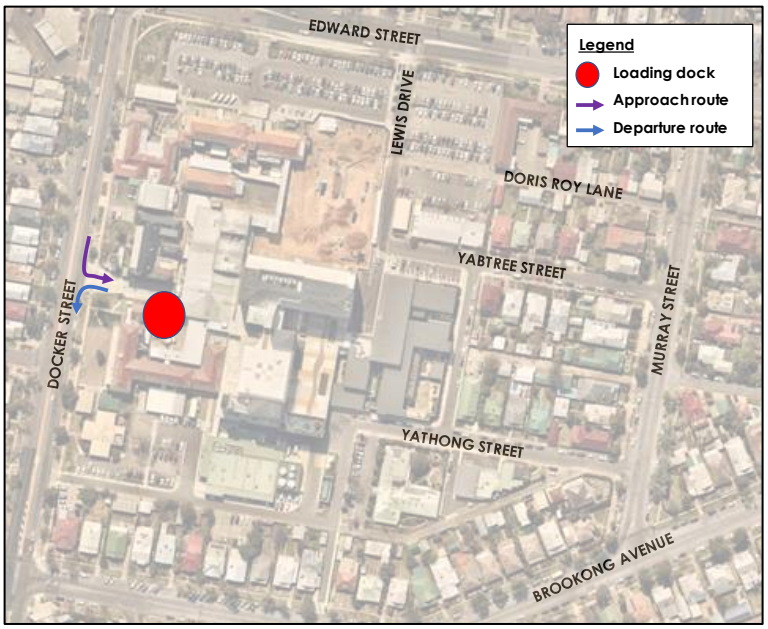
3.7 Loading Areas

The proposed development will maintain the existing loading arrangements on-site, towards the south of the clinical services building, with access to the loading dock via Docker Street.

It is understood that the existing loading area provides for four formal loading docks which can accommodate up to 12.5-metre long heavy rigid vehicles (HRV). Larger vehicles up to 14 metre HRVs can be accommodated within the loading area however will be required to park within the hard stand area to the west of the formal loading docks, with loading/ unloading occurring via use of fork lift. An informal loading area is provided adjacent to the bin room and recycling/ medical gas bottle store which can accommodate rigid trucks/ vans up to 8.8-metres long (medium rigid vehicle [MRV]) and standard 10 - 12 metre long contractor garbage trucks.

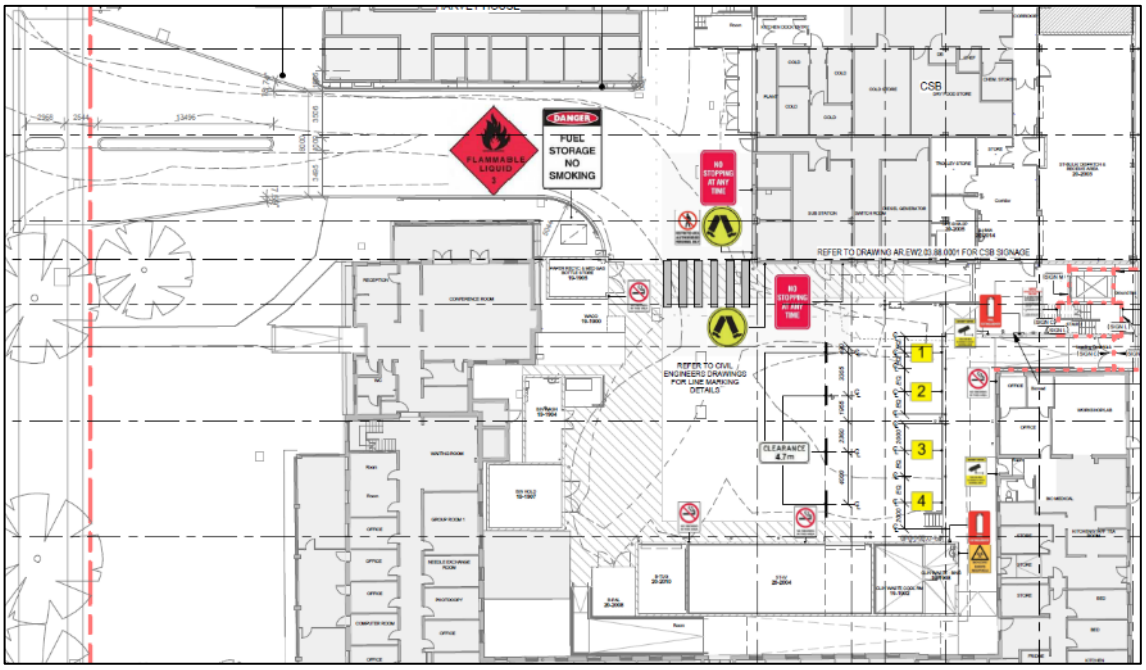
It is noted that the loading area accommodates 60 vehicles per day (120 vehicle movements per day), with 70 to 80 per cent being small vehicles; that is, couriers, vans, maintenance vehicles etc. This is equivalent to 16 vehicle trips per hour. This delivery activity predominantly occurs on weekdays between 7am and 5pm. The location of the existing loading area and layout are shown in Figure 3.6 and Figure 3.7.

Figure 3.6: Existing loading area



Basemap source: Nearmap

Figure 3.7: Existing loading area layout



Source: Wagga Wagga Health Services Redevelopment, Edward Street – Plan – Ground Floor Signage – Loading Dock, Drawing No. AR. EW2.03.88.0002[D], by Billard Leece Partnership Pty Ltd, 6 June 2014.

The future loading requirements for the Stage 3 development in terms of loading/ servicing activity is not available at this stage. However, it is noted that the activity will be accommodated by the existing loading dock. A detailed loading dock management plan may be necessary to ensure that the increased loading activity is able to be appropriately managed and that loading activity occurs at the appropriate location within the existing loading area.

The provision of a left-in and left-out manoeuvre at the access via Docker Street assists in minimising delays to through vehicles on Docker Street. As such, it is expected that the anticipated vehicle movements will not have a significant impact on the existing traffic flows.

It also noted that 19-metre articulated vehicles are used in delivering and decanting bulk oxygen to the WWBH with deliveries outside the peak hours to minimise disruption to the local road network. There are currently only two vehicles per week (four vehicle movements per week) and is expected to remain the same with the proposed development. Vehicle approach is currently via Yathong Street with vehicle departure to Docker Street via Rawson Lane.

4. Car Parking

4.1 Car Parking Requirements for Hospital

4.1.1 Wagga Wagga City Council's DCP 2010

The car parking requirements for hospitals are set out in the Wagga Wagga City Council's DCP 2010 based on staffing levels and number of beds. The DCP 2010 states the following parking requirements for a hospital use:

- One space for every four beds (including chairs and consulting rooms)
- One space for every two employees.

Application of the above DCP car parking rates against the development schedule for the proposed redevelopment, is provided in Table 4.1.

Table 4.1: DCP car parking requirements

Use	Size	DCP parking rate	DCP parking requirement
Hospital	94 beds/ chair/ rooms	1 space/ 4 beds/ chair/ rooms	24
	115 staff	1 space/ 2 employees	58
		Total	**82**

Table 4.1 indicates that the proposed development has a requirement to provide 82 spaces based on the rates provided for within the DCP.

4.1.2 Car Parking Demand Based on Bed/ Chair/ Consulting Room Numbers

The existing site currently contains a total of 393 beds/ chairs/ consulting rooms. Based on the provision of 440 car parking spaces on-site, the car parking rate per bed/ chair/ room equals to 0.90 car space per every bed/ chair/ room.

The proposed development will include an overall increase of 54 beds and 40 consulting rooms, therefore providing an additional 94 beds/ chairs/ rooms.

Application of the rate of 0.90 to the proposed additional 94 beds/ chairs/ consulting rooms will generate an additional requirement of 85 car parking spaces.

4.1.3 Summary

A summary of the parking requirements for the proposed hospital development is shown in Table 4.2.

Table 4.2: Car parking requirement summary

Use	Additional size	DCP 2010 parking rate	Number of Beds/ Chairs/ Rooms (based on on-site car parking supply of 440)
Hospital	94 beds/ chair/ rooms	82	85
	115 staff		

It is recommended that to accommodate the Stage 3 development that an additional 85 spaces be provided.

As part of the SSD application, HI has committed to providing 100 additional spaces on site in addition to the existing 440 spaces available at the end of the Stage 2 Redevelopment work, as presented in the Final Business Case.

4.2 Car Parking Requirements for Education Area

A review of the DCP 2010, Roads and Maritime Guide to Traffic Generating Development (2002) and neighbouring Councils' DCPs indicates that no specific car parking rate is nominated for Education Area use.

The intended use for the Education Area is predominately for those who will already on site for other purposes, such as staff. On the occasion that the centre will be used for external uses a commercial rate of one space per 40 square metres has been applied. Based on the proposed area of 379.2 square metres this will equate to a requirement of ten parking spaces.

4.3 Cumulative Parking Requirements

A summary of the cumulative parking requirements for the proposed hospital (including the Education Area) development is shown in Table 4.3.

Table 4.3: Car parking cumulative requirement summary

Use	Parking requirement
Hospital	85
Education Area	10
Total	**95**

Table 4.3 indicates that the proposed Stage 3 development will require 95 additional spaces including 85 spaces for the hospital and 10 spaces for the Education Area.

4.4 Adequacy of Parking Supply

The additional parking demand of 95 to be generated by the additional staff and bed numbers could not be accommodated by the existing off-street and on-street parking facilities.

With the proposed parking facilities proposed as part of the SSD Application as discussed in Section 3.3, a total of 100 additional car parking spaces will be provided, exceeding the minimum requirement for Stage 3.

4.5 Accessible Parking

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

- Hospital (non-outpatient area): One space per 100 parking spaces
- Hospital (outpatient area): One space per 50 parking spaces up to 1,000 parking spaces and one space per 100 parking in excess of 1,000 parking spaces.

Based on the additional 95 spaces, the proposal will be required to provide up to a total of two accessible spaces, to be compliant with the BCA. The proposed development provides two disabled spaces in the undercroft parking facility, in accordance with the BCA.

4.6 Motorcycle Parking

Council's DCP does not provide specific guidance on motorcycle parking. It is however recommended that up to five motorcycle spaces be provided where possible and within the hospital car parking areas to encourage motorcycle travel to the hospital (especially for staff).

4.7 Bicycle Parking

DCP 2010 and LEP 2010 do not provide a bicycle parking requirement. However, in acknowledgement of the objective of the proposed Bike Plan to encourage more active transport (walking and cycling), the potential to incorporate these facilities has been reviewed referencing to the Planning Guidelines for Walking and Cycling (Department of Planning, 2004). The guidelines suggest the following bicycle parking provisions for a hospital:

- Staff (long-term use) – rate of five to 10 per cent of staff
- Visitor (short-term use) – rate of five to 10 per cent of staff.

Given the location of the hospital and the existing/ proposed surrounding cycling infrastructure, it is recommended that a bicycle parking rate of five per cent of staff and visitors is adopted.

Applying this to an ASDS of 872, the proposed development should provide a total of 88 bicycle spaces (44 bicycle spaces for staff and 44 bicycle spaces for visitors).

Observations on-site indicate that around 40 per cent of the existing 28 bicycle spaces are currently being utilised. Based on this the provision of 88 bicycle spaces is considered an over supply. A more conservative provision of 50 per cent of the overall 88 bicycle requirement is considered appropriate to encourage staff and visitors to cycle to and from the hospital. The proposed bicycle parking provisions are considered adequate for the likely active transport requirements of future staff and visitors, recognising the existing and changing nature of the area and surrounding environment considering the Wagga Wagga Bicycle Plan.

Applying the utilisation rate of 50 per cent to the above bicycle requirements for staff and visitors will result in 44 bicycle spaces for staff and visitors.

As discussed, the existing hospital currently provides a total of 16 spaces for staff. Therefore, an additional 28 spaces (six spaces for staff and 22 spaces for visitors) will be required as part of the proposed Stage 3 redevelopment.

The bicycle parking facilities are proposed to be located in the landscaped area between the proposed ambulatory care building and the new on-grade parking north of Harvey House as well as the proposed basement carpark adjacent to the lifts.

5. Proposed On-Site Transport Improvements

5.1.1 Proposed Access Locations to Undercroft Car Park of Stage 3 Building via CP1

As part of the WWBH Stage 3 redevelopment, it is proposed that a new undercroft car park facility be provided for the new buildings constructed as part of Stage 3.

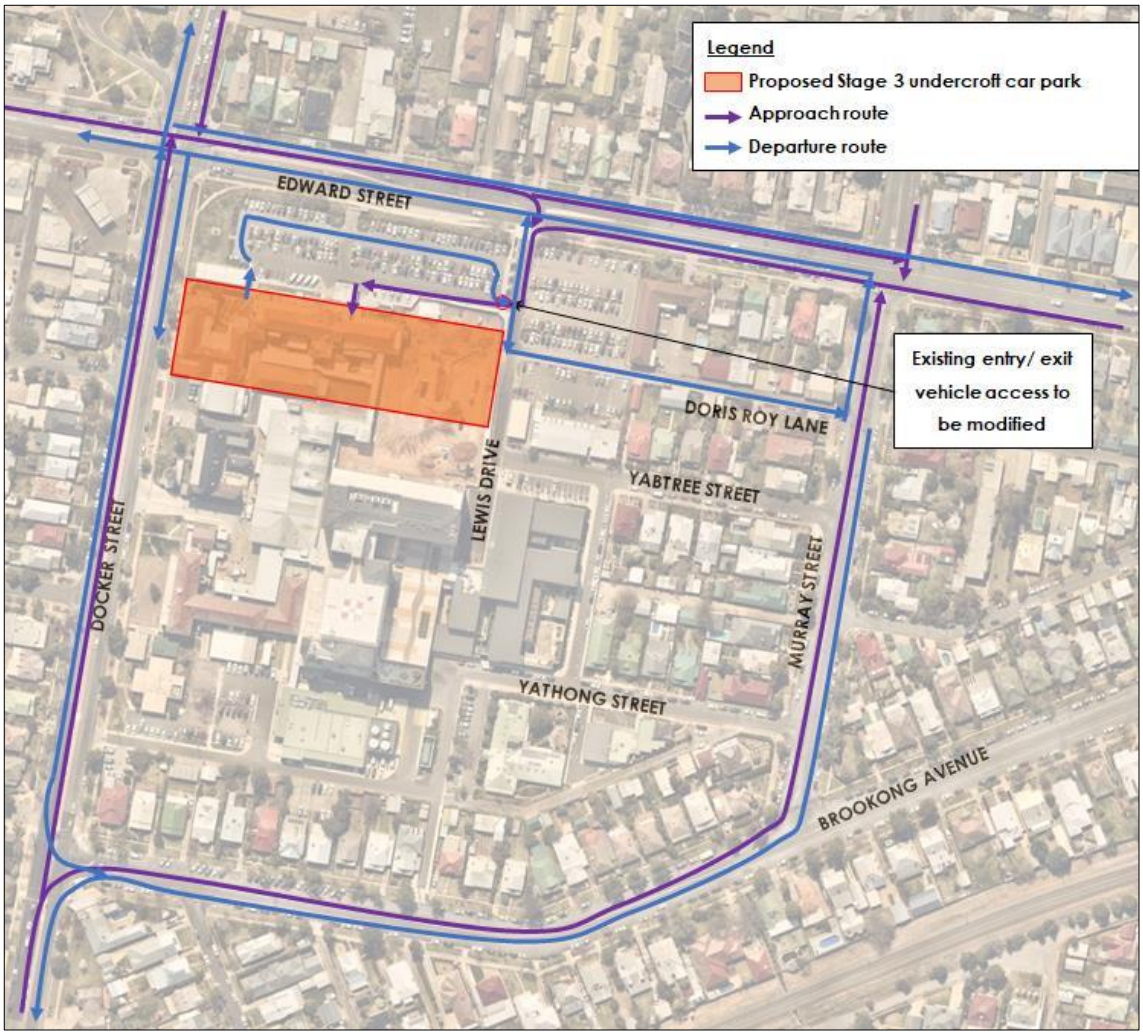
As discussed, the existing 5.6-metre driveway cannot accommodate for two-way movements for vehicles entering and exiting CP1. Such conflict results in vehicles queuing on Lewis Drive to allow for vehicles to exit CP1. With the proposed undercroft car park, parking demand at the existing driveway will increase.

As such, the following road designs are proposed to enhance pedestrian safety and to optimise existing operation of CP1 and future operation of the proposed undercroft car park, as shown in Figure 3.3:

- Widen existing driveway width (from 5.6-metre to 6.5-metre) to CP1 with minor reconfiguration of the car parking spaces on the eastern end of CP1.
- Entry to and exit from the undercroft car park will be located 70 metres and 120 metres west of Lewis Drive respectively to ensure that entering and exiting vehicles associated with the undercroft car park will not impact the vehicles circulating within CP1 and result in vehicle queuing onto Lewis Drive.

The above proposals, as well as the approach and departure routes due to the proposed changes are shown in Figure 5.1.

Figure 5.1: Approach and departure routes for CP1 and Stage 3 building car park



Basemap source: Nearmap

5.2 Other Improvements (Part of Future Approvals)

Several transport improvements are proposed to accommodate the specific needs of pedestrians, not only to improve their safety, but also to increase pedestrian access to the buildings within WWBH. These improvements will form part of future approvals.

These improvements include measures to:

- control vehicle speed
- implement traffic-calming measures
- restrict vehicle traffic in residential areas
- construct additional footpaths
- create a pedestrian zone for the connection between the existing and proposed car parks and the existing acute care zone and proposed Stage 3 Ambulatory Care Zone and Research and Education Zone.

The following road design strategies to improve pedestrian safety are proposed and will be addressed during the detailed design stage:

- reconfiguration of the existing set-down/ pick-up zone and CP4

- proposed access locations to the undercroft car park of Stage 3 building via CP1
- public access to the Emergency Department via Murray Street and exit via Yabtree Street and Doris Roy Lane.

5.2.1 Reconfiguration of Existing Set-Down/ Pick-Up Zone and CP4

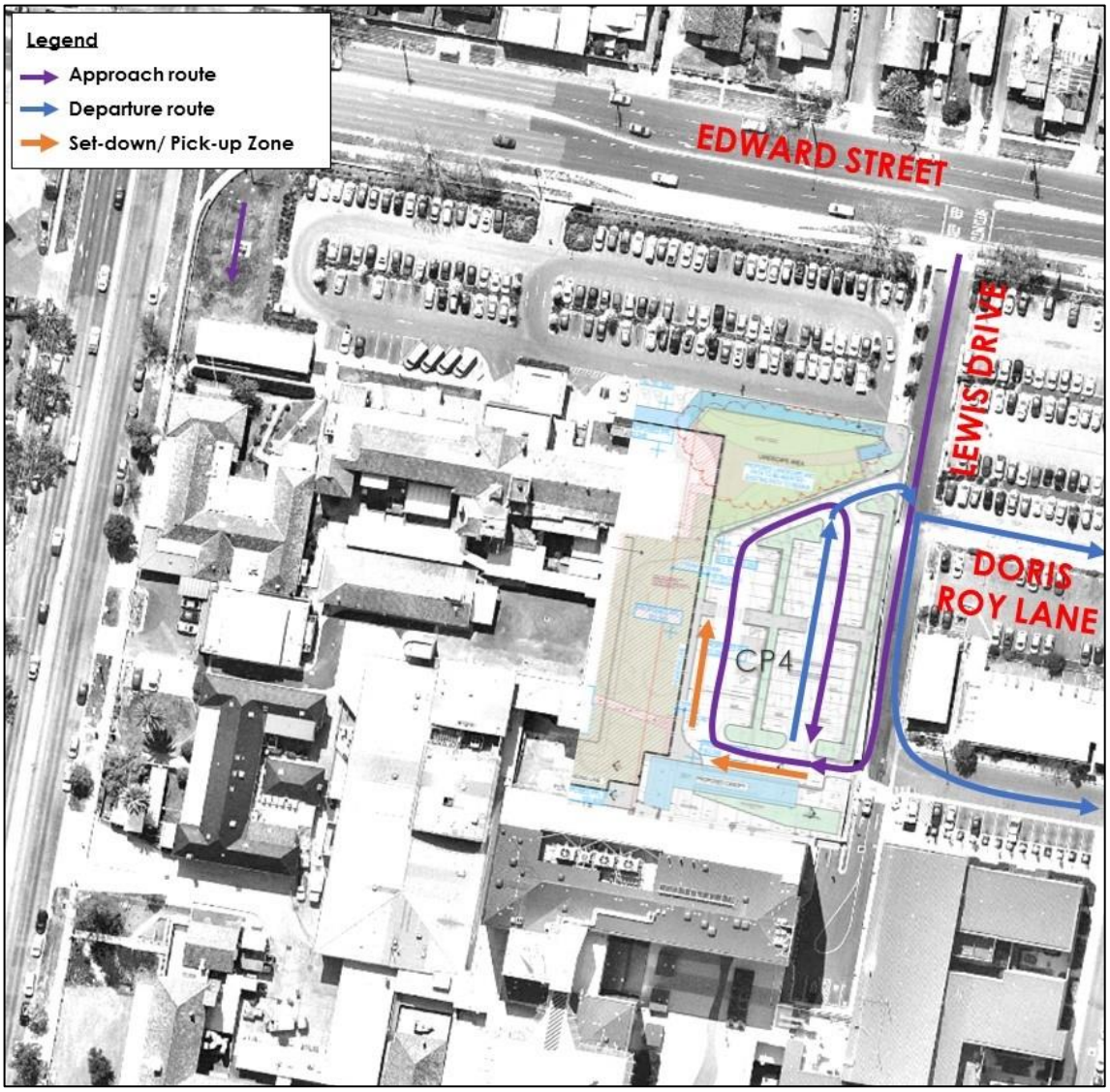
The functional layout of the existing set-down/ pick-up zone and CP4 of is critical to its efficiency while providing a pleasant and safe user experience. Some of the key concerns with the existing functional designs include:

- Set-down/ pick-up layout:
- The current layout will require vehicle to reverse into the easternmost, westernmost and northernmost set-down/ pick-up spaces.
- Given the one-way circulating lane width is only 3.6 metres and two-way circulating lane is only six metres wide, any reversing into the set-down/ pick-up spaces will interrupt the through traffic flows.
- With the easternmost set-down/ pick-up space located only five metres from Lewis Drive, there is only sufficient storage for one vehicle to queue behind the reversing vehicle before impacting Lewis Drive. This vehicle may potentially reverse and encroach on pedestrian access across the existing north-south crossing, as shown in Figure 5.2.
- Entrance/ exit locations and traffic circulation:
- The existing exit driveway layout, as shown in Figure 5.3 does not physically restrict left-turning vehicles with Lewis Drive being only one-way southbound. This will create potential conflicts if drivers make erroneous manoeuvres from CP4 northbound onto Lewis Drive.
- The vehicle entry is located close to (less than 5 metres) the adjacent set-down/ pick-up space and does not provide sufficient queueing storage.
- The existing approach and departure routes as shown in Figure 5.4 results in five potential vehicle conflict points as shown in Figure 5.5.

Figure 5.2: Existing north-south pedestrian crossing

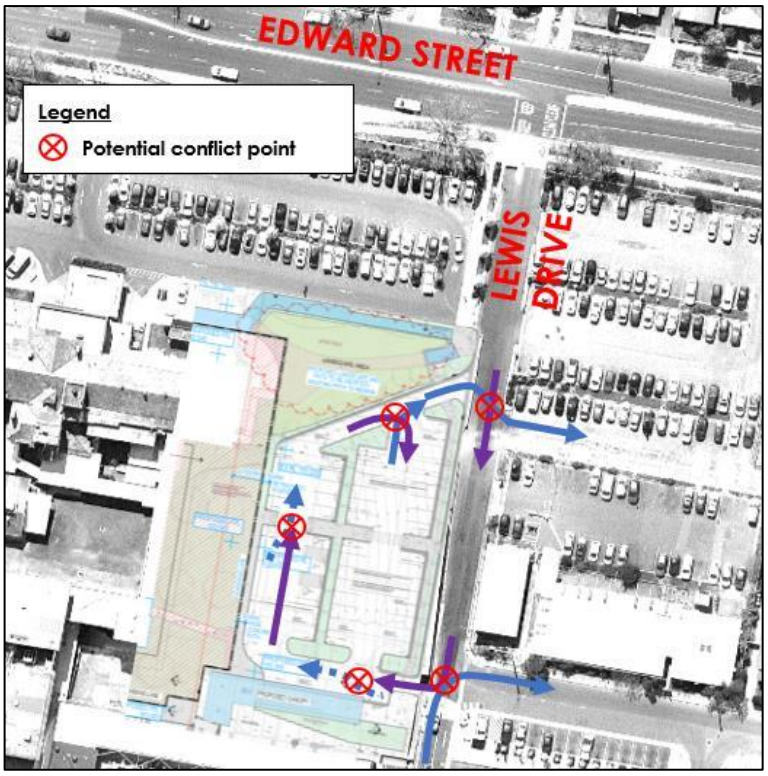
Figure 5.3: Existing exit only driveway onto Lewis Drive

Figure 5.4: Existing approach and departure routes for set-down/pick-up zone and CP4



Basemap source: Nearmap

Figure 5.5: Existing potential vehicle conflicts between approach and departure routes for set-down/pick-up zone and CP4



Basemap source: Nearmap

Based on the above concerns, the following layout reconfigurations are proposed to satisfy a safe and more efficient car park layout, as illustrated in Figure 5.6:

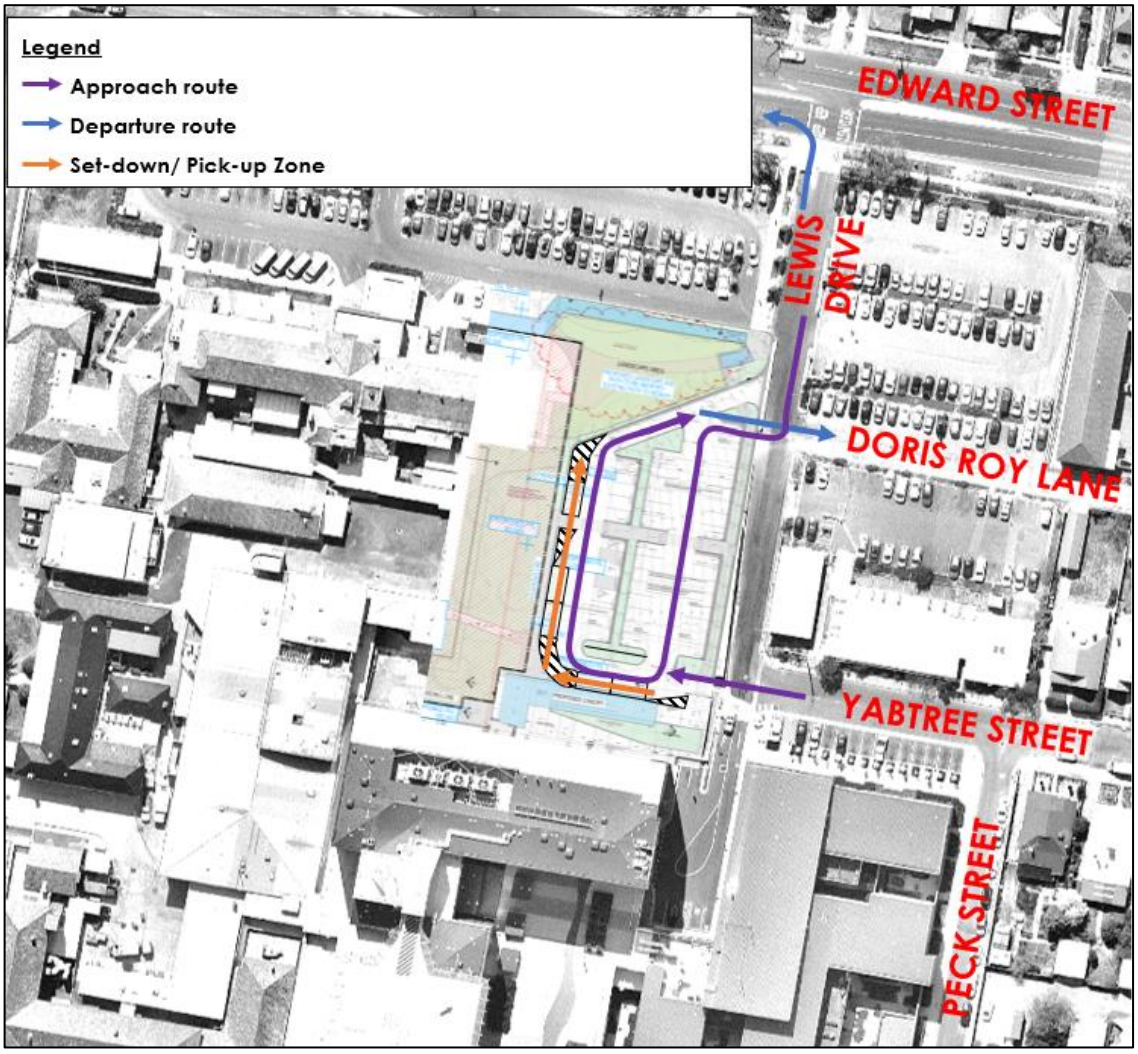
- existing exit point from CP4 to be widened to accommodate entry and exit and aligned with Doris Roy Lane
- internal vehicle circulation is recommended to be a single direction through the car park in a clockwise movement
- set-down/ pick-up spaces to be widened from 2.1 metres to 3.6 metres to provide an additional 1.5 metres for the safety of passenger set-down and pick-up activities
- appropriate pavement marking to be provided before and after set-down/ pick-up spaces to guide vehicles in and out of these spaces
- replace the existing flat pedestrian crossings within CP4 to new coloured thresholds
- reduce existing landscaped areas to accommodate wider set-down/ pick-up spaces and circulating aisles
- install pavement marking and signage indicating 10 km/h posted speed limit within CP4.

The proposed approach and departure routes based on the above layout reconfigurations are shown in Figure 5.6. The proposed layout provides the following safety benefits:

- no reversing of vehicles, in areas of high pedestrian activity
- on-site traffic congestion is unlikely to impact on the external transport network
- design for a progressive reduction in speed environment in moving between the road and a parking space
- design for efficient and simple space search patterns
- avoid cross-aisle intersections
- design for aisles to intersect with Lewis Drive as near to right angles as possible

- provide a clearly defined pedestrian network which closely follows desire lines and minimises the potential for vehicular and pedestrian conflict
- minimises likely vehicle operating speeds and congestion levels at conflict points
- provides for pedestrian and vehicular queues at conflict points
- provides adequate queuing areas for set-down/ pick-up spaces that will not block the primary circulation road or site access driveways.

Figure 5.6: Proposed reconfiguration of existing set-down/pick-up zone and CP4



Basemap source: Nearmap

5.2.2 Public Access to the Emergency Department via Murray Street and exit via Yabtree Street and Doris Roy Lane

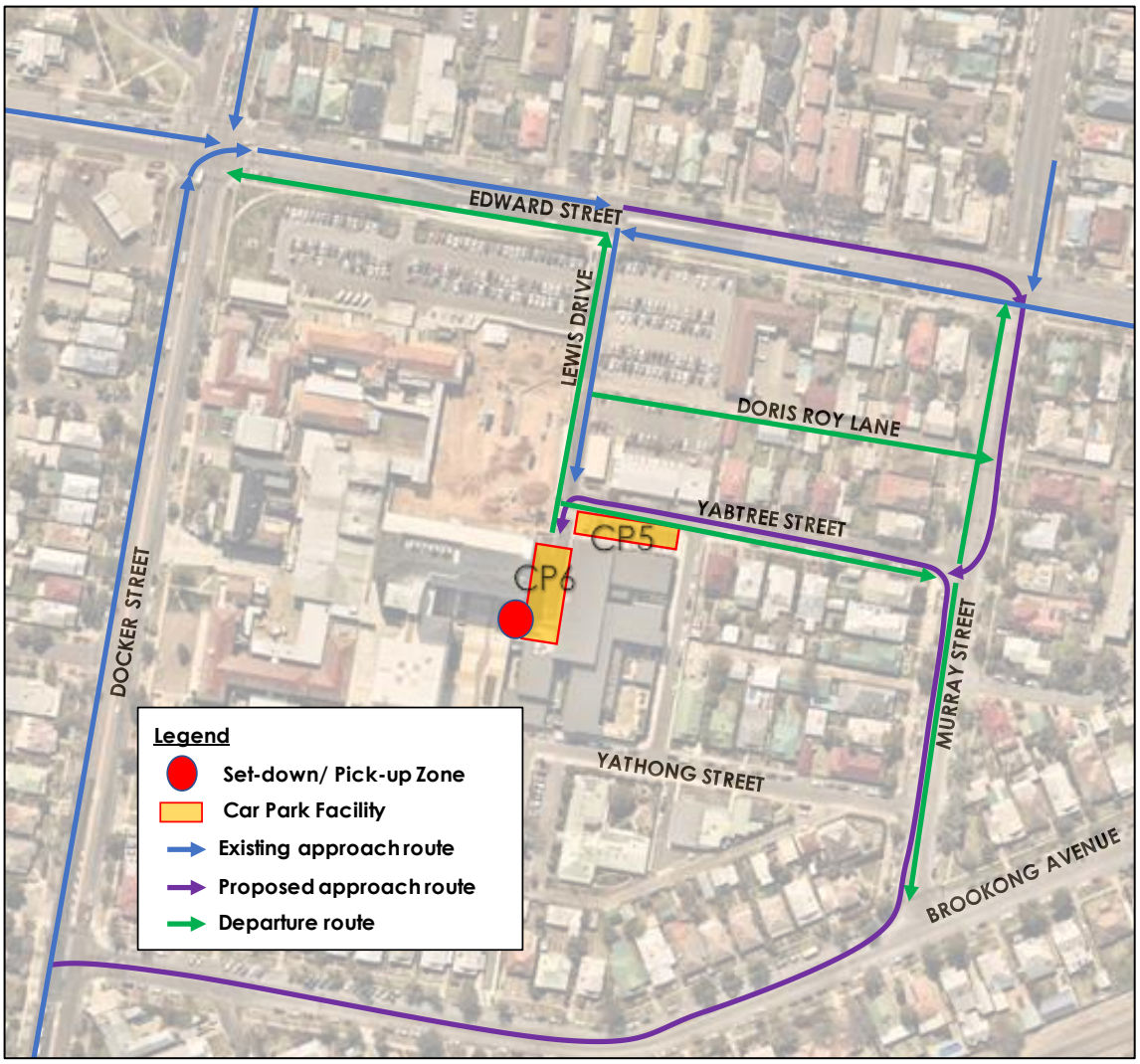
Yabtree Street provides vehicle access to the car parking facilities CP5 and CP6 and the existing set-down/ pick-up zone for the Emergency Department. Appropriate wayfinding signage at the intersections of Edward Street/ Lewis Drive, Edward Street/ Murray Street, Yabtree Street/ Murray Street and Yabtree Street/ Lewis Drive should be provided to guide vehicles associated with the set-down/ pick-up zone via Yabtree Street.

The above proposal will have minimal impact on the existing parking due to the expected low turnover rates of CP5 and CP6. Further, the access to the set-down/ pick-up zone via Yabtree Street

removes conflicts between set-down/ pick-up vehicles and vehicles accessing CP1, CP2, CP3, CP4 and Doris Roy Lane.

The existing and proposed approach routes as well as the departure routes for set-down/ pick-up zone, CP5 and CP6 via Yabtree Street, is shown in Figure 5.7.

Figure 5.7: Existing and proposed approach routes for set-down/ pick-up zone, CP5 and CP6



Basemap source: Nearmap

5.2.3 Car Park Management Plan

Several factors require detailed consideration to gain the best and highest utilisation of the final car parking provision. A detailed car park management plan to be implemented and managed by the hospital or a private car parking operator will ensure these objectives are met. This may include consideration for the following:

- Implementation of a parking guidance system and perhaps including an Automatic Number Plate Recognition (ANPR) system to allow efficient car park operation and access arrangements, particularly during peak times.
- Digital and static signage systems to enable clear and concise communication of parking areas and variable on-site conditions that react to demand profiles, events/ functions etc.

- Implementation of parking guidance and information system within the car park facility and near the hospital. Both provide information which aids the decision-making process of the drivers in reaching their destination location and assists them in locating a vacant parking space within the car park facility.
- Visitor parking arrangements that may include specific rates and duration of stay provisions.
- Implementation of smart payment system in the effort to overcome the limitation of the conventional payment methods such as the use of smart cards, debit cards and credit cards, contactless cards, mobile devices.
- Implementation of E-parking provides an alternative for visitors to enquire the availability and/ or reserve a parking space at their desired parking facility to ensure the availability of vacant car park space when they arrive at the parking facility. The system can be accessed via numerous methods such as SMS or through the internet.

6. Sustainable Transport Infrastructure

This chapter discusses potential measures that could encourage alternative means of travel to the private car and encourage the use of more environmentally sustainable forms of travel.

6.1 Better Placed – An Integrated Design Policy for the Build Environment of NSW 2007

Multiple environmental and health benefits are created through walkable access, cycling and public transport by reducing private car usage, traffic impacts and household transport costs. Better Placed has been developed by the Government Architect to deliver the strategic approach needed to ensure that as our cities and towns grow bigger they get even better.

As transport is responsible for around 14 per cent of the state's greenhouse gas emissions, there is a need to provide people with public transport options, and promote walking and cycling for short trips, in order to meet environmental objectives. This is further detailed in the Work Travel Plan in Section 8.

6.2 NSW Planning Guidelines for Walking and Cycling

The Planning Guidelines for Walking and Cycling provide guidance to land-use planners to ensure that walking and cycling improvements are taken into consideration in planning policy and practice. The guidelines provide a walking and cycling focus to the NSW Government's Integrating Land Use & Transport Planning Policy Package.

The guidelines suggest that "*when making planning instruments, councils are encouraged to integrate relevant state and local policies related to walking and cycling*". This includes development policies in the DCPs and LEPs that encourage walking and/or cycling that would be considered during the development assessment stage thereby encourage improvements to walking and cycling facilities.

Bicycle parking spaces will be designed in accordance with the relevant Australian Standard (AS2890.3 – Bicycle Parking Facilities). To comply with the Australian Standard, the bicycle parking spaces for staff will need to be provided as Class 1 bicycle spaces (i.e. individual bicycle lockers with dimensions of 1,840 millimetres by 715 millimetres), while visitor bicycle spaces will need to be provided as Class 3 bicycle spaces (i.e. bicycle racks in public area at 1,200 millimetres centre to centre). Secure racks for use by staff should be provided in a secure location (i.e. individual locker of secure room/ enclosure).

6.3 Pedestrian

A work program for the final Pedestrian Access and Mobility Plan (PAMP) for Wagga Wagga was prepared as part of Council's planning and funding commitments. Table 6.1 summarises the relevant recommended works to implement the PAMP.

Table 6.1: Works Schedule

No.	Location	Treatment	Priority
1	Sturt Highway (Edward Street), Wagga Wagga at Murray Street	Traffic Signals	H
2	Brookong Avenue, Wagga Wagga south of Edward Street.	Pedestrian Refuge	H

Key: H: High priority (now to 5 years)

6.4 Bicycle

6.4.1 Wagga Wagga Bicycle Plan

The Wagga Wagga Bicycle Plan was released in 2011 and set out the Bicycle Network development priorities within Wagga Wagga LGA. The key vision developed as part of the Bicycle Plan was *"to create an environment where cycling is an easy, enjoyable and convenient way to get about, where there are no barriers, and everyone has the confidence and desire to simply 'pick up a bike and go', whenever they feel like it"*.

It recognises the benefits of cycling, including to Council's quadruple bottom line (environmental, social, economic and governance), as well as to the wider transport network, but also the considerable barriers to cycling, which include major roads, traffic volumes and speeds, and the lack of continuity in the bicycle network.

6.4.2 Cycle Network

The Integrated Movement Study for City of Wagga Wagga (2008) identified proposed cycle routes to be implemented in Wagga Wagga as part of the Wagga Wagga City Bike Plan. These routes would also indirectly benefit cyclists of the subject site by providing appropriate facilities for cyclists and link connections in and around Wagga Wagga. These are shown in Figure 6.1.

Figure 6.1: Wagga Wagga City Bike Plan

Source: https://www.wagga.nsw.gov.au, accessed 19/04/18

Other measures as part of the Integrated Movement Study include:

- All on-road routes shown on the Wagga Wagga City Bike Plan should be surveyed for the design, setout and marking of road centrelines and edge lines to delineate road shoulder pavement and/or exclusive bicycle lanes for the passage of cyclists.

- All pavements should be sealed or constructed in concrete to make the network more attractive and encourage use.
- All structures should provide at least the same width as the approaching pathway.
- Provision of bicycle depots throughout the major residential areas and city centre that bicycles can be hired at one location and return at another location (WWBH) should also be investigated.
- Dialogue with bus operators for provision of bicycle racks on special buses.
- The upgrade of the existing on-road bicycle lanes to three metre wide off-road paths.

Near the hospital, it is recommended that Council survey and design to delineate routes with edge lines, pavement logos and signposting for all on-road routes without delineation.

6.4.3 End of Trip Facilities

Given that the DCP 2010 does not specify have any requirements for end of trip facilities, it is recommended that such facilities be considered in the existing buildings (retrofitting existing facilities) or new Stage 3 building. End of trip facilities are to be provided in accordance with the following:

- One bathroom and change area shall be provided and shall contain at least one toilet, wash basin, mirror, clothing hooks and power points (including shaving plugs).
- One bathroom and change area(s) per 10 required bicycle parking spaces.
- Clothes lockers to be provided at the rate of one clothes locker for every required bicycle parking space.

Based on the provision of 44 bicycle spaces for staff and visitors, the proposed development is to incorporate at least:

- one bathroom and change area
- four shower cubicles
- 40 clothes lockers (given there are four existing lockers).

6.5 Public Transport

Based on the JTW data, only one per cent of the staff currently use public transport. There is an opportunity to encourage the use of public and active transport modes. As such, as part of the Integrated Movement Study for City of Wagga Wagga (2008), it is recommended that the following specific approaches need to be explored for implementation:

- *Strategy 1: Fast Bus Routes: This strategy has briefly been discussed with Fearnes Coaches and requires further discussion among parties. The strategy aims to utilise the available shuttle buses (that are provided by pubs after hours) during normal hours while improving travel time along main bus routes. The strategy involves the use of shuttle buses at a local level to provide a connection to main bus service at a centralised location. This measure will reduce travel time along the main bus route by 20 to 30 minutes, as they no longer need to travel within local roads.*
- *Strategy 4: After Hours Bus Centre: It is understood that during after hours particularly on weekends after closure of pubs in CBD area, a shortage of taxis is experienced. To overcome this shortcoming a number of pubs within Wagga Wagga are providing shuttle bus services for their patrons. This would require an inefficient service with long travelling routes depending on various patrons' destinations. To overcome this issue and provide a more efficient and practical service, the following comments are made for further consideration by appropriate and relevant bodies.*

- *Strategy 7: Bus Routes Review It is anticipated that a review of bus routes (as part of a collaborative work between relevant bodies) could lead in their development of a more efficient and better service. This review could include re-routing certain bus services. For example moving a bus route from Baylis Street to another street such as Forsyth Street would improve its travel time (due to the nature of Baylis Street). Further, a bus interchange could also be accommodated along Forsyth Street opposite the shopping centre which is in the heart of the CBD area.*

The above recommendations will require further investigations and consultation by Roads and Maritime Services, TfNSW and bus operators to ensure there will be sufficient demand. The recommendations could contribute to increasing the use of public transport by staff and discourage the use of private motor vehicles.

As discussed, the proposed development is expected to generate up to 92 vehicle trips during the peak hours. Assuming a vehicle occupancy rate of 1.2, the proposed development will generate up to 110 potential passengers that could use the existing public transport system. The number of potential passengers can be easily accommodated within the remaining capacity of the existing bus system of 420 passengers.

As such, the existing public transport system is adequate to meet the likely future demand of the proposed development.

6.6 Rural and Regional on Demand Transport Request

TfNSW released the Rural and Regional on Demand Transport Request for Expressions of Interest (EOI) in November 2017 and identified Wagga Wagga to implement an on-demand bus service pilot program.

A key result of the EOI is to provide greater flexibility and mobility in the transport services to accommodate the needs of the Wagga Wagga community. As part of the pilot project, TfNSW:

- will work with participants who can contribute innovative systems and ideas in their own right or in partnership with others
- may assist by linking a participant proposing piloting an application that supports and encourages on demand transport with others who may be able to help provide an end-to-end solution.

With the recent trial projects in Sydney region, such program allows the patrons to book an on-demand service over the phone, via an app or in person at key locations. Payment to drivers can be pre-paid by debit/ credit card or cash. An on-demand bus will pick the customer up at the specified origin/ convenient nearby location and transport the customer to the specific destination within the on-demand area.

These on-demand services will supplement the regular bus services.

6.7 Crime Prevention through Environmental Design (CPTED)

There are four main principles of CPTED – natural surveillance, access control, territorial reinforcement and space management. The principles of CPTED can help create a safe and secure environment and assist in minimising the incidence of crime and contribute to perceptions of increased public safety within the hospital site.

HI has generally considered the CPTED principles as a tool in the infrastructure design. It is proposed that the car park be designed in accordance to the NSW Car Park Guidelines for Crime Prevention. The design guidelines which incorporates the CPTED principles are provided in Table 6.2.

Table 6.2: NSW Car Park Guidelines for Crime Prevention

Category	Sub Category	Guidelines
Natural surveillance	Sightlines	○ Configure the layout so cars are parked in grid like rows to allow for good sightlines between vehicles and through the car park. Do this in a way to maximise sightlines from areas with the most pedestrian and vehicular traffic, such as a nearby business or street. ○ Trim or remove foliage that is blocking sightlines into and through the car park. Any landscaping should be above head height, below waist height and set back from pedestrian pathways. ○ Remove or block secluded areas or hidden recesses, such as areas under stairs. ○ Ensure there is minimal obstruction to lines of sight including vehicles, pillars and concrete columns.
	Surveillance	○ Provide a mixture of long term and short term parking to enhance natural surveillance where practical. ○ Incorporate additional security for long term parking areas, such as patrols. ○ Locate long term parking areas in the most visible location in the car park. ○ Incorporate business activity within, or near, the car park, such as a car wash. ○ Ensure facilities, such as public toilets, are monitored, regularly patrolled and located in areas where maximum surveillance is offered. ○ Schedule maintenance at the most vulnerable times for offending, as the maintenance staff are a form of surveillance. ○ Multi-storey car parks should have open sides rather than solid blank walls.
	Lighting	○ Lighting should at least meet minimum requirements under Australian Standards (AS 1158 for external lighting and AS 1680 for interior lighting). ○ Light fixtures should be reliable, easy to maintain, able to withstand the elements and vandal resistant. ○ Incorporate lighting into a regular maintenance plan so as to ensure lights are working, maintaining lux levels and are not obstructed in any way by signs, landscaping or other objects. ○ When selecting and positioning light fixtures, be considerate of glare. Also consider the brightness of the light and effect of passing from light to dark areas. ○ White' light is best for natural surveillance as it allows for clarity of vision. Parked cars can be identified by colour and other details, which is important for crime reporting. Direct lighting to the car park so that guardians or passers-by can see inside the area. Ensure the lighting extends to the edges of the parking areas, not just vehicle and pedestrian routes. ○ Paint the car park interior white. This can assist lighting to be effective and can save money through lower wattage demand. ○ Lights should be bright enough to enable the rear seat of a parked vehicle to be seen before entering and enable the face of a person to be seen 15 metres away. ○ Ensure there is sufficient lighting to complement the CCTV system (if in place) so that images are captured. ○ Consider the use of sensor lights in certain darker areas.
	Closed Circuit Television (CCTV)	○ Install a quality, vandal resistant system which staff are thoroughly trained to use. ○ Display signage identifying that CCTV is operating. ○ Ensure the cameras are installed so as to maximise surveillance opportunities.

Category	Sub Category	Guidelines
		○ Ensure the camera views are not obstructed by anything such as landscaping or signposts. ○ Ensure that cameras are constantly, actively monitored near the site. If a crime is occurring this can make it possible for a perpetrator to be apprehended or interrupted. ○ Camera feeds should be recorded and stored.
Access Control	Vehicle Access	○ Provide a dedicated singular point of entry and a dedicated singular point of exit to the car park. ○ Install boom gates, ticketed entry, one-way spikes or other access control devices to regulate vehicle movement. ○ Locate entry and exit points near guardians in the car park, such as ticket sellers / machines, businesses, or other adjoining properties. ○ Provide clear line marking or parking spaces and clearly number or colour-code the parking bays. ○ Install black or dark green see-through fencing around the perimeter of the car park.
	Pedestrian Access	○ Provide minimal number of pedestrian access / exit points. ○ Provide clearly marked, open, visible pedestrian access ways within the car park to busy destination points. ○ Maintain landscaping along and near pedestrian access ways to ensure clear sightlines. Any landscaping should be above head height, below waist height and set back from pedestrian pathways.
	Design	○ Delineate the boundary and perimeter of the car park in some way. This could be through low shrubbery or dark coloured, see-through fencing around the perimeter of the car park. ○ Implement circular movement of traffic around the car park so that vehicles cannot simply take the shortest route to and from the entry and exit. ○ Clearly mark the car park with the name and street address.
Space and Activity Management	-	○ Clearly number or colour-code the floor levels and parking bays. ○ Ensure a regular maintenance plan is in place including rubbish removal, graffiti removal, repair of light fixtures, maintenance of lux levels, trimming of vegetation and other necessary repairs. ○ Where feasible, incorporate business activity within, or near, the car park, such as a car wash. ○ All staff should undergo crime awareness training - what is suspicious behaviour and what are the reporting procedures for the location. ○ Crime statistics for the car park should be monitored by management and should inform crime prevention initiatives such as the timing and frequency of security patrols.
	Signage	○ Highly visible (should be able to be seen clearly at night – use reflective material). ○ Advise users of installed security measures and where to find them (such as help points or intercom systems). ○ Reminds people to secure their vehicle and remove valuables. These signs should be simple to understand – use of images is best.

7. Traffic Impact Assessment

7.1 Traffic Generation

7.1.1 Private Hospital

It is difficult to determine the peak traffic generation, noting the on-street parking demand associated with the hospital. On this basis, the Roads and Maritime Services *Guide to Traffic Generating Developments*, 2002 (Roads and Maritime Guide) has been referenced to understand the impact of the proposed development.

For private hospitals, the Roads and Maritime Guide recommends 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
- AM Peak Vehicle Trips (MVT) = -10.21 + 0.47B + 0.06ASDS
- PM Peak Vehicle Trips (EVT) = -2.84 + 0.25B + 0.40ASDS.

Where 'B' represents the number of beds proposed.

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 3pm and 4pm. This time period generally coincided with a staff shift change at the surveyed hospitals and will coincide with the start of the on-road peak near the site.

It should also be noted that of the 19 hospitals surveyed, an average of 87 per cent of people travelling to each hospital did so by private car and the mode share attributed to car-based trips ranged from 67 per cent to 98 per cent. Average vehicle occupancy was 1.3 persons per vehicle.

The Roads and Maritime rates have been applied to the WWBH. This includes an increase of 94 beds/ chair/ rooms and 69 ASDS. The results indicate that the peak hour increase in traffic generation will result in around 39 and 49 additional trips per hour during the AM and PM peak hours, respectively.

7.1.2 Education Area

Roads and Maritime Guide (2002) and Technical Direction TDT 2013/4a do not provide traffic generation rates for Education Area facilities. As such, for the purposes of this assessment, the Roads and Maritime (2002) rate for commercial use has been adopted for the facilities that operate during the surveyed peak periods, which is two vehicle trips per 100 square metres GFA.

Based on 379.2 square metres GFA, the Education Area will result in eight additional trips per hour during the peak periods.

7.1.3 Set-Down/ Pick-Up Operations

The peak demand expected at the set-down/ pick-up area is also anticipated during the AM and PM peaks, with a maximum demand of 15 people during any peak hour. It is assumed that around 50 per cent of visitors will travel as a passenger by car with the other 50 per cent assumed to travel by taxi.

As a result, Lewis Drive is expected to carry an additional 30 vehicle trips associated with the set-down/ pick-up area during any peak hour.

The set-down/ pick-up has been designed to formally accommodate seven 99th percentile cars.

The operations of the set-down/ pick-up area is considered to be critical to the overall functionality of the area including Lewis Drive and adjacent vehicle accesses to car parking facilities and will require implementation of a detailed management plan comprising on-site traffic management as a minimum during peak times.

7.1.4 Summary

The proposed development is expected to generate an additional 76 and 92 vehicle trips during the AM and PM peak hours, respectively. This is equivalent to up to 1,150 vehicle trips per day[11].

Applying the above peak hour and daily traffic generation to the JTW mode share percentage, the number of staff/ visitor anticipated for each mode is summarised in Table 7.1.

Table 7.1: Anticipated Number of Staff/ Visitor by Mode

Mode	Mode share	Anticipated Number of Staff/ Visitor	
		Peak Hour	Daily
Vehicle driver	82%	74	942
Vehicle passenger	8%	8	92
Walked only	6%	6	69
Train	0%	0	0
Bus	1%	1	12
Mode not stated	2%	2	23
Other (Bicycle)	1%	1	12
Total	**100%**	**92**	**1,150**

Data source: JTW Explorer, Bureau of Transport Statistics, 21/12/2017

7.2 Distribution and Assignment

The directional distribution and assignment of existing traffic and traffic generated by the additional uses will be influenced by the following factors:

- Configuration of the internal road network within the site
- Existing operation of intersections providing access between the local and arterial road network, distribution of households near the site
- Surrounding retail centres and schools in relation to the site
- Likely distribution of employees' residences in relation to the site
- Configuration of access points to the site.

7.3 Traffic Impact

The traffic impact assessments in this section provide input which form the basis of the traffic and transport design for the hospital and inform the required civil works to be undertaken to the local road network within and around the hospital site. This section will also identify, if any, appropriate mitigation measures to effectively manage the transport impact of the proposed development.

11 Assuming a peak-to-daily ratio of 8%.

The Integrated Movement Study for City of Wagga Wagga (2008) include traffic modelling projections in addition to traffic volume data for the road network and land use information in Wagga Wagga area.

The future scenarios reflect general growth of the Study Area for a 20-year planning horizon (Year 2026) with respect to planning documents (such as Spatial Plan for Wagga Wagga 2007, Vision 21 Land Use Strategy and Advisory Report - Retail and Commercial Development Strategy, 2007) and other available information. The future scenarios have also taken into consideration the following potential developments within Wagga Wagga:

- Boorooma East: 400 lots. Area is around 64 hectares – assume around 8.5 dwellings/ hectare
- Estella West: 1615 lots. Area is around 190 hectares – assume around 8.5 dwellings/ hectare
- Lloyd West: 1157 lots. Estimates only. Needs considerable further investigation and may be significant reductions in yield
- Lloyd East: 660 lots Estimates only
- Estimates of commercial, retail and industrial land use areas were made as part of the traffic modelling process.

The base daily traffic volumes (2006) and future daily traffic volumes (2026) as well as associated annual growth rate are summarised in Table 7.2. This data shows an average growth of two per cent to 3.9 per cent per year between 2006 and 2026. It is noted that a factor of 3.2 per cent is used to convert the daily traffic volumes to the AM peak hour volumes.

On the basis of this factor, the AM peak hour increase in traffic between 2017 and 2027 is summarised in Table 7.2. These increases were considered in the assessment of the intersection operation to safeguard both intersections layout and operation.

Table 7.2: Annual Growth

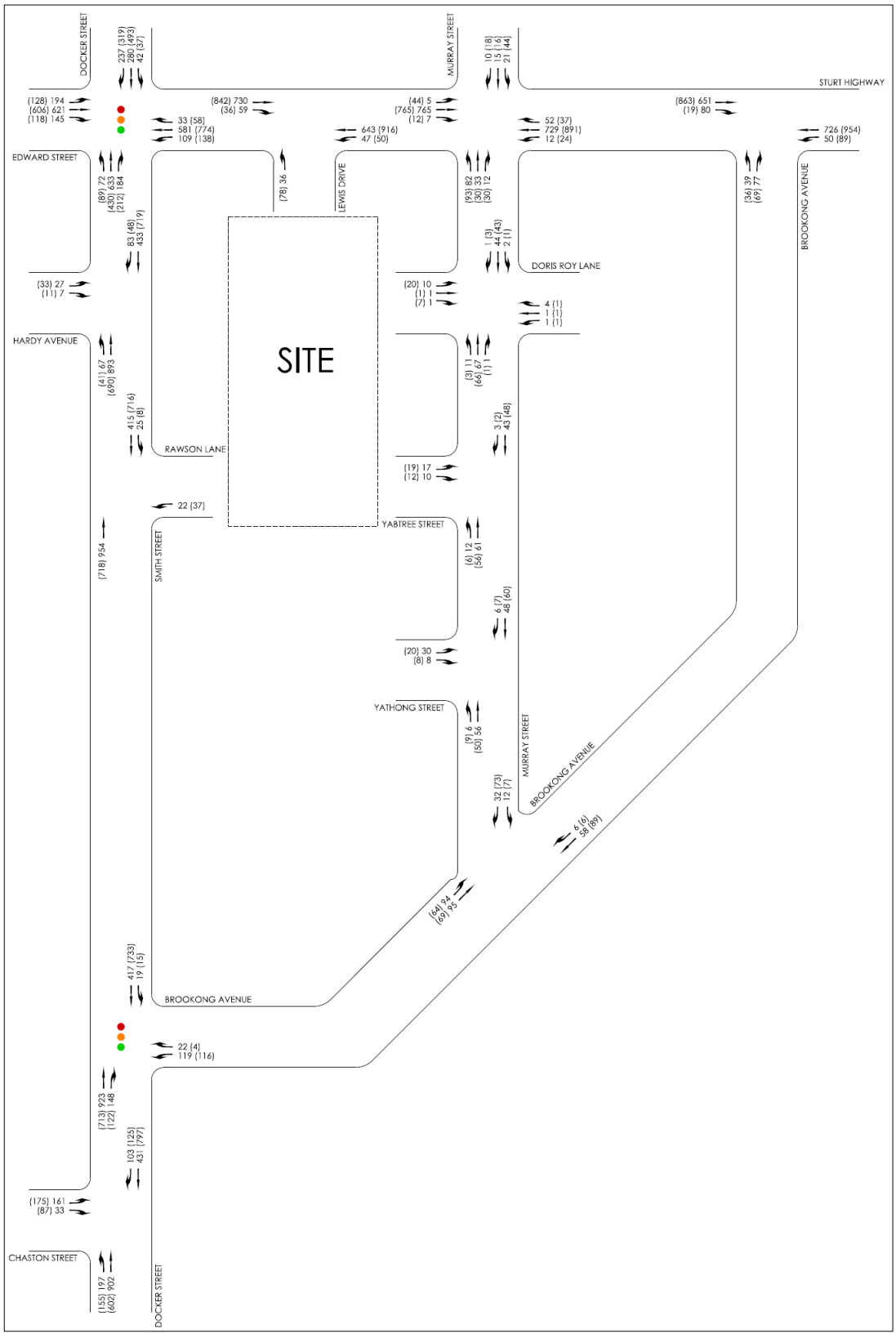
Street	2006 Traffic Volumes (daily)	Projected 2026 Traffic Volumes (daily)	Annual Growth	Projected 2017 Traffic Volumes (daily)	Increase in Traffic Volumes (daily) (2017 -2026)	Increase in Traffic Volumes (AM peak) (2017-2026)
Sturt Highway, East of Docker Street	16,456	30,004	3.0%	22,898	13,548	227
Docker Street, North of Edward Street	15,503	22,875	2.0%	19,202	7,372	118
Edward Street, West of Docker Street (Sturt Highway)	16,504	35,795	3.9%	25,265	19,291	337

Source: Integrated Movement Study for City of Wagga Wagga (2008)

7.4 Year 2027 Intersection Operation without Proposed Development

Considering the future traffic growth, the future Year 2027 AM and PM peak hour traffic volumes are summarised in Figure 7.1.

Figure 7.1: Future weekday AM and PM peak hour traffic volumes without proposed development (2027)



(AM Peak) PM Peak Hour Turning Volumes

The key intersections near the site were analysed under 2027 traffic conditions without the inclusion of traffic generated by the WWBH Redevelopment Stage 3 to confirm the future intersection operation. A summary of the expected future operating conditions of the key intersections for Year 2027 is shown in Table 7.3.

Table 7.3: Future operating conditions without proposed development (2027)

Intersection	Peak	Degree of saturation (DOS)	Average delay (sec)	95th percentile queue (m)	Level of service (LOS)
Edward Street/ Docker Street	AM	0.96	51	220	D
	PM	1.04	98	525	F
Edward Street/ Lewis Drive[1]	AM	0.11	11	3	A
	PM	0.10	14	2	A
Edward Street/ Murray Street[1]	AM	0.97	269	35	F
	PM	1	241	48	F
Edward Street/ Brookong Avenue[1]	AM	1.05	205	160	F
	PM	1.21	208	218	F
Murray Street/ Dorris Roy Lane[1]	AM	0.01	8	1	A
	PM	0.03	8	1	A
Docker Street/ Hardy Avenue[1]	AM	0.06	33	2	C
	PM	0.09	32	2	C
Murray Street/ Yabtree Street[1]	AM	0.03	5	1	A
	PM	0.03	5	1	A
Docker Street/ Rawson Lane[1]	AM	0.03	6	1	A
	PM	0.05	7	1	A
Murray Street/ Yathong Street[1]	AM	0.03	5	1	A
	PM	0.04	5	1	A
Docker Street/ Brookong Avenue	AM	0.47	8	42	A
	PM	0.34	9	41	A
Murray Street/ Brookong Avenue[1]	AM	0.04	6	1	A
	PM	0.06	6	1	A
Docker Street/ Chaston Street[1]	AM	0.27	35	7	C
	PM	0.36	21	11	B

[1] Worst movement reported for unsignalised intersection.

Based on Table 7.3, the background traffic growth has a notable impact to operation of the intersection of Edward Street/ Docker Street particularly in regard to queue length in the PM peak. The intersection will operate at level of service D during the AM peak hour but is expected to operate over capacity at a level of service F in the PM peak.

The intersection of Edward Street/ Lewis Drive will remain to operate well with minimal queues and delays on all approaches, with level of service A during the peak hours.

The background traffic growth is anticipated to have notable impacts to the intersection of Edward Street/ Murray Street, with increase in vehicle delays of up to 230 seconds and vehicle queues of up to 42 metres on the Murray Street approaches during the peak hours.

The traffic growth also has significant impact to the intersection of Edward Street/ Brookong Avenue, with increase in vehicle delays of up to 123 seconds and vehicle queues of up to 163 metres during the peak hours on the Brookong Avenue approach to Edward Street.

7.4.1 Mitigation Measures

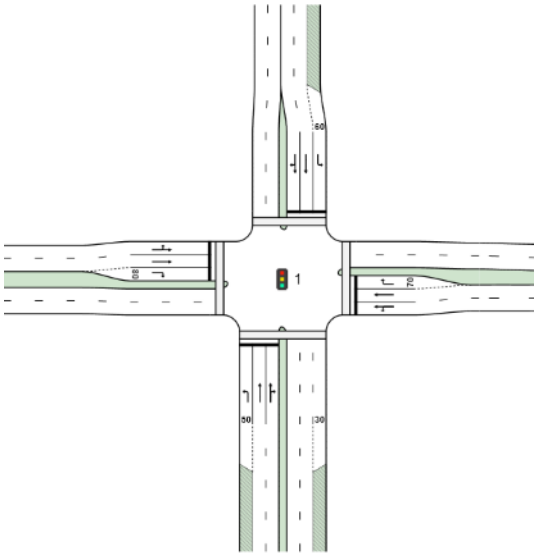
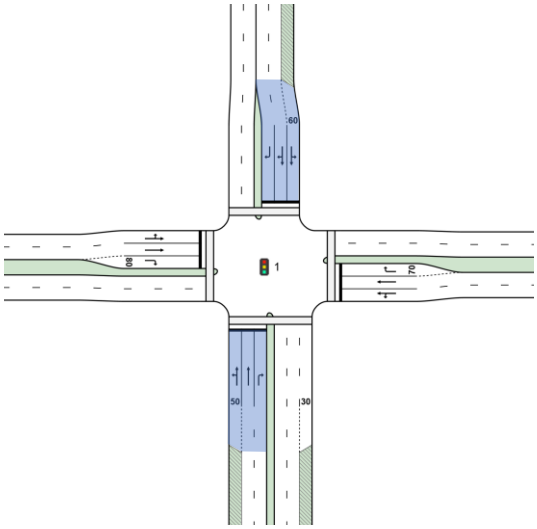
Edward Street/ Docker Street Intersection

The expected future operation of Edward Street/ Docker Street could be improved via lane reconfigurations and signal optimisation, with the applied mitigation measures at the intersection shown in Figure 7.2.

The following mitigation measures are recommended for Edward Street/ Docker Street intersection:

- Convert existing 50-metre northbound left-turn lane to a shared thru and left-turn lane
- Convert existing northbound shared thru and right-turn lane to right-turn lane
- Convert existing southbound thru lane to a shared through and right-turn lane
- Convert existing southbound shared thru and right-turn lane to right-turn lane
- Convert existing southbound left-turn lane to a shared thru and left-turn lane.

Figure 7.2: Edward Street/ Docker Street intersection upgrades (highlighted in blue) due to background traffic growth

Year 2018 Existing	Year 2027 with Background Traffic Growth (with Upgrades)
	

Edward Street/ Murray Street Intersection

Consultation between HI, Roads and Maritime and Council has occurred, and it is acknowledged that improvements to the intersection of Edward Street and Murray Street are required to support current and future traffic conditions. Roads and Maritime are currently undertaking their own investigations of this intersection and a commitment between the three agencies was made on Thursday 27 September 2018 to meet regularly to determine an appropriate intersection arrangement of Edward Street / Murray Street that would be committed prior to the opening of Stage 3 that would support an overall level of service C operation in 2031.

Summary

It is noted that improvements are required based on forecast traffic growth in the area and not necessarily as a result of the Stage 3 development.

Based on the above, the analysis for Stage 3 assumes the proposed improvements to the intersection of Edward Street and Docker Street have been implemented, however as

improvements to the intersection of Edward Street and Murray Street will be subject to ongoing consultation with Roads and Maritime and Council improvements to Edward Street and Murray Street have not been included in the modelling results . The expected future operating conditions of the key intersections with the proposed mitigation measures and without the proposed development, are summarised in Table 7.4.

Table 7.4: Future operating conditions with mitigation measures and without proposed development

Intersection	Peak	Degree of saturation (DOS)	Average delay (sec)	95th percentile queue (m)	Level of service (LOS)
Edward Street/ Docker Street	AM	0.86	42	145	C
	PM	0.94	65	247	E
Edward Street/ Lewis Drive[1]	AM	0.10	10	2	A
	PM	0.09	13	2	A
Edward Street/ Murray Street[1]	AM	0.59	166	13	F
	PM	1.00	>200	48	F
Edward Street/ Brookong Avenue[1]	AM	1.05	>200	60	F
	PM	2.23	>200	219	F
Murray Street/ Dorris Roy Lane[1]	AM	0.01	8	1	A
	PM	0.03	8	1	A
Docker Street/ Hardy Avenue[1]	AM	0.06	32	1	C
	PM	0.09	31	2	C
Murray Street/ Yabtree Street[1]	AM	0.02	5	1	A
	PM	0.02	5	1	A
Docker Street/ Rawson Lane[1]	AM	0.02	6	1	A
	PM	0.05	6	1	A
Murray Street/ Yathong Street[1]	AM	0.03	5	1	A
	PM	0.02	5	1	A
Docker Street/ Brookong Avenue	AM	0.47	8	42	A
	PM	0.34	9	41	A
Murray Street/ Brookong Avenue[1]	AM	0.04	6	1	A
	PM	0.05	6	1	A
Docker Street/ Chaston Street[1]	AM	0.27	35	6	C
	PM	0.36	21	10	B

[1] Worst movement reported for unsignalised intersection.

Based on Table 7.4, with the proposed lane reconfigurations and signal optimisation, the operation of the Edward Street/ Docker Street intersection would be at levels of service C and E during the AM and PM peak hours, respectively, which are similar to the existing operating conditions.

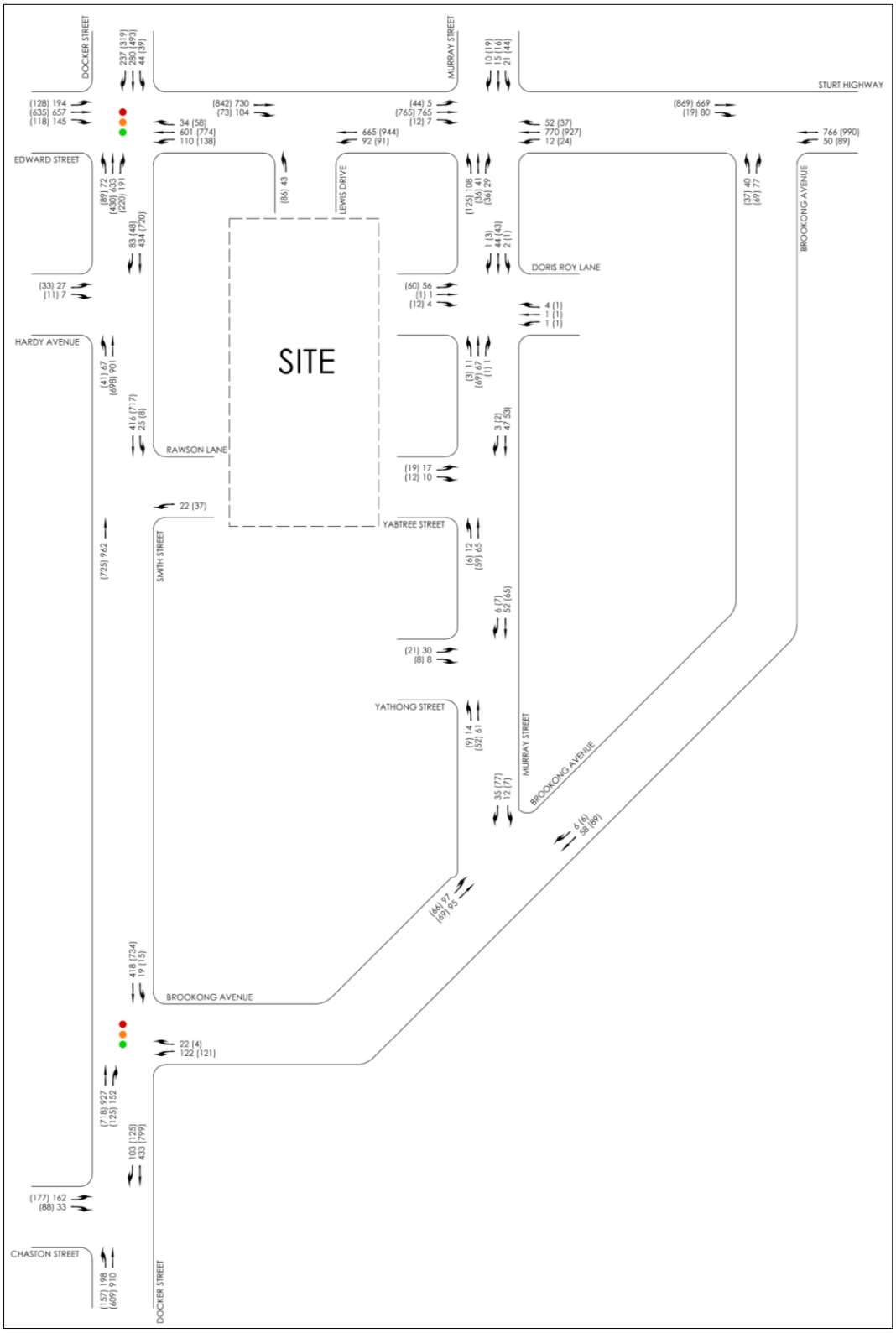
The intersections of Edward Street/ Murray Street and Edward Street/ Brookong Avenue would continue to operate at/ over capacity during both peak hours due to the delays to right turning vehicles on the minor approaches. As outlined proposed improvements to Edward Street and Murray Street are being addressed separately to this report.

All other intersections are expected to operate at levels of service C or better during the peak hours.

7.5 Year 2027 Intersection Operation with Proposed Development

The future AM and PM peak hour traffic volumes considering both the future traffic growth and traffic generated by the proposed development, are summarised in Figure 7.3.

Figure 7.3: Future weekday AM and PM peak hour traffic volumes with proposed development



(AM Peak) PM Peak Hour Turning Volumes

The key intersections in the vicinity of the site were reanalysed under 2027 traffic conditions with the inclusion of traffic caused by the WWBH Redevelopment Stage 3 to confirm the key intersections would continue to operate satisfactorily with the proposed mitigation measures. A summary of the expected future operating conditions of the key intersections for Year 2027 is shown in Table 7.5.

Table 7.5: Future operating conditions with mitigation measures with proposed development

Intersection	Peak	Degree of saturation (DOS)	Average delay (sec)	95th percentile queue (m)	Level of service (LOS)
Edward Street/ Docker Street	AM	0.88	42	151	C
	PM	0.92	64	250	E
Edward Street/ Lewis Drive[1]	AM	0.20	11	4	A
	PM	0.21	15	4	B
Edward Street/ Murray Street[1]	AM	1.76	>200	124	F
	PM	1.00	>200	28	F
Edward Street/ Brookong Avenue[1]	AM	1.16	>200	85	F
	PM	2.49	>200	238	F
Murray Street/ Dorris Roy Lane[1]	AM	0.10	8	2	A
	PM	0.07	8	2	A
Docker Street/ Hardy Avenue[1]	AM	0.06	33	1	C
	PM	0.09	32	2	C
Murray Street/ Yabtree Street[1]	AM	0.03	5	1	A
	PM	0.02	5	1	A
Docker Street/ Rawson Lane[1]	AM	0.02	6	1	A
	PM	0.05	6	1	A
Murray Street/ Yathong Street[1]	AM	0.03	5	1	A
	PM	0.02	5	1	A
Docker Street/ Brookong Avenue	AM	0.48	8	42	A
	PM	0.34	9	41	A
Murray Street/ Brookong Avenue[1]	AM	0.04	6	152	A
	PM	0.05	6	1	A
Docker Street/ Chaston Street[1]	AM	0.27	36	6	C
	PM	0.37	21	11	B

[1] Worst movement reported for unsignalised intersection.

Based on Table 7.4, the Edward Street/ Docker Street intersection would operate at levels of service C and E during the AM and PM peak hours, respectively, which are similar to the existing operating conditions and base case scenarios. The traffic generation of the proposed development generally would add minimal vehicle delays of up to five seconds and vehicle queues of up to six metres during the peak hours.

The Edward Street/ Brookong and Edward Street/ Murray Street intersections would continue to operate at levels of service F during the peak hours when including the proposed development traffic. It is noted that queuing increases significantly on the Murray Street/ Brookong Avenue intersection in the AM peak hour. This is due to downstream queuing along Murray Street as a result of its intersection with Edward Street. Following the upgrades to the Murray Street/ Edward Street intersection that will be prepared in consultation with Council and Roads and Maritime, queuing effects at the Murray Street/ Brookong Street intersection will be reduced.

All other intersections are expected to continue to operate at levels of service C or better during the peak hours.

8. Work Travel Plan

8.1 Purpose of a Work 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 Work Travel Plan (WTP) 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 WTP 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.

8.2 Typical Challenges for Regional Hospitals

Most staff activity associated with regional hospitals occurs via vehicles due to the nature of staff shift times and the limited availability of convenient public transport. Walking and cycling often proves difficult due to the distance between the home and work place as well as a lack of quality facilities. In this regard, the following factors are typically attributed to a high mode share for private vehicles at regional hospitals:

- Residential locations and hospital locations can have limited access to public transport services.
- Driving presents attractive travel time advantages for many key staff origins.
- Limited number of locations have access to direct public transport connections that do not require interchanging. This typically results in longer travel times, as well as influencing the perception of a lack of convenience and reliability.
- Time of arrival/ departure, due to shift work, potentially limits the access to frequent public transport services. Staff that work in shifts with start/ end times outside peak hours might also experience personal security issues.
- Time of arrival/ departure influences perceived comfort of traveling via alternate modes of transport, in particular outside peak hours.
- Unpredictable hospital activities may extend staff shift finish times. This can leave staff 'stranded' if public transport options are limited.
- Staff may need to drive to efficiently conduct other activities on their way to/ from the hospital such as school set-down/ pick-up activities.

Strategies can be implemented to encourage staff to reduce their reliance on private vehicles.

8.3 Travel Demand Strategies

While it is recognised that the site's location somewhat limits the practicality of using sustainable transport modes, there remains potential for improved utilisation of public transport and associated provision of sustainable transport infrastructure.

Several opportunities exist to provide WWBH staff with incentives to consider alternative modes of travel to and from work. The following recommendations are high level strategies that would need to be developed in greater detail and through consultation with relevant stakeholders closer to the opening of the Stage 3 building:

- **Staff Accommodation**
  - Provide staff accommodation near the site. This may encourage:
    - Walking and/ or cycling to work
    - Car-pooling between staff working the same shifts.
  - Provide a shuttle bus service between staff accommodation and the hospital to further reduce reliance on private vehicles.
- **Shuttle Bus Service**
  - Provide a shuttle bus service between the hospital and key public transport interchanges, such as the stops along Baylis Street and Best Street, aligned with staff shifts. A regular, flexible service is likely to increase staff perception of convenience and reliability.
  - Develop shuttle bus routes targeting key residential areas near the hospital with low public transport connectivity.
- **Public Transport**
  - Communicate with bus operators to amend bus routes (where possible) to connect public transport nodes with the hospital using the existing on-site bus stop discussed in Section 2.8.
  - Arrange public transport trips to be aligned with hospital shifts through consultation with Roads and Maritime Services, TfNSW and bus operators.
- **On Demand Transport**
  - Liaise with TfNSW and other stakeholders to implement the Rural and Regional on Demand Transport pilot project.
- **Active Travel**
  - Provide high quality and prominent bicycle parking and change/ shower facilities.
  - Provide clear pedestrian and cyclist wayfinding.
  - Provide shelters along walkways or near bus stops and street lighting.
  - Encourage cultural change through:
    - Creating a bike user group (targeting staff living within 5 km of the Hospital).
    - Events such as annual 'ride to work' day.
    - Providing information detailing opportunities and facilities available to staff. This may include providing maps of the available cycling routes to and within the Hospital site.
- **Promote Car-Pooling**
  - Provide prioritised car pool parking spaces on-site, including consideration for incentives such as prices, location and proximity to services.

9. Consultations

9.1 Council

On-going consultations with Cameron Collins (Development Assessment Coordinator) and Bill Harvey (Senior Traffic Officer) of Council are as detailed in Table 9.1.

Table 9.1: Consultation with Council

Day/ Date	Personnel	Comments

Monday, 19 March 2018	Cameron Collins	○ Traffic counts undertaken in the area by Council and were recently provided to consultants working on the health precinct project.
		○ Provided the boundaries of the health precinct and the location of the counts.
		  ○ Murray Street: 1904 (5 day), 1664 (7 day), 2% HV's, Year 2010
		  ○ Brookong Avenue: 1059 (5 day), 955 (7 day), 3% HV's, Year 2010
		  ○ Brookong Avenue: 3426 (5 day), 3037 (7day), 2% HV's, Year 2010
		  ○ Docker Street: SB 6373 (5 day), 5634 (7 day), 4% HV's, Year 2010, NB 8253 (5 day), 7066 (7 day), 5% HV's, Year 2010
		  ○ Meurant Street: 1669 (5 day), 1926 (7 day), 7% HV's, Year 2013
		  ○ Gormly Avenue: 265 (5 day), 239 (7 day), 17% HV's, Year 2013.

Friday, 19 March 2018	Cameron Collins	○ Reviewed surrounding developments and they do not warrant consideration with regards to the Hospital development. ○ Traffic assessment should be based on the Wagga Integrated Transport Study and relevant traffic studies that have informed this study: https://www.wagga.nsw.gov.au/city-of-wagga-wagga/engineering-services/traffic-and-transport/integrated-transport-study ○ There was some focus on the health precinct around the hospital as part of this work.
Wednesday, 14 March 2018	Cameron Collins	○ There are currently no approved developments that are relevant to the traffic impact assessment around the hospital. ○ There is a medical suite development on the corner of Docker Street/ Chaston Street. ○ There were some redevelopments that has occurred within the Calvary Hospital site. ○ To confirm the release of the above traffic studies and if not, the process to obtain these studies. ○ To confirm the works completed by Council's strategic section on applicable traffic studies.

Monday, 5 March 2018	Bill Harvey	○ To include the following intersections in the traffic assessment with multi-storey car park proposal:
		  ○ Doris Roy Lane/ Murray Street
		  ○ Yabtree Street/ Murray Street
		  ○ Yathong Street/ Murray Street.
		○ To include the following intersection in the traffic assessment for SEARs submission:
		  ○ Brookong/ Murray Street.
		○ No traffic survey was carried out for Brookong Avenue/ Docker Street.
		○ Peck Street would be converted to two-way street.
		○ Given the tight SEARs deadline, it is acceptable to mention the applicant's intention to carry out further assessment on the above intersections in the SEARs report and to provide an updated report once the additional assessments are completed.

9.2 Roads and Maritime

On-going consultations with Maurice Morgan (Manager Land Use Regional and Freight) are as detailed in Table 9.2.

Table 9.2: Consultation with Roads and Maritime

Day/ Date	Personnel	Comments
Friday, 16 February 2018	Maurice Morgan	○ Roads and Maritime has no plans for the upgrade of the intersections of Brookong Avenue/ Edward Street and Murray Street/ Edward Street. ○ The intersection of Murray and Edwards Street was raised as an issue as part of the original proposal for the redevelopment of the hospital site and has been a point of discussion with Council in recent years. ○ Roads and Maritime would not object to works at the intersections of Brookong Avenue/ Edward Street and Murray Street/ Edward Street, if proven to be required however an appropriate traffic study and assessment of the various options is needed to support the necessity for any works. ○ To provide for a robust assessment it would be appropriate to undertake a traffic assessment of the precinct surrounding the hospital site. ○ As a minimum the precinct should include the intersections with Edward Street from and including Docker Street to Brookong Avenue and the intersections with Docker Street from and including Edwards Street to Chaston Street.

Monday, 5 March 2018	Maurice Morgan	○ To include the following intersections in the traffic assessment:
		  ○ Chaston Street/ Docker Street
		  ○ Brookong Avenue/ Docker Street
		  ○ Rawson Lane/ Docker Street
		  ○ Hardy Avenue/ Docker Street
		  ○ Brookong Avenue/ Edward Street.
		○ Given the tight SEARs deadline, it is acceptable to mention the applicant's intention to carry out further assessment on the above intersections in the SEARs report and to provide an updated report once the additional assessments are completed.

9.2.1 Roads and Maritime Submission

A submission from Roads and Maritime was received on 15 August 2018 seeking analysis outlined in Table 9.2 to assess a wider area surrounding the hospital site. The additional analysis has been prepared and is presented in this report.

Roads and Maritime would like to see the cumulative impact of the whole redevelopment in terms of traffic generation and parking not a single stage in isolation. It is noted that this report assesses the Stage 3 Redevelopment and the full masterplan is to be investigated at a later stage.

The conditions of consent recommended by Roads and Maritime would be addressed as required throughout the project.

9.3 TfNSW

On-going consultation with Lee Farrell (Transport Planner) is as detailed in Table 9.3.

Table 9.3: Consultation with TfNSW

Day/ Date	Personnel	Comments
Wednesday, 19 April 2018	Lee Farrell (Transport Planner)	○ Proposed development should encourage the use of public and active transport modes through provision of bicycle parking and end of trip facilities. ○ Proposed development should consider the application of Rural and Regional on Demand Transport Request (not limited to only bus services and may include any form of transport). This application would improve public transport access to staff and visitors as well as to ensure they can utilise public transport to their respective destination quickly, safely, easily and efficiently at a time that suits them.

On Thursday 27 September 2018, a workshop was held with HI, Roads and Maritime and Council. It was acknowledged by all agencies that improvements to the intersection of Edward Street and Murray Street are required to support current and future traffic conditions. Roads and Maritime are currently undertaking their own investigations of this intersection and a commitment between the three agencies was made to meet regularly to determine an appropriate intersection arrangement of Edward Street/ Murray Street that would be committed prior to the opening of Stage 3 that would support an overall level of service C operation in 2031.

10. Conclusion

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

i The proposed Stage 3 redevelopment of WWBH includes:

- An increase of 115 additional staff. This represents an additional ASDS of 69
- An increase of 94 beds/ chairs/ rooms.

ii The intersection of Edward Street/ Lewis Drive currently operates satisfactorily, with spare capacity on all approaches. The intersection of Edward Street/ Docker Street currently operates at capacity with level of service E during the PM peak hour while the intersection of Edward Street/ Murray Street operates at level of service F during both AM and PM peak hours.

iii The hospital currently has 440 on site car parking spaces, with a peak demand of 77 per cent.

iv A total of 489 on-street parking spaces is available near the hospital, with 428 spaces occupied and 61 spaces vacant (86 per cent occupancy).

v Noting the theoretical capacity of a car parking facility, an 85 per cent occupancy of 929 on-site and on-street parking spaces represents 790 occupied spaces. With the peak demand at 768 spaces, there will be a theoretical supply of 22 vacant spaces before the drivers have to circulate to find parking spaces, which could lead to increased congestion near WWBH.

vi Analysis of parking requirements was assessed based on staff numbers and bed/ chair/ room numbers. The proposed development will provide 95 additional spaces including 85 spaces for the hospital and 10 spaces for the Education Area.

vii The additional parking demand of 95 spaces to be generated by the additional staff and bed numbers could not be accommodated by the existing off-street and on-street parking facilities.

viii The required number of parking spaces can be accommodated by the reinstated car spaces under the existing demountable facilities, reconfigured CP1, proposed Stage 3 parking and north of Harvey House.

ix The new parking facilities exceeds HI's commitment to provide 100 car spaces in addition the existing 440 spaces available at the end of the Stage 2 Redevelopment work, as presented in the Final Business Case.

x The following road design strategies to improve pedestrian safety will be provided during the detailed design stage:

- Reconfiguration of the exit/entry and circulation of CP4 including realignment with Doris Roy Lane
- Proposed access locations to the undercroft car park of Stage 3 building via CP1
- Public access to the Emergency Department via Murray Street and exit via Yabtree Street and Doris Roy Lane.

xi The proposed site is expected to generate an additional 76 and 92 vehicle trips during the AM and PM peak hours respectively.

xii The intersections of Edward Street/ Docker Street, Edward Street/ Murray Street and Edward Street/ Brookong Avenue would operate beyond its capacity under 2027 traffic even without traffic generated by the project.

xiii The Edward Street/ Docker Street intersection would operate at levels of service C and E during the AM and PM peak hours, respectively, which are similar to the existing operating conditions with reconfigurations of lanes and signal optimisation.

xiv Consultation between HI, Roads and Maritime and Council has occurred, and it is acknowledged that improvements to the intersection of Edward Street and Murray Street are required to support current and future traffic conditions. Roads and Maritime are currently undertaking their own investigations of this intersection and a commitment between the three agencies was made on Thursday 27 September 2018 to meet regularly to determine an appropriate intersection arrangement of Edward Street/ Murray Street that would be committed prior to the opening of Stage 3 that would support an overall level of service C operation in 2031.

xv All other intersections are expected to operate at levels of service C or better during the peak hours in the future with and without the proposed development traffic.

xvi Overall, the proposed development is not anticipated to have any notable impacts to the surrounding road network, with the implementation of proposed mitigation measures.

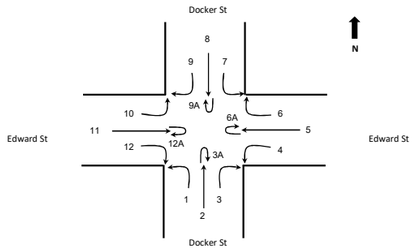
Appendix A

Survey Results

Data Audit Systems
FOR INFORMED DECISION MAKING
TRAFFIC SURVEYS

Location: Edward St / Docker St
Weather: Fine
Date: Tuesday, 5 December 2017
Survey Period : 6:30am - 9:30am and 2:30pm - 6:30pm

AM Peak: 8:15am-9:15am
PM Peak: 3:15pm-4:15pm



TIME	1			2			3			3A			4			5			6			6A			7			8			9			9A			10			11			12			12A			AM PEAK	
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Hour	Total
06:30	14	0	14	22	1	23	18	0	18	0	0	0	6	2	8	37	9	46	0	0	0	0	0	0	3	0	3	11	1	12	8	0	8	0	0	0	9	1	10	64	4	68	8	0	8	0	0	0	6:30 - 7:30	1114
06:45	10	0	10	51	1	52	18	0	18	0	0	0	11	0	11	50	8	58	1	0	1	0	0	0	7	0	7	23	0	23	25	0	25	0	0	0	25	0	25	59	7	66	14	0	14	0	0	0	6:45 - 7:45	1268
07:00	6	1	7	27	0	27	17	0	17	0	0	0	9	0	9	59	14	73	1	0	1	0	0	0	5	0	5	21	0	21	16	0	16	0	0	0	6	0	6	50	8	58	8	0	8	0	0	0	7:00 - 8:00	1475
07:15	3	1	4	55	0	55	17	0	17	0	0	0	11	0	11	67	19	86	2	0	2	0	0	0	6	0	6	25	0	25	22	0	22	0	0	0	21	1	22	66	7	73	13	2	15	0	0	0	7:15 - 8:15	1796
07:30	5	1	6	73	2	75	25	2	27	0	0	0	14	1	15	70	16	86	3	0	3	0	0	0	4	0	4	24	0	24	18	0	18	0	0	0	21	0	21	73	11	84	8	1	9	0	0	0	7:30 - 8:30	2130
07:45	25	0	25	100	1	101	31	1	32	0	0	0	14	1	15	77	15	92	8	0	8	0	0	0	2	0	2	51	0	51	37	0	37	0	0	0	26	0	26	94	14	108	20	0	20	0	0	0	7:45 - 8:45	2436
08:00	8	0	8	121	0	121	39	2	41	0	0	0	24	1	25	82	11	93	10	0	10	0	0	0	5	0	5	51	0	51	29	1	30	0	0	0	52	1	53	99	13	112	20	0	20	0	0	0	8:00 - 9:00	2632
08:15	11	0	11	154	3	157	37	0	37	0	0	0	20	1	21	96	15	111	6	0	6	0	0	0	11	0	11	54	1	55	46	1	47	0	0	0	52	1	53	124	9	133	26	0	26	3	1	4	8:15 - 9:15	2719
08:30	6	0	6	146	1	147	31	1	32	0	0	0	18	1	19	97	15	112	5	0	5	0	0	0	8	0	8	67	1	68	43	0	43	0	0	0	61	0	61	136	7	143	34	0	34	0	0	0	8:30 - 9:30	2675
08:45	21	0	21	166	2	168	42	2	44	0	0	0	28	0	28	98	9	107	5	1	6	0	0	0	10	0	10	69	0	69	52	0	52	0	0	0	48	2	50	119	11	130	28	0	28	0	0	0		
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TOTAL	134	3	137	1169	11	1180	357	11	368	0	0	0	205	9	214	938	149	1087	56	1	57	0	0	0	83	0	83	521	5	526	422	3	425	0	0	0	386	10	396	1103	114	1217	220	3	223	4	2	6		
AM PEAK	53	0	53	602	6	608	151	3	154	0	0	0	91	3	94	395	51	446	21	1	22	0	0	0	42	0	42	254	3	257	209	1	210	0	0	0	184	6	190	487	36	523	114	0	114	4	2	6		
COMMON AM PEAK	52	0	52	566	3	569	155	6	161	0	0	0	96	3	99	400	42	442	25	1	26	0	0	0	40	0	40	261	3	264	221	1	222	0	0	0	174	6	180	474	41	515	103	0	103	1	1	2		

TIME	1			2			3			3A			4			5			6			6A			7			8			9			9A			10			11			12			12A			PM PEAK	
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Hour	Total
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15:00	7	0	7	72	1	73	42	3	45	0	0	0	27	2	29	101	6	107	4	1	5	0	0	0	8	0	8	112	0	112	83	0	83	0	0	0	33	3	36	128	12	140	26	0	26	0	0	0	15:00 - 16:00	2892
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16:15	10	1	11	75	1	76	59	3	62	0	0	0	21	0	21	144	11	155	20	0	20	0	0	0	5	0	5	109	1	110	74	1	75	0	0	0	23	1	24	103	6	109	26	0	26	2	0	2	16:15 - 17:15	2777
16:30	8	0	8	46	0	46	42	0	42	0	0	0	31	1	32	165	7	172	8	0	8	0	0	0	14	0	14	115	0	115	69	0	69	0	0	0	23	0	23	123	7	130	33	0	33	2	1	3	16:30 - 17:30	2735
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17:45	6	0	6	53	0	53	31	1	32	0	0	0	23	0	23	113	6	119	4	0	4	0	0	0	6	0	6	86	0	86	58	1	59	0	0	0	19	0	19	80	7	87	31	0	31	0	0	0		
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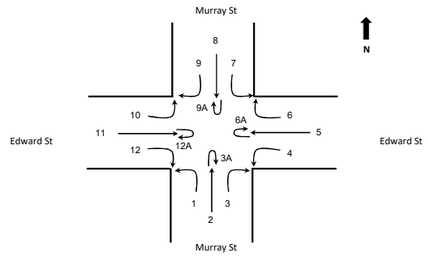
TOTAL	138	2	140	1247	7	1254	682	18	700	0	0	0	437	11	448	2113	143	2256	125	4	129	0	0	0	135	0	135	1603	7	1610	1176	11	1187	0	0	0	373	8	381	1612	123	1735	425	6	431	9	2	11		
PM PEAK	39	0	39	442	3	445	193	2	195	0	0	0	117	2	119	582	50	632	37	3	40	0	0	0	46	0	46	427	3	430	320	5	325	0	0	0	117	3	120	418	38	456	106	3	109	2	1	3		
COMMON PM PEAK	46	1	47	410	4	414	197	5	202	0	0	0	112	2	114	585	46	631	50	3	53	0	0	0	30	0	30	425	4	429	300	5	305	0	0	0	109	4	113	434	33	467	97	1	98	4	1	5		

Data Audit Systems
FOR INFORMED DECISION MAKING
TRAFFIC SURVEYS

Location: Edward St / Murray St
Weather: Fine
Date: Tuesday, 5 December 2017
Survey Period : 6:30am - 9:30am and 2:30pm - 6:30pm

Thu AM Peak: 8:30am-9:30am
Thu PM Peak: 3:30pm-4:30pm



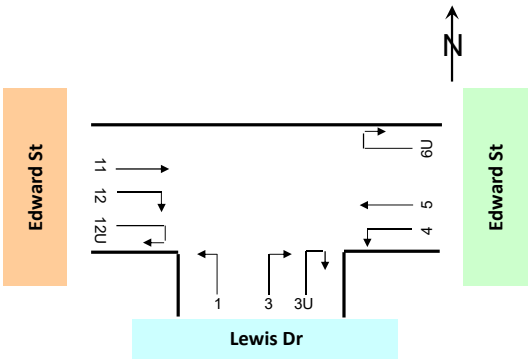
TIME	1			2			3			3A			4			5			6			6A			7			8			9			9A			10			11			12			12A			AM PEAK	
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Hour	Total
06:30	2	0	**2**	0	0	**0**	1	1	**2**	0	0	**0**	1	0	**1**	60	13	**73**	3	0	**3**	0	0	**0**	3	0	**3**	1	0	**1**	0	0	**0**	0	0	**0**	6	0	**6**	58	7	**65**	2	0	**2**	0	0	**0**	**6:30 - 7:30**	**751**
06:45	11	0	**11**	3	0	**3**	3	0	**3**	0	0	**0**	5	0	**5**	59	11	**70**	3	0	**3**	0	0	**0**	6	0	**6**	2	0	**2**	3	0	**3**	0	0	**0**	1	0	**1**	64	8	**72**	3	0	**3**	0	0	**0**	**6:45 - 7:45**	**845**
07:00	7	1	**8**	5	0	**5**	3	0	**3**	0	0	**0**	5	0	**5**	71	13	**84**	3	0	**3**	0	0	**0**	5	2	**7**	5	0	**5**	3	0	**3**	0	0	**0**	2	0	**2**	60	10	**70**	3	0	**3**	0	0	**0**	**7:00 - 8:00**	**939**
07:15	8	0	**8**	1	0	**1**	2	0	**2**	0	0	**0**	6	0	**6**	68	21	**89**	4	1	**5**	0	0	**0**	3	0	**3**	1	1	**2**	4	0	**4**	0	0	**0**	3	0	**3**	82	8	**90**	0	0	**0**	0	0	**0**	**7:15 - 8:15**	**1035**
07:30	22	0	**22**	5	0	**5**	3	0	**3**	0	0	**0**	5	0	**5**	74	20	**94**	2	1	**3**	0	0	**0**	7	0	**7**	2	1	**3**	2	0	**2**	0	0	**0**	5	0	**5**	90	12	**102**	0	1	**1**	0	0	**0**	**7:30 - 8:30**	**1178**
07:45	14	0	**14**	2	0	**2**	3	0	**3**	0	0	**0**	3	0	**3**	89	16	**105**	9	0	**9**	0	0	**0**	6	0	**6**	0	0	**0**	1	0	**1**	0	0	**0**	7	0	**7**	106	16	**122**	4	0	**4**	0	0	**0**	**7:45 - 8:45**	**1276**
08:00	11	0	**11**	4	0	**4**	3	0	**3**	0	0	**0**	1	0	**1**	112	12	**124**	10	0	**10**	0	0	**0**	4	0	**4**	2	0	**2**	0	0	**0**	0	0	**0**	12	0	**12**	105	17	**122**	1	0	**1**	0	0	**0**	**8:00 - 9:00**	**1393**
08:15	13	0	**13**	4	0	**4**	5	0	**5**	0	0	**0**	4	0	**4**	126	18	**144**	7	0	**7**	0	0	**0**	6	0	**6**	2	0	**2**	4	0	**4**	0	0	**0**	16	0	**16**	136	11	**147**	4	0	**4**	0	0	**0**	**8:15 - 9:15**	**1482**
08:30	12	0	**12**	11	0	**11**	4	0	**4**	0	0	**0**	2	0	**2**	117	19	**136**	15	2	**17**	0	0	**0**	2	0	**2**	1	0	**1**	5	0	**5**	0	0	**0**	9	0	**9**	141	9	**150**	1	0	**1**	0	0	**0**	**8:30 - 9:30**	**1502**
08:45	12	1	**13**	10	0	**10**	2	1	**3**	0	0	**0**	3	0	**3**	141	13	**154**	13	0	**13**	0	0	**0**	9	0	**9**	4	0	**4**	2	0	**2**	0	0	**0**	20	0	**20**	144	16	**160**	2	0	**2**	0	0	**0**		
09:00	15	0	**15**	11	0	**11**	2	0	**2**	0	0	**0**	4	0	**4**	141	16	**157**	13	0	**13**	0	0	**0**	6	1	**7**	5	0	**5**	1	0	**1**	0	0	**0**	7	0	**7**	150	10	**160**	0	1	**1**	0	0	**0**		
09:15	26	0	**26**	1	0	**1**	3	0	**3**	0	0	**0**	1	0	**1**	137	6	**143**	8	1	**9**	0	0	**0**	3	0	**3**	5	0	**5**	0	0	**0**	0	0	**0**	9	1	**10**	155	18	**173**	2	0	**2**	0	0	**0**		
TOTAL	**153**	**2**	**155**	**57**	**0**	**57**	**34**	**2**	**36**	**0**	**0**	**0**	**40**	**0**	**40**	**1195**	**178**	**1373**	**90**	**5**	**95**	**0**	**0**	**0**	**60**	**3**	**63**	**30**	**2**	**32**	**25**	**0**	**25**	**0**	**0**	**0**	**97**	**1**	**98**	**1291**	**142**	**1433**	**22**	**2**	**24**	**0**	**0**	**0**		
AM PEAK	**65**	**1**	**66**	**33**	**0**	**33**	**11**	**1**	**12**	**0**	**0**	**0**	**10**	**0**	**10**	**536**	**54**	**590**	**49**	**3**	**52**	**0**	**0**	**0**	**20**	**1**	**21**	**15**	**0**	**15**	**8**	**0**	**8**	**0**	**0**	**0**	**45**	**1**	**46**	**590**	**53**	**643**	**5**	**1**	**6**	**0**	**0**	**0**		
COMMON AM PEAK	**65**	**1**	**66**	**33**	**0**	**33**	**11**	**1**	**12**	**0**	**0**	**0**	**10**	**0**	**10**	**536**	**54**	**590**	**49**	**3**	**52**	**0**	**0**	**0**	**20**	**1**	**21**	**15**	**0**	**15**	**8**	**0**	**8**	**0**	**0**	**0**	**45**	**1**	**46**	**590**	**53**	**643**	**5**	**1**	**6**	**0**	**0**	**0**		

TIME	1			2			3			3A			4			5			6			6A			7			8			9			9A			10			11			12			12A			PM PEAK	
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total	Hour	Total
14:30	20	0	**20**	1	0	**1**	11	0	**11**	0	0	**0**	7	0	**7**	152	13	**165**	7	0	**7**	0	0	**0**	7	0	**7**	5	0	**5**	7	0	**7**	0	0	**0**	4	1	**5**	142	13	**155**	1	0	**1**	0	0	**0**	**14:30 - 15:30**	**1599**
14:45	16	0	**16**	5	0	**5**	4	0	**4**	0	0	**0**	8	0	**8**	154	14	**168**	5	0	**5**	0	0	**0**	9	0	**9**	7	0	**7**	7	0	**7**	0	0	**0**	10	0	**10**	158	10	**168**	1	0	**1**	0	0	**0**	**14:45 - 15:45**	**1649**
15:00	17	0	**17**	7	0	**7**	6	0	**6**	0	0	**0**	2	0	**2**	133	12	**145**	5	0	**5**	0	0	**0**	16	0	**16**	3	0	**3**	4	0	**4**	0	0	**0**	8	0	**8**	149	14	**163**	1	0	**1**	0	0	**0**	**15:00 - 16:00**	**1664**
15:15	23	0	**23**	7	0	**7**	7	0	**7**	0	0	**0**	9	0	**9**	170	14	**184**	9	0	**9**	0	0	**0**	12	0	**12**	2	0	**2**	2	0	**2**	0	0	**0**	7	0	**7**	145	11	**156**	5	0	**5**	0	0	**0**	**15:15 - 16:15**	**1709**
15:30	26	0	**26**	10	0	**10**	9	0	**9**	0	0	**0**	4	0	**4**	190	18	**208**	9	0	**9**	0	0	**0**	7	0	**7**	8	0	**8**	1	0	**1**	0	0	**0**	6	0	**6**	141	10	**151**	2	0	**2**	0	0	**0**	**15:30 - 16:30**	**1714**
15:45	20	0	**20**	7	0	**7**	6	0	**6**	0	0	**0**	8	0	**8**	178	10	**188**	8	0	**8**	0	0	**0**	14	0	**14**	0	0	**0**	2	0	**2**	0	0	**0**	6	1	**7**	150	9	**159**	4	0	**4**	0	0	**0**	**15:45 - 16:45**	**1704**
16:00	17	0	**17**	7	0	**7**	7	0	**7**	0	0	**0**	5	0	**5**	183	11	**194**	8	0	**8**	0	0	**0**	9	2	**11**	1	0	**1**	5	1	**6**	0	0	**0**	5	0	**5**	148	10	**158**	3	0	**3**	0	0	**0**	**16:00 - 17:00**	**1661**
16:15	18	0	**18**	6	0	**6**	8	0	**8**	0	0	**0**	4	0	**4**	170	14	**184**	12	0	**12**	0	0	**0**	12	0	**12**	7	0	**7**	7	0	**7**	0	0	**0**	9	0	**9**	151	9	**160**	1	0	**1**	0	0	**0**	**16:15 - 17:15**	**1658**
16:30	20	0	**20**	2	0	**2**	5	0	**5**	0	0	**0**	4	0	**4**	193	6	**199**	8	0	**8**	0	0	**0**	9	0	**9**	1	0	**1**	6	0	**6**	0	0	**0**	8	0	**8**	157	10	**167**	2	0	**2**	0	0	**0**	**16:30 - 17:30**	**1621**
16:45	11	0	**11**	2	0	**2**	9	0	**9**	0	0	**0**	6	0	**6**	159	6	**165**	4	0	**4**	0	0	**0**	11	0	**11**	5	0	**5**	3	0	**3**	0	0	**0**	14	1	**15**	136	11	**147**	2	0	**2**	0	0	**0**	**16:45 - 17:45**	**1547**
17:00	14	0	**14**	5	0	**5**	7	0	**7**	0	0	**0**	5	0	**5**	209	8	**217**	3	0	**3**	0	0	**0**	10	0	**10**	5	0	**5**	6	0	**6**	0	0	**0**	9	0	**9**	133	5	**138**	0	0	**0**	0	0	**0**	**17:00 - 18:00**	**1483**
17:15	16	0	**16**	5	0	**5**	5	0	**5**	0	0	**0**	7	0	**7**	172	9	**181**	7	0	**7**	0	0	**0**	8	0	**8**	8	0	**8**	8	0	**8**	0	0	**0**	5	0	**5**	136	4	**140**	1	0	**1**	0	0	**0**	**17:15 - 18:15**	**1327**
17:30	10	0	**10**	5	0	**5**	3	0	**3**	0	0	**0**	6	0	**6**	160	9	**169**	3	0	**3**	0	0	**0**	7	0	**7**	8	0	**8**	4	0	**4**	0	0	**0**	3	0	**3**	131	8	**139**	0	0	**0**	0	0	**0**	**17:30 - 18:30**	**1193**
17:45	11	0	**11**	4	0	**4**	8	0	**8**	0	0	**0**	5	0	**5**	131	6	**137**	4	0	**4**	0	0	**0**	8	0	**8**	5	0	**5**	4	0	**4**	0	0	**0**	5	0	**5**	114	10	**124**	1	0	**1**	0	0	**0**		
18:00	7	0	**7**	6	0	**6**	8	0	**8**	0	0	**0**	4	0	**4**	109	12	**121**	1	0	**1**	0	0	**0**	5	0	**5**	3	0	**3**	2	0	**2**	0	0	**0**	0	0	**0**	103	2	**105**	1	0	**1**	0	0	**0**		
18:15	7	0	**7**	6	0	**6**	8	0	**8**	0	0	**0**	5	0	**5**	106	2	**108**	2	0	**2**	0	0	**0**	10	0	**10**	4	0	**4**	1	0	**1**	0	0	**0**	8	0	**8**	96	2	**98**	0	0	**0**	0	0	**0**		
TOTAL	**253**	**0**	**253**	**85**	**0**	**85**	**111**	**0**	**111**	**0**	**0**	**0**	**89**	**0**	**89**	**2569**	**164**	**2733**	**95**	**0**	**95**	**0**	**0**	**0**	**154**	**2**	**156**	**72**	**0**	**72**	**69**	**1**	**70**	**0**	**0**	**0**	**107**	**3**	**110**	**2190**	**138**	**2328**	**25**	**0**	**25**	**0**	**0**	**0**		
PM PEAK	**81**	**0**	**81**	**30**	**0**	**30**	**30**	**0**	**30**	**0**	**0**	**0**	**21**	**0**	**21**	**721**	**53**	**774**	**37**	**0**	**37**	**0**	**0**	**0**	**42**	**2**	**44**	**16**	**0**	**16**	**15**	**1**	**16**	**0**	**0**	**0**	**26**	**1**	**27**	**590**	**38**	**628**	**10**	**0**	**10**	**0**	**0**	**0**		
COMMON PM PEAK	**81**	**0**	**81**	**30**	**0**	**30**	**30**	**0**	**30**	**0**	**0**	**0**	**21**	**0**	**21**	**721**	**53**	**774**	**37**	**0**	**37**	**0**	**0**	**0**	**42**	**2**	**44**	**16**	**0**	**16**	**15**	**1**	**16**	**0**	**0**	**0**	**26**	**1**	**27**	**590**	**38**	**628**	**10**	**0**	**10**	**0**	**0**	**0**		

MATRIX
Traffic and Transport Data

Job No. : N4041
Client : GTA
Suburb : Wagga Wagga
Location : 10. Edward St / Lewis Dr

Day/Date : Tue, 27th March 2018
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary



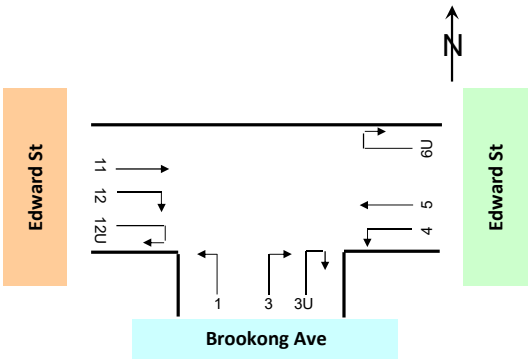
	Approach	Lewis Dr			Edward St				Edward St			Grand Total
	Time Period	Lights	Heavies	Total	Lights	Heavies	Total		Lights	Heavies	Total	
AM	8:15 to 9:15	36	0	**36**	468	66	**534**		600	57	**657**	**1,227**
PM	15:30 to 16:30	78	0	**78**	787	47	**834**		671	51	**722**	**1,634**

Approach	Lewis Dr			Edward St				Edward St			Grand Total
Time Period	Lights	Heavies	Total	Lights	Heavies	Total		Lights	Heavies	Total	
6:30 to 7:30	28	0	**28**	246	48	**294**		382	36	**418**	**740**
6:45 to 7:45	44	0	**44**	281	52	**333**		409	44	**453**	**830**
7:00 to 8:00	43	0	**43**	337	61	**398**		463	46	**509**	**950**
7:15 to 8:15	39	0	**39**	409	56	**465**		486	47	**533**	**1,037**
7:30 to 8:30	36	0	**36**	438	60	**498**		545	47	**592**	**1,126**
7:45 to 8:45	25	0	**25**	479	58	**537**		573	51	**624**	**1,186**
8:00 to 9:00	28	0	**28**	486	61	**547**		583	57	**640**	**1,215**
8:15 to 9:15	36	0	**36**	468	66	**534**		600	57	**657**	**1,227**
8:30 to 9:30	34	0	**34**	480	59	**539**		580	58	**638**	**1,211**
AM Totals	**98**	**0**	**98**	**1,164**	**167**	**1,331**		**1,507**	**141**	**1,648**	**3,077**
14:30 to 15:30	55	0	**55**	670	42	**712**		584	52	**636**	**1,403**
14:45 to 15:45	66	0	**66**	709	48	**757**		624	55	**679**	**1,502**
15:00 to 16:00	63	0	**63**	738	51	**789**		661	52	**713**	**1,565**
15:15 to 16:15	73	0	**73**	775	50	**825**		680	49	**729**	**1,627**
15:30 to 16:30	78	0	**78**	787	47	**834**		671	51	**722**	**1,634**
15:45 to 16:45	74	0	**74**	799	36	**835**		669	52	**721**	**1,630**
16:00 to 17:00	74	0	**74**	785	32	**817**		641	57	**698**	**1,589**
16:15 to 17:15	63	0	**63**	773	31	**804**		658	47	**705**	**1,572**
16:30 to 17:30	61	0	**61**	772	34	**806**		668	44	**712**	**1,579**
16:45 to 17:45	61	0	**61**	748	43	**791**		608	38	**646**	**1,498**
17:00 to 18:00	58	0	**58**	717	44	**761**		572	29	**601**	**1,420**
17:15 to 18:15	60	0	**60**	643	38	**681**		475	27	**502**	**1,243**
17:30 to 18:30	52	0	**52**	539	37	**576**		424	22	**446**	**1,074**
PM Totals	**246**	**0**	**246**	**2,768**	**160**	**2,928**		**2,347**	**169**	**2,516**	**5,690**

MATRIX Traffic and Transport Data

Job No. : N4041
Client : GTA
Suburb : Wagga Wagga
Location : 9. Brookong Ave / Edward St

Day/Date : Tue, 27th March 2018
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary



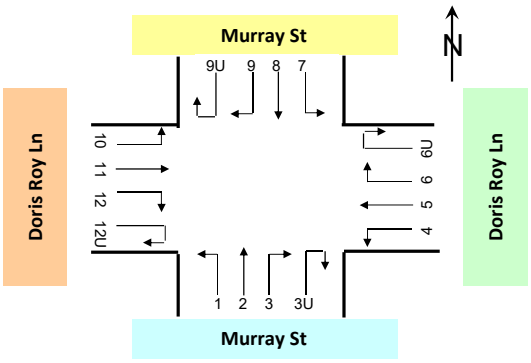
	Approach	Brookong Ave			Edward St				Edward St			Grand Total
	Time Period	Lights	Heavies	Total	Lights	Heavies	Total		Lights	Heavies	Total	
AM	8:30 to 9:30	93	1	**94**	559	74	**633**		495	56	**551**	**1,278**
PM	15:15 to 16:15	93	1	**94**	876	51	**927**		692	59	**751**	**1,772**

Approach	Brookong Ave			Edward St				Edward St			Grand Total
Time Period	Lights	Heavies	Total	Lights	Heavies	Total		Lights	Heavies	Total	
6:30 to 7:30	23	1	**24**	302	46	**348**		285	46	**331**	**703**
6:45 to 7:45	27	1	**28**	347	59	**406**		315	47	**362**	**796**
7:00 to 8:00	27	2	**29**	370	64	**434**		384	57	**441**	**904**
7:15 to 8:15	38	3	**41**	412	61	**473**		427	54	**481**	**995**
7:30 to 8:30	49	2	**51**	454	70	**524**		473	49	**522**	**1,097**
7:45 to 8:45	63	2	**65**	472	62	**534**		504	54	**558**	**1,157**
8:00 to 9:00	96	1	**97**	515	72	**587**		480	50	**530**	**1,214**
8:15 to 9:15	99	1	**100**	538	72	**610**		490	50	**540**	**1,250**
8:30 to 9:30	93	1	**94**	559	74	**633**		495	56	**551**	**1,278**
AM Totals	**165**	**4**	**169**	**1,315**	**190**	**1,505**		**1,253**	**151**	**1,404**	**3,078**
14:30 to 15:30	52	1	**53**	766	46	**812**		621	71	**692**	**1,557**
14:45 to 15:45	73	1	**74**	819	47	**866**		660	73	**733**	**1,673**
15:00 to 16:00	82	1	**83**	831	52	**883**		701	62	**763**	**1,729**
15:15 to 16:15	93	1	**94**	876	51	**927**		692	59	**751**	**1,772**
15:30 to 16:30	87	0	**87**	862	55	**917**		693	52	**745**	**1,749**
15:45 to 16:45	73	0	**73**	858	54	**912**		682	41	**723**	**1,708**
16:00 to 17:00	69	0	**69**	871	44	**915**		612	41	**653**	**1,637**
16:15 to 17:15	67	0	**67**	879	45	**924**		604	41	**645**	**1,636**
16:30 to 17:30	63	0	**63**	879	43	**922**		593	34	**627**	**1,612**
16:45 to 17:45	60	0	**60**	860	40	**900**		566	40	**606**	**1,566**
17:00 to 18:00	57	0	**57**	787	37	**824**		559	36	**595**	**1,476**
17:15 to 18:15	48	0	**48**	708	30	**738**		495	30	**525**	**1,311**
17:30 to 18:30	48	0	**48**	618	30	**648**		468	32	**500**	**1,196**
PM Totals	**250**	**1**	**251**	**3,125**	**174**	**3,299**		**2,375**	**189**	**2,564**	**6,114**

MATRIX Traffic and Transport Data

Job No. : N4041
Client : GTA
Suburb : Wagga Wagga
Location : 1. Doris Roy Ln / Murray St

Day/Date : Tue, 27th March 2018
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary



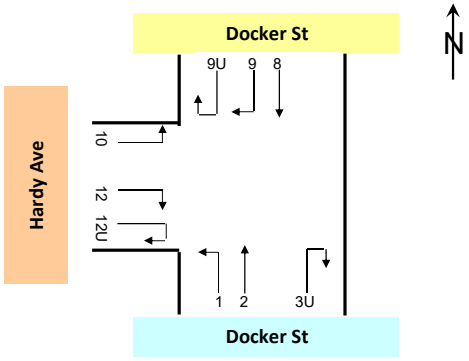
	Approach	Murray St			Doris Roy Ln			Murray St			Doris Roy Ln			Grand Total
	Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	
AM	8:30 to 9:30	73	2	**75**	4	0	**4**	43	1	**44**	7	0	**7**	**130**
PM	15:00 to 16:00	86	0	**86**	1	0	**1**	42	1	**43**	29	0	**29**	**159**

Approach	Murray St			Doris Roy Ln			Murray St			Doris Roy Ln			Grand Total
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	
6:30 to 7:30	23	2	**25**	0	0	**0**	33	0	**33**	8	0	**8**	**66**
6:45 to 7:45	30	2	**32**	0	0	**0**	29	0	**29**	9	0	**9**	**70**
7:00 to 8:00	40	2	**42**	0	0	**0**	35	1	**36**	7	0	**7**	**85**
7:15 to 8:15	51	2	**53**	1	0	**1**	36	2	**38**	7	0	**7**	**99**
7:30 to 8:30	56	2	**58**	2	0	**2**	32	2	**34**	7	0	**7**	**101**
7:45 to 8:45	69	2	**71**	3	0	**3**	38	2	**40**	7	0	**7**	**121**
8:00 to 9:00	74	2	**76**	4	0	**4**	36	1	**37**	7	0	**7**	**124**
8:15 to 9:15	76	2	**78**	4	0	**4**	38	0	**38**	7	0	**7**	**127**
8:30 to 9:30	73	2	**75**	4	0	**4**	43	1	**44**	7	0	**7**	**130**
AM Totals	**152**	**6**	**158**	**6**	**0**	**6**	**108**	**3**	**111**	**22**	**0**	**22**	**297**
14:30 to 15:30	70	0	**70**	5	0	**5**	37	1	**38**	25	0	**25**	**138**
14:45 to 15:45	73	0	**73**	5	0	**5**	35	1	**36**	23	0	**23**	**137**
15:00 to 16:00	86	0	**86**	1	0	**1**	42	1	**43**	29	0	**29**	**159**
15:15 to 16:15	76	0	**76**	1	0	**1**	44	0	**44**	32	0	**32**	**153**
15:30 to 16:30	70	0	**70**	0	0	**0**	44	0	**44**	24	0	**24**	**138**
15:45 to 16:45	63	0	**63**	0	0	**0**	46	0	**46**	22	0	**22**	**131**
16:00 to 17:00	50	0	**50**	0	0	**0**	41	0	**41**	23	0	**23**	**114**
16:15 to 17:15	46	1	**47**	0	0	**0**	46	0	**46**	20	0	**20**	**113**
16:30 to 17:30	46	1	**47**	1	0	**1**	44	0	**44**	22	1	**23**	**115**
16:45 to 17:45	54	1	**55**	1	0	**1**	42	0	**42**	19	1	**20**	**118**
17:00 to 18:00	45	1	**46**	2	0	**2**	48	0	**48**	13	1	**14**	**110**
17:15 to 18:15	48	0	**48**	3	0	**3**	46	0	**46**	12	1	**13**	**110**
17:30 to 18:30	41	0	**41**	2	0	**2**	43	0	**43**	13	0	**13**	**99**
PM Totals	**227**	**1**	**228**	**8**	**0**	**8**	**168**	**1**	**169**	**84**	**1**	**85**	**490**

MATRIX Traffic and Transport Data

Job No. : N4041
Client : GTA
Suburb : Wagga Wagga
Location : 8. Docker St / Hardy Ave

Day/Date : Tue, 27th March 2018
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary



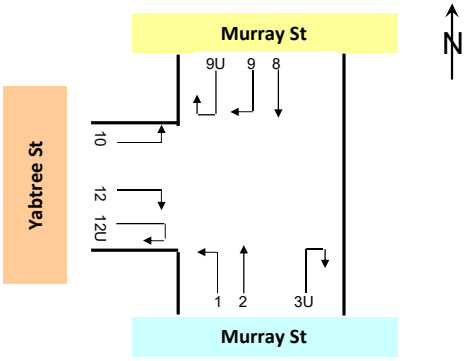
	Approach	Docker St				Docker St			Hardy Ave			Grand Total
	Time Period	Lights	Heavies	Total		Lights	Heavies	Total	Lights	Heavies	Total	
AM	8:15 to 9:15	906	20	**926**		450	23	**473**	32	0	**32**	**1,431**
PM	16:15 to 17:15	648	8	**656**		699	5	**704**	46	0	**46**	**1,406**

Approach	Docker St				Docker St			Hardy Ave			Grand Total
Time Period	Lights	Heavies	Total		Lights	Heavies	Total	Lights	Heavies	Total	
6:30 to 7:30	292	10	**302**		130	8	**138**	13	1	**14**	**454**
6:45 to 7:45	352	12	**364**		146	8	**154**	20	1	**21**	**539**
7:00 to 8:00	438	13	**451**		195	14	**209**	24	2	**26**	**686**
7:15 to 8:15	572	14	**586**		267	16	**283**	27	2	**29**	**898**
7:30 to 8:30	708	14	**722**		346	15	**361**	32	2	**34**	**1,117**
7:45 to 8:45	811	21	**832**		416	21	**437**	35	2	**37**	**1,306**
8:00 to 9:00	901	21	**922**		456	18	**474**	32	1	**33**	**1,429**
8:15 to 9:15	906	20	**926**		450	23	**473**	32	0	**32**	**1,431**
8:30 to 9:30	838	22	**860**		424	24	**448**	31	0	**31**	**1,339**
AM Totals	**1,838**	**46**	**1,884**		**900**	**47**	**947**	**76**	**3**	**79**	**2,910**
14:30 to 15:30	598	17	**615**		586	22	**608**	41	0	**41**	**1,264**
14:45 to 15:45	651	16	**667**		596	19	**615**	39	0	**39**	**1,321**
15:00 to 16:00	660	15	**675**		635	13	**648**	37	0	**37**	**1,360**
15:15 to 16:15	677	10	**687**		648	14	**662**	33	0	**33**	**1,382**
15:30 to 16:30	665	9	**674**		651	13	**664**	33	0	**33**	**1,371**
15:45 to 16:45	661	8	**669**		642	6	**648**	34	0	**34**	**1,351**
16:00 to 17:00	639	10	**649**		666	5	**671**	41	0	**41**	**1,361**
16:15 to 17:15	648	8	**656**		699	5	**704**	46	0	**46**	**1,406**
16:30 to 17:30	614	5	**619**		720	5	**725**	44	1	**45**	**1,389**
16:45 to 17:45	559	5	**564**		770	6	**776**	48	1	**49**	**1,389**
17:00 to 18:00	553	2	**555**		727	6	**733**	44	1	**45**	**1,333**
17:15 to 18:15	463	0	**463**		655	4	**659**	36	1	**37**	**1,159**
17:30 to 18:30	466	0	**466**		559	5	**564**	34	0	**34**	**1,064**
PM Totals	**2,343**	**31**	**2,374**		**2,516**	**45**	**2,561**	**152**	**1**	**153**	**5,088**

MATRIX Traffic and Transport Data

Job No. : N4041
Client : GTA
Suburb : Wagga Wagga
Location : 2. Yabtree St / Murray St

Day/Date : Tue, 27th March 2018
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary



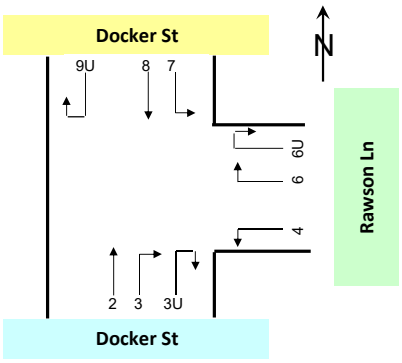
	Approach	Murray St				Murray St			Yabtree St			Grand Total
	Time Period	Lights	Heavies	Total		Lights	Heavies	Total	Lights	Heavies	Total	
AM	8:30 to 9:30	72	1	**73**		43	1	**44**	21	1	**22**	**139**
PM	15:00 to 16:00	74	0	**74**		47	1	**48**	27	0	**27**	**149**

Approach	Murray St				Murray St			Yabtree St			Grand Total
Time Period	Lights	Heavies	Total		Lights	Heavies	Total	Lights	Heavies	Total	
6:30 to 7:30	32	2	**34**		28	0	**28**	13	0	**13**	**75**
6:45 to 7:45	38	2	**40**		25	0	**25**	22	0	**22**	**87**
7:00 to 8:00	43	2	**45**		32	0	**32**	22	0	**22**	**99**
7:15 to 8:15	51	2	**53**		36	1	**37**	23	0	**23**	**113**
7:30 to 8:30	60	1	**61**		34	1	**35**	22	1	**23**	**119**
7:45 to 8:45	73	1	**74**		41	1	**42**	14	1	**15**	**131**
8:00 to 9:00	77	0	**77**		38	1	**39**	20	2	**22**	**138**
8:15 to 9:15	78	0	**78**		37	0	**37**	21	2	**23**	**138**
8:30 to 9:30	72	1	**73**		43	1	**44**	21	1	**22**	**139**
AM Totals	**164**	**4**	**168**		**105**	**2**	**107**	**56**	**2**	**58**	**333**
14:30 to 15:30	52	0	**52**		43	1	**44**	33	0	**33**	**129**
14:45 to 15:45	61	0	**61**		43	1	**44**	29	0	**29**	**134**
15:00 to 16:00	74	0	**74**		47	1	**48**	27	0	**27**	**149**
15:15 to 16:15	70	0	**70**		48	0	**48**	27	0	**27**	**145**
15:30 to 16:30	65	0	**65**		47	0	**47**	27	0	**27**	**139**
15:45 to 16:45	56	0	**56**		48	0	**48**	34	0	**34**	**138**
16:00 to 17:00	43	0	**43**		47	0	**47**	35	0	**35**	**125**
16:15 to 17:15	43	0	**43**		55	0	**55**	34	1	**35**	**133**
16:30 to 17:30	47	0	**47**		47	0	**47**	33	1	**34**	**128**
16:45 to 17:45	55	0	**55**		45	0	**45**	27	1	**28**	**128**
17:00 to 18:00	50	0	**50**		50	0	**50**	22	1	**23**	**123**
17:15 to 18:15	49	0	**49**		45	0	**45**	19	0	**19**	**113**
17:30 to 18:30	41	0	**41**		47	0	**47**	18	0	**18**	**106**
PM Totals	**205**	**0**	**205**		**184**	**1**	**185**	**111**	**1**	**112**	**502**

MATRIX Traffic and Transport Data

Job No. : N4041
Client : GTA
Suburb : Wagga Wagga
Location : 7. Docker St / Rawson Ln

Day/Date : Tue, 27th March 2018
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary



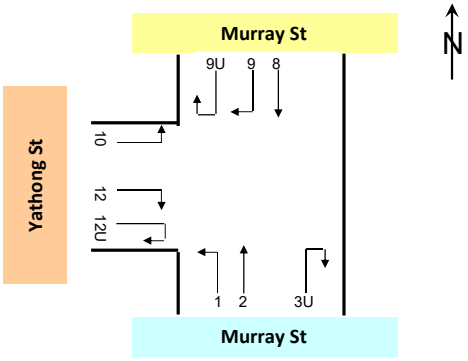
	Approach	Docker St			Rawson Ln			Docker St				Grand Total
	Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total		
AM	8:15 to 9:15	887	20	**907**	19	2	**21**	387	20	**407**		1,335
PM	15:15 to 16:15	680	11	**691**	38	0	**38**	597	13	**610**		1,339

Approach	Docker St			Rawson Ln			Docker St				Grand Total
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total		
6:30 to 7:30	292	10	**302**	19	0	**19**	106	7	**113**		434
6:45 to 7:45	354	12	**366**	26	0	**26**	125	7	**132**		524
7:00 to 8:00	434	13	**447**	25	0	**25**	160	13	**173**		645
7:15 to 8:15	573	14	**587**	20	0	**20**	221	14	**235**		842
7:30 to 8:30	695	14	**709**	18	1	**19**	289	13	**302**		1,030
7:45 to 8:45	796	22	**818**	15	1	**16**	343	17	**360**		1,194
8:00 to 9:00	890	21	**911**	12	2	**14**	384	14	**398**		1,323
8:15 to 9:15	887	20	**907**	19	2	**21**	387	20	**407**		1,335
8:30 to 9:30	832	22	**854**	20	2	**22**	363	20	**383**		1,259
AM Totals	**1,819**	**46**	**1,865**	**57**	**3**	**60**	**758**	**40**	**798**		2,723
14:30 to 15:30	603	18	**621**	27	0	**27**	552	20	**572**		1,220
14:45 to 15:45	663	17	**680**	29	0	**29**	558	17	**575**		1,284
15:00 to 16:00	669	15	**684**	28	0	**28**	599	13	**612**		1,324
15:15 to 16:15	680	11	**691**	38	0	**38**	597	13	**610**		1,339
15:30 to 16:30	655	9	**664**	37	0	**37**	612	12	**624**		1,325
15:45 to 16:45	634	8	**642**	34	0	**34**	613	5	**618**		1,294
16:00 to 17:00	619	10	**629**	29	0	**29**	632	4	**636**		1,294
16:15 to 17:15	620	7	**627**	18	0	**18**	677	5	**682**		1,327
16:30 to 17:30	590	4	**594**	14	0	**14**	695	5	**700**		1,308
16:45 to 17:45	543	4	**547**	12	0	**12**	739	6	**745**		1,304
17:00 to 18:00	536	1	**537**	14	0	**14**	704	6	**710**		1,261
17:15 to 18:15	459	0	**459**	8	0	**8**	624	4	**628**		1,095
17:30 to 18:30	464	0	**464**	9	0	**9**	533	5	**538**		1,011
PM Totals	**2,312**	**31**	**2,343**	**87**	**0**	**87**	**2,392**	**42**	**2,434**		4,864

MATRIX Traffic and Transport Data

Job No. : N4041
Client : GTA
Suburb : Wagga Wagga
Location : 3. Yathong St / Murray St

Day/Date : Tue, 27th March 2018
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary



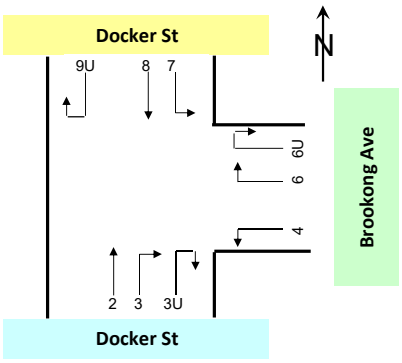
	Approach	Murray St				Murray St			Yathong St			Grand Total
	Time Period	Lights	Heavies	Total		Lights	Heavies	Total	Lights	Heavies	Total	
AM	8:15 to 9:15	87	3	**90**		52	0	**52**	40	0	**40**	**182**
PM	15:15 to 16:15	73	0	**73**		64	0	**64**	26	0	**26**	**163**

Approach	Murray St				Murray St			Yathong St			Grand Total
Time Period	Lights	Heavies	Total		Lights	Heavies	Total	Lights	Heavies	Total	
6:30 to 7:30	55	3	**58**		26	0	**26**	11	0	**11**	**95**
6:45 to 7:45	56	3	**59**		31	0	**31**	16	0	**16**	**106**
7:00 to 8:00	56	3	**59**		38	1	**39**	14	0	**14**	**112**
7:15 to 8:15	59	3	**62**		38	1	**39**	18	0	**18**	**119**
7:30 to 8:30	72	2	**74**		40	1	**41**	25	0	**25**	**140**
7:45 to 8:45	78	2	**80**		42	1	**43**	33	0	**33**	**156**
8:00 to 9:00	82	3	**85**		44	0	**44**	41	0	**41**	**170**
8:15 to 9:15	87	3	**90**		52	0	**52**	40	0	**40**	**182**
8:30 to 9:30	70	3	**73**		51	1	**52**	30	0	**30**	**155**
AM Totals	**197**	**8**	**205**		**117**	**2**	**119**	**66**	**0**	**66**	**390**
14:30 to 15:30	61	0	**61**		51	1	**52**	29	0	**29**	**142**
14:45 to 15:45	69	0	**69**		50	1	**51**	28	0	**28**	**148**
15:00 to 16:00	76	0	**76**		57	1	**58**	27	0	**27**	**161**
15:15 to 16:15	73	0	**73**		64	0	**64**	26	0	**26**	**163**
15:30 to 16:30	59	0	**59**		64	0	**64**	24	0	**24**	**147**
15:45 to 16:45	51	0	**51**		69	0	**69**	25	0	**25**	**145**
16:00 to 17:00	37	0	**37**		63	0	**63**	25	0	**25**	**125**
16:15 to 17:15	37	0	**37**		69	0	**69**	25	0	**25**	**131**
16:30 to 17:30	40	0	**40**		66	0	**66**	23	0	**23**	**129**
16:45 to 17:45	43	0	**43**		60	0	**60**	26	0	**26**	**129**
17:00 to 18:00	41	0	**41**		63	0	**63**	21	0	**21**	**125**
17:15 to 18:15	42	0	**42**		52	0	**52**	16	0	**16**	**110**
17:30 to 18:30	38	0	**38**		51	0	**51**	12	0	**12**	**101**
PM Totals	**198**	**0**	**198**		**232**	**1**	**233**	**88**	**0**	**88**	**519**

MATRIX Traffic and Transport Data

Job No. : N4041
Client : GTA
Suburb : Wagga Wagga
Location : 5. Docker St / Brookong Ave

Day/Date : Tue, 27th March 2018
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary



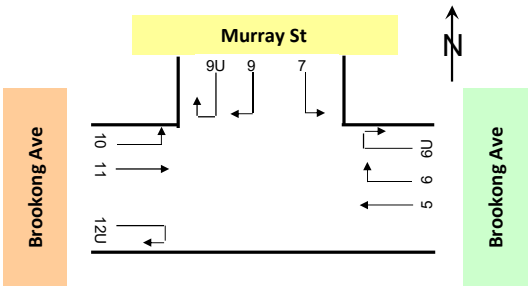
	Approach	Docker St			Brookong Ave			Docker St				Grand Total
	Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total		
AM	8:15 to 9:15	1,036	22	**1,058**	124	5	**129**	383	20	**403**		1,590
PM	15:15 to 16:15	782	11	**793**	201	2	**203**	642	13	**655**		1,651

Approach	Docker St			Brookong Ave			Docker St				Grand Total
Time Period	Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total		
6:30 to 7:30	382	9	**391**	36	2	**38**	108	7	**115**		544
6:45 to 7:45	451	13	**464**	41	3	**44**	133	7	**140**		648
7:00 to 8:00	532	15	**547**	58	4	**62**	165	13	**178**		787
7:15 to 8:15	682	16	**698**	70	5	**75**	225	15	**240**		1,013
7:30 to 8:30	836	17	**853**	87	4	**91**	292	14	**306**		1,250
7:45 to 8:45	933	23	**956**	113	4	**117**	332	16	**348**		1,421
8:00 to 9:00	1,038	23	**1,061**	118	3	**121**	367	15	**382**		1,564
8:15 to 9:15	1,036	22	**1,058**	124	5	**129**	383	20	**403**		1,590
8:30 to 9:30	945	25	**970**	124	6	**130**	361	21	**382**		1,482
AM Totals	**2,163**	**51**	**2,214**	**247**	**12**	**259**	**761**	**42**	**803**		3,276
14:30 to 15:30	668	18	**686**	141	5	**146**	562	20	**582**		1,414
14:45 to 15:45	745	17	**762**	164	4	**168**	580	18	**598**		1,528
15:00 to 16:00	756	16	**772**	183	3	**186**	616	13	**629**		1,587
15:15 to 16:15	782	11	**793**	201	2	**203**	642	13	**655**		1,651
15:30 to 16:30	763	9	**772**	195	0	**195**	638	12	**650**		1,617
15:45 to 16:45	715	8	**723**	211	0	**211**	645	5	**650**		1,584
16:00 to 17:00	674	10	**684**	203	1	**204**	654	4	**658**		1,546
16:15 to 17:15	655	8	**663**	217	1	**218**	695	5	**700**		1,581
16:30 to 17:30	607	5	**612**	242	1	**243**	716	5	**721**		1,576
16:45 to 17:45	563	5	**568**	226	2	**228**	747	5	**752**		1,548
17:00 to 18:00	561	2	**563**	221	2	**223**	719	6	**725**		1,511
17:15 to 18:15	490	0	**490**	180	2	**182**	632	4	**636**		1,308
17:30 to 18:30	500	1	**501**	142	2	**144**	562	5	**567**		1,212
PM Totals	**2,538**	**33**	**2,571**	**720**	**8**	**728**	**2,478**	**42**	**2,520**		5,819

MATRIX
Traffic and Transport Data

Job No. : N4041
Client : GTA
Suburb : Wagga Wagga
Location : 4. Brookong Ave / Murray St

Day/Date : Wed, 28th March 2018
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary



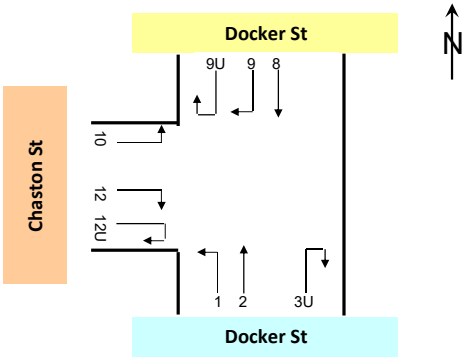
	Approach		Brookong Ave			Murray St			Brookong Ave			Grand Total
	Time Period		Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	
AM	8:15 to 9:15		68	0	**68**	47	1	**48**	186	3	**189**	**305**
PM	15:15 to 16:15		92	0	**92**	86	0	**86**	150	1	**151**	**329**

Approach		Brookong Ave			Murray St			Brookong Ave			Grand Total
Time Period		Lights	Heavies	Total	Lights	Heavies	Total	Lights	Heavies	Total	
6:30 to 7:30		16	1	**17**	22	0	**22**	80	3	**83**	**122**
6:45 to 7:45		22	3	**25**	24	0	**24**	77	2	**79**	**128**
7:00 to 8:00		27	4	**31**	29	0	**29**	74	3	**77**	**137**
7:15 to 8:15		33	3	**36**	39	0	**39**	95	2	**97**	**172**
7:30 to 8:30		49	3	**52**	45	0	**45**	97	1	**98**	**195**
7:45 to 8:45		52	1	**53**	48	0	**48**	123	1	**124**	**225**
8:00 to 9:00		67	0	**67**	49	0	**49**	176	2	**178**	**294**
8:15 to 9:15		68	0	**68**	47	1	**48**	186	3	**189**	**305**
8:30 to 9:30		55	0	**55**	41	1	**42**	186	3	**189**	**286**
AM Totals		**120**	**4**	**124**	**108**	**1**	**109**	**363**	**7**	**370**	**603**
14:30 to 15:30		82	3	**85**	55	0	**55**	102	1	**103**	**243**
14:45 to 15:45		91	3	**94**	64	0	**64**	137	1	**138**	**296**
15:00 to 16:00		80	1	**81**	78	0	**78**	147	1	**148**	**307**
15:15 to 16:15		92	0	**92**	86	0	**86**	150	1	**151**	**329**
15:30 to 16:30		85	0	**85**	77	0	**77**	122	0	**122**	**284**
15:45 to 16:45		87	0	**87**	72	0	**72**	76	0	**76**	**235**
16:00 to 17:00		97	0	**97**	73	0	**73**	68	0	**68**	**238**
16:15 to 17:15		111	0	**111**	83	1	**84**	61	0	**61**	**256**
16:30 to 17:30		137	0	**137**	80	1	**81**	56	0	**56**	**274**
16:45 to 17:45		136	0	**136**	74	1	**75**	66	0	**66**	**277**
17:00 to 18:00		131	0	**131**	65	1	**66**	62	0	**62**	**259**
17:15 to 18:15		114	1	**115**	48	0	**48**	60	0	**60**	**223**
17:30 to 18:30		85	1	**86**	42	0	**42**	59	0	**59**	**187**
PM Totals		**389**	**4**	**393**	**254**	**1**	**255**	**339**	**1**	**340**	**988**

MATRIX Traffic and Transport Data

Job No. : N4041
Client : GTA
Suburb : Wagga Wagga
Location : 6. Docker St / Chaston St

Day/Date : Tue, 27th March 2018
Weather : Fine
Description : Classified Intersection Count
: Peak Hour Summary



	Approach	Docker St				Docker St			Chaston St			Grand Total
	Time Period	Lights	Heavies	Total		Lights	Heavies	Total	Lights	Heavies	Total	
AM	8:15 to 9:15	1,086	23	**1,109**		475	24	**499**	174	6	**180**	**1,788**
PM	15:15 to 16:15	711	14	**725**		813	15	**828**	231	5	**236**	**1,789**

Approach	Docker St				Docker St			Chaston St			Grand Total
Time Period	Lights	Heavies	Total		Lights	Heavies	Total	Lights	Heavies	Total	
6:30 to 7:30	485	10	**495**		127	6	**133**	60	8	**68**	**696**
6:45 to 7:45	559	11	**570**		161	7	**168**	69	11	**80**	**818**
7:00 to 8:00	658	11	**669**		205	15	**220**	86	11	**97**	**986**
7:15 to 8:15	782	13	**795**		264	17	**281**	100	10	**110**	**1,186**
7:30 to 8:30	916	15	**931**		337	19	**356**	132	8	**140**	**1,427**
7:45 to 8:45	1,022	18	**1,040**		406	22	**428**	144	8	**152**	**1,620**
8:00 to 9:00	1,077	22	**1,099**		445	16	**461**	157	7	**164**	**1,724**
8:15 to 9:15	1,086	23	**1,109**		475	24	**499**	174	6	**180**	**1,788**
8:30 to 9:30	976	23	**999**		448	23	**471**	166	7	**173**	**1,643**
AM Totals	**2,377**	**48**	**2,425**		**912**	**48**	**960**	**358**	**23**	**381**	**3,766**
14:30 to 15:30	570	13	**583**		697	24	**721**	181	10	**191**	**1,495**
14:45 to 15:45	663	13	**676**		737	22	**759**	193	9	**202**	**1,637**
15:00 to 16:00	682	14	**696**		789	17	**806**	209	7	**216**	**1,718**
15:15 to 16:15	711	14	**725**		813	15	**828**	231	5	**236**	**1,789**
15:30 to 16:30	681	14	**695**		809	13	**822**	245	4	**249**	**1,766**
15:45 to 16:45	613	11	**624**		828	5	**833**	244	4	**248**	**1,705**
16:00 to 17:00	564	11	**575**		836	5	**841**	236	3	**239**	**1,655**
16:15 to 17:15	548	7	**555**		888	6	**894**	228	3	**231**	**1,680**
16:30 to 17:30	515	4	**519**		939	6	**945**	209	1	**210**	**1,674**
16:45 to 17:45	466	4	**470**		962	7	**969**	207	1	**208**	**1,647**
17:00 to 18:00	479	1	**480**		924	8	**932**	199	1	**200**	**1,612**
17:15 to 18:15	445	0	**445**		820	6	**826**	157	0	**157**	**1,428**
17:30 to 18:30	452	0	**452**		699	7	**706**	142	0	**142**	**1,300**
PM Totals	**2,218**	**31**	**2,249**		**3,144**	**50**	**3,194**	**777**	**15**	**792**	**6,235**

Appendix B

SIDRA Intersection Results

MOVEMENT SUMMARY

Site: 1 [1 Edward/ Docker AM]

Network: N101 [AM Existing]

Signals - Fixed Time Isolated Cycle Time = 110 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
1	L2	55	0.0	55	0.0	0.120	39.3	LOS C	2.3	16.0	0.81	0.72	29.6
2	T1	599	0.5	599	0.5	0.755	41.0	LOS C	19.8	140.7	0.97	0.88	27.5
3	R2	169	3.7	169	3.7	0.755	45.9	LOS D	19.8	140.7	0.98	0.88	13.0
Approach		823	1.2	823	1.2	0.755	41.9	LOS C	19.8	140.7	0.96	0.87	25.6
East: Edward Street													
4	L2	104	3.0	104	3.0	0.582	43.9	LOS D	13.1	97.2	0.92	0.80	12.1
5	T1	465	9.5	465	9.5	0.582	37.8	LOS C	13.6	103.3	0.92	0.79	30.6
6	R2	27	3.8	27	3.8	0.265	59.4	LOS E	1.5	10.6	0.97	0.73	22.7
Approach		597	8.1	597	8.1	0.582	39.9	LOS C	13.6	103.3	0.92	0.79	28.0
North: Docker Street													
7	L2	42	0.0	42	0.0	0.086	37.2	LOS C	1.7	11.9	0.79	0.71	25.0
8	T1	278	1.1	278	1.1	0.736	36.0	LOS C	20.0	140.7	0.90	0.77	24.9
9	R2	234	0.5	234	0.5	0.736	43.5	LOS D	20.0	140.7	0.96	0.86	33.2
Approach		554	0.8	554	0.8	0.736	39.2	LOS C	20.0	140.7	0.92	0.81	29.2
West: Edward Street													
10	L2	189	3.3	189	3.3	0.750	47.8	LOS D	18.1	132.7	0.98	0.88	32.4
11	T1	542	8.0	542	8.0	0.750	41.5	LOS C	19.3	144.4	0.98	0.88	25.5
12	R2	108	0.0	108	0.0	0.729	60.7	LOS E	6.2	43.4	1.00	0.89	20.3
Approach		840	5.9	840	5.9	0.750	45.4	LOS D	19.3	144.4	0.98	0.88	26.8
All Vehicles		2814	4.0	2813 N1	4.0	0.755	42.0	LOS C	20.0	144.4	0.95	0.84	27.2

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 8 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	42.9	LOS E	0.1	0.1	0.88	0.88
P2	East Full Crossing	53	39.4	LOS D	0.1	0.1	0.85	0.85
P3	North Full Crossing	53	41.1	LOS E	0.1	0.1	0.87	0.87
P4	West Full Crossing	53	41.1	LOS E	0.1	0.1	0.87	0.87
All Pedestrians		211	41.1	LOS E			0.87	0.87

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.

MOVEMENT SUMMARY

Site: 1 [1 Edward/ Docker PM]

Network: N101 [PM Existing]

Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	49	2.1	49	2.1	0.131	32.1	LOS C	1.7	12.4	0.85	0.72	32.3
2	T1	436	1.0	436	1.0	0.916	80.4	LOS F	27.7	196.9	1.00	1.07	19.3
3	R2	213	2.5	213	2.5	0.916	85.5	LOS F	27.7	196.9	1.00	1.03	7.7
Approach		698	1.5	698	1.5	0.916	78.5	LOS F	27.7	196.9	0.99	1.03	17.0
East: Edward Street													
4	L2	120	1.8	120	1.8	0.899	78.3	LOS F	32.8	240.7	1.00	1.02	7.3
5	T1	664	7.3	664	7.3	0.899	72.0	LOS F	32.8	240.7	1.00	1.03	21.4
6	R2	56	5.7	56	5.7	0.335	49.6	LOS D	3.0	22.3	0.94	0.74	25.0
Approach		840	6.4	840	6.4	0.899	71.4	LOS F	32.8	240.7	1.00	1.01	20.0
North: Docker Street													
7	L2	32	0.0	32	0.0	0.042	32.7	LOS C	1.4	9.5	0.63	0.67	26.6
8	T1	452	0.9	452	0.9	0.916	54.8	LOS D	49.5	350.4	0.91	0.87	19.9
9	R2	321	1.6	321	1.6	0.916	69.9	LOS E	49.5	350.4	1.00	1.01	26.9
Approach		804	1.2	804	1.2	0.916	60.0	LOS E	49.5	350.4	0.93	0.92	23.5
West: Edward Street													
10	L2	119	3.5	119	3.5	0.712	61.9	LOS E	21.2	155.5	0.98	0.84	29.0
11	T1	492	7.1	492	7.1	0.712	54.6	LOS D	21.2	155.5	0.96	0.82	21.6
12	R2	103	1.0	103	1.0	0.775	56.2	LOS D	6.0	42.5	1.00	0.84	21.4
Approach		714	5.6	714	5.6	0.775	56.1	LOS D	21.2	155.5	0.97	0.83	23.3
All Vehicles		3056	3.7	3056	3.7	0.916	66.4	LOS E	49.5	350.4	0.97	0.95	20.9

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	55.6	LOS E	0.2	0.2	0.86	0.86
P2	East Full Crossing	53	41.9	LOS E	0.2	0.2	0.75	0.75
P3	North Full Crossing	53	53.9	LOS E	0.2	0.2	0.85	0.85
P4	West Full Crossing	53	61.8	LOS F	0.2	0.2	0.91	0.91
All Pedestrians		211	53.3	LOS E			0.84	0.84

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

MOVEMENT SUMMARY

Site: 1 [1 Murray/ Dorris Roy AM]

Network: N101 [AM Existing]

Murray Street/ Dorris Roy Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	12	0.0	12	0.0	0.041	3.4	LOS A	0.0	0.1	0.01	0.08	45.9
2	T1	66	3.2	66	3.2	0.041	0.0	LOS A	0.0	0.1	0.01	0.08	43.2
3	R2	1	0.0	1	0.0	0.041	3.5	LOS A	0.0	0.1	0.01	0.08	44.8
Approach		79	2.7	79	2.7	0.041	0.6	NA	0.0	0.1	0.01	0.08	44.3
East: Dorris Roy Lane													
4	L2	1	0.0	1	0.0	0.006	4.7	LOS A	0.0	0.1	0.17	0.51	37.2
5	T1	1	0.0	1	0.0	0.006	3.6	LOS A	0.0	0.1	0.17	0.51	41.0
6	R2	4	0.0	4	0.0	0.006	5.1	LOS A	0.0	0.1	0.17	0.51	37.2
Approach		6	0.0	6	0.0	0.006	4.8	LOS A	0.0	0.1	0.17	0.51	38.1
North: Murray Street													
7	L2	2	0.0	2	0.0	0.025	3.9	LOS A	0.0	0.1	0.01	0.04	47.3
8	T1	44	2.4	44	2.4	0.025	0.0	LOS A	0.0	0.1	0.01	0.04	46.7
9	R2	1	0.0	1	0.0	0.025	4.1	LOS A	0.0	0.1	0.01	0.04	44.8
Approach		47	2.2	47	2.2	0.025	0.3	NA	0.0	0.1	0.01	0.04	46.7
West: Dorris Roy Lane													
10	L2	7	0.0	7	0.0	0.008	7.7	LOS A	0.0	0.2	0.16	0.90	30.9
11	T1	1	0.0	1	0.0	0.008	7.7	LOS A	0.0	0.2	0.16	0.90	37.5
12	R2	1	0.0	1	0.0	0.008	7.6	LOS A	0.0	0.2	0.16	0.90	30.9
Approach		9	0.0	9	0.0	0.008	7.6	LOS A	0.0	0.2	0.16	0.90	32.1
All Vehicles		142	2.2	142	2.2	0.041	1.1	NA	0.0	0.2	0.03	0.14	41.9

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 8 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 1 [1 Murray/ Dorris Roy PM]

Network: N101 [PM Existing]

Murray Street/ Dorris Roy Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	3	0.0	3	0.0	0.038	3.4	LOS A	0.0	0.1	0.01	0.03	47.0
2	T1	69	0.0	69	0.0	0.038	0.0	LOS A	0.0	0.1	0.01	0.03	47.3
3	R2	1	0.0	1	0.0	0.038	3.5	LOS A	0.0	0.1	0.01	0.03	45.6
Approach		74	0.0	74	0.0	0.038	0.2	NA	0.0	0.1	0.01	0.03	47.1
East: Dorris Roy Lane													
4	L2	1	0.0	1	0.0	0.003	4.7	LOS A	0.0	0.1	0.14	0.49	37.9
5	T1	1	0.0	1	0.0	0.003	3.6	LOS A	0.0	0.1	0.14	0.49	41.4
6	R2	1	0.0	1	0.0	0.003	5.1	LOS A	0.0	0.1	0.14	0.49	37.9
Approach		3	0.0	3	0.0	0.003	4.5	LOS A	0.0	0.1	0.14	0.49	39.5
North: Murray Street													
7	L2	1	0.0	1	0.0	0.024	4.0	LOS A	0.0	0.2	0.03	0.05	47.0
8	T1	42	0.0	42	0.0	0.024	0.0	LOS A	0.0	0.2	0.03	0.05	45.3
9	R2	3	0.0	3	0.0	0.024	4.0	LOS A	0.0	0.2	0.03	0.05	44.4
Approach		46	0.0	46	0.0	0.024	0.4	NA	0.0	0.2	0.03	0.05	45.3
West: Dorris Roy Lane													
10	L2	17	0.0	17	0.0	0.022	7.7	LOS A	0.1	0.6	0.17	0.90	30.9
11	T1	1	0.0	1	0.0	0.022	7.7	LOS A	0.1	0.6	0.17	0.90	37.6
12	R2	7	0.0	7	0.0	0.022	7.6	LOS A	0.1	0.6	0.17	0.90	30.9
Approach		25	0.0	25	0.0	0.022	7.6	LOS A	0.1	0.6	0.17	0.90	31.4
All Vehicles		148	0.0	148	0.0	0.038	1.6	NA	0.1	0.6	0.04	0.19	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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 10 [10 Edward/ Lewis AM]

Network: N101 [AM Existing]

Edward Street/ Lewis Drive
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Lewis Drive													
1	L2	38	0.0	38	0.0	0.036	5.6	LOS A	0.1	0.9	0.32	0.55	29.3
Approach		38	0.0	38	0.0	0.036	5.6	LOS A	0.1	0.9	0.32	0.55	29.3
East: Edward Street													
4	L2	49	0.0	49	0.0	0.156	5.5	LOS A	0.0	0.0	0.00	0.10	48.8
5	T1	513	13.6	513	13.6	0.156	0.0	LOS A	0.0	0.0	0.00	0.05	57.2
Approach		562	12.4	562	12.4	0.156	0.5	NA	0.0	0.0	0.00	0.05	55.9
West: Edward Street													
11	T1	629	9.4	629	9.4	0.171	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R2	62	1.7	62	1.7	0.082	8.6	LOS A	0.3	1.8	0.49	0.73	35.4
Approach		692	8.7	691	8.7	0.171	0.8	NA	0.3	1.8	0.04	0.07	54.7
All Vehicles		1292	10.0	1291 N1	10.0	0.171	0.8	NA	0.3	1.8	0.03	0.07	54.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 8 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 10 [10 Edward/ Lewis PM]

Network: N101 [PM Existing]

Edward Street/ Lewis Drive
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Lewis Drive													
1	L2	82	0.0	82	0.0	0.177	6.4	LOS A	0.3	2.3	0.43	0.66	28.3
Approach		82	0.0	82	0.0	0.177	6.4	LOS A	0.3	2.3	0.43	0.66	28.3
East: Edward Street													
4	L2	53	0.0	53	0.0	0.415	5.6	LOS A	0.0	0.0	0.00	0.07	49.7
5	T1	825	6.0	825	6.0	0.415	0.0	LOS A	0.0	0.0	0.00	0.03	57.9
Approach		878	5.6	878	5.6	0.415	0.4	NA	0.0	0.0	0.00	0.04	57.1
West: Edward Street													
11	T1	722	7.4	722	7.4	0.194	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R2	38	0.0	38	0.0	0.074	11.4	LOS A	0.2	1.5	0.66	0.86	32.2
Approach		760	7.1	760	7.1	0.194	0.6	NA	0.2	1.5	0.03	0.04	56.1
All Vehicles		1720	6.0	1720	6.0	0.415	0.7	NA	0.3	2.3	0.03	0.07	54.8

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [2 Murray/ Yabtree AM]

Network: N101 [AM Existing]

Murray Street/ Yabtree Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	13	0.0	13	0.0	0.040	4.6	LOS A	0.0	0.0	0.00	0.09	46.2
2	T1	64	1.6	64	1.6	0.040	0.0	LOS A	0.0	0.0	0.00	0.09	45.3
Approach		77	1.4	77	1.4	0.040	0.8	NA	0.0	0.0	0.00	0.09	45.6
North: Murray Street													
8	T1	43	2.4	43	2.4	0.024	0.0	LOS A	0.0	0.1	0.03	0.04	46.0
9	R2	3	0.0	3	0.0	0.024	3.6	LOS A	0.0	0.1	0.03	0.04	44.6
Approach		46	2.3	46	2.3	0.024	0.3	NA	0.0	0.1	0.03	0.04	45.7
West: Yabtree Street													
10	L2	13	8.3	13	8.3	0.018	4.8	LOS A	0.1	0.5	0.15	0.51	34.8
12	R2	11	0.0	11	0.0	0.018	4.9	LOS A	0.1	0.5	0.15	0.51	34.8
Approach		23	4.5	23	4.5	0.018	4.9	LOS A	0.1	0.5	0.15	0.51	34.8
All Vehicles		146	2.2	146	2.2	0.040	1.2	NA	0.1	0.5	0.03	0.14	42.5

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 8 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [2 Murray/ Yabtree PM]

Network: N101 [PM Existing]

Murray Street/ Yabtree Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	6	0.0	6	0.0	0.034	4.6	LOS A	0.0	0.0	0.00	0.05	47.0
2	T1	59	0.0	59	0.0	0.034	0.0	LOS A	0.0	0.0	0.00	0.05	47.1
Approach		65	0.0	65	0.0	0.034	0.4	NA	0.0	0.0	0.00	0.05	47.1
North: Murray Street													
8	T1	47	0.0	47	0.0	0.026	0.0	LOS A	0.0	0.1	0.02	0.02	47.5
9	R2	2	0.0	2	0.0	0.026	3.5	LOS A	0.0	0.1	0.02	0.02	44.9
Approach		49	0.0	49	0.0	0.026	0.2	NA	0.0	0.1	0.02	0.02	47.1
West: Yabtree Street													
10	L2	16	0.0	16	0.0	0.021	4.7	LOS A	0.1	0.5	0.14	0.51	34.8
12	R2	13	0.0	13	0.0	0.021	4.9	LOS A	0.1	0.5	0.14	0.51	34.8
Approach		28	0.0	28	0.0	0.021	4.8	LOS A	0.1	0.5	0.14	0.51	34.8
All Vehicles		143	0.0	143	0.0	0.034	1.2	NA	0.1	0.5	0.03	0.13	42.5

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 4 [3 Edward/ Murray AM]

Network: N101 [AM Existing]

Giveway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	69	1.5	69	1.5	0.080	5.9	LOS A	0.3	2.0	0.44	0.64	22.3
2	T1	35	0.0	35	0.0	0.587	66.4	LOS E	2.0	14.2	0.96	1.08	12.5
3	R2	13	8.3	13	8.3	0.587	87.5	LOS F	2.0	14.2	0.96	1.08	3.1
Approach		117	1.8	117	1.8	0.587	32.7	LOS C	2.0	14.2	0.65	0.82	12.2
East: Edward Street													
4	L2	11	0.0	11	0.0	0.219	5.5	LOS A	0.0	0.0	0.00	0.02	59.2
5	T1	621	9.2	621	9.2	0.219	0.9	LOS A	1.1	8.2	0.14	0.06	53.1
6	R2	55	5.8	55	5.8	0.219	11.4	LOS A	1.1	8.2	0.37	0.15	46.6
Approach		686	8.7	686	8.7	0.219	1.8	NA	1.1	8.2	0.16	0.07	51.9
North: Murray Street													
7	L2	22	4.8	22	4.8	0.026	6.4	LOS A	0.1	0.6	0.42	0.60	38.2
8	T1	16	0.0	16	0.0	0.287	45.7	LOS D	0.9	6.4	0.94	1.00	13.8
9	R2	8	0.0	8	0.0	0.287	69.9	LOS E	0.9	6.4	0.94	1.00	13.8
Approach		46	2.3	46	2.3	0.287	31.4	LOS C	0.9	6.4	0.69	0.81	19.8
West: Edqard Street													
10	L2	48	2.2	48	2.2	0.228	5.6	LOS A	0.0	0.0	0.00	0.07	54.4
11	T1	677	8.2	677	8.2	0.228	0.1	LOS A	0.1	1.1	0.02	0.04	56.8
12	R2	6	16.7	6	16.7	0.228	11.1	LOS A	0.1	1.1	0.04	0.01	57.4
Approach		732	7.9	732	7.9	0.228	0.6	NA	0.1	1.1	0.02	0.04	56.4
All Vehicles		1581	7.7	1581	7.7	0.587	4.4	NA	2.0	14.2	0.14	0.14	43.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 8 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 4 [3 Edward/ Murray PM]

Network: N101 [PM Existing]

Giveway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	85	0.0	85	0.0	0.105	6.3	LOS A	0.4	2.6	0.47	0.68	21.5
2	T1	32	0.0	32	0.0	0.612	66.4	LOS E	2.5	17.3	0.97	1.10	13.0
3	R2	32	0.0	32	0.0	0.612	70.7	LOS F	2.5	17.3	0.97	1.10	3.2
Approach		148	0.0	148	0.0	0.612	32.8	LOS C	2.5	17.3	0.68	0.86	10.6
East: Edward Street													
4	L2	22	0.0	22	0.0	0.254	5.5	LOS A	0.0	0.0	0.00	0.03	58.7
5	T1	815	6.8	815	6.8	0.254	0.5	LOS A	0.8	6.0	0.09	0.05	55.3
6	R2	39	0.0	39	0.0	0.254	10.8	LOS A	0.8	6.0	0.20	0.07	49.6
Approach		876	6.4	876	6.4	0.254	1.1	NA	0.8	6.0	0.09	0.05	54.7
North: Murray Street													
7	L2	46	4.5	46	4.5	0.051	6.2	LOS A	0.2	1.3	0.39	0.60	38.5
8	T1	17	0.0	17	0.0	0.371	51.7	LOS D	1.3	9.2	0.96	1.02	13.0
9	R2	17	6.3	17	6.3	0.371	65.7	LOS E	1.3	9.2	0.96	1.02	13.0
Approach		80	3.9	80	3.9	0.371	28.3	LOS B	1.3	9.2	0.63	0.78	21.0
West: Edqard Street													
10	L2	28	3.7	28	3.7	0.194	5.6	LOS A	0.0	0.0	0.00	0.05	54.3
11	T1	661	6.1	661	6.1	0.194	0.3	LOS A	0.3	2.1	0.04	0.03	56.3
12	R2	11	0.0	11	0.0	0.194	12.5	LOS A	0.3	2.1	0.08	0.02	55.0
Approach		700	5.9	700	5.9	0.194	0.7	NA	0.3	2.1	0.04	0.03	56.0
All Vehicles		1804	5.5	1804	5.5	0.612	4.7	NA	2.5	17.3	0.14	0.14	42.2

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [3 Murray/ Yathong AM]

Network: N101 [AM Existing]

Murray Street/ Yathong Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	Demand Flows HV	Arrival Flows Total	Arrival Flows HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	17	12.5	17	12.5	0.041	3.4	LOS A	0.0	0.0	0.00	0.11	42.6
2	T1	60	1.8	60	1.8	0.041	0.0	LOS A	0.0	0.0	0.00	0.11	42.2
Approach		77	4.1	77	4.1	0.041	0.7	NA	0.0	0.0	0.00	0.11	42.4
North: Murray Street													
8	T1	48	2.2	48	2.2	0.029	0.0	LOS A	0.0	0.3	0.04	0.06	45.4
9	R2	6	0.0	6	0.0	0.029	4.8	LOS A	0.0	0.3	0.04	0.06	44.6
Approach		55	1.9	55	1.9	0.029	0.6	NA	0.0	0.3	0.04	0.06	45.2
West: Yathong Street													
10	L2	23	0.0	23	0.0	0.022	4.7	LOS A	0.1	0.6	0.14	0.51	34.9
12	R2	8	0.0	8	0.0	0.022	5.0	LOS A	0.1	0.6	0.14	0.51	34.9
Approach		32	0.0	32	0.0	0.022	4.8	LOS A	0.1	0.6	0.14	0.51	34.9
All Vehicles		163	2.6	163	2.6	0.041	1.5	NA	0.1	0.6	0.04	0.17	40.8

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 8 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [3 Murray/ Yathong PM]

Network: N101 [PM Existing]

Murray Street/ Yathong Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	9	0.0	9	0.0	0.032	3.4	LOS A	0.0	0.0	0.00	0.08	46.0
2	T1	53	0.0	53	0.0	0.032	0.0	LOS A	0.0	0.0	0.00	0.08	43.8
Approach		62	0.0	62	0.0	0.032	0.5	NA	0.0	0.0	0.00	0.08	44.7
North: Murray Street													
8	T1	60	0.0	60	0.0	0.035	0.0	LOS A	0.0	0.3	0.04	0.06	45.8
9	R2	7	0.0	7	0.0	0.035	4.7	LOS A	0.0	0.3	0.04	0.06	44.8
Approach		67	0.0	67	0.0	0.035	0.5	NA	0.0	0.3	0.04	0.06	45.6
West: Yathong Street													
10	L2	17	0.0	17	0.0	0.018	4.7	LOS A	0.1	0.5	0.13	0.51	35.0
12	R2	8	0.0	8	0.0	0.018	5.0	LOS A	0.1	0.5	0.13	0.51	35.0
Approach		25	0.0	25	0.0	0.018	4.8	LOS A	0.1	0.5	0.13	0.51	35.0
All Vehicles		155	0.0	155	0.0	0.035	1.2	NA	0.1	0.5	0.04	0.14	42.1

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 4 [4 Murray/ Brookong AM]

Network: N101 [AM Existing]

Murray Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
NorthEast: Brookong Avenue													
25	T1	52	0.0	49	0.0	0.029	0.1	LOS A	0.0	0.3	0.08	0.07	48.4
26b	R3	6	0.0	6	0.0	0.029	5.9	LOS A	0.0	0.3	0.08	0.07	48.4
Approach		58	0.0	55 N1	0.0	0.029	0.7	NA	0.0	0.3	0.08	0.07	48.4
North: Murray Street													
7b	L3	13	0.0	13	0.0	0.008	4.5	LOS A	0.0	0.2	0.19	0.52	24.2
9a	R1	32	3.3	32	3.3	0.030	3.6	LOS A	0.1	0.7	0.26	0.51	24.7
Approach		44	2.4	44	2.4	0.030	3.9	LOS A	0.1	0.7	0.24	0.51	24.6
SouthWest: Brookong Avenue													
30a	L1	99	2.1	99	2.1	0.104	4.1	LOS A	0.0	0.0	0.00	0.26	46.3
31	T1	100	1.1	100	1.1	0.104	0.0	LOS A	0.0	0.0	0.00	0.26	46.3
Approach		199	1.6	199	1.6	0.104	2.0	NA	0.0	0.0	0.00	0.26	46.3
All Vehicles		301	1.4	298 N1	1.4	0.104	2.1	NA	0.1	0.7	0.05	0.26	45.7

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 8 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 4 [4 Murray/ Brookong PM]

Network: N101 [PM Existing]

Murray Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
NorthEast: Brookong Avenue													
25	T1	83	0.0	83	0.0	0.047	0.0	LOS A	0.0	0.3	0.04	0.05	49.0
26b	R3	6	0.0	6	0.0	0.047	5.6	LOS A	0.0	0.3	0.04	0.05	49.0
Approach		89	0.0	89	0.0	0.047	0.4	NA	0.0	0.3	0.04	0.05	49.0
North: Murray Street													
7b	L3	7	0.0	7	0.0	0.005	4.4	LOS A	0.0	0.1	0.14	0.52	24.6
9a	R1	74	0.0	74	0.0	0.067	3.5	LOS A	0.2	1.6	0.25	0.51	24.9
Approach		81	0.0	81	0.0	0.067	3.6	LOS A	0.2	1.6	0.24	0.51	24.8
SouthWest: Brookong Avenue													
30a	L1	67	0.0	67	0.0	0.067	4.1	LOS A	0.0	0.0	0.00	0.27	46.1
31	T1	61	0.0	61	0.0	0.067	0.0	LOS A	0.0	0.0	0.00	0.27	46.1
Approach		128	0.0	128	0.0	0.067	2.1	NA	0.0	0.0	0.00	0.27	46.1
All Vehicles		299	0.0	299	0.0	0.067	2.0	NA	0.2	1.6	0.08	0.27	45.2

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 5 [5 Docker/ Brookong AM]

Network: N101 [AM Existing]

Docker Street/ Brookong Avenue
Signals - Fixed Time Isolated Cycle Time = 40 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
2	T1	880	2.8	880	2.8	0.418	5.8	LOS A	5.1	36.8	0.62	0.54	34.8
3	R2	141	1.5	141	1.5	0.243	11.0	LOS A	1.6	11.6	0.60	0.71	27.4
Approach		1021	2.6	1021	2.6	0.418	6.5	LOS A	5.1	36.8	0.62	0.56	33.5
East: Brookong Avenue													
4	L2	114	5.6	111	5.7	0.416	22.7	LOS B	2.2	15.8	0.95	0.77	26.5
6	R2	23	0.0	23	0.0	0.081	21.3	LOS B	0.4	2.8	0.89	0.69	27.2
Approach		137	4.6	134 N1	4.7	0.416	22.5	LOS B	2.2	15.8	0.94	0.75	26.6
North: Docker Street													
7	L2	18	11.8	18	11.8	0.194	8.2	LOS A	1.8	13.3	0.53	0.47	21.6
8	T1	384	5.2	384	5.2	0.194	4.9	LOS A	2.0	14.7	0.53	0.45	21.7
Approach		402	5.5	402	5.5	0.194	5.0	LOS A	2.0	14.7	0.53	0.46	21.7
All Vehicles		1560	3.5	1557 N1	3.5	0.418	7.5	LOS A	5.1	36.8	0.62	0.55	30.6

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 8 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
P2	East Full Crossing	53	9.1	LOS A	0.0	0.0	0.68	0.68
P3	North Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
All Pedestrians		158	12.7	LOS B			0.79	0.79

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

MOVEMENT SUMMARY

Site: 5 [5 Docker/ Brookong PM]

Network: N101 [PM Existing]

Docker Street/ Brookong Avenue
Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
2	T1	696	1.4	696	1.4	0.300	6.3	LOS A	5.0	35.2	0.52	0.45	33.8
3	R2	117	0.0	117	0.0	0.269	13.7	LOS A	2.0	14.0	0.59	0.71	24.7
Approach		813	1.2	813	1.2	0.300	7.4	LOS A	5.0	35.2	0.53	0.49	32.1
East: Brookong Avenue													
4	L2	107	0.0	107	0.0	0.289	27.4	LOS B	2.8	19.5	0.89	0.76	24.2
6	R2	23	0.0	23	0.0	0.062	26.0	LOS B	0.6	3.9	0.84	0.69	24.7
Approach		131	0.0	131	0.0	0.289	27.2	LOS B	2.8	19.5	0.88	0.75	24.3
North: Docker Street													
7	L2	16	0.0	16	0.0	0.301	9.9	LOS A	4.9	34.7	0.52	0.47	18.4
8	T1	680	1.9	680	1.9	0.301	6.4	LOS A	5.0	35.4	0.52	0.46	18.6
Approach		696	1.8	696	1.8	0.301	6.5	LOS A	5.0	35.4	0.52	0.46	18.6
All Vehicles		1639	1.3	1639	1.3	0.301	8.6	LOS A	5.0	35.4	0.55	0.49	27.2

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P2	East Full Crossing	53	9.1	LOS A	0.0	0.0	0.55	0.55
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		158	19.3	LOS B			0.79	0.79

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

MOVEMENT SUMMARY

Site: 6 [6 Docker/ Chaston AM]

Network: N101 [AM Existing]

Docker Street/ Chaston Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	188	5.0	188	5.0	0.276	4.6	LOS A	0.0	0.0	0.00	0.20	48.3
2	T1	863	1.7	863	1.7	0.276	0.0	LOS A	0.0	0.0	0.00	0.08	49.1
Approach		1052	2.3	1052	2.3	0.276	0.9	NA	0.0	0.0	0.00	0.10	48.9
North: Docker Street													
8	T1	400	3.4	398	3.4	0.104	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
9	R2	96	11.0	95	11.0	0.271	15.6	LOS B	0.9	6.8	0.80	0.93	37.5
Approach		496	4.9	493[N1]	4.9	0.271	3.0	NA	0.9	6.8	0.15	0.18	47.0
West: Chaston Street													
10	L2	151	4.2	151	4.2	0.162	6.3	LOS A	0.6	4.5	0.42	0.64	42.8
12	R2	32	3.3	32	3.3	0.193	26.6	LOS B	0.6	4.4	0.85	0.94	36.4
Approach		182	4.0	182	4.0	0.193	9.8	LOS A	0.6	4.5	0.49	0.69	40.7
All Vehicles		1729	3.2	1727[N1]	3.2	0.276	2.4	NA	0.9	6.8	0.10	0.18	47.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 8 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 6 [6 Docker/ Chaston PM]

Network: N101 [PM Existing]

Docker Street/ Chaston Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	152	4.2	152	4.2	0.192	4.6	LOS A	0.0	0.0	0.00	0.23	48.2
2	T1	580	1.5	580	1.5	0.192	0.0	LOS A	0.0	0.0	0.00	0.08	49.1
Approach		732	2.0	732	2.0	0.192	1.0	NA	0.0	0.0	0.00	0.11	48.8
North: Docker Street													
8	T1	754	1.1	754	1.1	0.195	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
9	R2	112	4.7	112	4.7	0.182	9.4	LOS A	0.6	4.5	0.61	0.82	41.4
Approach		865	1.6	865	1.6	0.195	1.2	NA	0.6	4.5	0.08	0.11	48.7
West: Chaston Street													
10	L2	173	0.6	173	0.6	0.159	5.5	LOS A	0.6	4.3	0.32	0.57	43.2
12	R2	89	3.5	89	3.5	0.306	17.5	LOS B	1.2	8.7	0.76	0.93	40.0
Approach		262	1.6	262	1.6	0.306	9.6	LOS A	1.2	8.7	0.47	0.69	41.5
All Vehicles		1859	1.8	1859	1.8	0.306	2.3	NA	1.2	8.7	0.10	0.19	47.5

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 7 [7 Docker/ Rawson AM]

Network: N101 [AM Existing]

Docker Street/ Rawson Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
2	T1	899	2.6	898	2.6	0.234	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		899	2.6	898[N1]	2.6	0.234	0.0	NA	0.0	0.0	0.00	0.00	50.0
East: Rawson Lane													
4	L2	23	9.1	23	9.1	0.022	5.3	LOS A	0.1	0.6	0.27	0.52	26.0
Approach		23	9.1	23	9.1	0.022	5.3	LOS A	0.1	0.6	0.27	0.52	26.0
North: Docker Street													
7	L2	23	0.0	23	0.0	0.107	3.9	LOS A	0.0	0.0	0.00	0.06	32.3
8	T1	380	5.5	380	5.5	0.107	0.0	LOS A	0.0	0.0	0.00	0.03	47.6
Approach		403	5.2	403	5.2	0.107	0.2	NA	0.0	0.0	0.00	0.03	45.1
All Vehicles		1325	3.5	1325	3.5	0.234	0.2	NA	0.1	0.6	0.00	0.02	47.0

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 8 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 7 [7 Docker/ Rawson PM]

Network: N101 [PM Existing]

Docker Street/ Rawson Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
2	T1	699	1.4	699	1.4	0.181	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		699	1.4	699	1.4	0.181	0.0	NA	0.0	0.0	0.00	0.00	50.0
East: Rawson Lane													
4	L2	39	0.0	39	0.0	0.040	5.9	LOS A	0.1	1.0	0.37	0.58	25.2
Approach		39	0.0	39	0.0	0.040	5.9	LOS A	0.1	1.0	0.37	0.58	25.2
North: Docker Street													
7	L2	8	0.0	8	0.0	0.171	3.9	LOS A	0.0	0.0	0.00	0.01	33.0
8	T1	648	1.9	648	1.9	0.171	0.0	LOS A	0.0	0.0	0.00	0.01	49.4
Approach		657	1.9	657	1.9	0.171	0.1	NA	0.0	0.0	0.00	0.01	48.7
All Vehicles		1395	1.6	1395	1.6	0.181	0.2	NA	0.1	1.0	0.01	0.02	47.4

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 8 [8 Docker/ Hardy AM]

Network: N101 [AM Existing]

8 Docker Street/ Hardy Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	71	1.5	70	1.5	0.237	3.9	LOS A	0.0	0.0	0.00	0.08	47.8
2	T1	835	2.6	834	2.6	0.237	0.0	LOS A	0.0	0.0	0.00	0.04	47.1
Approach		905	2.6	905	2.6	0.237	0.3	NA	0.0	0.0	0.00	0.04	47.4
North: Docker Street													
8	T1	396	5.3	396	5.3	0.185	0.8	LOS A	0.8	5.9	0.09	0.06	46.3
9	R2	76	5.6	76	5.6	0.185	11.7	LOS A	0.8	5.9	0.71	0.53	39.6
Approach		472	5.4	472	5.4	0.185	2.6	NA	0.8	5.9	0.18	0.14	43.7
West: Hardy Avenue													
10	L2	25	0.0	25	0.0	0.028	6.3	LOS A	0.1	0.7	0.41	0.60	40.6
12	R2	7	0.0	7	0.0	0.044	25.1	LOS B	0.1	1.0	0.85	0.93	25.8
Approach		33	0.0	33	0.0	0.044	10.5	LOS A	0.1	1.0	0.51	0.67	36.0
All Vehicles		1409	3.4	1409	3.4	0.237	1.3	NA	0.8	5.9	0.07	0.09	44.5

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 8 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 8 [8 Docker/ Hardy PM]

Network: N101 [PM Existing]

8 Docker Street/ Hardy Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	43	0.0	43	0.0	0.195	3.9	LOS A	0.0	0.0	0.00	0.06	48.1
2	T1	666	1.4	666	1.4	0.195	0.0	LOS A	0.0	0.0	0.00	0.03	47.6
Approach		709	1.3	709	1.3	0.195	0.2	NA	0.0	0.0	0.00	0.03	47.8
North: Docker Street													
8	T1	652	1.9	652	1.9	0.206	0.7	LOS A	0.7	5.3	0.11	0.04	46.3
9	R2	47	2.2	47	2.2	0.206	9.6	LOS A	0.7	5.3	0.29	0.11	45.8
Approach		699	2.0	699	2.0	0.206	1.3	NA	0.7	5.3	0.13	0.05	46.2
West: Hardy Avenue													
10	L2	23	0.0	23	0.0	0.025	5.9	LOS A	0.1	0.6	0.37	0.57	40.8
12	R2	12	0.0	12	0.0	0.067	24.6	LOS B	0.2	1.5	0.85	0.93	26.1
Approach		35	0.0	35	0.0	0.067	12.1	LOS A	0.2	1.5	0.53	0.69	34.4
All Vehicles		1443	1.6	1443	1.6	0.206	1.0	NA	0.7	5.3	0.07	0.05	45.7

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 9 [9 Edward/ Brookong AM]

Network: N101 [AM Existing]

Edward Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Brookong Avenue													
1	L2	34	0.0	34	0.0	0.034	5.9	LOS A	0.1	0.8	0.36	0.57	40.9
3	R2	65	1.6	65	1.6	2.373	1367.9	LOS F	30.1	213.7	1.00	2.16	1.3
Approach		99	1.1	99	1.1	2.373	904.2	LOS F	30.1	213.7	0.78	1.62	1.7
East: Edward Street													
4	L2	43	0.0	43	0.0	0.184	5.5	LOS A	0.0	0.0	0.00	0.08	55.7
5	T1	623	12.5	623	12.5	0.184	0.0	LOS A	0.0	0.0	0.00	0.04	57.9
Approach		666	11.7	666	11.7	0.184	0.4	NA	0.0	0.0	0.00	0.04	57.7
West: Edward Street													
11	T1	572	10.3	572	10.3	0.313	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
12	R2	713	0.0	713	0.0	1.063	89.6	LOS F	48.3	337.9	1.00	3.49	7.5
Approach		1284	4.6	1284	4.6	1.063	49.8	NA	48.3	337.9	0.55	1.94	15.3
All Vehicles		2049	6.7	2049	6.7	2.373	75.0	NA	48.3	337.9	0.39	1.31	10.0

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 8 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 9 [9 Edward/ Brookong PM]

Network: N101 [PM Existing]

Edward Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Brookong Avenue													
1	L2	34	0.0	34	0.0	0.039	6.5	LOS A	0.1	0.9	0.43	0.62	40.4
3	R2	64	0.0	64	0.0	1.063	243.5	LOS F	7.7	54.1	1.00	1.58	6.7
Approach		98	0.0	98	0.0	1.063	161.9	LOS F	7.7	54.1	0.80	1.25	8.7
East: Edward Street													
4	L2	83	0.0	83	0.0	0.258	5.5	LOS A	0.0	0.0	0.00	0.10	54.7
5	T1	882	6.6	882	6.6	0.258	0.0	LOS A	0.0	0.0	0.00	0.05	57.4
Approach		965	6.0	965	6.0	0.258	0.5	NA	0.0	0.0	0.00	0.05	57.2
West: Edward Street													
11	T1	767	7.1	767	7.1	0.225	0.6	LOS A	0.6	4.5	0.07	0.01	57.8
12	R2	17	0.0	17	0.0	0.225	14.7	LOS B	0.6	4.5	0.15	0.03	52.4
Approach		784	7.0	784	7.0	0.225	0.9	NA	0.6	4.5	0.07	0.01	57.7
All Vehicles		1847	6.1	1847	6.1	1.063	9.2	NA	7.7	54.1	0.07	0.10	37.7

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 1 [1 Edward/ Docker AM - Fut Base]

Network: N101 [AM Fut Base]

Signals - Fixed Time Isolated Cycle Time = 110 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
1	L2	76	0.0	76	0.0	0.187	42.5	LOS D	3.3	23.3	0.85	0.74	28.5
2	T1	666	0.5	666	0.5	0.953	70.6	LOS F	30.9	219.7	1.00	1.21	20.9
3	R2	194	3.3	194	3.3	0.953	75.4	LOS F	30.9	219.7	1.00	1.17	8.6
Approach		936	1.0	936	1.0	0.953	69.3	LOS E	30.9	219.7	0.99	1.16	19.4
East: Edward Street													
4	L2	115	2.8	115	2.8	0.575	37.9	LOS C	15.8	115.8	0.88	0.78	13.8
5	T1	612	7.2	612	7.2	0.575	31.9	LOS C	16.2	120.6	0.87	0.77	33.1
6	R2	35	3.0	35	3.0	0.275	53.6	LOS D	1.8	12.7	0.93	0.75	24.0
Approach		761	6.4	761	6.4	0.575	33.8	LOS C	16.2	120.6	0.88	0.77	30.7
North: Docker Street													
7	L2	44	0.0	44	0.0	0.109	41.7	LOS C	1.9	13.3	0.84	0.72	23.6
8	T1	295	1.1	295	1.1	0.927	52.5	LOS D	28.3	199.0	0.94	0.93	20.4
9	R2	249	0.4	249	0.4	0.927	67.6	LOS E	28.3	199.0	1.00	1.10	27.3
Approach		588	0.7	588	0.7	0.927	58.1	LOS E	28.3	199.0	0.96	0.98	24.2
West: Edward Street													
10	L2	204	3.1	204	3.1	0.733	40.7	LOS C	21.3	155.8	0.94	0.85	34.7
11	T1	654	6.6	654	6.6	0.733	34.0	LOS C	21.3	155.8	0.91	0.82	28.4
12	R2	153	0.0	153	0.0	0.932	83.1	LOS F	11.0	76.9	1.00	1.11	16.3
Approach		1011	4.9	1011	4.9	0.932	42.8	LOS D	21.3	155.8	0.93	0.87	27.5
All Vehicles		3296	3.4	3296	3.4	0.953	51.0	LOS D	30.9	219.7	0.94	0.95	24.6

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 9 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	36.1	LOS D	0.1	0.1	0.81	0.81
P2	East Full Crossing	53	43.8	LOS E	0.1	0.1	0.89	0.89
P3	North Full Crossing	53	34.5	LOS D	0.1	0.1	0.79	0.79
P4	West Full Crossing	53	43.8	LOS E	0.1	0.1	0.89	0.89
All Pedestrians		211	39.5	LOS D			0.85	0.85

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

MOVEMENT SUMMARY

Site: 1 [1 Edward/ Docker PM - Fut Base]

Network: N101 [PM Fut Base]

Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
1	L2	94	1.1	94	1.1	0.246	32.7	LOS C	3.3	23.4	0.87	0.75	32.0
2	T1	453	0.9	453	0.9	1.016	123.0	LOS F	36.9	262.0	1.00	1.30	14.5
3	R2	223	2.4	223	2.4	1.016	126.6	LOS F	36.9	262.0	1.00	1.22	5.4
Approach		769	1.4	769	1.4	1.016	113.0	LOS F	36.9	262.0	0.98	1.21	13.2
East: Edward Street													
4	L2	144	1.5	144	1.5	1.012	122.1	LOS F	33.6	244.8	1.00	1.24	4.8
5	T1	776	6.2	776	6.2	1.012	117.0	LOS F	33.6	244.8	1.00	1.27	15.2
6	R2	58	5.5	58	5.5	0.384	49.4	LOS D	3.1	22.4	0.97	0.75	25.1
Approach		978	5.5	978	5.5	1.012	113.7	LOS F	33.6	244.8	1.00	1.24	14.3
North: Docker Street													
7	L2	39	0.0	39	0.0	0.052	32.8	LOS C	1.7	11.8	0.63	0.68	26.5
8	T1	519	0.8	519	0.8	1.031	91.8	LOS F	74.2	524.5	0.92	1.04	14.2
9	R2	336	1.6	336	1.6	1.031	125.3	LOS F	74.2	524.5	1.00	1.25	19.0
Approach		894	1.1	894	1.1	1.031	101.8	LOS F	74.2	524.5	0.94	1.10	16.7
West: Edward Street													
10	L2	135	3.1	135	3.1	0.851	70.1	LOS E	29.6	215.6	1.00	0.95	27.3
11	T1	638	5.4	638	5.4	0.851	63.5	LOS E	29.6	215.6	0.99	0.96	19.7
12	R2	124	0.8	124	0.8	0.895	62.2	LOS E	7.6	53.5	1.00	0.92	20.0
Approach		897	4.5	897	4.5	0.895	64.3	LOS E	29.6	215.6	1.00	0.95	21.2
All Vehicles		3538	3.2	3538	3.2	1.031	98.0	LOS F	74.2	524.5	0.98	1.12	16.0

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	54.7	LOS E	0.2	0.2	0.86	0.86
P2	East Full Crossing	53	42.7	LOS E	0.2	0.2	0.75	0.75
P3	North Full Crossing	53	53.0	LOS E	0.2	0.2	0.84	0.84
P4	West Full Crossing	53	62.7	LOS F	0.2	0.2	0.92	0.92
All Pedestrians		211	53.3	LOS E			0.84	0.84

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

MOVEMENT SUMMARY

Site: 1 [1 Murray/ Dorris Roy AM - Fut Base]

Network: N101 [AM Fut Base]

Murray Street/ Dorris Roy Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Murray Street													
1	L2	12	0.0	12	0.0	0.042	3.4	LOS A	0.0	0.1	0.01	0.08	45.9
2	T1	66	3.2	66	3.2	0.042	0.0	LOS A	0.0	0.1	0.01	0.08	43.2
3	R2	1	0.0	1	0.0	0.042	3.5	LOS A	0.0	0.1	0.01	0.08	44.8
Approach		79	2.7	79	2.7	0.042	0.6	NA	0.0	0.1	0.01	0.08	44.3
East: Dorris Roy Lane													
4	L2	1	0.0	1	0.0	0.006	4.7	LOS A	0.0	0.1	0.18	0.51	37.2
5	T1	1	0.0	1	0.0	0.006	3.6	LOS A	0.0	0.1	0.18	0.51	40.9
6	R2	4	0.0	4	0.0	0.006	5.1	LOS A	0.0	0.1	0.18	0.51	37.2
Approach		6	0.0	6	0.0	0.006	4.8	LOS A	0.0	0.1	0.18	0.51	38.1
North: Murray Street													
7	L2	2	0.0	2	0.0	0.026	3.9	LOS A	0.0	0.1	0.01	0.03	47.3
8	T1	46	2.3	46	2.3	0.026	0.0	LOS A	0.0	0.1	0.01	0.03	46.9
9	R2	1	0.0	1	0.0	0.026	4.1	LOS A	0.0	0.1	0.01	0.03	44.9
Approach		49	2.1	49	2.1	0.026	0.3	NA	0.0	0.1	0.01	0.03	46.8
West: Dorris Roy Lane													
10	L2	11	0.0	11	0.0	0.010	7.7	LOS A	0.0	0.3	0.16	0.90	30.9
11	T1	1	0.0	1	0.0	0.010	7.7	LOS A	0.0	0.3	0.16	0.90	37.5
12	R2	1	0.0	1	0.0	0.010	7.6	LOS A	0.0	0.3	0.16	0.90	30.9
Approach		13	0.0	13	0.0	0.010	7.7	LOS A	0.0	0.3	0.16	0.90	31.8
All Vehicles		147	2.1	147	2.1	0.042	1.2	NA	0.0	0.3	0.03	0.16	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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 9 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 1 [1 Murray/ Dorris Roy PM - Fut Base]

Network: N101 [PM Fut Base]

Murray Street/ Dorris Roy Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	3	0.0	3	0.0	0.039	3.4	LOS A	0.0	0.1	0.01	0.03	47.0
2	T1	69	0.0	69	0.0	0.039	0.0	LOS A	0.0	0.1	0.01	0.03	47.3
3	R2	1	0.0	1	0.0	0.039	3.5	LOS A	0.0	0.1	0.01	0.03	45.6
Approach		74	0.0	74	0.0	0.039	0.2	NA	0.0	0.1	0.01	0.03	47.1
East: Dorris Roy Lane													
4	L2	1	0.0	1	0.0	0.003	4.7	LOS A	0.0	0.1	0.15	0.49	37.9
5	T1	1	0.0	1	0.0	0.003	3.6	LOS A	0.0	0.1	0.15	0.49	41.4
6	R2	1	0.0	1	0.0	0.003	5.1	LOS A	0.0	0.1	0.15	0.49	37.9
Approach		3	0.0	3	0.0	0.003	4.5	LOS A	0.0	0.1	0.15	0.49	39.4
North: Murray Street													
7	L2	1	0.0	1	0.0	0.026	4.0	LOS A	0.0	0.2	0.03	0.05	47.0
8	T1	45	0.0	45	0.0	0.026	0.0	LOS A	0.0	0.2	0.03	0.05	45.6
9	R2	3	0.0	3	0.0	0.026	4.0	LOS A	0.0	0.2	0.03	0.05	44.5
Approach		49	0.0	49	0.0	0.026	0.4	NA	0.0	0.2	0.03	0.05	45.5
West: Dorris Roy Lane													
10	L2	21	0.0	21	0.0	0.025	7.7	LOS A	0.1	0.6	0.17	0.90	30.9
11	T1	1	0.0	1	0.0	0.025	7.7	LOS A	0.1	0.6	0.17	0.90	37.5
12	R2	7	0.0	7	0.0	0.025	7.6	LOS A	0.1	0.6	0.17	0.90	30.9
Approach		29	0.0	29	0.0	0.025	7.7	LOS A	0.1	0.6	0.17	0.90	31.3
All Vehicles		156	0.0	156	0.0	0.039	1.7	NA	0.1	0.6	0.05	0.21	39.1

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 10 [10 Edward/ Lewis AM - Fut Base]

Network: N101 [AM Fut Base]

Edward Street/ Lewis Drive
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Lewis Drive													
1	L2	38	0.0	38	0.0	0.040	6.0	LOS A	0.1	1.0	0.38	0.59	28.9
Approach		38	0.0	38	0.0	0.040	6.0	LOS A	0.1	1.0	0.38	0.59	28.9
East: Edward Street													
4	L2	49	0.0	49	0.0	0.198	5.5	LOS A	0.0	0.0	0.00	0.08	49.5
5	T1	677	10.3	677	10.3	0.198	0.0	LOS A	0.0	0.0	0.00	0.04	57.8
Approach		726	9.6	726	9.6	0.198	0.4	NA	0.0	0.0	0.00	0.04	56.8
West: Edward Street													
11	T1	768	7.7	768	7.7	0.207	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R2	62	1.7	62	1.7	0.101	10.1	LOS A	0.3	2.2	0.60	0.82	33.6
Approach		831	7.2	831	7.2	0.207	0.8	NA	0.3	2.2	0.04	0.06	54.9
All Vehicles		1595	8.1	1595	8.1	0.207	0.7	NA	0.3	2.2	0.03	0.06	55.0

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 9 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 10 [10 Edward/ Lewis PM - Fut Base]

Network: N101 [PM Fut Base]

Edward Street/ Lewis Drive
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Lewis Drive													
1	L2	82	0.0	82	0.0	0.202	7.0	LOS A	0.4	2.5	0.47	0.71	27.2
Approach		82	0.0	82	0.0	0.202	7.0	LOS A	0.4	2.5	0.47	0.71	27.2
East: Edward Street													
4	L2	53	0.0	53	0.0	0.270	5.5	LOS A	13.1	95.1	0.00	0.06	50.0
5	T1	964	5.1	964	5.1	0.270	0.0	LOS A	14.2	103.6	0.00	0.03	58.3
Approach		1017	4.9	1017	4.9	0.270	0.3	NA	14.2	103.6	0.00	0.03	57.6
West: Edward Street													
11	T1	886	6.1	883	6.1	0.235	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
12	R2	38	0.0	38	0.0	0.091	13.3	LOS A	0.3	1.8	0.73	0.89	30.2
Approach		924	5.8	921 N1	5.8	0.235	0.6	NA	0.3	1.8	0.03	0.04	56.3
All Vehicles		2023	5.1	2020 N1	5.1	0.270	0.7	NA	14.2	103.6	0.03	0.06	55.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 2 [2 Murray/ Yabtree AM - Fut Base]

Network: N101 [AM Fut Base]

Murray Street/ Yabtree Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	13	0.0	13	0.0	0.040	4.6	LOS A	0.0	0.0	0.00	0.09	46.2
2	T1	64	1.6	64	1.6	0.040	0.0	LOS A	0.0	0.0	0.00	0.09	45.3
Approach		77	1.4	77	1.4	0.040	0.8	NA	0.0	0.0	0.00	0.09	45.6
North: Murray Street													
8	T1	45	2.3	45	2.3	0.025	0.0	LOS A	0.0	0.1	0.03	0.04	46.2
9	R2	3	0.0	3	0.0	0.025	3.6	LOS A	0.0	0.1	0.03	0.04	44.6
Approach		48	2.2	48	2.2	0.025	0.3	NA	0.0	0.1	0.03	0.04	45.8
West: Yabtree Street													
10	L2	18	5.9	18	5.9	0.021	4.8	LOS A	0.1	0.5	0.15	0.51	34.8
12	R2	11	0.0	11	0.0	0.021	4.9	LOS A	0.1	0.5	0.15	0.51	34.8
Approach		28	3.7	28	3.7	0.021	4.9	LOS A	0.1	0.5	0.15	0.51	34.8
All Vehicles		154	2.1	154	2.1	0.040	1.4	NA	0.1	0.5	0.04	0.15	42.1

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 9 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [2 Murray/ Yabtree PM - Fut Base]

Network: N101 [PM Fut Base]

Murray Street/ Yabtree Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	6	0.0	6	0.0	0.034	4.6	LOS A	0.0	0.0	0.00	0.05	47.0
2	T1	59	0.0	59	0.0	0.034	0.0	LOS A	0.0	0.0	0.00	0.05	47.1
Approach		65	0.0	65	0.0	0.034	0.4	NA	0.0	0.0	0.00	0.05	47.1
North: Murray Street													
8	T1	51	0.0	50	0.0	0.027	0.0	LOS A	0.0	0.1	0.01	0.02	47.7
9	R2	2	0.0	2	0.0	0.027	3.5	LOS A	0.0	0.1	0.01	0.02	44.9
Approach		53	0.0	53	0.0	0.027	0.2	NA	0.0	0.1	0.01	0.02	47.3
West: Yabtree Street													
10	L2	20	0.0	20	0.0	0.024	4.7	LOS A	0.1	0.6	0.14	0.51	34.9
12	R2	13	0.0	13	0.0	0.024	4.9	LOS A	0.1	0.6	0.14	0.51	34.9
Approach		33	0.0	33	0.0	0.024	4.8	LOS A	0.1	0.6	0.14	0.51	34.9
All Vehicles		151	0.0	150[N1]	0.0	0.034	1.3	NA	0.1	0.6	0.04	0.14	42.1

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 4 [3 Edward/ Murray AM - Fut Base]

Network: N101 [AM Fut Base]

Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	86	1.2	86	1.2	0.111	6.5	LOS A	0.4	2.8	0.49	0.70	21.1
2	T1	35	0.0	35	0.0	0.962	215.9	LOS F	4.9	35.0	1.00	1.34	4.8
3	R2	13	8.3	13	8.3	0.962	268.1	LOS F	4.9	35.0	1.00	1.34	1.0
Approach		134	1.6	134	1.6	0.962	85.6	LOS F	4.9	35.0	0.67	0.92	5.1
East: Edward Street													
4	L2	13	0.0	13	0.0	0.262	5.5	LOS A	0.0	0.0	0.00	0.02	59.2
5	T1	767	7.4	767	7.4	0.262	1.1	LOS A	1.4	10.8	0.14	0.06	52.6
6	R2	55	5.8	55	5.8	0.262	12.9	LOS A	1.4	10.8	0.37	0.12	46.3
Approach		835	7.2	835	7.2	0.262	1.9	NA	1.4	10.8	0.15	0.06	51.7
North: Murray Street													
7	L2	22	4.8	22	4.8	0.027	6.7	LOS A	0.1	0.7	0.44	0.62	37.8
8	T1	16	0.0	16	0.0	0.593	115.4	LOS F	1.9	13.3	0.98	1.06	6.6
9	R2	11	0.0	11	0.0	0.593	166.2	LOS F	1.9	13.3	0.98	1.06	6.6
Approach		48	2.2	48	2.2	0.593	76.8	LOS F	1.9	13.3	0.73	0.86	10.6
West: Edqard Street													
10	L2	5	20.0	5	20.0	0.225	5.8	LOS A	0.0	0.0	0.00	0.01	50.4
11	T1	805	6.9	805	6.9	0.225	0.2	LOS A	0.2	1.8	0.03	0.01	58.1
12	R2	7	14.3	7	14.3	0.225	13.6	LOS A	0.2	1.8	0.05	0.01	56.5
Approach		818	7.1	818	7.1	0.225	0.4	NA	0.2	1.8	0.03	0.01	57.9
All Vehicles		1835	6.6	1835	6.6	0.962	9.3	NA	4.9	35.0	0.15	0.12	33.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 9 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 4 [3 Edward/ Murray PM - Fut Base]

Network: N101 [PM Fut Base]

Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Murray Street													
1	L2	98	0.0	98	0.0	0.153	6.9	LOS A	0.5	3.3	0.52	0.74	20.3
2	T1	32	0.0	32	0.0	1.000	234.7	LOS F	6.8	47.7	1.00	1.43	4.6
3	R2	32	0.0	32	0.0	1.000	240.4	LOS F	6.8	47.7	1.00	1.43	1.0
Approach		161	0.0	161	0.0	1.000	97.4	LOS F	6.8	47.7	0.71	1.01	4.0
East: Edward Street													
4	L2	25	0.0	25	0.0	0.293	5.6	LOS A	46.7	342.6	0.00	0.03	58.7
5	T1	938	5.9	938	5.9	0.293	0.8	LOS A	47.4	347.1	0.10	0.04	54.1
6	R2	39	0.0	39	0.0	0.293	13.3	LOS A	47.4	347.1	0.24	0.06	48.6
Approach		1002	5.6	1002	5.6	0.293	1.4	NA	47.4	347.1	0.11	0.04	53.7
North: Murray Street													
7	L2	46	4.5	46	4.5	0.055	6.6	LOS A	0.2	1.4	0.44	0.64	37.8
8	T1	17	0.0	17	0.0	0.810	176.4	LOS F	2.9	20.7	0.99	1.15	4.9
9	R2	19	5.6	19	5.6	0.810	203.5	LOS F	2.9	20.7	0.99	1.15	4.9
Approach		82	3.8	82	3.8	0.810	86.9	LOS F	2.9	20.7	0.68	0.86	9.6
West: Edqard Street													
10	L2	46	2.3	46	2.3	0.239	5.6	LOS A	0.0	0.0	0.00	0.06	54.5
11	T1	805	5.0	802	5.0	0.239	0.4	LOS A	0.5	3.6	0.05	0.04	54.9
12	R2	13	0.0	13	0.0	0.239	15.3	LOS B	0.5	3.6	0.10	0.02	53.1
Approach		864	4.8	861 N1	4.8	0.239	0.9	NA	0.5	3.6	0.05	0.04	54.8
All Vehicles		2109	4.7	2106 N1	4.7	1.000	11.9	NA	47.4	347.1	0.15	0.15	29.9

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 2 [3 Murray/ Yathong AM - Fut Base]

Network: N101 [AM Fut Base]

Murray Street/ Yathong Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	15	14.3	15	14.3	0.040	3.4	LOS A	0.0	0.0	0.00	0.10	42.4
2	T1	60	1.8	60	1.8	0.040	0.0	LOS A	0.0	0.0	0.00	0.10	42.9
Approach		75	4.2	75	4.2	0.040	0.7	NA	0.0	0.0	0.00	0.10	42.7
North: Murray Street													
8	T1	51	2.1	51	2.1	0.030	0.0	LOS A	0.0	0.3	0.04	0.06	45.6
9	R2	6	0.0	6	0.0	0.030	4.8	LOS A	0.0	0.3	0.04	0.06	44.7
Approach		57	1.9	57	1.9	0.030	0.6	NA	0.0	0.3	0.04	0.06	45.4
West: Yathong Street													
10	L2	32	0.0	32	0.0	0.028	4.7	LOS A	0.1	0.7	0.14	0.51	34.9
12	R2	8	0.0	8	0.0	0.028	5.0	LOS A	0.1	0.7	0.14	0.51	34.9
Approach		40	0.0	40	0.0	0.028	4.8	LOS A	0.1	0.7	0.14	0.51	34.9
All Vehicles		172	2.5	172	2.5	0.040	1.6	NA	0.1	0.7	0.05	0.18	40.4

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 9 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [3 Murray/ Yathong PM - Fut Base]

Network: N101 [PM Fut Base]

Murray Street/ Yathong Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	9	0.0	9	0.0	0.032	3.4	LOS A	0.0	0.0	0.00	0.08	46.0
2	T1	53	0.0	53	0.0	0.032	0.0	LOS A	0.0	0.0	0.00	0.08	43.8
Approach		62	0.0	62	0.0	0.032	0.5	NA	0.0	0.0	0.00	0.08	44.7
North: Murray Street													
8	T1	63	0.0	63	0.0	0.037	0.0	LOS A	0.0	0.3	0.04	0.06	46.0
9	R2	7	0.0	7	0.0	0.037	4.7	LOS A	0.0	0.3	0.04	0.06	44.8
Approach		71	0.0	70	0.0	0.037	0.5	NA	0.0	0.3	0.04	0.06	45.7
West: Yathong Street													
10	L2	21	0.0	21	0.0	0.021	4.7	LOS A	0.1	0.5	0.13	0.51	35.0
12	R2	8	0.0	8	0.0	0.021	5.0	LOS A	0.1	0.5	0.13	0.51	35.0
Approach		29	0.0	29	0.0	0.021	4.8	LOS A	0.1	0.5	0.13	0.51	35.0
All Vehicles		162	0.0	162	0.0	0.037	1.3	NA	0.1	0.5	0.04	0.15	41.9

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 4 [4 Murray/ Brookong AM - Fut Base]

Network: N101 [AM Fut Base]

Murray Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
NorthEast: Brookong Avenue													
25	T1	61	0.0	61	0.0	0.036	0.1	LOS A	0.0	0.3	0.07	0.06	48.6
26b	R3	6	0.0	6	0.0	0.036	5.9	LOS A	0.0	0.3	0.07	0.06	48.6
Approach		67	0.0	67	0.0	0.036	0.6	NA	0.0	0.3	0.07	0.06	48.6
North: Murray Street													
7b	L3	13	0.0	13	0.0	0.008	4.5	LOS A	0.0	0.2	0.19	0.52	24.2
9a	R1	34	3.1	34	3.1	0.032	3.7	LOS A	0.1	0.8	0.27	0.51	24.6
Approach		46	2.3	46	2.3	0.032	3.9	LOS A	0.1	0.8	0.25	0.51	24.5
SouthWest: Brookong Avenue													
30a	L1	99	2.1	99	2.1	0.104	4.1	LOS A	0.0	0.0	0.00	0.26	46.3
31	T1	100	1.1	100	1.1	0.104	0.0	LOS A	0.0	0.0	0.00	0.26	46.3
Approach		199	1.6	199	1.6	0.104	2.0	NA	0.0	0.0	0.00	0.26	46.3
All Vehicles		313	1.3	313	1.3	0.104	2.0	NA	0.1	0.8	0.05	0.25	45.8

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 9 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 4 [4 Murray/ Brookong PM - Fut Base]

Network: N101 [PM Fut Base]

Murray Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
NorthEast: Brookong Avenue													
25	T1	94	0.0	94	0.0	0.053	0.0	LOS A	0.0	0.3	0.04	0.04	49.1
26b	R3	6	0.0	6	0.0	0.053	5.7	LOS A	0.0	0.3	0.04	0.04	49.1
Approach		100	0.0	100	0.0	0.053	0.4	NA	0.0	0.3	0.04	0.04	49.1
North: Murray Street													
7b	L3	7	0.0	7	0.0	0.005	4.4	LOS A	0.0	0.1	0.15	0.52	24.5
9a	R1	77	0.0	77	0.0	0.071	3.6	LOS A	0.2	1.7	0.26	0.52	24.7
Approach		84	0.0	84	0.0	0.071	3.7	LOS A	0.2	1.7	0.25	0.52	24.7
SouthWest: Brookong Avenue													
30a	L1	67	0.0	67	0.0	0.072	4.1	LOS A	0.0	0.0	0.00	0.25	46.4
31	T1	73	0.0	73	0.0	0.072	0.0	LOS A	0.0	0.0	0.00	0.25	46.4
Approach		140	0.0	140	0.0	0.072	2.0	NA	0.0	0.0	0.00	0.25	46.4
All Vehicles		324	0.0	324	0.0	0.072	1.9	NA	0.2	1.7	0.08	0.25	45.5

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 5 [5 Docker/ Brookong AM - Fut Base]

Network: N101 [AM Fut Base]

Docker Street/ Brookong Avenue
Signals - Fixed Time Isolated Cycle Time = 40 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
2	T1	972	2.5	972	2.5	0.460	6.0	LOS A	5.8	41.8	0.64	0.56	34.4
3	R2	156	1.4	156	1.4	0.281	11.2	LOS A	1.9	13.2	0.61	0.71	27.3
Approach		1127	2.3	1127	2.3	0.460	6.7	LOS A	5.8	41.8	0.64	0.58	33.2
East: Brookong Avenue													
4	L2	125	5.0	125	5.0	0.466	22.9	LOS B	2.4	17.8	0.96	0.77	26.4
6	R2	23	0.0	23	0.0	0.083	21.3	LOS B	0.4	2.9	0.89	0.69	27.2
Approach		148	4.3	148	4.3	0.466	22.7	LOS B	2.4	17.8	0.95	0.76	26.5
North: Docker Street													
7	L2	20	10.5	20	10.5	0.220	8.4	LOS A	2.1	15.7	0.54	0.48	21.2
8	T1	439	4.6	439	4.6	0.220	5.0	LOS A	2.3	17.0	0.54	0.47	21.4
Approach		459	4.8	459	4.8	0.220	5.1	LOS A	2.3	17.0	0.54	0.47	21.4
All Vehicles		1735	3.2	1735	3.2	0.466	7.6	LOS A	5.8	41.8	0.64	0.57	30.3

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 9 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
P2	East Full Crossing	53	9.1	LOS A	0.0	0.0	0.68	0.68
P3	North Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
All Pedestrians		158	12.7	LOS B			0.79	0.79

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

MOVEMENT SUMMARY

Site: 5 [5 Docker/ Brookong PM - Fut Base]

Network: N101 [PM Fut Base]

Docker Street/ Brookong Avenue
Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
2	T1	751	1.3	751	1.3	0.323	6.4	LOS A	5.5	38.6	0.53	0.46	33.6
3	R2	128	0.0	128	0.0	0.324	14.7	LOS B	2.4	16.5	0.63	0.72	23.8
Approach		879	1.1	879	1.1	0.324	7.6	LOS A	5.5	38.6	0.54	0.50	31.7
East: Brookong Avenue													
4	L2	122	0.0	122	0.0	0.329	27.6	LOS B	3.2	22.3	0.90	0.77	24.1
6	R2	4	0.0	4	0.0	0.011	25.5	LOS B	0.1	0.7	0.82	0.63	25.0
Approach		126	0.0	126	0.0	0.329	27.6	LOS B	3.2	22.3	0.90	0.76	24.1
North: Docker Street													
7	L2	16	0.0	16	0.0	0.335	10.1	LOS A	5.6	39.8	0.53	0.48	18.1
8	T1	772	1.6	761	1.6	0.335	6.6	LOS A	5.7	40.4	0.53	0.47	18.3
Approach		787	1.6	777[N1]	1.6	0.335	6.6	LOS A	5.7	40.4	0.53	0.47	18.3
All Vehicles		1793	1.2	1782[N1]	1.2	0.335	8.6	LOS A	5.7	40.4	0.57	0.50	26.9

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P2	East Full Crossing	53	9.1	LOS A	0.0	0.0	0.55	0.55
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		158	19.3	LOS B			0.79	0.79

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

MOVEMENT SUMMARY

Site: 6 [6 Docker/ Chaston AM - Fut Base]

Network: N101 [AM Fut Base]

Docker Street/ Chaston Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	207	4.6	207	4.6	0.304	4.6	LOS A	0.0	0.0	0.00	0.20	48.3
2	T1	949	1.6	949	1.6	0.304	0.0	LOS A	0.0	0.0	0.00	0.08	49.1
Approach		1157	2.1	1157	2.1	0.304	0.9	NA	0.0	0.0	0.00	0.10	48.9
North: Docker Street													
8	T1	454	3.0	454	3.0	0.119	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
9	R2	108	9.7	108	9.7	0.363	19.1	LOS B	1.2	9.3	0.85	0.98	35.6
Approach		562	4.3	562	4.3	0.363	3.7	NA	1.2	9.3	0.16	0.19	46.4
West: Chaston Street													
10	L2	169	3.7	169	3.7	0.189	6.6	LOS A	0.7	5.2	0.45	0.66	42.5
12	R2	35	3.0	35	3.0	0.266	34.7	LOS C	0.9	6.2	0.89	0.98	33.7
Approach		204	3.6	204	3.6	0.266	11.4	LOS A	0.9	6.2	0.52	0.72	39.5
All Vehicles		1923	2.9	1923	2.9	0.363	2.8	NA	1.2	9.3	0.10	0.19	46.9

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 9 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 6 [6 Docker/ Chaston PM - Fut Base]

Network: N101 [PM Fut Base]

Docker Street/ Chaston Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	163	3.9	163	3.9	0.209	4.6	LOS A	0.0	0.0	0.00	0.22	48.2
2	T1	634	1.3	634	1.3	0.209	0.0	LOS A	0.0	0.0	0.00	0.08	49.1
Approach		797	1.8	797	1.8	0.209	1.0	NA	0.0	0.0	0.00	0.11	48.8
North: Docker Street													
8	T1	839	1.0	830	1.0	0.214	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
9	R2	132	4.0	130	4.0	0.230	10.3	LOS A	0.8	5.8	0.66	0.85	40.8
Approach		971	1.4	960 N1	1.4	0.230	1.4	NA	0.8	5.8	0.09	0.12	48.5
West: Chaston Street													
10	L2	184	0.6	184	0.6	0.173	5.7	LOS A	0.7	4.8	0.34	0.58	43.1
12	R2	92	3.4	92	3.4	0.358	20.7	LOS B	1.4	10.3	0.80	0.98	38.6
Approach		276	1.5	276	1.5	0.358	10.6	LOS A	1.4	10.3	0.50	0.71	40.8
All Vehicles		2043	1.6	2033 N1	1.6	0.358	2.5	NA	1.4	10.3	0.11	0.19	47.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 7 [7 Docker/ Rawson AM - Fut Base]

Network: N101 [AM Fut Base]

Docker Street/ Rawson Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
2	T1	1004	2.3	1004	2.3	0.261	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		1004	2.3	1004	2.3	0.261	0.0	NA	0.0	0.0	0.00	0.00	50.0
East: Rawson Lane													
4	L2	23	9.1	23	9.1	0.022	5.5	LOS A	0.1	0.6	0.30	0.53	25.8
Approach		23	9.1	23	9.1	0.022	5.5	LOS A	0.1	0.6	0.30	0.53	25.8
North: Docker Street													
7	L2	26	0.0	26	0.0	0.123	3.9	LOS A	0.0	0.0	0.00	0.06	32.3
8	T1	437	4.8	437	4.8	0.123	0.0	LOS A	0.0	0.0	0.00	0.03	47.6
Approach		463	4.5	463	4.5	0.123	0.2	NA	0.0	0.0	0.00	0.03	45.1
All Vehicles		1491	3.1	1491	3.1	0.261	0.2	NA	0.1	0.6	0.00	0.02	47.1

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 9 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 7 [7 Docker/ Rawson PM - Fut Base]

Network: N101 [PM Fut Base]

Docker Street/ Rawson Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
2	T1	756	1.3	756	1.3	0.195	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		756	1.3	756	1.3	0.195	0.0	NA	0.0	0.0	0.00	0.00	50.0
East: Rawson Lane													
4	L2	39	0.0	39	0.0	0.045	6.2	LOS A	0.1	1.0	0.41	0.61	24.9
Approach		39	0.0	39	0.0	0.045	6.2	LOS A	0.1	1.0	0.41	0.61	24.9
North: Docker Street													
7	L2	8	0.0	8	0.0	0.206	3.9	LOS A	0.0	0.0	0.00	0.01	33.1
8	T1	754	1.7	743	1.7	0.206	0.0	LOS A	0.0	0.0	0.00	0.01	49.5
Approach		762	1.7	751 N1	1.7	0.206	0.0	NA	0.0	0.0	0.00	0.01	48.9
All Vehicles		1557	1.4	1546 N1	1.4	0.206	0.2	NA	0.1	1.0	0.01	0.02	47.6

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 8 [8 Docker/ Hardy AM - Fut Base]

Network: N101 [AM Fut Base]

8 Docker Street/ Hardy Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	71	1.5	71	1.5	0.307	3.9	LOS A	0.0	0.0	0.00	0.07	48.0
2	T1	940	2.4	940	2.4	0.307	0.0	LOS A	0.0	0.0	0.00	0.03	47.3
Approach		1011	2.3	1011	2.3	0.307	0.3	NA	0.0	0.0	0.00	0.04	47.5
North: Docker Street													
8	T1	456	4.6	456	4.6	0.226	0.5	LOS A	0.9	6.6	0.05	0.04	47.5
9	R2	87	4.8	87	4.8	0.226	13.7	LOS A	0.9	6.6	0.77	0.69	37.6
Approach		543	4.7	543	4.7	0.226	2.7	NA	0.9	6.6	0.16	0.15	43.6
West: Hardy Avenue													
10	L2	28	0.0	28	0.0	0.039	6.8	LOS A	0.1	0.8	0.45	0.64	40.0
12	R2	7	0.0	7	0.0	0.059	32.4	LOS C	0.2	1.2	0.89	0.95	22.7
Approach		36	0.0	36	0.0	0.059	12.0	LOS A	0.2	1.2	0.54	0.70	34.6
All Vehicles		1589	3.0	1589	3.0	0.307	1.4	NA	0.9	6.6	0.07	0.09	44.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 9 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 8 [8 Docker/ Hardy PM - Fut Base]

Network: N101 [PM Fut Base]

8 Docker Street/ Hardy Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	43	0.0	43	0.0	0.280	3.9	LOS A	0.0	0.0	0.00	0.06	48.2
2	T1	726	1.3	726	1.3	0.280	0.0	LOS A	0.0	0.0	0.00	0.03	47.8
Approach		769	1.2	769	1.2	0.280	0.2	NA	0.0	0.0	0.00	0.03	47.9
North: Docker Street													
8	T1	757	1.7	746	1.7	0.236	0.8	LOS A	0.9	6.7	0.12	0.04	46.0
9	R2	51	2.1	50	2.1	0.236	10.5	LOS A	0.9	6.7	0.31	0.10	45.4
Approach		807	1.7	796[N1]	1.7	0.236	1.4	NA	0.9	6.7	0.13	0.04	45.9
West: Hardy Avenue													
10	L2	35	0.0	35	0.0	0.051	6.2	LOS A	0.1	0.9	0.40	0.61	40.7
12	R2	12	0.0	12	0.0	0.087	31.2	LOS C	0.3	1.9	0.89	0.95	23.1
Approach		46	0.0	46	0.0	0.087	12.5	LOS A	0.3	1.9	0.53	0.70	34.2
All Vehicles		1623	1.4	1611[N1]	1.4	0.280	1.2	NA	0.9	6.7	0.08	0.06	45.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 9 [9 Edward/ Brookong AM - Fut Base]

Network: N101 [AM Fut Base]

Edward Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Brookong Avenue													
1	L2	41	0.0	41	0.0	0.045	6.2	LOS A	0.2	1.1	0.41	0.61	40.6
3	R2	81	1.3	81	1.3	1.048	204.2	LOS F	8.5	59.8	1.00	1.66	7.8
Approach		122	0.9	122	0.9	1.048	137.6	LOS F	8.5	59.8	0.80	1.31	9.9
East: Edward Street													
4	L2	53	0.0	53	0.0	0.223	5.5	LOS A	0.0	0.0	0.00	0.08	55.8
5	T1	764	10.2	764	10.2	0.223	0.0	LOS A	0.0	0.0	0.00	0.04	57.9
Approach		817	9.5	817	9.5	0.223	0.4	NA	0.0	0.0	0.00	0.04	57.8
West: Edward Street													
11	T1	685	8.6	685	8.6	0.262	1.3	LOS A	1.7	12.7	0.16	0.08	55.0
12	R2	84	0.0	84	0.0	0.262	12.4	LOS A	1.7	12.7	0.55	0.26	39.1
Approach		769	7.7	769	7.7	0.262	2.5	NA	1.7	12.7	0.20	0.10	53.6
All Vehicles		1708	8.1	1708	8.1	1.048	11.1	NA	8.5	59.8	0.15	0.16	35.2

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 9 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 9 [9 Edward/ Brookong PM - Fut Base]

Network: N101 [PM Fut Base]

Edward Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Brookong Avenue													
1	L2	38	0.0	38	0.0	0.047	6.8	LOS A	0.2	1.1	0.46	0.65	39.9
3	R2	73	0.0	73	0.0	2.210	1207.3	LOS F	31.1	217.5	1.00	2.29	1.5
Approach		111	0.0	110 N1	0.0	2.210	795.7	LOS F	31.1	217.5	0.81	1.73	2.0
East: Edward Street													
4	L2	94	0.0	94	0.0	0.292	5.5	LOS A	46.7	340.1	0.00	0.10	54.7
5	T1	1004	5.8	1004	5.8	0.292	0.0	LOS A	47.4	348.0	0.00	0.05	57.5
Approach		1098	5.3	1098	5.3	0.292	0.5	NA	47.4	348.0	0.00	0.05	57.2
West: Edward Street													
11	T1	908	6.0	905	6.0	0.269	0.9	LOS A	1.0	7.5	0.08	0.01	56.8
12	R2	20	0.0	20	0.0	0.269	18.1	LOS B	1.0	7.5	0.19	0.03	49.2
Approach		928	5.9	925 N1	5.9	0.269	1.3	NA	1.0	7.5	0.09	0.02	56.7
All Vehicles		2137	5.3	2134 N1	5.3	2.210	42.0	NA	47.4	348.0	0.08	0.12	16.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1 [1 Edward/ Docker AM - Fut Base Mit]

Network: N101 [AM Fut Base Mit]

Signals - Fixed Time Isolated Cycle Time = 110 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
1	L2	76	0.0	76	0.0	0.864	51.7	LOS D	20.3	142.3	0.93	0.97	26.9
2	T1	666	0.5	666	0.5	0.864	46.9	LOS D	20.5	143.8	0.93	0.97	25.9
3	R2	194	3.3	194	3.3	0.356	37.1	LOS C	8.2	58.7	0.83	0.78	14.5
Approach		936	1.0	936	1.0	0.864	45.3	LOS D	20.5	143.8	0.91	0.93	24.6
East: Edward Street													
4	L2	115	2.8	115	2.8	0.546	36.1	LOS C	15.3	112.5	0.85	0.77	14.4
5	T1	612	7.2	612	7.2	0.546	30.1	LOS C	15.7	117.0	0.85	0.75	34.0
6	R2	35	3.0	35	3.0	0.252	51.4	LOS D	1.7	12.4	0.91	0.75	24.6
Approach		761	6.4	761	6.4	0.546	32.0	LOS C	15.7	117.0	0.85	0.75	31.5
North: Docker Street													
7	L2	44	0.0	44	0.0	0.216	49.2	LOS D	2.9	20.6	0.91	0.73	21.9
8	T1	295	1.1	295	1.1	0.830	53.2	LOS D	15.9	112.0	0.99	0.96	20.6
9	R2	249	0.4	249	0.4	0.780	55.7	LOS D	13.8	96.7	1.00	0.90	29.5
Approach		588	0.7	588	0.7	0.830	54.0	LOS D	15.9	112.0	0.99	0.92	25.1
West: Edward Street													
10	L2	204	3.1	204	3.1	0.676	38.1	LOS C	19.8	144.6	0.91	0.82	35.6
11	T1	654	6.6	654	6.6	0.676	31.5	LOS C	19.8	144.6	0.89	0.79	29.5
12	R2	153	0.0	153	0.0	0.859	67.3	LOS E	9.7	68.2	1.00	1.01	19.0
Approach		1011	4.9	1011	4.9	0.859	38.2	LOS C	19.8	144.6	0.91	0.83	29.1
All Vehicles		3296	3.4	3296	3.4	0.864	41.6	LOS C	20.5	144.6	0.91	0.86	27.3

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	34.5	LOS D	0.1	0.1	0.79	0.79
P2	East Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	32.9	LOS D	0.1	0.1	0.77	0.77
P4	West Full Crossing	53	38.6	LOS D	0.1	0.1	0.84	0.84
All Pedestrians		211	38.8	LOS D			0.84	0.84

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

MOVEMENT SUMMARY

Site: 1 [1 Edward/ Docker PM - Fut Base Mit]

Network: N101 [PM Fut Base Mit]

Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
1	L2	94	1.1	94	1.1	0.894	83.9	LOS F	24.4	172.0	1.00	1.08	20.0
2	T1	453	0.9	453	0.9	0.894	77.8	LOS F	24.4	172.0	0.99	1.05	19.7
3	R2	223	2.4	223	2.4	0.655	65.9	LOS E	15.3	109.0	0.98	0.83	9.4
Approach		769	1.4	769	1.4	0.894	75.1	LOS F	24.4	172.0	0.99	0.99	17.6
East: Edward Street													
4	L2	144	1.5	144	1.5	0.936	84.7	LOS F	33.6	244.8	1.00	1.07	6.7
5	T1	776	6.2	776	6.2	0.936	78.5	LOS F	33.6	244.8	1.00	1.09	20.2
6	R2	58	5.5	58	5.5	0.299	41.7	LOS C	2.8	20.2	0.90	0.74	27.3
Approach		978	5.5	978	5.5	0.936	77.3	LOS F	33.6	244.8	0.99	1.07	19.0
North: Docker Street													
7	L2	39	0.0	39	0.0	0.239	49.0	LOS D	7.0	49.4	0.81	0.69	22.4
8	T1	519	0.8	519	0.8	0.918	67.9	LOS E	35.0	246.8	0.96	1.00	17.7
9	R2	336	1.6	336	1.6	0.653	55.6	LOS D	21.6	153.1	0.94	0.84	29.5
Approach		894	1.1	894	1.1	0.918	62.5	LOS E	35.0	246.8	0.95	0.93	22.8
West: Edward Street													
10	L2	135	3.1	135	3.1	0.692	53.2	LOS D	25.7	187.4	0.94	0.83	31.3
11	T1	638	5.4	638	5.4	0.692	46.2	LOS D	25.7	187.4	0.91	0.80	24.0
12	R2	124	0.8	124	0.8	0.579	45.2	LOS D	5.9	41.9	0.99	0.79	24.5
Approach		897	4.5	897	4.5	0.692	47.1	LOS D	25.7	187.4	0.93	0.80	25.6
All Vehicles		3538	3.2	3538	3.2	0.936	65.4	LOS E	35.0	246.8	0.96	0.95	21.0

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	51.4	LOS E	0.2	0.2	0.83	0.83
P2	East Full Crossing	53	50.5	LOS E	0.2	0.2	0.82	0.82
P3	North Full Crossing	53	45.0	LOS E	0.2	0.2	0.78	0.78
P4	West Full Crossing	53	62.7	LOS F	0.2	0.2	0.92	0.92
All Pedestrians		211	52.4	LOS E			0.84	0.84

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

MOVEMENT SUMMARY

Site: 1 [1 Murray/ Dorris Roy AM - Fut Base]

Network: N101 [AM Fut Base Mit]

Murray Street/ Dorris Roy Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Murray Street													
1	L2	12	0.0	12	0.0	0.042	3.4	LOS A	0.0	0.1	0.01	0.08	45.9
2	T1	66	3.2	66	3.2	0.042	0.0	LOS A	0.0	0.1	0.01	0.08	43.2
3	R2	1	0.0	1	0.0	0.042	3.5	LOS A	0.0	0.1	0.01	0.08	44.8
Approach		79	2.7	79	2.7	0.042	0.6	NA	0.0	0.1	0.01	0.08	44.3
East: Dorris Roy Lane													
4	L2	1	0.0	1	0.0	0.006	4.7	LOS A	0.0	0.1	0.18	0.51	37.2
5	T1	1	0.0	1	0.0	0.006	3.6	LOS A	0.0	0.1	0.18	0.51	40.9
6	R2	4	0.0	4	0.0	0.006	5.1	LOS A	0.0	0.1	0.18	0.51	37.2
Approach		6	0.0	6	0.0	0.006	4.8	LOS A	0.0	0.1	0.18	0.51	38.1
North: Murray Street													
7	L2	2	0.0	2	0.0	0.026	3.9	LOS A	0.0	0.1	0.01	0.03	47.3
8	T1	46	2.3	46	2.3	0.026	0.0	LOS A	0.0	0.1	0.01	0.03	46.9
9	R2	1	0.0	1	0.0	0.026	4.1	LOS A	0.0	0.1	0.01	0.03	44.9
Approach		49	2.1	49	2.1	0.026	0.3	NA	0.0	0.1	0.01	0.03	46.8
West: Dorris Roy Lane													
10	L2	11	0.0	11	0.0	0.010	7.7	LOS A	0.0	0.3	0.16	0.90	30.9
11	T1	1	0.0	1	0.0	0.010	7.7	LOS A	0.0	0.3	0.16	0.90	37.5
12	R2	1	0.0	1	0.0	0.010	7.6	LOS A	0.0	0.3	0.16	0.90	30.9
Approach		13	0.0	13	0.0	0.010	7.7	LOS A	0.0	0.3	0.16	0.90	31.8
All Vehicles		147	2.1	147	2.1	0.042	1.2	NA	0.0	0.3	0.03	0.16	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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 1 [1 Murray/ Dorris Roy PM - Fut Base]

Network: N101 [PM Fut Base Mit]

Murray Street/ Dorris Roy Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	3	0.0	3	0.0	0.039	3.4	LOS A	0.0	0.1	0.01	0.03	47.0
2	T1	69	0.0	69	0.0	0.039	0.0	LOS A	0.0	0.1	0.01	0.03	47.2
3	R2	1	0.0	1	0.0	0.039	3.5	LOS A	0.0	0.1	0.01	0.03	45.6
Approach		74	0.0	74	0.0	0.039	0.2	NA	0.0	0.1	0.01	0.03	47.1
East: Dorris Roy Lane													
4	L2	1	0.0	1	0.0	0.003	4.7	LOS A	0.0	0.1	0.15	0.49	37.9
5	T1	1	0.0	1	0.0	0.003	3.6	LOS A	0.0	0.1	0.15	0.49	41.4
6	R2	1	0.0	1	0.0	0.003	5.1	LOS A	0.0	0.1	0.15	0.49	37.9
Approach		3	0.0	3	0.0	0.003	4.5	LOS A	0.0	0.1	0.15	0.49	39.4
North: Murray Street													
7	L2	1	0.0	1	0.0	0.026	4.0	LOS A	0.0	0.2	0.03	0.05	47.0
8	T1	45	0.0	45	0.0	0.026	0.0	LOS A	0.0	0.2	0.03	0.05	45.6
9	R2	3	0.0	3	0.0	0.026	4.0	LOS A	0.0	0.2	0.03	0.05	44.5
Approach		49	0.0	49	0.0	0.026	0.4	NA	0.0	0.2	0.03	0.05	45.5
West: Dorris Roy Lane													
10	L2	21	0.0	21	0.0	0.025	7.7	LOS A	0.1	0.6	0.17	0.90	30.9
11	T1	1	0.0	1	0.0	0.025	7.7	LOS A	0.1	0.6	0.17	0.90	37.5
12	R2	7	0.0	7	0.0	0.025	7.6	LOS A	0.1	0.6	0.17	0.90	30.9
Approach		29	0.0	29	0.0	0.025	7.7	LOS A	0.1	0.6	0.17	0.90	31.3
All Vehicles		156	0.0	156	0.0	0.039	1.7	NA	0.1	0.6	0.05	0.21	39.1

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 10 [10 Edward/ Lewis AM - Fut Base]

Network: N101 [AM Fut Base Mit]

Edward Street/ Lewis Drive
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Lewis Drive													
1	L2	38	0.0	38	0.0	0.040	6.0	LOS A	0.1	1.0	0.38	0.59	28.9
Approach		38	0.0	38	0.0	0.040	6.0	LOS A	0.1	1.0	0.38	0.59	28.9
East: Edward Street													
4	L2	49	0.0	49	0.0	0.198	5.5	LOS A	0.0	0.0	0.00	0.08	49.5
5	T1	677	10.3	677	10.3	0.198	0.0	LOS A	0.0	0.0	0.00	0.04	57.8
Approach		726	9.6	726	9.6	0.198	0.4	NA	0.0	0.0	0.00	0.04	56.8
West: Edward Street													
11	T1	768	7.7	768	7.7	0.207	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R2	62	1.7	62	1.7	0.101	10.1	LOS A	0.3	2.2	0.60	0.82	33.6
Approach		831	7.2	831	7.2	0.207	0.8	NA	0.3	2.2	0.04	0.06	54.9
All Vehicles		1595	8.1	1595	8.1	0.207	0.7	NA	0.3	2.2	0.03	0.06	55.0

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 10 [10 Edward/ Lewis PM - Fut Base]

Network: N101 [PM Fut Base Mit]

Edward Street/ Lewis Drive
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Lewis Drive													
1	L2	82	0.0	82	0.0	0.202	7.0	LOS A	0.4	2.5	0.47	0.71	27.2
Approach		82	0.0	82	0.0	0.202	7.0	LOS A	0.4	2.5	0.47	0.71	27.2
East: Edward Street													
4	L2	53	0.0	53	0.0	0.270	5.5	LOS A	6.9	50.4	0.00	0.06	50.0
5	T1	964	5.1	964	5.1	0.270	0.0	LOS A	6.9	50.4	0.00	0.03	58.3
Approach		1017	4.9	1017	4.9	0.270	0.3	NA	6.9	50.4	0.00	0.03	57.6
West: Edward Street													
11	T1	886	6.1	886	6.1	0.236	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
12	R2	38	0.0	38	0.0	0.091	13.3	LOS A	0.3	1.8	0.73	0.89	30.2
Approach		924	5.8	924	5.8	0.236	0.6	NA	0.3	1.8	0.03	0.04	56.3
All Vehicles		2023	5.1	2023	5.1	0.270	0.7	NA	6.9	50.4	0.03	0.06	55.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [2 Murray/ Yabtree AM - Fut Base]

Network: N101 [AM Fut Base Mit]

Murray Street/ Yabtree Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	13	0.0	13	0.0	0.040	4.6	LOS A	0.0	0.0	0.00	0.09	46.2
2	T1	64	1.6	64	1.6	0.040	0.0	LOS A	0.0	0.0	0.00	0.09	45.3
Approach		77	1.4	77	1.4	0.040	0.8	NA	0.0	0.0	0.00	0.09	45.6
North: Murray Street													
8	T1	45	2.3	45	2.3	0.025	0.0	LOS A	0.0	0.1	0.03	0.04	46.2
9	R2	3	0.0	3	0.0	0.025	3.6	LOS A	0.0	0.1	0.03	0.04	44.6
Approach		48	2.2	48	2.2	0.025	0.3	NA	0.0	0.1	0.03	0.04	45.8
West: Yabtree Street													
10	L2	18	5.9	18	5.9	0.021	4.8	LOS A	0.1	0.5	0.15	0.51	34.8
12	R2	11	0.0	11	0.0	0.021	4.9	LOS A	0.1	0.5	0.15	0.51	34.8
Approach		28	3.7	28	3.7	0.021	4.9	LOS A	0.1	0.5	0.15	0.51	34.8
All Vehicles		154	2.1	154	2.1	0.040	1.4	NA	0.1	0.5	0.04	0.15	42.1

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [2 Murray/ Yabtree PM - Fut Base]

Network: N101 [PM Fut Base Mit]

Murray Street/ Yabtree Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	6	0.0	6	0.0	0.034	4.6	LOS A	0.0	0.0	0.00	0.05	47.0
2	T1	59	0.0	59	0.0	0.034	0.0	LOS A	0.0	0.0	0.00	0.05	47.1
Approach		65	0.0	65	0.0	0.034	0.4	NA	0.0	0.0	0.00	0.05	47.1
North: Murray Street													
8	T1	51	0.0	51	0.0	0.027	0.0	LOS A	0.0	0.1	0.01	0.02	47.7
9	R2	2	0.0	2	0.0	0.027	3.5	LOS A	0.0	0.1	0.01	0.02	44.9
Approach		53	0.0	53	0.0	0.027	0.2	NA	0.0	0.1	0.01	0.02	47.3
West: Yabtree Street													
10	L2	20	0.0	20	0.0	0.024	4.7	LOS A	0.1	0.6	0.14	0.51	34.9
12	R2	13	0.0	13	0.0	0.024	4.9	LOS A	0.1	0.6	0.14	0.51	34.9
Approach		33	0.0	33	0.0	0.024	4.8	LOS A	0.1	0.6	0.14	0.51	34.9
All Vehicles		151	0.0	151	0.0	0.034	1.3	NA	0.1	0.6	0.04	0.14	42.1

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 4 [3 Edward/ Murray AM - Fut Base]

Network: N101 [AM Fut Base Mit]

Giveway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	86	1.2	86	1.2	0.111	6.5	LOS A	0.4	2.8	0.49	0.70	21.1
2	T1	35	0.0	35	0.0	0.962	215.9	LOS F	4.9	35.0	1.00	1.34	4.8
3	R2	13	8.3	13	8.3	0.962	268.1	LOS F	4.9	35.0	1.00	1.34	1.0
Approach		134	1.6	134	1.6	0.962	85.6	LOS F	4.9	35.0	0.67	0.92	5.1
East: Edward Street													
4	L2	13	0.0	13	0.0	0.262	5.5	LOS A	0.0	0.0	0.00	0.02	59.2
5	T1	767	7.4	767	7.4	0.262	1.1	LOS A	1.4	10.8	0.14	0.06	52.6
6	R2	55	5.8	55	5.8	0.262	12.9	LOS A	1.4	10.8	0.37	0.12	46.3
Approach		835	7.2	835	7.2	0.262	1.9	NA	1.4	10.8	0.15	0.06	51.7
North: Murray Street													
7	L2	22	4.8	22	4.8	0.027	6.7	LOS A	0.1	0.7	0.44	0.62	37.8
8	T1	16	0.0	16	0.0	0.593	115.4	LOS F	1.9	13.3	0.98	1.06	6.6
9	R2	11	0.0	11	0.0	0.593	166.2	LOS F	1.9	13.3	0.98	1.06	6.6
Approach		48	2.2	48	2.2	0.593	76.8	LOS F	1.9	13.3	0.73	0.86	10.6
West: Edqard Street													
10	L2	5	20.0	5	20.0	0.225	5.8	LOS A	0.0	0.0	0.00	0.01	50.4
11	T1	805	6.9	805	6.9	0.225	0.2	LOS A	0.2	1.8	0.03	0.01	58.1
12	R2	7	14.3	7	14.3	0.225	13.6	LOS A	0.2	1.8	0.05	0.01	56.5
Approach		818	7.1	818	7.1	0.225	0.4	NA	0.2	1.8	0.03	0.01	57.9
All Vehicles		1835	6.6	1835	6.6	0.962	9.3	NA	4.9	35.0	0.15	0.12	33.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 4 [3 Edward/ Murray PM - Fut Base]

Network: N101 [PM Fut Base Mit]

Giveway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	98	0.0	98	0.0	0.133	6.9	LOS A	0.5	3.3	0.52	0.73	20.3
2	T1	32	0.0	32	0.0	1.000	235.6	LOS F	6.8	47.9	1.00	1.43	4.6
3	R2	32	0.0	32	0.0	1.000	241.2	LOS F	6.8	47.9	1.00	1.43	1.0
Approach		161	0.0	161	0.0	1.000	97.7	LOS F	6.8	47.9	0.71	1.01	4.0
East: Edward Street													
4	L2	25	0.0	25	0.0	0.293	5.6	LOS A	40.5	297.4	0.00	0.03	58.7
5	T1	938	5.9	938	5.9	0.293	0.8	LOS A	40.5	297.4	0.10	0.04	54.1
6	R2	39	0.0	39	0.0	0.293	13.4	LOS A	37.1	271.9	0.24	0.06	48.6
Approach		1002	5.6	1002	5.6	0.293	1.4	NA	40.5	297.4	0.11	0.04	53.7
North: Murray Street													
7	L2	46	4.5	46	4.5	0.055	6.7	LOS A	0.2	1.4	0.44	0.64	37.8
8	T1	17	0.0	17	0.0	0.744	155.2	LOS F	2.7	19.7	0.99	1.12	5.4
9	R2	19	5.6	19	5.6	0.744	182.4	LOS F	2.7	19.7	0.99	1.12	5.4
Approach		82	3.8	82	3.8	0.744	77.7	LOS F	2.7	19.7	0.68	0.85	10.5
West: Edqard Street													
10	L2	46	2.3	46	2.3	0.240	5.6	LOS A	0.0	0.0	0.00	0.06	54.5
11	T1	805	5.0	805	5.0	0.240	0.4	LOS A	0.5	3.6	0.05	0.04	54.9
12	R2	13	0.0	13	0.0	0.240	15.3	LOS B	0.5	3.6	0.10	0.02	53.1
Approach		864	4.8	864	4.8	0.240	0.9	NA	0.5	3.6	0.05	0.04	54.8
All Vehicles		2109	4.7	2109	4.7	1.000	11.5	NA	40.5	297.4	0.15	0.15	30.4

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [3 Murray/ Yathong AM - Fut Base]

Network: N101 [AM Fut Base Mit]

Murray Street/ Yathong Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	15	14.3	15	14.3	0.040	3.4	LOS A	0.0	0.0	0.00	0.10	42.4
2	T1	60	1.8	60	1.8	0.040	0.0	LOS A	0.0	0.0	0.00	0.10	42.9
Approach		75	4.2	75	4.2	0.040	0.7	NA	0.0	0.0	0.00	0.10	42.7
North: Murray Street													
8	T1	51	2.1	51	2.1	0.030	0.0	LOS A	0.0	0.3	0.04	0.06	45.6
9	R2	6	0.0	6	0.0	0.030	4.8	LOS A	0.0	0.3	0.04	0.06	44.7
Approach		57	1.9	57	1.9	0.030	0.6	NA	0.0	0.3	0.04	0.06	45.4
West: Yathong Street													
10	L2	32	0.0	32	0.0	0.028	4.7	LOS A	0.1	0.7	0.14	0.51	34.9
12	R2	8	0.0	8	0.0	0.028	5.0	LOS A	0.1	0.7	0.14	0.51	34.9
Approach		40	0.0	40	0.0	0.028	4.8	LOS A	0.1	0.7	0.14	0.51	34.9
All Vehicles		172	2.5	172	2.5	0.040	1.6	NA	0.1	0.7	0.05	0.18	40.4

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [3 Murray/ Yathong PM - Fut Base]

Network: N101 [PM Fut Base Mit]

Murray Street/ Yathong Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	9	0.0	9	0.0	0.032	3.4	LOS A	0.0	0.0	0.00	0.08	46.0
2	T1	53	0.0	53	0.0	0.032	0.0	LOS A	0.0	0.0	0.00	0.08	43.8
Approach		62	0.0	62	0.0	0.032	0.5	NA	0.0	0.0	0.00	0.08	44.7
North: Murray Street													
8	T1	63	0.0	63	0.0	0.037	0.0	LOS A	0.0	0.3	0.04	0.06	46.0
9	R2	7	0.0	7	0.0	0.037	4.7	LOS A	0.0	0.3	0.04	0.06	44.8
Approach		71	0.0	71	0.0	0.037	0.5	NA	0.0	0.3	0.04	0.06	45.7
West: Yathong Street													
10	L2	21	0.0	21	0.0	0.021	4.7	LOS A	0.1	0.5	0.13	0.51	35.0
12	R2	8	0.0	8	0.0	0.021	5.0	LOS A	0.1	0.5	0.13	0.51	35.0
Approach		29	0.0	29	0.0	0.021	4.8	LOS A	0.1	0.5	0.13	0.51	35.0
All Vehicles		162	0.0	162	0.0	0.037	1.3	NA	0.1	0.5	0.04	0.15	41.9

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 4 [4 Murray/ Brookong AM - Fut Base]

Network: N101 [AM Fut Base Mit]

Murray Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
NorthEast: Brookong Avenue													
25	T1	61	0.0	61	0.0	0.036	0.1	LOS A	0.0	0.3	0.07	0.06	48.6
26b	R3	6	0.0	6	0.0	0.036	5.9	LOS A	0.0	0.3	0.07	0.06	48.6
Approach		67	0.0	67	0.0	0.036	0.6	NA	0.0	0.3	0.07	0.06	48.6
North: Murray Street													
7b	L3	13	0.0	13	0.0	0.008	4.5	LOS A	0.0	0.2	0.19	0.52	24.2
9a	R1	34	3.1	34	3.1	0.032	3.7	LOS A	0.1	0.8	0.27	0.51	24.6
Approach		46	2.3	46	2.3	0.032	3.9	LOS A	0.1	0.8	0.25	0.51	24.5
SouthWest: Brookong Avenue													
30a	L1	99	2.1	99	2.1	0.104	4.1	LOS A	0.0	0.0	0.00	0.26	46.3
31	T1	100	1.1	100	1.1	0.104	0.0	LOS A	0.0	0.0	0.00	0.26	46.3
Approach		199	1.6	199	1.6	0.104	2.0	NA	0.0	0.0	0.00	0.26	46.3
All Vehicles		313	1.3	313	1.3	0.104	2.0	NA	0.1	0.8	0.05	0.25	45.8

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 4 [4 Murray/ Brookong PM - Fut Base]

Network: N101 [PM Fut Base Mit]

Murray Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
NorthEast: Brookong Avenue													
25	T1	94	0.0	94	0.0	0.053	0.0	LOS A	0.0	0.3	0.04	0.04	49.1
26b	R3	6	0.0	6	0.0	0.053	5.7	LOS A	0.0	0.3	0.04	0.04	49.1
Approach		100	0.0	100	0.0	0.053	0.4	NA	0.0	0.3	0.04	0.04	49.1
North: Murray Street													
7b	L3	7	0.0	7	0.0	0.005	4.4	LOS A	0.0	0.1	0.15	0.52	24.5
9a	R1	77	0.0	77	0.0	0.071	3.6	LOS A	0.2	1.7	0.26	0.52	24.7
Approach		84	0.0	84	0.0	0.071	3.7	LOS A	0.2	1.7	0.25	0.52	24.7
SouthWest: Brookong Avenue													
30a	L1	67	0.0	67	0.0	0.072	4.1	LOS A	0.0	0.0	0.00	0.25	46.4
31	T1	73	0.0	73	0.0	0.072	0.0	LOS A	0.0	0.0	0.00	0.25	46.4
Approach		140	0.0	140	0.0	0.072	2.0	NA	0.0	0.0	0.00	0.25	46.4
All Vehicles		324	0.0	324	0.0	0.072	1.9	NA	0.2	1.7	0.08	0.25	45.5

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 5 [5 Docker/ Brookong AM - Fut Base]

Network: N101 [AM Fut Base Mit]

Docker Street/ Brookong Avenue
Signals - Fixed Time Isolated Cycle Time = 40 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
2	T1	972	2.5	972	2.5	0.460	6.0	LOS A	5.8	41.8	0.64	0.56	34.4
3	R2	156	1.4	156	1.4	0.281	11.2	LOS A	1.9	13.2	0.61	0.71	27.3
Approach		1127	2.3	1127	2.3	0.460	6.7	LOS A	5.8	41.8	0.64	0.58	33.2
East: Brookong Avenue													
4	L2	125	5.0	125	5.0	0.466	22.9	LOS B	2.4	17.8	0.96	0.77	26.4
6	R2	23	0.0	23	0.0	0.083	21.3	LOS B	0.4	2.9	0.89	0.69	27.2
Approach		148	4.3	148	4.3	0.466	22.7	LOS B	2.4	17.8	0.95	0.76	26.5
North: Docker Street													
7	L2	20	10.5	20	10.5	0.220	8.4	LOS A	2.1	15.7	0.54	0.48	21.2
8	T1	439	4.6	439	4.6	0.220	5.0	LOS A	2.3	17.0	0.54	0.47	21.4
Approach		459	4.8	459	4.8	0.220	5.1	LOS A	2.3	17.0	0.54	0.47	21.4
All Vehicles		1735	3.2	1735	3.2	0.466	7.6	LOS A	5.8	41.8	0.64	0.57	30.3

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
P2	East Full Crossing	53	9.1	LOS A	0.0	0.0	0.68	0.68
P3	North Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
All Pedestrians		158	12.7	LOS B			0.79	0.79

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

MOVEMENT SUMMARY

Site: 5 [5 Docker/ Brookong PM - Fut Base]

Network: N101 [PM Fut Base Mit]

Docker Street/ Brookong Avenue
Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
2	T1	751	1.3	751	1.3	0.323	6.4	LOS A	5.5	38.6	0.53	0.46	33.6
3	R2	128	0.0	128	0.0	0.328	14.7	LOS B	2.4	16.5	0.63	0.72	23.8
Approach		879	1.1	879	1.1	0.328	7.6	LOS A	5.5	38.6	0.55	0.50	31.7
East: Brookong Avenue													
4	L2	122	0.0	122	0.0	0.329	27.6	LOS B	3.2	22.3	0.90	0.77	24.1
6	R2	4	0.0	4	0.0	0.011	25.5	LOS B	0.1	0.7	0.82	0.63	25.0
Approach		126	0.0	126	0.0	0.329	27.6	LOS B	3.2	22.3	0.90	0.76	24.1
North: Docker Street													
7	L2	16	0.0	16	0.0	0.340	10.1	LOS A	5.7	40.5	0.54	0.48	18.0
8	T1	772	1.6	772	1.6	0.340	6.6	LOS A	5.8	41.1	0.54	0.47	18.3
Approach		787	1.6	787	1.6	0.340	6.7	LOS A	5.8	41.1	0.54	0.47	18.3
All Vehicles		1793	1.2	1793	1.2	0.340	8.6	LOS A	5.8	41.1	0.57	0.51	26.8

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P2	East Full Crossing	53	9.1	LOS A	0.0	0.0	0.55	0.55
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		158	19.3	LOS B			0.79	0.79

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

MOVEMENT SUMMARY

Site: 6 [6 Docker/ Chaston AM - Fut Base]

Network: N101 [AM Fut Base Mit]

Docker Street/ Chaston Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	207	4.6	207	4.6	0.304	4.6	LOS A	0.0	0.0	0.00	0.20	48.3
2	T1	949	1.6	949	1.6	0.304	0.0	LOS A	0.0	0.0	0.00	0.08	49.1
Approach		1157	2.1	1157	2.1	0.304	0.9	NA	0.0	0.0	0.00	0.10	48.9
North: Docker Street													
8	T1	454	3.0	454	3.0	0.119	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
9	R2	108	9.7	108	9.7	0.363	19.1	LOS B	1.2	9.3	0.85	0.98	35.6
Approach		562	4.3	562	4.3	0.363	3.7	NA	1.2	9.3	0.16	0.19	46.4
West: Chaston Street													
10	L2	169	3.7	169	3.7	0.189	6.6	LOS A	0.7	5.2	0.45	0.66	42.5
12	R2	35	3.0	35	3.0	0.266	34.7	LOS C	0.9	6.2	0.89	0.98	33.7
Approach		204	3.6	204	3.6	0.266	11.4	LOS A	0.9	6.2	0.52	0.72	39.5
All Vehicles		1923	2.9	1923	2.9	0.363	2.8	NA	1.2	9.3	0.10	0.19	46.9

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 6 [6 Docker/ Chaston PM - Fut Base]

Network: N101 [PM Fut Base Mit]

Docker Street/ Chaston Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	163	3.9	163	3.9	0.209	4.6	LOS A	0.0	0.0	0.00	0.22	48.2
2	T1	634	1.3	634	1.3	0.209	0.0	LOS A	0.0	0.0	0.00	0.08	49.1
Approach		797	1.8	797	1.8	0.209	1.0	NA	0.0	0.0	0.00	0.11	48.8
North: Docker Street													
8	T1	839	1.0	839	1.0	0.217	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
9	R2	132	4.0	132	4.0	0.233	10.3	LOS A	0.8	5.9	0.66	0.85	40.8
Approach		971	1.4	971	1.4	0.233	1.4	NA	0.8	5.9	0.09	0.12	48.5
West: Chaston Street													
10	L2	184	0.6	184	0.6	0.173	5.7	LOS A	0.7	4.8	0.34	0.58	43.1
12	R2	92	3.4	92	3.4	0.359	20.7	LOS B	1.4	10.4	0.81	0.98	38.6
Approach		276	1.5	276	1.5	0.359	10.7	LOS A	1.4	10.4	0.50	0.71	40.8
All Vehicles		2043	1.6	2043	1.6	0.359	2.5	NA	1.4	10.4	0.11	0.19	47.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 7 [7 Docker/ Rawson AM - Fut Base]

Network: N101 [AM Fut Base Mit]

Docker Street/ Rawson Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
2	T1	1004	2.3	1004	2.3	0.261	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		1004	2.3	1004	2.3	0.261	0.0	NA	0.0	0.0	0.00	0.00	50.0
East: Rawson Lane													
4	L2	23	9.1	23	9.1	0.022	5.5	LOS A	0.1	0.6	0.30	0.53	25.8
Approach		23	9.1	23	9.1	0.022	5.5	LOS A	0.1	0.6	0.30	0.53	25.8
North: Docker Street													
7	L2	26	0.0	26	0.0	0.123	3.9	LOS A	0.0	0.0	0.00	0.06	32.3
8	T1	437	4.8	437	4.8	0.123	0.0	LOS A	0.0	0.0	0.00	0.03	47.6
Approach		463	4.5	463	4.5	0.123	0.2	NA	0.0	0.0	0.00	0.03	45.1
All Vehicles		1491	3.1	1491	3.1	0.261	0.2	NA	0.1	0.6	0.00	0.02	47.1

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 7 [7 Docker/ Rawson PM - Fut Base]

Network: N101 [PM Fut Base Mit]

Docker Street/ Rawson Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
2	T1	756	1.3	756	1.3	0.195	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		756	1.3	756	1.3	0.195	0.0	NA	0.0	0.0	0.00	0.00	50.0
East: Rawson Lane													
4	L2	39	0.0	39	0.0	0.046	6.3	LOS A	0.1	1.0	0.41	0.61	24.8
Approach		39	0.0	39	0.0	0.046	6.3	LOS A	0.1	1.0	0.41	0.61	24.8
North: Docker Street													
7	L2	8	0.0	8	0.0	0.212	3.9	LOS A	0.0	0.0	0.00	0.01	33.1
8	T1	754	1.7	754	1.7	0.212	0.0	LOS A	0.0	0.0	0.00	0.01	49.5
Approach		762	1.7	762	1.7	0.212	0.0	NA	0.0	0.0	0.00	0.01	48.9
All Vehicles		1557	1.4	1557	1.4	0.212	0.2	NA	0.1	1.0	0.01	0.02	47.6

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 8 [8 Docker/ Hardy AM - Fut Base]

Network: N101 [AM Fut Base Mit]

8 Docker Street/ Hardy Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	71	1.5	71	1.5	0.264	3.9	LOS A	0.0	0.0	0.00	0.08	47.9
2	T1	940	2.4	940	2.4	0.264	0.0	LOS A	0.0	0.0	0.00	0.03	47.4
Approach		1011	2.3	1011	2.3	0.264	0.3	NA	0.0	0.0	0.00	0.04	47.5
North: Docker Street													
8	T1	456	4.6	456	4.6	0.226	0.6	LOS A	0.9	6.6	0.05	0.04	47.4
9	R2	87	4.8	87	4.8	0.226	13.6	LOS A	0.9	6.6	0.77	0.68	37.7
Approach		543	4.7	543	4.7	0.226	2.7	NA	0.9	6.6	0.16	0.15	43.6
West: Hardy Avenue													
10	L2	28	0.0	28	0.0	0.034	6.6	LOS A	0.1	0.8	0.44	0.63	40.2
12	R2	7	0.0	7	0.0	0.059	32.3	LOS C	0.2	1.2	0.89	0.95	22.7
Approach		36	0.0	36	0.0	0.059	11.9	LOS A	0.2	1.2	0.53	0.69	34.7
All Vehicles		1589	3.0	1589	3.0	0.264	1.3	NA	0.9	6.6	0.07	0.09	44.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 8 [8 Docker/ Hardy PM - Fut Base]

Network: N101 [PM Fut Base Mit]

8 Docker Street/ Hardy Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	43	0.0	43	0.0	0.199	3.9	LOS A	0.0	0.0	0.00	0.06	48.1
2	T1	726	1.3	726	1.3	0.199	0.0	LOS A	0.0	0.0	0.00	0.03	47.8
Approach		769	1.2	769	1.2	0.199	0.2	NA	0.0	0.0	0.00	0.03	47.9
North: Docker Street													
8	T1	757	1.7	757	1.7	0.239	0.8	LOS A	1.0	6.8	0.12	0.04	46.0
9	R2	51	2.1	51	2.1	0.239	10.5	LOS A	1.0	6.8	0.31	0.10	45.5
Approach		807	1.7	807	1.7	0.239	1.4	NA	1.0	6.8	0.13	0.04	45.9
West: Hardy Avenue													
10	L2	35	0.0	35	0.0	0.037	6.0	LOS A	0.1	0.9	0.39	0.59	40.8
12	R2	12	0.0	12	0.0	0.087	31.4	LOS C	0.3	1.9	0.89	0.95	23.1
Approach		46	0.0	46	0.0	0.087	12.4	LOS A	0.3	1.9	0.51	0.68	34.2
All Vehicles		1623	1.4	1623	1.4	0.239	1.2	NA	1.0	6.8	0.08	0.06	45.4

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 9 [9 Edward/ Brookong AM - Fut Base]

Network: N101 [AM Fut Base Mit]

Edward Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Brookong Avenue													
1	L2	41	0.0	41	0.0	0.045	6.2	LOS A	0.2	1.1	0.41	0.61	40.6
3	R2	81	1.3	81	1.3	1.048	204.2	LOS F	8.5	59.8	1.00	1.66	7.8
Approach		122	0.9	122	0.9	1.048	137.6	LOS F	8.5	59.8	0.80	1.31	9.9
East: Edward Street													
4	L2	53	0.0	53	0.0	0.223	5.5	LOS A	0.0	0.0	0.00	0.08	55.8
5	T1	764	10.2	764	10.2	0.223	0.0	LOS A	0.0	0.0	0.00	0.04	57.9
Approach		817	9.5	817	9.5	0.223	0.4	NA	0.0	0.0	0.00	0.04	57.8
West: Edward Street													
11	T1	685	8.6	685	8.6	0.262	1.3	LOS A	1.7	12.7	0.16	0.08	55.0
12	R2	84	0.0	84	0.0	0.262	12.4	LOS A	1.7	12.7	0.55	0.26	39.1
Approach		769	7.7	769	7.7	0.262	2.5	NA	1.7	12.7	0.20	0.10	53.6
All Vehicles		1708	8.1	1708	8.1	1.048	11.1	NA	8.5	59.8	0.15	0.16	35.2

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.1 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 9 [9 Edward/ Brookong PM - Fut Base]

Network: N101 [PM Fut Base Mit]

Edward Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Brookong Avenue													
1	L2	38	0.0	38	0.0	0.047	6.8	LOS A	0.2	1.1	0.46	0.65	39.9
3	R2	73	0.0	73	0.0	2.228	1224.0	LOS F	31.3	219.2	1.00	2.29	1.5
Approach		111	0.0	111	0.0	2.228	806.7	LOS F	31.3	219.2	0.81	1.73	2.0
East: Edward Street													
4	L2	94	0.0	94	0.0	0.292	5.5	LOS A	40.5	295.2	0.00	0.10	54.7
5	T1	1004	5.8	1004	5.8	0.292	0.0	LOS A	40.5	295.2	0.00	0.05	57.5
Approach		1098	5.3	1098	5.3	0.292	0.5	NA	40.5	295.2	0.00	0.05	57.2
West: Edward Street													
11	T1	908	6.0	908	6.0	0.270	0.9	LOS A	1.0	7.6	0.08	0.01	56.8
12	R2	20	0.0	20	0.0	0.270	18.1	LOS B	1.0	7.6	0.19	0.03	49.2
Approach		928	5.9	928	5.9	0.270	1.3	NA	1.0	7.6	0.09	0.02	56.7
All Vehicles		2137	5.3	2137	5.3	2.228	42.5	NA	40.5	295.2	0.08	0.12	16.1

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 1 [1 Edward/ Docker AM - Fut]

Network: N101 [AM Fut Dev]

Signals - Fixed Time Isolated Cycle Time = 110 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
1	L2	76	0.0	76	0.0	0.864	51.7	LOS D	20.3	142.3	0.93	0.97	26.9
2	T1	666	0.5	666	0.5	0.864	46.9	LOS D	20.5	143.8	0.93	0.97	26.0
3	R2	201	3.1	201	3.1	0.369	37.2	LOS C	8.5	61.2	0.83	0.78	14.5
Approach		943	1.0	943	1.0	0.864	45.2	LOS D	20.5	143.8	0.91	0.93	24.6
East: Edward Street													
4	L2	116	2.7	116	2.7	0.548	35.5	LOS C	15.7	114.9	0.85	0.77	14.7
5	T1	633	7.0	633	7.0	0.548	29.5	LOS C	16.1	119.3	0.85	0.75	34.3
6	R2	36	2.9	36	2.9	0.286	53.7	LOS D	1.8	13.1	0.93	0.75	24.0
Approach		784	6.2	784	6.2	0.548	31.5	LOS C	16.1	119.3	0.85	0.75	31.8
North: Docker Street													
7	L2	46	0.0	46	0.0	0.230	50.3	LOS D	3.0	20.8	0.92	0.74	21.5
8	T1	295	1.1	295	1.1	0.884	58.9	LOS E	17.0	120.3	1.00	1.04	19.4
9	R2	249	0.4	249	0.4	0.823	58.9	LOS E	14.3	100.4	1.00	0.93	28.7
Approach		591	0.7	591	0.7	0.884	58.2	LOS E	17.0	120.3	0.99	0.97	24.1
West: Edward Street													
10	L2	204	3.1	204	3.1	0.658	37.1	LOS C	19.6	142.8	0.90	0.81	35.9
11	T1	692	6.2	692	6.2	0.658	31.1	LOS C	20.5	150.9	0.89	0.79	29.7
12	R2	153	0.0	153	0.0	0.858	67.0	LOS E	9.8	68.3	1.00	1.01	19.0
Approach		1048	4.7	1048	4.7	0.858	37.5	LOS C	20.5	150.9	0.91	0.83	29.3
All Vehicles		3366	3.3	3366	3.3	0.884	41.9	LOS C	20.5	150.9	0.91	0.86	27.2

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	33.7	LOS D	0.1	0.1	0.78	0.78
P2	East Full Crossing	53	49.3	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	32.1	LOS D	0.1	0.1	0.77	0.77
P4	West Full Crossing	53	38.6	LOS D	0.1	0.1	0.84	0.84
All Pedestrians		211	38.4	LOS D			0.83	0.83

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

MOVEMENT SUMMARY

Site: 1 [1 Edward/ Docker PM - Fut]

Network: N101 [PM Fut Dev]

Signals - Fixed Time Isolated Cycle Time = 150 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
1	L2	94	1.1	94	1.1	0.894	83.9	LOS F	24.4	172.0	1.00	1.08	20.0
2	T1	453	0.9	453	0.9	0.894	77.8	LOS F	24.4	172.0	0.99	1.05	19.7
3	R2	232	2.3	232	2.3	0.679	66.3	LOS E	15.9	113.7	0.99	0.83	9.3
Approach		778	1.4	778	1.4	0.894	75.1	LOS F	24.4	172.0	0.99	0.99	17.6
East: Edward Street													
4	L2	145	1.4	145	1.4	0.910	75.2	LOS F	33.6	244.8	1.00	1.02	7.5
5	T1	815	5.9	815	5.9	0.910	68.9	LOS E	33.6	244.8	0.99	1.03	22.0
6	R2	61	5.2	61	5.2	0.295	41.7	LOS C	2.8	20.8	0.92	0.75	27.2
Approach		1021	5.3	1021	5.3	0.910	68.2	LOS E	33.6	244.8	0.99	1.01	20.7
North: Docker Street													
7	L2	41	0.0	41	0.0	0.240	49.0	LOS D	7.1	49.6	0.81	0.70	22.4
8	T1	519	0.8	519	0.8	0.923	69.0	LOS E	35.5	249.9	0.96	1.01	17.5
9	R2	336	1.6	336	1.6	0.653	55.6	LOS D	21.6	153.1	0.94	0.84	29.5
Approach		896	1.1	896	1.1	0.923	63.0	LOS E	35.5	249.9	0.95	0.93	22.7
West: Edward Street													
10	L2	135	3.1	135	3.1	0.775	57.9	LOS E	28.8	209.1	0.98	0.88	30.1
11	T1	668	5.2	668	5.2	0.775	51.0	LOS D	28.8	209.1	0.95	0.85	22.6
12	R2	124	0.8	124	0.8	0.676	47.0	LOS D	6.1	43.2	1.00	0.81	23.9
Approach		927	4.3	927	4.3	0.775	51.5	LOS D	28.8	209.1	0.96	0.85	24.3
All Vehicles		3622	3.1	3622	3.1	0.923	64.1	LOS E	35.5	249.9	0.97	0.95	21.2

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	48.9	LOS E	0.2	0.2	0.81	0.81
P2	East Full Crossing	53	50.5	LOS E	0.2	0.2	0.82	0.82
P3	North Full Crossing	53	47.3	LOS E	0.2	0.2	0.80	0.80
P4	West Full Crossing	53	62.7	LOS F	0.2	0.2	0.92	0.92
All Pedestrians		211	52.4	LOS E			0.84	0.84

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

MOVEMENT SUMMARY

Site: 1 [1 Murray/ Dorris Roy AM - Fut]

Network: N101 [AM Fut Dev]

Murray Street/ Dorris Roy Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Murray Street													
1	L2	12	0.0	12	0.0	0.044	3.4	LOS A	4.2	29.8	0.01	0.08	46.0
2	T1	71	3.0	71	3.0	0.044	0.0	LOS A	4.2	29.8	0.01	0.08	43.5
3	R2	1	0.0	1	0.0	0.044	3.5	LOS A	4.2	29.8	0.01	0.08	44.8
Approach		83	2.5	83	2.5	0.044	0.5	NA	4.2	29.8	0.01	0.08	44.5
East: Dorris Roy Lane													
4	L2	1	0.0	1	0.0	0.010	4.7	LOS A	0.0	0.1	0.19	0.52	37.1
5	T1	1	0.0	1	0.0	0.010	3.6	LOS A	0.0	0.1	0.19	0.52	40.9
6	R2	4	0.0	4	0.0	0.010	5.3	LOS A	0.0	0.1	0.19	0.52	37.1
Approach		6	0.0	6	0.0	0.010	4.9	LOS A	0.0	0.1	0.19	0.52	38.0
North: Murray Street													
7	L2	2	0.0	2	0.0	0.026	3.9	LOS A	0.0	0.1	0.01	0.03	47.3
8	T1	46	2.3	46	2.3	0.026	0.0	LOS A	0.0	0.1	0.01	0.03	46.9
9	R2	1	0.0	1	0.0	0.026	4.1	LOS A	0.0	0.1	0.01	0.03	44.8
Approach		49	2.1	49	2.1	0.026	0.3	NA	0.0	0.1	0.01	0.03	46.8
West: Dorris Roy Lane													
10	L2	59	0.0	59	0.0	0.095	7.7	LOS A	0.2	1.4	0.17	0.90	30.8
11	T1	1	0.0	1	0.0	0.095	7.7	LOS A	0.2	1.4	0.17	0.90	37.5
12	R2	4	0.0	4	0.0	0.095	7.7	LOS A	0.2	1.4	0.17	0.90	30.8
Approach		64	0.0	64	0.0	0.095	7.7	LOS A	0.2	1.4	0.17	0.90	31.0
All Vehicles		203	1.6	203	1.6	0.095	2.9	NA	4.2	29.8	0.06	0.34	36.5

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 1 [1 Murray/ Dorris Roy PM - Fut]

Network: N101 [PM Fut Dev]

Murray Street/ Dorris Roy Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	3	0.0	3	0.0	0.045	3.4	LOS A	0.0	0.1	0.01	0.03	47.0
2	T1	73	0.0	73	0.0	0.045	0.0	LOS A	0.0	0.1	0.01	0.03	47.4
3	R2	1	0.0	1	0.0	0.045	3.5	LOS A	0.0	0.1	0.01	0.03	45.6
Approach		77	0.0	77	0.0	0.045	0.2	NA	0.0	0.1	0.01	0.03	47.2
East: Dorris Roy Lane													
4	L2	1	0.0	1	0.0	0.003	4.7	LOS A	0.0	0.1	0.15	0.49	37.9
5	T1	1	0.0	1	0.0	0.003	3.6	LOS A	0.0	0.1	0.15	0.49	41.4
6	R2	1	0.0	1	0.0	0.003	5.4	LOS A	0.0	0.1	0.15	0.49	37.9
Approach		3	0.0	3	0.0	0.003	4.5	LOS A	0.0	0.1	0.15	0.49	39.4
North: Murray Street													
7	L2	1	0.0	1	0.0	0.026	4.0	LOS A	0.0	0.2	0.03	0.05	47.0
8	T1	45	0.0	45	0.0	0.026	0.0	LOS A	0.0	0.2	0.03	0.05	45.5
9	R2	3	0.0	3	0.0	0.026	4.1	LOS A	0.0	0.2	0.03	0.05	44.5
Approach		49	0.0	49	0.0	0.026	0.4	NA	0.0	0.2	0.03	0.05	45.5
West: Dorris Roy Lane													
10	L2	63	0.0	63	0.0	0.069	7.7	LOS A	0.2	1.7	0.17	0.90	30.9
11	T1	1	0.0	1	0.0	0.069	7.7	LOS A	0.2	1.7	0.17	0.90	37.5
12	R2	13	0.0	13	0.0	0.069	7.6	LOS A	0.2	1.7	0.17	0.90	30.9
Approach		77	0.0	77	0.0	0.069	7.7	LOS A	0.2	1.7	0.17	0.90	31.0
All Vehicles		206	0.0	206	0.0	0.069	3.1	NA	0.2	1.7	0.08	0.36	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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 10 [10 Edward/ Lewis AM - Fut]

Network: N101 [AM Fut Dev]

Edward Street/ Lewis Drive
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Lewis Drive													
1	L2	45	0.0	45	0.0	0.047	5.9	LOS A	0.2	1.1	0.37	0.58	28.9
Approach		45	0.0	45	0.0	0.047	5.9	LOS A	0.2	1.1	0.37	0.58	28.9
East: Edward Street													
4	L2	97	0.0	97	0.0	0.217	5.5	LOS A	0.0	0.0	0.00	0.14	48.0
5	T1	700	9.9	700	9.9	0.217	0.0	LOS A	0.0	0.0	0.00	0.06	56.5
Approach		797	8.7	797	8.7	0.217	0.7	NA	0.0	0.0	0.00	0.07	54.7
West: Edward Street													
11	T1	768	7.7	768	7.7	0.207	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
12	R2	109	1.0	109	1.0	0.195	11.1	LOS A	0.6	4.4	0.66	0.86	32.5
Approach		878	6.8	878	6.8	0.207	1.4	NA	0.6	4.4	0.08	0.11	51.7
All Vehicles		1720	7.5	1720	7.5	0.217	1.2	NA	0.6	4.4	0.05	0.10	52.4

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 10 [10 Edward/ Lewis PM - Fut]

Network: N101 [PM Fut Dev]

Edward Street/ Lewis Drive
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Lewis Drive													
1	L2	91	0.0	91	0.0	0.220	6.9	LOS A	0.4	2.8	0.47	0.71	27.3
Approach		91	0.0	91	0.0	0.220	6.9	LOS A	0.4	2.8	0.47	0.71	27.3
East: Edward Street													
4	L2	96	0.0	96	0.0	0.289	5.5	LOS A	6.2	44.8	0.00	0.10	49.0
5	T1	994	5.0	994	5.0	0.289	0.0	LOS A	6.2	44.8	0.00	0.05	57.4
Approach		1089	4.5	1089	4.5	0.289	0.5	NA	6.2	44.8	0.00	0.05	56.1
West: Edward Street													
11	T1	886	6.1	886	6.1	0.236	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
12	R2	77	0.0	77	0.0	0.207	15.2	LOS B	0.6	4.4	0.78	0.92	28.5
Approach		963	5.6	963	5.6	0.236	1.2	NA	0.6	4.4	0.06	0.07	52.7
All Vehicles		2143	4.8	2143	4.8	0.289	1.1	NA	6.2	44.8	0.05	0.09	53.0

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [2 Murray/ Yabtree AM - Fut]

Network: N101 [AM Fut Dev]

Murray Street/ Yabtree Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	13	0.0	13	0.0	0.042	4.6	LOS A	21.7	153.6	0.00	0.08	46.3
2	T1	68	1.5	68	1.5	0.042	0.0	LOS A	21.7	153.6	0.00	0.08	45.5
Approach		81	1.3	81	1.3	0.042	0.7	NA	21.7	153.6	0.00	0.08	45.7
North: Murray Street													
8	T1	49	2.1	49	2.1	0.028	0.0	LOS A	0.0	0.1	0.02	0.03	46.4
9	R2	3	0.0	3	0.0	0.028	3.6	LOS A	0.0	0.1	0.02	0.03	44.7
Approach		53	2.0	53	2.0	0.028	0.2	NA	0.0	0.1	0.02	0.03	46.1
West: Yabtree Street													
10	L2	18	5.9	18	5.9	0.025	4.8	LOS A	0.1	0.5	0.16	0.51	34.7
12	R2	11	0.0	11	0.0	0.025	5.0	LOS A	0.1	0.5	0.16	0.51	34.7
Approach		28	3.7	28	3.7	0.025	4.9	LOS A	0.1	0.5	0.16	0.51	34.7
All Vehicles		162	1.9	162	1.9	0.042	1.3	NA	21.7	153.6	0.04	0.14	42.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [2 Murray/ Yabtree PM - Fut]

Network: N101 [PM Fut Dev]

Murray Street/ Yabtree Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	6	0.0	6	0.0	0.035	4.6	LOS A	0.0	0.0	0.00	0.05	47.0
2	T1	62	0.0	62	0.0	0.035	0.0	LOS A	0.0	0.0	0.00	0.05	47.2
Approach		68	0.0	68	0.0	0.035	0.4	NA	0.0	0.0	0.00	0.05	47.2
North: Murray Street													
8	T1	56	0.0	56	0.0	0.030	0.0	LOS A	0.0	0.1	0.01	0.02	47.9
9	R2	2	0.0	2	0.0	0.030	3.5	LOS A	0.0	0.1	0.01	0.02	45.0
Approach		58	0.0	58	0.0	0.030	0.1	NA	0.0	0.1	0.01	0.02	47.5
West: Yabtree Street													
10	L2	20	0.0	20	0.0	0.024	4.7	LOS A	0.1	0.6	0.15	0.51	34.8
12	R2	13	0.0	13	0.0	0.024	5.0	LOS A	0.1	0.6	0.15	0.51	34.8
Approach		33	0.0	33	0.0	0.024	4.8	LOS A	0.1	0.6	0.15	0.51	34.8
All Vehicles		159	0.0	159	0.0	0.035	1.2	NA	0.1	0.6	0.04	0.13	42.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 4 [3 Edward/ Murray AM - Fut]

Network: N101 [AM Fut Dev]

Giveway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	114	0.9	114	0.9	0.150	6.8	LOS A	0.5	3.8	0.51	0.73	20.6
2	T1	43	0.0	43	0.0	1.762	796.2	LOS F	17.5	124.3	1.00	2.31	1.4
3	R2	31	3.4	31	3.4	1.762	823.0	LOS F	17.5	124.3	1.00	2.31	0.3
Approach		187	1.1	187	1.1	1.762	321.6	LOS F	17.5	124.3	0.70	1.35	1.3
East: Edward Street													
4	L2	13	0.0	13	0.0	0.273	5.6	LOS A	0.0	0.0	0.00	0.01	59.3
5	T1	811	7.0	811	7.0	0.273	1.1	LOS A	1.5	11.1	0.14	0.05	52.7
6	R2	55	5.8	55	5.8	0.273	13.1	LOS A	1.5	11.1	0.36	0.11	46.5
Approach		878	6.8	878	6.8	0.273	1.9	NA	1.5	11.1	0.15	0.06	51.9
North: Murray Street													
7	L2	22	4.8	22	4.8	0.027	6.7	LOS A	0.1	0.7	0.44	0.62	37.8
8	T1	16	0.0	16	0.0	0.711	159.3	LOS F	2.3	16.3	0.99	1.09	4.9
9	R2	11	0.0	11	0.0	0.711	230.0	LOS F	2.3	16.3	0.99	1.09	4.9
Approach		48	2.2	48	2.2	0.711	105.0	LOS F	2.3	16.3	0.74	0.88	8.2
West: Edqard Street													
10	L2	5	20.0	5	20.0	0.226	5.8	LOS A	0.0	0.0	0.00	0.01	50.4
11	T1	805	6.9	805	6.9	0.226	0.2	LOS A	0.3	2.0	0.03	0.01	57.9
12	R2	7	14.3	7	14.3	0.226	14.4	LOS A	0.3	2.0	0.06	0.01	56.1
Approach		818	7.1	818	7.1	0.226	0.4	NA	0.3	2.0	0.03	0.01	57.7
All Vehicles		1932	6.3	1932	6.3	1.762	34.9	NA	17.5	124.3	0.17	0.18	14.7

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 4 [3 Edward/ Murray PM - Fut]

Network: N101 [PM Fut Dev]

Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Murray Street													
1	L2	132	0.0	132	0.0	0.183	7.2	LOS A	0.7	4.7	0.54	0.77	19.8
2	T1	38	0.0	38	0.0	1.000	243.3	LOS F	8.9	62.0	1.00	1.43	4.5
3	R2	38	0.0	38	0.0	1.000	249.8	LOS F	8.9	62.0	1.00	1.43	0.9
Approach		207	0.0	207	0.0	1.000	94.7	LOS F	8.9	62.0	0.71	1.01	4.0
East: Edward Street													
4	L2	25	0.0	25	0.0	0.303	5.6	LOS A	39.8	291.7	0.00	0.03	58.7
5	T1	976	5.7	976	5.7	0.303	0.8	LOS A	39.8	291.7	0.10	0.04	54.2
6	R2	39	0.0	39	0.0	0.303	13.5	LOS A	36.3	265.2	0.23	0.06	48.7
Approach		1040	5.4	1040	5.4	0.303	1.4	NA	39.8	291.7	0.10	0.04	53.8
North: Murray Street													
7	L2	46	4.5	46	4.5	0.055	6.7	LOS A	0.2	1.4	0.44	0.64	37.8
8	T1	17	0.0	17	0.0	0.903	233.1	LOS F	3.9	27.7	1.00	1.22	3.7
9	R2	20	5.3	20	5.3	0.903	272.9	LOS F	3.9	27.7	1.00	1.22	3.7
Approach		83	3.8	83	3.8	0.903	116.6	LOS F	3.9	27.7	0.69	0.89	7.5
West: Edqard Street													
10	L2	46	2.3	46	2.3	0.241	5.6	LOS A	0.0	0.0	0.00	0.06	54.5
11	T1	805	5.0	805	5.0	0.241	0.5	LOS A	0.5	3.9	0.05	0.04	54.6
12	R2	13	0.0	13	0.0	0.241	16.1	LOS B	0.5	3.9	0.11	0.02	52.5
Approach		864	4.8	864	4.8	0.241	1.0	NA	0.5	3.9	0.05	0.04	54.5
All Vehicles		2195	4.6	2195	4.6	1.000	14.4	NA	39.8	291.7	0.16	0.17	27.0

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [3 Murray/ Yathong AM - Fut]

Network: N101 [AM Fut Dev]

Murray Street/ Yathong Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	15	14.3	15	14.3	0.042	3.4	LOS A	21.7	157.2	0.00	0.10	42.5
2	T1	64	1.6	64	1.6	0.042	0.0	LOS A	21.7	157.2	0.00	0.10	43.3
Approach		79	4.0	79	4.0	0.042	0.6	NA	21.7	157.2	0.00	0.10	42.9
North: Murray Street													
8	T1	55	1.9	55	1.9	0.032	0.0	LOS A	0.0	0.3	0.04	0.06	45.9
9	R2	6	0.0	6	0.0	0.032	4.8	LOS A	0.0	0.3	0.04	0.06	44.8
Approach		61	1.7	61	1.7	0.032	0.5	NA	0.0	0.3	0.04	0.06	45.6
West: Yathong Street													
10	L2	32	0.0	32	0.0	0.028	4.7	LOS A	0.1	0.7	0.15	0.51	34.9
12	R2	8	0.0	8	0.0	0.028	5.0	LOS A	0.1	0.7	0.15	0.51	34.9
Approach		40	0.0	40	0.0	0.028	4.8	LOS A	0.1	0.7	0.15	0.51	34.9
All Vehicles		180	2.3	180	2.3	0.042	1.5	NA	21.7	157.2	0.05	0.18	40.6

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 2 [3 Murray/ Yathong PM - Fut]

Network: N101 [PM Fut Dev]

Murray Street/ Yathong Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Murray Street													
1	L2	9	0.0	9	0.0	0.033	3.4	LOS A	0.0	0.0	0.00	0.08	46.1
2	T1	55	0.0	55	0.0	0.033	0.0	LOS A	0.0	0.0	0.00	0.08	43.9
Approach		64	0.0	64	0.0	0.033	0.5	NA	0.0	0.0	0.00	0.08	44.8
North: Murray Street													
8	T1	68	0.0	68	0.0	0.040	0.0	LOS A	0.0	0.3	0.03	0.05	46.2
9	R2	7	0.0	7	0.0	0.040	4.7	LOS A	0.0	0.3	0.03	0.05	44.9
Approach		76	0.0	76	0.0	0.040	0.5	NA	0.0	0.3	0.03	0.05	46.0
West: Yathong Street													
10	L2	22	0.0	22	0.0	0.021	4.7	LOS A	0.1	0.6	0.13	0.51	35.0
12	R2	8	0.0	8	0.0	0.021	5.0	LOS A	0.1	0.6	0.13	0.51	35.0
Approach		31	0.0	31	0.0	0.021	4.8	LOS A	0.1	0.6	0.13	0.51	35.0
All Vehicles		171	0.0	171	0.0	0.040	1.3	NA	0.1	0.6	0.04	0.14	42.1

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 4 [4 Murray/ Brookong AM - Fut]

Network: N101 [AM Fut Dev]

Murray Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
NorthEast: Brookong Avenue													
25	T1	61	0.0	60	0.0	0.036	0.1	LOS A	21.7	152.0	0.07	0.06	48.6
26b	R3	6	0.0	6	0.0	0.036	5.9	LOS A	21.7	152.0	0.07	0.06	48.6
Approach		67	0.0	67	0.0	0.036	0.6	NA	21.7	152.0	0.07	0.06	48.6
North: Murray Street													
7b	L3	13	0.0	13	0.0	0.008	4.5	LOS A	0.0	0.2	0.19	0.52	24.2
9a	R1	37	2.9	37	2.9	0.035	3.7	LOS A	0.1	0.8	0.27	0.51	24.6
Approach		49	2.1	49	2.1	0.035	3.9	LOS A	0.1	0.8	0.25	0.51	24.5
SouthWest: Brookong Avenue													
30a	L1	102	2.1	102	2.1	0.106	4.1	LOS A	21.7	154.0	0.00	0.26	46.2
31	T1	100	1.1	100	1.1	0.106	0.0	LOS A	21.7	154.0	0.00	0.26	46.2
Approach		202	1.6	202	1.6	0.106	2.1	NA	21.7	154.0	0.00	0.26	46.2
All Vehicles		319	1.3	318[N1]	1.3	0.106	2.1	NA	21.7	154.0	0.05	0.26	45.7

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 4 [4 Murray/ Brookong PM - Fut]

Network: N101 [PM Fut Dev]

Murray Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
NorthEast: Brookong Avenue													
25	T1	94	0.0	94	0.0	0.053	0.0	LOS A	0.0	0.3	0.04	0.04	49.1
26b	R3	6	0.0	6	0.0	0.053	5.7	LOS A	0.0	0.3	0.04	0.04	49.1
Approach		100	0.0	100	0.0	0.053	0.4	NA	0.0	0.3	0.04	0.04	49.1
North: Murray Street													
7b	L3	7	0.0	7	0.0	0.005	4.4	LOS A	0.0	0.1	0.15	0.52	24.5
9a	R1	81	0.0	81	0.0	0.075	3.6	LOS A	0.3	1.8	0.27	0.52	24.7
Approach		88	0.0	88	0.0	0.075	3.7	LOS A	0.3	1.8	0.26	0.52	24.7
SouthWest: Brookong Avenue													
30a	L1	69	0.0	69	0.0	0.074	4.1	LOS A	0.0	0.0	0.00	0.25	46.3
31	T1	73	0.0	73	0.0	0.074	0.0	LOS A	0.0	0.0	0.00	0.25	46.3
Approach		142	0.0	142	0.0	0.074	2.0	NA	0.0	0.0	0.00	0.25	46.3
All Vehicles		331	0.0	331	0.0	0.075	2.0	NA	0.3	1.8	0.08	0.26	45.4

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 5 [5 Docker/ Brookong AM - Fut]

Network: N101 [AM Fut Dev]

Docker Street/ Brookong Avenue
Signals - Fixed Time Isolated Cycle Time = 40 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
2	T1	976	2.5	976	2.5	0.462	6.0	LOS A	5.9	42.1	0.64	0.56	34.4
3	R2	160	1.3	160	1.3	0.289	11.2	LOS A	1.9	13.6	0.62	0.72	27.2
Approach		1136	2.3	1136	2.3	0.462	6.7	LOS A	5.9	42.1	0.64	0.58	33.2
East: Brookong Avenue													
4	L2	128	4.9	128	4.9	0.475	22.9	LOS B	2.5	18.2	0.96	0.77	26.4
6	R2	23	0.0	23	0.0	0.083	21.3	LOS B	0.4	2.9	0.89	0.69	27.2
Approach		152	4.2	151 N1	4.2	0.475	22.7	LOS B	2.5	18.2	0.95	0.76	26.5
North: Docker Street													
7	L2	20	10.5	20	10.5	0.221	8.4	LOS A	2.1	15.7	0.54	0.48	21.2
8	T1	440	4.5	440	4.5	0.221	5.0	LOS A	2.3	17.0	0.54	0.47	21.4
Approach		460	4.8	460	4.8	0.221	5.1	LOS A	2.3	17.0	0.54	0.47	21.4
All Vehicles		1747	3.1	1747	3.1	0.475	7.7	LOS A	5.9	42.1	0.64	0.57	30.3

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
P2	East Full Crossing	53	9.1	LOS A	0.0	0.0	0.68	0.68
P3	North Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
All Pedestrians		158	12.7	LOS B			0.79	0.79

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

MOVEMENT SUMMARY

Site: 5 [5 Docker/ Brookong PM - Fut]

Network: N101 [PM Fut Dev]

Docker Street/ Brookong Avenue
Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Docker Street													
2	T1	756	1.3	756	1.3	0.326	6.4	LOS A	5.5	38.9	0.53	0.46	33.6
3	R2	132	0.0	132	0.0	0.336	14.8	LOS B	2.4	17.0	0.64	0.73	23.8
Approach		887	1.1	887	1.1	0.336	7.7	LOS A	5.5	38.9	0.55	0.50	31.7
East: Brookong Avenue													
4	L2	127	0.0	127	0.0	0.343	27.7	LOS B	3.3	23.4	0.90	0.77	24.0
6	R2	4	0.0	4	0.0	0.011	25.5	LOS B	0.1	0.7	0.82	0.63	25.0
Approach		132	0.0	132	0.0	0.343	27.6	LOS B	3.3	23.4	0.90	0.76	24.0
North: Docker Street													
7	L2	16	0.0	16	0.0	0.340	10.1	LOS A	5.7	40.6	0.54	0.48	18.0
8	T1	773	1.6	773	1.6	0.340	6.6	LOS A	5.8	41.2	0.54	0.47	18.3
Approach		788	1.6	788	1.6	0.340	6.7	LOS A	5.8	41.2	0.54	0.47	18.3
All Vehicles		1807	1.2	1807	1.2	0.343	8.7	LOS A	5.8	41.2	0.57	0.51	26.8

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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
P2	East Full Crossing	53	9.1	LOS A	0.0	0.0	0.55	0.55
P3	North Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		158	19.3	LOS B			0.79	0.79

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

MOVEMENT SUMMARY

Site: 6 [6 Docker/ Chaston AM - Fut]

Network: N101 [AM Fut Dev]

Docker Street/ Chaston Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	208	4.5	208	4.5	0.306	4.6	LOS A	0.0	0.0	0.00	0.20	48.3
2	T1	958	1.5	958	1.5	0.306	0.0	LOS A	0.0	0.0	0.00	0.08	49.1
Approach		1166	2.1	1166	2.1	0.306	0.9	NA	0.0	0.0	0.00	0.10	48.9
North: Docker Street													
8	T1	456	3.0	455	3.0	0.119	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
9	R2	108	9.7	108	9.7	0.369	19.4	LOS B	1.2	9.5	0.85	0.99	35.4
Approach		564	4.3	564	4.3	0.369	3.7	NA	1.2	9.5	0.16	0.19	46.3
West: Chaston Street													
10	L2	171	3.7	171	3.7	0.191	6.6	LOS A	0.7	5.3	0.45	0.67	42.5
12	R2	35	3.0	35	3.0	0.271	35.5	LOS C	0.9	6.3	0.90	0.98	33.4
Approach		205	3.6	205	3.6	0.271	11.5	LOS A	0.9	6.3	0.52	0.72	39.4
All Vehicles		1936	2.9	1935[N1]	2.9	0.369	2.8	NA	1.2	9.5	0.10	0.19	46.9

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 6 [6 Docker/ Chaston PM - Fut]

Network: N101 [PM Fut Dev]

Docker Street/ Chaston Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	165	3.8	165	3.8	0.211	4.6	LOS A	0.0	0.0	0.00	0.22	48.2
2	T1	641	1.3	641	1.3	0.211	0.0	LOS A	0.0	0.0	0.00	0.08	49.1
Approach		806	1.8	806	1.8	0.211	1.0	NA	0.0	0.0	0.00	0.11	48.8
North: Docker Street													
8	T1	841	1.0	841	1.0	0.217	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
9	R2	132	4.0	132	4.0	0.236	10.5	LOS A	0.8	6.0	0.67	0.86	40.7
Approach		973	1.4	973	1.4	0.236	1.4	NA	0.8	6.0	0.09	0.12	48.5
West: Chaston Street													
10	L2	186	0.6	186	0.6	0.175	5.7	LOS A	0.7	4.8	0.35	0.58	43.1
12	R2	93	3.4	93	3.4	0.369	21.2	LOS B	1.5	10.7	0.81	0.98	38.4
Approach		279	1.5	279	1.5	0.369	10.8	LOS A	1.5	10.7	0.50	0.72	40.6
All Vehicles		2058	1.6	2058	1.6	0.369	2.5	NA	1.5	10.7	0.11	0.20	47.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 7 [7 Docker/ Rawson AM - Fut]

Network: N101 [AM Fut Dev]

Docker Street/ Rawson Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
2	T1	1013	2.3	1013	2.3	0.263	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		1013	2.3	1013	2.3	0.263	0.0	NA	0.0	0.0	0.00	0.00	50.0
East: Rawson Lane													
4	L2	23	9.1	23	9.1	0.022	5.5	LOS A	0.1	0.6	0.30	0.53	25.8
Approach		23	9.1	23	9.1	0.022	5.5	LOS A	0.1	0.6	0.30	0.53	25.8
North: Docker Street													
7	L2	26	0.0	26	0.0	0.123	3.9	LOS A	0.0	0.0	0.00	0.06	32.3
8	T1	438	4.8	438	4.8	0.123	0.0	LOS A	0.0	0.0	0.00	0.03	47.6
Approach		464	4.5	464	4.5	0.123	0.2	NA	0.0	0.0	0.00	0.03	45.2
All Vehicles		1500	3.1	1500	3.1	0.263	0.2	NA	0.1	0.6	0.00	0.02	47.1

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 7 [7 Docker/ Rawson PM - Fut]

Network: N101 [PM Fut Dev]

Docker Street/ Rawson Lane
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
2	T1	763	1.2	763	1.2	0.197	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		763	1.2	763	1.2	0.197	0.0	NA	0.0	0.0	0.00	0.00	50.0
East: Rawson Lane													
4	L2	39	0.0	39	0.0	0.046	6.3	LOS A	0.1	1.0	0.41	0.61	24.8
Approach		39	0.0	39	0.0	0.046	6.3	LOS A	0.1	1.0	0.41	0.61	24.8
North: Docker Street													
7	L2	8	0.0	8	0.0	0.213	3.9	LOS A	0.0	0.0	0.00	0.01	33.1
8	T1	755	1.7	755	1.7	0.213	0.0	LOS A	0.0	0.0	0.00	0.01	49.5
Approach		763	1.7	763	1.7	0.213	0.0	NA	0.0	0.0	0.00	0.01	48.9
All Vehicles		1565	1.4	1565	1.4	0.213	0.2	NA	0.1	1.0	0.01	0.02	47.6

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 8 [8 Docker/ Hardy AM - Fut]

Network: N101 [AM Fut Dev]

8 Docker Street/ Hardy Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	71	1.5	71	1.5	0.266	3.9	LOS A	0.0	0.0	0.00	0.07	47.9
2	T1	948	2.3	948	2.3	0.266	0.0	LOS A	0.0	0.0	0.00	0.03	47.4
Approach		1019	2.3	1019	2.3	0.266	0.3	NA	0.0	0.0	0.00	0.04	47.6
North: Docker Street													
8	T1	457	4.6	457	4.6	0.227	0.5	LOS A	0.9	6.6	0.05	0.04	47.6
9	R2	87	4.8	87	4.8	0.227	13.7	LOS A	0.9	6.6	0.77	0.69	37.6
Approach		544	4.6	544	4.6	0.227	2.7	NA	0.9	6.6	0.16	0.15	43.6
West: Hardy Avenue													
10	L2	28	0.0	28	0.0	0.034	6.6	LOS A	0.1	0.8	0.44	0.63	40.2
12	R2	7	0.0	7	0.0	0.060	32.9	LOS C	0.2	1.3	0.89	0.95	22.5
Approach		36	0.0	36	0.0	0.060	12.0	LOS A	0.2	1.3	0.54	0.69	34.6
All Vehicles		1599	3.0	1599	3.0	0.266	1.3	NA	0.9	6.6	0.07	0.09	44.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 8 [8 Docker/ Hardy PM - Fut]

Network: N101 [PM Fut Dev]

8 Docker Street/ Hardy Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Docker Street													
1	L2	43	0.0	43	0.0	0.202	3.9	LOS A	0.0	0.0	0.00	0.06	48.2
2	T1	735	1.3	735	1.3	0.202	0.0	LOS A	0.0	0.0	0.00	0.03	47.8
Approach		778	1.2	778	1.2	0.202	0.2	NA	0.0	0.0	0.00	0.03	47.9
North: Docker Street													
8	T1	758	1.7	758	1.7	0.240	0.8	LOS A	1.0	6.9	0.12	0.04	45.9
9	R2	51	2.1	51	2.1	0.240	10.6	LOS A	1.0	6.9	0.31	0.10	45.4
Approach		808	1.7	808	1.7	0.240	1.4	NA	1.0	6.9	0.13	0.04	45.8
West: Hardy Avenue													
10	L2	35	0.0	35	0.0	0.037	6.1	LOS A	0.1	0.9	0.39	0.59	40.7
12	R2	12	0.0	12	0.0	0.089	31.8	LOS C	0.3	1.9	0.89	0.95	22.9
Approach		46	0.0	46	0.0	0.089	12.5	LOS A	0.3	1.9	0.51	0.68	34.1
All Vehicles		1633	1.4	1633	1.4	0.240	1.2	NA	1.0	6.9	0.08	0.05	45.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 9 [9 Edward/ Brookong AM - Fut]

Network: N101 [AM Fut Dev]

Edward Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Brookong Avenue													
1	L2	42	0.0	42	0.0	0.047	6.4	LOS A	0.2	1.2	0.42	0.62	40.5
3	R2	81	1.3	81	1.3	1.155	279.1	LOS F	12.0	85.1	1.00	1.89	5.9
Approach		123	0.9	123	0.9	1.155	185.9	LOS F	12.0	85.1	0.80	1.45	7.7
East: Edward Street													
4	L2	53	0.0	53	0.0	0.234	5.5	LOS A	0.0	0.0	0.00	0.07	56.0
5	T1	806	9.7	806	9.7	0.234	0.0	LOS A	0.0	0.0	0.00	0.03	58.0
Approach		859	9.1	859	9.1	0.234	0.3	NA	0.0	0.0	0.00	0.04	57.9
West: Edward Street													
11	T1	704	8.4	693	8.4	0.268	1.4	LOS A	1.8	13.4	0.17	0.08	54.8
12	R2	84	0.0	83	0.0	0.268	13.0	LOS A	1.8	13.4	0.58	0.26	38.1
Approach		788	7.5	776[N1]	7.5	0.268	2.7	NA	1.8	13.4	0.21	0.10	53.3
All Vehicles		1771	7.8	1758[N1]	7.8	1.155	14.4	NA	12.0	85.1	0.15	0.16	31.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.5 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 9 [9 Edward/ Brookong PM - Fut]

Network: N101 [PM Fut Dev]

Edward Street/ Brookong Avenue
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Brookong Avenue													
1	L2	39	0.0	39	0.0	0.049	7.0	LOS A	0.2	1.2	0.47	0.66	39.7
3	R2	73	0.0	73	0.0	2.494	1463.9	LOS F	34.1	238.4	1.00	2.26	1.2
Approach		112	0.0	112	0.0	2.494	955.3	LOS F	34.1	238.4	0.81	1.70	1.7
East: Edward Street													
4	L2	94	0.0	94	0.0	0.302	5.5	LOS A	39.8	289.8	0.00	0.10	54.9
5	T1	1042	5.6	1042	5.6	0.302	0.0	LOS A	39.8	289.8	0.00	0.04	57.5
Approach		1136	5.1	1136	5.1	0.302	0.5	NA	39.8	289.8	0.00	0.05	57.3
West: Edward Street													
11	T1	915	6.0	915	6.0	0.273	1.0	LOS A	1.1	8.3	0.09	0.01	56.5
12	R2	20	0.0	20	0.0	0.273	19.1	LOS B	1.1	8.3	0.20	0.03	48.3
Approach		935	5.9	935	5.9	0.273	1.4	NA	1.1	8.3	0.09	0.02	56.4
All Vehicles		2182	5.2	2182	5.2	2.494	49.7	NA	39.8	289.8	0.08	0.12	14.3

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.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model 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.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %
Number of Iterations: 10 (maximum specified: 10)

Appendix C

Preliminary Construction Traffic Management Plan

Reference: #N138820

21 August 2018

Health Infrastructure
c/o Savills Project Management
1 Farrer Place
SYDNEY NSW 2000

Attention: Mr. Dan Herbertson (Project Director Savills Project Management)

Dear Dan

RE: WAGGA WAGGA BASE HOSPITAL REDEVELOPMENT STAGE 3 – PRELIMINARY CONSTRUCTION TRAFFIC MANAGEMENT PLAN

This letter has been prepared to address specific requirements detailed in the Secretary's Environmental Assessment Requirements (SEARs) – Schedule 2 of the Environmental Planning and Assessment Regulation 2000 as it relates to the proposed development located at 260-280 Edward Street, Wagga Wagga, NSW 2650. The relevant requirements are set out below.

- *Assessment of cumulative impacts associated with other construction activities*
- *An assessment of road safety at key intersection and location subject to heavy vehicle construction traffic movements and high pedestrian activity*
- *Details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process*
- *Details of anticipated peak hour and daily construction vehicle movements to and from the site*
- *Details of access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle*
- *Details of temporary cycling and pedestrian access during construction*
- *Details of the proposed construction vehicle access arrangements at all stages of construction*
- *Traffic and transport impacts during construction, including cumulative impacts associated with other construction activities, and how these impacts will be mitigated for any associated traffic, pedestrian, cyclists, parking and public transport, including the preparation of a draft Construction Traffic Management Plan to demonstrate the proposed management of the impact (which must include vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures for all demolition/ construction activities)*
- *Preliminary Construction Management Plan, inclusive of a preliminary Construction Traffic Management Plan detailing vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures.*

The proposed Stage 3 development provides for a mix of new buildings for aged care rehabilitation, aged care/ generation evaluation and management, mental health, extended ambulatory care, renal unit and lecture theatre.

The construction works comprise of the demolition of the existing Old Hospital Building, Robinson House and Hydrotherapy Pool buildings and construction of a six-storey Ambulatory Care Building above a semi-basement parking level. The new building will contain aged care, rehabilitation, older person's mental health, ambulatory clinics, rehabilitation and allied health therapy,

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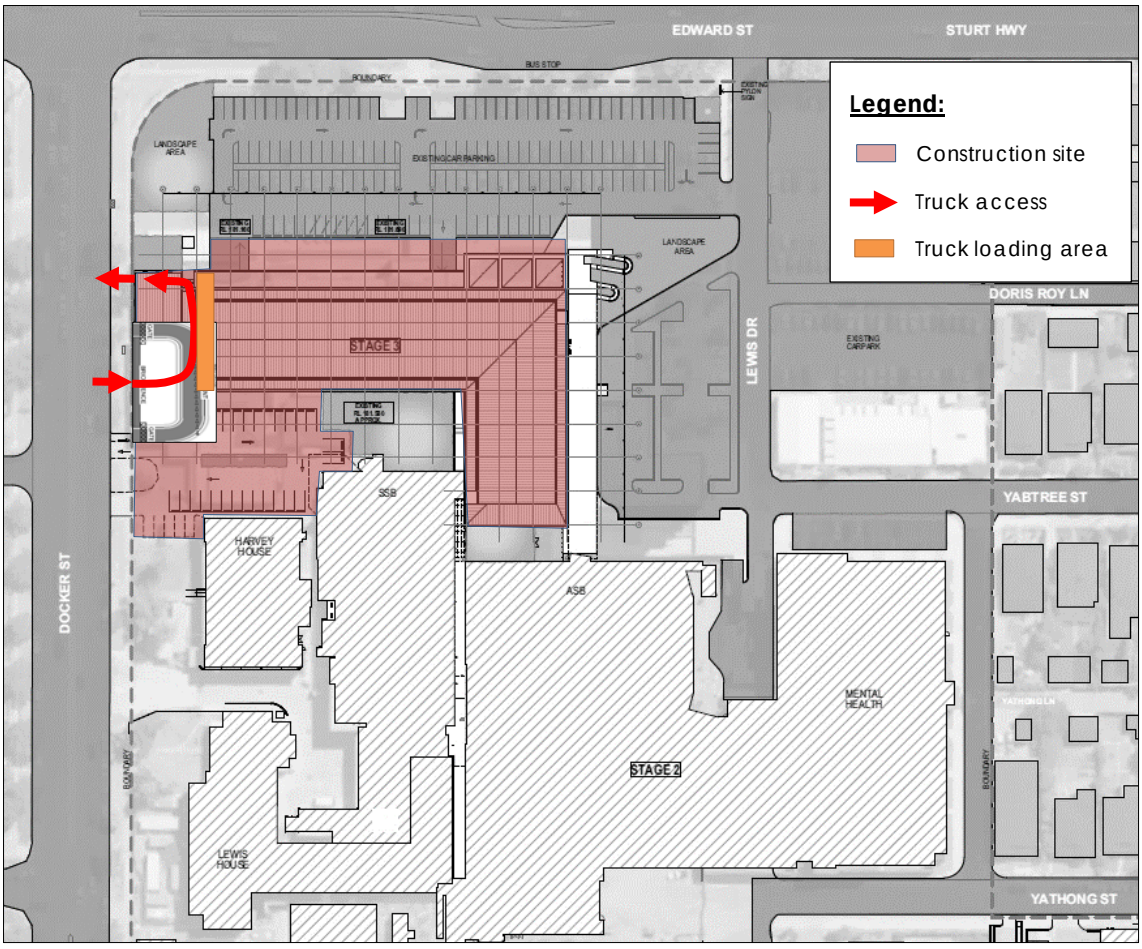
education and research and hospital offices. Works will comprise of a new public entry, ground level and a bridge connection to the existing hospital building, new forecourt and new outdoor carpark and associated site landscaping. The site plan for the construction works is shown in Figure 1.

Construction works are expected to commence in 2018 and be completed in 2020. The commencement date has not been determined at this stage. All construction equipment/ machinery storage will occur within the works area. The number of construction workers on site is expected to be on average 140 workers, with a maximum of 320 workers during peak construction.

Figure 1: Overview of Construction Site Layout



Source: Martin & Ollmann Architects, Stage 3 Development, Wagga Wagga Health Service Redevelopment, Issue 01, 15/03/2018.

This Preliminary Construction Traffic Management Plan (PCTMP) provides an overview of the initiatives to be implemented as part of the construction works associated with Stage 3 works.

Specifically, the PCTMP considers the following:

- construction site access arrangements
- anticipated truck volumes during construction stages
- truck routes to/ from the site
- requirements for Works Zones
- pedestrian and cyclist access

- site personnel parking
- traffic control measures
- overview of CTMP requirements.

A detailed CTMP will need to be prepared prior to the issue of construction certificate and contain confirmed construction details developed in coordination with the appointed contractor/ builder.

Principles of traffic management

The general principles of traffic management during construction activities are as follows:

- minimise the impact on pedestrian and cyclist movements
- maintain appropriate public transport access
- minimise the loss of on-street parking
- minimise the impact on adjacent and surrounding buildings
- maintain access to/ from adjacent buildings
- restrict construction vehicle movements to designated routes to/ from the site
- manage and control construction vehicle activity near the site
- carry out construction activity in accordance with approved hours of works.

Work hours

Construction work would be undertaken in accordance to development consent conditions. The typical work hours are expected to be:

- Monday to Friday: 7am to 6pm
- Saturday: 7:30am to 5pm
- Sundays and public holidays: No work.

The contractor will be responsible for instructing and controlling all sub-contractors regarding the hours of work, to minimise disruption to daily traffic and disturbance to surrounding land owners and businesses. It may be necessary to carry out some work outside of these hours. Prior notice would be given to the community if any works are planned to be undertaken outside typical hours. Such activities would include delivery of cranes, large plant or equipment to the site.

Roads and Maritime and Council works constraints, holiday shut downs, peak traffic construction hours, etc., need to be considered in the planning and delivery of any construction works.

Site access

Vehicle access would be left-in and left-out via Docker Street with a truck loading area proposed to the east of Docker Street.

Docker Street functions as a collector road in a north-south direction on the western boundary of the site. Adjacent to the hospital, Docker Street is a two-way road with two traffic lanes and one parking lane in each direction, set within a carriageway of around 15-metres wide, with footpaths provided on both sides of the road and a posted speed limit of 50 kilometres per hour. Kerbside parking is permitted on both sides of the road under 2P time restrictions.

Construction staff parking

No on-site parking will be provided for construction workers. Workers required to drive to/ from the site will be instructed to park on-street near the construction site to minimise the parking impacts

within the on-site parking facilities. Appropriate arrangements would be made for any equipment/ tool storage requirements.

Car-pooling by the construction workers during construction will be encouraged.

The site is also within close walking distance of several bus services with bus stops on the western side of Docker Street south of Hardy Avenue, the eastern side of Docker Street south of Darlow Street and the northern side of Edward Street east of Docker Street. The bus stops are currently serviced by at least seven bus services (1W, 3W, 22, 24, 961, 962 and 963) operated by Busabout Wagga and Junee Buses, providing local connections to Bourkelands, Glenfield Park, Springvale and the greater Wagga Wagga LGA.

Heavy vehicle traffic generation

Heavy vehicle traffic would mainly be generated by activities associated with the following:

- Delivery of construction materials
- Delivery and removal of construction equipment and machinery
- Movement of construction personnel, including contractors, site labour force and specialist supervisory personnel.

Construction vehicles are expected to include excavators, truck and dogs and semi-trailers. An average of two trucks per day is expected, with a maximum of eight trucks per day during peak construction (16 movements per day). The heavy vehicle movements are likely to be spread through the day. However, in the worst-case assessment it has been assumed that 25 per cent, or two vehicles (four two-way vehicle movements), would occur during the peak hour.

The primary routes for construction vehicles are along the Sturt Highway and Olympic Highway from the east/ west and north/ south respectively. The main access roads are State Roads, which carry high daily traffic volumes. As such, any additional construction vehicle traffic would have a minimal traffic impact as this additional construction vehicle traffic would be within the range of daily variation in traffic on these routes.

Vehicle access will be provided to the site via two crossover points on Docker Street. Vehicles will use the southern access as an entry only and exit via the northern access in a left in left out operation.

The movement of materials should be managed through the scheduling of deliveries and availability of fleet to minimise the number of haulage and delivery vehicles during peak periods and on weekends.

Based on the low volumes of truck movements per day, it is anticipated that the construction traffic would have a minimal impact on the surrounding road network.

Light vehicle generation

Light vehicle traffic generation would be largely generated by construction worker traffic movements to and from the site. Given the number of construction workers on site is expected to be on average 140 workers, with a maximum of 320 workers during peak construction, it is expected the parking demand would be up to 320 vehicles.

Heavy vehicle access routes

Truck movements will be restricted to designated routes and confined to State Roads in the broader road network. Truck routes to/ from the site have been identified with the aim of minimising the impact of construction traffic on roads near the site. No queueing of trucks is allowed in any local road or regional roads within Wagga Wagga LGA.

The directional distribution and assignment of construction traffic generated by the proposed 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.

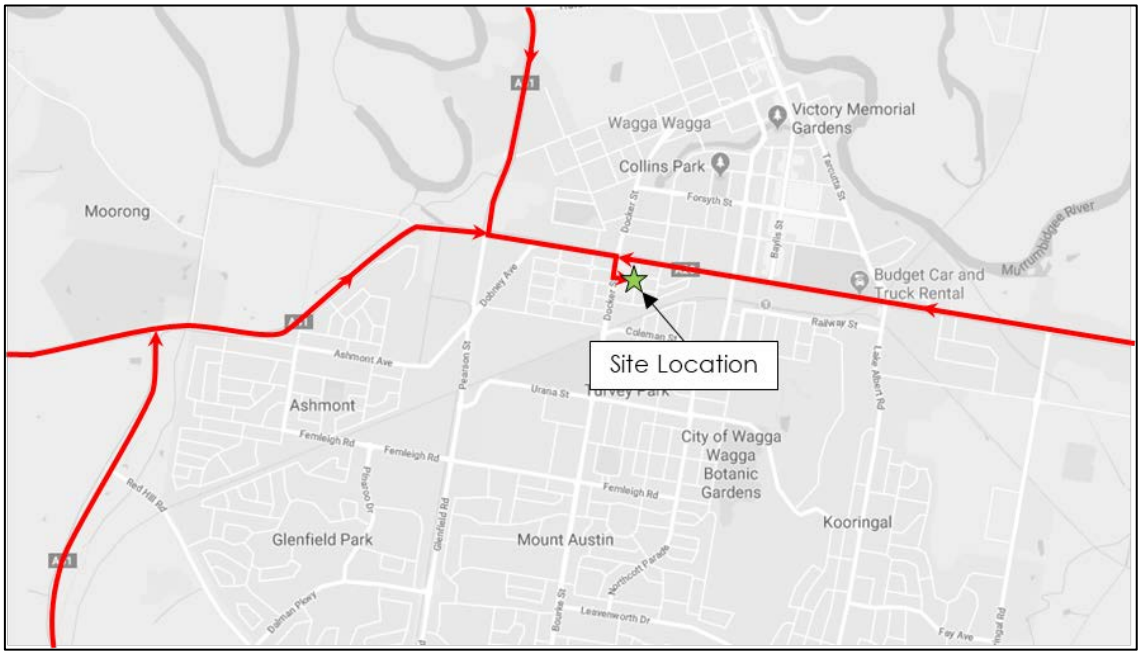
Truck drivers will be advised of the designated truck routes to/ from the site. The approach and departure routes are subject to change if the designated routes result in significant traffic congestion.

Approach routes

The construction traffic approach routes are detailed as follows and illustrated in Figure 2:

- North: Olympic Highway, Sturt Highway/ Edward Street, Docker Street
- South: Olympic Highway, Sturt Highway/ Edward Street, Docker Street
- East: Sturt Highway/ Edward Street, Docker Street
- West: Sturt Highway/ Edward Street, Docker Street.

Figure 2: Construction vehicle approach routes



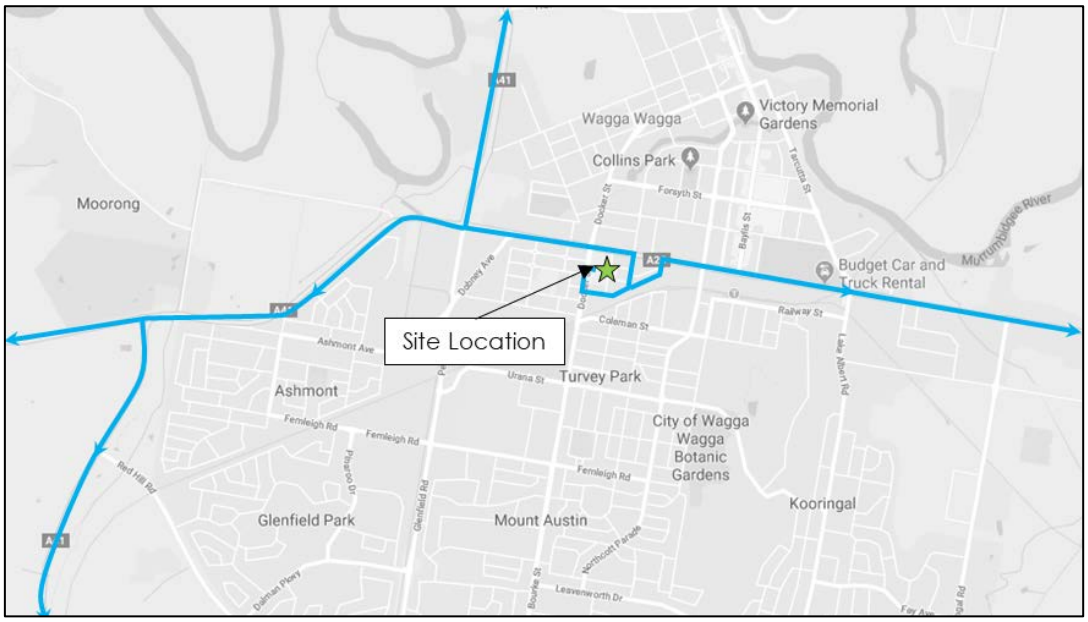
Basemap source: Google Maps

Departure Routes

The construction traffic departure routes are detailed as follows and illustrated in Figure 3:

- North: Docker Street, Brookong Avenue, Murray Street, Sturt Highway/ Edward Street, Olympic Highway
- South: Docker Street, Brookong Avenue, Murray Street, Sturt Highway/ Edward Street, Olympic Highway
- East: Docker Street, Brookong Avenue, Sturt Highway/ Edward Street
- West: Docker Street, Brookong Avenue, Murray Street, Sturt Highway/ Edward Street.

Figure 3: Construction vehicle departure routes



Basemap source: Google Maps

Transport Impacts

Cumulative traffic impacts

The additional eight heavy vehicles per day expected during construction of the main works is expected to have a minimal impact on the surrounding road network. As discussed, the expected number of construction workers on site is expected to be up to 320 workers during peak construction period. This equates to up to a maximum of 320 vehicles per day during peak construction with 320 inbound and 320 outbound movements during the AM and PM peak hours respectively.

It is expected that the workers would arrive before the AM peak hour and depart before the PM peak hour. Based on these travel patterns, it is not expected the construction works will significantly contribute to the existing and future traffic within the Wagga Wagga LGA, therefore minimising the impact on the surrounding road network during the peak hours.

The impact to pedestrians is expected to be minimal and potentially only impact where pedestrians will cross the construction driveway access.

There are two other major planned construction sites that would likely be active during the construction period of the proposed development. Notable projects include the medical suite development on the corner of Docker Street and Chaston Street as well as the redevelopment work within the Calvary Hospital Site.

With only up to eight heavy vehicles per day along the approach and departure routes via Sturt Highway, Edward Street and Docker Street, there will be only minor construction vehicle traffic impact along these roads.

Also, given the smaller scale of the medical suite and redevelopment work within the Calvary Hospital site, the traffic impact of these developments will be minor.

Measures will be undertaken during construction of works to ensure that hospital operations are not interrupted. This includes the construction of temporary facilities, on and off site, and all necessary temporary transportation provisions.

Parking

To accommodate the site accesses, it is proposed to temporarily remove four 2P on-street parallel parking spaces along the site frontage on Docker Street.

The temporary loss of any time restricted parking is considered acceptable, given the spaces would have primarily serviced the site itself.

Pedestrian and Cyclist

During construction, the pedestrian footpath along Docker Street west of the site will be maintained. Pedestrians would be provided with convenient and safe routes at all times. There would be no loading and unloading on footpath reserves. Accredited site personnel would be provided at each site access to ensure the safety of pedestrians. Special care will be taken when truck movements are occurring. The pathways along the full frontage would be swept and kept clean at all times during normal work periods.

Given there is currently no bicycle route along Docker Street, no cyclist management will be required.

Emergency Vehicle

Access to the site via Brookong Avenue by emergency vehicles would not be affected by the works as the road would be unaffected.

Other emergency access (police and fire) for to the site will be available at all times via the site access point on Lewis Drive.

Emergency protocols on the site would include a requirement for the traffic controller to assist with emergency access from the street. All truck movements to the site and/ or incident point would be suspended and cleared.

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

Consultation with the police and emergency services agencies will be carried out throughout the construction period and a 24-hour contact would be made available for 'out-of-hours' emergencies and access.

Therefore, no adverse impacts on the provision of existing emergency vehicle access to other neighbouring properties resulting from the proposed construction activities is expected.

Service vehicles

Existing loading arrangements are via Docker Street, towards the south of the construction site accesses, this would not be affected by the works as Docker Street.

Traffic guidance scheme (TGS)

A traffic guidance scheme (TGS) (formerly a traffic control plan) has been prepared by Riverina Traffic Services in accordance with the principles of the Roads and Maritime Traffic Control at Work Sites manual. The traffic guidance scheme would primarily show where "Trucks" signs would be located at the construction access along Docker Street to warn other road users of the increase in construction vehicle movements. The TGS is provided in Attachment 1. The plan presents the principles of traffic management and is subject to WorkCover requirements.

The TGS details the following considerations:

- Construction vehicle activity, including the loading/ unloading of trucks and all materials handling to be provided within the construction site boundaries or within the proposed works zone at all times.
- The movement of trucks to/ from the construction site would be managed and controlled by accredited site personnel with no through traffic to be affected during construction.
- Construction site accesses would provide appropriate sight distances and a safe environment for all users.
- Accredited site personnel will be required at key locations surrounding the site to maintain safety and manage construction vehicles if and as required.
- Pedestrian safety to be maintained at all times.

I trust that the above provides the information you require. Naturally, should you have any questions or require any further information, please do not hesitate to contact me in our Sydney office on (02) 8448 1800.

Yours sincerely

GTA CONSULTANTS

Karen McNatty
Associate
encl.
Attachment 1 – Traffic Guidance Scheme (TGS)

Attachment 1

Traffic Guidance Scheme (TGS)

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NOTE:

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POSTED SPEED LIMIT

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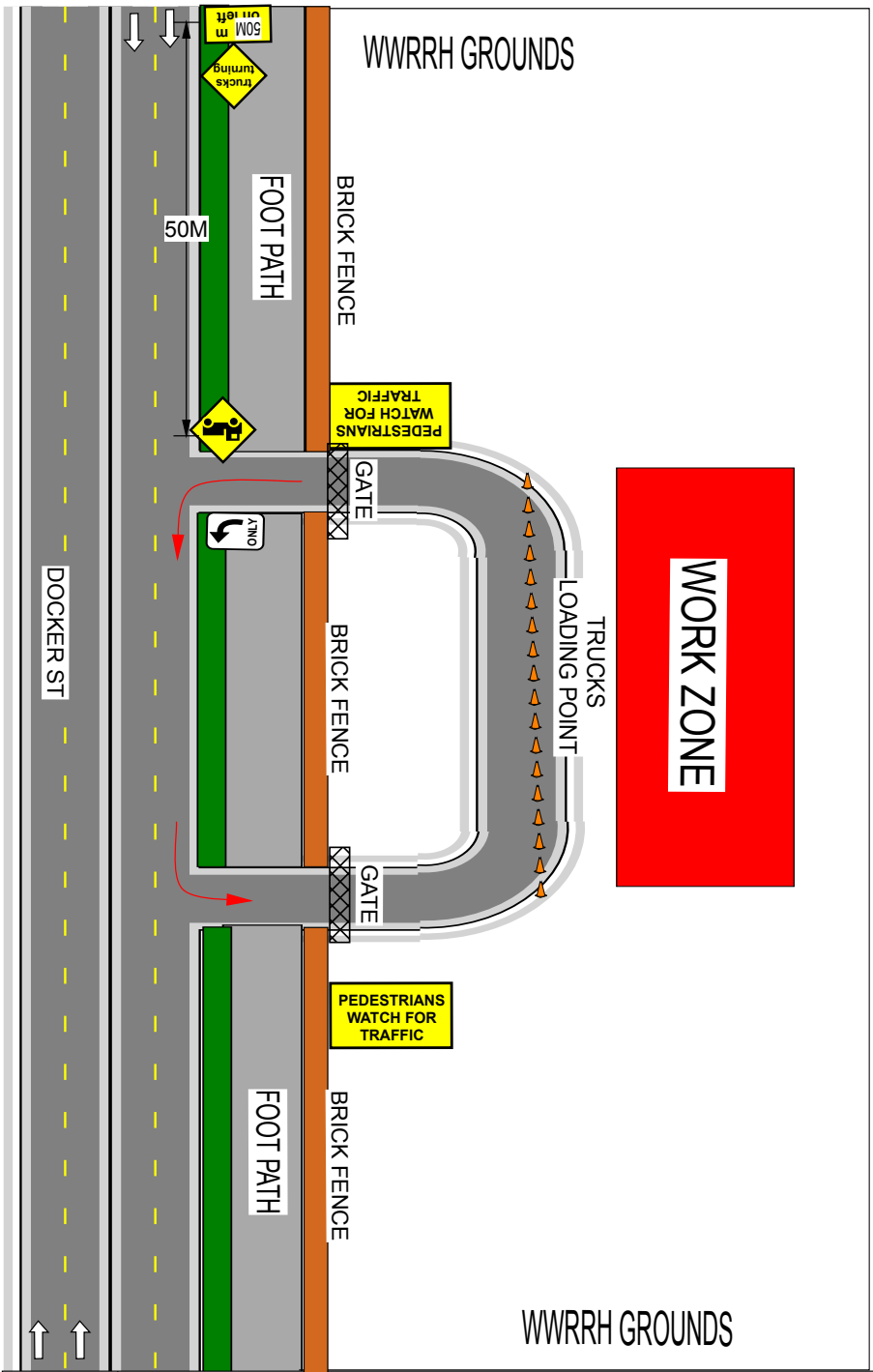

NOTES;

1. TRUCK TURNING INTO WWRRH FOR DEMOLITION WORKS
2. PLAN AS PER TCP 195 RMS TRAFFIC CONTROL @ WORK SITES MANUAL V4
3. ALL SIGNS AND SPACING'S AS PER TCP UNLESS MODIFIED BY AUTHORISED PERSON
4. ALL EMERGENCY VEHICLES TO HAVE RIGHT OF WAY
5. ALL EXITING TRAFFIC TO STOP BEFORE ENTERING DOCKER ST
6. ALL PEDESTRIANS TO HAVE RIGHT OF WAY
7. DURING PEAK TIME SPOTER TO CONTROL TRUCKS EXITING
8. CONSTRUCTION AREA TO BE CONED OFF AT ALL TIMES
9. TRUCK ENTRIES TO BE RESTRICTED DURING PEAK TIMES 0730-0900 &AFTER 1500

Designed by Shane Egan	RTA LIC No: 0031546879	RTA Lic Exp Date: 16-05-19
AUTHORITY TO COMPLILE TCP: R.T.A DESIGN & INSPECT TRAFFIC PLANS		
TCP No: RTS195	Scale: N.T.S	Date: 25-01-18
SHANE EGAN 0458 981 482		

CLIENT: RICHARD CROOKES CONSTRUCTIONS

NOTES:

1. All signage displayed on this traffic control plan is in accordance with Australian Standard AS/NZ 1742-3 209 & RTA Traffic Control @ WS manual V4
2. All existing speed and other sgns to be covered if they conflict with TCP
3. It is the client's responsibility to have this TCP checked by a Riverina Traffic Services representive after the set up but prior to commencement of work to ensure compliance with AS/NZ 1742-3 2009 & Traffic control @ WS manual V4.
4. This Traffic Control Plan is a controlled document and as such cannot be altered without notifying the designer.

Revision:	Sheet No:	MODIFIED BY:	DATE	TIME
B				

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