



Block 2 Report

Sydney Metro C&SW - Traffic and Interchange Monitoring

10-Apr-2024
Sydney Metro City and Southwest - Traffic and Interchange Monitoring
Doc No. 60705686-ACM-B2-RPT-TR-001-R01

Block 2 Report

Sydney Metro C&SW - Traffic and Interchange Monitoring

Client: Sydney Metro

ABN: 12 354 063 515

Prepared by

AECOM Australia Pty Ltd

10-Apr-2024

Job No.: 60705686

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 and ISO45001.

© (AECOM). All rights reserved.

AECOM has prepared this document for the sole use of the Client and for a specific purpose, each as expressly stated in the document. No other party should rely on this document without the prior written consent of AECOM. AECOM undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document. This document has been prepared based on the Client's description of its requirements and AECOM's experience, having regard to assumptions that AECOM can reasonably be expected to make in accordance with sound professional principles. AECOM may also have relied upon information provided by the Client and other third parties to prepare this document, some of which may not have been verified. Subject to the above conditions, this document may be transmitted, reproduced or disseminated only in its entirety.

Quality Information

Document Block 2 Report
 Ref 60705686
 Date 10-Apr-2024
 Originator Sara Hu, Jimmy Wan
 Checker/s Mack Brinums
 Verifier/s Anoop Sridhar

Revision History


Rev	Revision Date	Details	Approved	
			Name/Position	Signature
A	28-Mar-2024	Draft Report for Sydney Metro Review	Anoop Sridhar Associate Director	
B	10-Apr-2024	Final Report	Anoop Sridhar Associate Director	

Table of Contents

Terms and abbreviations	5
1.0 Introduction	6
1.1 Project overview	6
1.2 Purpose of this report	7
1.3 Scope of this study	7
1.4 Structure of this report	8
2.0 Context and background	9
2.1 Context	9
2.2 Background	10
3.0 Study area	11
3.1 Overview	11
3.2 Traffic monitoring	12
3.3 Transport interchange monitoring	24
4.0 Assessment methodology	27
4.1 Traffic monitoring	27
4.2 Transport interchange monitoring	29
5.0 Traffic monitoring and intersection performance	31
5.1 Chatswood Dive Site	31
5.2 Crows Nest Station	37
5.3 Victoria Cross Station	60
5.4 Barangaroo Station	69
5.5 Martin Place Station	93
5.6 Gadigal Station	104
5.7 Central Station	112
5.8 Waterloo Station	120
5.9 Sydenham Station	130
6.0 Transport interchange monitoring	140
6.1 Chatswood Station	140
6.2 Sydenham Station	145
7.0 Summary	150
Appendix A Stakeholder Meeting Minutes	A-1
Appendix B SIDRA Intersection Modelling Assumptions	B-1
Appendix C Network Flow Diagrams	C-4
Appendix D Traffic Monitoring – Station Overview	D-1
Appendix E Movement Summary Outputs	E-1

Terms and abbreviations

Term	Definition
AECOM	AECOM Australia Pty Ltd
Block 2	The second study block of the traffic and interchange monitoring program
BOAM	Bus Opal Assignment Model
CBD	Central Business District
CoA	Conditions of Approval
Condition D12	Refers to Item D12 of the Sydney Metro City & Southwest Chatswood to Sydenham conditions of approval, which specifies requirements for traffic operational monitoring of the Sydney Metro City & Southwest Chatswood to Sydenham.
CSELR	CBD and South-East Light Rail
CSSI	Critical State Significant Infrastructure
IAP	Interchange Access Plan
LOS	Level of Service
post-opening	denotes post-opening scenarios of the Sydney Metro City & Southwest line operating between Chatswood to Sydenham
pre-opening	denotes pre-opening scenarios of the Sydney Metro City & Southwest line operating between Chatswood to Sydenham
PTIPS	Public Transport Information and Priority Systems
SCATS	Sydney Coordinated Adaptive Traffic System
SIDRA Intersection	SIDRA Intersection modelling software, the modelling software used to assess the traffic performance.
SHB	Sydney Harbour Bridge
Sydney Metro	A New South Wales Government Agency constituted under the <i>Transport Administration Act 1988 (NSW)</i> .
Sydney Metro City & Southwest	The metro railway between Chatswood and Bankstown, including 15.5 kilometres of twin metro railway tunnels from Chatswood to Marrickville under Sydney Harbour.
Sydney Metro Northwest	The former Northwest Rail Link, i.e. operating metro railway between Tallawong Station at Rouse Hill and Chatswood.
Sydney Metro West	The metro railway that will connect the Sydney CBD and Parramatta, linking communities along the way with a new underground railway.
Sydney Metro Western Sydney Airport	The metro railway that will link St Marys to the Western Sydney International (Nancy Bird Walton) airport and the Aerotropolis.
TfNSW	Transport for NSW (A New South Wales Government Agency constituted under the <i>Transport Administration Act 1988 (NSW)</i>).
the Project	Traffic and interchange monitoring assessments for the Sydney Metro City & Southwest Chatswood to Sydenham
TCS	Traffic Control Signal
TSN	Transit Stop Number

1.0 Introduction

This section provides an introduction of the traffic and interchange monitoring for the Sydney Metro City & Southwest (C&SW) between Chatswood Station and Sydenham Station (the Project), including the project overview, project objectives and overall scope of works covered under this Project.

1.1 Project overview

Sydney Metro is the largest public transport project in Australia, designed to address congestion, enhance connectivity, and meet the evolving needs of Sydney’s population and economy. It encompasses four major metro lines: Sydney Metro Northwest, Sydney Metro West, Sydney Metro Western Sydney Airport, and Sydney Metro City & Southwest.

AECOM Australia Pty Ltd (AECOM) has been appointed by Sydney Metro to conduct traffic and interchange monitoring assessments for the Sydney Metro City & Southwest between Chatswood Station and Sydenham Station (the Project).

The purpose of this assessment is to evaluate the impact of the Sydney Metro City & Southwest (Chatswood to Sydenham) operations on the nine stations and their surrounding intersections and interchange facilities. The study involves evaluating the performance of these intersections and interchange both before and after the introduction of the metro line. This assessment is crucial for fulfilling the requirements of the Critical State Significant Infrastructure (CSSI) application Conditions of Approval (CoA) overseen by the NSW Department of Planning and Environment.

Traffic and interchange monitoring will be conducted in six study blocks, spanning a period of 12-months before the commencement of the CSSI operations (pre-opening) and 12-months after the commencement (post-opening). This comprehensive monitoring approach will provide insights into the traffic and interchange dynamics during different stages of the Sydney Metro City & Southwest Line (Chatswood to Sydenham), allowing for a thorough and robust impact assessment.

Figure 1-1 presents a timeline overview of the study blocks, highlighting the specific periods under observation.

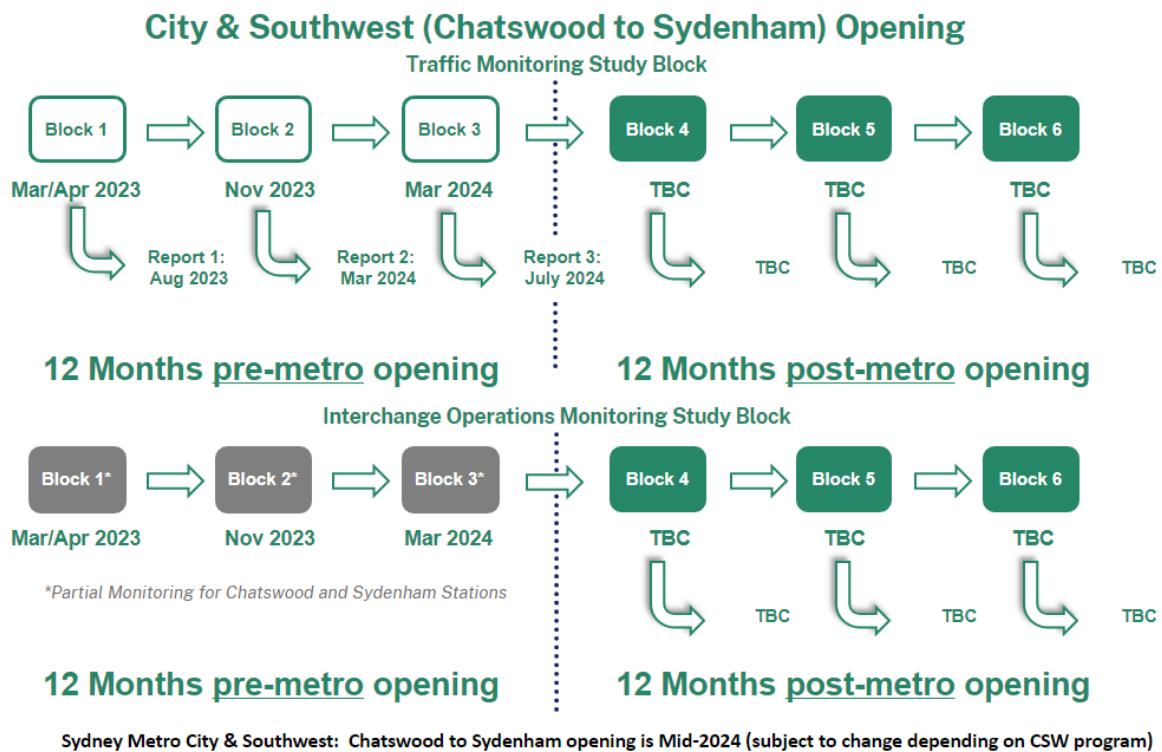


Figure 1-1 Traffic and interchange monitoring program

1.2 Purpose of this report

The Sydney Metro City & Southwest Chatswood to Sydenham – Traffic and Interchange Operation Monitoring report (this report) has been prepared to meet the requirements of Condition D12 of the CoA (outlined in **Section 2.2**).

This report provides traffic and interchange operation assessments of the nine stations along the Sydney Metro City & Southwest Line (Chatswood to Sydenham) during the monitoring timeframe of November to December 2023 (Block 2).

1.3 Scope of this study

The overall scope of works for the Block 2 study covers the following:

- **Traffic monitoring:** Intersection surveys were conducted in mid-November 2023 and early-December (re-surveys) 2023, including:
 - classified intersection count surveys conducted continuously for a one-week period, including light vehicles, heavy vehicles, buses, cyclist and pedestrian counts
 - vehicular queue length surveys (at the signal change to green for signalised intersections and aggregated every two minutes for priority intersections) conducted for the following nominated peak periods during the same one-week period:
 - weekday AM peak: 6am–10am
 - weekday PM peak: 3pm–7pm
 - weekend peak: 10am–2pm.
- **Transport interchange monitoring:** only Chatswood Station and Sydenham Station were considered for the interchange monitoring for the Block 2 study due to the existing operational train/metro stations. Interchange operation surveys were conducted at these two stations continuously for a one-week period same as intersection surveys in mid-November and early-December (re-surveys) 2023. Interchange operation surveys collected the following information for taxi, bus stop and kiss and ride facilities at each station:
 - vehicle counts
 - vehicle occupancy (boarding and alighting passengers only)
 - vehicle dwell time
 - vehicle queue length outside the bay on a lane-by-lane basis.
- **Site observations:** Site visits were undertaken in conjunction with the traffic and interchange operation monitoring for at least one weekday AM peak, one weekday PM peak, and one weekend peak period at each station.
- **Intersection assessment:** To assess the intersection operation performance during Block 2, a combination of isolated and network traffic modelling assessments was undertaken using SIDRA Intersection modelling software (SIDRA Intersection). The following data was obtained from Sydney Metro for developing the SIDRA Intersection models:
 - Sydney Coordinated Adaptive Traffic System (SCATS) traffic detector count data
 - SCATS traffic signal data and sub-systems information.
- **Stakeholder consultation:** Key findings of the Block 2 study were provided to Sydney Metro and the following key stakeholders in March 2024 for review and feedback:
 - Transport for NSW (TfNSW)
 - Willoughby City Council
 - North Sydney City Council
 - City of Sydney

- Inner West Council.

Additionally, Block 2 study findings were presented to TfNSW, Willoughby City Council and Inner West Council. **Appendix A** provides the minutes from these stakeholder meetings.

1.4 Structure of this report

This report is structured as follows:

- Section 1.0 provides an introduction to the Project
- Section 2.0 provides the context and background of the Project
- Section 3.0 outlines the study area of the Project
- Section 4.0 describes the methodology adopted for the traffic and interchange operation assessments
- Section 5.0 details the traffic monitoring and intersection performance
- Section 6.0 details the interchange monitoring performance
- Section 7.0 provides a summary of the traffic and interchange monitoring.

2.0 Context and background

This section provides an overview of the strategic context of the Project within the overall Sydney Metro program and the background of the CSSI CoA for the Sydney Metro City & Southwest Line (Chatswood to Sydenham).

2.1 Context

Sydney Metro is Australia’s largest public transport project, aiming to alleviate congestion, improve connectivity, and support the growing population and economic needs of Sydney. The main objectives of Sydney Metro are to enhance the overall transport experience, establish a robust and sustainable transport system, increase public transport usage and enhance the resilience of the transport network.

By 2032, Sydney Metro is expected to create a network of four metro lines (Northwest, West, Western Sydney Airport, and City & Southwest), spanning 113 kilometres, and encompassing 46 stations.

2.1.1 Sydney Metro Northwest

Sydney Metro Northwest marked the initial phase of the Sydney Metro project, commencing operations in May 2019. Spanning approximately 36 kilometres from Tallawong to Chatswood, this line consists of 13 stations.

2.1.2 Sydney Metro City & Southwest

Sydney Metro City & Southwest further extends the constructed Sydney Metro Northwest from Chatswood to Bankstown via the Sydney Central Business District (CBD) with 30 kilometres of metro rail. Sydney Metro City & Southwest between Chatswood and Sydenham is due to open in 2024, with seven new metro stations and 11 upgraded stations as shown in **Figure 2-1**. This will establish connectivity between metro stations in the city and southwest with those further west, including future metro stations on the Sydney Metro West and Sydney Metro Western Sydney Airport.

Sydney Metro City & Southwest project consists of two phases: Chatswood to Sydenham; and Sydenham to Bankstown. This study focuses on the assessments for the Chatswood to Sydenham phase of the Sydney Metro City & Southwest project.



Figure 2-1 Sydney Metro City & Southwest overview

2.1.3 Sydney Metro West

Sydney Metro West is an upcoming 24-kilometre metro line that will establish a vital connection between Greater Parramatta and the Sydney CBD, linking the communities along its route. This line will incorporate 10 new metro stations, located at key destinations including Westmead, Parramatta, Sydney Olympic Park, The Bays Precinct, and the Sydney CBD.

Construction for the Sydney Metro West project commenced in 2020 and is currently in progress.

2.1.4 Sydney Metro Western Sydney Airport

Sydney Metro Western Sydney Airport line is an upcoming 23-kilometre line and will link the new Western Sydney International (Nancy-Bird Walton) Airport with the Western Sydney Aerotropolis, and St Marys. The Sydney Metro Western Sydney Airport project includes the construction of six new metro stations and will provide connectivity to the existing Sydney Trains suburban T1 Western Line.

Construction for the Sydney Metro Western Sydney Airport project commenced in 2020 and is currently in progress.

2.2 Background

On 10 January 2017, the NSW Minister for Planning granted approval to the CSSI application for the Sydney Metro City & Southwest Chatswood to Sydenham. The infrastructure approval, which is regulated under Section 115ZB of the *Environmental Planning and Assessment Act 1979*, is subject to the Minister's conditions of approval for the CSSI.

The Conditions of Approval are administered by the NSW Department of Planning and Environment (previously the NSW Department of Planning, Industry and Environment) and delivered by the Proponent – Sydney Metro.

Part D of the Conditions of Approval outlines conditions for environmental management during operations of the project. Condition D12 specifies the requirement for traffic operational monitoring of the Project as per the following requirement:

“Traffic on local roads around each station must be monitored 12 months before the CSSI commences operation and for a period of no less than 12 months after commencement of operation. If monitoring indicates unacceptable traffic intrusion on local roads/streets as a result of operation of the CSSI beyond those that could reasonably be predicted in the EIS and/or Interchange Access Plan(s) in Condition E92, appropriate traffic management measures to mitigate the monitored impacts must be implemented following consultation with the Sydney Coordination Office and Relevant Road Authorities.”

3.0 Study area

This section provides an overview of the study area for both traffic and interchange monitoring, which was identified by Sydney Metro in consultation with key stakeholders (as listed in **Section 1.3**) during late 2022.

3.1 Overview

The Sydney Metro City & Southwest Line (Chatswood to Sydenham) includes a total of nine stations. For ease of referencing, each station has been assigned a three-character identifier based on the TfNSW Asset Reference Codes Register¹. **Table 3-1** displays the list of these stations along with their corresponding identifiers.

Table 3-1 Station three-character identifiers

Station	Station ID ¹
Chatswood	CWD ³
Chatswood Dive Site ²	
Crows Nest	CST
Victoria Cross	VIC
Barangaroo	BGU
Martin Place	MPL
Gadigal (formerly Pitt Street)	PIT
Central	CEN
Waterloo	WLO
Sydenham	SYD

Notes:

- 1) [TfNSW Asset Codes Register TS 01499:2.00 Version 2](#) has been used as a reference.
- 2) Chatswood Dive Site is not a station
- 3) Note CWD refers to Chatswood Dive Site in the context of the traffic assessment and Chatswood Station in the context of the interchange operation monitoring assessment.

All stations in Block 2, except Sydenham Station, had either traffic monitoring or interchange operation monitoring, while Sydenham Station had both intersection and interchange monitoring.

Table 3-2 outlines the type of assessment undertaken for each station in the Block 2 study.

Table 3-2 Assessments undertaken for each station in Block 2

Station	Traffic monitoring	Interchange monitoring	Remarks
Chatswood	✗	✓	No changes to road network
Chatswood Dive Site	✓	✗	No new kerbside usage proposed
Crows Nest	✓	✗	Interchanges not operational during Block 2
Victoria Cross	✓	✗	Interchanges not operational during Block 2
Barangaroo	✓	✗	Interchanges not operational during Block 2
Martin Place	✓	✗	No new kerbside usage proposed

Station	Traffic monitoring	Interchange monitoring	Remarks
Gadigal	✓	✗	No new kerbside usage proposed
Central	✓	✗	No new kerbside usage proposed
Waterloo	✓	✗	Interchanges not operational during Block 2
Sydenham	✓	✓	Nil

3.2 Traffic monitoring

The study area for traffic monitoring comprises a total of 65 intersections spread across the nine stations. To facilitate ease of reference, each intersection is assigned two unique identifiers:

- Intersection ID: A five-character code formed by combining the three-character identifier of the corresponding station (as listed in **Table 3-1**) with the index of the intersection within the study area surrounding that station. For example, CEN03 represents the third intersection in the Central Station study area.
- S.ID: A two-character identifier used to index all intersections within the Project study area.

Table 3-3 outlines each intersection's S.ID, Intersection ID, traffic control signal (TCS) ID designated by TfNSW, name, and control type. Of the 65 intersections within the study area, 60 intersections were assessable via SIDRA Intersection modelling during Block 2. The following pedestrian mid-block crossings were not operational during Block 2 and hence were excluded from the analysis:

- BGU16 – New Pedestrian Mid-block Crossing at New Hickson Road (north of Metro Station)
- BGU17 – New Pedestrian Mid-block Crossing at New Hickson Road (south of Metro Station)
- CEN04 – New Pedestrian Mid-block Crossing at Randle Lane
- WLO06 – New Pedestrian Mid-block Crossing at Cope Street.

Additionally, the pedestrian bridge crossing along Mowbray Road (CWD02) was solely included in traffic surveys for data collection and was not modelled.

Figure 3-1 to Figure 3-9 depict the location of each intersection within each station's study area based on their Intersection ID.

Table 3-3 Traffic assessment intersections

S.ID	Intersection ID	TCS ID	Intersection name	Intersection control type
01	CWD01	3037	Mowbray Road / Hampden Road	Signal
02	CWD02	-	Pedestrian Bridge Crossing along Mowbray Road	Pedestrian only - Bridge Crossing
03	CST01	768	Pacific Highway / Albany Street	Signal
04	CST02	767	Pacific Highway / Oxley Street	Signal
05	CST03	766	Pacific Highway / Hume Street	Signal
06	CST04	765	Pacific Highway / Falcon Street / Shirley Road	Signal
07	CST05	-	Clarke Street / Oxley Street	Priority - Give Way
08	CST06	-	Clarke Street / Hume Street	Priority - Give Way
09	CST07	-	Clarke Street / Willoughby Road	Priority - Give Way

S.ID	Intersection ID	TCS ID	Intersection name	Intersection control type
10	CST08	516	Albany Street / Willoughby Road	Signal
11	CST09	-	Albany Street / Oxley Street	Roundabout
12	CST10	-	Albany Street / Clarke Lane	Priority - Give Way
13	CST11	-	Oxley Street / Clarke Lane	Priority - Give Way
14	CST12	-	Hume Street / Clarke Lane	Priority - Stop
15	CST13	763	Pacific Highway / Alexander Street	Signal
16	CST14	764	Falcon Street / Alexander Street	Signal
17	VIC01	1206	Pacific Highway / Berry Street	Signal
18	VIC02	874	Miller Street / Berry Street	Signal
19	VIC03	1156	Miller Street / McLaren Street	Signal
20	VIC04	630	Pacific Highway / Miller Street	Signal
21	BGU01	-	Hickson Road / Towns Place	Priority - Give Way
22	BGU02	-	Dalgety Road / Towns Place	Roundabout
23	BGU03	-	Kent Street / Argyle Street	Priority - Give Way
24	BGU04	4272	Pedestrian Mid-block Crossing at Kent Street near Gas Lane	Pedestrian only - Signal
25	BGU05	4272	Kent Street / Sydney Harbour Bridge (SHB) On-ramp	Signal
26	BGU06	4625	Hickson Road / Napoleon Street / Sussex Street	Signal
27	BGU07	308	Margaret Street / Kent Street / Napoleon Street	Signal
28	BGU08	319	Margaret Street / Clarence Street	Signal
29	BGU09	3042	Margaret Street / York Street	Signal
30	BGU10	3939	Pedestrian Mid-block Crossing at Sussex Street under Exchange Place	Pedestrian only - Signal
31	BGU11	4109	Pedestrian Mid-block Crossing at Kent Street near Margaret Street	Pedestrian only - Signal
32	BGU12	310	Sussex Street / Erskine Street	Signal
33	BGU13	307	Kent Street / Erskine Street	Signal
34	BGU14	284	Sussex Street / King Street	Signal
35	BGU15	283	Kent Street / King Street	Signal
36	BGU16	-*	New Pedestrian Mid-block Crossing at New Hickson Road (north of Metro Station)	Pedestrian only - Signal
37	BGU17	-*	New Pedestrian Mid-block Crossing at New Hickson Road (south of Metro Station)	Pedestrian only - Signal
38	BGU18	305	Shelley Street / Erskine Street	Signal

S.ID	Intersection ID	TCS ID	Intersection name	Intersection control type
39	MPL01	244	Hunter Street / Castlereagh Street / Bligh Street	Signal
40	MPL02	302	Hunter Street / Elizabeth Street / Chifley Square	Signal
41	MPL03	1412	Bent Street / Bligh Street	Signal
42	MPL04	242	Bent Street / Phillip Street	Signal
43	MPL05	245	Pedestrian Mid-block Crossing at Castlereagh Street	Pedestrian only - Signal
44	MPL06	287	Pedestrian Mid-block Crossing at Elizabeth Street	Pedestrian only - Signal
45	PIT01	2312	Pitt Street / Bathurst Street	Signal
46	PIT02	2281	Castlereagh Street / Bathurst Street	Signal
47	PIT03	250	Park Street / Castlereagh Street	Signal
48	PIT04	235	Park Street / Pitt Street	Signal
49	CEN01	293	Elizabeth Street / Eddy Avenue	Signal
50	CEN02	293	Elizabeth Street / Foveaux Street	Signal
51	CEN03	-	Elizabeth Street / Cooper Street	Priority - Give Way
52	CEN04	-*	New Pedestrian Mid-block Crossing at Randle Lane	Pedestrian only - Signal
53	CEN05	2916	Elizabeth Street / Randle Street	Signal
54	WLO01	47	Botany Road / Raglan Street / Henderson Road	Signal
55	WLO02	-	Raglan Street / Cope Street	Roundabout
56	WLO03	137	Botany Road / Wellington Street / Buckland Street	Signal
57	WLO04	-	Cope Street / Wellington Street	Roundabout
58	WLO05	55	Wyndham Street / Henderson Road	Signal
59	WLO06	-*	New Pedestrian Mid-block Crossing at Cope Street	Pedestrian only - Signal
60	SYD01	3320	Railway Parade / Gleeson Avenue	Signal
61	SYD02	1152	Burrows Avenue / Gleeson Avenue	Signal
62	SYD03	-	Burrows Avenue / George Street	Priority - Give Way
63	SYD04	4946	Pedestrian Mid-block Crossing at Sydenham Road	Pedestrian only - Signal
64	SYD05	-	Marrickville Road / Buckley Street	Priority - Give Way
65	SYD06	-	Sydenham Road / Buckley Street	Priority - Give Way

*Note: The new pedestrian mid-block crossings were under construction during Block 2 and were not assigned a TCS number.

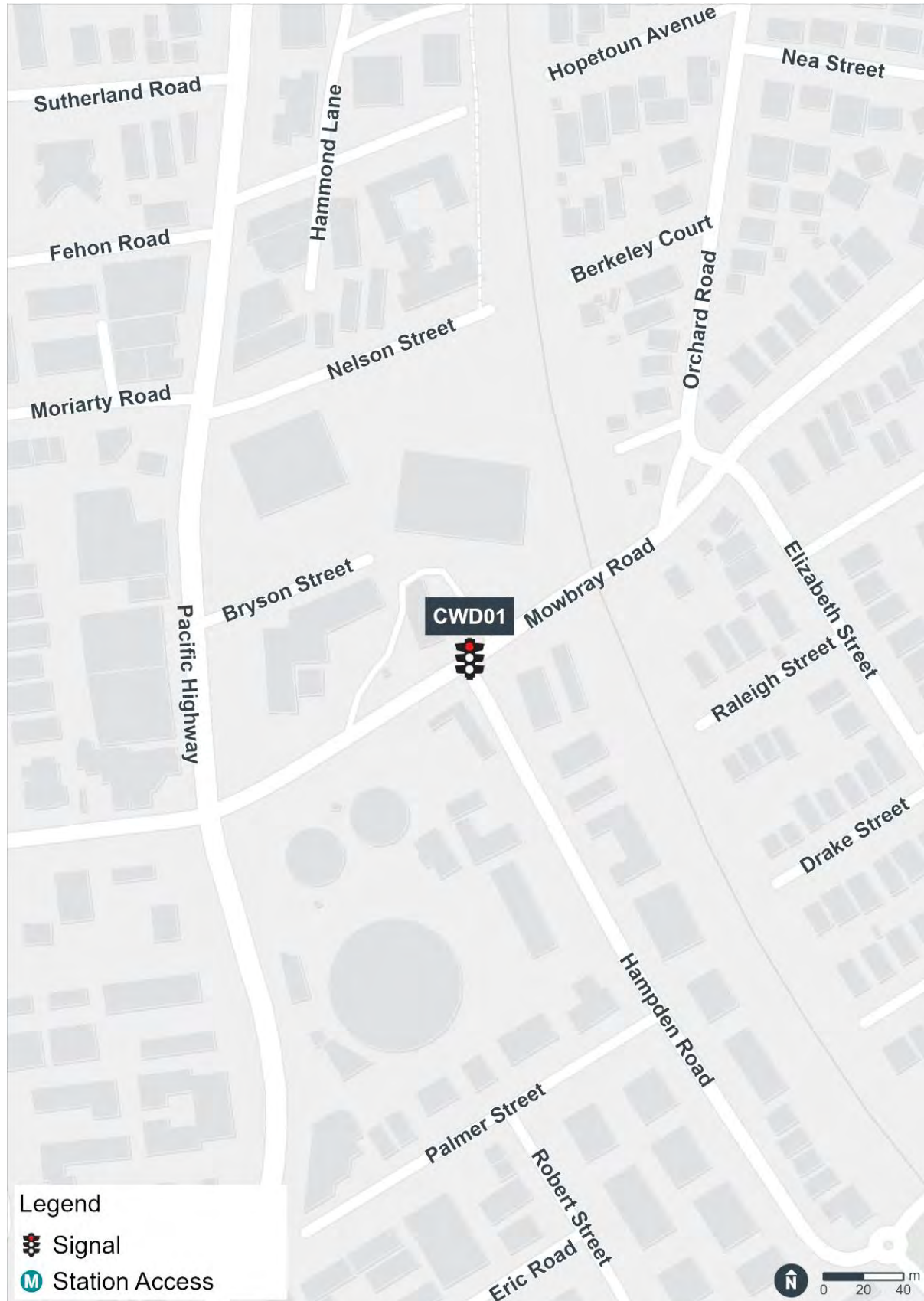


Figure 3-1 Chatswood Dive Site traffic study area



Figure 3-2 Crows Nest Station traffic study area

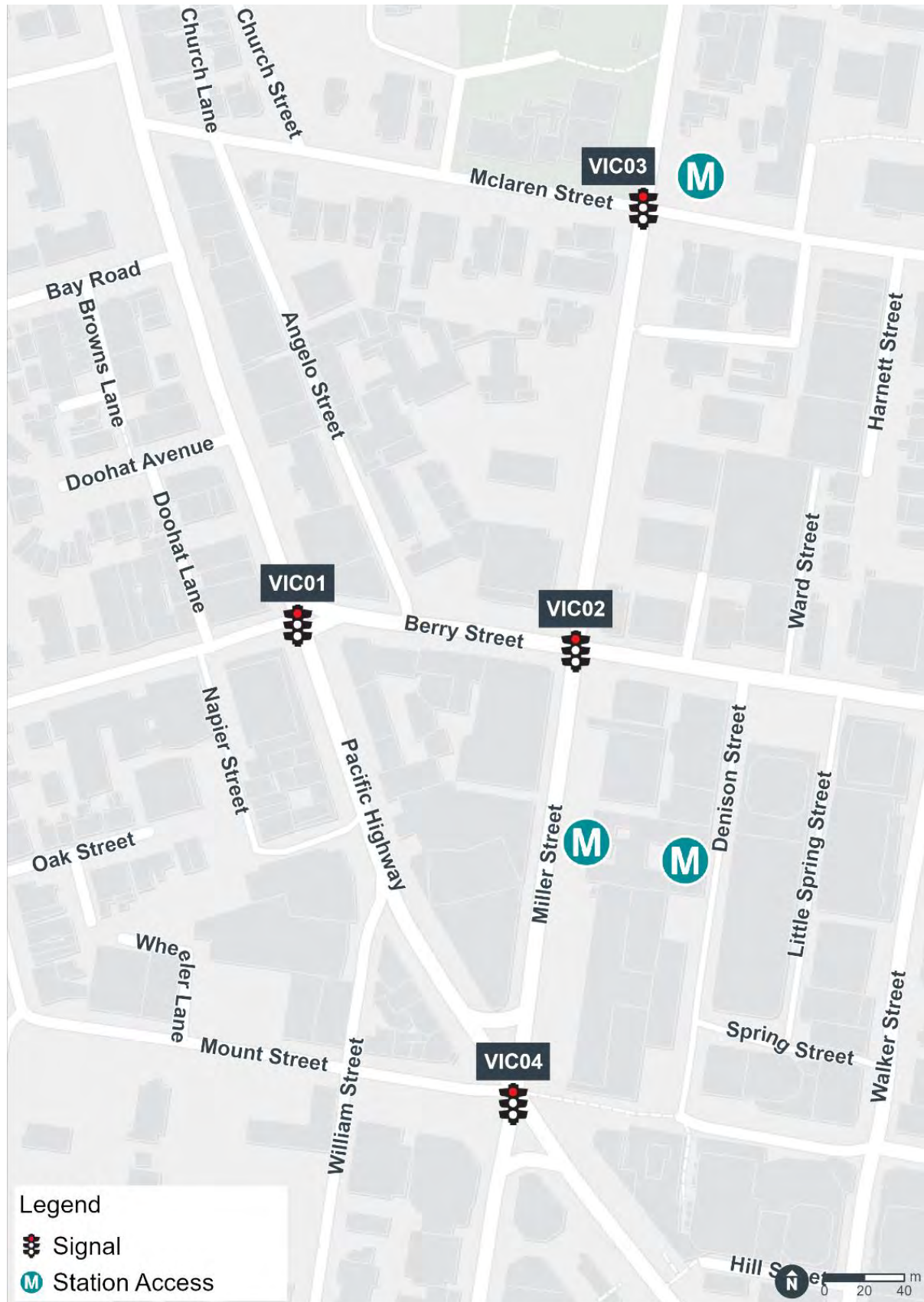


Figure 3-3 Victoria Cross Station traffic study area

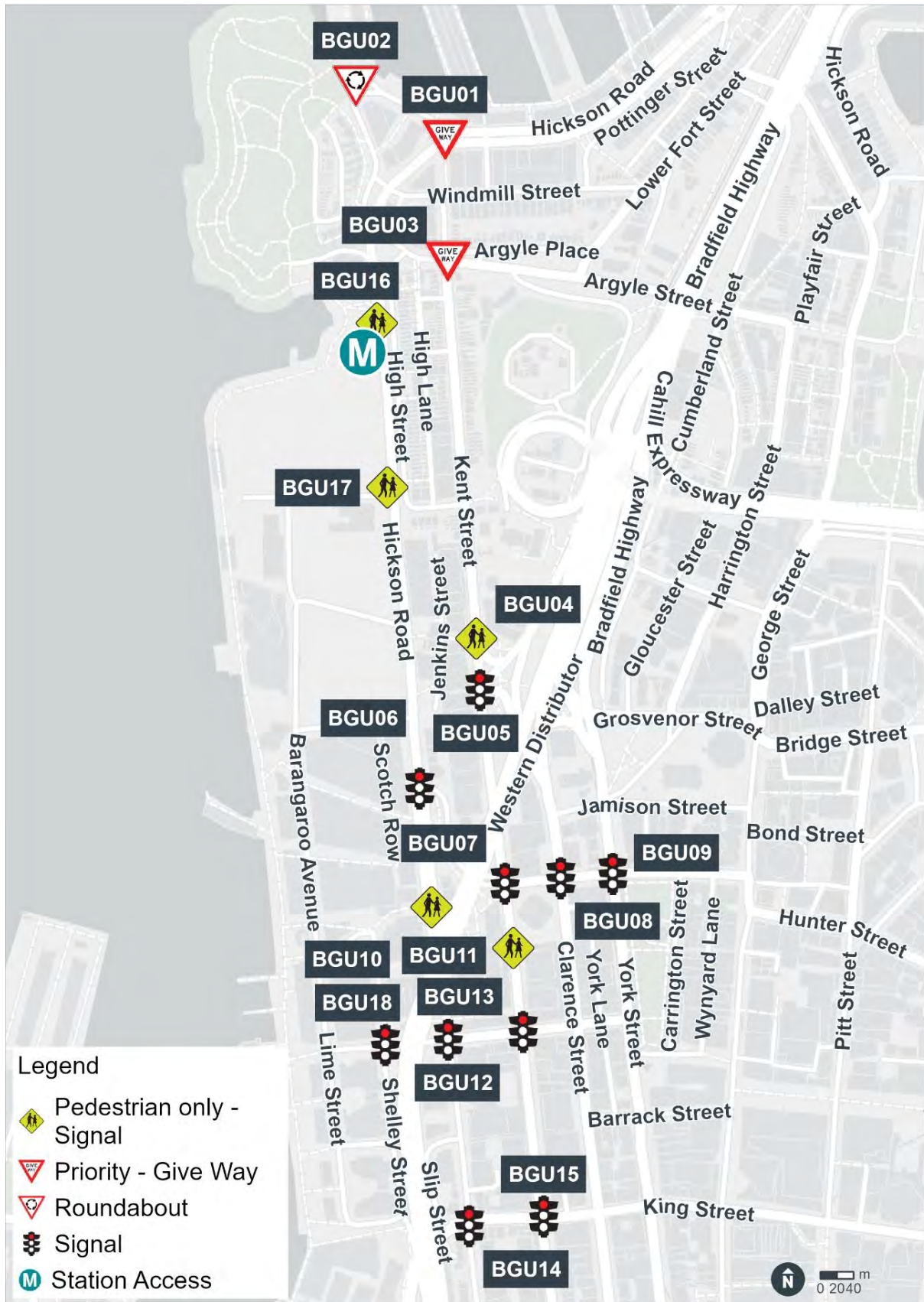


Figure 3-4 Barangaroo Station traffic study area

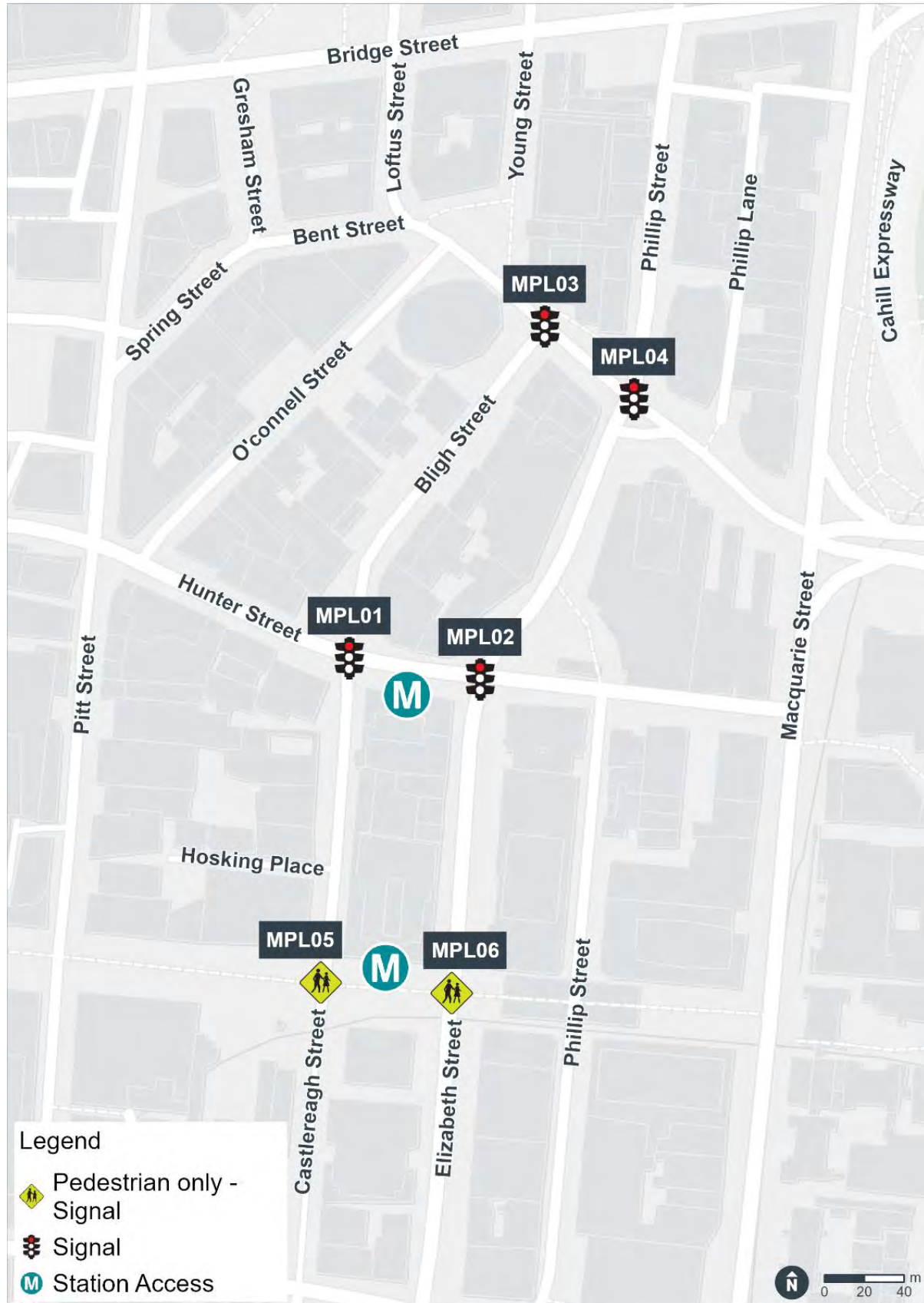


Figure 3-5 Martin Place Station traffic study area

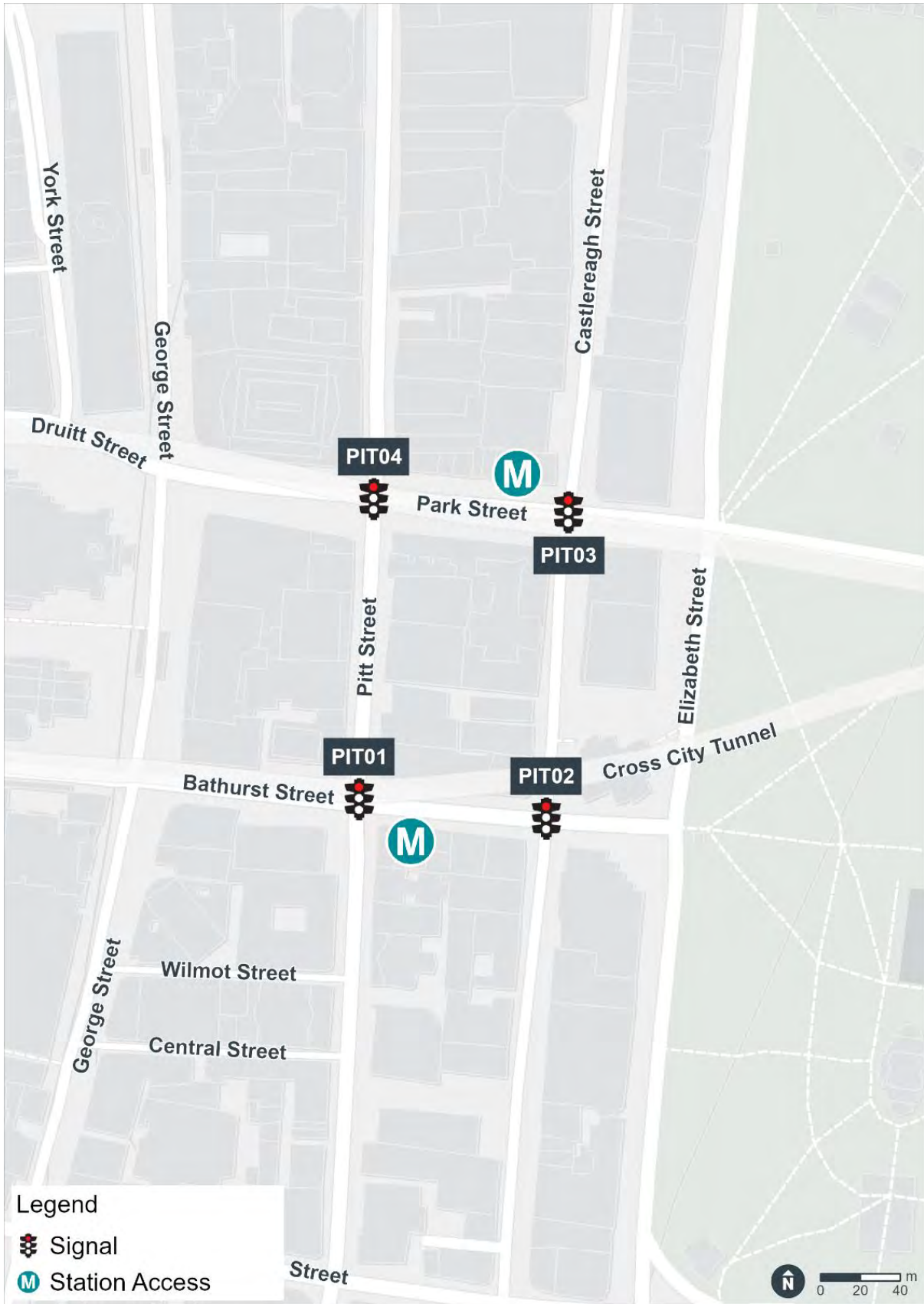


Figure 3-6 Gadigal Station traffic study area

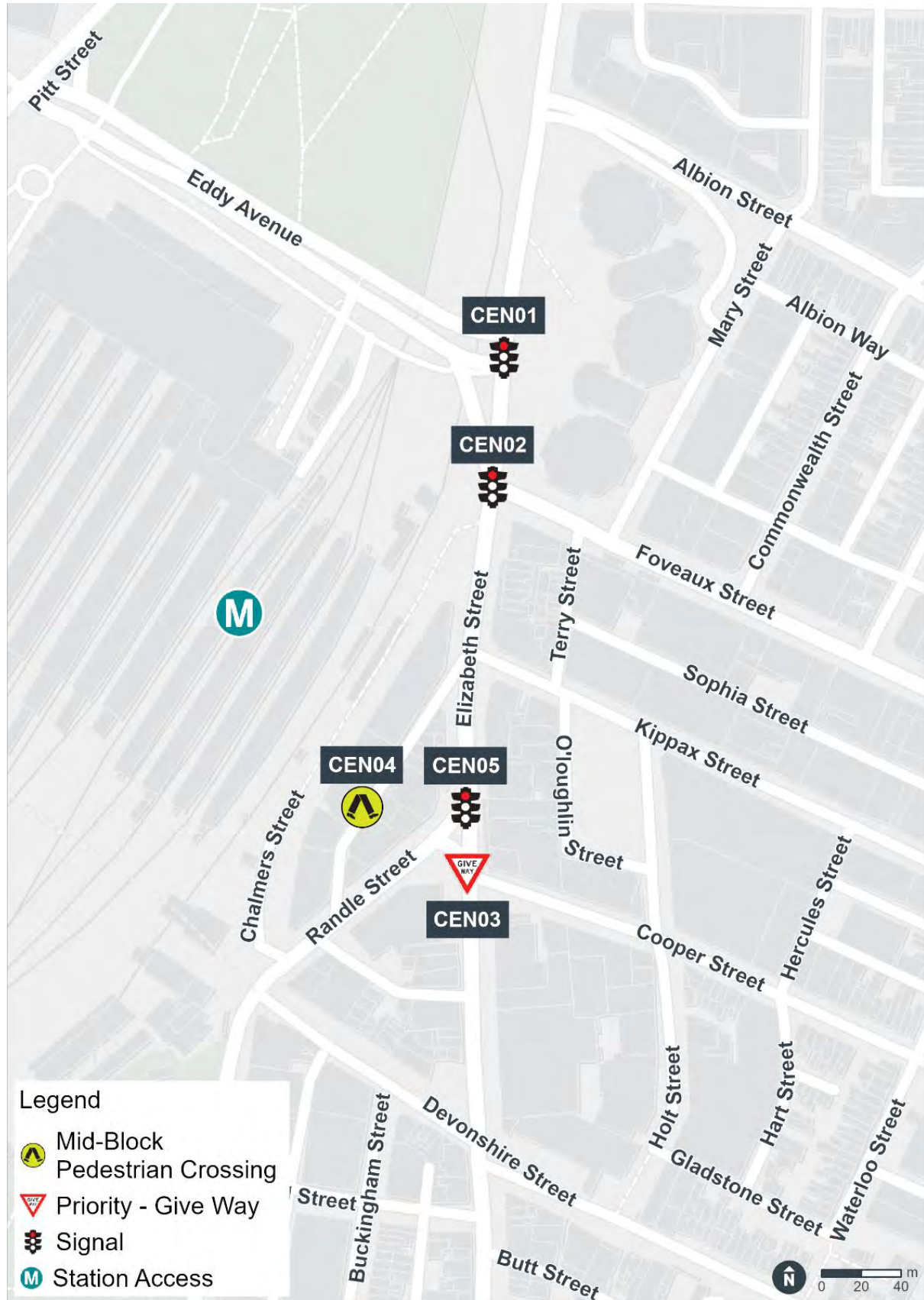


Figure 3-7 Central Station traffic study area



Figure 3-8 Waterloo Station traffic study area

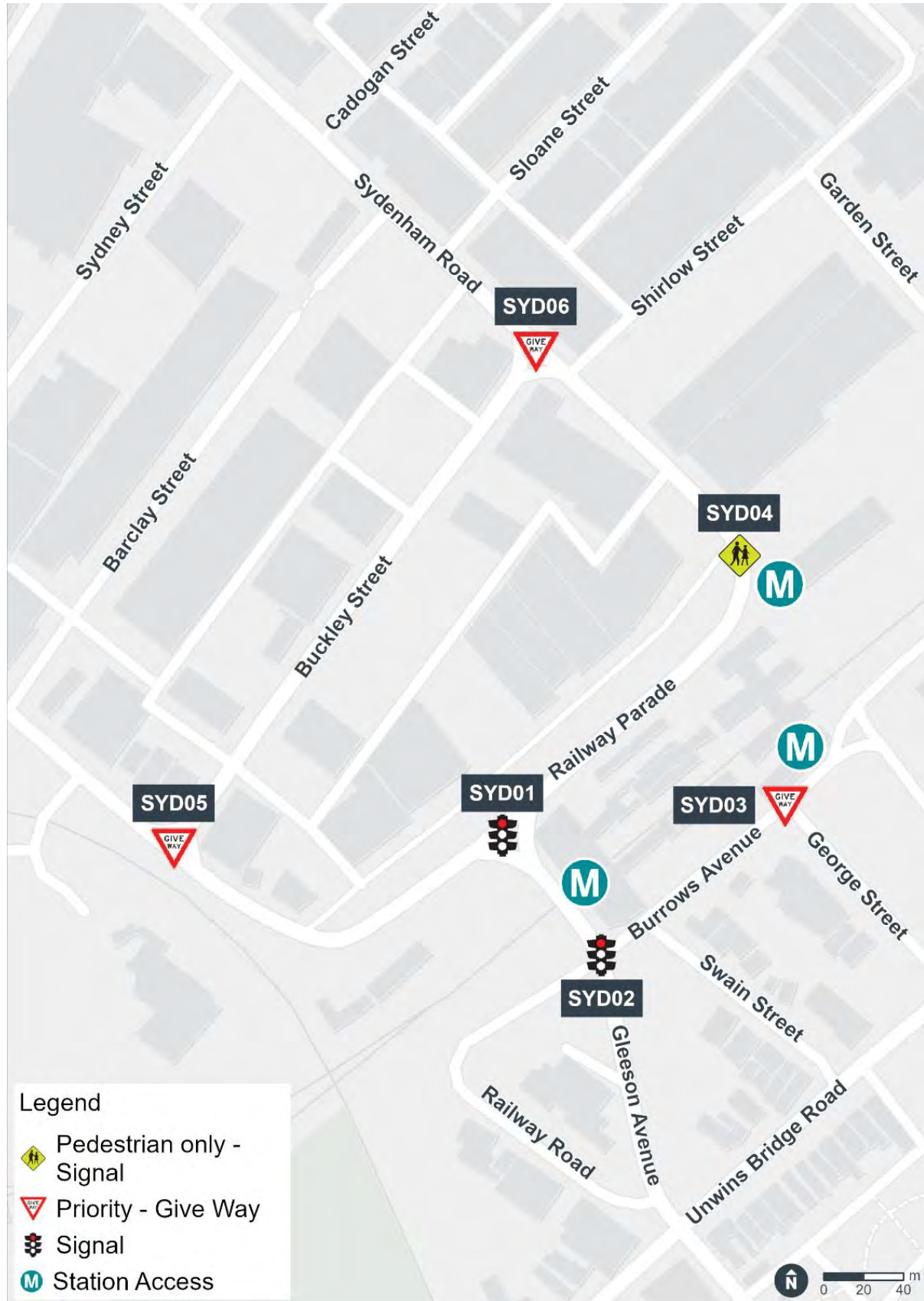


Figure 3-9 Sydenham Station traffic study area

3.3 Transport interchange monitoring

The transport interchange monitoring study area includes taxi, bus stop and kiss and ride facilities located near the nine stations along the City & Southwest Line (Chatswood to Sydenham). In Block 2, surveys were conducted only for facilities near operating interchanges, namely Chatswood Station and Sydenham Station.

Similar to the intersections in the traffic study area, a five-character identifier was assigned to each taxi, bus stop and kiss and ride facility for ease of referencing, with the first three-characters matching the station identifiers in **Table 3-1**. The fourth character identifies the type of interchange facility and the fifth character indexes it.

Table 3-4 outlines the interchange facilities assessed in the Block 2 study, including the associated type, identifier, station, street and side of road location, and number of bays.

Table 3-4 Block 2 – kiss and ride facilities

Type	ID	Station	Street	Side of road	Number of bays
Kiss and ride	CWDK1	Chatswood	Railway Street	West	1
Kiss and ride	CWDK2	Chatswood	Albert Avenue	North	2
Kiss and ride	CWDK3	Chatswood	Endeavour Street	North	2
Taxi	CWDT1	Chatswood	Victoria Avenue	North	11
Taxi	CWDT2	Chatswood	Endeavour Street	North	2
Bus*	SYDB1	Sydenham	Railway Parade	South	3
Kiss and ride	SYDK1	Sydenham	Burrows Avenue	North	4
Kiss and ride**	SYDK2	Sydenham	Sydenham Road	East	2
Taxi	SYDT1	Sydenham	Burrows Avenue	North	2
Accessible parking***	SYDA1	Sydenham	Bolton Street	North	2

*Note: SYDB1 encompasses transit stop number (TSN) 220421, TSN 2204125 and TSN 220450.

**Note: SYDK2 is a new kiss and ride facility. At the time of the Block 2 study, kerbside signage indicated this was a no parking zone. It has been included as part of the Block 2 study for comparison with future study blocks.

***Note: SYDA1 is a new accessible parking area. At the time of the Block 2 study, the accessible parking bays had been constructed and signposted as such. It has been included as part of the Block 2 study for comparison with future study blocks.

Figure 3-10 and **Figure 3-11** depict the location of each taxi, bus stop and kiss and ride facility assessed surrounding Chatswood Station and Sydenham Station, respectively.



Figure 3-10 Chatswood Station interchange study area

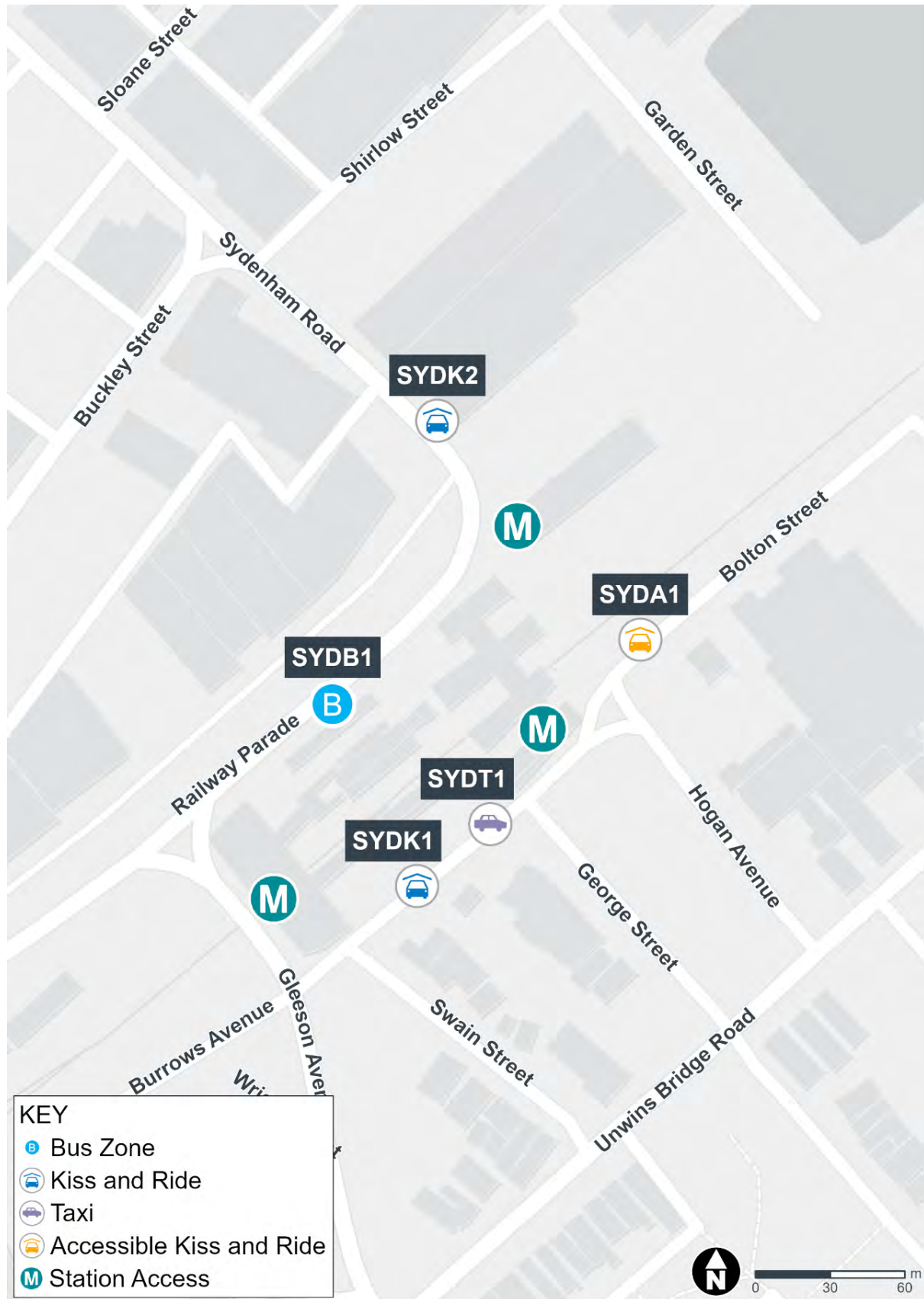


Figure 3-11 Sydenham Station interchange assessment study area

4.0 Assessment methodology

This section details the traffic and transport interchange monitoring assessment methodology undertaken for the intersections within study area and the park and ride facilities surrounding the stations identified in **Section 3.2** and **Section 3.3**, respectively.

4.1 Traffic monitoring

Figure 4-1 provides an overview of the adopted methodology for the traffic monitoring, with further clarifications and details provided in the subsequent sections.

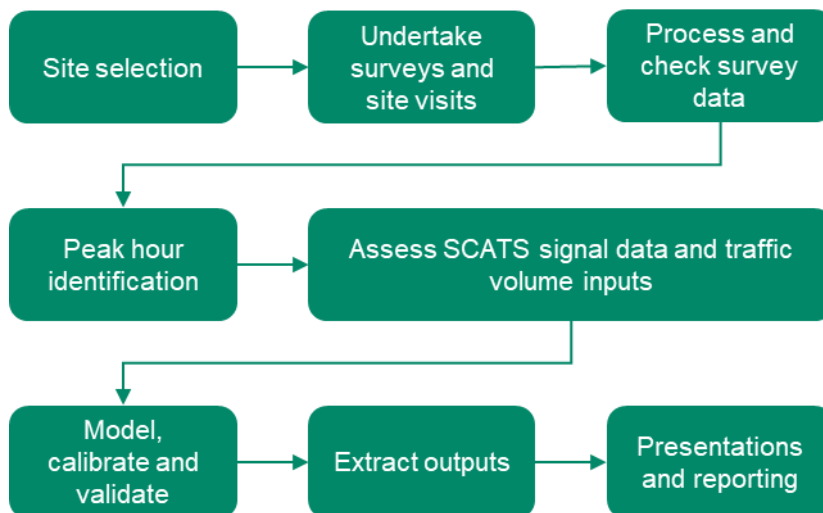


Figure 4-1 Traffic assessment methodology overview

4.1.1 Traffic surveys

Classified intersection counts were undertaken for 61 of the 65 study area intersections (as outlined in **Section 3.2**). The traffic surveys were carried out over a one-week period, and the data was aggregated in 15-minute intervals. In cases where data was corrupted or unavailable due to vandalism, re-surveys were conducted. The survey dates were as follows:

- **Traffic Surveys:** Monday 13 November 2023 to Sunday 19 November 2023
- **Re-Surveys:** Friday 1 December 2023 to Monday 4 December 2023.

During the traffic surveys, data was gathered for various vehicle types including light vehicles, heavy vehicles, and buses, as well as for cyclists and pedestrians. In addition, queue lengths were also documented during the traffic surveys to aid in validating the SIDRA Intersection models.

AECOM conducted site observations in conjunction with the traffic surveys, ensuring at least one observation was carried out for each intersection during each peak period specified in **Section 4.1.2** (excluding the Monday and Friday). The site observations were conducted to observe various aspects, including vehicle behaviours, any changes in lane geometry or capacity, and the condition of the traffic survey cameras to ensure that they were properly set up and not vandalised.

SCATS traffic detector count data was provided by Sydney Metro, for the same dates traffic surveys were undertaken. The traffic survey data was reviewed against the SCATS traffic detector count data to identify any potential outliers. Intersections with traffic survey volumes greater than or less than 10 per cent of the SCATS volumes underwent additional investigation and/or recounting of the traffic surveys. Once the traffic survey data were reviewed and finalised, additional data analysis was conducted as detailed in the subsequent sections.

4.1.2 Peak hour identification

Peak one-hour periods were identified for each intersection during three peak periods listed below:

- weekday AM peak: 6am–10am, Monday to Friday
- weekday PM peak: 3pm–7pm, Monday to Friday
- weekend peak: 10am–2pm, Saturday to Sunday.

It is important to note that the identified peak hour varies between different locations. However, the peak hours fall within the time periods listed above.

Each intersection was modelled as either an isolated site or as part of a network, as described in **Appendix B**. In the case of intersections modelled as an isolated site, the peak hour was determined by considering the total hourly volume (light vehicles, heavy vehicles and buses) at the intersection. Conversely, for intersections modelled as part of a network, the peak hour was determined by considering the total hourly volume across the network at approaches connecting to the external network.

4.1.3 Network flow diagrams

A review was undertaken to identify any variations in peak hour traffic volumes between mid-blocks connecting adjacent intersections within the same network. These variations were primarily due to minor counting discrepancies or due to side streets, property and parking access. Survey volumes were used for the intersection modelling. Additionally, considering the fixed schedule of bus routes, adjustments were made to bus volumes whenever large discrepancies were observed.

The resulting peak hour volumes were utilised as the turning volume inputs for the SIDRA Intersection models. The network flow diagrams used to inform the traffic and pedestrian volume inputs for SIDRA Intersection modelling are included in **Appendix C**.

4.1.4 SCATS signal and sub-systems data

In addition to the SCATS detector count data, SCATS traffic signal data was also provided for each intersection during their respective peak hours, which aligned with the traffic survey dates.

The SCATS traffic signal data included historical information on the signal phase sequence and signal phase time frequency, as well as sub-system information for signalised intersections modelled as a part of a network. Furthermore, the signal phase sequence was reviewed against traffic survey footage to determine if any signal phases were not executed or ran in a different order. Moreover, the traffic survey footage was also examined to ascertain whether the early cut-off or late-start movements observed during site visits also occurred during the peak hours modelled.

4.1.5 SIDRA Intersection modelling

The performance of the intersections was assessed using either the site or network function (refer to **Appendix B**) of the SIDRA Intersection software, adopting the peak hour volumes and SCATS traffic signal data. Detailed SIDRA Intersection modelling was conducted for the intersections within the study area. The geometry of the intersections was established using desktop aerial imagery from sources such as Nearmap and Google Streetview, which was then validated through on-site observations. The models were specifically developed for the identified peak hours within the peak periods (**Section 4.1.2**), incorporating the peak volume inputs derived from the network flow diagrams (**Section 4.1.3**), as well as the SCATS signal data and sub-systems information (**Section 4.1.4**).

The modelled queues were validated against the queue length surveys and traffic survey footage.

4.1.6 Intersection performance assessment

The standard measure of intersection performance is vehicle delay, which is used to assess the efficiency of an intersection. SIDRA Intersection adopts the TfNSW Traffic Modelling Guidelines which categorises average intersection delay into six bands of average delay per vehicle (seconds per vehicle). These bands are determined based on the criteria outlined in **Table 4-1**. By analysing the average delay, SIDRA Intersection determines the level of service (LOS) for the intersection, a measure of the intersection performance.

Table 4-1 Intersection LOS criteria

LOS	Average delay (seconds per vehicle)	Criteria for traffic signals	Criteria for give way and stop signs
A	< 14	Good operation	Good operation
B	15 to 28	Good operation with acceptable delays and spare capacity	Good operation with acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	42 to 56	Near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals, incidents will cause excess delays	At capacity, requires other control mode
F	> 70	Extra capacity required	At capacity, requires other control mode

Source: TfNSW Traffic Modelling Guidelines, LOS definitions for vehicles (NSW method) based on delay only

It is noted that the critical movement for LOS at a roundabout or priority-controlled intersection is the movement with the worst delay, whereas for a signalised intersection, the average delay over all movements is adopted.

4.2 Transport interchange monitoring

Figure 4-2 provides an overview of the adopted methodology for the interchange monitoring, with further clarifications and details are provided in the subsequent sections.

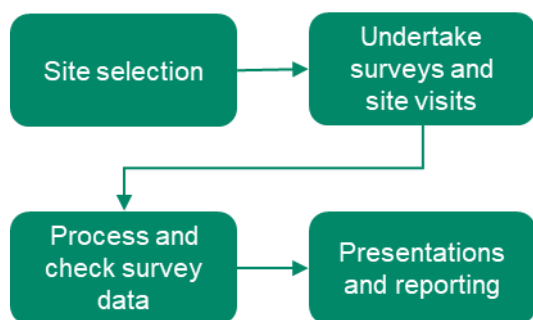


Figure 4-2 Interchange assessment methodology overview

4.2.1 Interchange surveys

Interchange surveys were undertaken at taxi, bus stop and kiss and ride facilities located at Chatswood Station and Sydenham Station (as outlined in Section 3.3).

The interchange surveys were carried out over a one-week period similar to the intersection surveys, and re-surveys were conducted at sites where data was corrupted or unavailable due to vandalism. The survey dates are as follows:

- **Traffic Surveys:** Monday 13 November 2023 to Sunday 19 November 2023
- **Re-Surveys:** Friday 1 December 2023 to Sunday 3 December 2023.

As part of the interchange surveys, data was gathered for the pick-up and drop-off facilities, comprising bus bays/stops, taxi bays, and kiss and ride bays. The key data captured at each facility includes:

- vehicle counts
- vehicle occupancy (boarding and alighting passengers only)
- vehicle dwell time
- vehicle queue length outside the bay on a lane-by-lane basis.

Site observations were completed in conjunction with the interchange surveys, ensuring at least one observation was carried out for each pick-up and drop-off facility during each of the following peak periods:

- weekday AM peak: 6am–10am, Monday to Friday
- weekday PM peak: 3pm–7pm, Monday to Friday
- weekend peak: 10am–2pm, Saturday to Sunday.

During the survey period, AECOM conducted site observations in conjunction with the data collection process. These observations aimed to monitor several aspects, such as kerbside lane usage, queuing outside the bays and the condition of the interchange survey cameras, ensuring they were correctly set up and not subject to vandalism.

4.2.2 Aggregation and analysis

The interchange survey data was consolidated and analysed, categorising the data based on facility type (taxi, bus stop, or kiss and ride) to understand usage patterns at the park and ride facilities near the stations. A high-level exploratory analysis of the combined data was conducted to identify the daily vehicle trends for the key data types outlined in **Section 4.2.1**.

To ensure the accuracy and reliability of the findings, the identified trends were compared with the survey footage. In cases where discrepancies were detected, the survey data was recounted and/or rechecked to provide reliable results. The findings from this analysis are reported in **Section 6.0**.

5.0 Traffic monitoring and intersection performance

This section summarises the traffic monitoring and intersection performance outputs from traffic survey data and SIDRA Intersection modelling undertaken across the Block 2 study area.

Appendix D provides an overview of the average vehicle profile, traffic volumes, cyclist and pedestrian patterns for each station.

The SIDRA Intersection movement summary outputs for all modelled intersections during each peak period are shown in **Appendix E**.

5.1 Chatswood Dive Site

The Chatswood Dive Site is a temporary underground site facilitating excavation and construction works for the City & Southwest Line tunnel portal from Chatswood Station. Although not accessible to the general public, the Chatswood Dive Site facilitates the movement of workers and equipment to access the underground areas where crucial tunnelling and other metro construction operations take place. When the Sydney Metro City & Southwest Line (Chatswood to Sydenham) is operational, the Chatswood Dive Site will be used as a service facility for the operation of the Sydney Metro rail line between Chatswood and the Sydney CBD (and beyond).

The Chatswood Dive Site is located south of Chatswood Station and north of Artarmon Station, bound by the Pacific Highway (A1), Mowbray Road and Nelson Street in Chatswood. Bus services are available within approximately 200 metres west of the Chatswood Dive Site on the Pacific Highway (A1) and Mowbray Road. Artarmon Station, approximately 600 metres south of the Chatswood Dive Site, offers the nearest rail service. The bridge crossing along Mowbray Road over the rail line connects residents to the east with the Pacific Highway (A1), facilitating walking and cycling in addition to general traffic.

The Chatswood Dive Site study area consists of two study sites; however, the pedestrian bridge crossing along Mowbray Road (CWD02) was not modelled given it does not function as an intersection or mid-block crossing. **Table 5-1** presents the peak hours utilised for modelling the intersections.

Table 5-2 provides a summary of the intersection LOS, while Figure 5-1 visualises a geospatial summary of the intersection LOS within the Chatswood Dive Site study area.

Table 5-1 Block 2 – Chatswood Dive Site peak hours modelled

Network ID	Intersection ID	Weekday AM peak hour		Weekday PM peak hour		Weekend peak hour	
		Day	Start time	Day	Start time	Day	Start time
-	CWD01	Tuesday	8.00am	Thursday	5.30pm	Saturday	12.00pm
-	CWD02	No modelling was undertaken					

Table 5-2 Block 2 - Chatswood Dive Site intersection performance summary

Intersection ID	Intersection	LOS		
		Weekday AM Peak	Weekday PM Peak	Weekend Peak
CWD01	Mowbray Road / Hampden Road (Signal)	B	B	A
CWD02	Pedestrian Bridge Crossing along Mowbray Road (Bridge)	No modelling was undertaken.		

Overall, the intersection performance in the Chatswood Dive Site study area during the peak periods is satisfactory, operating at LOS B or better.

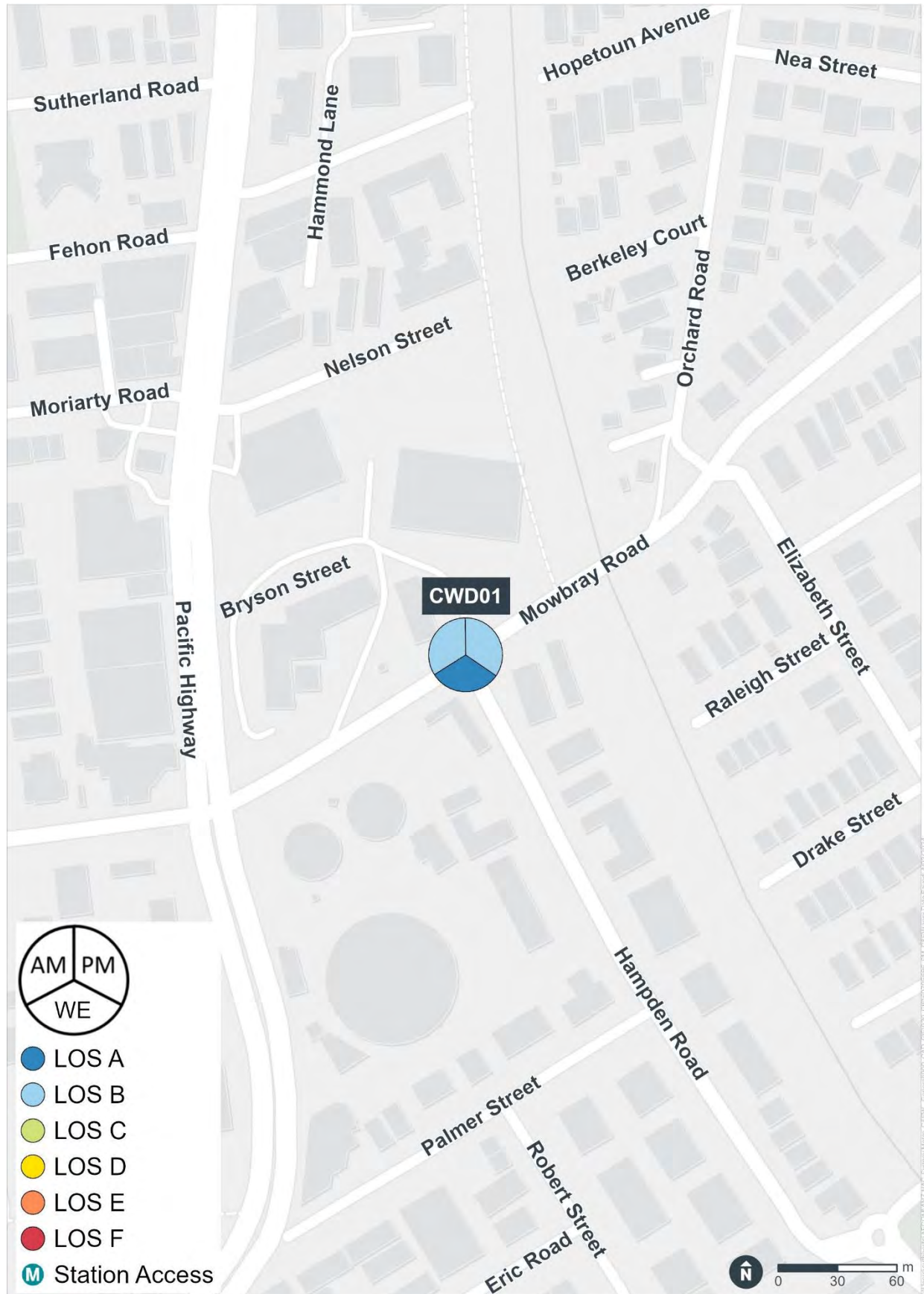
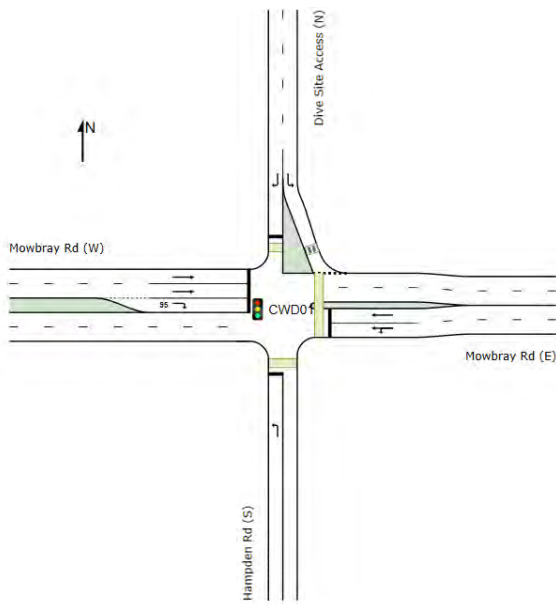


Figure 5-1 Block 2 - Chatswood Dive Site intersection performance summary

5.1.1 CWD01 – Mowbray Road / Hampden Road

This signalised intersection, composed of Mowbray Road, Hampden Road and the Chatswood Dive Site egress, is located directly south of the Chatswood Dive Site. This intersection serves as a connection point for the local road of Hampden Road, linking Chatswood and Artarmon, and the regional road of Mowbray Road, linking Willoughby to Lane Cove. Furthermore, the Chatswood Dive Site exits on to Mowbray Road at this intersection. The pedestrian bridge crossing along Mowbray Road (CWD02) connects with the eastern approach of this intersection.

Figure 5-2 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-2 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CWD01

Table 5-3 presents a performance summary of this intersection.

Table 5-3 Block 2 – Intersection performance summary of CWD01

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Mowbray Road / Hampden Road (Signal)	Weekday AM	South	0.492	57.5	78	LOS E
		East	0.484	18.9	159.3	LOS B
		North	0.009	39	0.5	LOS C
		West	0.488	6.3	78.5	LOS A
		Total	0.492	15	159.3	LOS B
	Weekday PM	South	0.451	53.3	76.9	LOS D
		East	0.488	21.1	161.2	LOS B
		North	0.009	38.3	0.5	LOS C
West		0.544	6.8	89.3	LOS A	

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
		Total	0.544	16	161.2	LOS B
		South	0.491	49.5	94.4	LOS D
	Weekend	East	0.493	13.4	145	LOS A
		North	0.002	2.7	0	LOS A
		West	0.49	3.8	78.7	LOS A
		Total	0.493	11.3	145	LOS A

Overall, the intersection of Mowbray Road and Hampden Road performs satisfactorily at LOS B or better. Mowbray Road (east approach) experiences consistent congestion, and vehicles often form queues that extend close to the intersection with Elizabeth Street and Orchard Road.

5.1.2 CWD02 – Pedestrian Bridge Crossing along Mowbray Road

This pedestrian bridge, located east of the intersection of Mowbray Road and Hampden Road and south of the Chatswood Dive Site, provides passage along Mowbray Road for pedestrians, cyclists, and general traffic over the T1 North Shore & Western and T9 Northern rail lines. Mowbray Road is an east-west thoroughfare that connects Willoughby in the east to Lane Cove in the west, intersecting with key roads including the Pacific Highway (A1).

The pedestrian bridge was not modelled in SIDRA Intersection as it does not function as an intersection or mid-block crossing. Rather it was modelled as an extension of the eastern approach of the intersection of Mowbray Road and Hampden Road (CWD01, refer to **Section 5.1.1**).

5.1.3 Comparison with previous study blocks

Figure 5-3 provides a comparison of the total peak hourly traffic volumes recorded across all intersections for the Block 1 and Block 2 study. As shown, traffic volumes are relatively consistent between the two block studies.

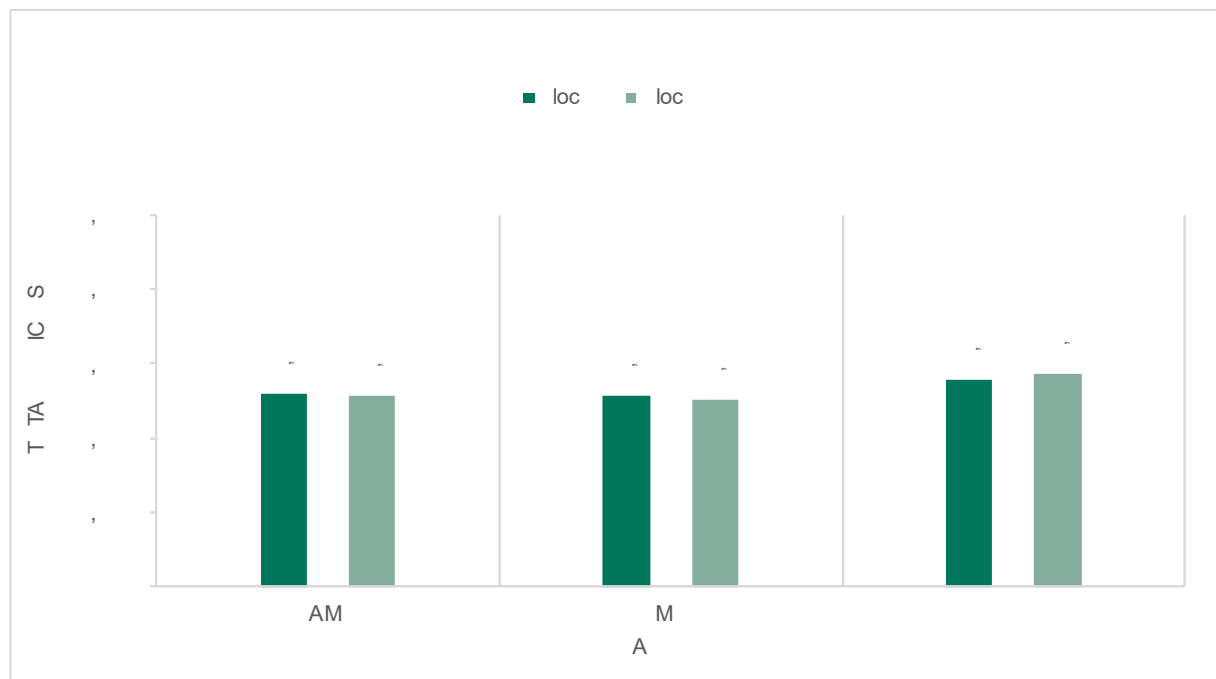


Figure 5-3 Study block comparison - Chatswood Dive Site peak hourly traffic volumes across all intersections

A comparison of the intersection LOS in Block 1 and Block 2 is shown in **Figure 5-4**. The intersection in the Chatswood Dive Site study area perform at LOS B or better during Block 2, which is generally similar to Block 1.

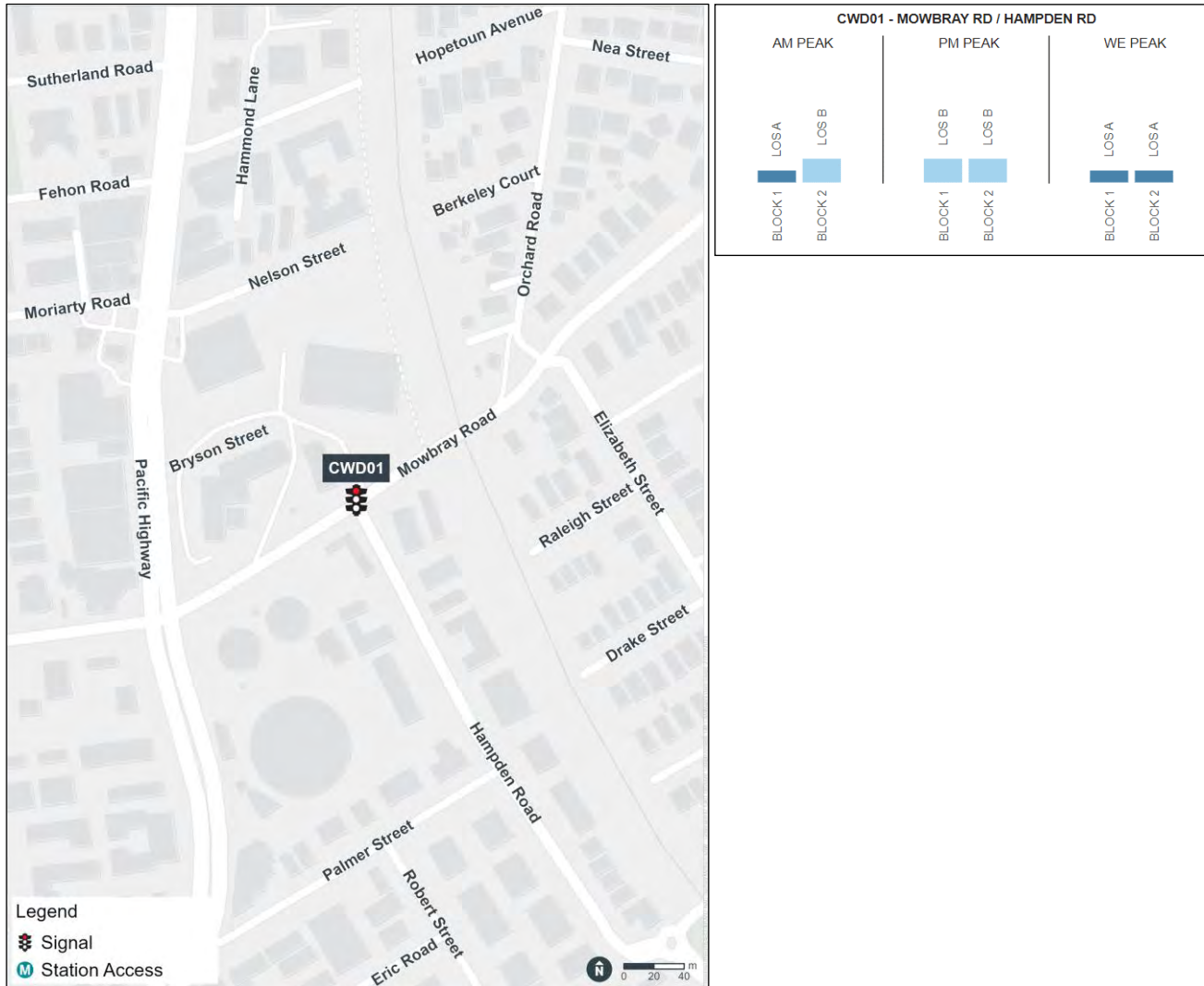


Figure 5-4 Study block comparison - Chatswood Dive Site intersection performance summary

5.2 Crows Nest Station

Crows Nest Station is a new underground station and the second stop along the City & Southwest Line (towards Sydenham). It is located in the south-east area of the St Leonards strategic centre, bounded by the Pacific Highway (A1), Oxley Street and Clarke Street in Crows Nest.

Crows Nest Station was still under construction during Block 2. The construction zone incorporated Clarke Lane, south of Oxley Street, and Hume Street, between the Pacific Highway (A1) and Clarke Street. Construction access and egress to the station was facilitated through Clarke Lane at the intersection of Oxley Street and Clarke Lane, while residential access to Clarke Lane was provided at the intersection of Hume Street and Clarke Lane via Clarke Street.

Bus services are available within approximately 150 metres of Crows Nest Station. Bus stops located on the Pacific Highway (A1) facilitate connections to the external Sydney network, while bus stops on Willoughby Road connect to the internal Crows Nest centre. St Leonards Station, approximately 500 metres north-west from Crows Nest Station, offers the nearest rail service. Within a 50-metre distance of Crows Nest Station, an existing cycleway runs along Oxley Street and Clarke Street and pedestrian footpaths are available throughout Crows Nest.

The Crows Nest Station study area consists of 14 intersections. **Table 5-4** presents the peak hours utilised for modelling the intersections. **Table 5-5** provides a summary of the intersection LOS, while **Figure 5-5** visualises a geospatial summary of the intersection LOS within the Crows Nest Station study area.

Table 5-4 Block 2 - Crows Nest Station peak hours modelled

Network ID	Intersection ID	Weekday AM peak hour		Weekday PM peak hour		Weekend peak hour								
		Day	Start time	Day	Start time	Day	Start time							
CST-N1	CST01	Monday	8.15am	Thursday	5.00pm	Saturday	12.15pm							
	CST02													
	CST03													
	CST04													
	CST05													
	CST06													
	CST09													
	CST10													
	CST11													
	CST12													
	CST13													
	CST14													
	-							CST07	Monday	8.15am	Friday	5.30pm	Saturday	12.30pm
	-							CST08	Wednesday	9.00am	Wednesday	5.30pm	Saturday	1.30pm

Table 5-5 Block 2 - Crows Nest Station intersection performance summary

Intersection ID	Intersection	LOS		
		Weekday AM Peak	Weekday PM Peak	Weekend Peak
CST01	Pacific Highway / Albany Street (Signal)	LOS B	LOS C	LOS B
CST02	Pacific Highway / Oxley Street (Signal)	LOS A	LOS C	LOS B
CST03	Pacific Highway / Hume Street (Signal)	LOS A	LOS A	LOS A
CST04	Pacific Highway / Falcon Street / Shirley Road (Signal)	LOS C	LOS C	LOS C
CST05	Clarke Street / Oxley Street (Priority – Give Way)	LOS A	LOS A	LOS A
CST06	Clarke Street / Hume Street (Priority – Give Way)	LOS A	LOS A	LOS A
CST07	Clarke Street / Willoughby Road (Priority – Give Way)	LOS A	LOS A	LOS A
CST08	Albany Street / Willoughby Road (Signal)	LOS B	LOS B	LOS B
CST09	Albany Street / Oxley Street (Roundabout)	LOS A	LOS B	LOS A
CST10	Albany Street / Clarke Lane (Priority – Give Way)	LOS B	LOS B	LOS A
CST11	Oxley Street / Clarke Lane (Priority – Give Way)	LOS A	LOS A	LOS A
CST12	Hume Street / Clarke Lane (Priority – Stop)	LOS A	LOS A	LOS A
CST13	Pacific Highway / Alexander Street (Signal)	LOS B	LOS B	LOS A
CST14	Falcon Street / Alexander Street (Signal)	LOS B	LOS B	LOS C

Overall, the intersection performance in the Crows Nest Station study area during the peak periods is satisfactory, operating at LOS C or better.

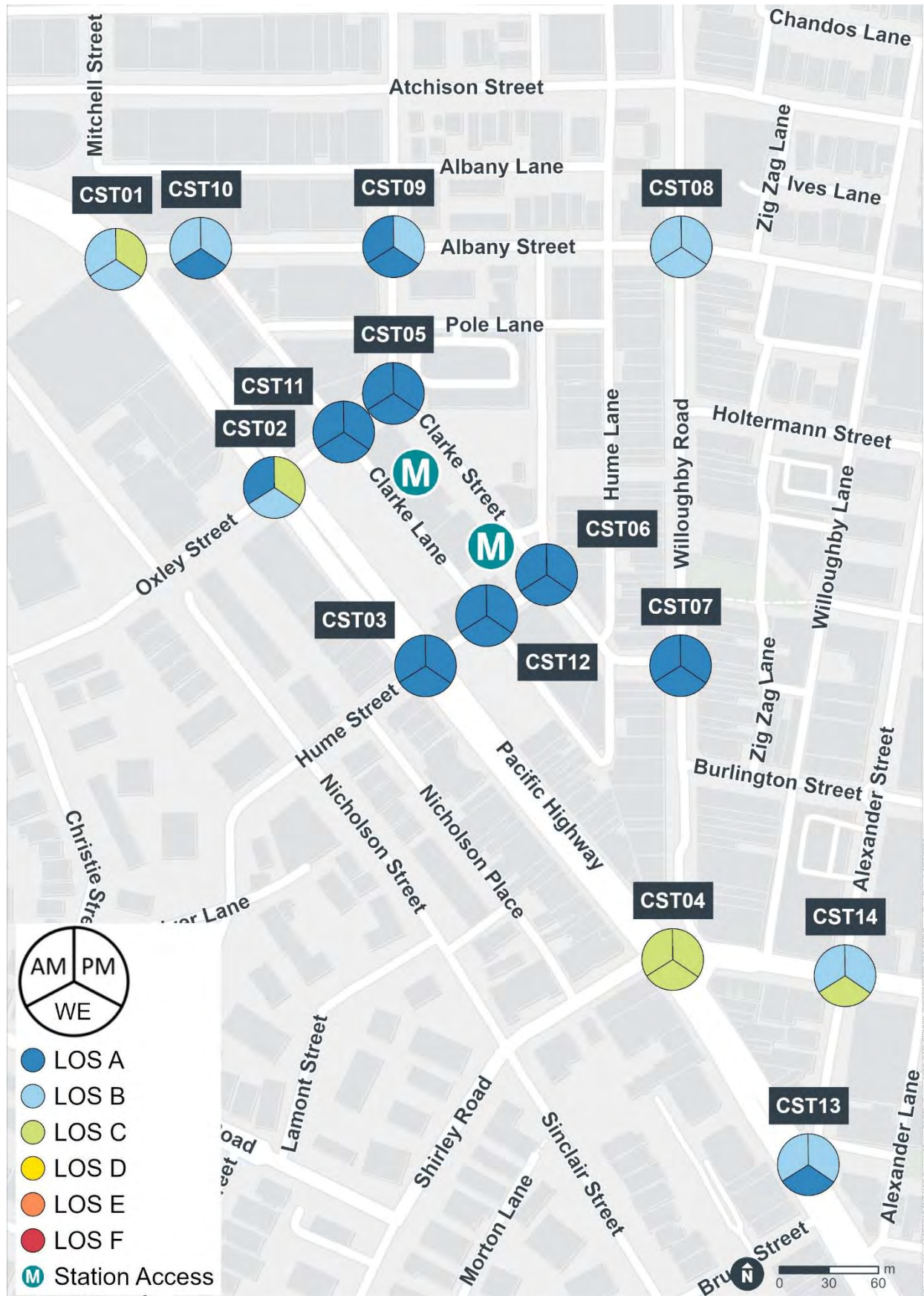
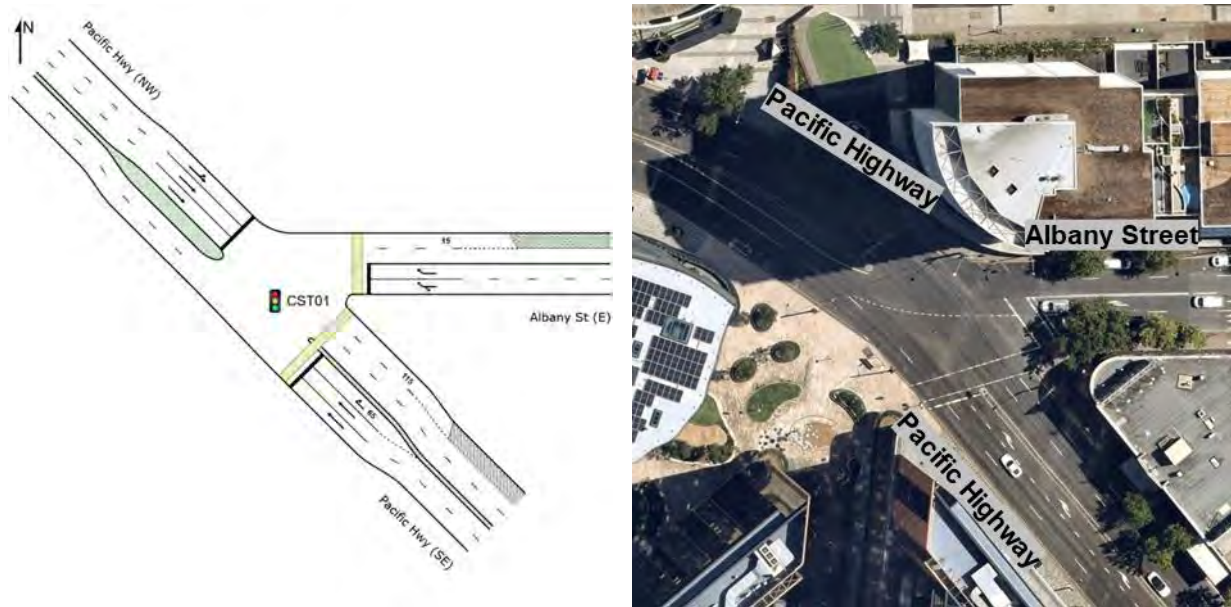


Figure 5-5 Block 2 – Crows Nest Station intersection performance summary

5.2.1 CST01 – Pacific Highway / Albany Street

This signalised intersection, composed of the Pacific Highway and Albany Street, is located north-west of Crows Nest Station. It connects the state road of the Pacific Highway (A1), linking Wahroonga and North Sydney, with the local road of Albany Street, linking Crows Nest and St Leonards.

Figure 5-6 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-6 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CST01

Table 5-6 presents a performance summary of this intersection.

Table 5-6 Block 2 – Intersection performance summary of CST01

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pacific Highway / Albany Street (Signal)	Weekday AM	South-east	0.85	17.4	129.5	LOS B
		East	0.704	57.5	49	LOS E
		North-west	0.615	19.2	202.3	LOS B
		Total	0.85	24.1	202.3	LOS B
	Weekday PM	South-east	0.892	24	146.2	LOS B
		East	0.736	60	49	LOS E
		North-west	0.943	45.6	532.3	LOS D
		Total	0.943	40.8	532.3	LOS C
	Weekend	South-east	0.912	21.5	127.9	LOS B
		East	0.657	56	49	LOS D
		North-west	0.503	17.2	151.2	LOS B
		Total	0.912	25.1	151.2	LOS B

Overall, the intersection of the Pacific Highway (A1) and Albany Street performs satisfactorily at LOS C or better during the peak hours. The 95th percentile queues on the Pacific Highway (A1) (north-west approach) extend back to Christie Street during all peak hours.

5.2.2 CST02 – Pacific Highway / Oxley Street

This signalised intersection, composed of Pacific Highway and Oxley Street, is located directly north-west of Crows Nest Station. It connects the local road of Oxley Street, linking St Leonards and Naremburn through Crows Nest, with the state road of Pacific Highway (A1), linking Wahroonga and North Sydney.

During Block 2, the south-eastern kerbside departure lane of the Pacific Highway (A1) was closed off due to Sydney Metro construction.

Figure 5-7 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-7 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CST02

Table 5-7 presents a performance summary of this intersection.

Table 5-7 Block 2 – Intersection performance summary of CST02

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pacific Highway / Oxley Street	Weekday AM	South-east	0.46	4	45.3	LOS A
		North-east	0.521	57.7	49	LOS E
		North-west	0.461	0.7	14.1	LOS A
		South-west	0.654	59.9	61.8	LOS E
		Total	0.654	13.1	61.8	LOS A
(Signal)	Weekday PM	South-east	0.39	4.2	50.7	LOS A
		North-east	0.373	57.3	49	LOS E
		North-west	0.609	29.3	236.6	LOS C

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
		South-west	0.717	76.7	98.8	LOS F
		Total	0.717	30.2	236.6	LOS C
	Weekend	South-east	0.38	4.1	39.6	LOS A
		North-east	0.362	56.9	42.8	LOS E
		North-west	0.401	9.5	99.7	LOS A
		South-west	0.439	57.3	59.8	LOS E
		Total	0.439	16.4	99.7	LOS B

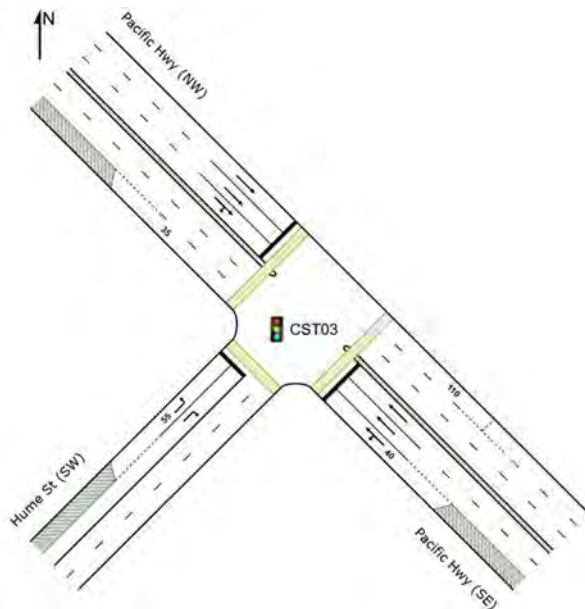
Overall, the intersection of the Pacific Highway and Oxley Street performs satisfactorily at LOS C or better during the peak hours. The 95th percentile queues on Oxley Street (south-west approach) extend back to Nicholson Street during the PM peak hour.

5.2.3 CST03 – Pacific Highway / Hume Street

This signalised intersection, composed of Pacific Highway and Hume Street, is located directly south-west of Crows Nest Station. It connects the state road of Pacific Highway (A1), linking Wahroonga and North Sydney, with the local road of Hume Street, linking Crows Nest and Wollstonecraft.

During Block 2, access to Hume Street (north-eastern approach) was closed due to Sydney Metro construction. Additionally, kerbside lane closures were observed along the Pacific Highway (A1), adjacent to the construction site, in the south-westbound direction of travel.

Figure 5-8 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-8 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CST03

Table 5-8 presents a performance summary of this intersection.

Table 5-8 Block 2 – Intersection performance summary of CST03

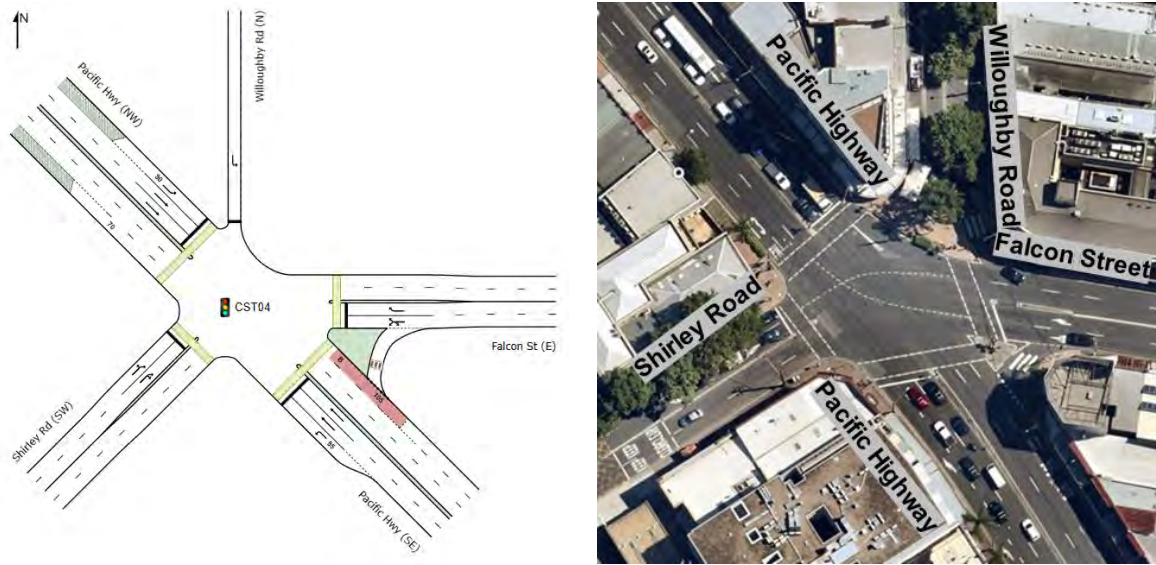
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pacific Highway / Hume Street (Signal)	Weekday AM	South-east	0.37	0.6	8.2	LOS A
		North-west	0.494	2.4	87.7	LOS A
		South-west	0.443	67.2	38.1	LOS E
		Total	0.494	4.2	87.7	LOS A
	Weekday PM	South-east	0.248	0.7	10.1	LOS A
		North-west	0.547	4	123.4	LOS A
		South-west	0.411	69.9	39.8	LOS E
		Total	0.547	6.1	123.4	LOS A
	Weekend	South-east	0.305	2.6	56.3	LOS A
		North-west	0.426	6.1	126.1	LOS A
		South-west	0.301	66.6	25.4	LOS E
		Total	0.426	6.7	126.1	LOS A

Overall, the intersection of the Pacific Highway (A1) and Hume Street performs satisfactorily at LOS A during the peak hours. The 95th percentile queues on Pacific Highway (A1) (north-west approach) extend back to Oxley Street during the PM and Weekend peak hours.

5.2.4 CST04 – Pacific Highway / Falcon Street / Shirley Road

This signalised intersection, composed of Pacific Highway, Falcon Street and Shirley Road, is located south-east of Crows Nest Station. It connects the state road of Pacific Highway (A1), linking Wahroonga to North Sydney, with the state road of Falcon Street, linking Crows Nest and Neutral Bay, and Shirley Road, linking Crows Nest and Wollstonecraft. Willoughby Road is an unsignalised approach, serving as an exit only route onto Falcon Street from the Crows Nest centre.

Figure 5-9 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-9 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CST04

Table 5-9 presents a performance summary of this intersection.

Table 5-9 Block 2 - Intersection performance summary of CST04

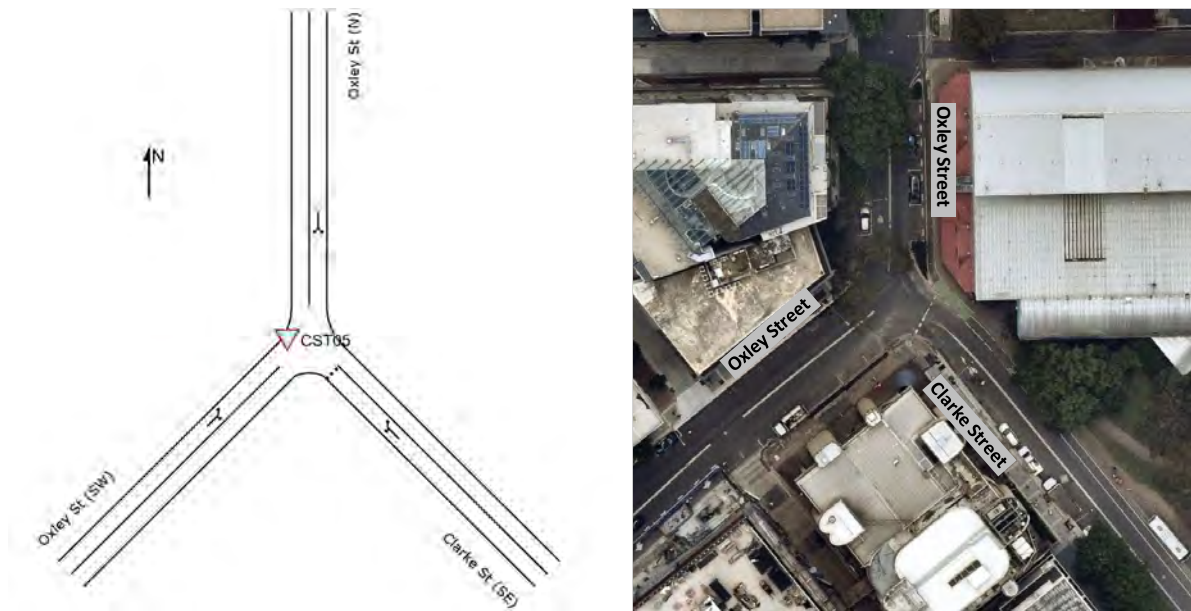
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pacific Highway / Falcon Street / Shirley Road (Signal)	Weekday AM	South-east	0.607	27.2	156.8	LOS B
		East	0.917	61.1	130.6	LOS E
		North	0.001	3.9	0	LOS A
		North-west	0.745	28.2	199.3	LOS B
		South-west	0.918	75	207.1	LOS F
		Total	0.918	42.5	207.1	LOS C
	Weekday PM	South-east	0.433	19.9	119.3	LOS B
		East	0.918	58	130.6	LOS E
		North	0.001	4.6	0.1	LOS A
		North-west	0.644	24.4	197.2	LOS B
		South-west	0.545	62.9	107.5	LOS E
		Total	0.918	33.4	197.2	LOS C
	Weekend	South-east	0.735	35.8	147.4	LOS C
		East	0.938	43.7	130.6	LOS D
		North	0.001	3.7	0	LOS A
		North-west	0.926	40.2	223.7	LOS C
		South-west	0.685	52	149.2	LOS D
		Total	0.938	42	223.7	LOS C

Overall, the intersection of the Pacific Highway (A1), Falcon Street, and Shirley Road performs at LOS C during all peak hours, noting however it is close to capacity as indicated by the degree of saturation being close to 1.00. The 95th percentile queues on both the Pacific Highway (A1) (south-east approach) and Falcon Street (east approach) extend back to Alexander Street during all peak hours. Similarly, the 95th percentile queues on Pacific Highway (A1) (north-west approach) extend back to Hume Street during all peak hours. Additionally, the 95th percentile queues on Shirley Road (south-west approach) extend back to River Road during the weekday AM peak hour.

5.2.5 CST05 – Clarke Street / Oxley Street

This priority intersection, composed of Oxley Street and Clarke Street, is located directly north of Crows Nest Station. It connects the local roads of Clarke Street in Crows Nest and Oxley Street, linking Wollstonecraft and Naremburn through Crows Nest.

Figure 5-10 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-10 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CST05

Table 5-10 presents a performance summary of this intersection.

Table 5-10 Block 2 - Intersection performance summary of CST05

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Clarke Street / Oxley Street	Weekday AM	South-east	0.095	6.3	2.1	LOS A
		North	0.192	4.4	0	LOS A
		South-west	0.131	3.9	3.7	LOS A
		Total	0.095	6.3	2.1	LOS A
(Priority – Give Way)	Weekday PM	South-east	0.095	6.5	1.9	LOS A
		North	0.24	4.4	0	LOS A
		South-west	0.145	4.1	3.4	LOS A
		Total	0.095	6.5	1.9	LOS A

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
	Weekend	South-east	0.058	5.7	1.4	LOS A
		North	0.153	4.4	0	LOS A
		South-west	0.102	3.9	2.3	LOS A
		Total	0.058	5.7	1.4	LOS A

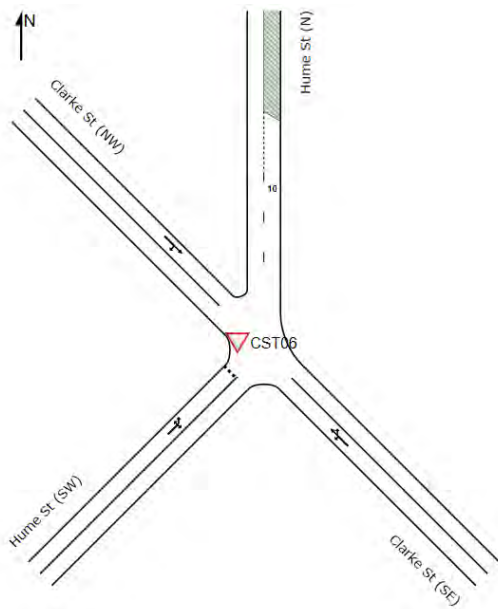
Overall, the intersection of Clarke Street and Oxley Street performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.2.6 CST06 – Clarke Street / Hume Street

This priority intersection, composed of Clarke Street and Hume Street, is located directly north-east of Crows Nest Station. It connects the local roads of Clarke Street in Crows Nest and Hume Street, linking Crows Nest and Wollstonecraft.

During Block 2, access to Hume Street (south-west approach) was limited to residential access and transportation of construction materials only. In Block 2, access into Hume Street (north approach) was enabled and observed to operate as a one-way exit for Clarke Street (south-east approach) and Hume Street (south-west approach). During the weekday AM peak period, Clarke Street (south-east approach) was observed to operate as a two-way one-lane road under controlled conditions, managed by on-site traffic controllers. Similarly, traffic control was observed at the intersection to facilitate construction vehicle movements.

Figure 5-11 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-11 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CST06

Table 5-11 presents a performance summary of this intersection.

Table 5-11 Block 2 - Intersection performance summary of CST06

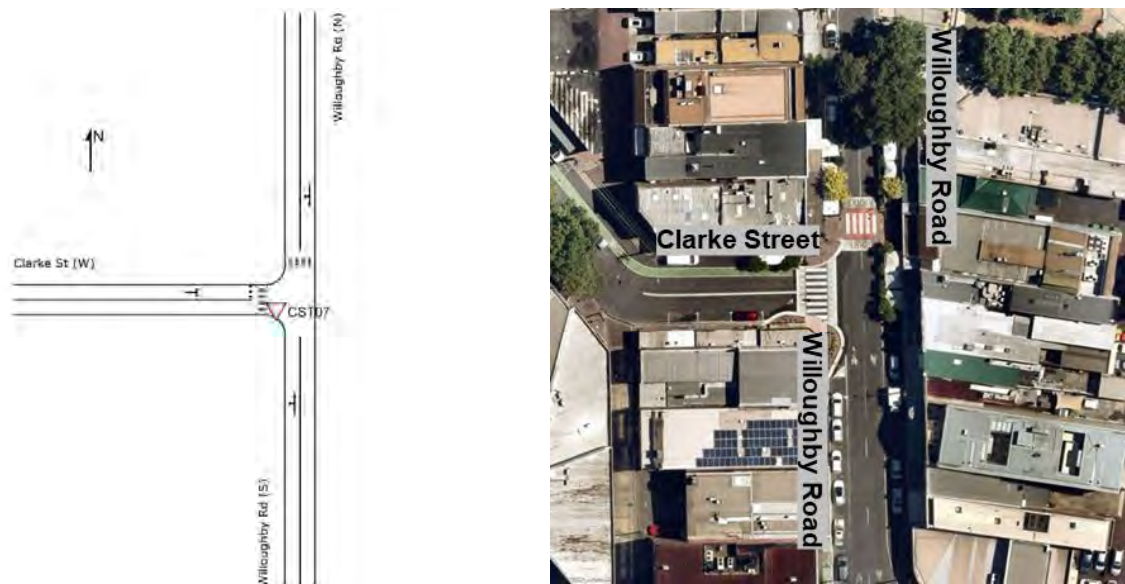
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Clarke Street / Hume Street (Priority – Give Way)	Weekday AM	South-east	0.051	4.9	1.5	LOS A
		North-west	0.044	4.6	0.1	LOS A
		South-west	0.006	4.3	0.1	LOS A
		Total	0.051	4.9	1.5	LOS A
	Weekday PM	South-east	0.056	5.1	1.5	LOS A
		North-west	0.086	4.6	0	LOS A
		South-west	0.005	4.3	0.1	LOS A
		Total	0.056	5.1	1.5	LOS A
	Weekend	South-east	0.05	5.1	1.4	LOS A
		North-west	0.088	4.6	0	LOS A
		South-west	0.007	4.3	0.1	LOS A
		Total	0.05	5.1	1.4	LOS A

Overall, the intersection of Clarke Street and Hume Street performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.2.7 CST07 – Clarke Street / Willoughby Road

This priority intersection, composed of Clarke Street and Willoughby Road, is located east of Crows Nest Station. It connects the local roads of Clarke Street in Crows Nest and Willoughby Road, linking Crows Nest and Willoughby.

Figure 5-12 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearthmap (December 2023)

Figure 5-12 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearthmap aerial imagery (right) of CST07

Table 5-12 presents a performance summary of this intersection.

Table 5-12 Block 2 - Intersection performance summary of CST07

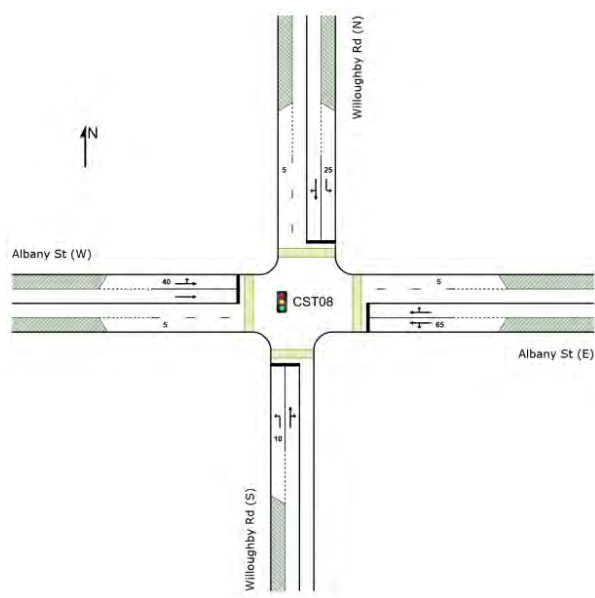
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Clarke Street / Willoughby Road (Priority – Give Way)	Weekday AM	South	0.241	4	9.4	LOS A
		North	0.198	6.6	6.4	LOS A
		West	0.143	5.9	3.7	LOS A
		Total	0.198	6.6	6.4	LOS A
	Weekday PM	South	0.265	4.4	9.8	LOS A
		North	0.274	8.9	8.4	LOS A
		West	0.248	7.1	6.7	LOS A
		Total	0.274	8.9	8.4	LOS A
	Weekend	South	0.262	4.7	9.1	LOS A
		North	0.311	10.3	10.3	LOS A
		West	0.23	8.7	6	LOS A
		Total	0.311	10.3	10.3	LOS A

Overall, the intersection of Clarke Street and Willoughby Road performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.2.8 CST08 – Albany Street / Willoughby Road

This signalised intersection, composed of Albany Street and Willoughby Road, is located north-east of Crows Nest Station. It connects the local roads of Albany Street, linking Crows Nest and St Leonards, and Willoughby Road, linking Crows Nest and Willoughby.

Figure 5-13 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-13 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CST08

Table 5-13 presents a performance summary of this intersection.

Table 5-13 Block 2 - Intersection performance summary of CST08

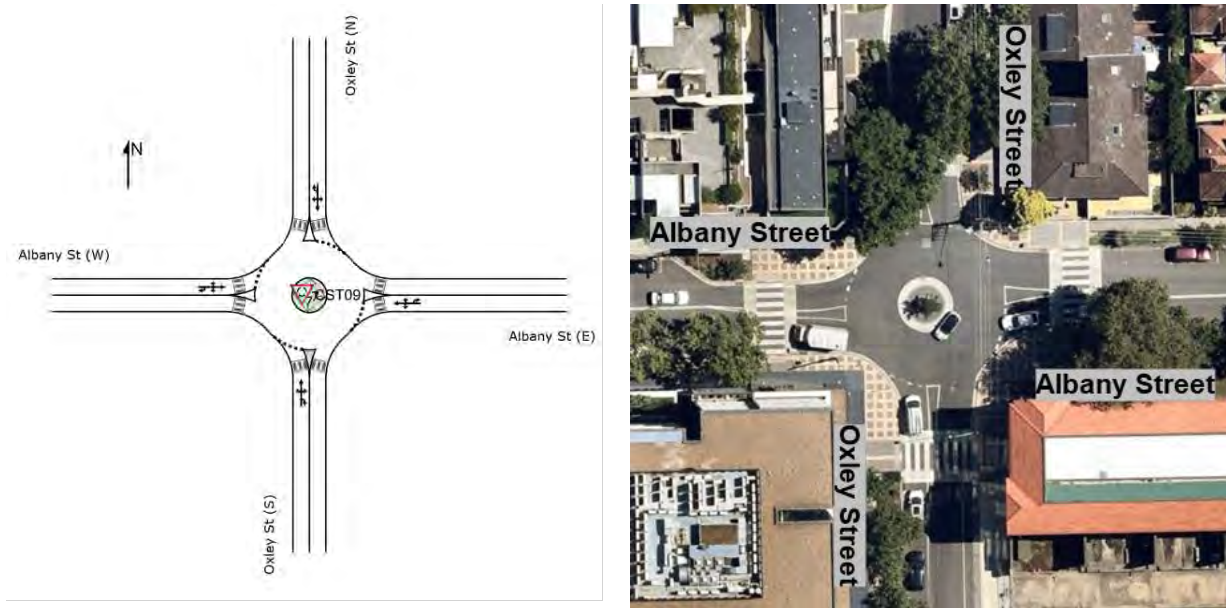
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Albany Street / Willoughby Road (Signal)	Weekday AM	South	0.307	24.3	28.3	LOS B
		East	0.942	30.3	106.1	LOS C
		North	0.622	23.6	59.4	LOS B
		West	0.467	18.7	56.2	LOS B
		Total	0.942	25.2	106.1	LOS B
	Weekday PM	South	0.287	23.9	25.9	LOS B
		East	0.587	16.3	46.8	LOS B
		North	0.421	19.2	42.4	LOS B
		West	0.596	21.2	75.4	LOS B
		Total	0.596	19.5	75.4	LOS B
	Weekend	South	0.182	16.8	19	LOS B
		East	0.808	24.6	85.2	LOS B
		North	0.356	16.7	35.5	LOS B
		West	0.575	24.2	60.9	LOS B
		Total	0.808	21.7	85.2	LOS B

Overall, the intersection of Albany Street and Willoughby Road performs satisfactorily at LOS B during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.2.9 CST09 – Albany Street / Oxley Street

This roundabout, composed of Albany Street and Oxley Street, is located north of Crows Nest Station. It connects the local roads of Albany Street, linking Crows Nest and St Leonards, and Oxley Street, linking Wollstonecraft and Naremburn through Crows Nest.

Figure 5-14 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-14 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CST09

Table 5-14 presents a performance summary of this intersection.

Table 5-14 Block 2 - Intersection performance summary of CST09

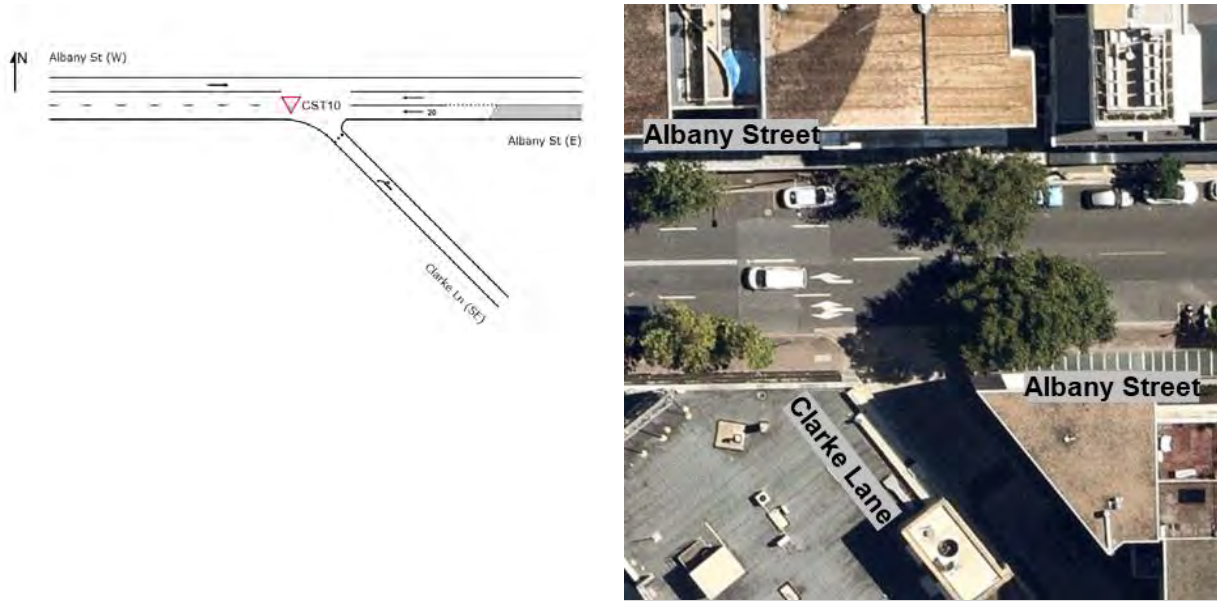
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Albany Street / Oxley Street (Roundabout)	Weekday AM	South	0.248	12	11.8	LOS A
		East	0.509	11.6	25.9	LOS A
		North	0.377	12.1	18.5	LOS A
		West	0.52	9.9	31.7	LOS A
		Total	0.377	12.1	18.5	LOS A
	Weekday PM	South	0.434	13.4	20.7	LOS A
		East	0.908	22.4	67.9	LOS B
		North	0.509	14.4	29.4	LOS A
		West	0.634	11.8	45.9	LOS A
		Total	0.908	22.4	67.9	LOS B
	Weekend	South	0.321	11.6	15.5	LOS A
		East	0.429	10.5	19.6	LOS A
		North	0.285	11.8	13.2	LOS A
		West	0.483	10.1	28	LOS A
		Total	0.285	11.8	13.2	LOS A

Overall, the intersection of Albany Street and Oxley Street performs satisfactorily at LOS B or better during the peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.2.10 CST10 – Albany Street / Clarke Lane

This priority intersection, composed of Albany Street and Clarke Lane, is located north-west of Crows Nest Station. It connects the local roads of Clarke Lane in Crows Nest with Albany Street, linking Crows Nest and St Leonards.

Figure 5-15 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-15 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CST10

Table 5-15 presents a performance summary of this intersection.

Table 5-15 Block 2 - Intersection performance summary of CST10

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Albany Street / Clarke Lane (Priority – Give Way)	Weekday AM	South-east	0.064	22.7	33.3	LOS B
		East	0.244	0	68	LOS A
		West	0.281	0	0	LOS A
		Total	0.064	22.7	33.3	LOS B
	Weekday PM	South-east	0.058	18.2	0.8	LOS B
		East	0.193	0	95.8	LOS A
		West	0.303	0	0	LOS A
		Total	0.058	18.2	0.8	LOS B
	Weekend	South-east	0.082	14.3	38.9	LOS A
		East	0.212	0	61.9	LOS A
		West	0.251	0	0	LOS A
		Total	0.082	14.3	38.9	LOS A

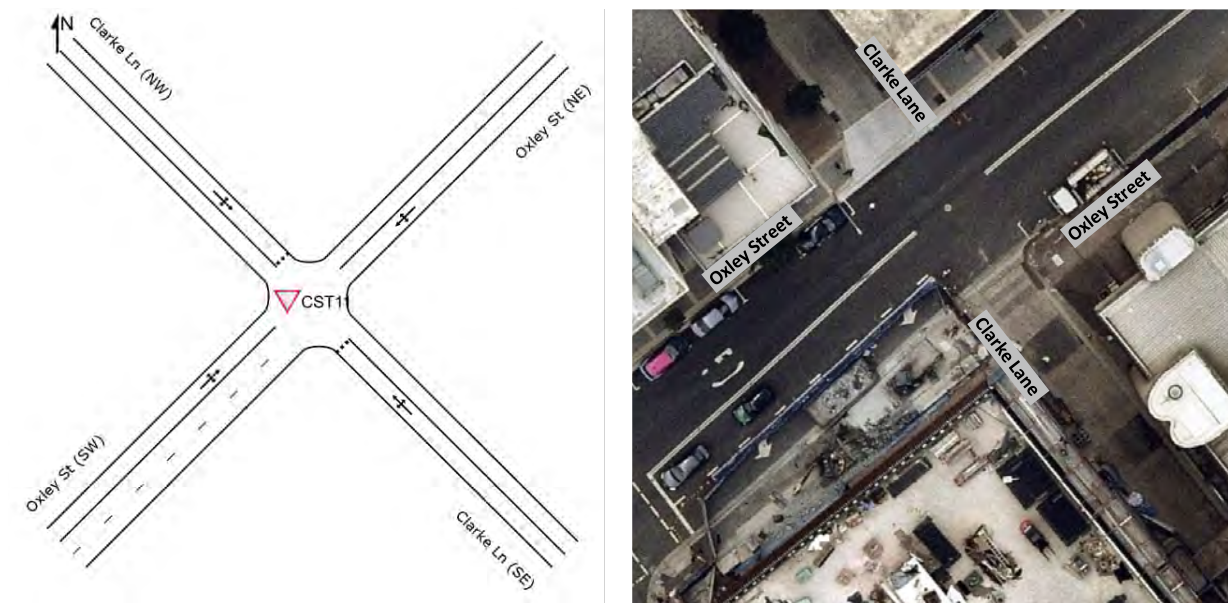
Overall, the intersection of Albany Street and Clarke Lane performs satisfactorily at LOS B or better during the peak hours. The 95th percentile queues on Albany Street (east approach) extends back to Oxley Street during the PM peak hour.

5.2.11 CST11 – Oxley Street / Clarke Lane

This priority intersection, composed of Oxley Street and Clarke Lane, is located directly north-west of Crows Nest Station. It connects the local roads of Clarke Lane in Crows Nest and Oxley Street, linking Wollstonecraft and Naremburn through Crows Nest.

During Block 2, access to Clarke Lane (south-east approach) was limited to Sydney Metro construction vehicles only.

Figure 5-16 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-16 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CST11

Table 5-16 presents a performance summary of this intersection.

Table 5-16 Block 2 - Intersection performance summary of CST11

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Oxley Street / Clarke Lane	Weekday AM	South-east	0.004	6.8	0.1	LOS A
		North-east	0.141	3.3	23.9	LOS A
		North-west	0.021	6.8	0.9	LOS A
		South-west	0.109	3.2	0.1	LOS A
		Total	0.021	6.8	0.9	LOS A
(Priority – Give Way)	Weekday PM	South-east	0.008	6.8	0.1	LOS A
		North-east	0.127	3.4	13.6	LOS A
		North-west	0.019	6.9	0.5	LOS A
		South-west	0.12	3.1	0.1	LOS A

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
		Total	0.019	6.9	0.5	LOS A
		South-east	0.005	6.2	0.1	LOS A
	Weekend	North-east	0.135	3.3	0.6	LOS A
		North-west	0.016	6.2	0.5	LOS A
		South-west	0.085	3	0.1	LOS A
		Total	0.016	6.2	0.5	LOS A

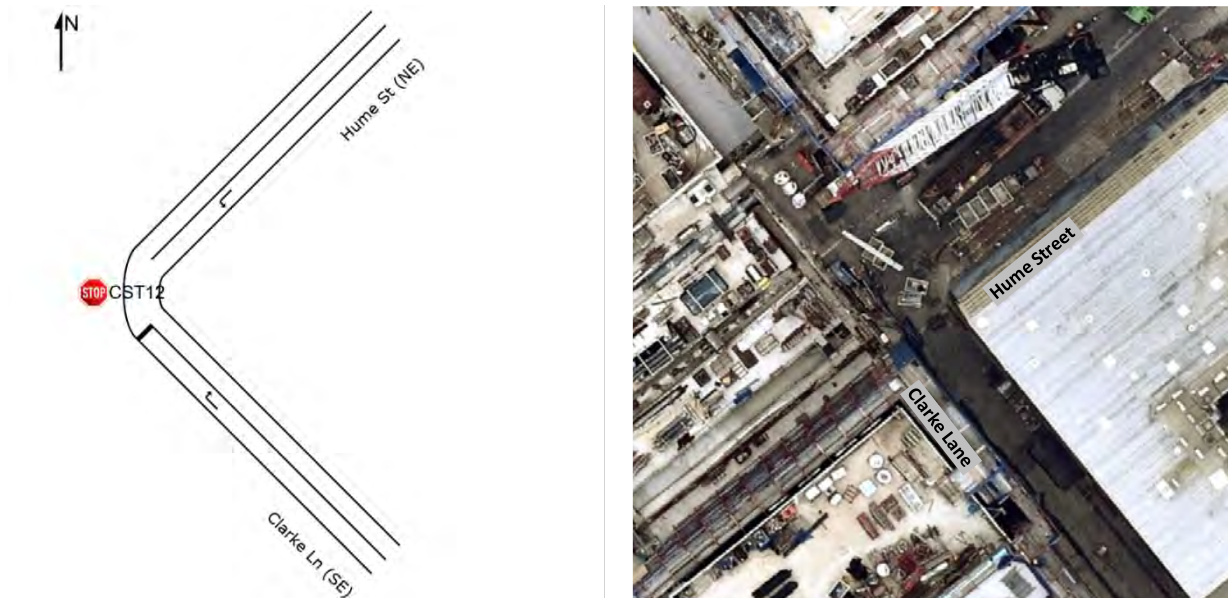
Overall, the intersection of Oxley Street and Clarke Lane performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.2.12 CST12 – Hume Street / Clarke Lane

This priority intersection, composed of Hume Street and Clarke Lane, is located within the Crows Nest Station boundary. It connects the local roads of Clarke Lane in Crows Nest and Hume Street, linking Crows Nest and Wollstonecraft.

During Block 2, access to Hume Street (south-west approach) and Clarke Lane (north-west approach) was closed due to Sydney Metro construction. The usage of this intersection was restricted to residential access and the transportation of construction materials.

Figure 5-17 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-17 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CST12

Table 5-17 presents a performance summary of this intersection.

Table 5-17 Block 2 - Intersection performance summary of CST12

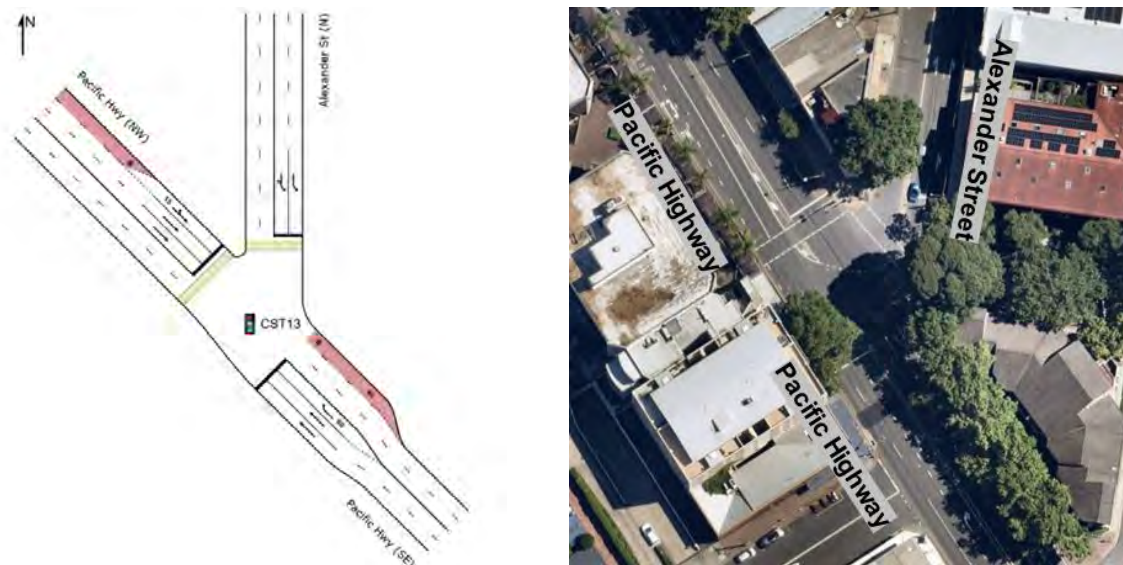
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Hume Street / Clarke Lane (Priority – Stop)	Weekday AM	South-east	0.001	6.9	0	LOS A
		North-east	0.001	3.2	0	LOS A
		Total	0.001	6.9	0	LOS A
	Weekday PM	South-east	0.001	6.9	0	LOS A
		North-east	0.001	3.2	0	LOS A
		Total	0.001	6.9	0	LOS A
	Weekend	South-east	0.001	6.9	0	LOS A
		North-east	0.001	3.2	0	LOS A
		Total	0.001	6.9	0	LOS A

Overall, the intersection of Hume Street and Clarke Lane performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.2.13 CST13 – Pacific Highway / Alexander Street

This signalised intersection, composed of Pacific Highway, Alexander Street and Hayberry Street, is located south-east of Crows Nest Station. It connects the state road of Pacific Highway (A1), linking Wahroonga to North Sydney, with the local roads of Alexander Street and Hayberry Street in Crows Nest. Hayberry Street was not modelled.

Figure 5-18 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-18 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CST13

Table 5-18 presents a performance summary of this intersection.

Table 5-18 Block 2 - Intersection performance summary of CST13

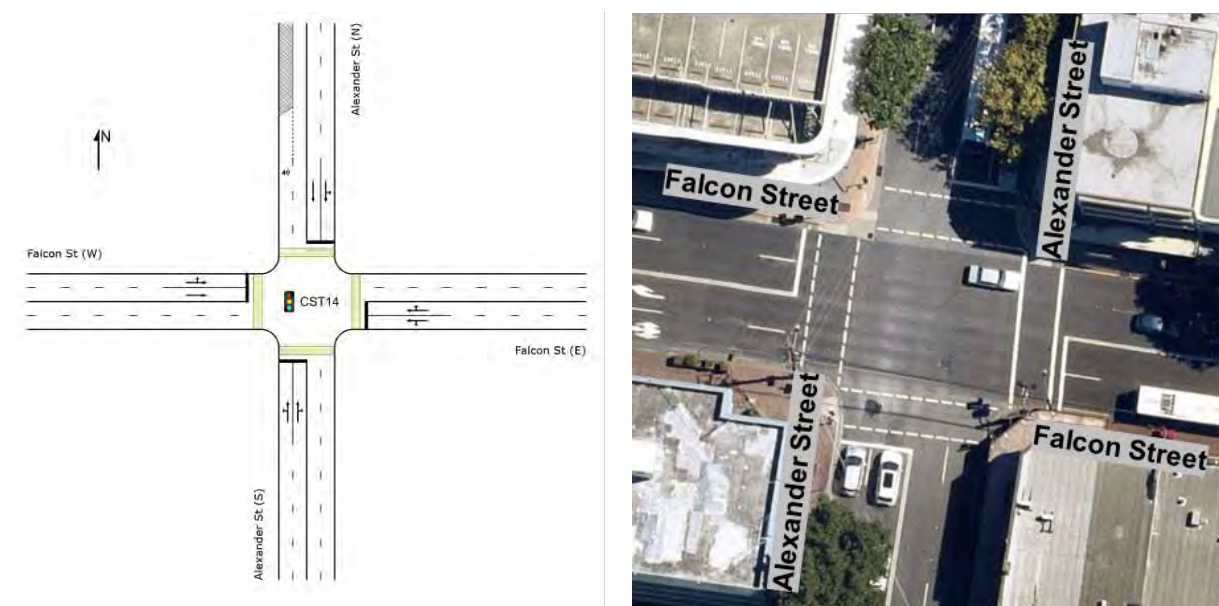
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pacific Highway / Alexander Street (Signal)	Weekday AM	South-east	0.506	11.7	74.4	LOS A
		North	0.641	40.9	81.4	LOS C
		North-west	0.768	14.8	142.5	LOS B
		Total	0.768	16.5	142.5	LOS B
	Weekday PM	South-east	0.507	10.3	76.1	LOS A
		North	0.938	57.3	93	LOS E
		North-west	0.628	7.3	75.7	LOS A
		Total	0.938	15.4	93	LOS B
	Weekend	South-east	0.397	8.5	54.9	LOS A
		North	0.779	38.1	54	LOS C
		North-west	0.503	5.8	44.2	LOS A
		Total	0.779	11.2	54.9	LOS A

Overall, the intersection of the Pacific Highway (A1) and Alexander Street performs satisfactorily at LOS B or better during the peak hours. The 95th percentile queue on the Pacific Highway (A1) (north-west approach) extends back to Shirley Road and Falcon Street during the weekday AM peak hour.

5.2.14 CST14 – Falcon Street / Alexander Street

This signalised intersection, comprised of Falcon Street and Alexander Street, is located south-east of Crows Nest Station. It connects the local road of Alexander Street in Crows Nest with the state road of Falcon Street, linking Crows Nest and Neutral Bay.

Figure 5-19 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-19 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CST14

Table 5-19 presents a performance summary of this intersection.

Table 5-19 Block 2 - Intersection performance summary of CST14

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Falcon Street / Alexander Street (Signal)	Weekday AM	South	0.664	68.8	98.6	LOS E
		East	0.445	19.6	98	LOS B
		North	0.539	53.8	84.4	LOS D
		West	0.364	2.8	32.8	LOS A
		Total	0.664	24.9	98.6	LOS B
	Weekday PM	South	0.561	70.6	102.6	LOS F
		East	0.475	22.3	115.4	LOS B
		North	0.518	54.5	97.1	LOS D
		West	0.408	3.5	44.8	LOS A
		Total	0.561	25.4	115.4	LOS B
	Weekend	South	0.659	67.8	96.2	LOS E
		East	0.796	36	220	LOS C
		North	0.78	89.8	123.7	LOS F
		West	0.494	3.6	45.3	LOS A
		Total	0.796	33.8	220	LOS C

Overall, the intersection of Falcon Street and Alexander Street performs satisfactorily at LOS C or better during the peak hours. The 95th percentile queues on Alexander Street (north and south approach) extend back to Burlington Street and the Pacific Highway during all peak hours.

5.2.15 Comparison with previous study blocks

Figure 5-20 provides a comparison of the total peak hourly traffic volumes recorded across all intersections for the Block 1 and Block 2 study. As shown, Block 2 traffic volumes were slightly higher than Block 1 during all peak hours.

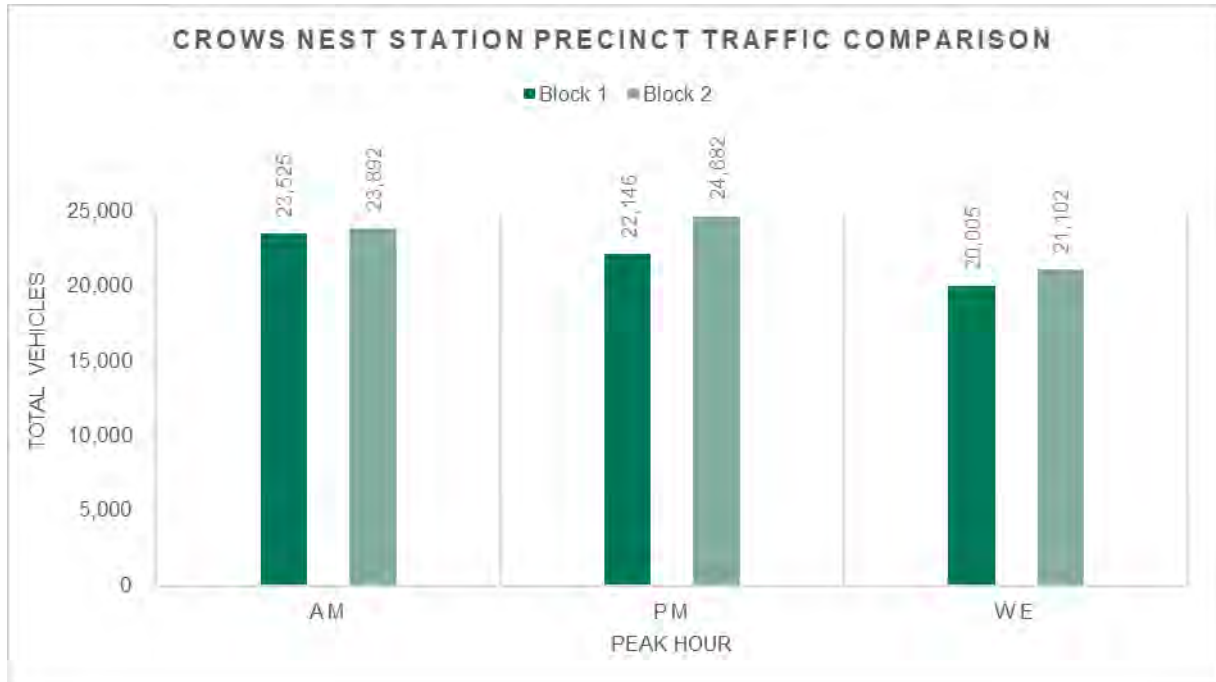


Figure 5-20 Study block comparison – Crows Nest Station peak hourly traffic volume across all intersections

A comparison of the intersection LOS in Block 1 and Block 2 is shown in **Figure 5-21** and **Figure 5-22**. All intersections in the Crows Nest Station study area perform at LOS C or better during Block 2, which is generally similar to Block 1. Pacific Highway / Falcon Street / Shirley Road (CST04) had a notable change in LOS, whereby the intersection improved from a LOS D to a C in the AM peak period compared to Block 1. The Block 2 site improvement for CST04 was due to better optimised phasing (as determined by SCATS).



Figure 5-21 Study block comparison – Crows Nest Station intersection performance summary (CST01-CST08)



Figure 5-22 Study block comparison – Crows Nest Station intersection performance summary (CST09-CST14)

5.3 Victoria Cross Station

Victoria Cross Station is a new underground station and the third stop on the City & Southwest Line (towards Sydenham). It is located in the centre of the North Sydney commercial centre and north of the existing North Sydney Station.

Victoria Cross Station will have two station entrances, Victoria Cross North, at the north-east corner of the intersection of Miller Street and McLaren Street, and Victoria Cross South, at the south-east corner of the intersection of Miller Street and Berry Street. Victoria Cross Station was still under construction during Block 2. Construction access to Victoria Cross North was facilitated via McLaren Street, east of Miller Street, whereas access to Victoria Cross South was facilitated via Denison Street.

Bus services are available within approximately 150 metres of Victoria Cross Station, located along Miller Street and Pacific Highway. Pedestrian footpaths are provided on both sides of Miller Street and Pacific Highway in the vicinity of Victoria Cross Station.

The Victoria Cross Station study area consists of four intersections. **Table 5-20** presents the peak hours utilised for modelling the intersections. **Table 5-21** provides a summary of the intersection LOS while **Figure 5-23** visualises a geospatial summary of the intersection LOS within the Victoria Cross Station study area.

Table 5-20 Block 2 - Victoria Cross Station peak hours modelled

Network ID	Intersection ID	Weekday AM peak hour		Weekday PM peak hour		Weekend peak hour	
		Day	Start time	Day	Start time	Day	Start time
VIC-N1	VIC01	Monday	8.00am	Monday	5.00pm	Saturday	12.15pm
	VIC02						
	VIC03						
	VIC04						

Table 5-21 Block 2 - Victoria Cross Station intersection performance summary

Intersection ID	Intersection	LOS		
		Weekday AM Peak	Weekday PM Peak	Weekend Peak
VIC01	Pacific Highway / Berry Street (Signal)	LOS A	LOS A	LOS A
VIC02	Miller Street / Berry Street (Signal)	LOS C	LOS C	LOS C
VIC03	Miller Street / McLaren Street (Signal)	LOS B	LOS B	LOS A
VIC04	Pacific Highway / Miller Street (Signal)	LOS C	LOS C	LOS B

Overall, the intersection performance in the Victoria Cross Station study area during the peak periods is satisfactory, operating at LOS C or better.

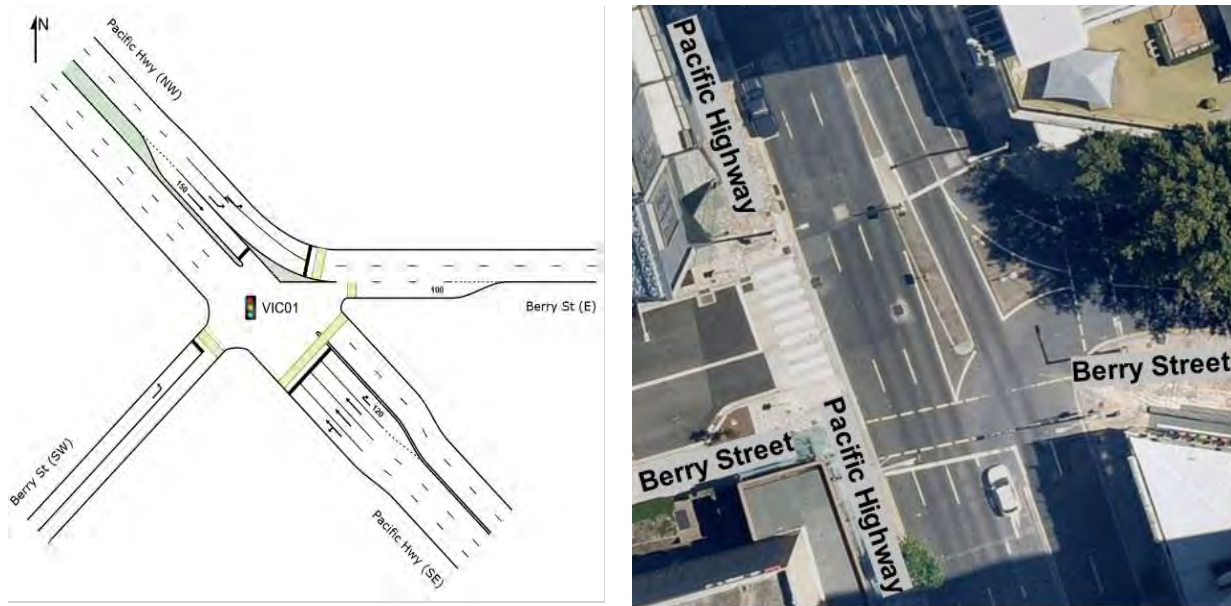


Figure 5-23 Block 2 – Victoria Cross Station intersection performance summary

5.3.1 VIC01 – Pacific Highway / Berry Street

This signalised intersection, composed of Pacific Highway and Berry Street, is located east of Victoria Cross South. It connects the state road of Pacific Highway (A1), linking Wahroonga and North Sydney, with the local road of Berry Street, linking North Sydney to the Warringah Freeway (M1). Berry Street (south-west approach) is not signalised; however, for modelling purposes, it has been simulated as a signalised approach operating in every phase.

Figure 5-24 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-24 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of VIC01

Table 5-22 presents a performance summary of this intersection.

Table 5-22 Block 2 - Intersection performance summary of VIC01

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pacific Highway / Berry Street (Signal)	Weekday AM	South-east	0.795	9.2	57.1	LOS A
		North-west	0.731	14.8	112.4	LOS B
		South-west	0.132	6.7	5.6	LOS A
		Total	0.795	11.9	112.4	LOS A
	Weekday PM	South-east	0.825	10	55.4	LOS A
		North-west	0.45	10.7	60.9	LOS A
		South-west	0.118	5.8	4.3	LOS A
		Total	0.825	10.2	60.9	LOS A
	Weekend	South-east	0.561	5.3	28	LOS A
		North-west	0.412	9.2	68.1	LOS A
		South-west	0.063	8.3	4	LOS A
		Total	0.561	7.5	68.1	LOS A

Overall, the intersection of the Pacific Highway (A1) and Berry Street performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.3.2 VIC02 – Miller Street / Berry Street

This signalised intersection, composed of Miller Street and Berry Street, is located directly west of Victoria Cross South. It connects the regional road of Miller Street, linking Cammeray and North Sydney, with the local road of Berry Street, linking North Sydney to the Warringah Freeway (M1).

During Block 2, the southern departure kerbside lane of Miller Street was closed off (during AM & PM peak hours) due to Sydney Metro construction.

Figure 5-25 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-25 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of VIC02

Table 5-23 presents a performance summary of this intersection.

Table 5-23 Block 2 - Intersection performance summary of VIC02

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Miller Street / Berry Street (Signal)	Weekday AM	South	0.879	32.1	135.6	LOS C
		North	0.724	45.3	117.8	LOS D
		West	0.696	32	136.7	LOS C
		Total	0.879	35.2	136.7	LOS C
	Weekday PM	South	0.634	22	95.5	LOS B
		North	0.715	43.8	60.2	LOS D
		West	0.671	41.2	119.7	LOS C
		Total	0.715	35.4	119.7	LOS C
	Weekend	South	0.862	42.7	100.5	LOS D

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
		North	0.756	55.5	66.9	LOS D
		West	0.635	30.2	140.1	LOS C
		Total	0.862	37.8	140.1	LOS C

Overall, the intersection of Miller Street and Berry Street performs satisfactorily at LOS C during the peak hours. The 95th percentile queues on Berry Street (west approach) extend back to the Pacific Highway (A1) during all peak hours.

5.3.3 VIC03 – Miller Street / McLaren Street

This signalised intersection, composed of Miller Street and McLaren Street, is located directly south of Victoria Cross North. It connects the regional road of Miller Street, linking North Sydney and Cammeray, with the local road of McLaren Street in North Sydney.

Figure 5-26 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-26 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of VIC03

Table 5-24 presents a performance summary of this intersection.

Table 5-24 Block 2 - Intersection performance summary of VIC03

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Miller Street / McLaren Street (Signal)	Weekday AM	South	0.36	10	66.6	LOS A
		East	0.436	60.9	40.2	LOS E
		North	0.408	13.4	84.9	LOS A
		West	0.68	47.5	51.7	LOS D

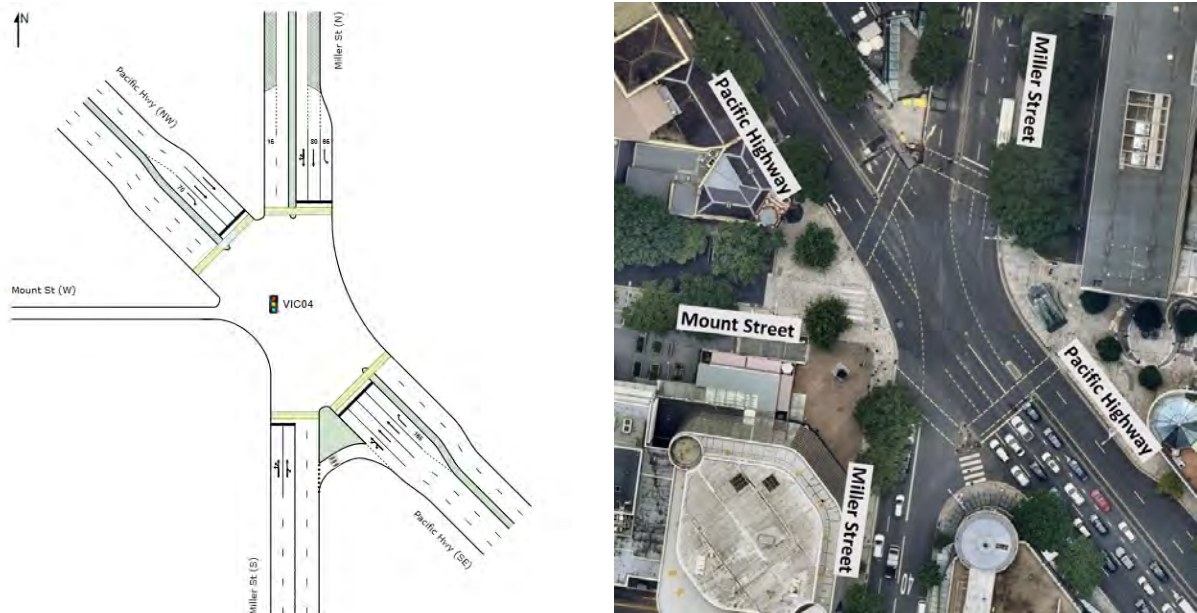
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
	Weekday PM	Total	0.68	22	84.9	LOS B
		South	0.285	10.5	35.3	LOS A
		East	0.286	26.1	23	LOS B
		North	0.332	13.1	34.8	LOS A
		West	0.258	21.9	17.3	LOS B
		Total	0.332	14.6	35.3	LOS B
	Weekend	South	0.319	9.4	39	LOS A
		East	0.244	28.8	11.7	LOS C
		North	0.343	11.9	40.4	LOS A
		West	0.266	24.5	16.8	LOS B
		Total	0.343	14.4	40.4	LOS A

Overall, the intersection of Miller Street and McLaren Street performs satisfactorily at LOS B or better during the peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.3.4 VIC04 – Pacific Highway / Miller Street

This signalised intersection, composed of the Pacific Highway, Miller Street and Mount Street, is located directly south of Victoria Cross South. It connects the state road of Pacific Highway (A1), linking Wahroonga and North Sydney, with the regional road of Miller Street, linking North Sydney and Cammeray. Additionally, it provides travel to the west of North Sydney via the Mount Street unsignalised egress-only approach.

Figure 5-27 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-27 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of VIC04

Table 5-25 presents a performance summary of this intersection.

Table 5-25 Block 2 - Intersection performance summary of VIC04

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pacific Highway / Miller Street (Signal)	Weekday AM	South	0.782	43.2	107.7	LOS D
		South-east	0.795	31.6	127.7	LOS C
		North	0.471	14.5	30.6	LOS A
		North-west	0.611	31	90	LOS C
		Total	0.795	30.7	127.7	LOS C
	Weekday PM	South	0.908	49.1	157.5	LOS D
		South-east	0.907	32.3	126.5	LOS C
		North	0.222	9.9	9.6	LOS A
		North-west	0.551	40.3	65.6	LOS C
		Total	0.908	34.7	157.5	LOS C
	Weekend	South	0.771	37.2	101.6	LOS C
		South-east	0.718	25	98.3	LOS B
		North	0.402	9.2	13.6	LOS A
		North-west	0.6	41.7	78.6	LOS C
		Total	0.771	28.3	101.6	LOS B

Overall, the intersection of the Pacific Highway (A1), Miller Street and Mount Street performs satisfactorily at LOS C or better during the peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.3.5 Comparison with previous study blocks

Figure 5-28 provides a comparison of the total peak hourly traffic volumes recorded across all intersections for the Block 1 and Block 2 study. As shown, traffic volumes were higher in Block 2 than Block 1 in all peak hours. The change in traffic volumes may be associated with shifts in work from home arrangements and more people travelling into the office post the Covid-19 pandemic. It is understood there has also been various changes to travel patterns as a result of the ramp/road closures associated with the Warringah Freeway Upgrade project.

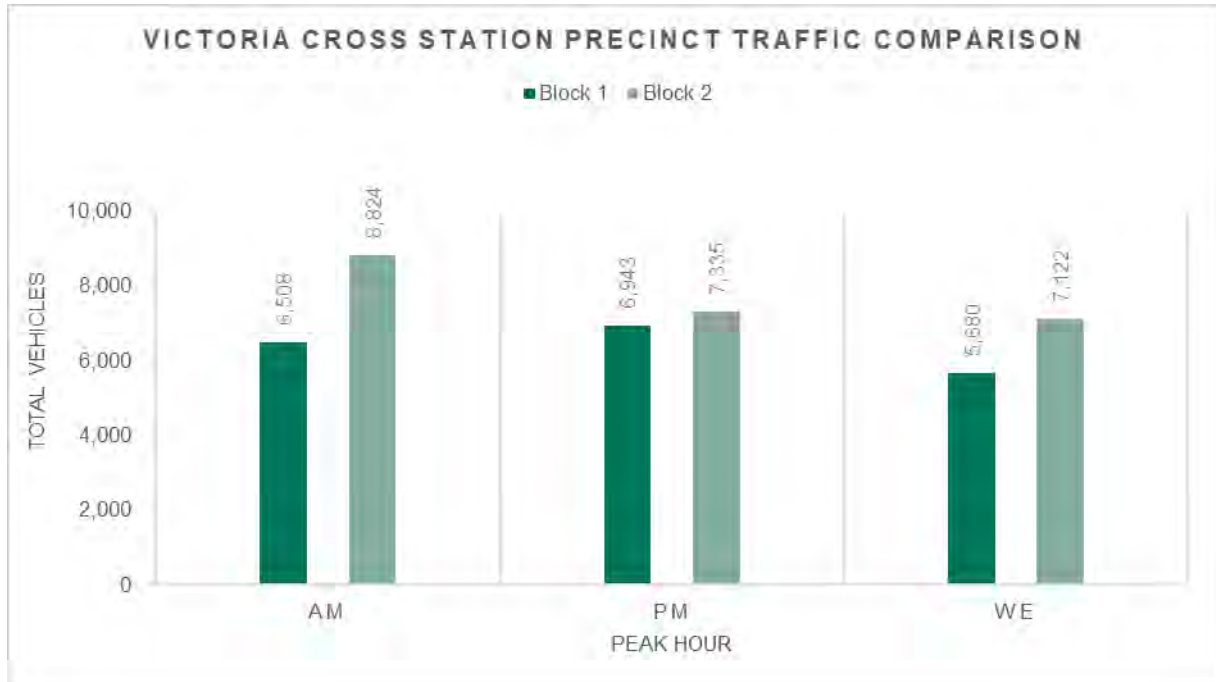


Figure 5-28 Study block comparison – Victoria Cross Station peak hourly traffic volume across all intersections

A comparison of the intersection LOS in Block 1 and Block 2 is shown in **Figure 5-29**. All intersections in the Victoria Cross Station precinct perform at LOS C or better during Block 2, which is generally similar to Block 1.



Figure 5-29 Study block comparison – Victoria Cross Station intersection performance summary

5.4 Barangaroo Station

Barangaroo Station is a new underground station and the fourth stop on the City & Southwest Line (towards Sydenham). It is located at the northern area of Barangaroo, south of Munn Street, bounded by Hickson Road.

Barangaroo Station was still under construction during Block 2. Construction access and egress to the station was facilitated through the newly constructed Barangaroo Avenue via Hickson Road.

Bus services are available within approximately 400 metres of Barangaroo Station, located along Hickson Road and Kent Street. Dedicated cycle lanes are provided along the Sydney Harbour Bridge on-ramp and Kent Street, south of the intersection of Kent Street, Clarence Street and the Sydney Harbour Bridge on-ramp. Around the station precinct, there will be two new bus stops on Hickson Road (one northbound travel and one southbound travel). Kiss and ride bays and taxi zones will be provided at the proposed Hickson Road interchange, and coach bays underneath Munn Street bridge.

The Barangaroo Station study area consists of 18 intersections. During Block 2, two intersections were new pedestrian mid-block crossings which have not yet been constructed. **Table 5-26** presents the peak hours utilised for modelling the intersections. **Table 5-27** provides a summary of the intersection LOS while Figure 5-30 visualises a geospatial summary of the intersection LOS within the Barangaroo Station study area.

Table 5-26 Block 2 - Barangaroo Station peak hours modelled

Network ID	Intersection ID	Weekday AM peak hour		Weekday PM peak hour		Weekend peak hour	
		Day	Start time	Day	Start time	Day	Start time
BGU-N1	BGU01	Wednesday	8.15am	Thursday	5.45pm	Sunday	11.45am
	BGU02						
BGU-N2	BGU04	Tuesday	8.00am	Friday	5.30pm	Saturday	12.00pm
	BGU05						
	BGU07						
	BGU08						
	BGU09						
BGU-N3	BGU06	Tuesday	8.00am	Friday	5.30pm	Saturday	12.00pm
	BGU10						
	BGU11						
	BGU12						
	BGU13						
	BGU18						
BGU-N4	BGU14	Tuesday	8.00am	Friday	5.30pm	Saturday	12.00pm
	BGU15						
-	BGU03	Wednesday	9.00am	Friday	6.00pm	Sunday	11.45pm
-	BGU16	Under construction.					
-	BGU17	Under construction.					

Table 5-27 Block 2 - Barangaroo Station intersection performance summary

Intersection ID	Intersection	LOS		
		Weekday AM Peak	Weekday PM Peak	Weekend Peak
BGU01	Hickson Road / Towns Place (Priority – Give Way)	LOS A	LOS A	LOS A
BGU02	Dalgety Road / Towns Place (Roundabout)	LOS A	LOS A	LOS A
BGU03	Kent Street / Argyle Street (Priority – Give Way)	LOS B	LOS C	LOS A
BGU04	Pedestrian Mid-block Crossing at Kent Street near Gas Lane (Pedestrian only - Signal)	LOS B	LOS B	LOS B
BGU05	Kent Street / Sydney Harbour Bridge (SHB) On-ramp (Signal)	LOS B	LOS B	LOS B
BGU06	Hickson Road / Napoleon Street / Sussex Street (Signal)	LOS B	LOS B	LOS B
BGU07	Margaret Street / Kent Street / Napoleon Street (Signal)	LOS B	LOS B	LOS B
BGU08	Margaret Street / Clarence Street (Signal)	LOS B	LOS B	LOS B
BGU09	Margaret Street / York Street (Signal)	LOS B	LOS B	LOS B
BGU10	Pedestrian Mid-block Crossing at Sussex Street under Exchange Place (Pedestrian only - Signal)	LOS A	LOS A	LOS A
BGU11	Pedestrian Mid-block Crossing at Kent Street near Margaret Street (Pedestrian only - Signal)	LOS A	LOS A	LOS A
BGU12	Sussex Street / Erskine Street (Signal)	LOS B	LOS B	LOS B
BGU13	Kent Street / Erskine Street (Signal)	LOS B	LOS B	LOS C
BGU14	Sussex Street / King Street (Signal)	LOS B	LOS B	LOS B
BGU15	Kent Street / King Street (Signal)	LOS B	LOS B	LOS B
BGU16	New Pedestrian Mid-block Crossing at New Hickson Road (north of Metro Station) (Pedestrian only - Signal)	Under construction.		
BGU17	New Pedestrian Mid-block Crossing at New Hickson Road (south of Metro Station) (Pedestrian only - Signal)	Under construction.		
BGU18	Shelley Street / Erskine Street (Signal)	LOS B	LOS A	LOS B

Overall, the intersection performance in the Barangaroo Station study area during the peak periods is satisfactory, operating at LOS C or better.



Figure 5-30 Block 2 – Barangaroo Station intersection performance summary

5.4.1 BGU01 – Hickson Road / Towns Place

The priority intersection, composed of Hickson Road and Towns Place, is located north of Barangaroo Station. It connects the local road of Towns Place with the regional road of Hickson Road which runs along the western waterfront of Barangaroo.

Figure 5-31 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-31 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU01

Table 5-28 presents a performance summary of this intersection.

Table 5-28 Block 2 – Intersection performance summary of BGU01

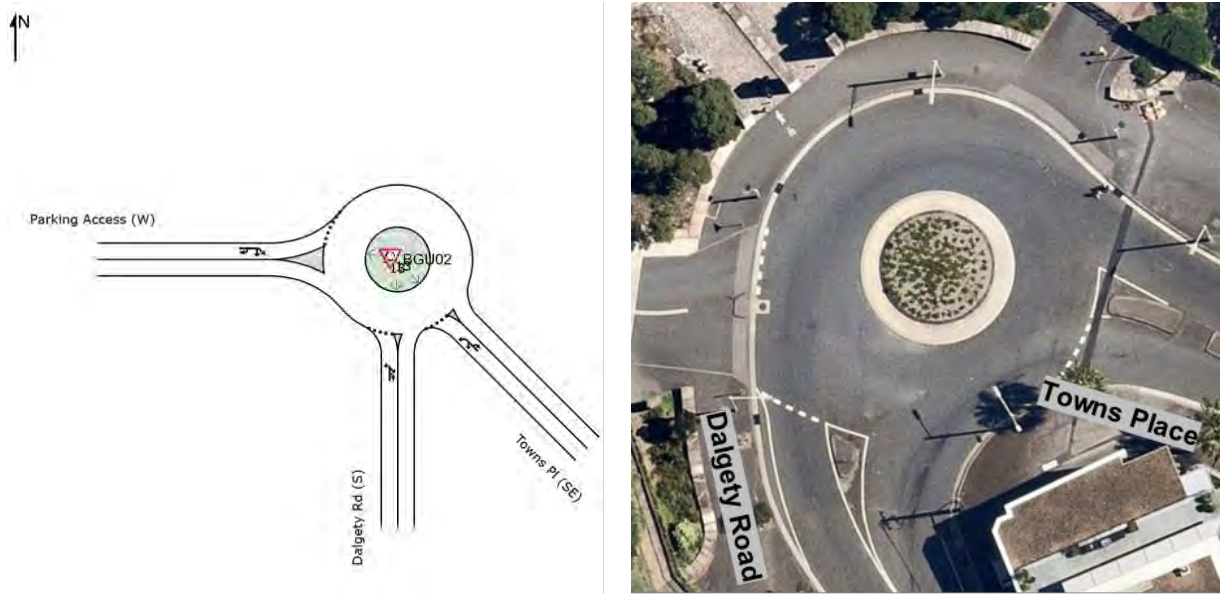
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Hickson Road / Towns Place (Priority – Give Way)	Weekday AM	East	0.154	4.7	5.1	LOS A
		North-west	0.409	7.6	16.8	LOS A
		South-west	0.143	4.3	4.8	LOS A
		Total	0.409	7.6	16.8	LOS A
	Weekday PM	East	0.158	5.8	5.1	LOS A
		North-west	0.194	6.7	5.5	LOS A
		South-west	0.261	4.1	9.7	LOS A
		Total	0.194	6.7	5.5	LOS A
	Weekend	East	0.259	5.4	9.5	LOS A
		North-west	0.279	8.8	8.6	LOS A
		South-west	0.183	4.1	6.7	LOS A
		Total	0.279	8.8	8.6	LOS A

Overall, the intersection of Hickson Road and Towns Place performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.4.2 BGU02 – Dalgety Road / Towns Place

The roundabout intersection, composed of Dalgety Road and Towns Place, is located north of Barangaroo Station. It connects the local roads of Dalgety Road and Towns Place in Barangaroo with the Barangaroo Reserve car park.

Figure 5-32 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-32 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU02

Table 5-29 presents a performance summary of this intersection.

Table 5-29 Block 2 – Intersection performance summary of BGU02

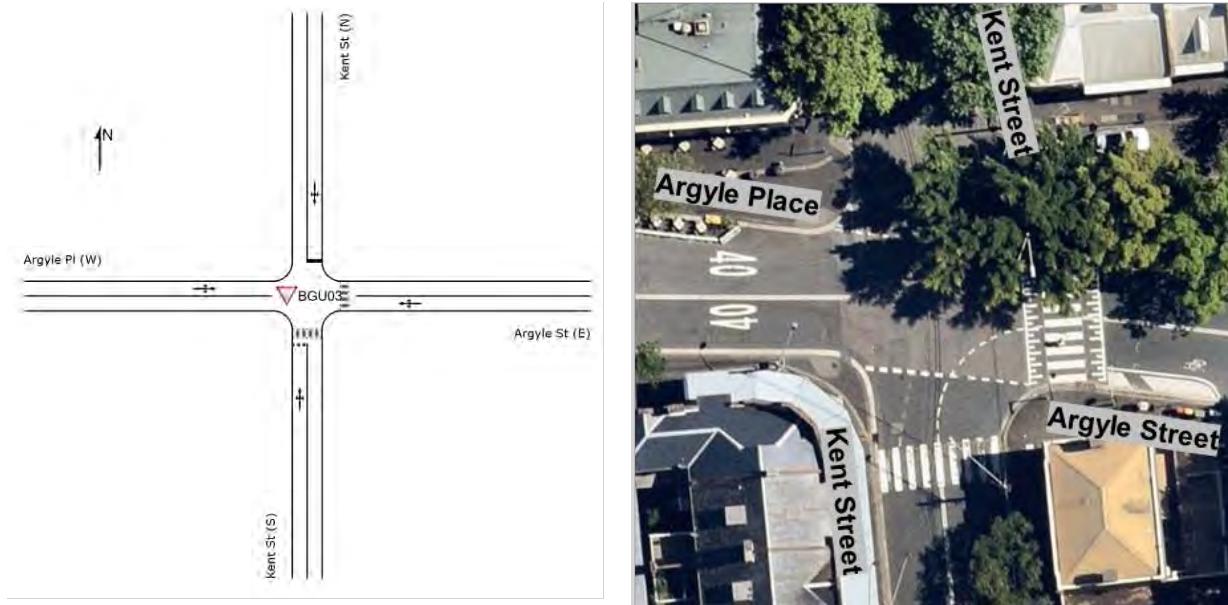
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Dalgety Road / Towns Place (Roundabout)	Weekday AM	South	0.267	7.8	13.9	LOS A
		South-east	0.126	8.4	5.5	LOS A
		West	0.008	3	0.3	LOS A
		Total	0.126	8.4	5.5	LOS A
	Weekday PM	South	0.119	6.9	5.1	LOS A
		South-east	0.194	8.3	9.4	LOS A
		West	0.022	1.1	0.8	LOS A
		Total	0.194	8.3	9.4	LOS A
	Weekend	South	0.201	7.1	9	LOS A
		South-east	0.134	8.2	5.8	LOS A
		West	0.006	1.6	0.2	LOS A
		Total	0.134	8.2	5.8	LOS A

Overall, the intersection of Dalgety Road and Towns Place performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.4.3 BGU03 – Kent Street / Argyle Street

The priority intersection, composed of Kent Street, Argyle Street and Argyle Place, is located north-east of Barangaroo Station. It connects the local roads of Argyle Street and Argyle Place in Barangaroo with Kent Street, a major local road that runs through the Sydney CBD.

Figure 5-33 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-33 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU03

Table 5-30 presents a performance summary of this intersection.

Table 5-30 Block 2 – Intersection performance summary of BGU03

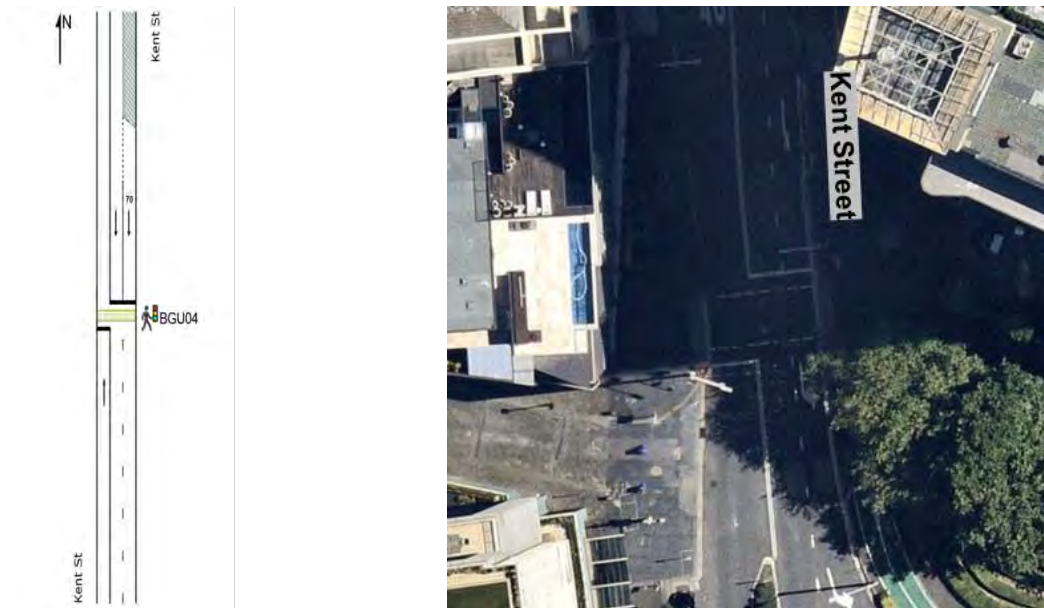
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Kent Street / Argyle Street (Priority – Give Way)	Weekday AM	South	0.699	15.2	58.6	LOS B
		East	0.236	4.5	8.4	LOS A
		North	0.026	9.4	0.6	LOS A
		West	0.149	4.9	5.3	LOS A
		Total	0.699	15.2	58.6	LOS B
	Weekday PM	South	0.923	31.4	127.5	LOS C
		East	0.312	5.1	11.4	LOS A
		North	0.037	12.2	0.51	LOS A
		West	0.16	5.6	5.5	LOS A
		Total	0.923	31.4	127.5	LOS C
	Weekend	South	0.308	7.9	9.8	LOS A
		East	0.197	4.7	7.1	LOS A
		North	0.02	9.2	0.5	LOS A
		West	0.084	4.9	2.7	LOS A
		Total	0.02	9.2	0.5	LOS A

Overall, the intersection of Kent Street, Argyle Street and Argyle Place performs satisfactorily at LOS C or better during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.4.4 BGU04 – Pedestrian Mid-block Crossing at Kent Street near Gas Lane

The signalised pedestrian mid-block crossing at Kent Street, near Gas Lane, is located south-east of Barangaroo Station. It offers a signalised pedestrian crossing over Kent Street near Gas Lane, a major local road that runs through the Sydney CBD. A dedicated cycleway runs along the east side of Kent Street; however, it was not considered for this assessment. The traffic signals at this intersection are co-ordinated with the intersection of Kent Street, Clarence Street and the Sydney Harbour Bridge on-ramp (BGU05).

Figure 5-34 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-34 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU04

Table 5-31 presents a performance summary of this intersection.

Table 5-31 Block 2 – Intersection performance summary of BGU04

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pedestrian Mid-block Crossing at Kent Street near Gas Lane	Weekday AM	South	0.344	8.8	55.2	LOS A
		North	0.374	31.5	33.5	LOS C
		Total	0.374	18	55.2	LOS B
	Weekday PM	South	0.47	9.6	81.6	LOS A
		North	0.788	44.5	67.4	LOS D
		Total	0.788	23.5	81.6	LOS B
(Pedestrian only – Signal)	Weekend	South	0.281	9.5	40.1	LOS A
		North	0.333	24.9	25.5	LOS B
		Total	0.333	16.5	40.1	LOS B

Overall, the pedestrian mid-block crossing at Kent Street, near Gas Lane, performs satisfactorily at LOS B during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.4.5 BGU05 – Kent Street / Sydney Harbour Bridge (SHB) On-ramp

The signalised intersection, composed of Kent Street, Clarence Street and the Sydney Harbour Bridge (SHB) on-ramp, is located south-east of Barangaroo Station. It connects the major local roads running through the Sydney CBD of Kent Street and Clarence Street with the Sydney Harbour Bridge on-ramp, providing northbound access to the M1 Motorway. A dedicated cycleway runs along the east side of Kent Street and the north side of the SHB on-ramp. Kent St (NE) cycleway was not assessed. The traffic signals at this intersection are co-ordinated with the pedestrian mid-block crossing at Kent Street, near Gas Lane (BGU04).

Figure 5-35 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-35 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU05

Table 5-32 presents a performance summary of this intersection.

Table 5-32 Block 2 – Intersection performance summary of BGU05

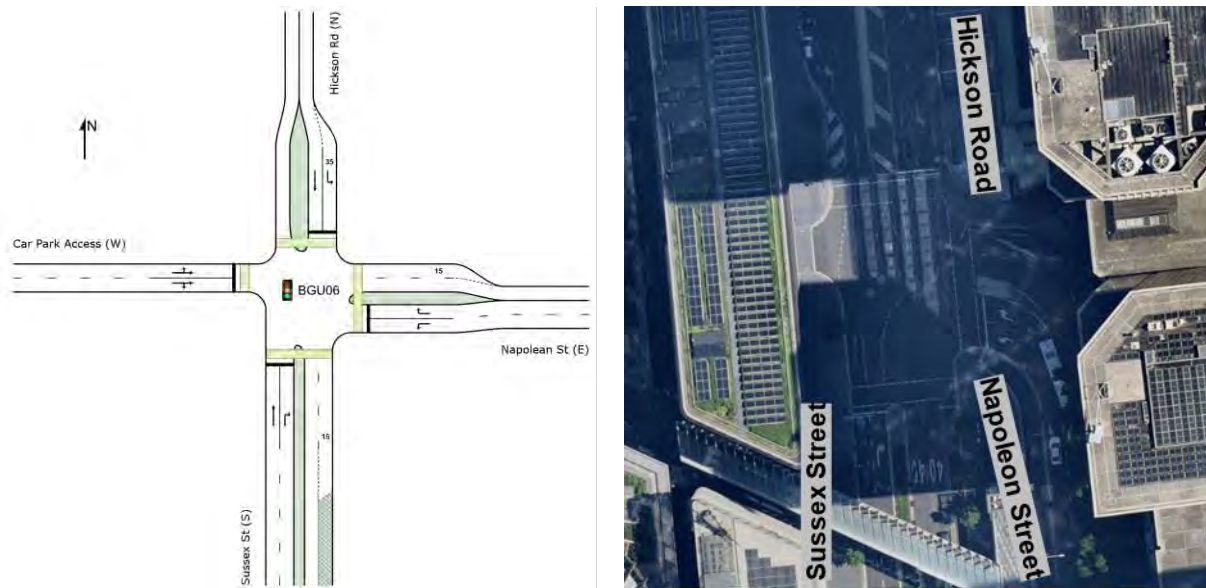
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Kent Street / Sydney Harbour Bridge (SHB) On-ramp (Signal)	Weekday AM	South	0.718	17.6	101.5	LOS B
		East	0.402	34.4	34.6	LOS C
		North	0.403	36.4	40.9	LOS C
		Total	0.718	24.2	101.5	LOS B
	Weekday PM	South	0.726	12.2	13.8	LOS A
		East	0.919	60	77.8	LOS E
		North	0.903	36.7	72.1	LOS C
		Total	0.919	26.1	101.4	LOS B
	Weekend	South	0.511	18.2	47.8	LOS B
		East	0.249	26.2	19.8	LOS B
		North	0.593	21.1	24.5	LOS B
		Total	0.593	20.2	47.8	LOS B

Overall, the intersection of Kent Street, Clarence Street and the SHB on-ramp performs satisfactorily at LOS B during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.4.6 BGU06 – Hickson Road / Napoleon Street / Sussex Street

The signalised intersection, composed of Hickson Road, Napoleon Street, Sussex Street and a private parking facility is located south of Barangaroo Station. It connects the parking facility exit and local road of Napoleon Street with the regional roads of Hickson Road, which runs along the western waterfront of Barangaroo, and Sussex Street running through the Sydney CBD.

Figure 5-36 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nemap (December 2023)

Figure 5-36 Block 2 – AM peak model SIDRA Intersection layout (left) and Nemap aerial imagery (right) of BGU06

Table 5-33 presents a performance summary of this intersection.

Table 5-33 Block 2 – Intersection performance summary of BGU06

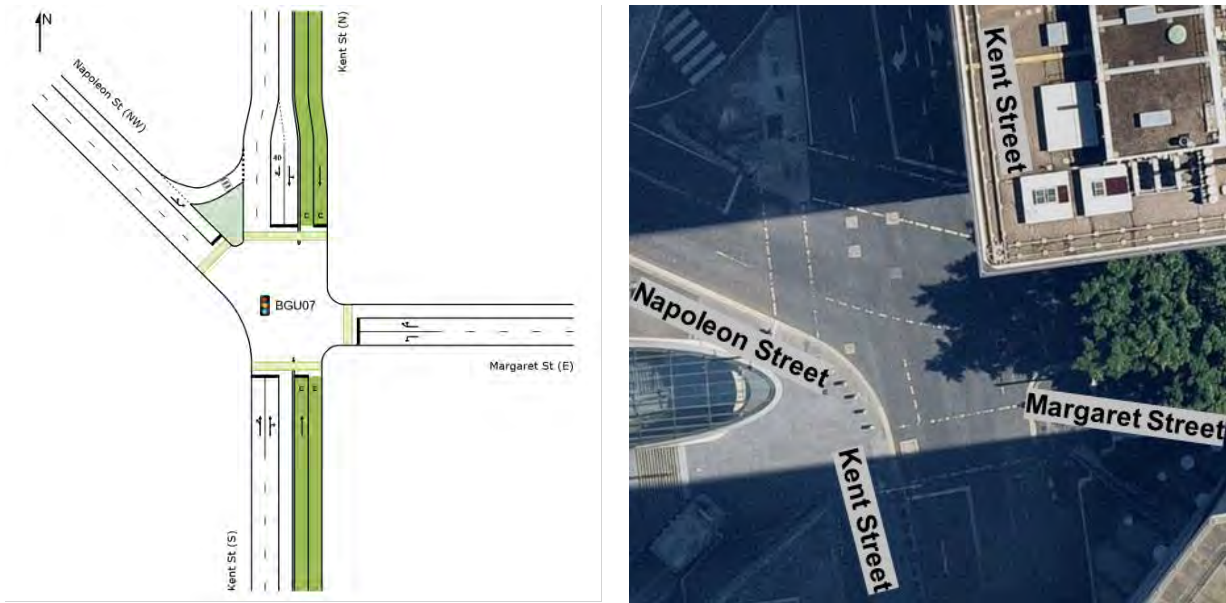
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Hickson Road / Napoleon Street / Sussex Street (Signal)	Weekday AM	South	0.366	14.7	30.2	LOS B
		East	0.427	24	39.6	LOS B
		North	0.33	20.9	38.1	LOS B
		West	0.192	40.7	2.8	LOS C
		Total	0.427	19.9	39.6	LOS B
	Weekday PM	South	0.332	15.8	55.9	LOS B
		East	0.45	30.9	49.4	LOS C
		North	0.429	23	66.3	LOS B
		West	0.483	46.7	13.6	LOS D
		Total	0.483	23.7	66.3	LOS B
	Weekend	South	0.294	12.5	40.2	LOS A
		East	0.29	23.8	26.9	LOS B
		North	0.413	20.1	50.9	LOS B
		West	0.077	43.4	0.6	LOS D
		Total	0.413	17.8	50.9	LOS B

Overall, the intersection of Hickson Road, Napoleon Street and Sussex Street performs satisfactorily at LOS B during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.4.7 BGU07 – Margaret Street / Kent Street / Napoleon Street

The signalised intersection, composed of Margaret Street, Kent Street and Napoleon Street, is located south-east of Barangaroo Station. It connects the local roads of Napoleon Street and Margaret Street in the Sydney CBD with Kent Street, a major local road that runs through the Sydney CBD. A dedicated cycleway runs along the east side of Kent Street.

Figure 5-37 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-37 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU07

Table 5-34 presents a performance summary of this intersection.

Table 5-34 Block 2 – Intersection performance summary of BGU07

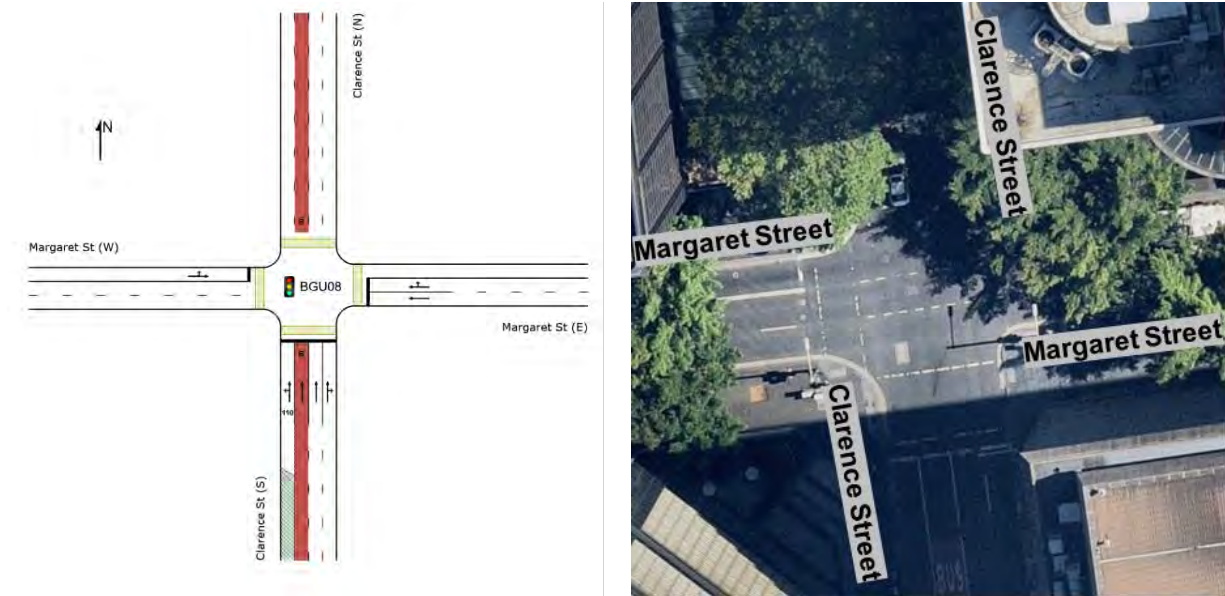
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Margaret Street / Kent Street / Napoleon Street (Signal)	Weekday AM	South	0.48	23.3	78.5	LOS B
		East	0.572	31	65.3	LOS C
		North	0.181	29.9	14	LOS C
		North-west	0.355	17.5	35.8	LOS B
		Total	0.572	25.7	78.5	LOS B
	Weekday PM	South	0.446	19.2	85.3	LOS B
		East	0.506	33.7	63.6	LOS C
		North	0.36	10.6	13.5	LOS A
		North-west	0.391	11.1	35	LOS A
		Total	0.506	18.4	85.3	LOS B
	Weekend	South	0.303	15.6	37.6	LOS B
		East	0.261	18.6	20.2	LOS B
		North	0.356	15.8	18.4	LOS B
		North-west	0.272	9.9	19.9	LOS A
		Total	0.356	14.9	37.6	LOS B

Overall, the intersection of Margaret Street, Kent Street and Napoleon Street performs satisfactorily at LOS B during all peak hours. The 95th percentile queue on Margaret Street (east approach) extends back to Clarence Street during the weekday AM and PM peak hour.

5.4.8 BGU08 – Margaret Street / Clarence Street

The signalised intersection, composed of Margaret Street and Clarence Street, is located south-east of Barangaroo Station. It connects the local road of Margaret Street with Clarence Street, a major local road that runs through the Sydney CBD.

Figure 5-38 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-38 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU08

Table 5-35 presents a performance summary of this intersection.

Table 5-35 Block 2 – Intersection performance summary of BGU08

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Margaret Street / Clarence Street (Signal)	Weekday AM	South	0.338	21.2	45.7	LOS B
		East	0.503	16	53.1	LOS B
		West	0.471	36.9	39.3	LOS C
		Total	0.503	21.2	53.1	LOS B
	Weekday PM	South	0.421	24.1	68.2	LOS B
		East	0.329	15.4	36.4	LOS B
		West	0.454	42.7	47.4	LOS D
		Total	0.454	24.3	68.2	LOS B
	Weekend	South	0.281	17.2	30.5	LOS B
		East	0.14	11.5	16.1	LOS A
		West	0.257	22.2	28.7	LOS B
		Total	0.281	16.2	30.5	LOS B

Overall, the intersection of Margaret Street and Clarence Street performs satisfactorily at LOS B during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.4.9 BGU09 – Margaret Street / York Street

The signalised intersection, composed of Margaret Street and York Street, is located south-east of Barangaroo Station. It connects the local road of Margaret Street with York Street, a major local road that runs through the Sydney CBD.

Figure 5-39 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-39 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU09

Table 5-36 presents a performance summary of this intersection.

Table 5-36 Block 2 – Intersection performance summary of BGU09

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Margaret Street / York Street (Signal)	Weekday AM	East	0.274	29.1	35.9	LOS C
		North	0.336	12.7	59	LOS A
		West	0.25	37.1	18.1	LOS C
		Total	0.336	16.2	59	LOS B
	Weekday PM	East	0.255	27.8	36.5	LOS B
		North	0.341	15.1	60.3	LOS B
		West	0.29	36.5	21.7	LOS C
		Total	0.341	18.6	60.3	LOS B
	Weekend	East	0.109	18.6	9.3	LOS B
		North	0.284	14.8	33.8	LOS B
		West	0.263	24.5	18.8	LOS B
		Total	0.284	16.2	33.8	LOS B

Overall, the intersection of Margaret Street and York Street performs satisfactorily at LOS B during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.4.10 BGU10 – Pedestrian Mid-block Crossing at Sussex Street under Exchange Place

The signalised pedestrian mid-block crossing at Sussex Street, under Exchange Place, is located south of Barangaroo Station. It offers a signalised pedestrian crossing over Sussex Street, a regional road that runs through the Sydney CBD.

Figure 5-40 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-40 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU10

Table 5-37 presents a performance summary of this intersection.

Table 5-37 Block 2 – Intersection performance summary of BGU10

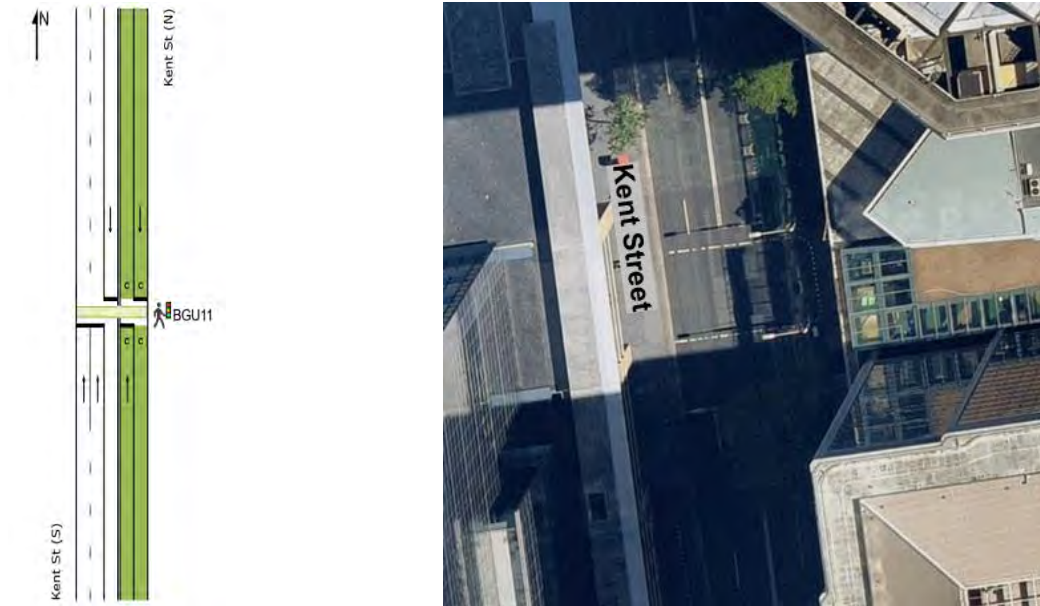
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pedestrian Mid-block Crossing at Sussex Street under Exchange Place	Weekday AM	South	0.167	7.1	20.6	LOS A
		North	0.164	7.1	20.1	LOS A
		Total	0.167	7.1	20.6	LOS A
	Weekday PM	South	0.237	9.4	24.5	LOS A
		North	0.273	9.6	28.7	LOS A
		Total	0.273	9.5	28.7	LOS A
(Pedestrian only – Signal)	Weekend	South	0.179	7.2	21	LOS A
		North	0.157	7.1	18.1	LOS A
		Total	0.179	7.2	21	LOS A

Overall, the pedestrian mid-block crossing at Sussex Street under Exchange Place performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.4.11 BGU11 – Pedestrian Mid-block Crossing at Kent Street near Margaret Street

The signalised pedestrian mid-block crossing at Kent Street, near Margaret Street, is located south of Barangaroo Station. It offers a signalised pedestrian crossing over Kent Street near Margaret Street, a major local road that runs through the Sydney CBD. A dedicated cycleway runs along the east side of Kent Street.

Figure 5-41 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-41 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU11

Table 5-38 presents a performance summary of this intersection.

Table 5-38 Block 2 – Intersection performance summary of BGU11

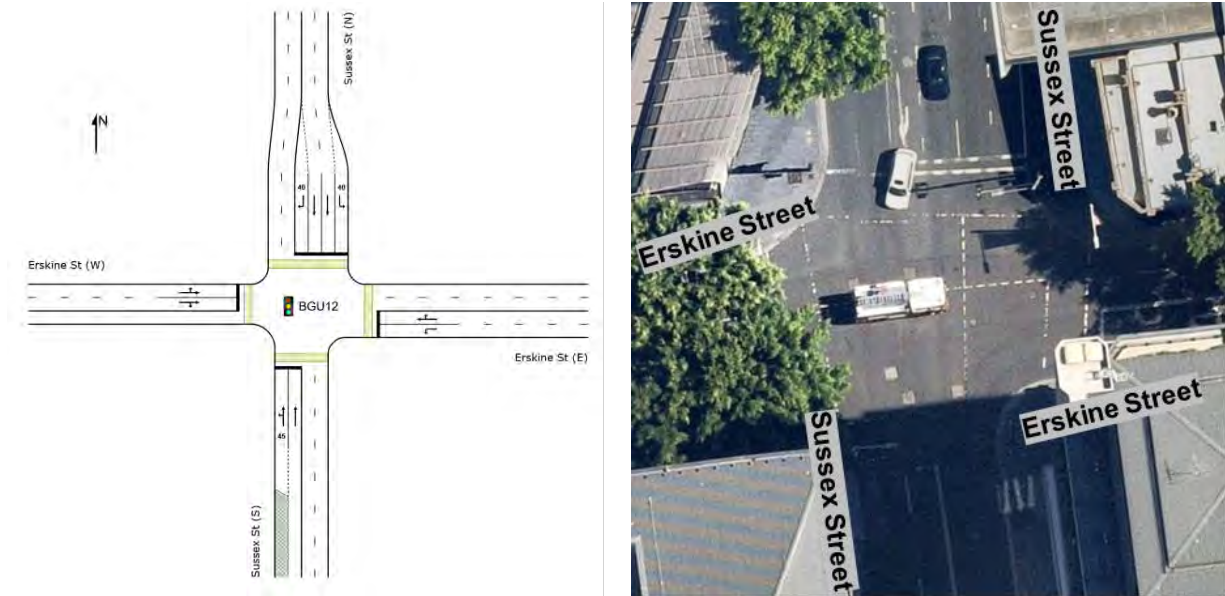
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pedestrian Mid-block Crossing at Kent Street near Margaret Street	Weekday AM	South	0.389	10.2	33.9	LOS A
		North	0.174	9.1	13.7	LOS A
		Total	0.389	9.9	33.9	LOS A
	Weekday PM	South	0.47	10.9	42.7	LOS A
		North	0.209	9.4	16.8	LOS A
		Total	0.47	10.6	42.7	LOS A
(Pedestrian only – Signal)	Weekend	South	0.232	9	19.1	LOS A
		North	0.165	8.6	13.1	LOS A
		Total	0.232	8.9	19.1	LOS A

Overall, the pedestrian mid-block crossing at Kent Street, near Margaret Street, performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.4.12 BGU12 – Sussex Street / Erskine Street

The signalised intersection, composed of Sussex Street and Erskine Street, is located south of Barangaroo Station. It connects the regional road of Sussex Street running through the Sydney CBD with the local road of Erskine Street.

Figure 5-42 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-42 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU12

Table 5-39 presents a performance summary of this intersection.

Table 5-39 Block 2 – Intersection performance summary of BGU12

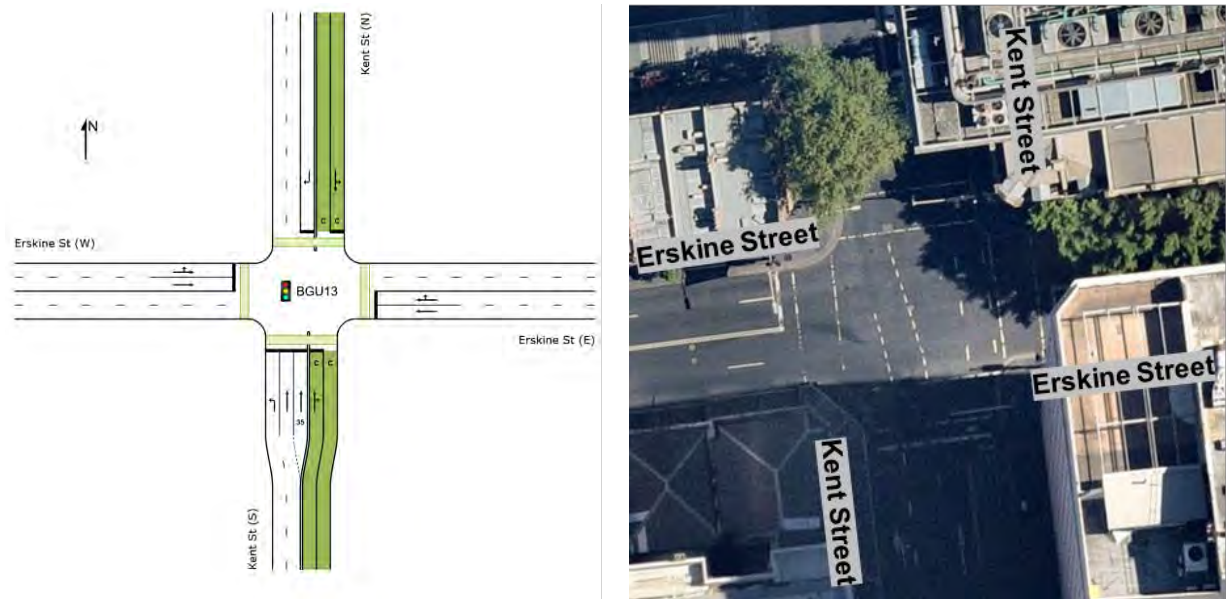
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Sussex Street / Erskine Street (Signal)	Weekday AM	South	0.335	30.2	44.5	LOS C
		East	0.404	9.3	45	LOS A
		North	0.206	22.2	30.6	LOS B
		West	0.362	15.5	64.6	LOS B
		Total	0.404	17.8	64.6	LOS B
	Weekday PM	South	0.341	25	53.3	LOS B
		East	0.523	10.8	57.1	LOS A
		North	0.24	17.5	39.3	LOS B
		West	0.452	21	66.1	LOS B
		Total	0.523	18.2	66.1	LOS B
	Weekend	South	0.301	28.4	39.7	LOS B
		East	0.367	9.4	45.6	LOS A
		North	0.214	22.4	31.5	LOS B
		West	0.717	19.4	73.4	LOS B
		Total	0.717	18.6	73.4	LOS B

Overall, the intersection of Sussex Street and Erskine Street performs satisfactorily at LOS B during all peak hours. The 95th percentile queue on Erskine Street (west approach) extends back to Shelley Street during the weekday AM and PM peak hours.

5.4.13 BGU13 – Kent Street / Erskine Street

The signalised intersection, composed of Kent Street and Erskine Street, is located south of Barangaroo Station. It connects the local road of Erskine Street with Kent Street, a major local road that runs through the Sydney CBD. A dedicated cycleway runs along the east side of Kent Street.

Figure 5-43 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-43 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU13

Table 5-40 presents a performance summary of this intersection.

Table 5-40 Block 2 – Intersection performance summary of BGU13

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Kent Street / Erskine Street (Signal)	Weekday AM	South	0.351	21.2	53.7	LOS B
		East	0.227	22.8	33.2	LOS B
		North	0.705	29.1	43.6	LOS C
		West	0.257	18.9	32.1	LOS B
		Total	0.705	22.4	53.7	LOS B
	Weekday PM	South	0.35	15.2	61.6	LOS B
		East	0.357	33.9	39.1	LOS C
		North	0.841	36.5	56	LOS C
		West	0.427	27	42	LOS B
		Total	0.841	23.7	61.6	LOS B
	Weekend	South	0.208	20	31.6	LOS B
East		0.403	40.8	36.7	LOS C	

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
		North	0.588	33.3	41.1	LOS C
		West	0.372	28.6	38.3	LOS C
		Total	0.588	29	41.1	LOS C

Overall, the intersection of Kent Street and Erskine Street performs satisfactorily at LOS C or better during the peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.4.14 BGU14 – Sussex Street / King Street

The signalised intersection, composed of Sussex Street and King Street, is located south of Barangaroo Station. It connects the King Street Western Distributor (A1) off-ramp with the regional road of Sussex Street, running through the Sydney CBD. A dedicated cycleway runs along the north side of King Street.

Figure 5-44 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-44 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU14

Table 5-41 presents a performance summary of this intersection.

Table 5-41 Block 2 – Intersection performance summary of BGU14

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Sussex Street / King Street	Weekday AM	North	0.066	41.7	5.9	LOS C
		South-west	0.749	38.1	102.8	LOS C
		Total	0.721	19	142.2	LOS B
(Signal)	Weekday PM	North	0.749	23.1	142.2	LOS B
		South-west	0.125	42.7	10.2	LOS D

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
	Weekend	Total	0.603	22.8	116.1	LOS B
		North	0.603	21	120.5	LOS B
		South-west	0.603	22.3	120.5	LOS B
		Total	0.061	41.7	5.4	LOS C

Overall, the intersection of Sussex Street and King Street performs satisfactorily at LOS C or better during the peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.4.15 BGU15 – Kent Street / King Street

The signalised intersection, composed of Kent Street and King Street, is located south of Barangaroo Station. It connects the local road of King Street with Kent Street, a major local road that runs through the Sydney CBD. A dedicated cycleway runs along the east side of Kent Street and north side of King Street.

Figure 5-45 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-45 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU15

Table 5-42 presents a performance summary of this intersection.

Table 5-42 Block 2 – Intersection performance summary of BGU15

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Kent Street / King Street (Signal)	Weekday AM	South	0.418	34.9	49.9	LOS C
		West	0.622	10.9	83.6	LOS A
		Total	0.622	18.7	83.6	LOS B
		South	0.63	35.5	80.4	LOS C

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
	Weekday PM	West	0.514	8.5	55.2	LOS A
		Total	0.63	20.4	80.4	LOS B
	Weekend	South	0.333	31.5	44.4	LOS C
		West	0.453	14.9	56	LOS B
		Total	0.453	21.9	56	LOS B

Overall, the intersection of Kent Street and King Street performs satisfactorily at LOS B during all peak hours. The 95th percentile queue on King Street (west approach) extends back to Sussex Street during the weekday AM peak hour.

5.4.16 BGU16 – New Pedestrian Mid-block Crossing at New Hickson Road (north of Metro Station)

The signalised pedestrian mid-block crossing at New Hickson Road (north of the metro station) is located directly east of Barangaroo Station. During Block 2, the mid-block crossing was under construction and non-operational. It was not assessed as part of the Block 2 study.

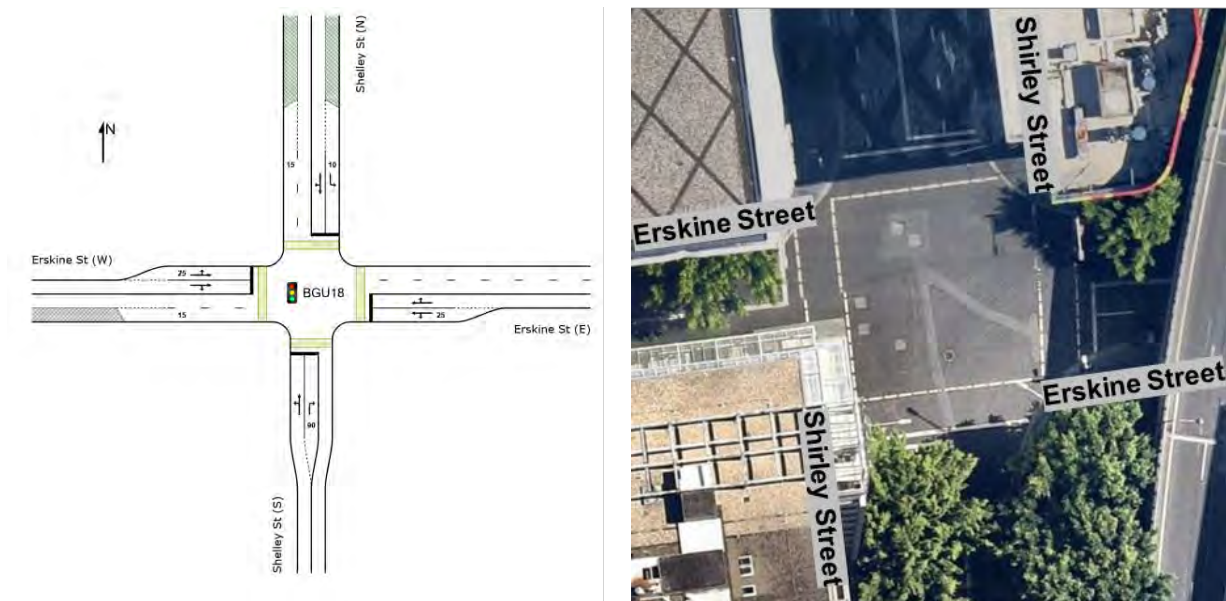
5.4.17 BGU17 – New Pedestrian Mid-block Crossing at New Hickson Road (south of Metro Station)

The signalised pedestrian mid-block crossing at New Hickson Road (south of the metro station) is located directly east of Barangaroo Station. During Block 2, the mid-block crossing was under construction and non-operational. It was not assessed as part of the Block 2 study.

5.4.18 BGU18 – Shelley Street / Erskine Street

The signalised intersection, composed of Shelley Street and Erskine Street, is located south of Barangaroo Station. It connects the local roads of Erskine Street and Shelley Street in the Sydney CBD near the King Street Wharf.

Figure 5-46 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-46 Block 2 – AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of BGU18

Table 5-43 presents a performance summary of this intersection.

Table 5-43 Block 2 – Intersection performance summary of BGU18

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Shelley Street / Erskine Street (Signal)	Weekday AM	South	0.691	17.8	49.6	LOS B
		East	0.339	15.4	20.7	LOS B
		North	0.262	15.7	11.9	LOS B
		West	0.118	11.1	8.3	LOS A
		Total	0.691	16.1	49.6	LOS B
	Weekday PM	South	0.263	14.7	14	LOS B
		East	0.272	14.1	17.6	LOS A
		North	0.386	15.5	18.7	LOS B
		West	0.11	11.4	7.8	LOS A
		Total	0.386	14.2	18.7	LOS A
	Weekend	South	0.91	29.6	55	LOS C
		East	0.372	15.8	23.7	LOS B
		North	0.215	14.4	15.7	LOS A
		West	0.26	11.9	19.5	LOS A
		Total	0.91	19.4	55	LOS B

Overall, the intersection of Shelley Street and Erskine Street performs satisfactorily at LOS B or better during the peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.4.19 Comparison with previous study blocks

Figure 5-47 provides a comparison of the total peak hourly traffic volumes recorded across all intersections for the Block 1 and Block 2 study. As shown, traffic volumes are relatively consistent between the two block studies in the AM peak hour, while Block 2 traffic volumes are slightly higher than Block 1 in the PM and Weekend peak hours.

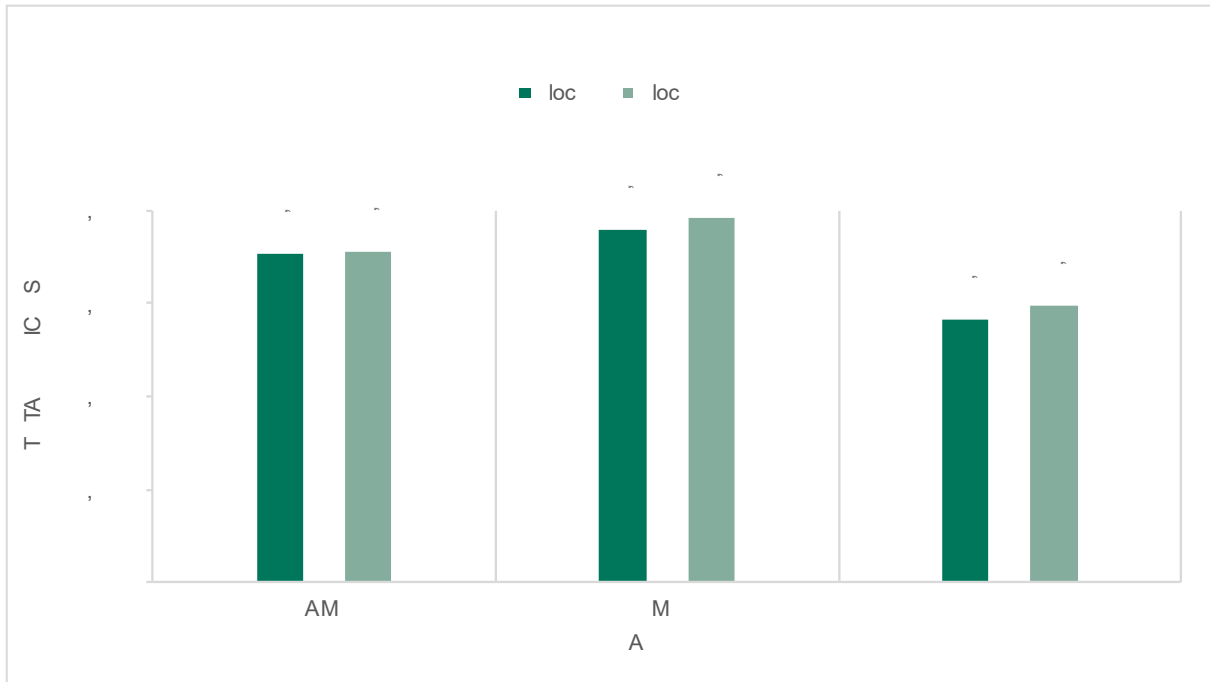


Figure 5-47 Study block comparison – Barangaroo Station peak hourly traffic volume across all intersections

A summary of the intersection LOS in Block 1 and Block 2 is shown in **Figure 5-48** and **Figure 5-49**. All intersections in the Barangaroo Station study area perform at LOS C or better during Block 2, which is generally similar to Block 1. Kent Street / Argyle Street (BGU03) had a notable change in LOS, whereby the intersection reduced from a LOS A to a C in the PM peak period compared to Block 1. This change in LOS for BGU03 is due to there being higher traffic volumes in Block 2.



Figure 5-48 Study block comparison – Barangaroo Station intersection performance summary (BGU01-BGU08)



Figure 5-49 Study block comparison – Barangaroo Station intersection performance summary (BGU09-BGU15, BGU18)

5.5 Martin Place Station

Martin Place Station is a new underground station and the fifth stop on the City & Southwest Line (towards Sydenham). It is located to west of the existing Martin Place Station (Sydney Trains) in Martin Place. Martin Place Station will have two station entrances, Martin Place North, bounded by Hunter Street, Castlereagh Street and Elizabeth Street, and Martin Place South, at Martin Place. New underground pedestrian connections will link the existing Martin Place Station platforms and the metro station platforms.

Martin Place Station was still under construction during Block 2. Construction access and egress to the station was facilitated via Elizabeth Street and Castlereagh Street.

Bus services are available within approximately 150 metres of Martin Place Station, located at Elizabeth Street and Castlereagh Street. New bicycle parking racks will be provided on Castlereagh Street at both station entries, and the existing taxi ranks close to the station will be retained. The Martin Place Station study area consists of six intersections. **Table 5-44** presents the peak hours utilised for modelling the intersections. **Table 5-45** provides a summary of the intersection LOS while Figure 5-50 visualises a geospatial summary of the intersection LOS within the Martin Place Station study area.

Table 5-44 Block 2 – Martin Place Station peak hours modelled

Network ID	Intersection ID	Weekday AM peak hour		Weekday PM peak hour		Weekend peak hour	
		Day	Start time	Day	Start time	Day	Start time
MPL-N1	MPL01	Wednesday	8.45am	Wednesday	5.15pm	Saturday	12.30pm
	MPL02						
	MPL03						
	MPL04						
-	MPL05	Wednesday	9.45am	Wednesday	5.45pm	Saturday	11.00am
-	MPL06	Thursday	8.45am	Wednesday	5.15pm	Saturday	12.00pm

Table 5-45 Block 2 – Martin Place Station intersection performance summary

Intersection ID	Intersection	LOS		
		Weekday AM Peak	Weekday PM Peak	Weekend Peak
MPL01	Hunter Street / Castlereagh Street / Bligh Street (Signal)	LOS B	LOS B	LOS B
MPL02	Hunter Street / Elizabeth Street / Chifley Square (Signal)	LOS C	LOS C	LOS B
MPL03	Bent Street / Bligh Street (Signal)	LOS A	LOS A	LOS A
MPL04	Bent Street / Phillip Street (Signal)	LOS B	LOS B	LOS B
MPL05	Pedestrian Mid-block Crossing at Castlereagh Street (Signal)	LOS A	LOS A	LOS A
MPL06	Pedestrian Mid-block Crossing at Elizabeth Street (Signal)	LOS A	LOS A	LOS B

Overall, the intersection performance in the Martin Place Station study area during the peak periods is satisfactory, operating at LOS C or better.

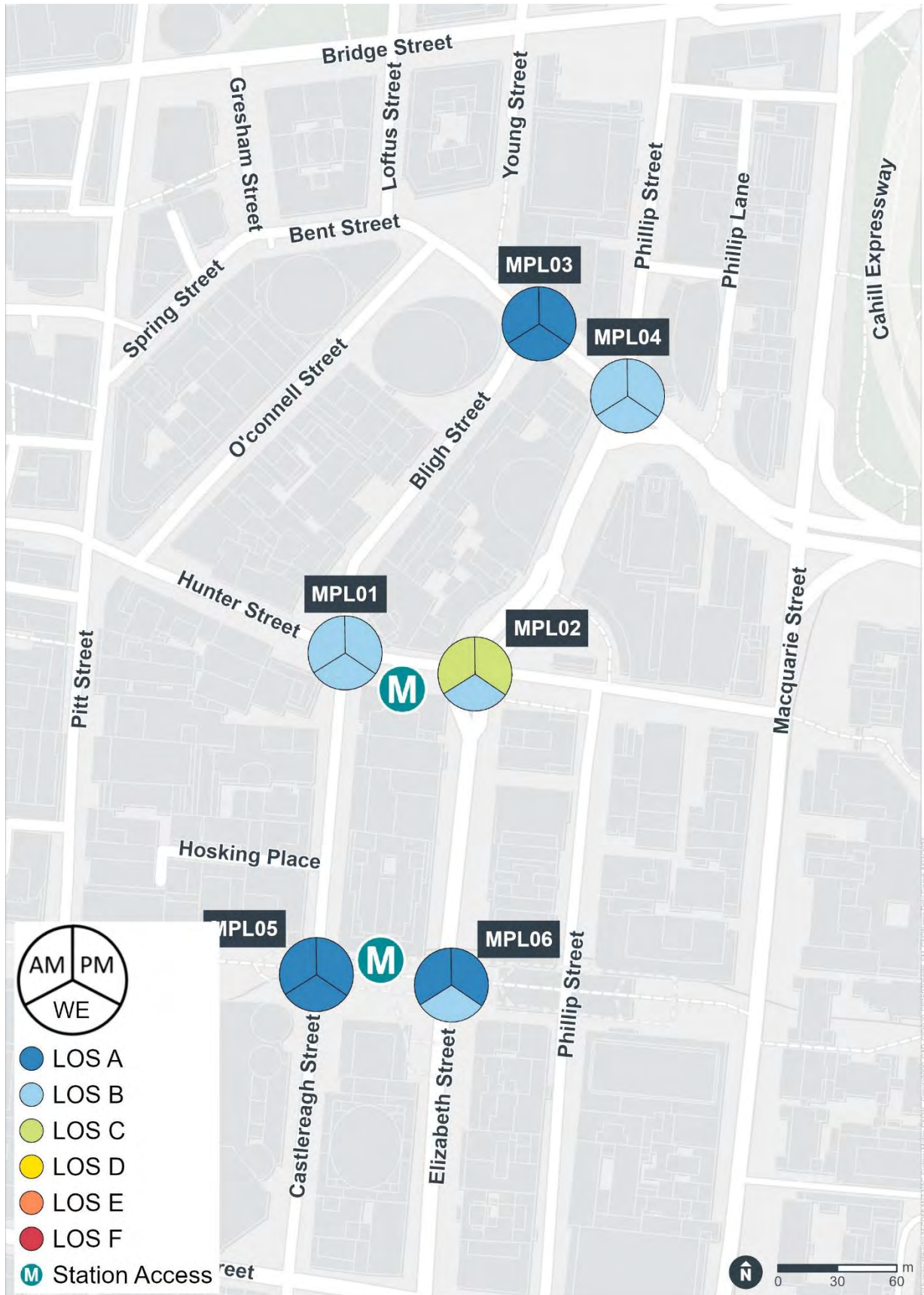
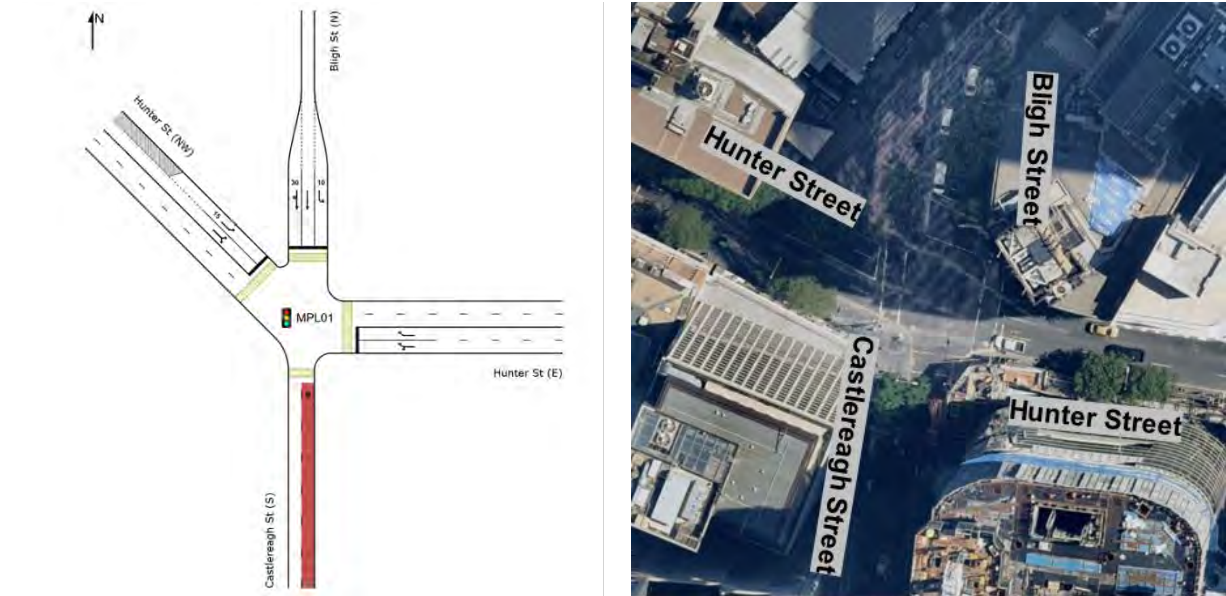


Figure 5-50 Block 2 – Martin Place Station intersection performance summary

5.5.1 MPL01 – Hunter Street / Castlereagh Street / Bligh Street

The signalised intersection, composed of Hunter Street, Castlereagh Street and Bligh Street, is located directly north-west of Martin Place North. It connects the local roads of Bligh Street and Hunter Street in the Sydney CBD with Castlereagh Street, a major local road running through the Sydney CBD.

Figure 5-51 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-51 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of MPL01

Table 5-46 presents a performance summary of this intersection.

Table 5-46 Block 2 - Intersection performance summary of MPL01

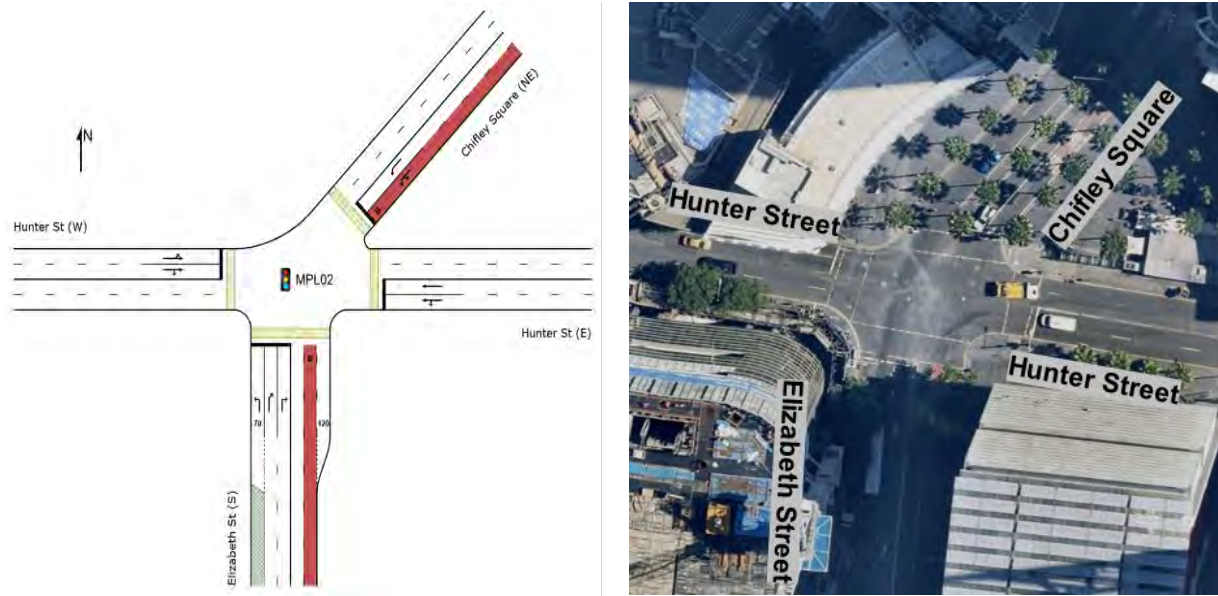
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Hunter Street / Castlereagh Street / Bligh Street (Signal)	Weekday AM	East	0.353	12.5	49.9	LOS A
		North	0.398	44.9	21.9	LOS D
		North-west	0.192	9.2	20.7	LOS A
		Total	0.398	18.6	49.9	LOS B
	Weekday PM	East	0.266	13.6	32.5	LOS A
		North	0.78	55.4	35.5	LOS D
		North-west	0.362	9.4	39	LOS A
		Total	0.78	19	39	LOS B
	Weekend	East	0.165	10.8	14.9	LOS A
		North	0.191	30.1	13.4	LOS C
		North-west	0.126	10.9	14.7	LOS A
		Total	0.191	14.6	14.9	LOS B

Overall, the intersection of Hunter Street, Castlereagh Street and Bligh Street performs satisfactorily at LOS B during all peak hours. The 95th percentile queue on Hunter Street (east approach) extends back to Elizabeth Street during the weekday AM peak hour.

5.5.2 MPL02 – Hunter Street / Elizabeth Street / Chifley Square

The signalised intersection, composed of Hunter Street, Elizabeth Street and Chifley Square, is located directly north-east of Martin Place North. It connects the local roads of Chifley Square and Hunter Street in the Sydney CBD with Elizabeth Street, a major local road linking the Sydney CBD and Waterloo.

Figure 5-52 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-52 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of MPL02

Table 5-47 presents a performance summary of this intersection.

Table 5-47 Block 2 - Intersection performance summary of MPL02

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Hunter Street / Elizabeth Street / Chifley Square (Signal)	Weekday AM	South	0.857	36.4	230.2	LOS C
		East	0.424	29.9	39.7	LOS C
		North-east	0.46	21.6	50.4	LOS B
		West	0.391	29.6	50.3	LOS C
		Total	0.857	31.6	230.2	LOS C
	Weekday PM	South	0.943	50.1	318.5	LOS D
		East	0.414	31.7	40.4	LOS C
		North-east	0.519	34.1	71.1	LOS C
		West	0.531	31.6	65.3	LOS C
		Total	0.943	40.5	318.5	LOS C
	Weekend	South	0.654	15.6	109.7	LOS B
		East	0.256	21.1	18.3	LOS B
		North-east	0.204	10.1	12.5	LOS A
		West	0.28	20.5	23.9	LOS B
		Total	0.654	16.5	109.7	LOS B

Overall, the intersection of Hunter Street, Elizabeth Street and Chifley Square performs satisfactorily at LOS C or better during the peak hours. The 95th percentile queues on Elizabeth Street (south approach) extend back to the mid-block crossing on Elizabeth Street (MPL06) during the weekday AM and PM peak hours. Similarly, the 95th percentile queues on Hunter Street (west approach) extend back to Castlereagh Street during the weekday AM and PM peak hours.

5.5.3 MPL03 – Bent Street / Bligh Street

The signalised intersection, composed of Bent Street and Bligh Street, is located north of Martin Place North. It connects the local roads of Bent Street and Bligh Street in the Sydney CBD, providing access to the major local road of Castlereagh Street further south.

Figure 5-53 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-53 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of MPL03

Table 5-48 presents a performance summary of this intersection.

Table 5-48 Block 2 - Intersection performance summary of MPL03

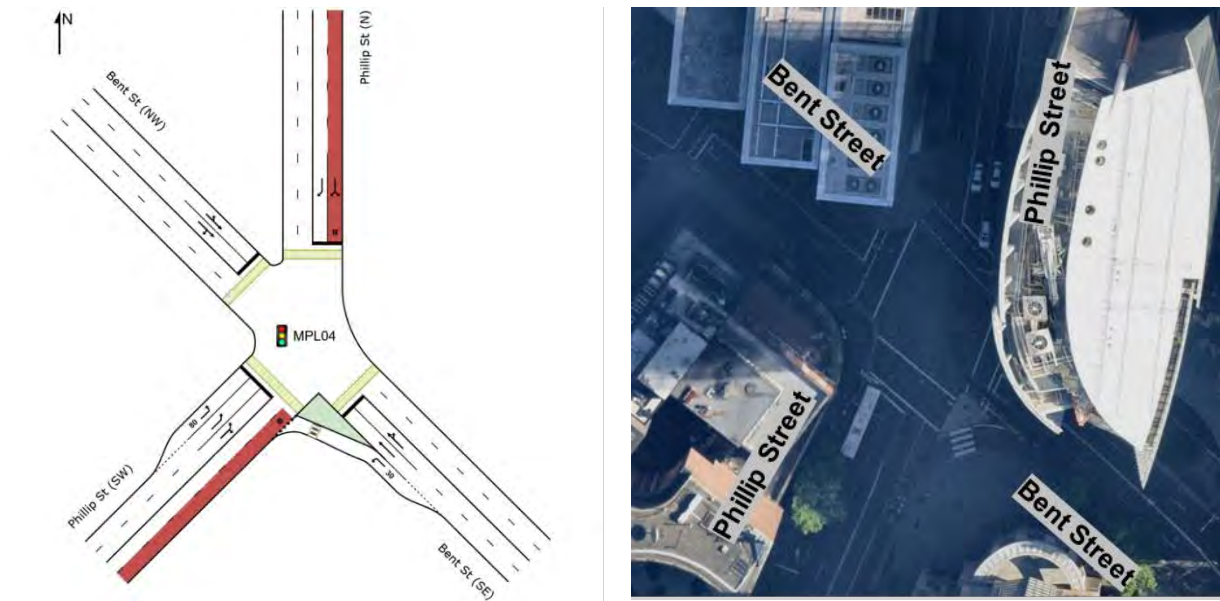
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Bent Street / Bligh Street (Signal)	Weekday AM	South-east	0.3	3.8	40.4	LOS A
		North-west	0.169	4.2	16.3	LOS A
		Total	0.3	3.9	40.4	LOS A
	Weekday PM	South-east	0.268	3.1	21.9	LOS A
		North-west	0.127	3.9	14.7	LOS A
		Total	0.268	3.3	21.9	LOS A
	Weekend	South-east	0.332	4.7	23.4	LOS A
		North-west	0.085	3.9	8.5	LOS A
		Total	0.332	4.4	23.4	LOS A

Overall, the intersection of Bent Street and Bligh Street performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.5.4 MPL04 – Bent Street / Phillip Street

The signalised intersection, composed of Bent Street and Phillip Street, is located north of Martin Place North. It connects the local roads of Bent Street and Phillip Street in the Sydney CBD, providing access to the major local road of Elizabeth Street further south.

Figure 5-54 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-54 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of MPL04

Table 5-49 presents a performance summary of this intersection.

Table 5-49 Block 2 - Intersection performance summary of MPL04

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Bent Street / Phillip Street (Signal)	Weekday AM	South-east	0.567	38.6	99.6	LOS C
		North	0.249	17.4	40.5	LOS B
		North-west	0.246	25.2	26.8	LOS B
		South-west	0.388	15.4	58.9	LOS B
		Total	0.567	24.6	99.6	LOS B
	Weekday PM	South-east	0.73	35.6	73.7	LOS C
		North	0.258	16.1	42.2	LOS B
		North-west	0.43	35	31.8	LOS C
		South-west	0.472	14.3	67.2	LOS A
		Total	0.73	21.9	73.7	LOS B
	Weekend	South-east	0.563	20.6	60.7	LOS B
		North	0.149	16.4	17	LOS B
		North-west	0.166	17	14.5	LOS B
		South-west	0.384	15.5	42.7	LOS B
		Total	0.563	17.3	60.7	LOS B

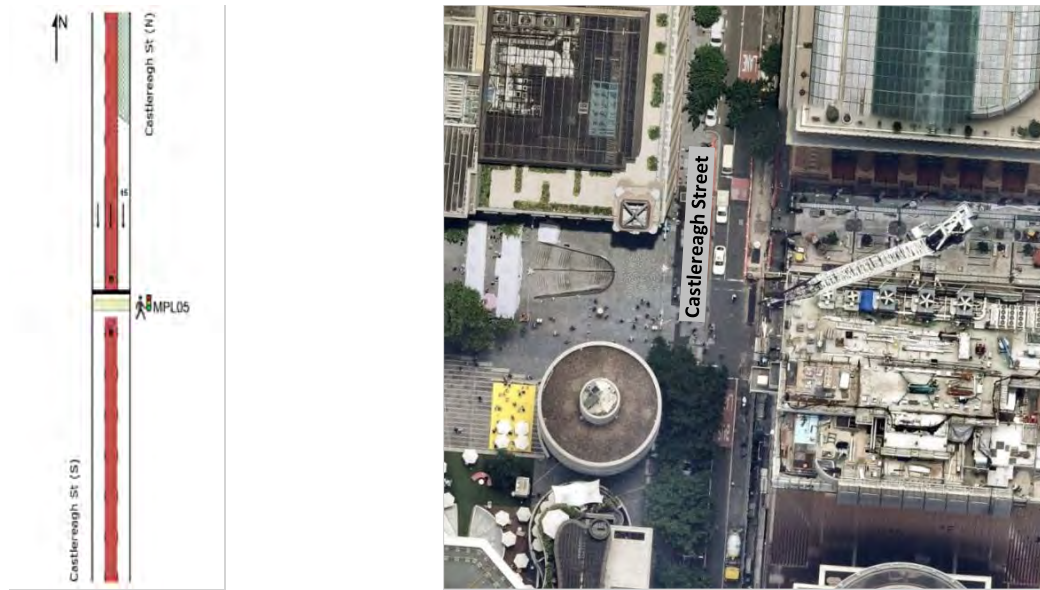
Overall, the intersection of Bent Street and Phillip Street performs satisfactorily at LOS B during all peak hours. The 95th percentile queue on Bent Street (south-east approach) extends back to Macquarie Street during the weekday AM peak hour.

5.5.5 MPL05 – Pedestrian Mid-block Crossing at Castlereagh Street

The signalised pedestrian mid-block crossing at Castlereagh Street is located directly north-west of Martin Place South. It offers a signalised pedestrian crossing over Castlereagh Street, a major local road that runs through the Sydney CBD.

During Block 2, the east kerbside lane was closed during all peak periods due to Sydney Metro construction.

Figure 5-55 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-55 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of MPL05

Table 5-50 presents a performance summary of this intersection.

Table 5-50 Block 2 - Intersection performance summary of MPL05

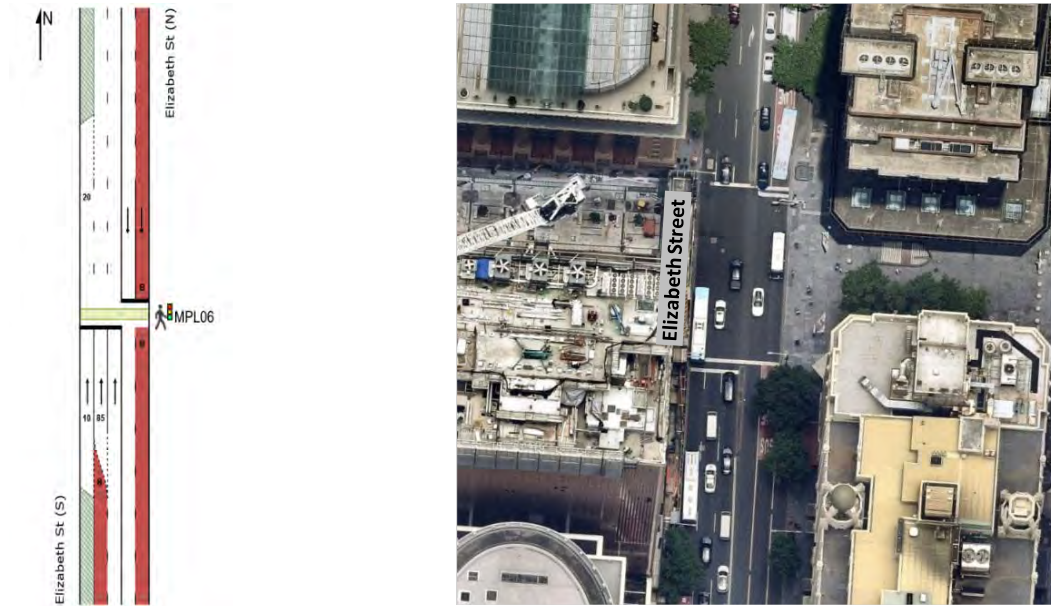
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pedestrian Mid-block Crossing at Castlereagh Street (Pedestrian only – Signal)	Weekday AM	North	0.486	9.2	47.2	LOS A
		Total	0.486	9.2	47.2	LOS A
	Weekday PM	North	0.409	7.9	39	LOS A
		Total	0.409	7.9	39	LOS A
Weekend	North	0.206	7.2	17.3	LOS A	
	Total	0.206	7.2	17.3	LOS A	

Overall, the pedestrian mid-block crossing at Castlereagh Street performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.5.6 MPL06 – Pedestrian Mid-block Crossing at Elizabeth Street

The signalised pedestrian mid-block crossing at Elizabeth Street is located directly north-east of Martin Place South. It offers a signalised pedestrian crossing over Elizabeth Street, a major local road linking the Sydney CBD and Waterloo.

Figure 5-56 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-56 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of MPL06

Table 5-51 presents a performance summary of this intersection.

Table 5-51 Block 2 - Intersection performance summary of MPL06

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pedestrian Mid-block Crossing at Elizabeth Street (Pedestrian only – Signal)	Weekday AM	South	0.462	10.5	75.4	LOS A
		North	0.427	9.5	68.3	LOS A
		Total	0.462	11.6	75.4	LOS A
	Weekday PM	South	0.442	8.9	83	LOS A
		North	0.383	7.8	68.8	LOS A
		Total	0.442	10	83	LOS A
	Weekend	South	0.796	20.9	74.6	LOS B
		North	0.351	14.3	24.9	LOS A
		Total	0.796	22.2	74.6	LOS B

Overall, the pedestrian mid-block crossing at Elizabeth Street performs satisfactorily at LOS B or better. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.5.7 Comparison with previous study blocks

Figure 5-57 provides a comparison of the total peak hourly traffic volumes recorded across all intersections for the Block 1 and Block 2 study. As shown, traffic volumes are generally higher in Block 2 compared to Block 1.

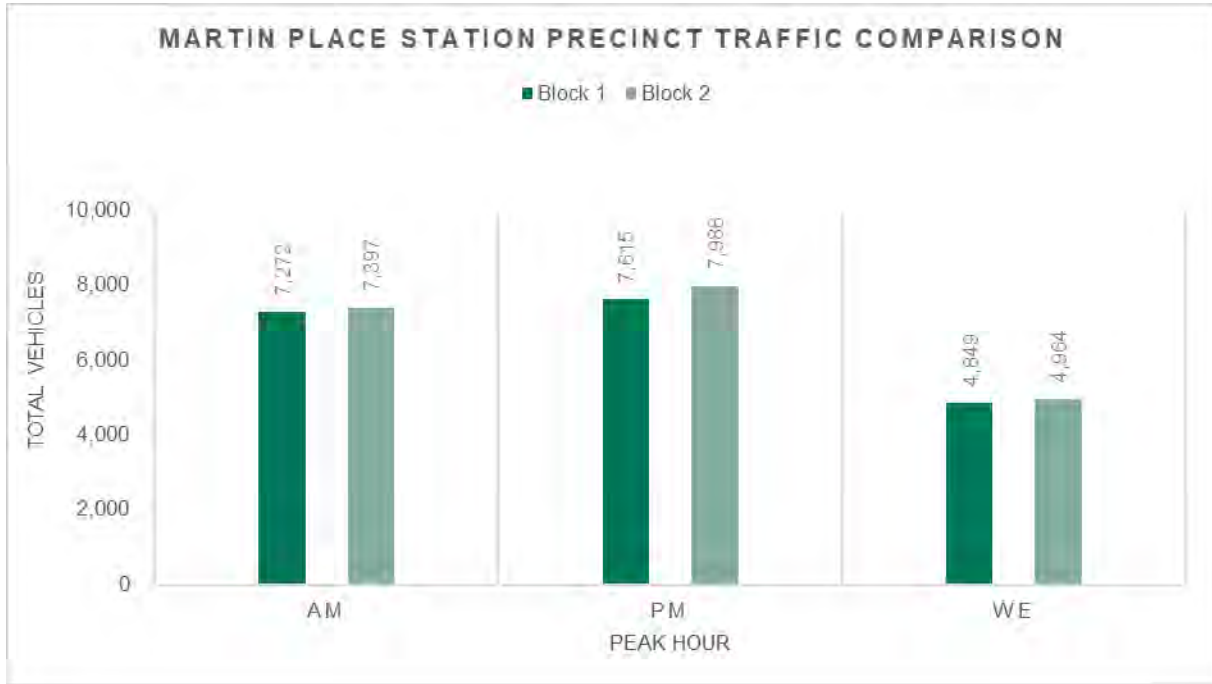


Figure 5-57 Martin Place Station peak hourly traffic volumes across all intersections

A comparison of the intersection LOS in Block 1 and Block 2 is shown in **Figure 5-58**. All intersections in the Martin Place Station study area perform at a LOS C or better during Block 2, which is generally similar to Block 1.



Figure 5-58 Study block comparison – Martin Place Station intersection performance summary

5.6 Gadigal Station

Gadigal Station (previously Pitt Street Station) is a new underground station and the sixth stop on the City & Southwest Line (towards Sydenham). It is located at the junction of Sydney's southern C D and the midtown retail precinct. Gadigal Station will have station entrances within two new pedestrian plazas, Pitt Street North, bounded by Pitt Street, Park Street and Castlereagh Street, and Pitt Street South, at the corner of Pitt Street and Bathurst Street.

Gadigal Station was still under construction during Block 2. Construction access to Pitt Street North was facilitated via Park Street whereas access to Pitt Street South was facilitated via Bathurst Street.

Several bus routes operate within the vicinity of the new Gadigal Station. Bus services are available within approximately 100 metres of Gadigal Station, located at Elizabeth Street and Park Street. The CBD and South-East Light Rail (CSELR) project which is currently operational along George Street.

To accommodate future pedestrian demand, footpath widening is planned for Bathurst Street, immediately outside the future Pitt Street South. New bicycle parking racks will be provided on Park Street and Bathurst Street.

The Gadigal Station study area consists of four intersections. **Table 5-52** presents the peak hours utilised for modelling the intersections. **Table 5-53** provides a summary of the intersection LOS while **Figure 5-59** visualises a geospatial summary of the intersection LOS within the Gadigal Station study area.

Table 5-52 Block 2 - Gadigal Station peak hours modelled

Network ID	Intersection ID	Weekday AM peak hour		Weekday PM peak hour		Weekend peak hour	
		Day	Start time	Day	Start time	Day	Start time
PIT-N1	PIT01	Friday	8.00am	Wednesday	4.45pm	Saturday	1.45pm
	PIT02						
	PIT03						
	PIT04						

Table 5-53 Block 2 - Gadigal Station intersection performance summary

Intersection ID	Intersection	LOS		
		Weekday AM Peak	Weekday PM Peak	Weekend Peak
PIT01	Pitt Street / Bathurst Street (Signal)	LOS B	LOS B	LOS A
PIT02	Castlereagh Street / Bathurst Street (Signal)	LOS A	LOS A	LOS A
PIT03	Park Street / Castlereagh Street (Signal)	LOS B	LOS C	LOS B
PIT04	Park Street / Pitt Street (Signal)	LOS B	LOS B	LOS B

Overall, in the Gadigal Station study area, the intersection performance during the peak periods is satisfactory, operating at LOS C or better.

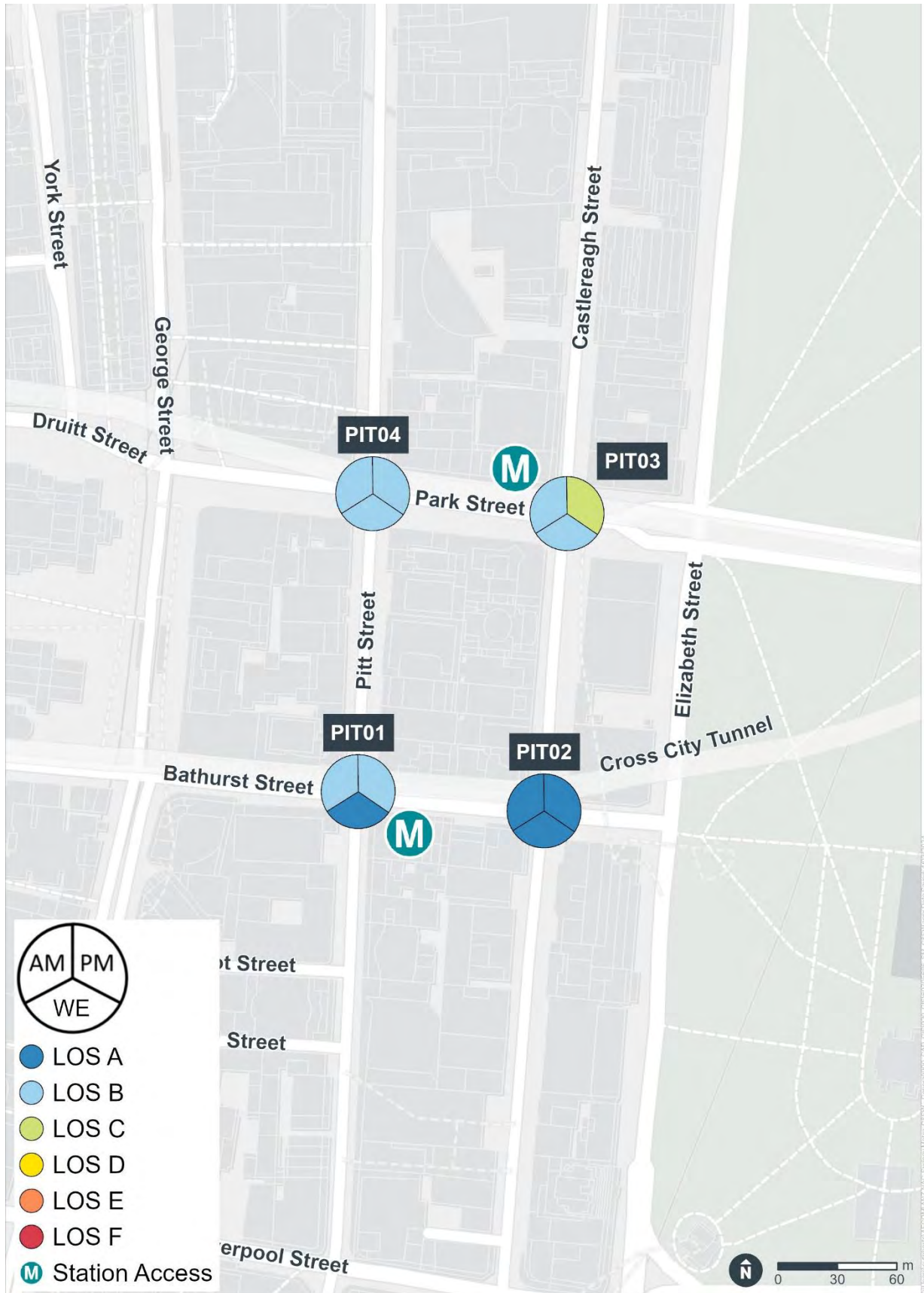


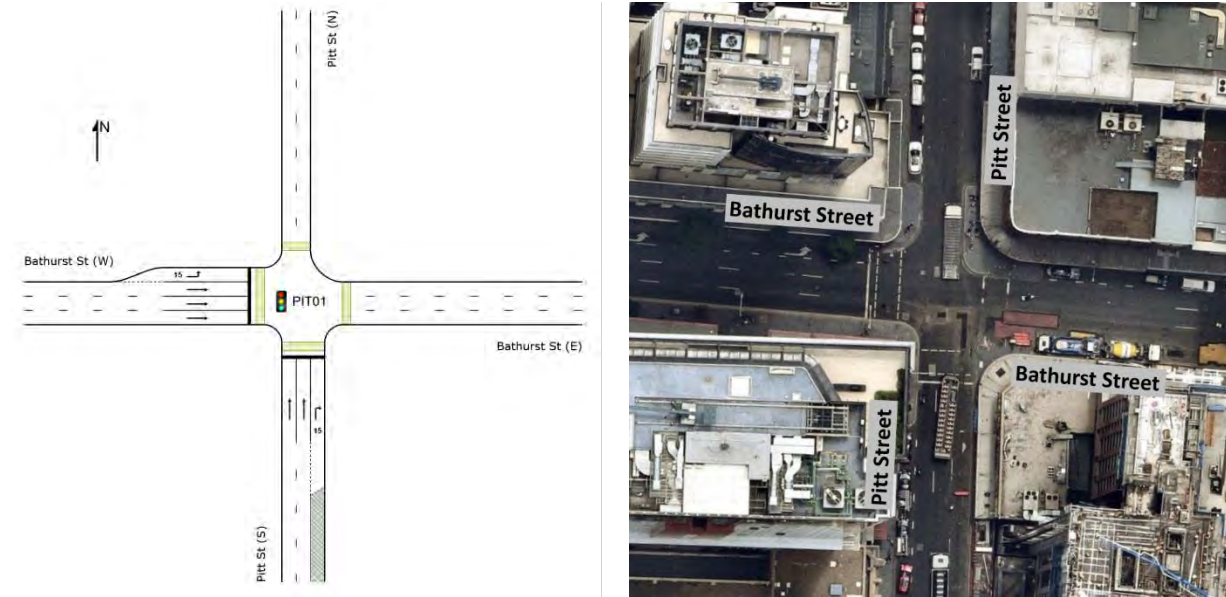
Figure 5-59 Block 2 – Gadigal Station intersection performance summary

5.6.1 PIT01 – Pitt Street / Bathurst Street

The signalised intersection, composed of Pitt Street and Bathurst Street, is located directly north-west of Pitt Street South. It connects the major local road of Pitt Street and major regional road of Bathurst Street running through the inner Sydney CBD.

During Block 2, the available storage on the right turn kerbside lane on Pitt Street (south approach) was reduced due to the presence of a Sydney Metro construction work zone (weekend excluded).

Figure 5-60 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-60 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of PIT01

Table 5-54 presents a performance summary of this intersection.

Table 5-54 Block 2 - Intersection performance summary of PIT01

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pitt Street / Bathurst Street (Signal)	Weekday AM	South	0.634	49	48.4	LOS D
		West	0.325	10.4	54.5	LOS A
		Total	0.634	19.4	54.5	LOS B
	Weekday PM	South	0.489	34.6	45.8	LOS C
		West	0.35	10.1	61.6	LOS A
		Total	0.489	16.4	61.6	LOS B
	Weekend	South	0.454	18.4	19.6	LOS B
		West	0.355	9.3	32.8	LOS A
		Total	0.454	11.4	32.8	LOS A

Overall, the intersection of Pitt Street and Bathurst Street performs satisfactorily at LOS B or better during the peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.6.2 PIT02 – Castlereagh Street / Bathurst Street

The signalised intersection, composed of Castlereagh Street and Bathurst Street, is located north-east of Pitt Street South. It connects the major local road of Castlereagh Street and major regional road of Bathurst Street running through the inner Sydney CBD.

Figure 5-61 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-61 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of PIT02

Table 5-55 presents a performance summary of this intersection.

Table 5-55 Block 2 - Intersection performance summary of PIT02

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Castlereagh Street / Bathurst Street (Signal)	Weekday AM	North	0.204	25.4	27.7	LOS B
		West	0.29	5.9	43	LOS A
		Total	0.29	9.2	43	LOS A
	Weekday PM	North	0.521	29.6	76.3	LOS C
		West	0.311	4.8	41.2	LOS A
		Total	0.521	10.6	76.3	LOS A
	Weekend	North	0.165	13.3	11.4	LOS A
		West	0.362	4.6	22.2	LOS A
		Total	0.362	6	22.2	LOS A

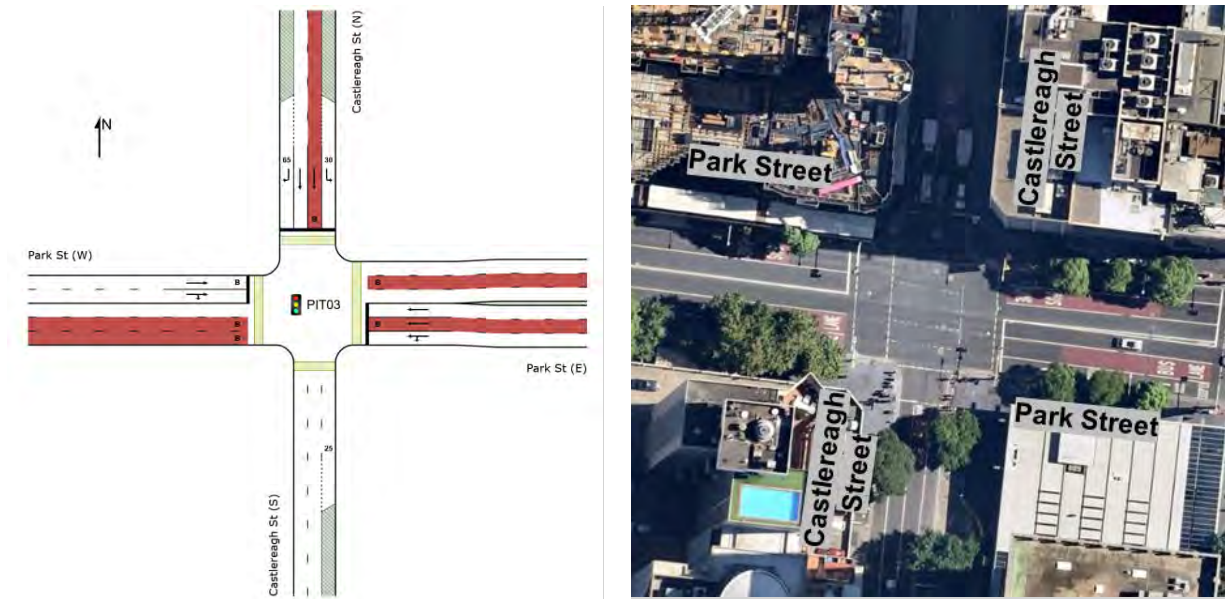
Overall, the intersection of Castlereagh Street and Bathurst Street performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.6.3 PIT03 – Park Street / Castlereagh Street

The signalised intersection, composed of Park Street and Castlereagh Street, is located directly south-east of Pitt Street North. It connects the major regional road of Park Street and major local road of Castlereagh Street running through the inner Sydney CBD.

During Block 2, the kerbside lane of Park Street (west approach) was occupied by a work zone upstream at the intersection of Park Street and Pitt Street (PIT04) during the weekend peak.

Figure 5-62 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-62 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of PIT03

Table 5-56 presents a performance summary of this intersection.

Table 5-56 Block 2 - Intersection performance summary of PIT03

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Park Street / Castlereagh Street (Signal)	Weekday AM	East	0.358	11.9	65	LOS A
		North	0.316	33.8	32.7	LOS C
		West	0.188	10.9	21.9	LOS A
		Total	0.358	18.1	65	LOS B
	Weekday PM	East	0.329	13	58.7	LOS A
		North	0.716	49.4	68.6	LOS D
		West	0.299	14.1	36.9	LOS A
		Total	0.716	29.6	68.6	LOS C
	Weekend	East	0.333	8.7	57.9	LOS A
		North	0.343	35.3	34.3	LOS C
		West	0.135	9.8	16.4	LOS A
		Total	0.343	17.6	57.9	LOS B

Overall, the intersection of Park Street and Castlereagh Street performs satisfactorily at LOS C or better during the peak hours. The 95th percentile queues on Park Street (east approach) extend back to Elizabeth Street during all peak hours.

5.6.4 PIT04 – Park Street / Pitt Street

The signalised intersection, composed of Park Street and Pitt Street, is located directly south-west of Pitt Street North. It connects the major regional road of Park Street and major local road of Pitt Street running through the inner Sydney CBD.

During Block 2, the kerbside departure lane of Park Street (east approach) was occupied by a work zone towards Castlereagh Street during the weekend peak.

Figure 5-63 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-63 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of PIT04

Table 5-57 presents a performance summary of this intersection.

Table 5-57 Block 2 - Intersection performance summary of PIT04

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Park Street / Pitt Street (Signal)	Weekday AM	South	0.632	26.5	48.3	LOS B
		East	0.688	12.9	65	LOS A
		West	0.244	9.5	19.9	LOS A
		Total	0.688	18.6	65	LOS B
	Weekday PM	South	0.542	25.4	38.4	LOS B
		East	0.595	11.6	55.8	LOS A
		West	0.24	9.4	19.6	LOS A
		Total	0.595	17.3	55.8	LOS B
	Weekend	South	0.47	24.1	33.7	LOS B
		East	0.659	12.4	64.2	LOS A
		West	0.126	9	9.6	LOS A
		Total	0.659	17.5	64.2	LOS B

Overall, the intersection of Park Street and Pitt Street performs satisfactorily at LOS B during the peak hours. The 95th percentile queues on Park Street (east approach) extend back to Castlereagh Street during the weekday AM peak and weekend peak hours.

5.6.5 Comparison with previous study blocks

Figure 5-64 provides a comparison of the total peak hourly traffic volumes recorded across all intersections for the Block 1 and Block 2 study. As shown, traffic volumes are slightly higher in Block 2 in the AM and PM peak hours, and slightly lower in the Weekend peak hour compared to Block 1.

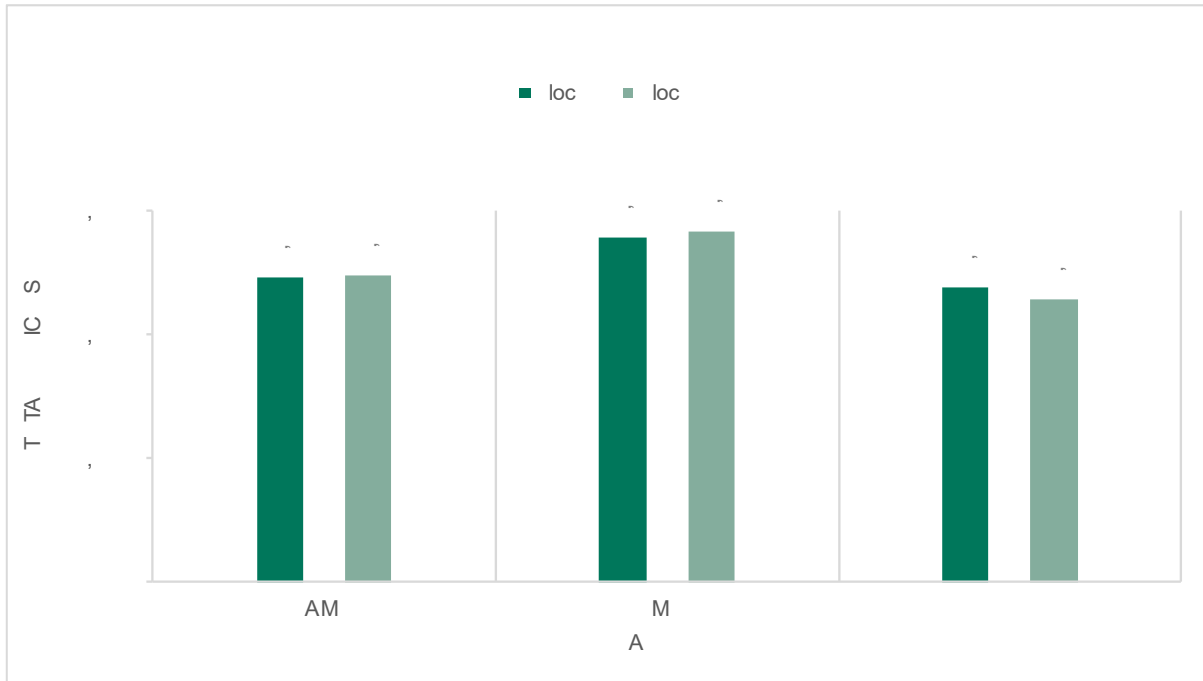


Figure 5-64 Gadigal Station peak hourly traffic volumes across all intersections

A summary of the intersection LOS in Block 1 and Block 2 is shown in **Figure 5-65**. All intersections in the Gadigal Station study area perform at LOS C or better during Block 2, which is generally similar to Block 1.



Figure 5-65 Study block comparison – Gadigal Station intersection performance summary

5.7 Central Station

Central Station is an existing station and the seventh stop on the City & Southwest Line (towards Sydenham). It is located at the southern end of the Sydney CBD, directly south of Belmore Park between Pitt Street and Elizabeth Street.

Central Station (metro) was still under construction during Block 2. The metro lines are being built under the existing platforms 13, 14 and 15 in Central Station. In addition to the existing seven entrances, a new eastern entrance is being constructed at Chalmers Street. Construction access and egress to the station was facilitated via Randle Lane.

Bus services are available within approximately 100 metres of Central Station, located at Eddy Avenue, Pitt Street, Lee Street and Elizabeth Street. Dedicated cycle lanes are currently provided along Elizabeth Street and Eddy Avenue near Central Station. Enhancement of pedestrian and cycling infrastructure around the station will be enabled by the Sydney Metro City & Southwest project and further investigated by TfNSW.

The Central Station study area consists of five intersections. During Block 2, one intersection was a new pedestrian mid-block crossing which had not yet been constructed. **Table 5-58** presents the peak hours utilised for modelling the intersections. **Table 5-59** provides a summary of the intersection LOS while **Figure 5-66** visualises a geospatial summary of the intersection LOS within the Central Station study area.

Table 5-58 Block 2 - Central Station peak hours modelled

Network ID	Intersection ID	Weekday AM peak hour		Weekday PM peak hour		Weekend peak hour	
		Day	Start time	Day	Start time	Day	Start time
CEN-N1	CEN01	Wednesday	8.15am	Thursday	5.45pm	Saturday	12.00pm
	CEN02						
CEN-N2	CEN03	Monday	8.15am	Thursday	5.45pm	Saturday	12.15pm
	CEN05						
-	CEN04	Under construction.					

Table 5-59 Block 2 - Central Station intersection performance summary

Intersection ID	Intersection	LOS		
		Weekday AM Peak	Weekday PM Peak	Weekend Peak
CEN01	Elizabeth Street / Eddy Avenue (Signal)	LOS B	LOS C	LOS B
CEN02	Elizabeth Street / Foveaux Street (Signal)	LOS B	LOS B	LOS B
CEN03	Elizabeth Street / Cooper Street (Priority – Give Way)	LOS A	LOS A	LOS A
CEN04	New Pedestrian Mid-block Crossing at Randle Lane (Pedestrian only – Signal)	Under construction		
CEN05	Elizabeth Street / Randle Street (Signal)	LOS A	LOS A	LOS A

Overall, the intersection performance in the Central Station study area during the peak periods is satisfactory, operating at LOS C or better.

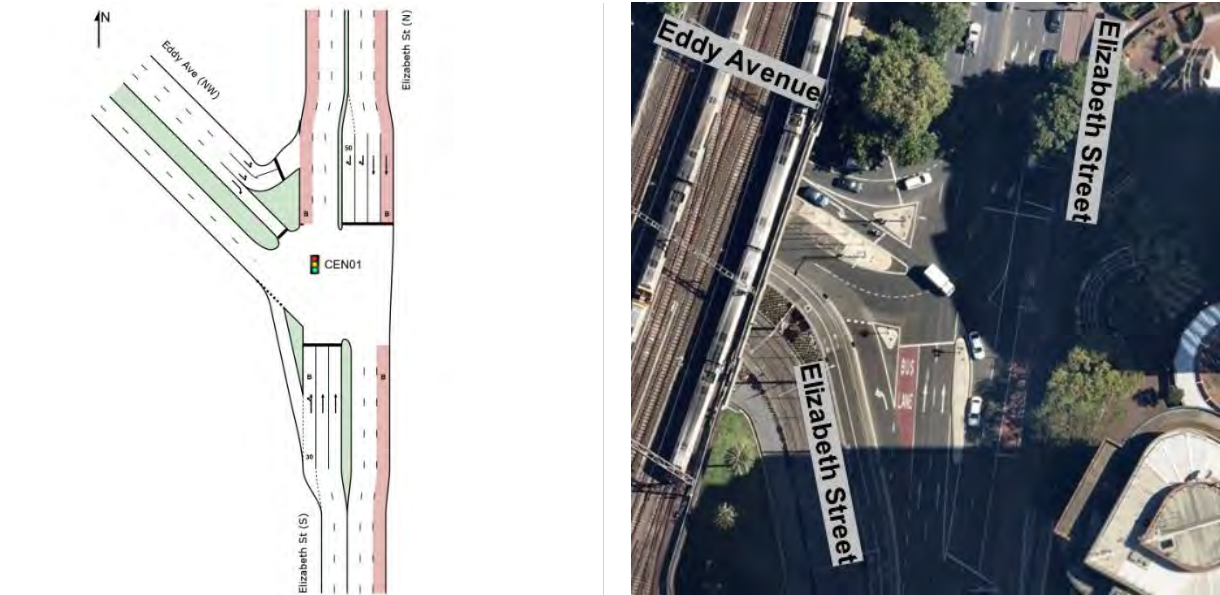


Figure 5-66 Block 2 – Central Station intersection performance summary

5.7.1 CEN01 – Elizabeth Street / Eddy Avenue

The signalised intersection, composed of Elizabeth Street and Eddy Avenue, is located north of Central Station. It connects the regional roads of Eddy Avenue, running through the Sydney CBD, and Elizabeth Street, linking the Sydney CBD and Waterloo. The traffic signals at this intersection are co-ordinated with the intersection of Elizabeth Street and Foveaux Street (CEN02).

Figure 5-67 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-67 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CEN01

Table 5-60 presents a performance summary of this intersection.

Table 5-60 Block 2 - Intersection performance summary of CEN01

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Elizabeth Street / Eddy Avenue (Signal)	Weekday AM	South	0.692	10.6	57.1	LOS A
		North	0.879	44.8	231.8	LOS D
		North-west	0.805	38.3	106.5	LOS C
		Total	0.879	26.8	231.8	LOS B
	Weekday PM	South	0.643	7.4	57.1	LOS A
		North	0.878	45.6	283.1	LOS D
		North-west	0.98	54	111.8	LOS D
		Total	0.98	30.9	283.1	LOS C
	Weekend	South	0.394	5.5	44.5	LOS A
		North	0.528	31.9	64	LOS C
		North-west	0.839	40.9	103.5	LOS C
		Total	0.839	22.4	103.5	LOS B

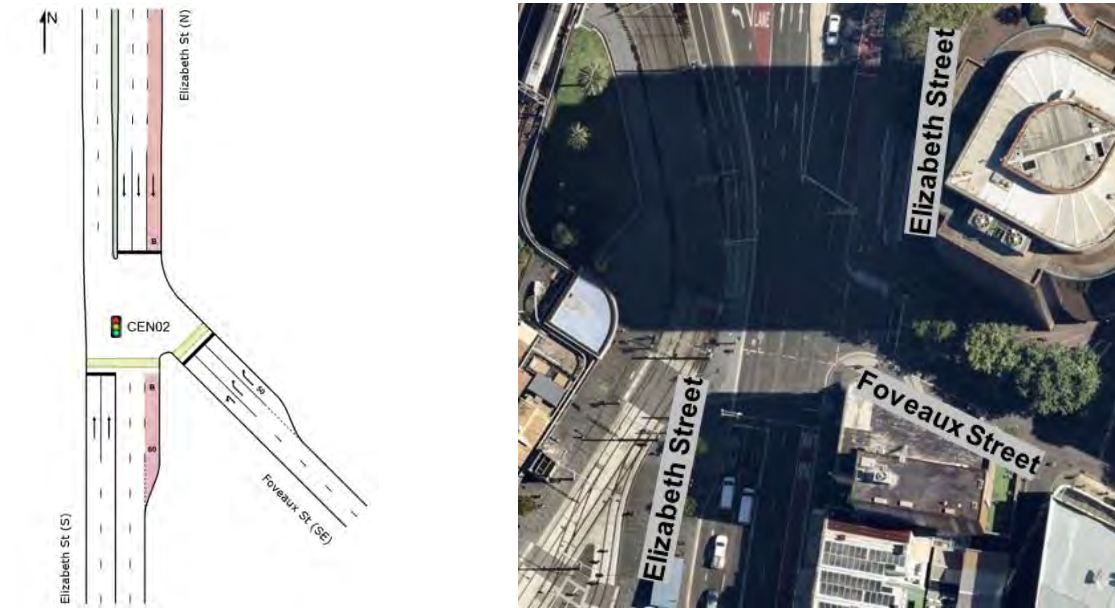
Overall, the intersection of Elizabeth Street and Eddy Avenue performs satisfactorily at LOS C or better during the peak hours. The 95th percentile queues on Elizabeth Street (north approach) extend back to

Albion Street during the weekday AM and PM peak hours. Similarly, the 95th percentile queues on Eddy Avenue (north-west approach) extend back to the pedestrian mid-block crossing on Eddy Avenue during all peak hours.

5.7.2 CEN02 – Elizabeth Street / Foveaux Street

The signalised intersection, composed of Elizabeth Street and Foveaux Street, is located north of Central Station. It connects the regional roads of Foveaux Street, running through Surry Hills, and Elizabeth Street, linking the Sydney CBD and Waterloo. The traffic signals at this intersection are co-ordinated with the intersection of Elizabeth Street and Eddy Avenue (CEN01).

Figure 5-68 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-68 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CEN02

Table 5-61 presents a performance summary of this intersection.

Table 5-61 Block 2 - Intersection performance summary of CEN02

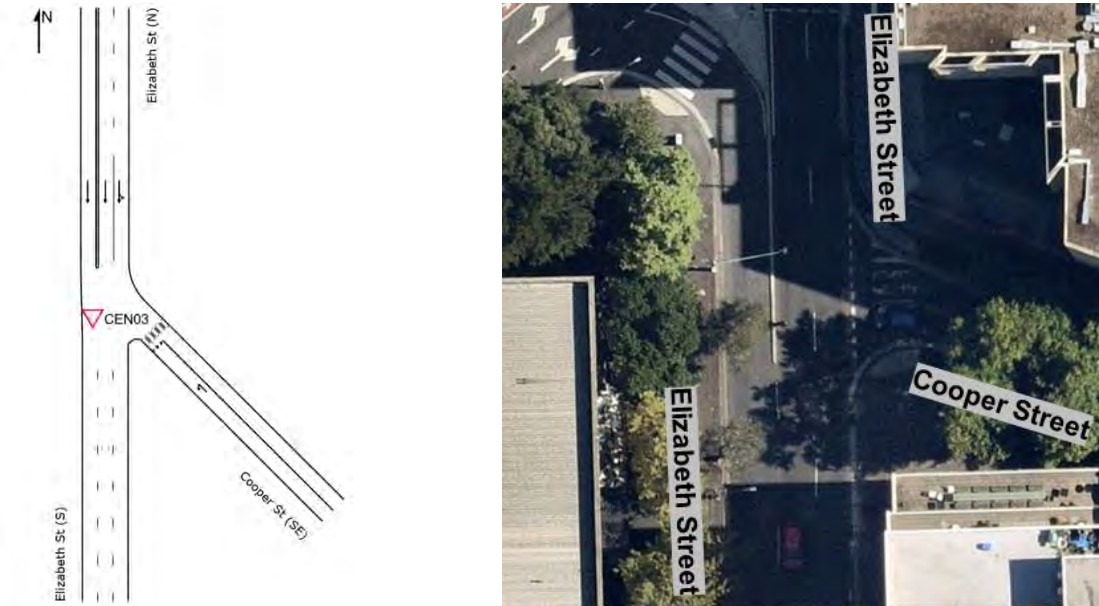
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Elizabeth Street / Foveaux Street (Signal)	Weekday AM	South	0.642	28.6	150	LOS C
		South-east	0.597	26.2	75.1	LOS B
		North	0.444	9.6	57.1	LOS A
		Total	0.642	22.1	150	LOS B
	Weekday PM	South	0.605	26.1	144.8	LOS B
		South-east	0.661	29.3	84.5	LOS C
		North	0.545	10.2	57.1	LOS A
		Total	0.661	21.4	144.8	LOS B
	Weekend	South	0.508	24.6	114.9	LOS B
		South-east	0.353	26.2	57.8	LOS B
		North	0.321	7.8	47.8	LOS A
		Total	0.508	20.2	114.9	LOS B

Overall, the intersection of Elizabeth Street and Foveaux Street performs satisfactorily at LOS B during all peak hours. The 95th percentile queues on Elizabeth Street (south approach) extend back to Randle Street during the weekday AM and PM peak hours. Similarly, the 95th percentile queues on Foveaux Street (south-east approach) extend back to Commonwealth Street during the weekday PM peak hour.

5.7.3 CEN03 – Elizabeth Street / Cooper Street

The priority intersection, composed of Elizabeth Street and Cooper Street, is located south of Central Station. It connects the local road of Cooper Street with the regional road of Elizabeth Street, linking the Sydney CBD to Waterloo.

Figure 5-69 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-69 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CEN03

Table 5-62 presents a performance summary of this intersection.

Table 5-62 Block 2 - Intersection performance summary of CEN03

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Elizabeth Street / Cooper Street (Priority – Give Way)	Weekday AM	South-east	0.087	6	2.6	LOS A
		North	0.169	2.9	3.3	LOS A
		Total	0.087	6	2.6	LOS A
	Weekday PM	South-east	0.063	5.9	1.8	LOS A
		North	0.204	2.5	2.5	LOS A
		Total	0.063	5.9	1.8	LOS A
	Weekend	South-east	0.047	5.6	1.4	LOS A
		North	0.149	2.7	1.9	LOS A
		Total	0.047	5.6	1.4	LOS A

Overall, the intersection of Elizabeth Street and Cooper Street performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.7.4 CEN04 – New Pedestrian Mid-block Crossing at Randle Lane

The signalised pedestrian mid-block crossing at Randle Lane is located directly south of Central Station. During Block 2, the mid-block crossing was under construction and non-operational. As such, it was not assessed as part of the Block 2 study.

5.7.5 CEN05 – Elizabeth Street / Randle Street

The signalised intersection, composed of Elizabeth Street and Randle Street, is located south of Central Station. It connects the local road of Randle Street with the regional road of Elizabeth Street, linking the Sydney CBD to Waterloo.

Figure 5-70 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-70 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of CEN05

Table 5-63 presents a performance summary of this intersection.

Table 5-63 Block 2 - Intersection performance summary of CEN05

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Elizabeth Street / Randle Street (Signal)	Weekday AM	North	0.277	3.3	36.6	LOS A
		South-west	0.349	6	56.2	LOS A
		Total	0.349	4.9	56.2	LOS A
	Weekday PM	North	0.365	3.6	53.2	LOS A
		South-west	0.312	5.6	49.5	LOS A
		Total	0.365	4.6	53.2	LOS A
	Weekend	North	0.27	3.4	35	LOS A
		South-west	0.28	5.6	41.9	LOS A
		Total	0.28	4.6	41.9	LOS A

Overall, the intersection of Elizabeth Street and Randle Street performs satisfactorily at LOS A during the peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.7.6 Comparison with previous study blocks

Figure 5-71 provides a comparison of the total peak hourly traffic volumes recorded across all intersections for the Block 1 and Block 2 study. As shown, traffic volumes are higher in Block 2 in the AM and PM peak hours, and lower in the Weekend peak hour compared to Block 1. Construction related road closures were observed during the weekend, which is likely to have resulted in comparatively lower traffic volumes during Block 2.

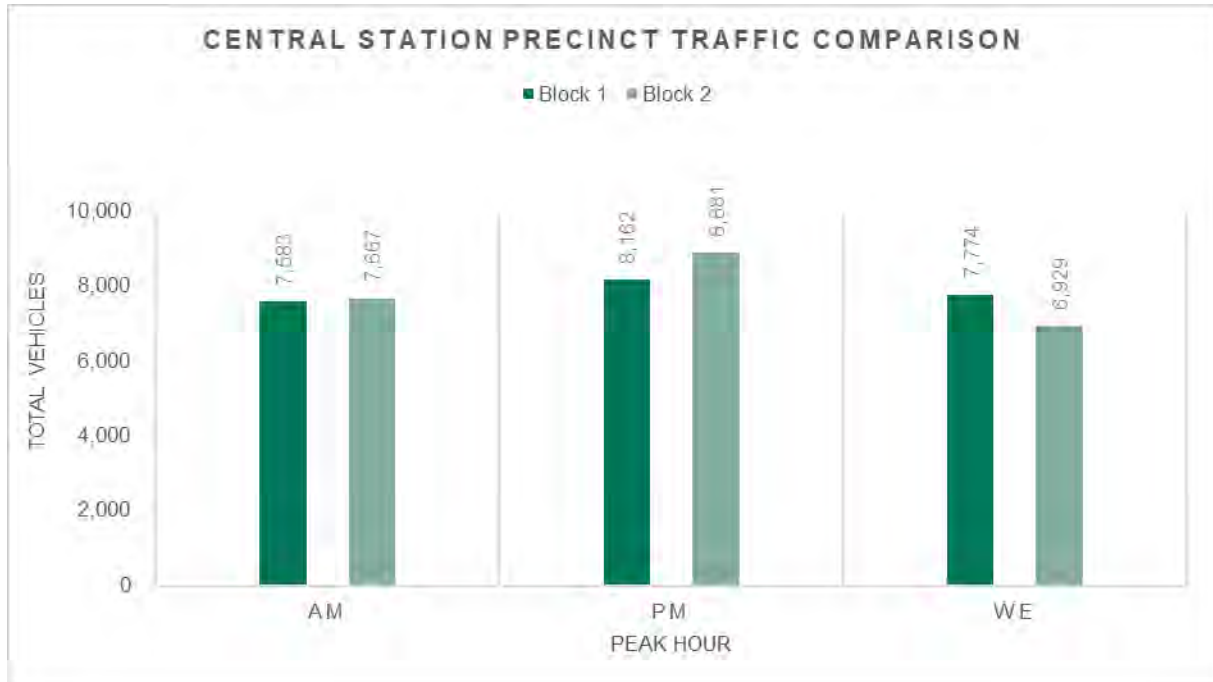


Figure 5-71 Central Station peak hourly traffic volumes across all intersections

A summary of the intersection LOS in Block 1 and Block 2 is shown in **Figure 5-72**. All intersections in the Central Station study area perform at LOS C or better during Block 2, which is generally similar to Block 1.



Figure 5-72 Study block comparison – Central Station intersection performance summary

5.8 Waterloo Station

Waterloo Station is a new underground station and the eighth stop on the City & Southwest Line (towards Sydenham). It is located in the north-western quadrant of Waterloo, bounded by Botany Road, Cope Street, Raglan Street and Wellington Street.

Waterloo Station was still under construction during Block 2. Construction access and egress to the station was facilitated via Cope Street, which was closed off to general traffic between Raglan Street and Wellington Street.

Bus services are available within approximately 150 metres of Waterloo Station, located along Botany Road. The existing bus stops will be retained for northbound routes, and the existing bus stops for southbound routes will be relocated to the mid-block on Botany Road between Raglan Street and Wellington Street. A new on-road marked cycle link will be provided along Wellington Street.

The Waterloo Station study area consists of six intersections. During Block 2, WLO06 is a new unsignalised pedestrian mid-block crossing which had not yet been constructed. **Table 5-64** presents the peak hours utilised for modelling the intersections. **Table 5-65** provides a summary of the intersection LOS while **Figure 5-73** visualises a geospatial summary of the intersection LOS within the Waterloo Station study area.

Table 5-64 Block 2 - Waterloo Station peak hours modelled

Network ID	Intersection ID	Weekday AM peak hour		Weekday PM peak hour		Weekend peak hour	
		Day	Start time	Day	Start time	Day	Start time
WLO-N1	WLO01	Thursday	8.00am	Thursday	5.15pm	Saturday	11.45am
	WLO02						
	WLO03						
	WLO04						
	WLO05						
-	WLO06	Under construction.					

Table 5-65 Block 2 - Waterloo Station intersection performance summary

Intersection ID	Intersection	LOS		
		Weekday AM Peak	Weekday PM Peak	Weekend Peak
WLO01	Botany Road / Raglan Street / Henderson Road (Signal)	LOS C	LOS C	LOS C
WLO02	Raglan Street / Cope Street (Roundabout)	LOS A	LOS A	LOS A
WLO03	Botany Road / Wellington Street / Buckland Street (Signal)	LOS A	LOS A	LOS A
WLO04	Cope Street / Wellington Street (Roundabout)	LOS A	LOS A	LOS A
WLO05	Wyndham Street / Henderson Road (Signal)	LOS C	LOS C	LOS D
WLO06	New Pedestrian Mid-block Crossing at Cope Street (Pedestrian only – Signal)	Under construction.		

Overall, the intersection performance in the Waterloo Station study area during the peak periods is satisfactory, operating at LOS D or better.



Figure 5-73 Block 2 – Waterloo Station intersection performance summary

5.8.1 WLO01 – Botany Road / Raglan Street / Henderson Road

The signalised intersection, composed of Botany Road, Raglan Street and Henderson Road, is located directly north-west of Waterloo Station. It connects the local road of Raglan Street in Waterloo with the state roads of Botany Road, linking Waterloo and Matraville, and Henderson Road, linking Waterloo and Eveleigh.

Figure 5-74 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-74 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of WLO01

Table 5-66 presents a performance summary of this intersection.

Table 5-66 Block 2 - Intersection performance summary of WLO01

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Botany Road / Raglan Street / Henderson Road (Signal)	Weekday AM	South	0.683	34.5	126.3	LOS C
		East	0.634	74.5	51.8	LOS F
		North	0.757	24.5	129.8	LOS B
		West	0.596	15.8	28	LOS B
		Total	0.757	30.5	129.8	LOS C
	Weekday PM	South	0.7	57	125.7	LOS E
		East	0.596	70.6	55.1	LOS F
		North	0.775	25.7	134.8	LOS B
		West	0.708	14	36.2	LOS A
		Total	0.775	34.8	134.8	LOS C
	Weekend	South	0.597	55.1	100.3	LOS D
		East	0.565	70.1	49.8	LOS E
North		0.616	25.4	159.1	LOS B	
West		0.475	35.3	38.6	LOS C	

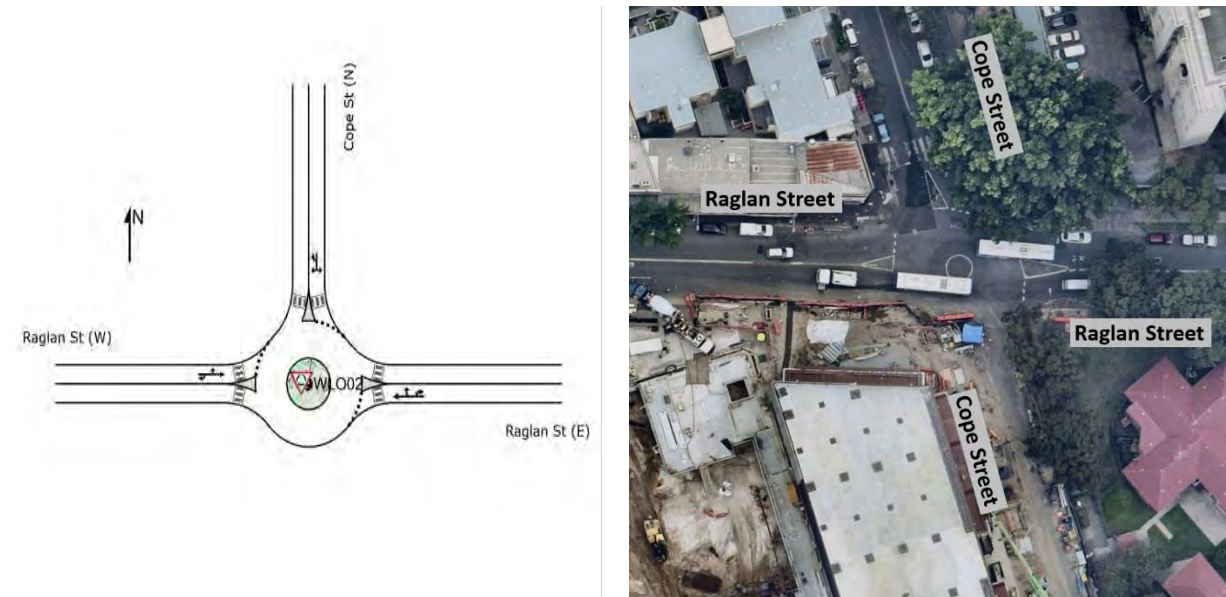
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
		Total	0.616	37	159.1	LOS C

Overall, the intersection of Botany Road, Raglan Street and Henderson Road performs satisfactorily at LOS C during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.8.2 WLO02 – Raglan Street / Cope Street

The roundabout, composed of Raglan Street and Cope Street, is located directly north-east of Waterloo Station. It connects the local roads of Raglan Street and Cope Street in Waterloo. During Block 2, Cope Street (south approach) was closed off due to Sydney Metro construction works.

Figure 5-75 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-75 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of WLO02

Table 5-67 presents a performance summary of this intersection.

Table 5-67 Block 2 - Intersection performance summary of WLO02

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Raglan Street / Cope Street (Roundabout)	Weekday AM	East	0.183	9.1	9.2	LOS A
		North	0.072	9.7	3	LOS A
		West	0.213	8.4	9.3	LOS A
		Total	0.072	9.7	3	LOS A
	Weekday PM	East	0.2	8.6	9.9	LOS A
		North	0.088	10.2	3.6	LOS A
		West	0.26	8.5	11.6	LOS A
		Total	0.088	10.2	3.6	LOS A

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
	Weekend	East	0.163	8.7	7.6	LOS A
		North	0.102	9.6	4.3	LOS A
		West	0.184	8.3	7.4	LOS A
		Total	0.102	9.6	4.3	LOS A

Overall, the intersection of Raglan Street and Cope Street performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.8.3 WLO03 – Botany Road / Wellington Street / Buckland Street

The signalised intersection, composed of Botany Road, Wellington Street and Buckland Street, is located directly south-west of Waterloo Station. It connects the local roads of Wellington Street in Waterloo and Buckland Street, linking Waterloo and Alexandria, with the state road of Botany Road, linking Waterloo and Matraville.

Figure 5-76 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-76 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of WLO03

Table 5-68 presents a performance summary of this intersection.

Table 5-68 Block 2 - Intersection performance summary of WLO03

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Botany Road / Wellington Street /	Weekday AM	South	0.374	6.2	73.8	LOS A
		East	0.238	59.5	17.2	LOS E
		North	0.362	4.2	61	LOS A
		West	0.369	52.7	37.9	LOS D

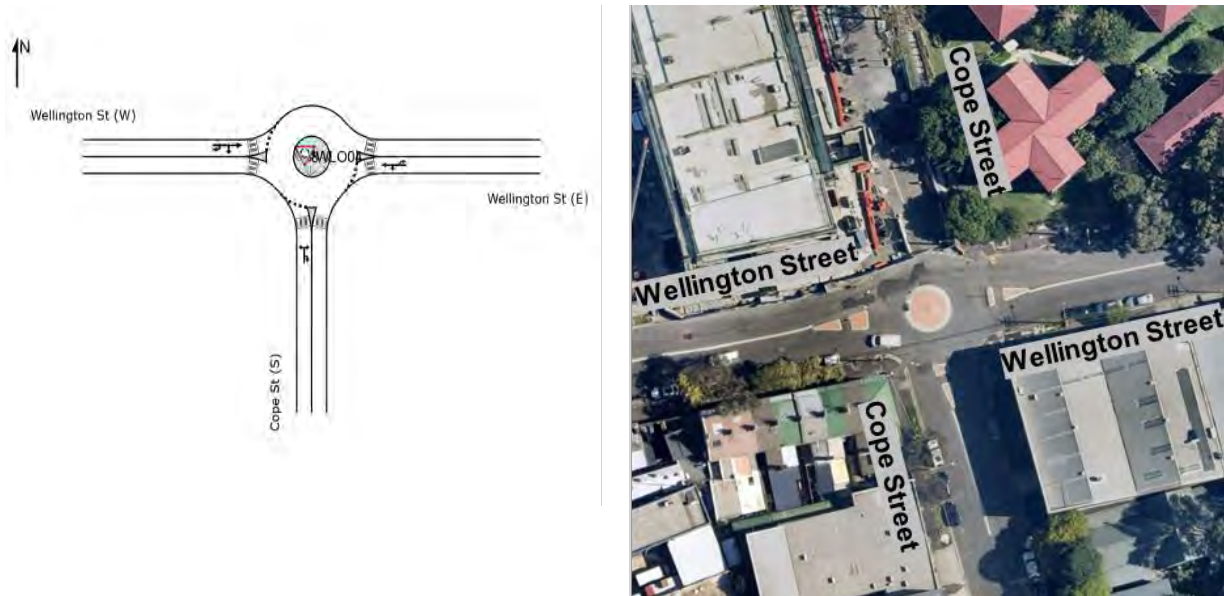
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Buckland Street (Signal)	Weekday PM	Total	0.374	9.8	73.8	LOS A
		South	0.36	5.8	69	LOS A
		East	0.33	60.2	24	LOS E
		North	0.381	1.8	35.1	LOS A
		West	0.318	53	31.1	LOS D
		Total	0.381	8.2	69	LOS A
	Weekend	South	0.393	6.3	62.2	LOS A
		East	0.273	61.9	18.3	LOS E
		North	0.614	5.9	68.4	LOS A
		West	0.251	54.8	22.7	LOS D
		Total	0.614	11.1	68.4	LOS A

Overall, the intersection of Botany Road, Wellington Street and Buckland Street performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.8.4 WLO04 – Cope Street / Wellington Street

The roundabout, composed of Cope Street and Wellington Street, is located directly south-east of Waterloo Station. It connects the local roads of Cope Street, linking Waterloo and Redfern, and Wellington Street in Waterloo. During Block 2, the Cope Street northern approach was closed off due to Sydney Metro construction works.

Figure 5-77 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-77 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of WLO04

Table 5-69 presents a performance summary of this intersection.

Table 5-69 Block 2 - Intersection performance summary of WLO04

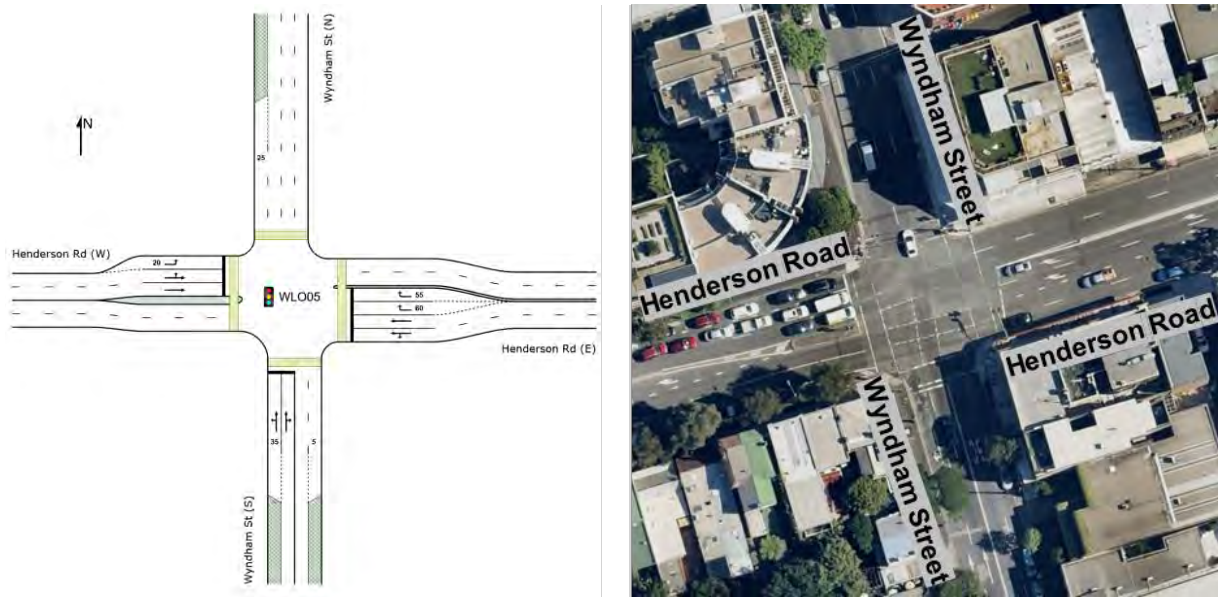
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Cope Street / Wellington Street (Roundabout)	Weekday AM	South	0.03	8.3	1.2	LOS A
		East	0.039	8.2	1.7	LOS A
		West	0.128	7.9	4.7	LOS A
		Total	0.03	8.3	1.2	LOS A
	Weekday PM	South	0.028	8.4	1.1	LOS A
		East	0.048	8.2	2	LOS A
		West	0.134	7.8	4.8	LOS A
		Total	0.028	8.4	1.1	LOS A
	Weekend	South	0.029	8.4	1.1	LOS A
		East	0.05	8.1	2.1	LOS A
		West	0.09	7.9	3.2	LOS A
		Total	0.029	8.4	1.1	LOS A

Overall, the intersection of Cope Street and Wellington Street performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.8.5 WLO05 – Wyndham Street / Henderson Road

The signalised intersection, composed of Wyndham Street and Henderson Road, is located west of Waterloo Station. It connects Henderson Road, linking Waterloo and Eveleigh, and Wyndham Street in Alexandria.

Figure 5-78 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-78 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of WLO05

Table 5-70 presents a performance summary of this intersection.

Table 5-70 Block 2 - Intersection performance summary of WLO05

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Wyndham Street / Henderson Road (Signal)	Weekday AM	South	0.653	54.5	90.4	LOS D
		East	0.657	10.7	58.8	LOS A
		West	0.801	66.6	106.4	LOS E
		Total	0.801	30.7	106.4	LOS C
	Weekday PM	South	0.725	61.5	91.9	LOS E
		East	0.53	9.1	44.8	LOS A
		West	0.77	62.2	139.7	LOS E
		Total	0.77	32.1	139.7	LOS C
	Weekend	South	0.743	62.2	98.6	LOS E
		East	0.524	9.1	37.7	LOS A
		West	0.99	90.5	241.6	LOS F
		Total	0.99	45.3	241.6	LOS D

Overall, the intersection of Wyndham Street and Henderson Road performs satisfactorily at LOS D or better during the peak hours. The 95th percentile queues on Henderson Street (east approach) extend back to Botany Road during the weekday AM peak hours. Similarly, the 95th percentile queues on Henderson Street (west approach) extend back to Garden Street during all peak hours.

5.8.6 WLO06 – New Pedestrian Mid-block Crossing at Cope Street

The new unsignalised pedestrian mid-block crossing at Cope Street is located directly east of Waterloo Station. During Block 2, the mid-block crossing was under construction and non-operational. As such, it was not assessed as part of the Block 2 study.

5.8.7 Comparison with previous study blocks

Figure 5-79 provides a comparison of the total peak hourly traffic volumes recorded across all intersections for the Block 1 and Block 2 study. As shown, traffic volumes are lower in Block 2 in the AM and Weekend peak hours, and around the same as Block 1 in the PM peak hour.

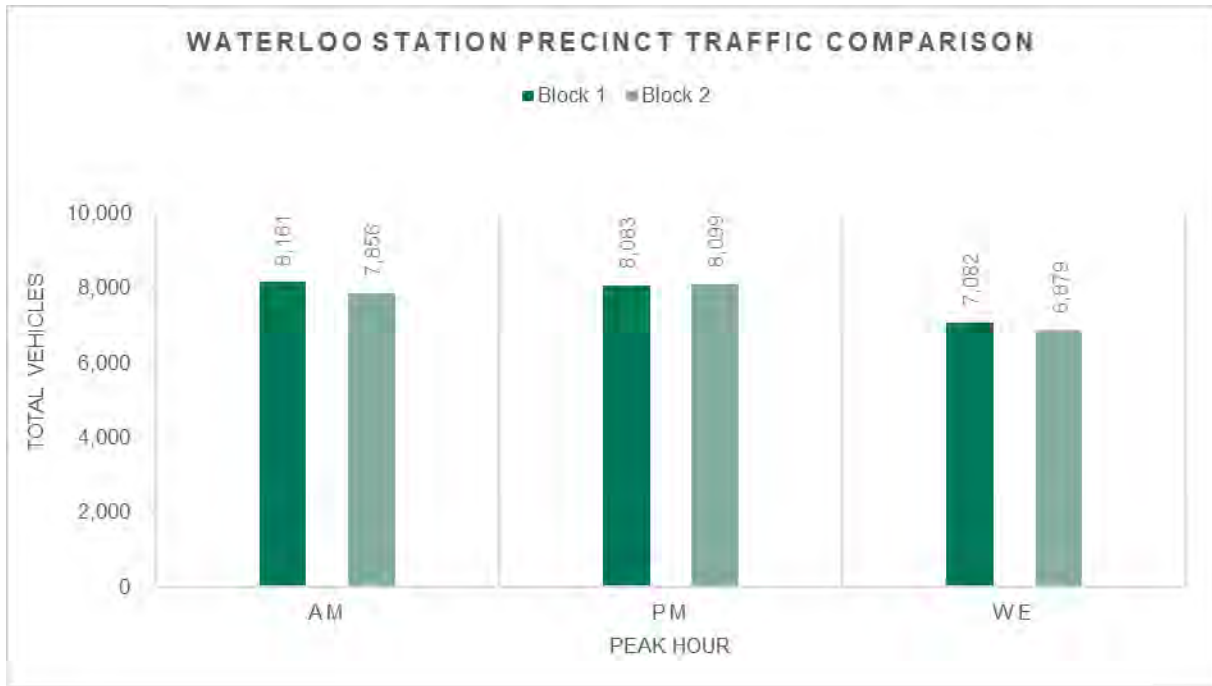


Figure 5-79 Waterloo Station peak hourly traffic volumes across all intersections

A summary of the intersection LOS in Block 1 and Block 2 is shown in **Figure 5-80**. All intersections in the Waterloo site perform at LOS D or better during Block 2, which is generally similar to Block 1. Wyndham Street / Henderson Road (WLO05) had a notable change in LOS, whereby the intersection reduced from a LOS C to a D in the weekend peak hour compared to Block 1. The vehicle demands at this intersection in Block 1 and Block 2 were similar, however varying phase times between the blocks as determined by SCATS resulted in a reduction of LOS.



Figure 5-80 Study block comparison – Waterloo Station intersection performance summary

5.9 Sydenham Station

Sydenham Station is an existing station and the ninth stop on the City & Southwest Line (towards Sydenham). It is located in the north-western area of Sydenham, bounded by Railway Parade, Gleeson Avenue, and Burrows Avenue in Sydenham.

Platforms 1 and 2 of the existing Sydenham Station are currently being upgraded and extended to facilitate metro functionality. In addition to the existing entrance at Gleeson Avenue, two new entrances will be constructed – one in the north and the other in the south. The northern entry will open onto a plaza near the corner of Railway Parade and the southern entry, which was operable during Block 2, provides access onto a plaza on Burrows Avenue near Hogan Avenue.

Bus services are provided within approximately 100 metres of Sydenham Station, located along Burrows Avenue and Railway Parade.

The Sydenham Station study area consists of six intersections. **Table 5-71** presents the peak hours utilised for modelling the intersections. **Table 5-72** provides a summary of the intersection LOS while **Figure 5-81** visualises a geospatial summary of the intersection LOS within the Sydenham Station study area.

Table 5-71 Block 2 - Sydenham Station peak hours modelled

Network ID	Intersection ID	Weekday AM peak hour		Weekday PM peak hour		Weekend peak hour	
		Day	Start time	Day	Start time	Day	Start time
SYD-N1	SYD01	Wednesday	8.00am	Thursday	4.45pm	Saturday	12.30pm
	SYD02						
-	SYD03	Thursday	7.30am	Thursday	4.15pm	Saturday	12.15pm
-	SYD04	Tuesday	7.30am	Friday	3.00pm	Saturday	12.15pm
-	SYD05	Tuesday	8.15am	Thursday	4.30pm	Saturday	12.00pm
-	SYD06	Tuesday	8.00am	Friday	3.00pm	Saturday	12.45pm

Table 5-72 Block 2 - Sydenham Station intersection performance summary

Intersection ID	Intersection	LOS		
		Weekday AM Peak	Weekday PM Peak	Weekend Peak
SYD01	Railway Parade / Gleeson Avenue (Signal)	LOS A	LOS A	LOS A
SYD02	Burrows Avenue / Gleeson Avenue (Signal)	LOS B	LOS B	LOS A
SYD03	Burrows Avenue / George Street (Priority – Give Way)	LOS A	LOS A	LOS A
SYD04	Pedestrian Mid-block Crossing at Sydenham Road (Pedestrian only - Signal)	LOS A	LOS A	LOS A
SYD05	Marrickville Road / Buckley Street (Priority – Give Way)	LOS A	LOS A	LOS A
SYD06	Sydenham Road / Buckley Street (Priority – Give Way)	LOS A	LOS A	LOS A

Overall, the intersection performance in the Sydenham Station study area during the peak periods is satisfactory, operating at LOS B or better.

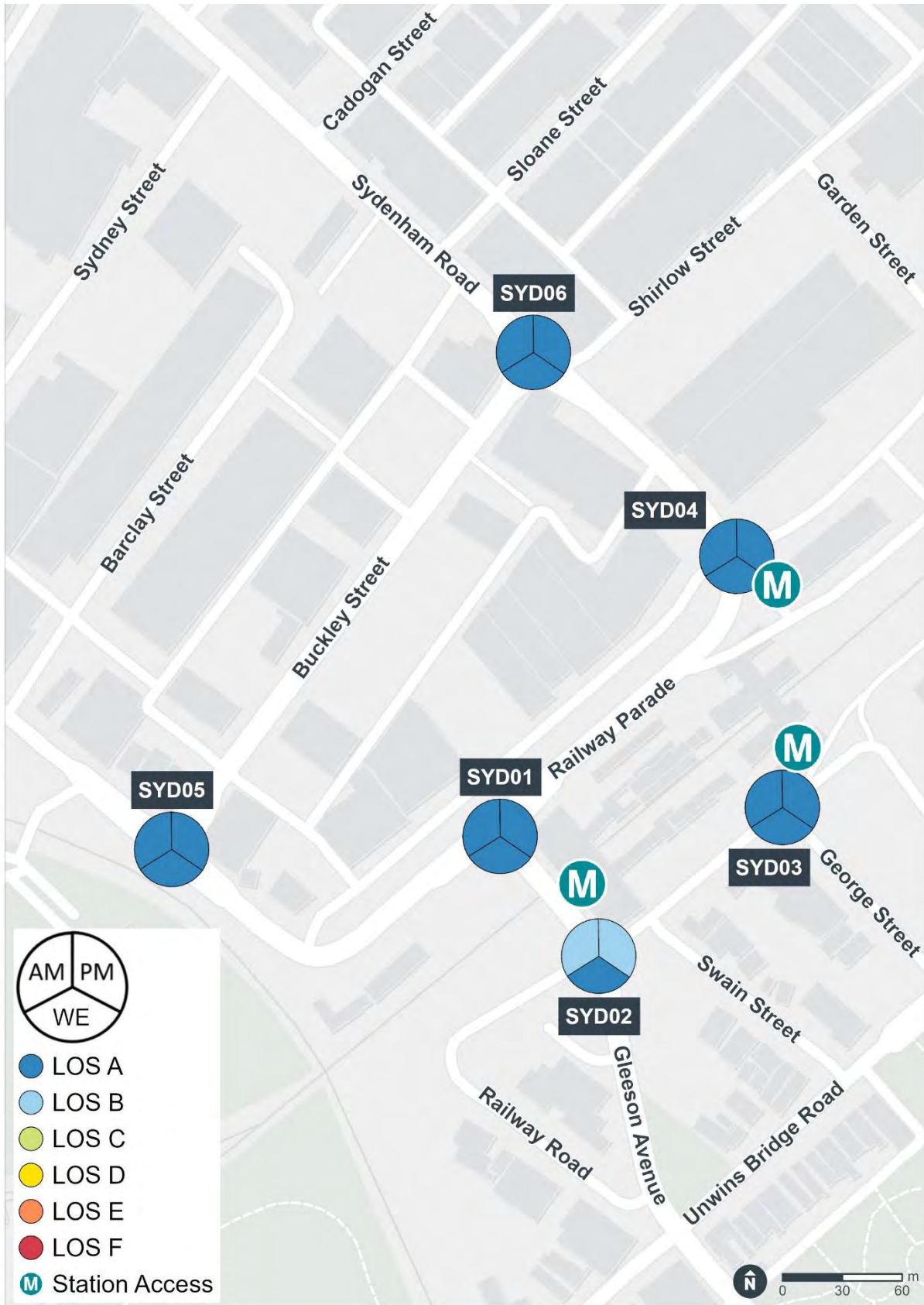
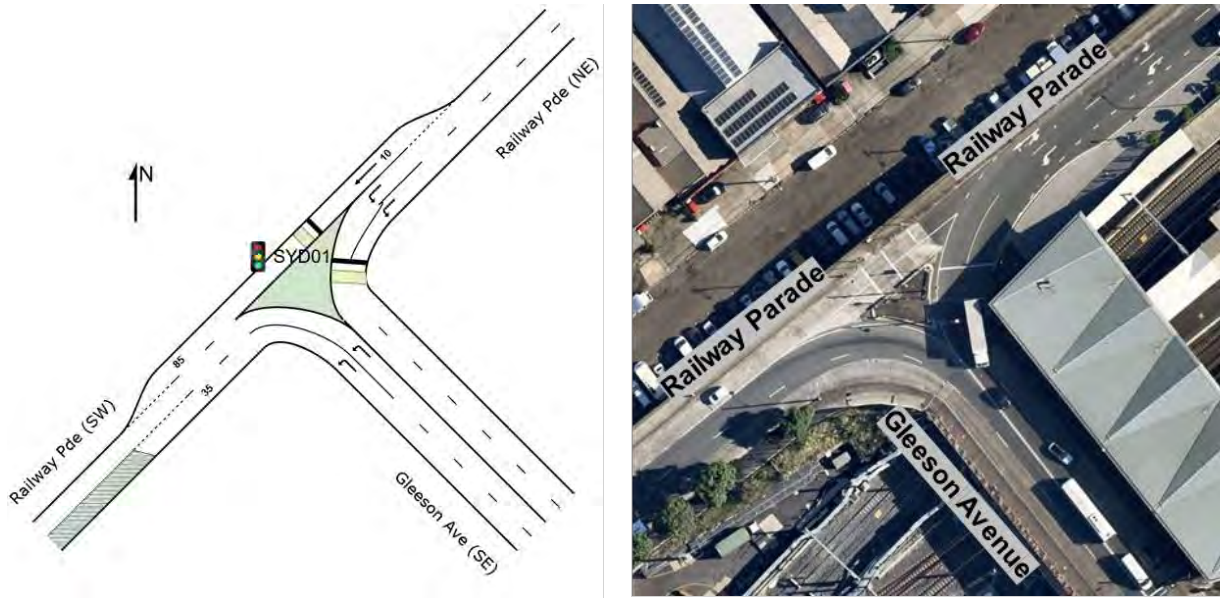


Figure 5-81 Block 2 – Sydenham Station intersection performance summary

5.9.1 SYD01 – Railway Parade / Gleeson Avenue

The signalised intersection, composed of Railway Parade and Gleeson Avenue, is located directly west of Sydenham Station. It connects the state roads of Railway Parade and Gleeson Avenue in Sydenham.

Figure 5-82 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-82 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of SYD01

Table 5-73 presents a performance summary of this intersection.

Table 5-73 Block 2 - Intersection performance summary of SYD01

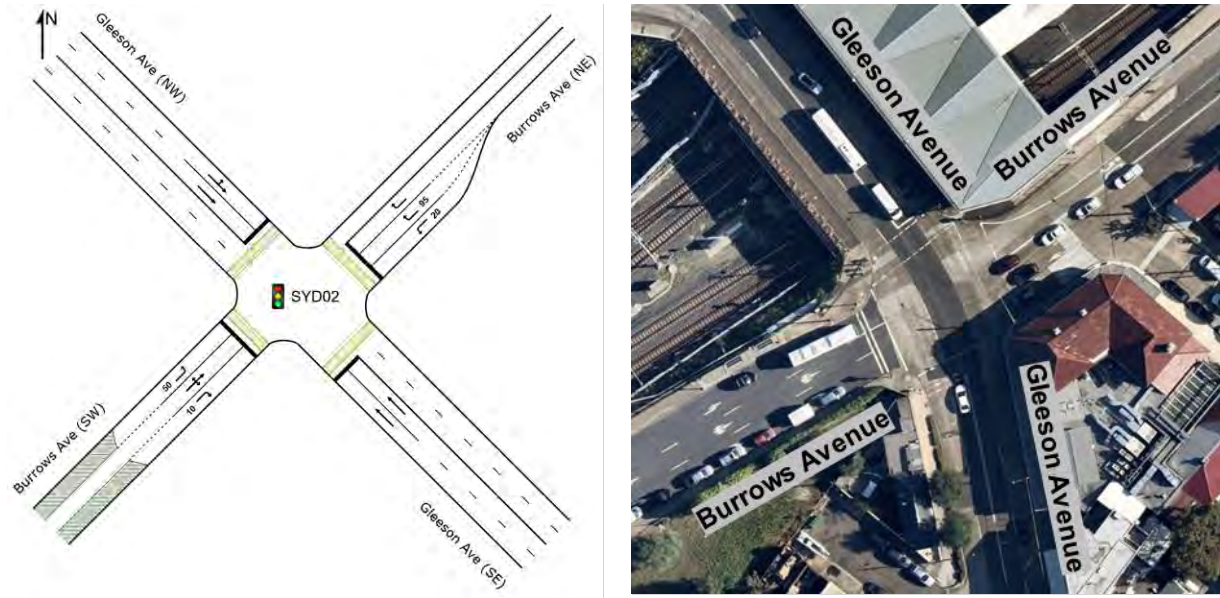
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Railway Parade / Gleeson Avenue (Signal)	Weekday AM	South-east	0.401	4.9	0	LOS A
		North-east	0.442	12	61.4	LOS A
		Total	0.442	8.7	61.4	LOS A
	Weekday PM	South-east	0.538	5.5	0	LOS A
		North-east	0.318	9	34.4	LOS A
		Total	0.538	7	34.4	LOS A
	Weekend	South-east	0.425	4.9	0	LOS A
		North-east	0.394	8	52.9	LOS A
		Total	0.425	6.5	52.9	LOS A

Overall, the intersection of Railway Parade and Gleeson Avenue performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.9.2 SYD02 – Burrows Avenue / Gleeson Avenue

The signalised intersection, composed of Burrows Avenue and Gleeson Avenue, is located directly south of Sydenham Station. It connects the local road of Burrows Avenue with the state road of Gleeson Avenue in Sydenham.

Figure 5-83 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-83 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of SYD02

Table 5-74 presents a performance summary of this intersection.

Table 5-74 Block 2 - Intersection performance summary of SYD02

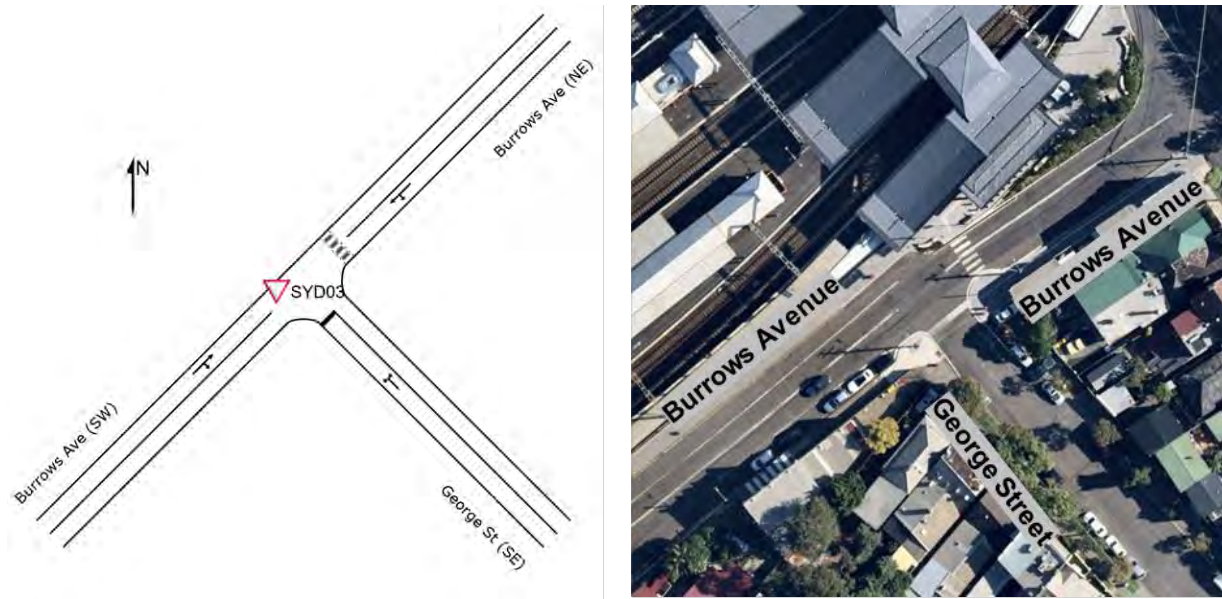
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Burrows Avenue / Gleeson Avenue (Signal)	Weekday AM	South-east	0.353	15.5	74.2	LOS B
		North-east	0.431	51.1	36.1	LOS D
		North-west	0.539	5.5	54.9	LOS A
		South-west	0.14	51.7	9	LOS D
		Total	0.539	15.4	74.2	LOS B
	Weekday PM	South-east	0.41	13.4	94.3	LOS A
		North-east	0.776	69.1	72.1	LOS E
		North-west	0.399	5.3	39.5	LOS A
		South-west	0.163	54.3	9.3	LOS D
		Total	0.776	21.1	94.3	LOS B
	Weekend	South-east	0.367	12.5	84.6	LOS A
		North-east	0.416	56.4	35.3	LOS D
		North-west	0.529	5.6	65.8	LOS A
		South-west	0.189	55.7	11	LOS D
		Total	0.529	13.9	84.6	LOS A

Overall, the intersection of Burrows Avenue and Gleeson Avenue performs satisfactorily at LOS B or better during the peak hours. The 95th percentile queues on Gleeson Avenue (north-west approach) extend back to Railway Parade during the weekday AM peak and weekend peak hours.

5.9.3 SYD03 – Burrows Avenue / George Street

The priority intersection, composed of Burrows Avenue and George Street, is located directly east of Sydenham Station. It connects the local roads of Burrows Avenue and George Street in Sydenham.

Figure 5-84 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-84 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of SYD03

Table 5-75 presents a performance summary of this intersection.

Table 5-75 Block 2 - Intersection performance summary of SYD03

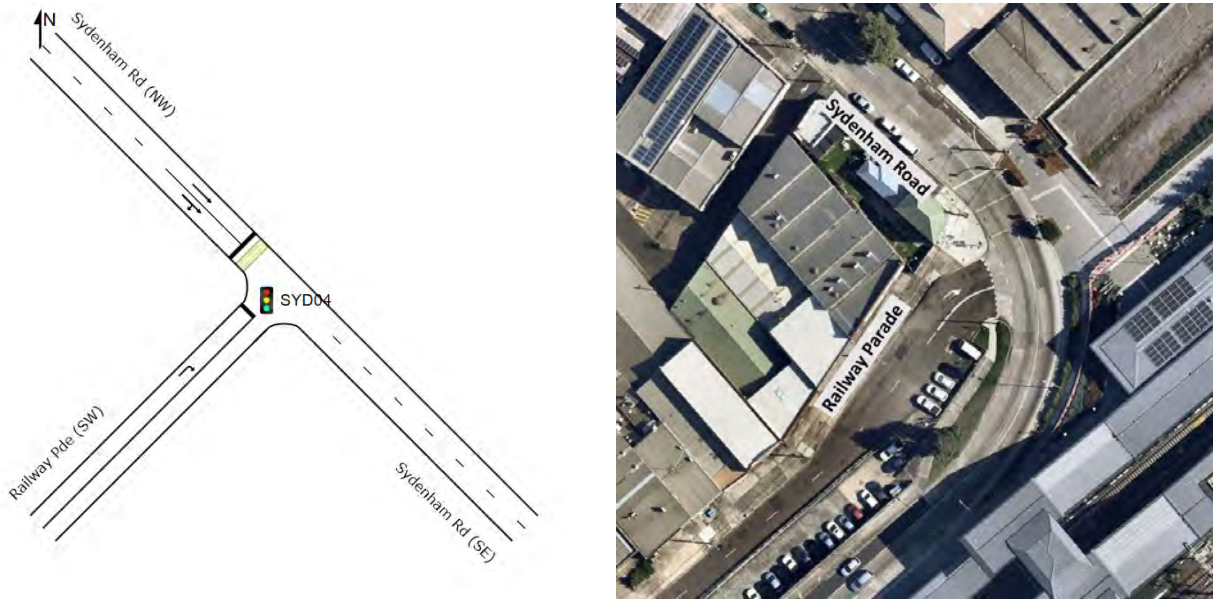
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Burrows Avenue / George Street (Priority – Give Way)	Weekday AM	South-east	0.025	9.4	0.5	LOS A
		North-east	0.189	4	7.2	LOS A
		South-west	0.2	5.6	6.6	LOS A
		Total	0.025	9.4	0.5	LOS A
	Weekday PM	South-east	0.018	10.7	0.4	LOS A
		North-east	0.332	4.2	14.2	LOS A
		South-west	0.202	6.4	6.5	LOS A
		Total	0.018	10.7	0.4	LOS A
	Weekend	South-east	0.018	8.9	0.4	LOS A
		North-east	0.14	3.8	0.4	LOS A
		South-west	0.196	5.1	5	LOS A
		Total	0.018	8.9	0.4	LOS A

Overall, the intersection of Burrows Avenue and George Street performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.9.4 SYD04 – Pedestrian Mid-block Crossing at Sydenham Road

The signalised pedestrian mid-block crossing at Sydenham Road is located north of Sydenham Station. It offers a signalised pedestrian crossing over Sydenham Road, a state road linking Sydenham and Marrickville. Additionally, Railway Parade was introduced into SYD04 during Block 2 to accurately reflect the current vehicular traffic movement along the intersection.

Figure 5-85 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-85 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of SYD04

Table 5-76 presents a performance summary of this intersection.

Table 5-76 Block 2 - Intersection performance summary of SYD04

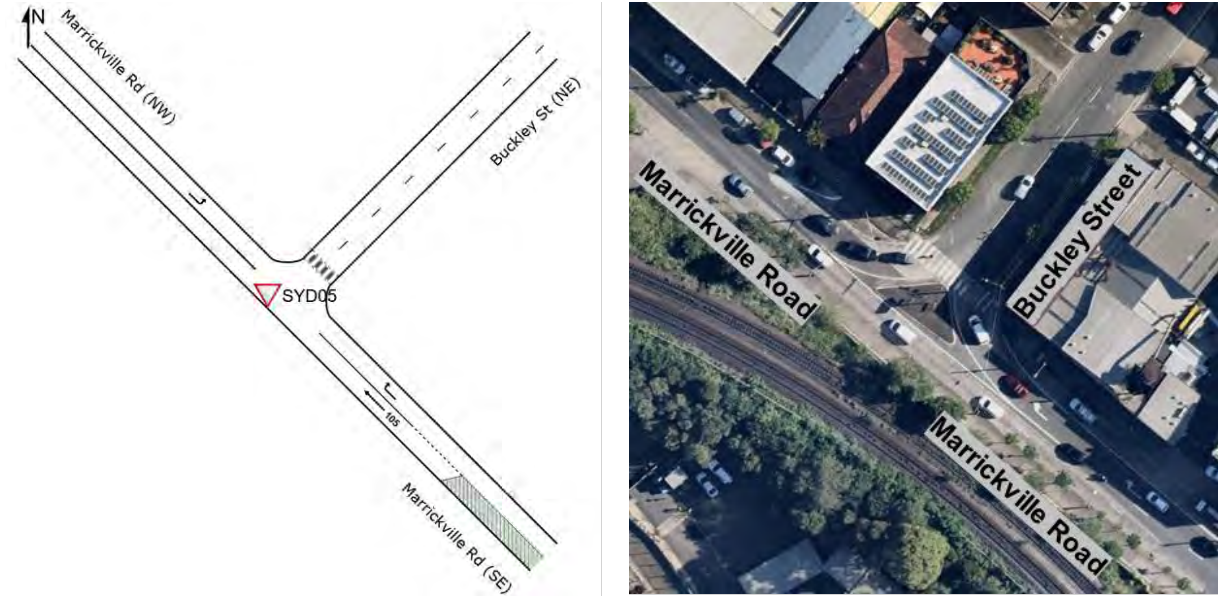
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Pedestrian Mid-block Crossing at Sydenham Road (Pedestrian only - Signal)	Weekday AM	North-west	0.429	6.5	63.5	LOS A
		South-west	0.036	31.6	3.3	LOS C
		Total	0.429	6.7	63.5	LOS A
	Weekday PM	North-west	0.421	6.4	63	LOS A
		South-west	0.045	31.2	3.6	LOS C
		Total	0.421	6.7	63	LOS A
	Weekend	North-west	0.422	6.4	62.2	LOS A
		South-west	0.027	31	1.9	LOS C
		Total	0.422	6.6	62.2	LOS A

Overall, the pedestrian mid-block crossing at Sydenham Road performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.9.5 SYD05 – Marrickville Road / Buckley Street

The priority intersection, composed of Marrickville Road and Buckley Street, is located west of Sydenham Station. It connects the state roads of Buckley Street in Sydenham and Marrickville Road, linking Sydenham and Dulwich Hill.

Figure 5-86 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-86 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of SYD05

Table 5-77 presents a performance summary of this intersection.

Table 5-77 Block 2 - Intersection performance summary of SYD05

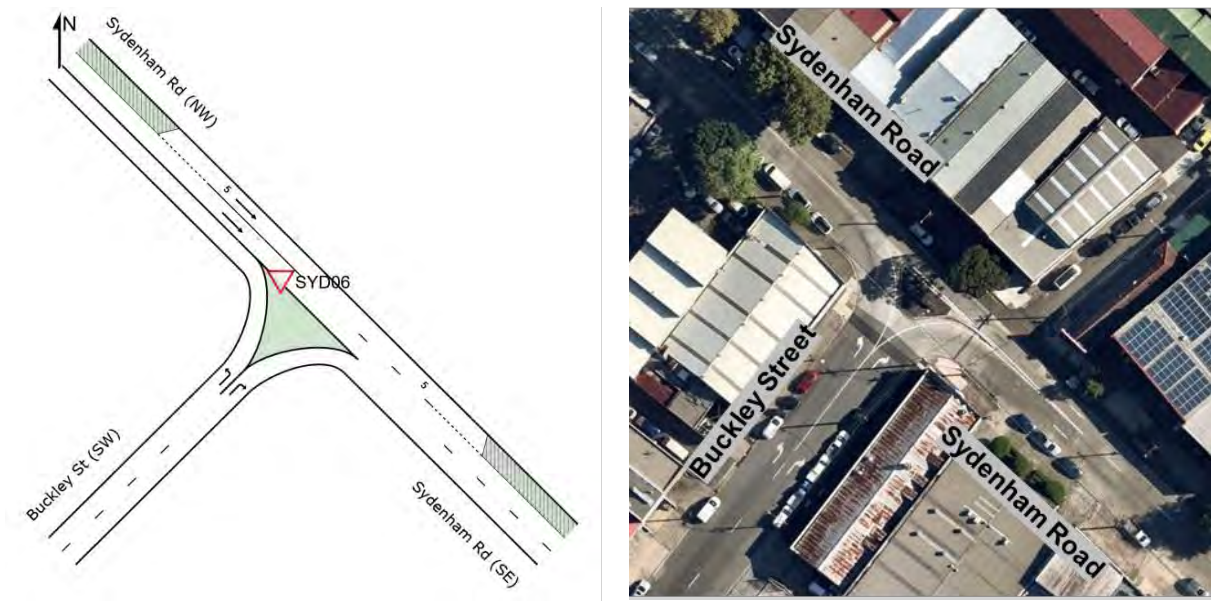
Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Marrickville Road / Buckley Street (Priority – Give Way)	Weekday AM	South-east	0.753	8.7	41.4	LOS A
		North-west	0.752	9	36.1	LOS A
		Total	0.752	9	36.1	LOS A
	Weekday PM	South-east	0.694	7.9	30.8	LOS A
		North-west	0.696	8.1	21.7	LOS A
		Total	0.696	8.1	21.7	LOS A
	Weekend	South-east	0.303	6.1	11.1	LOS A
		North-west	0.315	6	10.7	LOS A
		Total	0.303	6.1	11.1	LOS A

Overall, the intersection of Marrickville Road and Buckley Street performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.9.6 SYD06 – Sydenham Road / Buckley Street

The priority intersection, composed of Sydenham Road and Buckley Street, is located north of Sydenham Station. It connects the state roads of Buckley Street in Sydenham and Sydenham Road, linking Sydenham and Marrickville.

Figure 5-87 illustrates both the general intersection layout as modelled in SIDRA Intersection and the layout as per aerial imagery.



Source: Nearmap (December 2023)

Figure 5-87 Block 2 - AM peak model SIDRA Intersection layout (left) and Nearmap aerial imagery (right) of SYD06

Table 5-78 presents a performance summary of this intersection.

Table 5-78 Block 2 - Intersection performance summary of SYD06

Intersection	Peak	Approach	Degree of saturation	Average delay (seconds)	95 th percentile queue (metres)	LOS
Sydenham Road / Buckley Street (Priority – Give Way)	Weekday AM	North-west	0.363	0.1	0	LOS A
		South-west	0.318	5.8	0	LOS A
		Total	0.318	5.8	0	LOS A
	Weekday PM	North-west	0.434	0.1	0	LOS A
		South-west	0.282	5.8	0	LOS A
		Total	0.282	5.8	0	LOS A
	Weekend	North-west	0.404	0.1	0	LOS A
		South-west	0.208	5.8	0	LOS A
		Total	0.208	5.8	0	LOS A

Overall, the intersection of Sydenham Road and Buckley Street performs satisfactorily at LOS A during all peak hours. The 95th percentile queue lengths are accommodated within the approach distances for all approaches.

5.9.7 Comparison with previous study blocks

Figure 5-88 provides a comparison of the total peak hourly traffic volumes recorded across all intersections for the Block 1 and Block 2 study. As shown, traffic volumes are higher in Block 2 in all peak hours compared to Block 1.

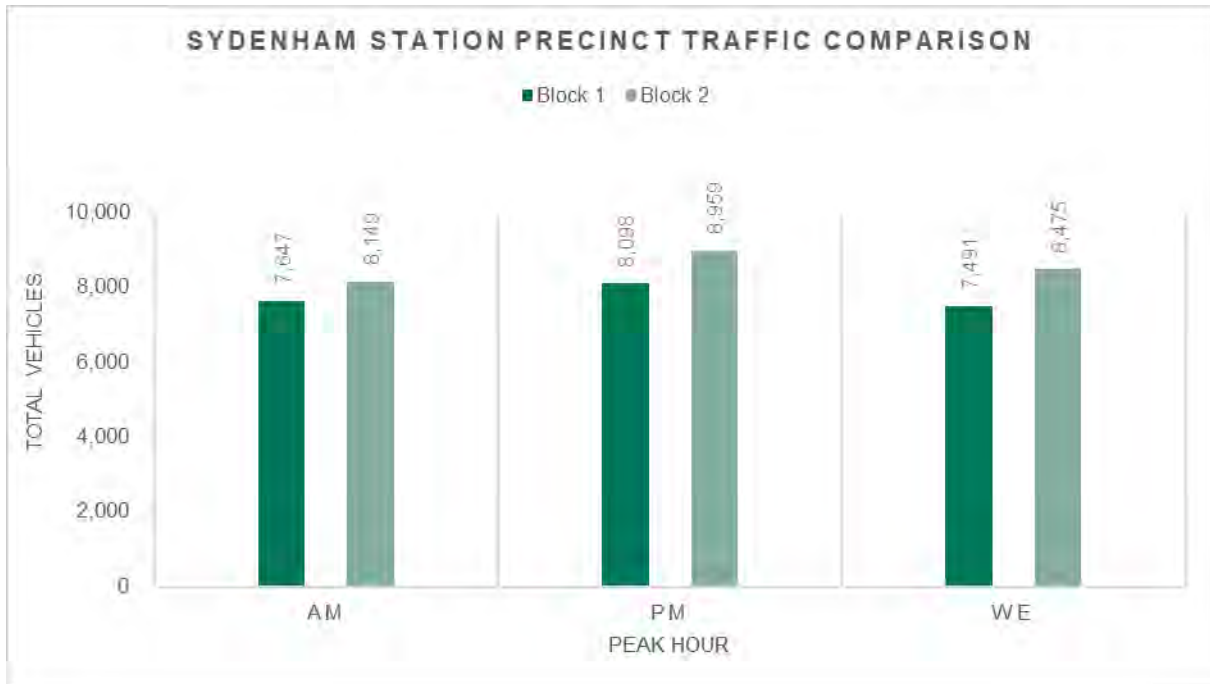


Figure 5-88 Sydenham Station peak hourly traffic volumes across all intersections

A summary of the intersection LOS in Block 1 and Block 2 is shown in **Figure 5-89**. All intersections in the Sydenham site perform at a LOS B or better during Block 2, which is generally similar to Block 1.



Figure 5-89 Study block comparison – Sydenham Station intersection performance summary

6.0 Transport interchange monitoring

This section details analysis of the interchange traffic survey data at kerbside facilities nearby station interchanges.

6.1 Chatswood Station

In the Chatswood Station study area, a total of five taxi and kiss and ride facilities were assessed during Block 2. These included three kiss and ride facilities and two taxi facilities. Refer to **Section 3.3** for detailed information about their locations and the number of bays.

6.1.1 Kiss and ride

Table 6-1 presents a summary of the kiss and ride facilities' peak hour vehicle demands, as well as the average dwell time and total number of boarding/alighting passengers during the identified peak hours. **Figure 6-1** to **Figure 6-3** provide the daily demand profile for each of the three kiss and ride facilities.

Based on the interchange survey data, the following was observed:

- The highest demand recorded at CWDK1 was 29 vehicles per hour which occurred during 4pm-5pm on a Tuesday. CWDK1 bays were sufficient for the existing demand and generally no queues formed outside the bays.
- The highest demand recorded at CWDK2 was 57 vehicles per hour which occurred during 7am-8am on a Tuesday. CWDK2 bays were sufficient for the existing demand and generally no queues formed outside the bays.
- The highest demand recorded at CWDK3 was 33 vehicles per hour which occurred during 8am-9am on a Tuesday. CWDK3 bays were sufficient for the existing demand and generally no queues formed outside the bays.

Table 6-1 Block 2 – Chatswood Station interchange assessment peak hour summary (kiss and ride)

ID	Peak hour			
	Summary	Weekday AM	Weekday PM	Weekend
CWDK1 (Railway Street)	Peak period	Wednesday 7am-8am	Tuesday 4pm-5pm	Saturday 10am-11am
	Vehicles (vehicle per hour)	25	29	17
	Average dwell time (minutes)	2	1	1
	Boarding/alighting passenger (excluding driver)	34	40	24
CWDK2 (Albert Avenue)	Peak period	Tuesday 7am-8am	Thursday 6pm-7pm	Saturday 10am-11am
	Vehicles (vehicle per hour)	57	29	25
	Average dwell time (minutes)	1	4	3
	Boarding/alighting passenger (excluding driver)	76	39	38

ID	Peak hour			
	Summary	Weekday AM	Weekday PM	Weekend
CWDK3 (Endeavour Street)	Peak period	Tuesday 8am-9am	Thursday 5pm-6pm	Sunday 11am-12pm
	Vehicles (vehicle per hour)	33	32	30
	Average dwell time (minutes)	1	2	2
	Boarding/alighting passenger (excluding driver)	44	41	39

Note: Average dwell times were rounded to the nearest minute.

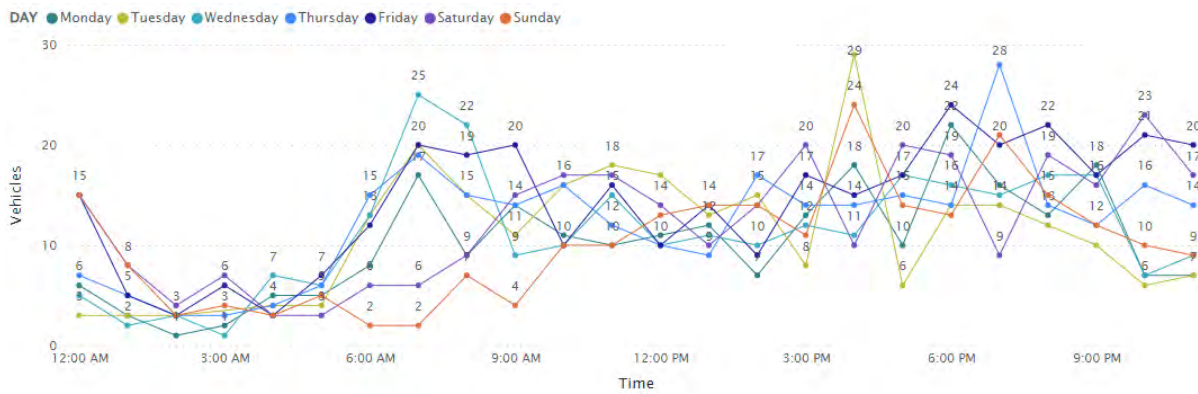


Figure 6-1 Block 2 – Daily demand profile of CWDK1

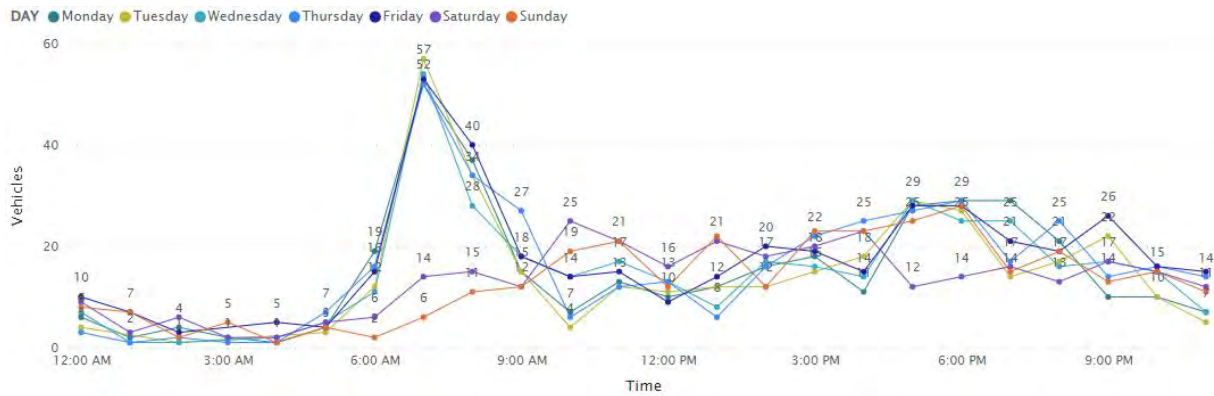


Figure 6-2 Block 2 –Daily demand profile of CWDK2

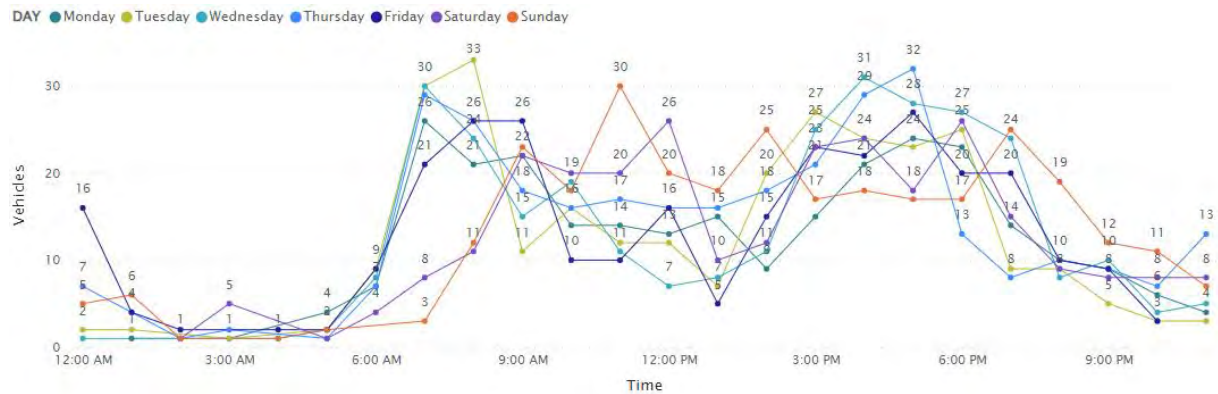


Figure 6-3 Block 2 - Daily demand profile of CWDK3

6.1.2 Taxi

Table 6-2 presents a summary of the taxi facilities’ peak hour vehicle demands, as well as the average dwell time and total number of boarding/alighting passengers during the identified peak hours. Figure 6-4 and Figure 6-5 provide the daily demand profile for each of the two taxi facilities.

Based on the interchange survey data, the following was observed:

- The highest demand recorded at CWDT1 was 38 vehicles per hour which occurred during 5pm-6pm on a Friday. CWDT1 bays were sufficient for the existing demand and generally no queues formed outside the bays.
- The highest demand recorded at CWDT2 was 17 vehicles per hour which occurred during 6pm-7pm on a Friday. CWDT2 bays were sufficient for the existing demand and generally no queues formed outside the bays.

Table 6-2 Block 2 - Chatswood Station interchange assessment peak hour summary (taxi)

ID	Peak hour			
	Summary	Weekday AM	Weekday PM	Weekend
CWDT1 (Victoria Avenue)	Peak period	Tuesday 9am-10am	Friday 5pm-6pm	Saturday 10am-11am
	Vehicles (vehicle per hour)	22	38	32
	Average dwell time (minutes)	9	9	5
	Boarding/alighting passenger (excluding driver)	32	50	61
CWDT2 (Endeavour Street)	Peak period	Tuesday 9am-10am	Friday 6pm-7pm	Saturday 11am-12pm
	Vehicles (vehicle per hour)	11	17	12
	Average dwell time (minutes)	1	1	1
	Boarding/alighting passenger (excluding driver)	13	23	17

Note: Average dwell times were rounded to the nearest minute.

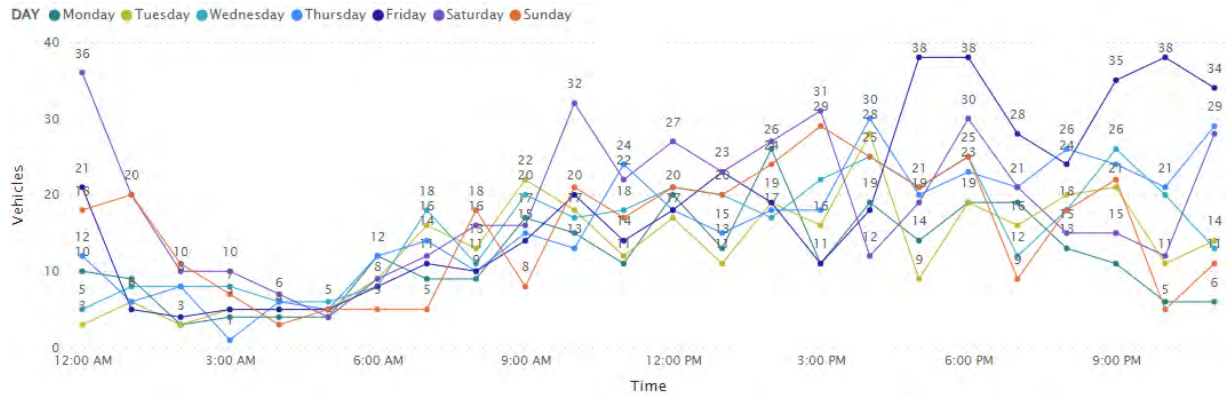


Figure 6-4 Block 2 – Daily hourly demand profile of CWDT1

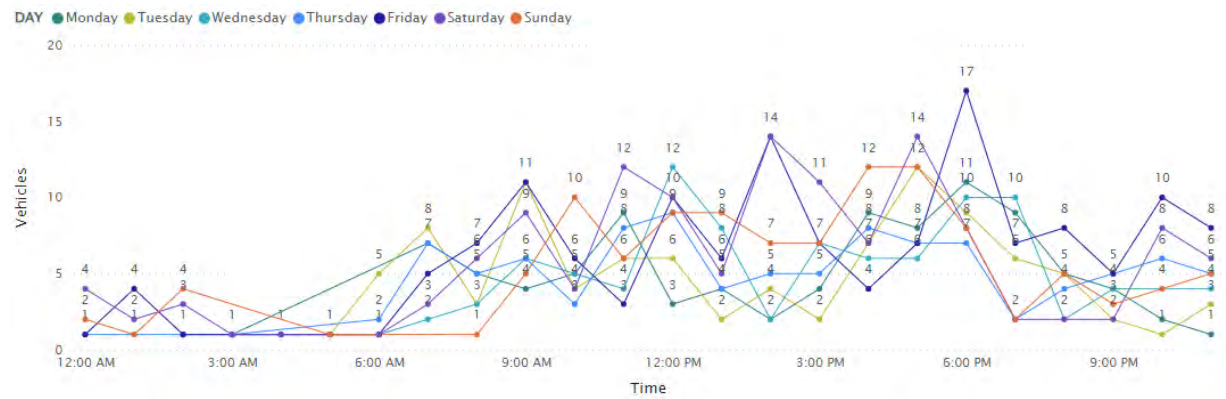


Figure 6-5 Block 2 – Daily demand profile of CWDT2

6.1.3 Comparison with previous study blocks

Figure 6-6 provides a comparison of the total peak hourly demand recorded across the interchange facilities for the Block 1 and Block 2 study. As shown, vehicle demands are generally higher in Block 2 in all peak hours compared to Block 1. The exception is CHWK1 in the weekend peak hour, and CHWK2 and CHWK3 in the AM and PM peak hours where there was a lower demand during Block 2.



Figure 6-6 Study block comparison – Chatswood Station interchange vehicle demand summary

6.2 Sydenham Station

In the Sydenham Station study area, a total of five taxi, bus stop, kiss and ride and accessible parking facilities were assessed during Block 2. These included one bus facility, two kiss and ride facilities, one taxi facility and one accessible parking area. Refer to **Section 3.3** for detailed information about their locations and the number of bays.

6.2.1 Bus

Table 6-3 presents a summary of the bus facility peak hour demands, as well as the average dwell time and total number of boarding/alighting passengers during the identified peak hours. **Figure 6-7** provides the daily demand profile for the bus facility.

Based on the interchange survey data, the highest demand recorded at SYDB1 was 21 buses per hour which occurred during 4pm-5pm on a Tuesday. SYDB1 bays were sufficient for the existing demand and generally no queues formed outside the bays.

Table 6-3 Block 2 - Sydenham Station interchange assessment peak hour summary (bus)

ID	Peak hour			
	Summary	Weekday AM	Weekday PM	Weekend
SYDB1 (Railway Parade)	Peak period	Tuesday 7am-8am	Tuesday 4pm-5pm	Saturday 10am-11am
	Vehicles (vehicle per hour)	19	21	12
	Average dwell time (minutes)	5	4	8
	Boarding/alighting passenger (excluding driver)	112	106	43

Note: Average dwell times were rounded to the nearest minute.

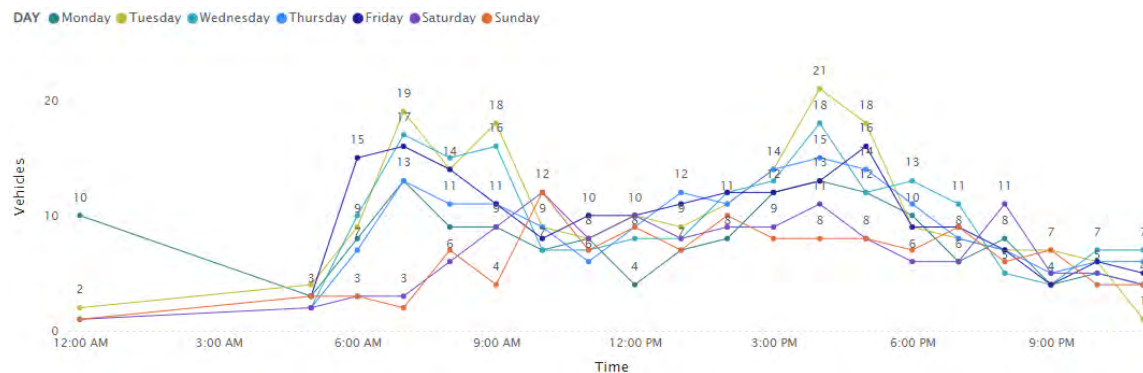


Figure 6-7 Block 2 – Daily demand profile of SYDB1

6.2.2 Kiss and ride

Table 6-4 presents a summary of the kiss and ride facilities’ peak hour demands, as well as the average dwell time and total number of boarding/alighting passengers during the identified peak hours. **Figure 6-8** and **Figure 6-9** provide daily demand profile for the kiss and ride facilities.

Based on the interchange survey data, the following was observed:

- The highest demand recorded at SYDK1 was 22 vehicles per hour which occurred during 7am-8am on a Monday. SYDK1 bays were sufficient for the existing demand and generally no queues formed outside the bays.
- The highest demand recorded at SYDK2 was five vehicles per hour which occurred during 9am-10am on a Monday. SYDK2 bays were sufficient for the existing demand and generally no queues formed outside the bays.

Table 6-4 Block 2 - Sydenham Station interchange assessment peak hour summary (kiss and ride)

ID	Peak hour			
	Summary	Weekday AM	Weekday PM	Weekend
SYDK1 (Burrows Avenue)	Peak period	Monday 7am-8am	Wednesday 5pm-6pm	Sunday 11am-12pm
	Vehicles (vehicle per hour)	22	19	21
	Average dwell time (minutes)	3	4	1
	Boarding/alighting passenger (excluding driver)	22	15	8
SYDK2 (Sydenham Road)	Peak period	Friday 9am-10am	Friday 3pm-4pm	Saturday 1pm-2pm
	Vehicles (vehicle per hour)	5	3	2
	Average dwell time (minutes)	6	3	1
	Boarding/alighting passenger (excluding driver)	6	3	0

Note: Average dwell times were rounded to the nearest minute.

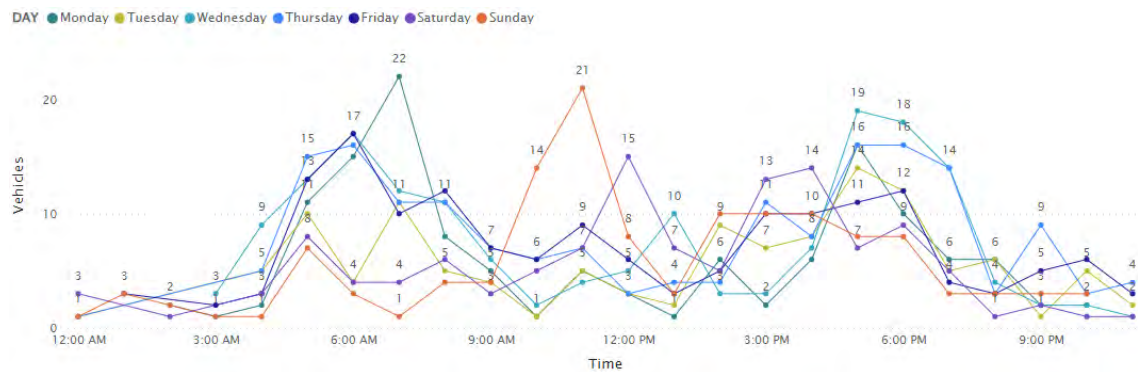


Figure 6-8 Block 2 – Daily demand profile of SYDK1

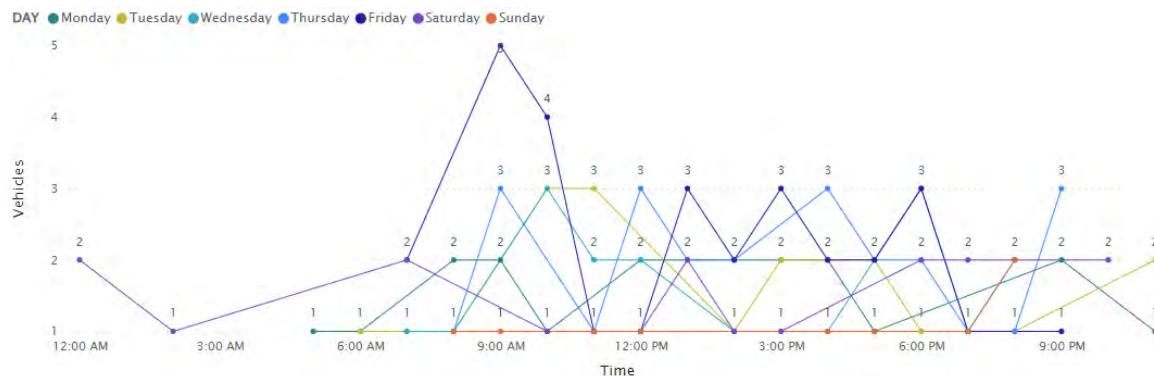


Figure 6-9 Block 2 – Daily demand profile of SYDK2

6.2.3 Taxi

Table 6-5 presents a summary of the taxi facility peak hour demands, as well as the average dwell time and total number of boarding/alighting passengers during the identified peak hours. **Figure 6-10** provides the daily demand profile for the taxi facility.

Based on the interchange survey data, the highest demand recorded at SYDT1 was eight taxis per hour which occurred during 7am-8am on a Monday. SYDT1 bays were sufficient for the existing demand and generally no queues formed outside the bays.

Table 6-5 Block 2 - Sydenham Station interchange assessment peak hour summary (taxi)

ID	Peak hour			
	Summary	Weekday AM	Weekday PM	Weekend
SYDT1 (Burrows Avenue)	Peak period	Monday 7am-8am	Friday 4pm-5pm	Saturday 11am-12pm
	Vehicles (vehicle per hour)	8	7	5
	Average dwell time (minutes)	1	1	1
	Boarding/alighting passenger (excluding driver)	11	7	6

Note: Average dwell times were rounded to the nearest minute.

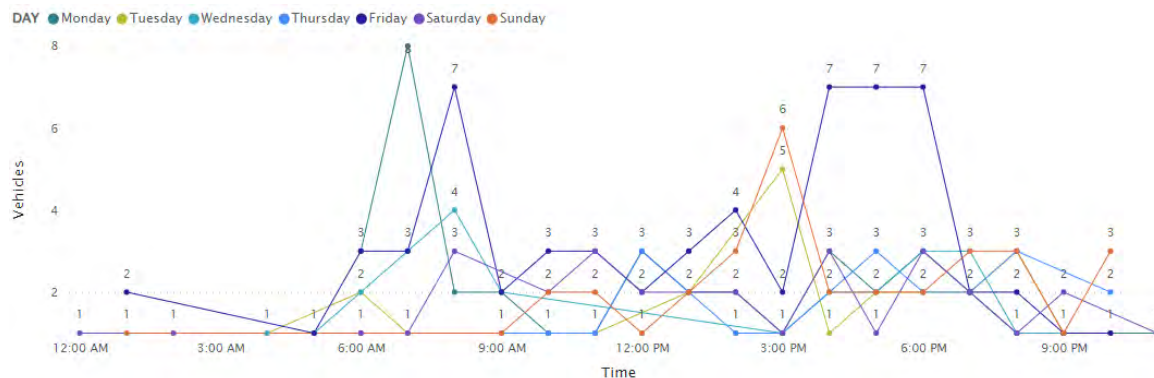


Figure 6-10 Block 2 – Daily demand profile of SYDT1

6.2.4 Accessible parking

Table 6-6 presents a summary of the accessible parking peak hour demands, as well as the average dwell time and total number of boarding/alighting passengers during the identified peak hours. **Figure 6-11** provides the daily demand profile for the accessible parking.

Based on the interchange survey data, the highest demand recorded at SYDA1 was two vehicles per hour which occurred during 7am-8am on a Tuesday and 12pm-1pm on a Saturday. No vehicles were observed to be queued waiting for the accessible parking spaces during the surveys.

Table 6-6 Block 2 - Sydenham Station interchange assessment peak hour summary (accessible parking)

ID	Peak hour			
	Summary	Weekday AM	Weekday PM	Weekend
SYDA1 (Bolton Street)	Peak period	Tuesday 7am-8am	Tuesday 3pm-4pm	Saturday 12pm-1pm
	Vehicles (vehicle per hour)	2	1	2
	Average dwell time (minutes)	13	40	2
	Boarding/alighting passenger (excluding driver)	4	0	6

Note: Average dwell times were rounded to the nearest minute.

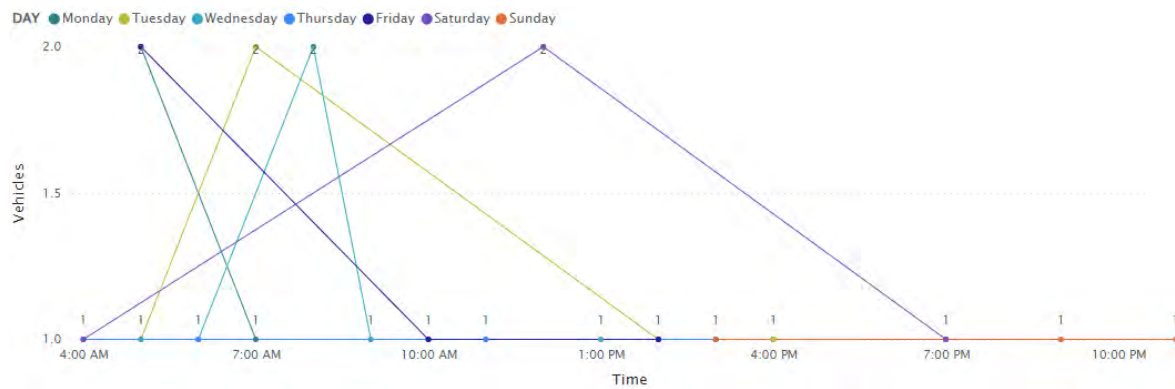


Figure 6-11 Block 2 – Daily demand profile of SYDA1

6.2.5 Comparison with previous study blocks

Figure 6-12 provides a comparison of the peak hourly traffic volumes recorded across the bus, taxi, accessible parking and two kiss and ride facilities for the Block 1 and Block 2 study. As shown, vehicle demands were generally higher in Block 2 in all peak hours compared to Block 1, with the exception of SYDK2 and SYDA1 which saw a reduction in vehicle demand in the PM peak hour during Block 2. However, the total number of buses using the interchange across the day during a typical weekday and weekend in Block 1 and Block 2 were generally consistent.



Figure 6-12 Study block comparison – Sydenham Station interchange vehicle demand summary

7.0 Summary

AECOM has been commissioned by Sydney Metro to undertake traffic and interchange monitoring for the Sydney Metro City & Southwest, covering the stretch between Chatswood Station and Sydenham Station (the Project).

The primary objective of the traffic and interchange monitoring assessment is to evaluate the potential impacts of metro operations at the nine stations along the Sydney Metro City & Southwest (Chatswood to Sydenham) on the surrounding intersections and interchange facilities.

To meet the CoA requirements and align with the project program for Sydney Metro City & Southwest (Chatswood to Sydenham), the traffic and interchange monitoring program will be conducted in six study blocks. The monitoring period will span 12 months before the commencement of CSSI operations (pre-opening) and another 12 months after the commencement (post-opening).

The overall scope of works for the Block 2 study covers the following:

- **Traffic monitoring:** Intersection surveys were conducted during two periods – mid-November 2023 and early-December 2023 (re-surveys). The surveys included classified intersection count survey and vehicular queue length survey.
- **Transport interchange monitoring:** Only Chatswood Station and Sydenham Station were considered for the interchange monitoring for the Block 2 study due to the existing operational train/metro stations. Interchange operation surveys were conducted at these two stations continuously for a one-week period in November 2023.
- **Site visit and observations:** Site visits were undertaken in conjunction with the traffic and interchange operation monitoring for at least one weekday AM peak, one weekday PM peak, and one weekday peak period at each station.
- **Intersection assessment:** To evaluate the intersection operation during Block 2, isolated and network traffic modelling assessments were performed using SIDRA Intersection modelling software.
- **Traffic and interchange monitoring report:** The key findings of the Block 2 study were presented to Sydney Metro and key stakeholders in March 2024. This report provides a summary of the details regarding the Block 2 traffic and interchange operation assessment.

Key findings of the Block 2 study are:

- **Intersection monitoring:** Based on site observation and SIDRA Intersection modelling results, intersection operation and performance of key intersections at each station are summarised as follows.
 - Chatswood Dive Site:
 - The intersection of Mowbray Road and Hampden Road (CWD01) performs at LOS B or better during all peak hours.
 - Block 2 intersection performance is generally similar to Block 1.
 - Crows Nest Station:
 - All intersections within the Crows Nest Station study area perform at LOS C or better during all peak hours.
 - Block 2 intersection performance is generally similar to Block 1. Pacific Highway / Falcon Street / Shirley Road (CST04) had a notable change in LOS, whereby the intersection improved from a LOS D to a C in the AM peak period compared to Block 1. The Block 2 site improvement for CST04 was due to better optimised phasing (as determined by SCATS data).

- Victoria Cross Station:
 - All intersections within the Victoria Cross Station study area operate at LOS C or better during all peak hours.
 - Block 2 intersection performance is generally similar to Block 1.
- Barangaroo Station:
 - All intersections within the Barangaroo Station study area operate at LOS C or better during all peak hours.
 - Block 2 intersection performance is generally similar to Block 1. Kent Street / Argyle Street (BGU03) had a notable change in LOS however, whereby the intersection reduced from a LOS A to a C in the PM peak period compared to Block 1. This change in LOS for BGU03 is due to there being higher traffic volumes in Block 2.
- Martin Place Station:
 - All intersections within the Martin Place Station study area operate at LOS C or better during all peak hours.
 - Block 2 intersection performance is generally similar to Block 1.
- Gadigal Station:
 - All intersections within the Gadigal Station study area operate at LOS C or better during all peak hours.
 - Block 2 intersection performance is generally similar to Block 1.
- Central Station:
 - All intersections within the Central Station study area operate at LOS C or better during all peak hours.
 - Block 2 intersection performance is generally similar to Block 1.
- Waterloo Station:
 - All intersections within the Waterloo Station study area operate at LOS D or better during all peak hours.
 - Block 2 intersection performance is generally similar to Block 1. Wyndham Street / Henderson Road (WLO05) had a notable change in LOS, whereby the intersection reduced from a LOS C to a D in the weekend peak hour compared to Block 1. The vehicle demands at this intersection in Block 1 and Block 2 were similar, however varying phase times between the blocks as determined by SCATS resulted in a reduction of LOS.
- Sydenham Station:
 - All intersections within the Sydenham Station study area operate at LOS B or better during all peak hours.
 - Block 2 intersection performance is generally similar to Block 1.
- **Transport interchange monitoring:** The interchange operation surveys focused on analysing taxi, bus stop and kiss and ride facilities at Chatswood Station and Sydenham station. The Key findings are summarised as follows.
 - Chatswood Station:
 - The provision of kiss and ride bays and taxi bays were generally sufficient and cater for the existing demand, with no queues extending outside the bays.
 - Vehicle demands were generally higher in Block 2 in all peak hours compared to Block 1. The exception was CHWK1 in the weekend peak hour, and CHWK2 and CHWK3 in the AM and PM peak hours where there was a lower demand during Block 2.

- Sydenham Station:
 - The provision of kiss and ride, taxi and bus bays appears generally sufficient for the existing demand, no queues extend outside the bay.
 - The vehicle demands were generally higher in Block 2 in all peak hours compared to Block 1, with the exception of SYDK2 and SYDA1 which saw a reduction in vehicle demand in the PM peak hour during Block 2.
 - The total number of buses using the interchange across the day during a typical weekday and weekend in Block 1 and Block 2 were generally consistent.

In summary, the results from Block 2 traffic and interchange monitoring demonstrate generally satisfactory intersection performance, consistently achieving LOS D or better across all stations. The assessment of kiss and ride and taxi facilities at Chatswood and Sydenham stations indicates sufficient provision to meet the demand observed during Block 2.

Appendix A

Stakeholder Meeting Minutes

Appendix A Stakeholder Meeting Minutes

Minutes of Meeting

Sydney Metro City & Southwest - Traffic and Interchange Operation Monitoring

Subject	Block 2 Presentation	Page	1
Venue	MS-Teams	Time	01:30pm - 02:30pm
Participants	Nita Hutapea (NH), Sydney Metro Shobhan Baranwal (SB), Sydney Metro Imogen Markus (IM), Sydney Metro Michael Huy (MH), Inner West Council George Tsaprounis (GT), Inner West Council Allan Borg (AB), Inner West Council Jennifer Adams (JA), Inner West Council Anoop Sridhar (AS), AECOM Mack Brinums (MB), AECOM Jimmy Wan (JW), AECOM		
Apologies	Garry Hitchcox (GH), SM		
File/Ref No.	SM-C&SW-MM-IWC-002	Date	25-Mar-2023
Distribution	As above		

No	Item	Action	Date
Introduction			
1.	<ul style="list-style-type: none"> NH commenced the meeting providing a brief overview of the project. Attendees introduced themselves, highlighting their roles and organisations. 	-	
Project Overview and Results			
2.	<ul style="list-style-type: none"> AS provided overview of the scope, methodology, requirement of the project, as well as Block 2 results. 	-	
3.	<ul style="list-style-type: none"> GT noted Council's plans for a cycleway in the area, specifically on Burrows Avenue and queried whether there was spare capacity in the interchange facilities to potentially allow for modifications to facilitate the cycleway. GT also noted that it is understood there are plans for a temporary bus layover area potentially on Burrows Avenue. AS noted that it is not possible to confirm whether the existing capacity of the interchange facilities are adequate until Sydney Metro opens and the post-opening studies are completed. NH noted Bus Planning team within TfNSW is working on the potential temporary bus layover area. 	Sydney Metro to liaise with Bus Planning team within TfNSW to consult with Council on any proposed plans for kerbside uses around the station.	

No	Item	Action	Date
4.	<ul style="list-style-type: none"> GT noted Council's cycleway plans and that Council were interested in understanding what facilities might be able to change in future to facilitate cycleway works. Council noted they want to be kept informed and involved in design process going forward, particularly for Burrows Avenue. 	Sydney Metro to liaise with Council on proposed plans around the station.	
5.	<ul style="list-style-type: none"> GT queried when Block 6 is planned and when Council can understand how well utilised the interchange facilities are. NH noted Block 6 would be within 12 months of Metro opening. GT noted that based on the program, Block 5 results might give a good indication on utilisation of interchange facilities. 	-	
6.	<ul style="list-style-type: none"> GT queried what the end-state design for the bus layover area is. AB noted that the design around Sydenham Station has been changing. IM noted that feedback will be taken on board and IWC will be kept informed on any changes to bus zones around Sydenham Station going forward. 	Sydney Metro to liaise with Council on proposed changes to bus zones.	
7.	<ul style="list-style-type: none"> MH queried what the number of bays refers to. AS clarified that the number of bays represents the estimated number of vehicles that can store within each zone. MH noted the accessible spaces may be replacing other accessible spaces that were removed elsewhere as part of the Sydney Metro construction works. IM noted that plans currently refer to these as accessible parking and not kiss and ride. AECOM to update reference to these bays as accessible parking and not accessible parking kiss and ride spaces for future block studies. 	AECOM to update terminology in future block studies.	
8.	<ul style="list-style-type: none"> GT queried if there were any plans to remove the kerb blister on Burrows Avenue. NH noted the kiss and ride zone will be monitored post-opening to understand whether kerb blister impacts operations. AB noted it looked like part of the kerb blister was removed by SM as part of the construction works and queried why the full kerb upstand was not removed. MH to raise this issue with Gordon Hughes (Sydney Metro). IM noted this would also be investigated internally. 	Sydney Metro to investigate plans around kerb blister on Burrows Avenue.	

Enclosures:

- Block 2 Presentation
- Traffic and Interchange Data for Block 2

Minutes of Meeting

Sydney Metro City & Southwest - Traffic and Interchange Operation Monitoring

Subject	Block 2 Presentation	Page	1
Venue	MS-Teams	Time	02:00pm - 03:00pm
Participants	Nita Hutapea (NH), Sydney Metro Shobhan Baranwal (SB), Sydney Metro Daniel Sui (DS), Willoughby City Council Adeline Sim (ASi), Willoughby City Council Anoop Sridhar (AS), AECOM Mack Brinums (MB), AECOM Jimmy Wan (JW), AECOM		
Apologies	Garry Hitchcox (GH), Sydney Metro		
File/Ref No.	SM-C&SW-MM-001	Date	21-Mar-2024
Distribution	As above		

No	Item	Action	Date
1.	<p>Introduction</p> <ul style="list-style-type: none"> Attendees introduced themselves, highlighting their roles and organisations. 		
2.	<p>Project Overview and Results</p> <ul style="list-style-type: none"> AS gave an overview of the Block 2 traffic monitoring results. ASi queried what the dwell time for kiss and ride zones. AS noted that high dwell times were observed in early hours of morning, however during the day dwell time was generally less than 5 mins. ASi queried when the survey was completed. AS clarified survey data relates to a 7-day period in early-mid November 2023. ASi asked for traffic counts to understand cyclist movements at Chatswood Dive site. DS queried whether there is enough data to form a trend, and whether the trends for other station sites were comparable with what is occurring at Chatswood. AS confirmed the Block 1 and Block 2 comparison within the presentation indicates minimal difference between the two blocks and other stations within the study show similar results. 	AECOM to issue raw survey data to be issued to Council (copy enclosed)	21/03/24

No	Item	Action	Date
	<ul style="list-style-type: none"> DS queried how many Blocks and the timing between Blocks. NH confirmed there would be 6 Blocks, with Block 3 being the last pre-opening study, and Block 4-6 being post-opening studies. Post-opening studies would be completed within a year of Sydney Metro opening. DS queried if the block studies indicate a significant increase in traffic and if mitigation measures are required, can mitigation measures be implemented between block studies or do they have to be delayed until after all block studies are completed. NH advised that the cause of the traffic changes would need to be identified first before implementing mitigation measures as there could be a number of reasons for traffic volume changes (e.g. Warringah Freeway upgrade and related closures near Victoria Cross station). DS queried whether traffic network efficiency improvements would be considered around the interchanges. NS confirmed that specific to the interchange, the project would look at whether kiss and ride and taxi bays are sufficient to meet demand pre and post-opening of Sydney Metro. Network efficiency matters would be outside of the scope of this project, however, if Council had a specific query, this could go through the network operations team at TfNSW. NH to provide contact details to Council. DS noted bicycle parking demand at Chatswood Station is high, and noted bicycle parking demand has not been monitored as part of the project to date. A query was raised whether bicycle parking demand could be monitored going forward. Council to investigate whether survey footage available near bike storage. Comment to be considered for future block studies. DS noted that the number of people using Chatswood Station reduced during Covid-19 and asked if information on the number of people using the station before, during and after Covid-19 could be incorporated into the presentation for the next block. NH noted Opal data could be obtained to understand the number of people entering the station. Comment to be considered for future block studies. DS queried whether mode share at Chatswood Station could be estimated 	<p>Sydney Metro to provide contact details of Network Operations team to Council.</p> <p>Willoughby Council to check regarding video footage</p>	<p>22/03</p> <p>26/03</p>

No	Item	Action	Date
	utilising Opal data. NH advised that this would not be possible as the Opal data would capture the total number of tap on/tap off at the station.	Sydney Metro	

Enclosures:

- Block 2 Presentation – Willoughby City Council
- Traffic survey data for Chatswood sites

Minutes of Meeting

Sydney Metro City & Southwest - Traffic and Interchange Operation Monitoring

Subject	Block 2 Presentation	Page	1
Venue	MS-Teams	Time	10:00am - 11:00am
Participants	Nita Hutapea (NH), Sydney Metro Shobhan Baranwal (SB), Sydney Metro Katherine McCray (KM), TfNSW Zakaria Ahmad (ZA), TfNSW Anoop Sridhar (AS), AECOM Mack Brinums (MB), AECOM Jimmy Wan (JW), AECOM		
Apologies	Chris Slenders (CS), TfNSW Khaled Dib (KD), TfNSW Garry Hitchcox (GH), Sydney Metro		
File/Ref No.	SM-C&SW-MM-TfNSW-002	Date	22-Mar-2024
Distribution	As above		

No	Item	Action	Date
1.	<p>Introduction</p> <ul style="list-style-type: none"> Attendees introduced themselves, highlighting their roles and organisations. NH gave project overview, background and need for the study. 		
2.	<p>Project Overview and Results</p> <ul style="list-style-type: none"> AS provided overview of the scope, methodology, requirement of the project, as well as Block 2 results. KM queried whether there was any requirement to look at the bus zones for Chatswood Interchange. NH noted that bus zone monitoring was not part of scope for Chatswood as it is an existing station servicing metro, and no changes are proposed as part of Sydney Metro C&SW. Bus zone monitoring has, however, been completed at Sydenham Station. KM queried why there are increases in buses at Sydenham Station. AS noted there were observations of rail replacement buses throughout the week so this could be the reason. KM queried what would be used for the base to compare with the post opening studies, 		

No	Item	Action	Date
	<p>particularly for the bus interchange at Sydenham Station. AS noted that Block 3 is the remaining pre-opening study, and once that is analysed, it would be agreed with Sydney Metro what would be used as the base to compare with post-opening studies (i.e. whether Block 1-3 is used as a base, or a specific block).</p> <ul style="list-style-type: none"><li data-bbox="338 658 941 842">• KM queried whether there was any analysis of pedestrian LOS at crossings. AS noted that pedestrian volumes have been used within the intersection modelling to understand impact on vehicles, but no formal assessment of pedestrian LOS has been completed.		

Enclosures:

- Block 2 Presentation

Appendix B

SIDRA Intersection Modelling Assumptions

Appendix B SIDRA Intersection Modelling Assumptions

Technical Assumptions and Outputs Memo

1.0 Traffic and Interchange monitoring data outputs

The following outputs are proposed to be provided for the traffic and interchange monitoring:

- Weekly profile graph for individual intersections for 24hr period.
- Summary of daily total traffic volumes per intersection/interchange in a tabular format.
- Weekly profile graph for each station (total of all intersections) for 24hr period.
- Summary of daily total traffic volumes for each station (total of all intersections) in a tabular format.
- Graph of total traffic flows of intersection for typical peak periods during weekdays (06:00-10:00 am and 03:00-07:00 pm) and weekends (10:00am - 02:00pm).
- Turning movements for identified peak hours during weekdays AM and PM peaks and weekend peaks in a network flow diagram in excel spreadsheets.
- Pedestrian volumes for identified peak hours during weekdays AM and PM peaks and weekend peaks in a network diagram in excel spreadsheets.
- Vehicle counts for 7-day weekly profile, typical peak periods, identified peaks for interchanges to include:
 - Vehicle counts for each bay
 - Vehicle occupancy (passenger only, driver excluded)
 - Vehicle dwell time for each bay
 - Vehicle queue length (outside the bay)

2.0 SIDRA modelling related assumptions

Table 1 outlines technical assumptions that will be applied for SIDRA modelling analysis.

Table 1 SIDRA Modelling Assumptions

SI No.	Parameter	Assumption
1.	SIDRA Software Version	SIDRA 9.1
2.	Lane Configuration - Grade	A default 0% grade will be applied to all lanes / TCS plans where applicable.
3.	Lane Width	A default 3.3m lane width will be applied to all lanes.
4.	Approach / Exit Cruise Speed	Based on posted speed limit. A default speed of 50km/h will be adopted where posted speed limit is not enforced.
5.	Roundabout Entry Radius & Entry Angle	A default entry radius of 20m and a default entry angle of 30 degrees will be adopted for all roundabouts.
6.	Critical Gap & Follow-up Headway	The default 'Program' input will be adopted for all movements.
7.	Gap Acceptance	The default 'SIDRA Standard' gap acceptance capacity model will be adopted for all vehicle types.

SI No.	Parameter	Assumption
		Reference will also be made to relevant standards/requirements in Austroads (RMS Modelling Guidelines), where applicable.
8.	Vehicle Movement Start Loss & End Gain	Based on SCATS data provided and survey footages / site observations
9.	Pedestrian Walking Speed (Average)	1.2 m/s
10.	Pedestrian Crossing Distance	Based on intersection geometry/Program (TCS plan where available / Nearmap aerial imageries)
11.	Peak Flow Period	30 minutes
12.	Peak Flow Factor	95%
13.	Phasing Arrangements	Based on SCATS data provided
14.	Phase Time and Frequency	Based on SCATS data provided
15.	Yellow Time & All-Red Time	Based on SCATS data provided
16.	Site Cycle/phase Time	User-Given Phase Time (Based on Phase time & frequency)
17.	Maximum Number of Iterations for Network Analysis	A default 30 iterations will be adopted. Increases of the maximum number of iterations may be applied depending on the Diagnostics Status.
18.	Network Cycle Time	User-Given Cycle Time (Based on User-Given Phase Time for all signals within the network)
19.	Network Signal Coordination	Coordinated Sites / User offsets / CCGs will be defined based on SCATS data provided. Signal offsets included in the SIDRA models provided by Sydney Metro will be adopted where relevant SCATS data are not available.
20.	Queue in Outputs (Site & Network)	95th Percentile
21.	PCU factor	LV: 1.0, HV & Bus: 2.0, Bicycles: 0.3
22.	Site level of service method	Delay (RTA NSW)
23.	Extra Bunching (Site Analysis)	Based on RMS Traffic Modelling Guidelines
24.	Movement Classes	Based on each intersection geometry (LV, HV, Buses, Bicycles)
25.	All other parameters	Default SIDRA settings

The following additional assumptions will be adopted for SIDRA modelling based on the discussion with Sydney Metro on 04 Apr 2023.

Table 2 Additional SIDRA Modelling Assumptions

SI No.	Items	Assumption
1.	Network peak hours	For each station, peak hours will be identified for individual intersections and proposed networks (highlighted in green cells in Figure 1). By reviewing these individual and network peak hours, a station-wide peak hour will be nominated/adopted for each peak period. Peak period dates will be identified for each station

SI No.	Items	Assumption
		for AM, PM and weekend. For eg.SYD AM Peak - Tuesday; SYD PM Peak - Thursday; WLO AM Peak - Wednesday
2.	Cyclist movements	For SIDRA modelling, cyclist movements will only be included if there is a dedicated cycling phase.
3.	Intersection approach/lane closure	Due to construction activities, some approaches/lanes were observed temporarily (partially) closed on site. These temporary closures will be reflected in the models unless it only occurs for a short period of time (for e.g. 10 to 15mins). Notes will be made to approach/lane closure observed on-site, and approach/lane excluded in SIDRA modelling.
4.	CST06 intersection geometry	Hume St North (one-way exit) will not be included in Block 1 modelling. Notes will be made to the left turn movements observed from Clarke St northwest to Hume St north.
5.	BGU05 intersection geometry	Clarence St northbound on-ramp lane to SHB will not be included in the modelling.
6.	CEN03/CEN05 intersection geometry	Elizabeth St/Randle St intersection has been included as CEN05, and will be modelled as network model with CEN03.

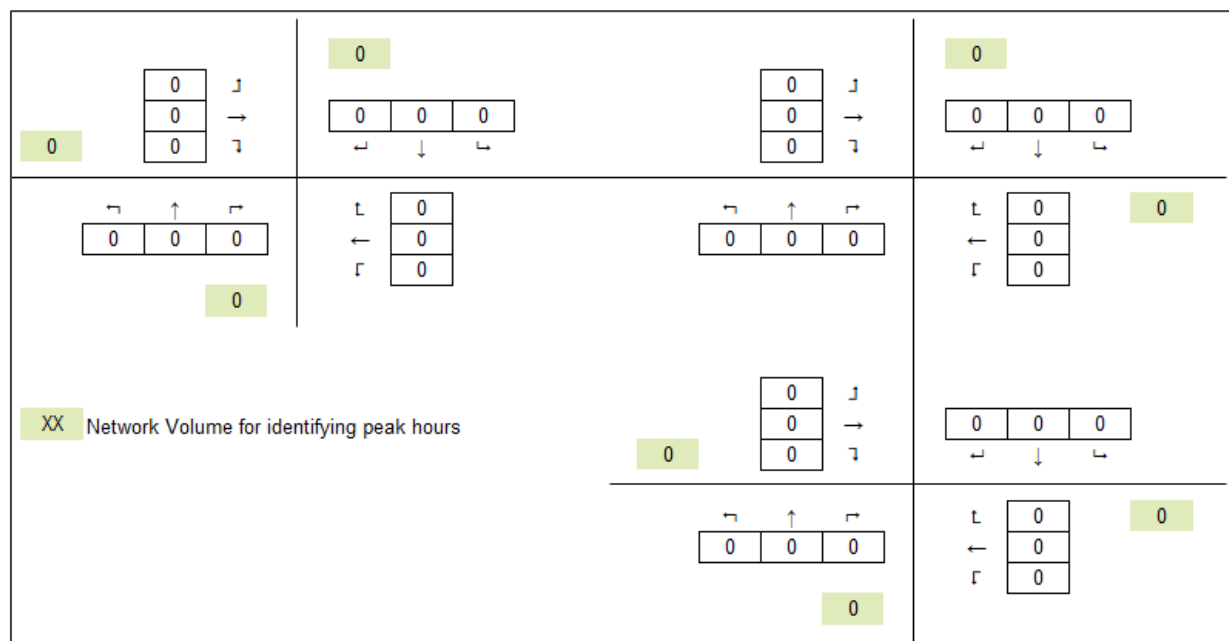


Figure 1 Adopted Network Volume for Network Peak Hour Identification

The following SIDRA outputs would be provided for each intersection.

- Degree of saturation (DoS)
- Average delay (sec)
- 95th percentile queue (m)
- Level of service (LoS)

A sample format of the output table is shown in Table 3.

Table 3 Example SIDRA output format

Intersection	Peak	Leg	Degree of saturation (DoS)	Average delay (sec)	95 th percentile queue (m)	Level of service (LoS)
Road1 / Road2 (Signal / Roundabout / Priority)	AM	South				
		East				
		North				
		West				
		Total				
	PM	South				
		East				
		North				
		West				
		Total				
	Weekend	South				
		East				
		North				
		West				
		Total				

Sydney Metro City & Southwest - Traffic and Interchange Operation Monitoring

SIDRA Network Model Coverage

S.ID	Intersection ID	Station Name	Intersection Name	Intersection Control	Intersection Geometry Layout	Intersection Geometry Code	SIDRA Network Model (AECOM Revised) Pre-opening	Coordination
01	CWD01	Chatswood Station	Mowbray Rd / Hampden Rd	Signal	3-leg Intersection	2_4_6	-	-
02	CWD02	Chatswood Station	Pedestrian Bridge Crossing along Mowbray	Pedestrian only - Bridge Crossing	Bridge Crossing	2_6	-	-
03	CST01	Crows Nest Station	Pacific Hwy / Albany St	Signal	3-leg Intersection	3_4_8	CST-N1	Offset_CST-N1
04	CST02	Crows Nest Station	Pacific Hwy / Oxley St	Signal	4-leg Intersection	2_4_6_8	CST-N1	Offset_CST-N1
05	CST03	Crows Nest Station	Pacific Hwy / Hume St	Signal	4-leg Intersection	2_4_6_8	CST-N1	Offset_CST-N1
06	CST04	Crows Nest Station	Pacific Hwy / Falcon St / Shirley Rd	Signal	5-leg Intersection	1_3_4_6_8	CST-N1	Offset_CST-N1
07	CST05	Crows Nest Station	Clarke St / Oxley St	Priority - Give Way	3-leg Intersection	1_4_6	CST-N1	-
08	CST06	Crows Nest Station	Clarke St / Hume St	Priority - Give Way	3-leg Intersection	4_6_8	CST-N1	-
09	CST07	Crows Nest Station	Clarke St / Willoughby Rd	Priority - Give Way	3-leg Intersection	1_5_7	-	-
10	CST08	Crows Nest Station	Albany St / Willoughby Rd	Signal	4-leg Intersection	1_3_5_7	-	-
11	CST09	Crows Nest Station	Albany St / Oxley St	Roundabout	4-leg Intersection	1_3_5_7	CST-N1	-
12	CST10	Crows Nest Station	Albany St / Clarke Ln	Priority - Give Way	3-leg Intersection	3_4_7	CST-N1	-
13	CST11	Crows Nest Station	Oxley St / Clarke Ln	Priority - Give Way	4-leg Intersection	2_4_6_8	CST-N1	-
14	CST12	Crows Nest Station	Hume St / Clarke Ln	Priority - Stop	3-leg Intersection	2_4_6	CST-N1	-
15	CST13	Crows Nest Station	Pacific Hwy / Alexander St	Signal	4-leg Intersection	1_3_4_8	CST-N1	Offset_CST-N1
16	CST14	Crows Nest Station	Falcon St / Alexander St	Signal	4-leg Intersection	1_3_5_7	CST-N1	Offset_CST-N1
17	VIC01	Victoria Cross Station	Pacific Hwy / Berry St	Signal	4-leg Intersection	3_4_6_8	VIC-N1	Offset_VIC-N1
18	VIC02	Victoria Cross Station	Miller St / Berry St	Signal	4-leg Intersection	1_3_5_7	VIC-N1	Offset_VIC-N1
19	VIC03	Victoria Cross Station	Miller St / McLaren St	Signal	4-leg Intersection	1_3_5_7	VIC-N1	-
20	VIC04	Victoria Cross Station	Pacific Hwy / Miller St	Signal	5-leg Intersection	1_4_5_7_8	VIC-N1	Offset_VIC-N1
21	BGU01	Barangaroo Station	Hickson Rd / Towns Pl	Priority - Give Way	3-leg Intersection	3_6_8	BGU-N1	-
22	BGU02	Barangaroo Station	Dalgely Rd / Towns Pl	Roundabout	3-leg Intersection	4_5_7	BGU-N1	-
23	BGU03	Barangaroo Station	Kent St / Argyle St	Priority - Give Way	4-leg Intersection	1_3_5_7	-	-
24	BGU04	Barangaroo Station	Pedestrian Mid-block Crossing at Kent St near Gas Ln	Pedestrian only - Signal	Pedestrian Mid-block Crossing	1_5	BGU-N2	Offset_BGU-N2
25	BGU05	Barangaroo Station	Kent St / Sydney Harbour Bridge (SHB) On-ramp	Signal	4-leg Intersection	1_2_3_5	BGU-N2	Offset_BGU-N2
26	BGU06	Barangaroo Station	Hickson Rd / Napoleon St / Sussex St	Signal	4-leg Intersection	1_3_5_7	BGU-N3	-
27	BGU07	Barangaroo Station	Margaret St / Kent St / Napoleon St	Signal	4-leg Intersection	1_3_5_8	BGU-N2	Offset_BGU-N2
28	BGU08	Barangaroo Station	Margaret St / Clarence St	Signal	4-leg Intersection	1_3_5_7	BGU-N2	Offset_BGU-N2
29	BGU09	Barangaroo Station	Margaret St / York St	Signal	4-leg Intersection	1_3_5_7	BGU-N2	-
30	BGU10	Barangaroo Station	Pedestrian Mid-block Crossing at Sussex St under Exchange Pl	Pedestrian only - Signal	Pedestrian Mid-block Crossing	1_5	BGU-N3	-
31	BGU11	Barangaroo Station	Pedestrian Mid-block Crossing at Kent St near Margaret St	Pedestrian only - Signal	Pedestrian Mid-block Crossing	1_5	BGU-N3	-
32	BGU12	Barangaroo Station	Sussex St / Erskine St	Signal	4-leg Intersection	1_3_5_7	BGU-N3	Offset_BGU-N3
33	BGU13	Barangaroo Station	Kent St / Erskine St	Signal	4-leg Intersection	1_3_5_7	BGU-N3	Offset_BGU-N3
34	BGU14	Barangaroo Station	Sussex St / King St	Signal	4-leg Intersection	1_3_5_6	BGU-N4	Offset_BGU-N4
35	BGU15	Barangaroo Station	Kent St / King St	Signal	4-leg Intersection	1_3_5_7	BGU-N4	Offset_BGU-N4
36	BGU16	Barangaroo Station	New Pedestrian Mid-block Crossing at New Hickson Rd (north of Metro Station)	Pedestrian only - Signal	Pedestrian Mid-block Crossing	1_5	-	-
37	BGU17	Barangaroo Station	New Pedestrian Mid-block Crossing at New Hickson Rd (south of Metro Station)	Pedestrian only - Signal	Pedestrian Mid-block Crossing	1_5	-	-
38	BGU18	Barangaroo Station	Shelley St / Erskine St	Signal	4-leg Intersection	1_3_5_7	BGU-N3	-
39	MPL01	Martin Place Station	Hunter St / Castlereagh St / Bligh St	Signal	4-leg Intersection	1_3_5_8	MPL-N1	Offset_MPL-N1
40	MPL02	Martin Place Station	Hunter St / Elizabeth St / Chifley Square	Signal	4-leg Intersection	2_3_5_7	MPL-N1	Offset_MPL-N1
41	MPL03	Martin Place Station	Bent St / Bligh St	Signal	3-leg Intersection	4_6_8	MPL-N1	Offset_MPL-N1
42	MPL04	Martin Place Station	Bent St / Phillip St	Signal	4-leg Intersection	1_4_6_8	MPL-N1	Offset_MPL-N1
43	MPL05	Martin Place Station	Pedestrian Mid-block Crossing at Castlereagh St	Pedestrian only - Signal	Pedestrian Mid-block Crossing	1_5	-	-
44	MPL06	Martin Place Station	Pedestrian Mid-block Crossing at Elizabeth St	Pedestrian only - Signal	Pedestrian Mid-block Crossing	1_5	-	-
45	PIT01	Pitt Street Station	Pitt St / Bathurst St	Signal	4-leg Intersection	1_3_5_7	PIT-N1	-
46	PIT02	Pitt Street Station	Castlereagh St / Bathurst St	Signal	4-leg Intersection	1_3_5_7	PIT-N1	-
47	PIT03	Pitt Street Station	Park St / Castlereagh St	Signal	4-leg Intersection	1_3_5_7	PIT-N1	-
48	PIT04	Pitt Street Station	Park St / Pitt St	Signal	4-leg Intersection	1_3_5_7	PIT-N1	-
49	CEN01	Central Station	Elizabeth St / Eddy Ave	Signal	3-leg Intersection	1_5_8	CEN-N1	Offset_CEN-N1
50	CEN02	Central Station	Elizabeth St / Foveaux St	Signal	3-leg Intersection	1_4_5	CEN-N1	Offset_CEN-N1
51	CEN03	Central Station	Elizabeth St / Cooper St	Priority - Give Way	3-leg Intersection	1_4_5	CEN-N2	-
52	CEN04	Central Station	New Pedestrian Mid-block Crossing at Randle Ln	Pedestrian only - Signal	Pedestrian Mid-block Crossing	2_6	-	-
53	CEN05	Central Station	Elizabeth St / Randle St	Signal	3-leg Intersection	1_5_6	CEN-N2	-
54	WLO01	Waterloo Station	Botany Rd / Raglan St / Henderson Rd	Signal	4-leg Intersection	1_3_5_7	WLO-N1	Offset_WLO-N1
55	WLO02	Waterloo Station	Raglan St / Cope St	Roundabout	4-leg Intersection	1_3_5_7	WLO-N1	-
56	WLO03	Waterloo Station	Botany Rd / Wellington St / Buckland St	Signal	4-leg Intersection	1_3_5_7	WLO-N1	Offset_WLO-N1
57	WLO04	Waterloo Station	Cope St / Wellington St	Roundabout	4-leg Intersection	1_3_5_7	WLO-N1	-
58	WLO05	Waterloo Station	Wyndham St / Henderson Rd	Signal	4-leg Intersection	1_3_5_7	WLO-N1	Offset_WLO-N1
59	WLO06	Waterloo Station	New Pedestrian Mid-block Crossing at Cope St	Pedestrian only - Signal	Pedestrian Mid-block Crossing	1_5	-	-
60	SYD01	Sydenham Station	Railway Pde / Gleeson Ave	Signal	3-leg Intersection	2_4_6	SYD-N1	-
61	SYD02	Sydenham Station	Burrows Ave / Gleeson Ave	Signal	4-leg Intersection	2_4_6_8	SYD-N1	-
62	SYD03	Sydenham Station	Burrows Ave / George St	Priority - Give Way	3-leg Intersection	2_4_6	-	-
63	SYD04	Sydenham Station	Pedestrian Mid-block Crossing at Sydenham Rd	Pedestrian only - Signal	Pedestrian Mid-block Crossing	5_8	-	-
64	SYD05	Sydenham Station	Marrickville Rd / Buckley St	Priority - Give Way	3-leg Intersection	2_4_8	-	-
65	SYD06	Sydenham Station	Sydenham Rd / Buckley St	Priority - Give Way	3-leg Intersection	4_6_8	-	-

Sydney Metro City & Southwest - Traffic and Interchange Operation Monitoring

Intersection Geometry

Source: Nearmap accessed XX XX XXXX

Include NearMaps layout (already prepared for each site) and include a markup showing the approach distances, short lane lengths, parking zone, no stopping zone etc.

Include SIDRA model layout

Sydney Metro City & Southwest - Traffic and Interchange Operation Monitoring

SIDRA Model Review Checklist

Site Name:
 Site ID:
 Type:
 Scenario:

Status	
Open	Attention Required for modeller / reviewer
In Progress	Working in progress
Closed	Closed
N/A	Not Applicable/Not Required

Links to:
 SIDRA File
 Traffic Volume Input
 SCATS Data TCS Plan

Modeller:
 Reviewer:
 Verifier:

Item	Model Element	Notes (For modeller)	Modeller		AM Peak Reviewer		Verifier		Modeller		PM Peak Reviewer		Verifier		Modeller		Weekend Peak Reviewer	
			Status	Notes	Status	Notes	Status	Notes	Status	Notes	Status	Notes	Status	Notes	Status	Notes	Status	Notes
1	General		Open		Open		Open		Open		Open		Open		Open		Open	
1.1	SIDRA Setup	New South Wales	Open		Open		Open		Open		Open		Open		Open		Open	
1.2	Intersection Type	For priority intersections, check for 'give way' or 'stop'	Open		Open		Open		Open		Open		Open		Open		Open	
2	Intersection		Open		Open		Open		Open		Open		Open		Open		Open	
2.1	Site Name	To be consistent with the Intersection Master List	Open		Open		Open		Open		Open		Open		Open		Open	
2.2	Site Title	Include TCS numbers in the model, if applicable	Open		Open		Open		Open		Open		Open		Open		Open	
2.3	Approach Names	Include as per Nearmap, compare with Intersection Master List	Open		Open		Open		Open		Open		Open		Open		Open	
2.4	Lane Geometry	Two-way, one-way etc.	Open		Open		Open		Open		Open		Open		Open		Open	
2.5	Approach/Exit Distance	Check and update as per NearMaps (distance till the next intersection if more than 500m)	Open		Open		Open		Open		Open		Open		Open		Open	
2.6	Extra Bunching	For isolated intersections, include as per Traffic modelling guidelines. For sites in the network, ensure Program option is selected for 'network internal' approaches (user input should still be included for 'network external' approaches, where applicable)	Open		Open		Open		Open		Open		Open		Open		Open	
3	Movement Definitions		Open		Open		Open		Open		Open		Open		Open		Open	
3.1	Vehicle Types	Confirm inclusion of Buses, Bicycles, if relevant (for easier volume input, select Bus and bicycles for all intersections)	Open		Open		Open		Open		Open		Open		Open		Open	
3.2	OD Movements	Switch off banned movements as per site observations, compare with Intersection Master list for banned movements.	Open		Open		Open		Open		Open		Open		Open		Open	
4	Lane Geometry		Open		Open		Open		Open		Open		Open		Open		Open	
4.1	Lane Configuration / Length	Check the full length of lane and 'short lane' based on Nearmap - refer Intersection Geometry tab (round to 5m)	Open		Open		Open		Open		Open		Open		Open		Open	
4.2	Lane Type	High angle or Low angle for slip lanes	Open		Open		Open		Open		Open		Open		Open		Open	
4.3	Lane Control		Open		Open		Open		Open		Open		Open		Open		Open	
4.4	Overflow Lane Number		Open		Open		Open		Open		Open		Open		Open		Open	
4.5	Grade	A default 0% grade will be applied to all lanes. / TCS plans where applicable.	Open		Open		Open		Open		Open		Open		Open		Open	
4.6	Lane Disciplines	Update if specific movement classes have banned movements (for eq. Right turn only for buses)	Open		Open		Open		Open		Open		Open		Open		Open	
4.7	Lane Capacity Adjustment	Justifications based on site observations required if these factors are adjusted	Open		Open		Open		Open		Open		Open		Open		Open	
5	Lane Movements		Open		Open		Open		Open		Open		Open		Open		Open	
5.1	Lane Movement Proportion	As per site observations or survey videos. From approach lane to exit lane (e.g. bus lane on approach side should direct to bus lane on exit side)	Open		Open		Open		Open		Open		Open		Open		Open	
6	Roundabout (if applicable)		Open		Open		Open		Open		Open		Open		Open		Open	
6.1	Number of Lanes		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
6.2	Circulating Width		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
6.3	Island Diameter		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
6.4	Ped Crossing at Roundabout	Include ped crossing for all roundabouts (with / without zebra crossing); if there's no zebra crossing, make a note in the checklist - 'No zebra crossing, priority settings (ped or veh) to be further revised with survey footage to calibrate the model'	N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
7	Pedestrians		Open		Open		Open		Open		Open		Open		Open		Open	
7.1	Crossing Location / Type	Full crossing / staged crossing / slip lane crossing (signalised or zebra)	Open		Open		Open		Open		Open		Open		Open		Open	
7.2	Pedestrian Volume	Update as per surveys	Open		Open		Open		Open		Open		Open		Open		Open	
7.3	Peak Flow Factor	95%	Open		Open		Open		Open		Open		Open		Open		Open	
7.4	Crossing Distance	Based on intersection geometry (round to 0.5m)	Open		Open		Open		Open		Open		Open		Open		Open	
7.5	Walking Speed (Average)	1.2 m/s (as recommended in RMS Modelling Guide)	Open		Open		Open		Open		Open		Open		Open		Open	
7.6	Pedestrian Timing Data	Adopt the SCATS walk time as minimum walk time, minimum clearance as default 5 sec, Clearance 1 & 2 as per SCATS data	Open		Open		Open		Open		Open		Open		Open		Open	
7.7	Walk Time Extension	Remain as 'unticked' (can adjust based on survey videos, where applicable)	Open		Open		Open		Open		Open		Open		Open		Open	
8	Volumes		Open		Open		Open		Open		Open		Open		Open		Open	
8.1	Vehicle Volumes	Check individual intersections; For network model, check midblock flows (ensure input volumes are set to 'Separate')	Open		Open		Open		Open		Open		Open		Open		Open	
8.2	Peak Flow Period	30 minutes	Open		Open		Open		Open		Open		Open		Open		Open	
8.3	Peak Flow Factor	95%	Open		Open		Open		Open		Open		Open		Open		Open	
9	Priorities		Open		Open		Open		Open		Open		Open		Open		Open	
9.1	Priorities	Ensure priority settings updated for turn movements at signals with opposed ped movements	Open		Open		Open		Open		Open		Open		Open		Open	
10	Gap Acceptance		Open		Open		Open		Open		Open		Open		Open		Open	
10.1	Opposing Peds (Extra Loss)	Justifications required if these factors are adjusted	Open		Open		Open		Open		Open		Open		Open		Open	
11	Vehicle Movement Data		Open		Open		Open		Open		Open		Open		Open		Open	
11.1	Approach / Exit Cruise Speed	Based on posted speed limits or agreed assumptions (if no posted speed limits)	Open		Open		Open		Open		Open		Open		Open		Open	
11.2	Start Loss / End Gain	Justifications required if these factors are adjusted	Open		Open		Open		Open		Open		Open		Open		Open	
11.3	Early Cut-Off / Late Start	Justifications required if these factors are adjusted	Open		Open		Open		Open		Open		Open		Open		Open	
12	Phasing & Timing (if applicable)		Open		Open		Open		Open		Open		Open		Open		Open	
12.1	Phasing Arrangements	As per SCATS, TCS Plan	Open		Open		Open		Open		Open		Open		Open		Open	
12.2	Red Arrow Drop Off		Open		Open		Open		Open		Open		Open		Open		Open	
12.3	Phase Time / Frequency	User-give phase times. Frequency as per SCATS/Site observations	Open		Open		Open		Open		Open		Open		Open		Open	
12.4	Yellow Time	As per SCATS (if SCATS data indicates 5, round up and leave a note in the checklist)	Open		Open		Open		Open		Open		Open		Open		Open	
12.5	All-Red Time	As per SCATS (if SCATS data indicates 5, round up and leave a note in the checklist)	Open		Open		Open		Open		Open		Open		Open		Open	
13	Performance Settings		Open		Open		Open		Open		Open		Open		Open		Open	
13.1	Site LoS Method	Delay (RTA NSW); Site Level of Service Target LoS C	Open		Open		Open		Open		Open		Open		Open		Open	
13.2	Queue in Output		Open		Open		Open		Open		Open		Open		Open		Open	
13.3	PCU factor	LV: 1.0, HV & Bus: 2.0, Bicycles: 0.3	Open		Open		Open		Open		Open		Open		Open		Open	

Sydney Metro City & Southwest - Traffic and Interchange Operation Monitoring
 SIDRA Network Model Coverage

Site Name:	CHW Network 1
Site ID:	Network
Type:	N/A
Scenario:	TBC

Status	
Open	Attention Required for modeller / reviewer
In Progress	Working in progress
Closed	Closed
N/A	Not Applicable/Not Required

Links to:	
SIDRA File	
Traffic Volume Input	
SCATS Data	

Modeller:	
Reviewer:	
Verifier:	

Item	Model Element	Notes	AM Peak			PM Peak			Sat Peak		
			Modeller	Reviewer	Verifier	Modeller	Reviewer	Verifier	Modeller	Reviewer	Verifier
1	Network Data		Open	Open	Open	Open	Open	Open	Open	Open	Open
1.1	Queue in Output	95th Percentile	Open	Open	Open	Open	Open	Open	Open	Open	Open
1.2	Maximum Number of Iterations	30; unless notes are given in Diagnostics	Open	Open	Open	Open	Open	Open	Open	Open	Open
2	CCGs		Open	Open	Open	Open	Open	Open	Open	Open	Open
2.1	CCG Set Up	If applicable	Open	Open	Open	Open	Open	Open	Open	Open	Open
3	Network Timing		Open	Open	Open	Open	Open	Open	Open	Open	Open
3.1	Coordinated Site Selection	If applicable	Open	Open	Open	Open	Open	Open	Open	Open	Open
3.2	User Offset	If applicable	Open	Open	Open	Open	Open	Open	Open	Open	Open
3.3	Route Definition	If applicable	Open	Open	Open	Open	Open	Open	Open	Open	Open
3.4	Network Cycle Time	If applicable	Open	Open	Open	Open	Open	Open	Open	Open	Open

Appendix C

Network Flow Diagrams

Appendix C Network Flow Diagrams

Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

AM

CWD01 - 8:00 AM (Tue)

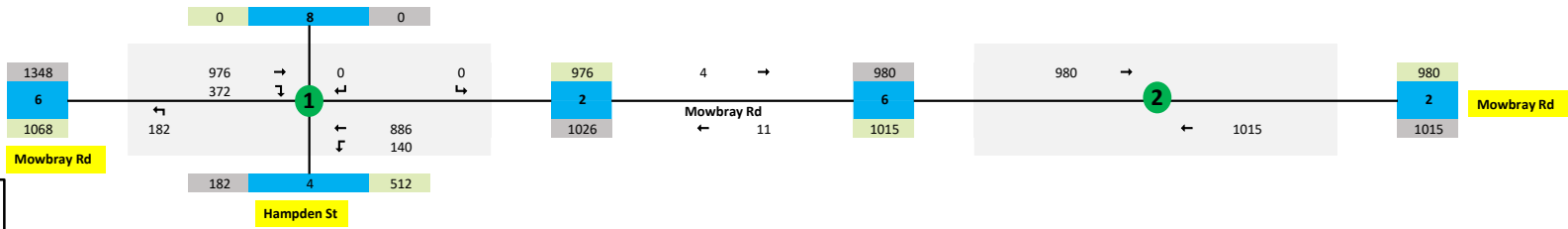
CWD02 - 8:00 AM (Tue)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

AM

CST-N1 - 8:15 AM (Mon)

CST07 - 8:15 AM (Mon)

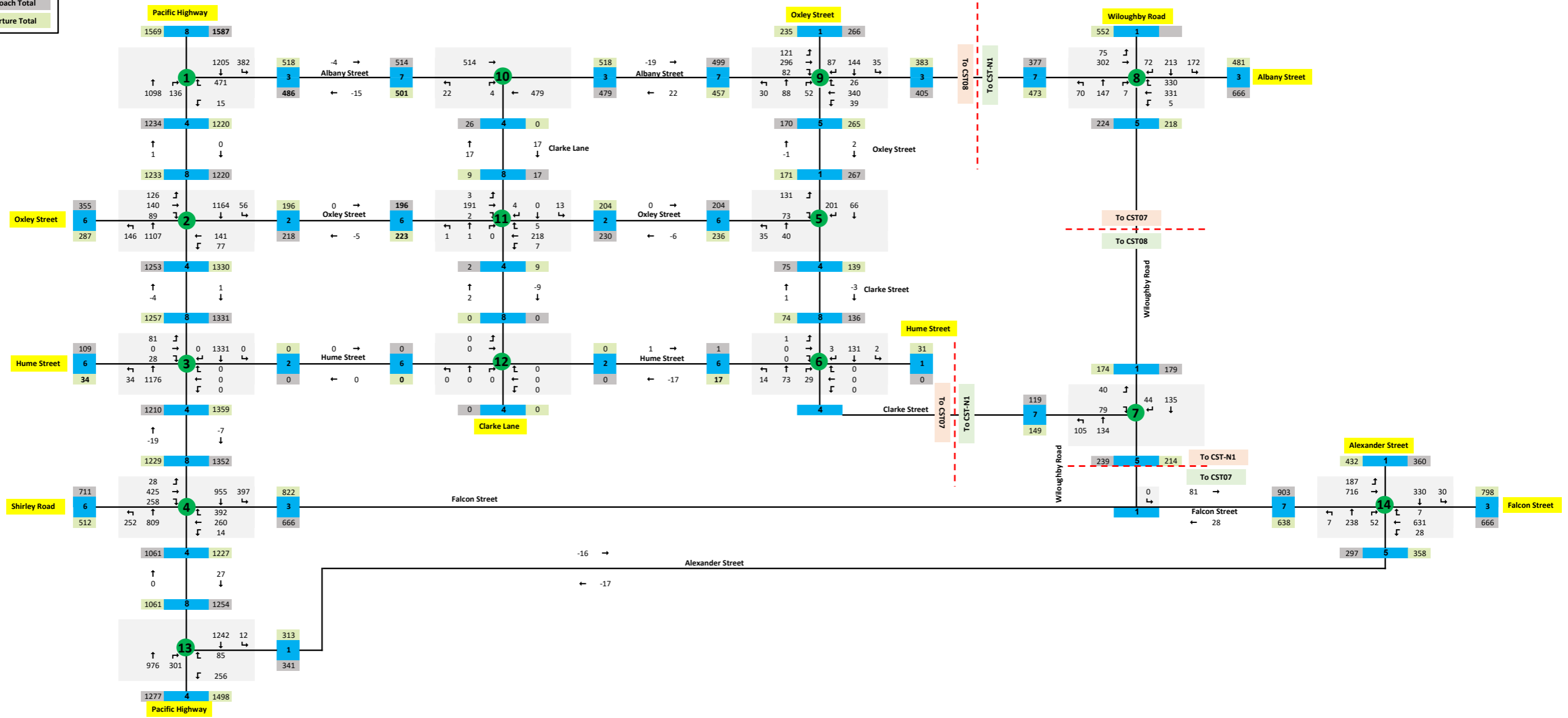
CST08 - 8:00 AM (Thu)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

AM

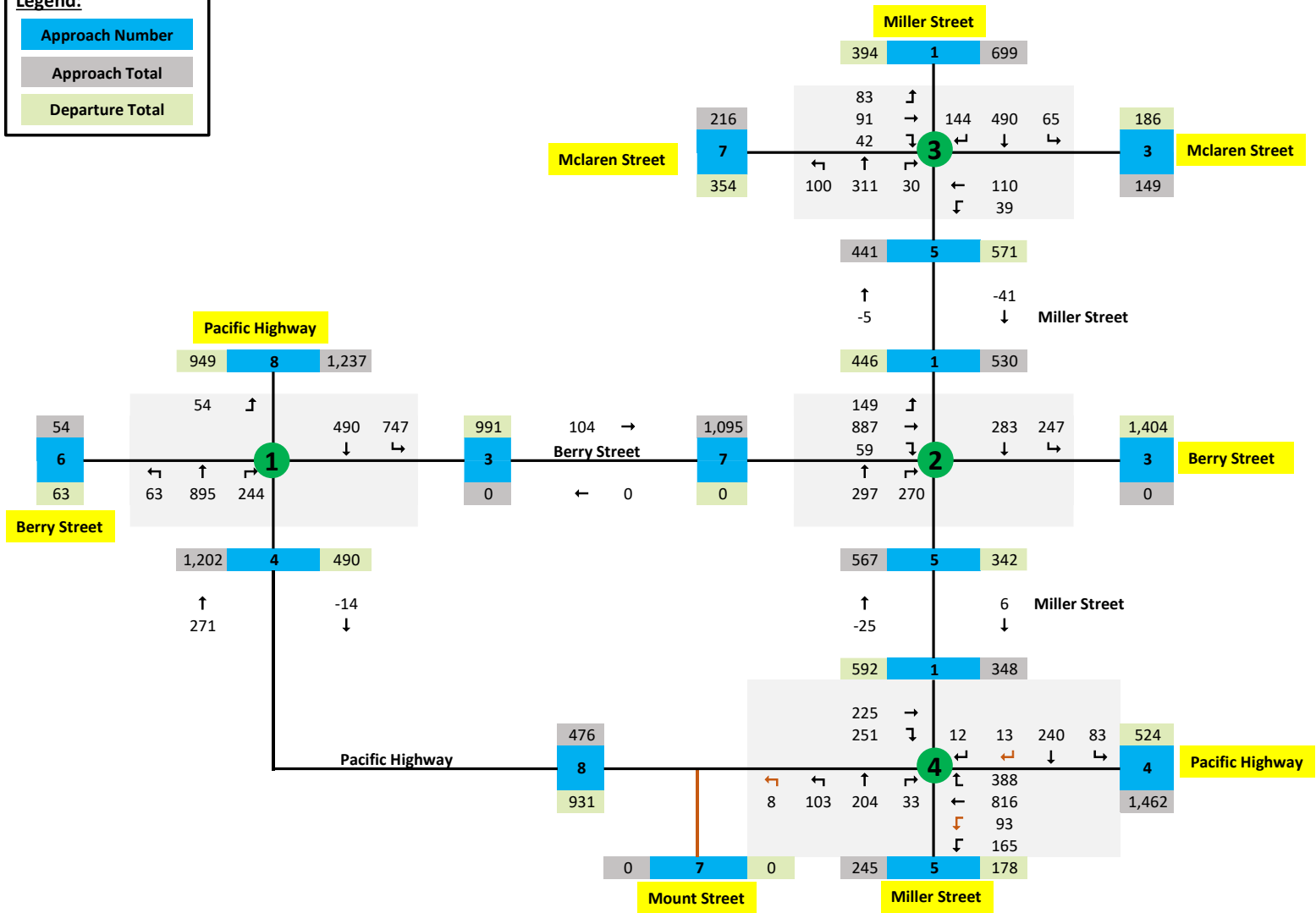
VIC-N1 - 8:00 AM (Mon)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type: ALLVEHICLES

Time Period: AM

BGU-N1: 8:15 AM (Wed)

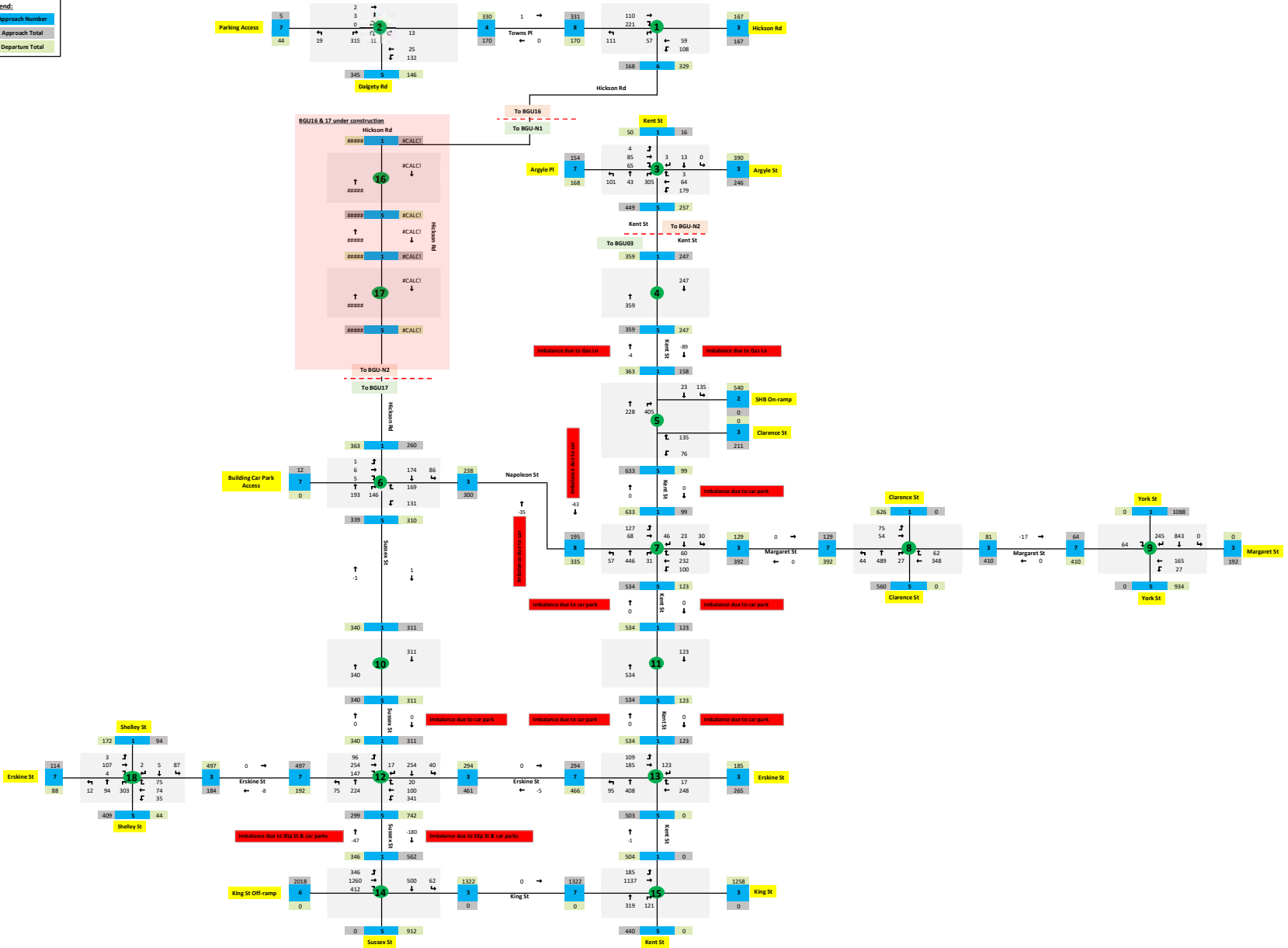
BGU-N2: 8:00 AM (Tue)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

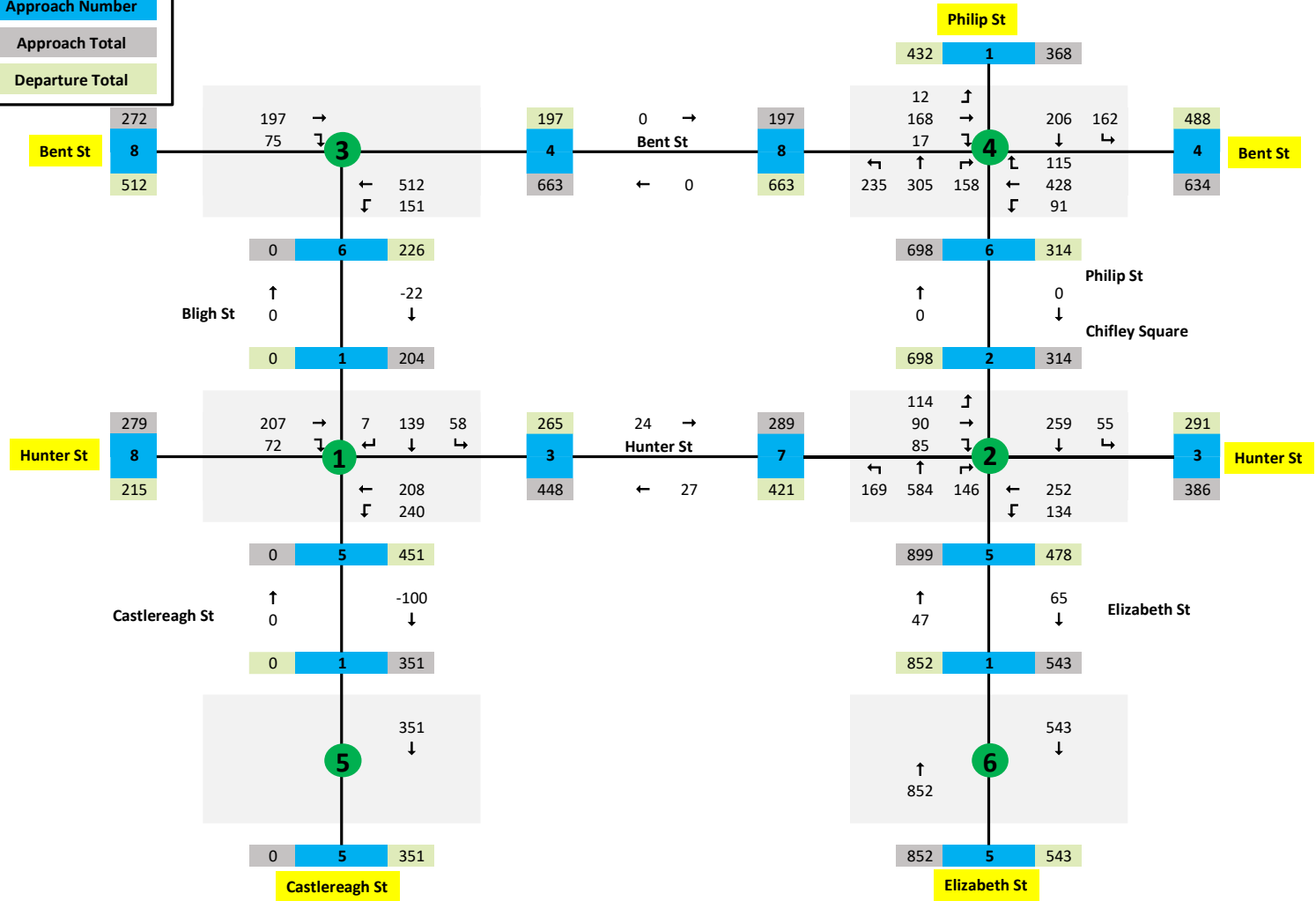
Time Period:

AM

MPL-N1 - 8:45 AM (Wed)

Legend:

- Approach Number
- Approach Total
- Departure Total

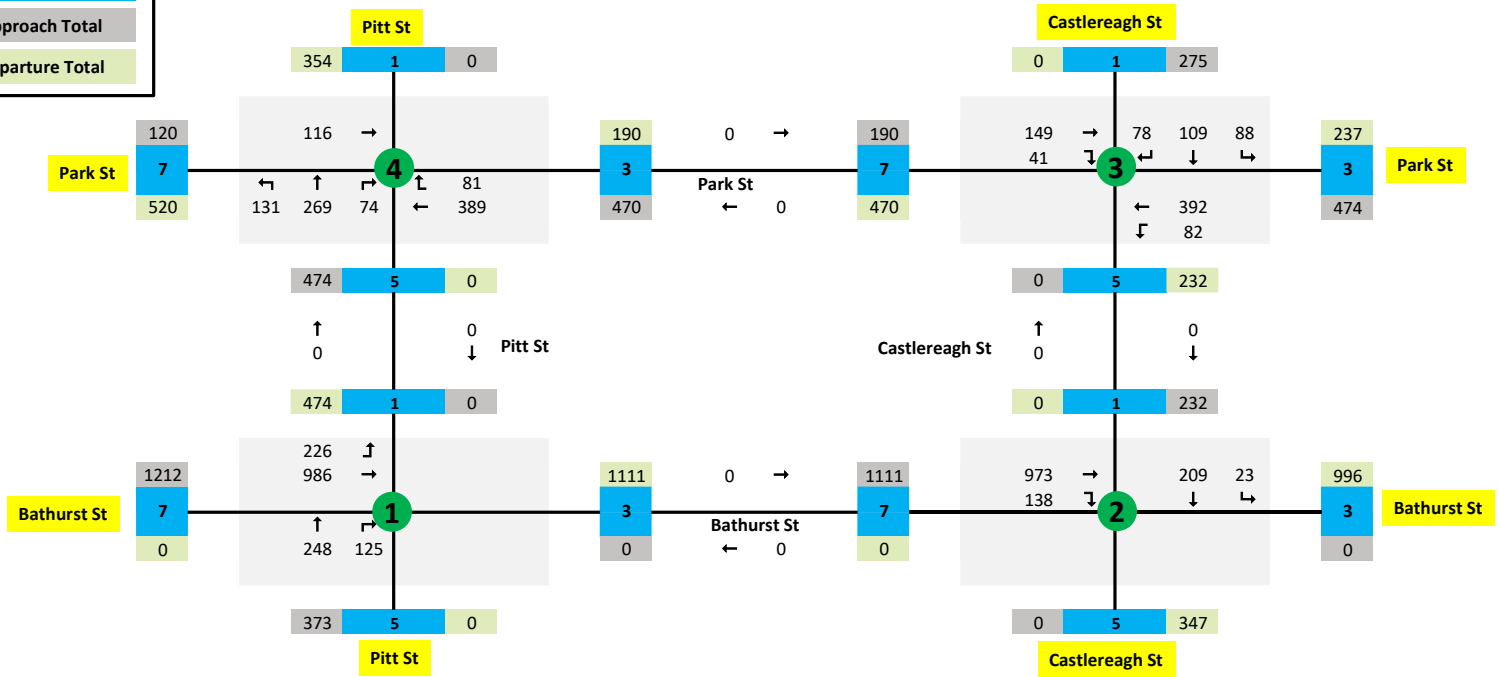


Block 2

Dropdowns:
 Vehicle Type:
 ALL VEHICLES
 Time Period:
 AM
 PIT-N1 - 8:00 AM (Fri)

Legend:

- Approach Number
- Approach Total
- Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

AM

CEN-N1 - 8:15 AM (Wed)

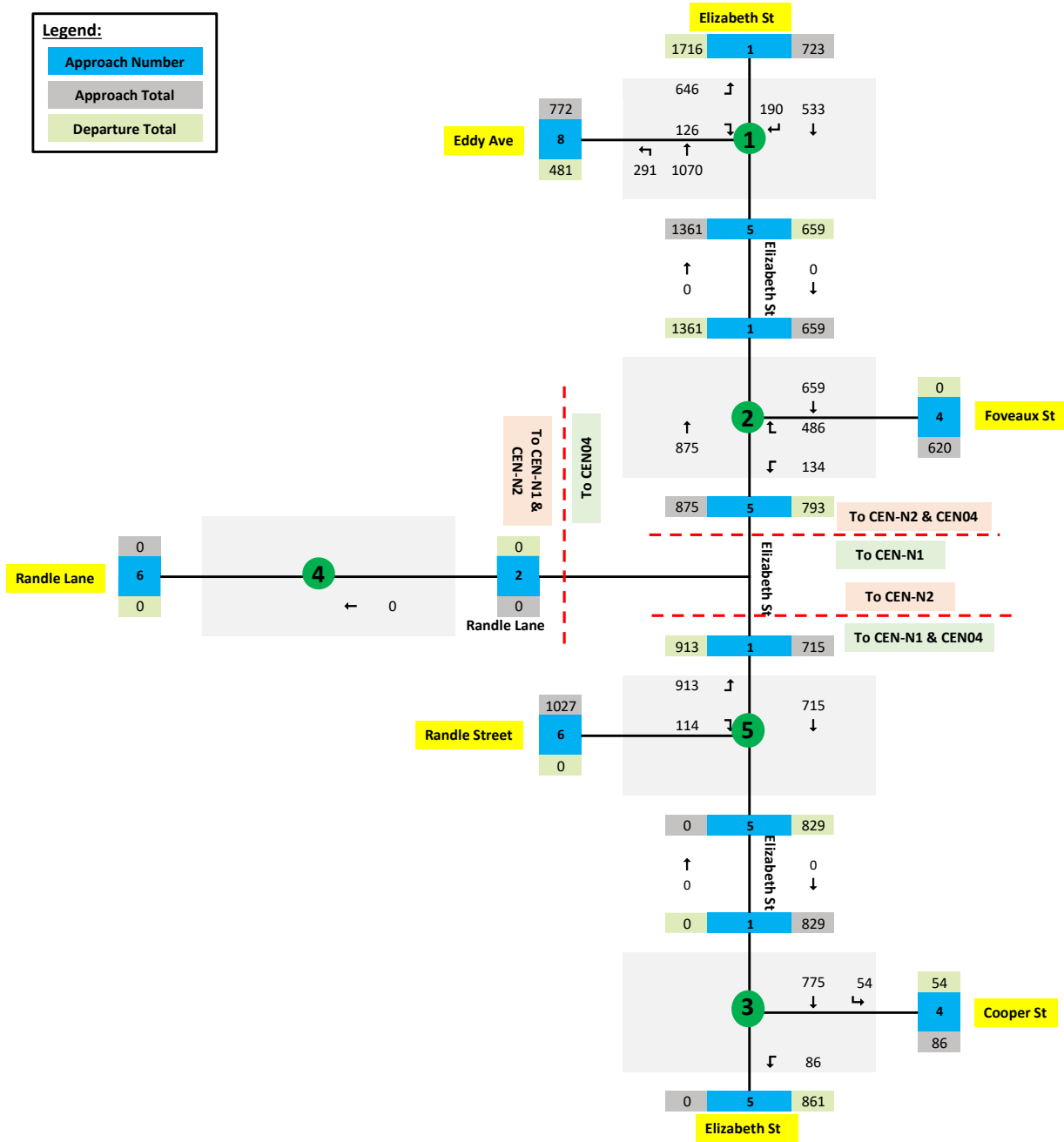
CEN-N2 - 8:15 AM (Mon)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

AM

SYD-N1 - 8:00 AM (Wed)

SYD03 - 7:30 AM (Thu)

SYD04 - 7:30 AM (Tue)

SYD05 - 8:15 AM (Tue)

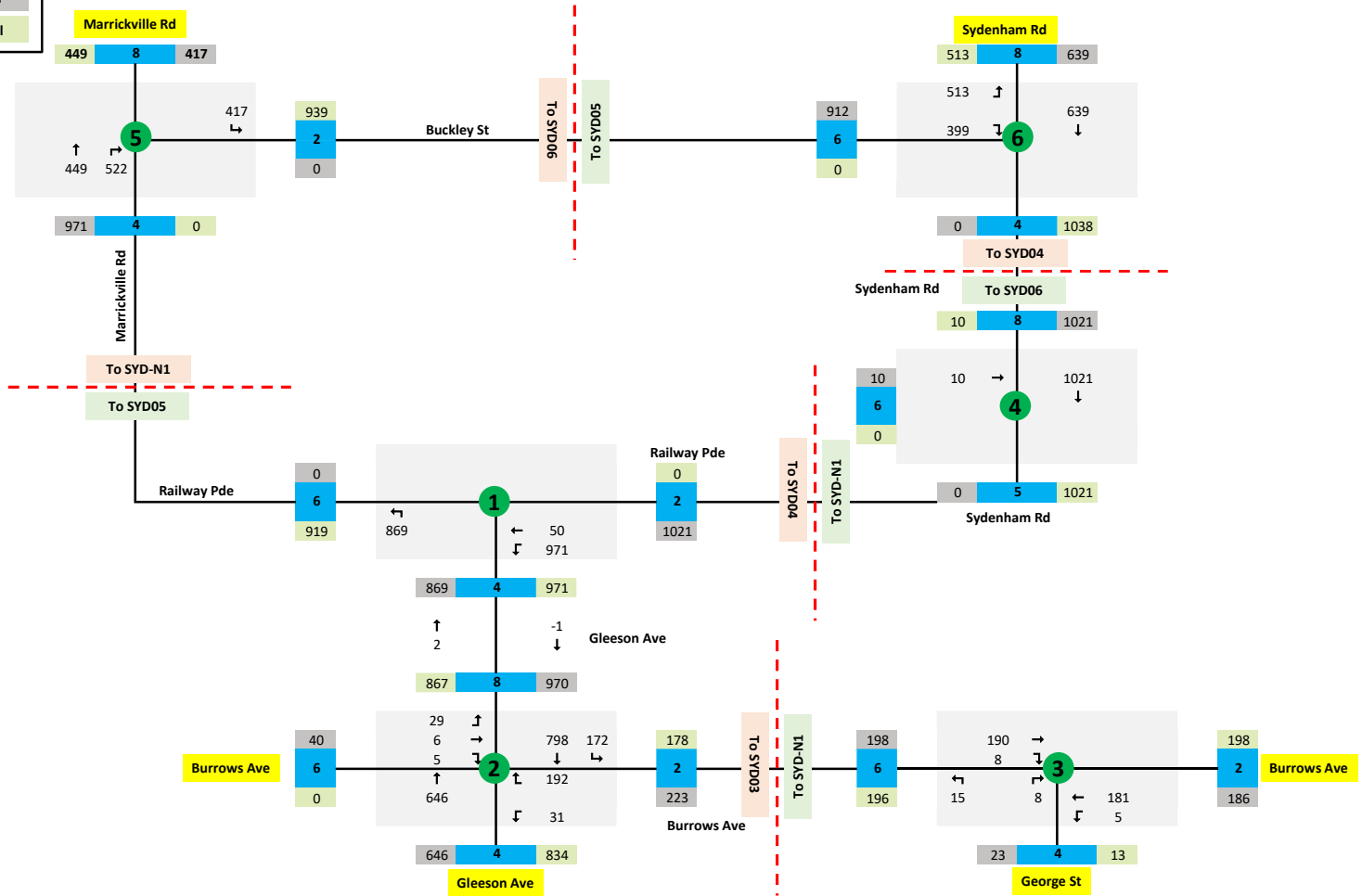
SYD06 - 8:00 AM (Tue)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

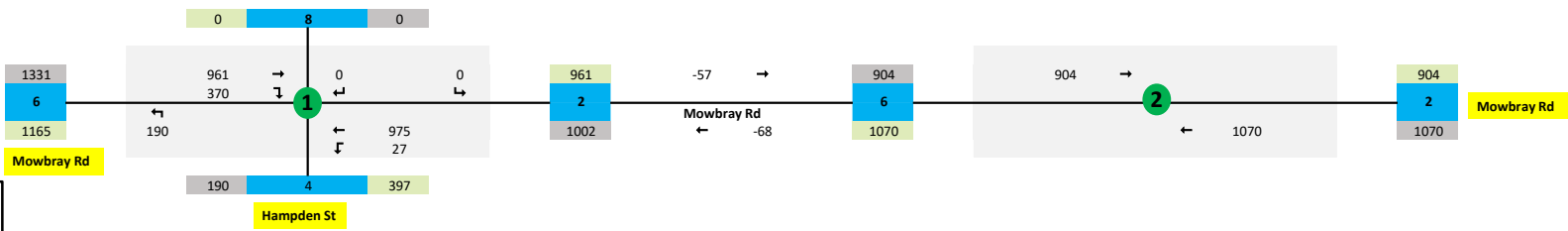
PM

CWD01 - 5:30 PM (Thu)

CWD02 - 3:00 PM (Wed)

Legend:

- Approach Number
- Approach Total
- Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

PM

CST-N1 - 5:00 PM (Thu)

CST07 - 5:30 PM (Fri)

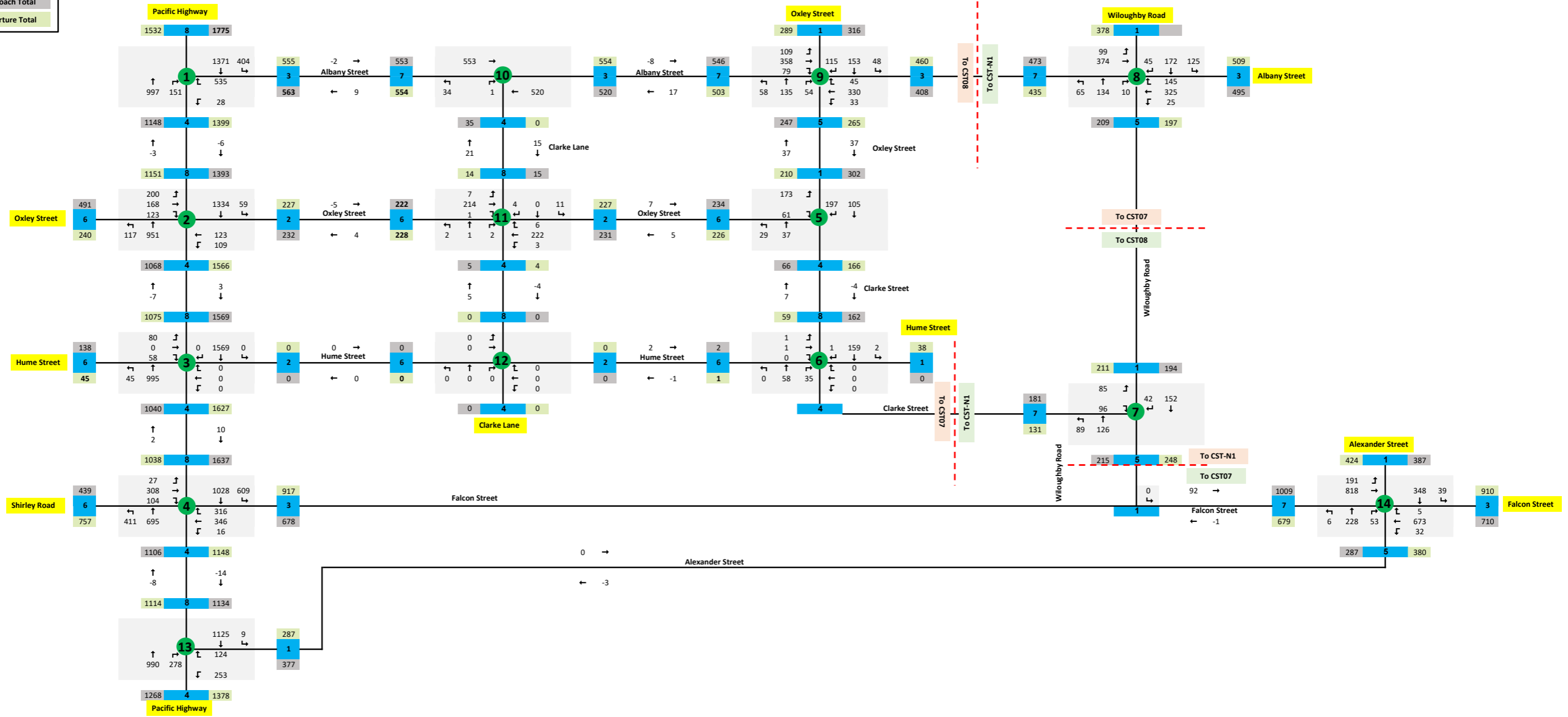
CST08 - 4:45 PM (Thu)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

PM

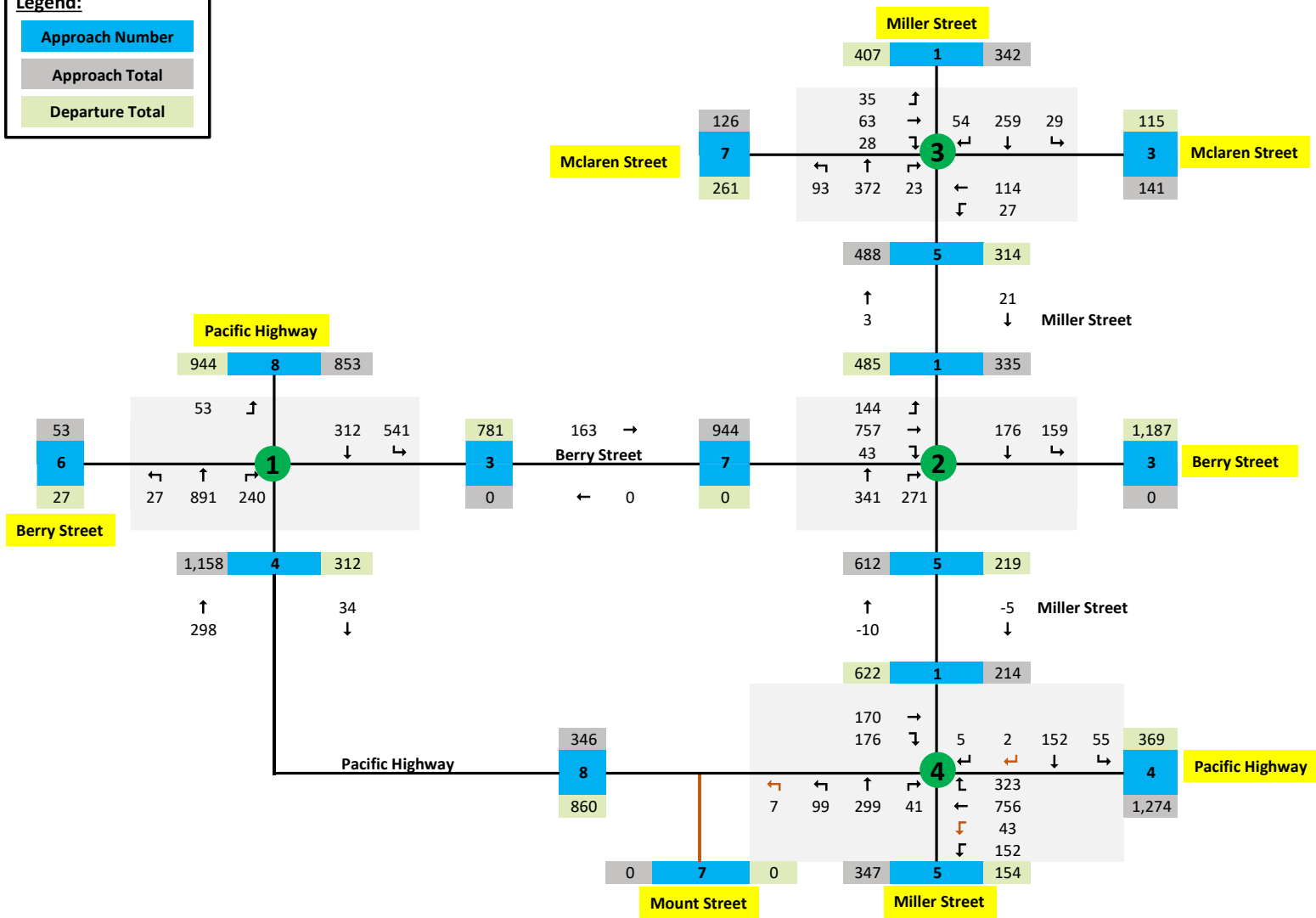
VIC-N1 - 5:00 PM (Mon)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type: ALLVEHICLES

Time Period: PM

BGU-N1: 5:45 PM (Thu)

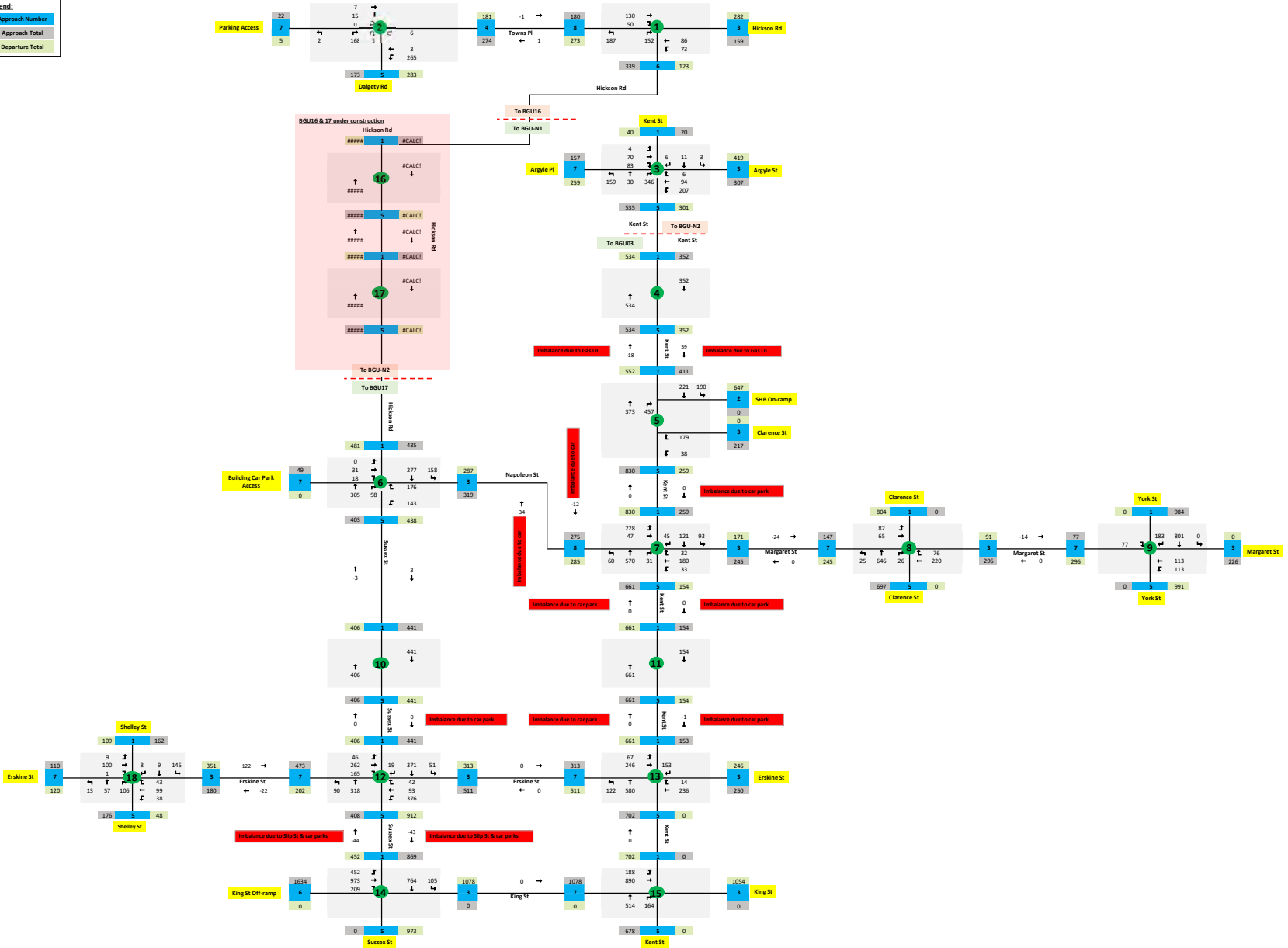
BGU-N2: 5:30 PM (Fri)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

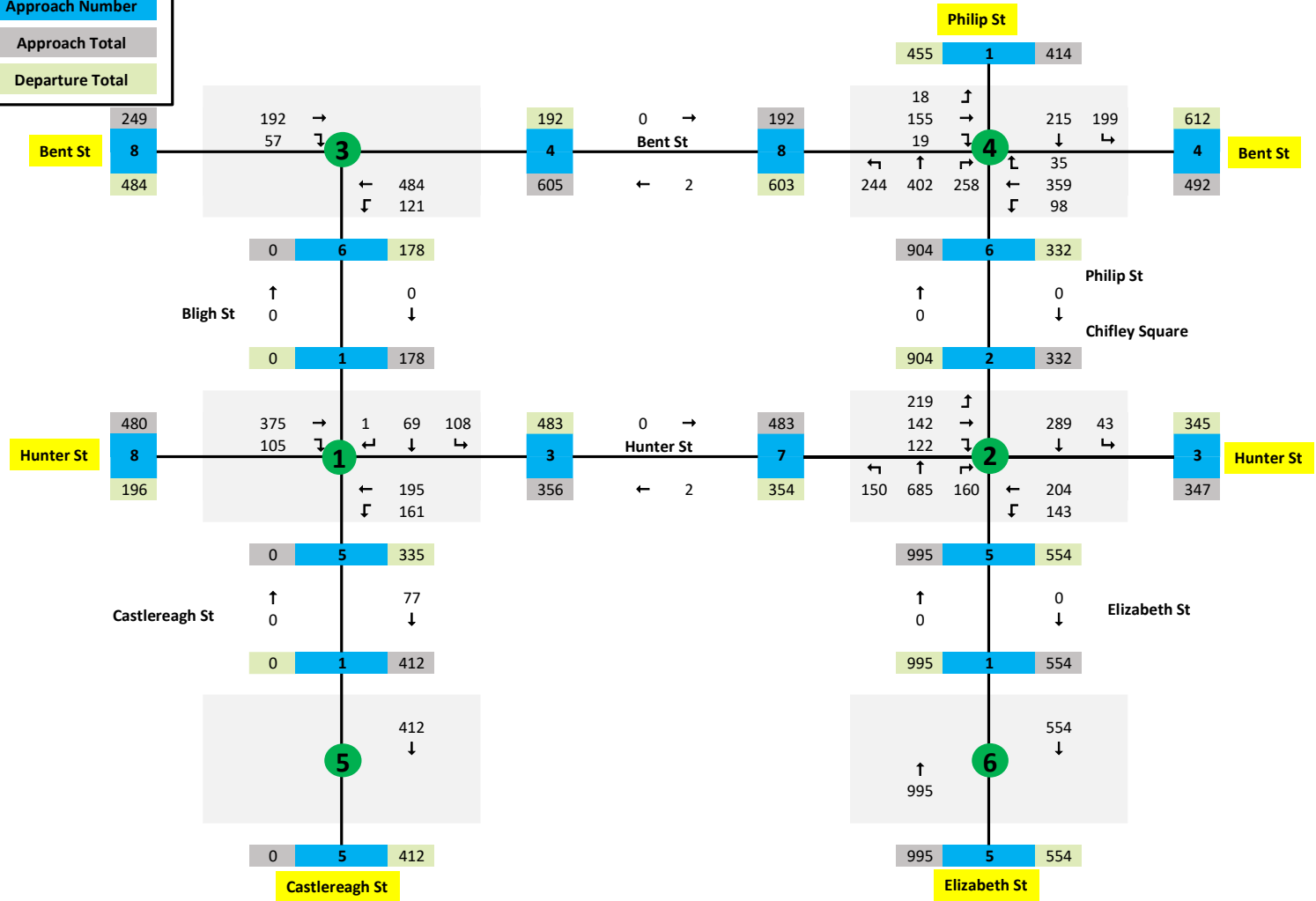
Time Period:

PM

MPL-N1 - 5:15 PM (Wed)

Legend:

- Approach Number
- Approach Total
- Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

PM

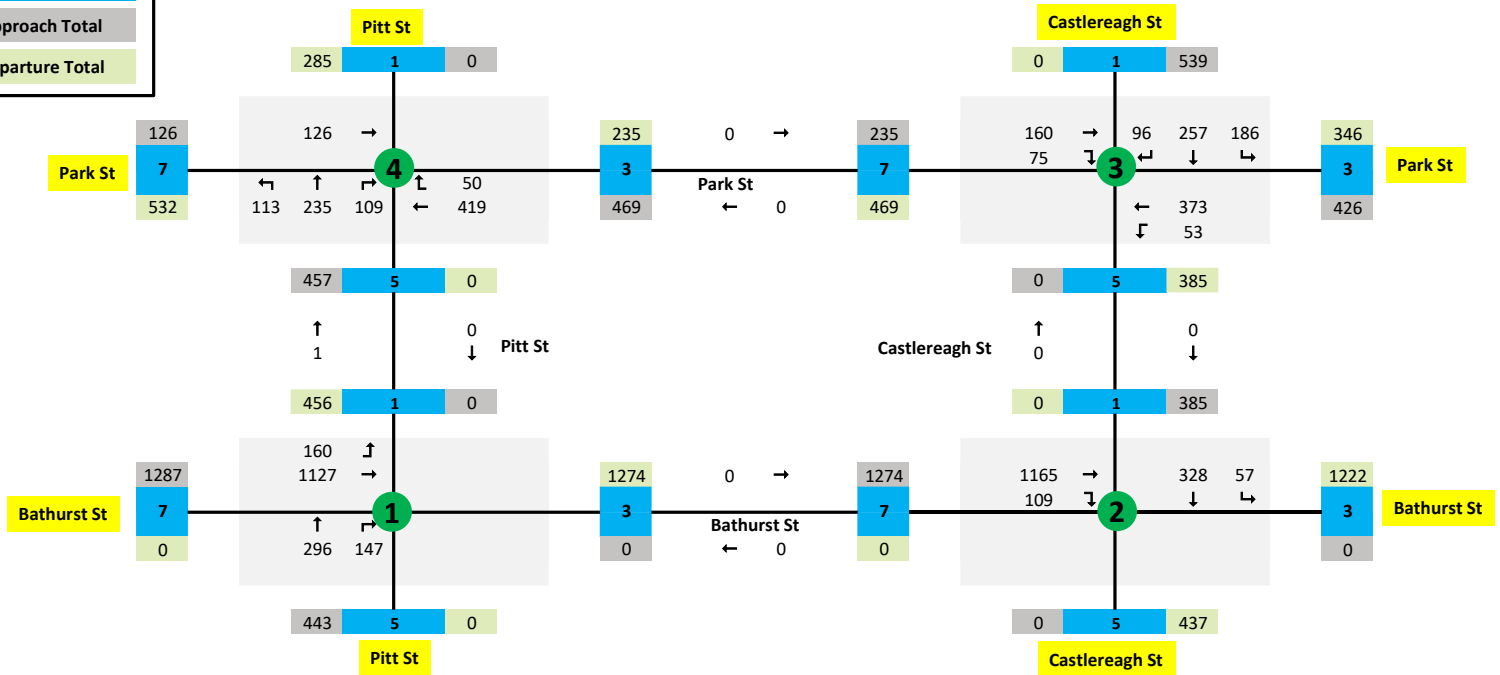
PIT-N1 - 4:45 PM (Wed)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

PM

CEN-N1 - 5:45 PM (Thu)

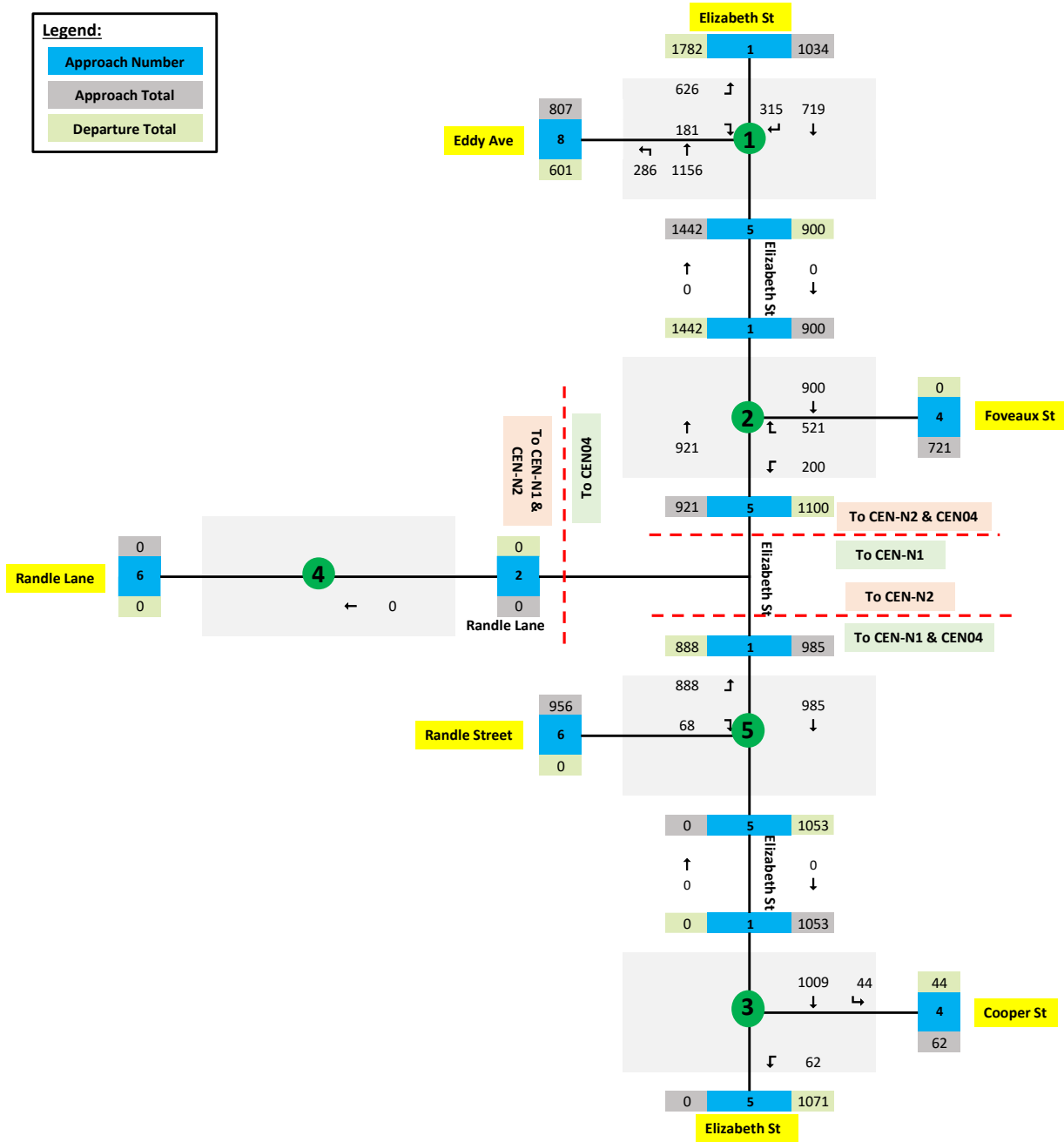
CEN-N2 - 5:45 PM (Thu)

Legend:

Approach Number

Approach Total

Departure Total

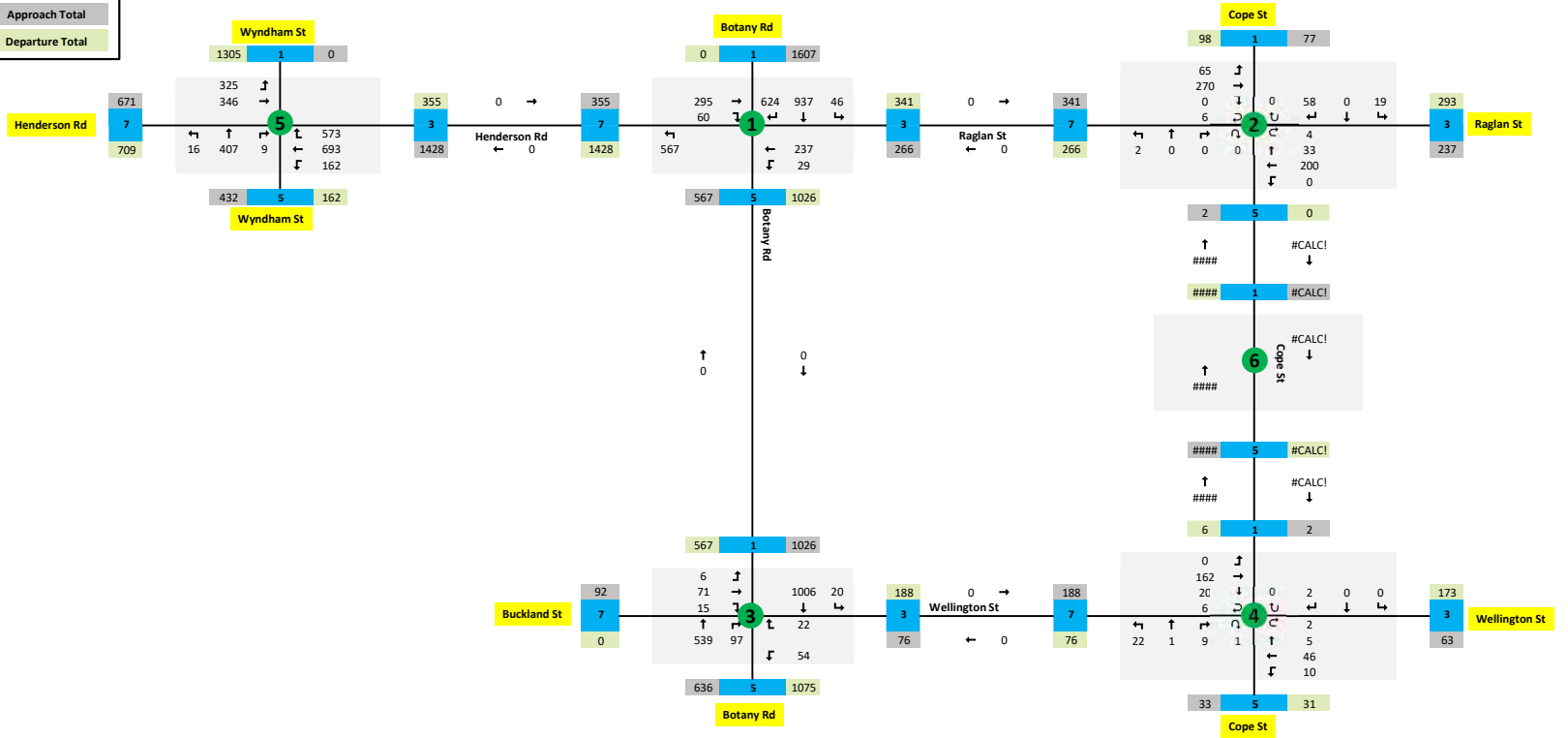


Block 2

Dropdowns:
 Vehicle Type:
 ALL VEHICLES
 Time Period:
 PM
 WLO-N1 - 5:15 PM (Thu)

Legend:

- Approach Number
- Approach Total
- Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

PM

SYD-N1 - 4:45 PM (Thu)

SYD03 - 4:15 PM (Thu)

SYD04 - 3:00 PM (Fri)

SYD05 - 4:30 PM (Thu)

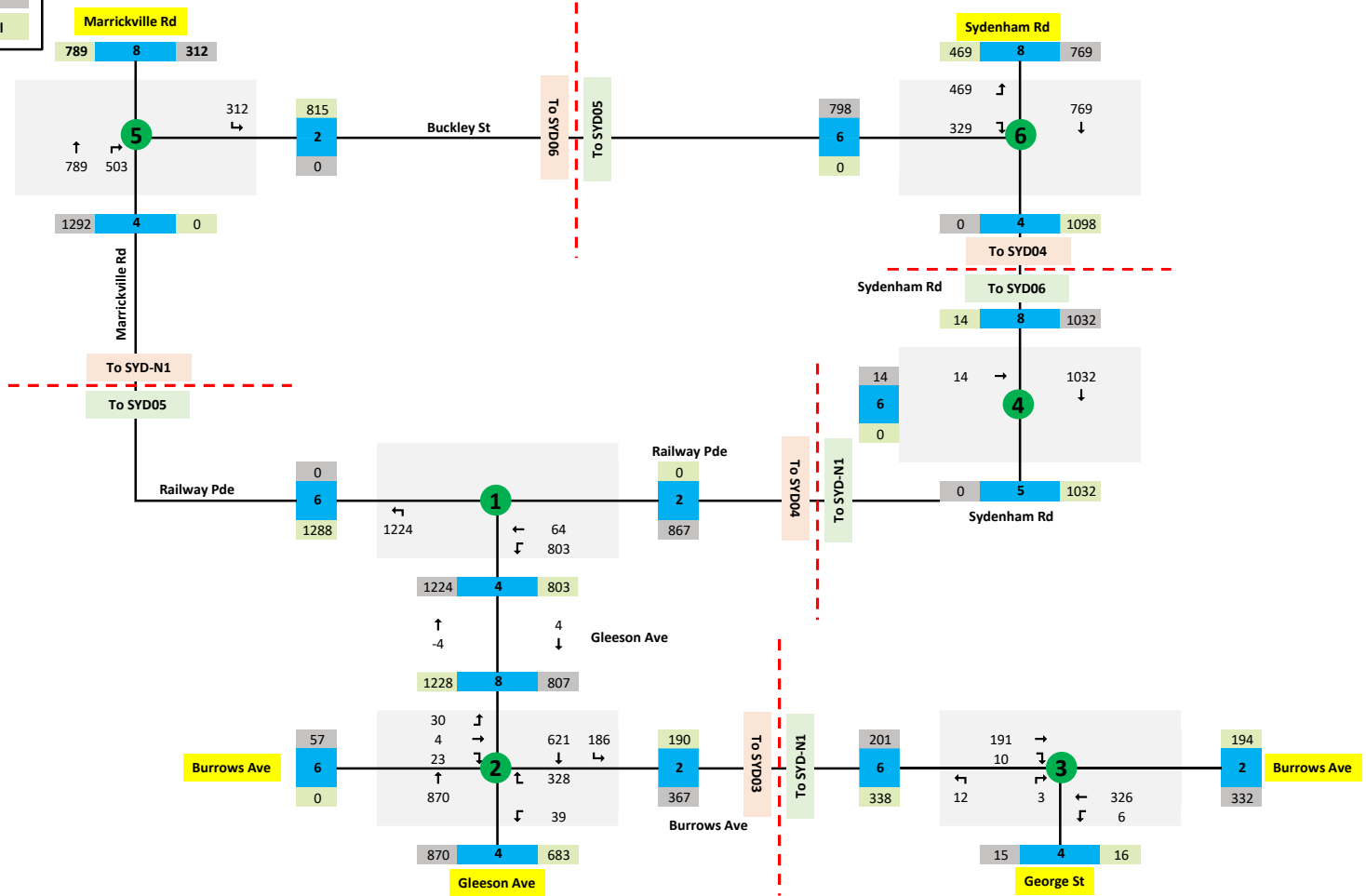
SYD06 - 3:00 PM (Fri)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

WEEKEND

CWD01 - 12:00 PM (Sat)

CWD02 - 12:00 PM (Sat)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

WEEKEND

CST-N1 - 12:15 PM (Sat)

CST07 - 12:30 PM (Sat)

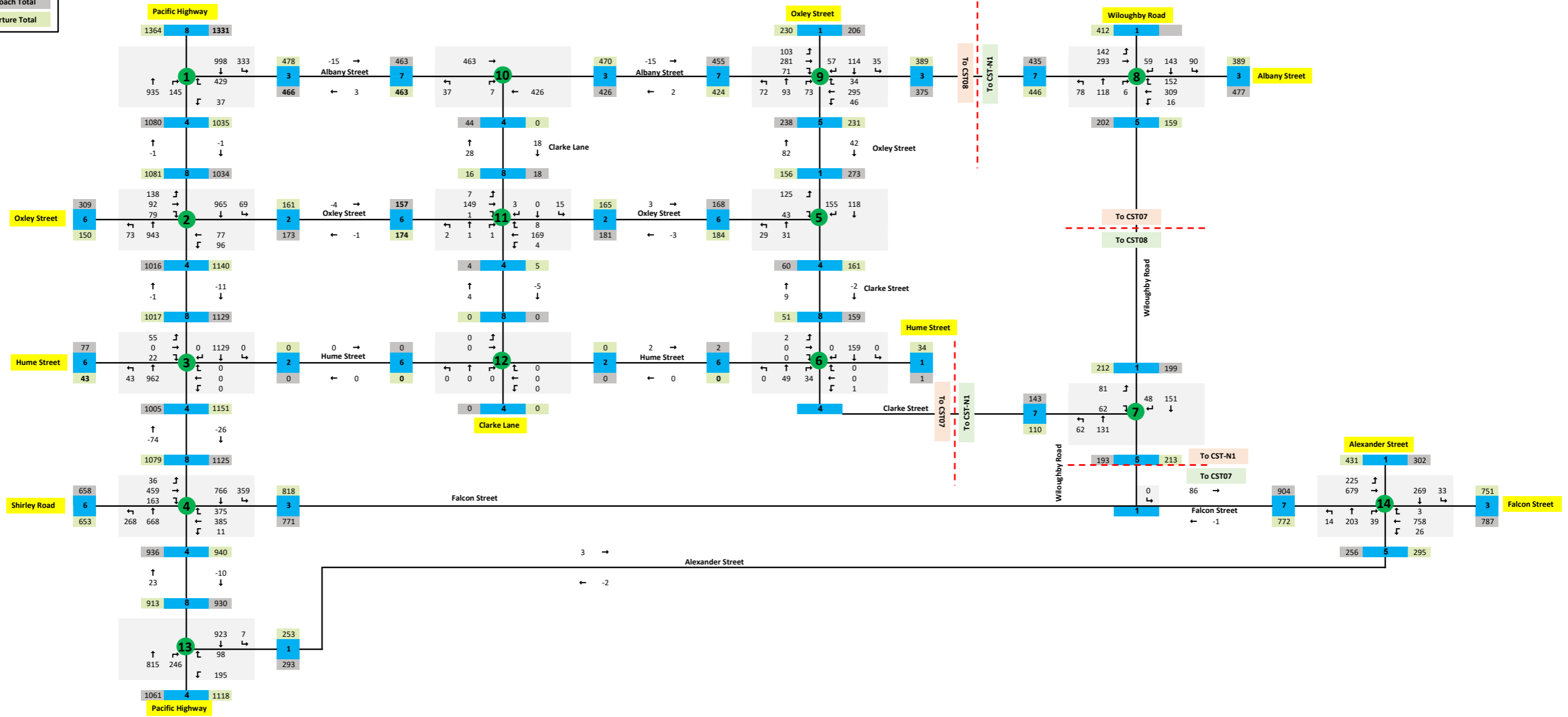
CST08 - 11:30 AM (Sat)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

WEEKEND

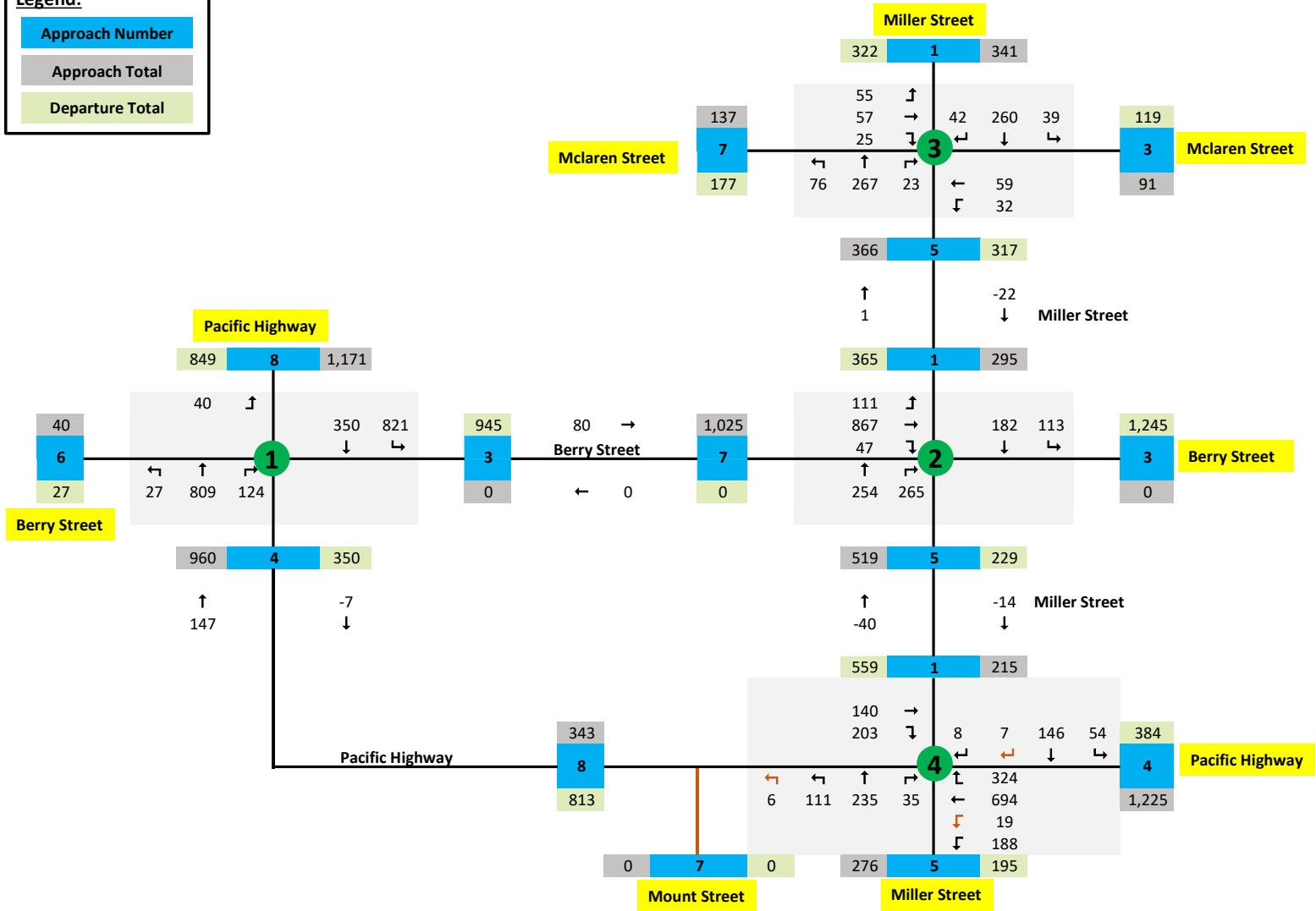
VIC-N1 - 12:15 PM (Sat)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Droptouts:

Vehicle Type:

- ALLVEHICLES

Time Period:

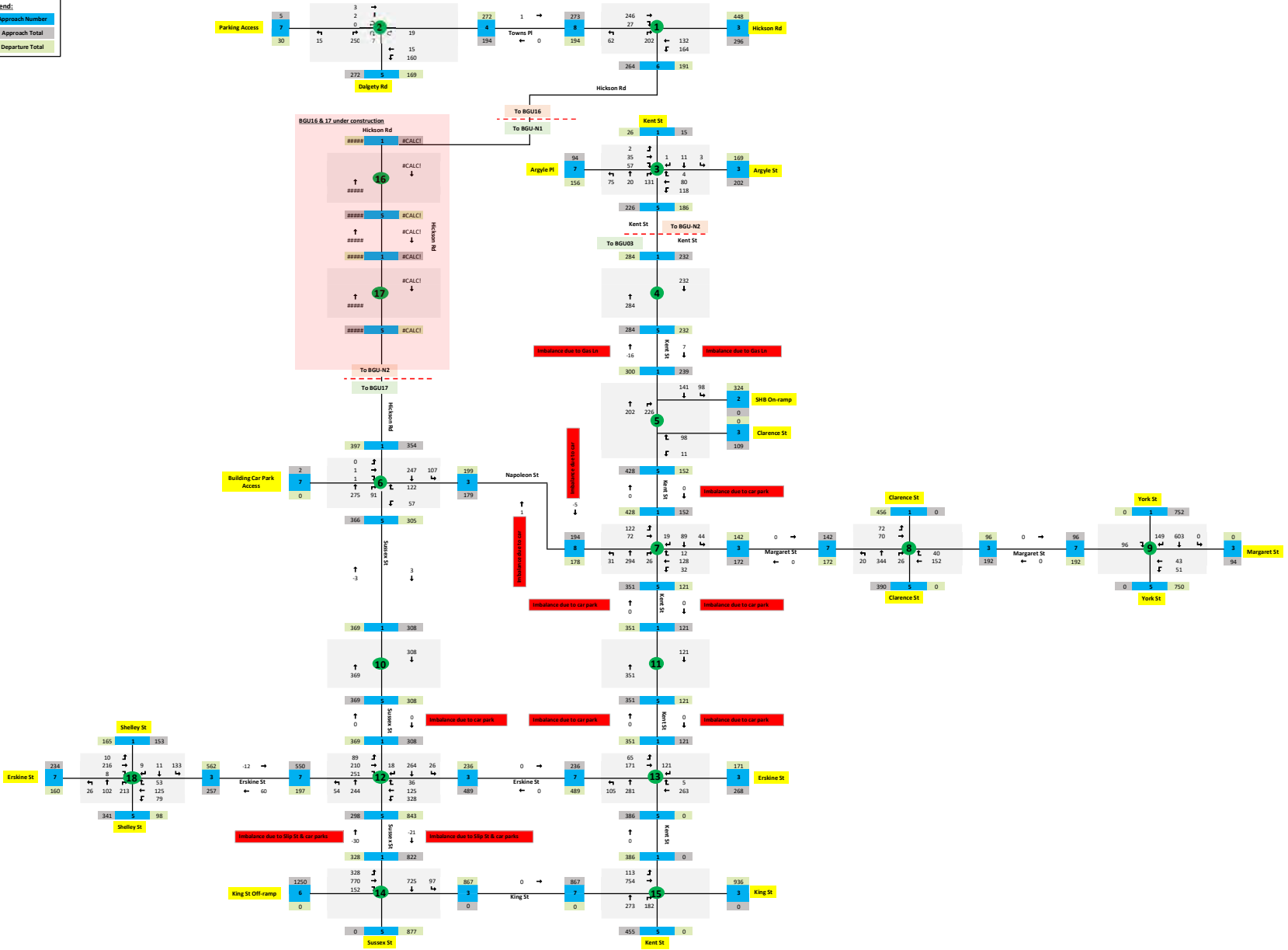
- WEEKEND

Departure Total:

- BGU-N1 - 11:45 AM (Sun)
- BGU-N2 - 12:00 PM (Sat)

Legend:

- Approach Number
- Approach Total
- Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

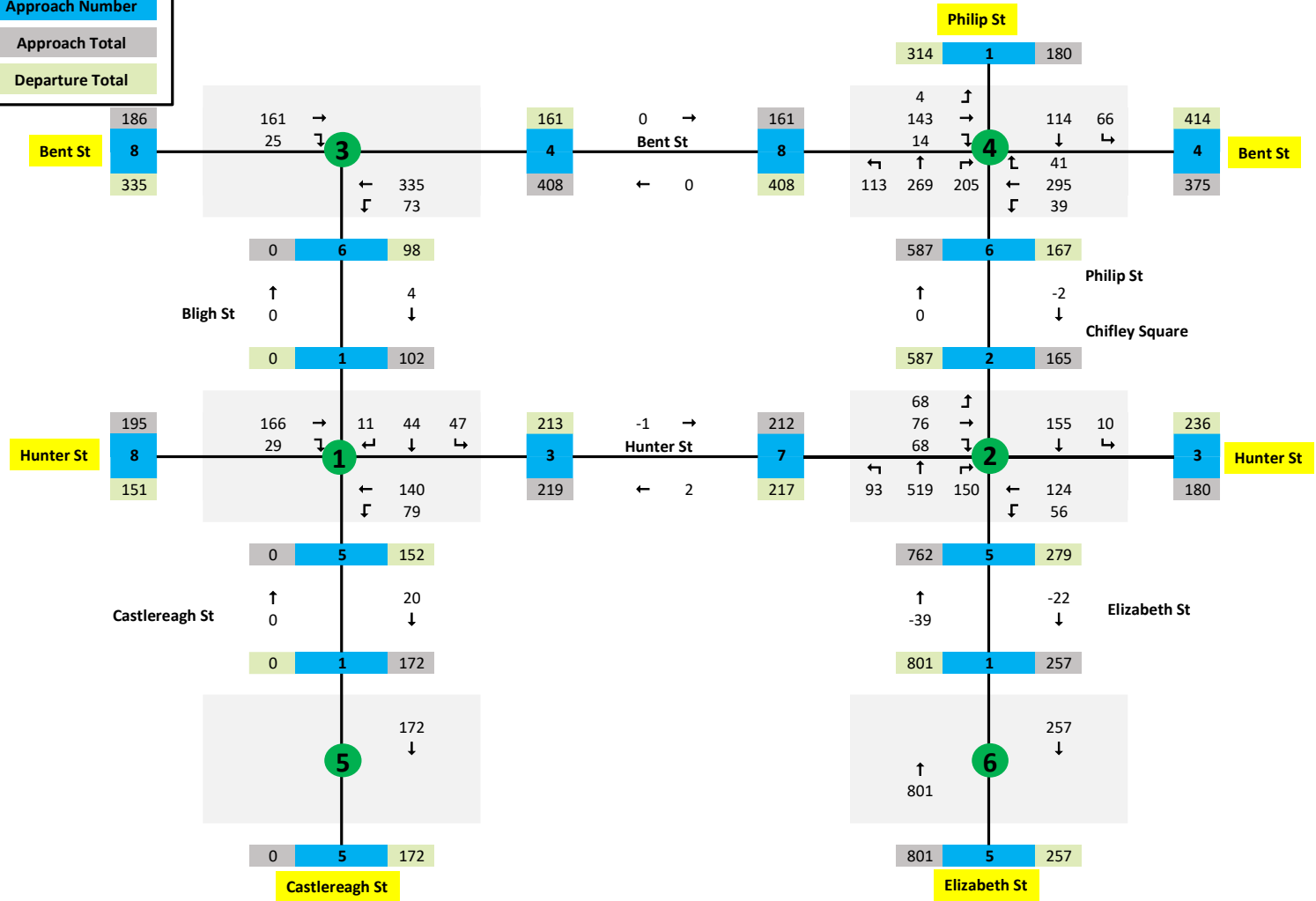
Time Period:

WEEKEND

MPL-N1 - 12:30 PM (Sat)

Legend:

- Approach Number
- Approach Total
- Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

WEEKEND

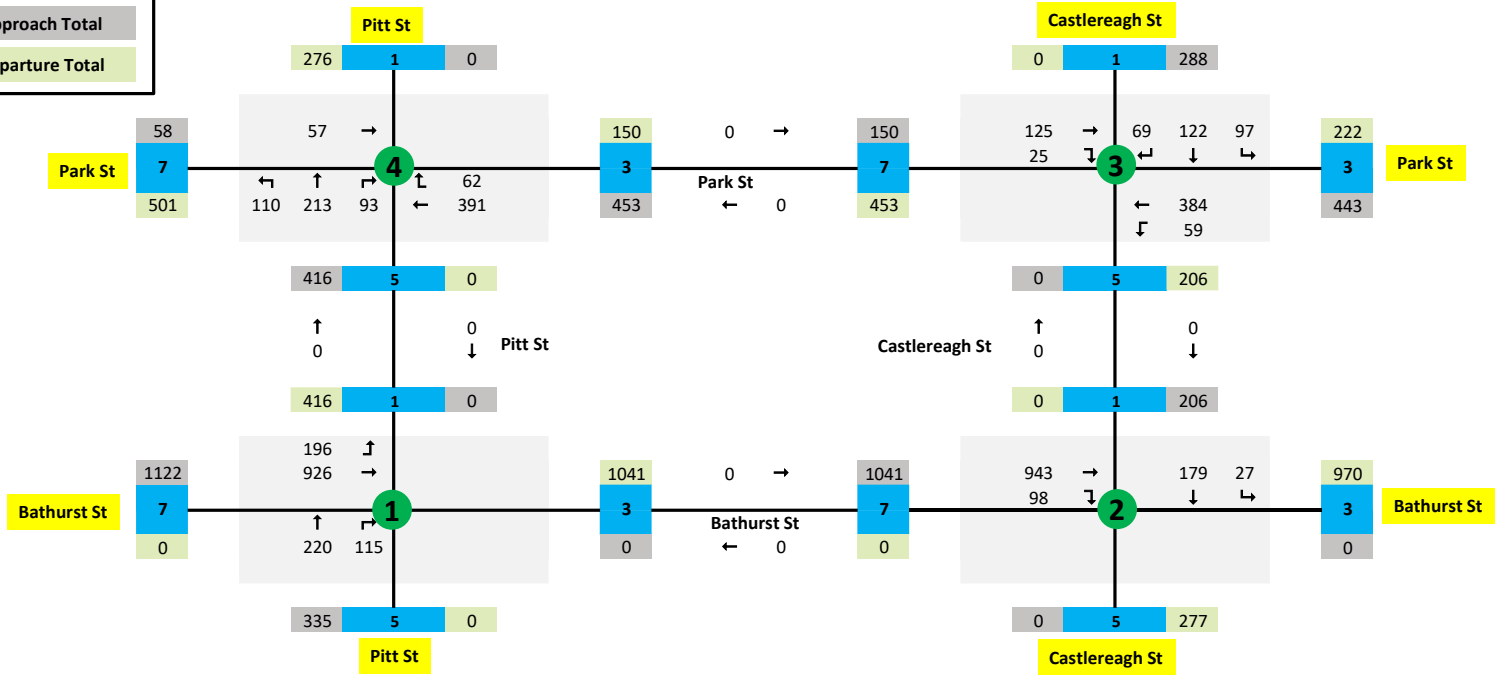
PIT-N1 - 1:45 PM (Sat)

Legend:

Approach Number

Approach Total

Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

WEEKEND

CEN-N1 - 12:00 PM (Sat)

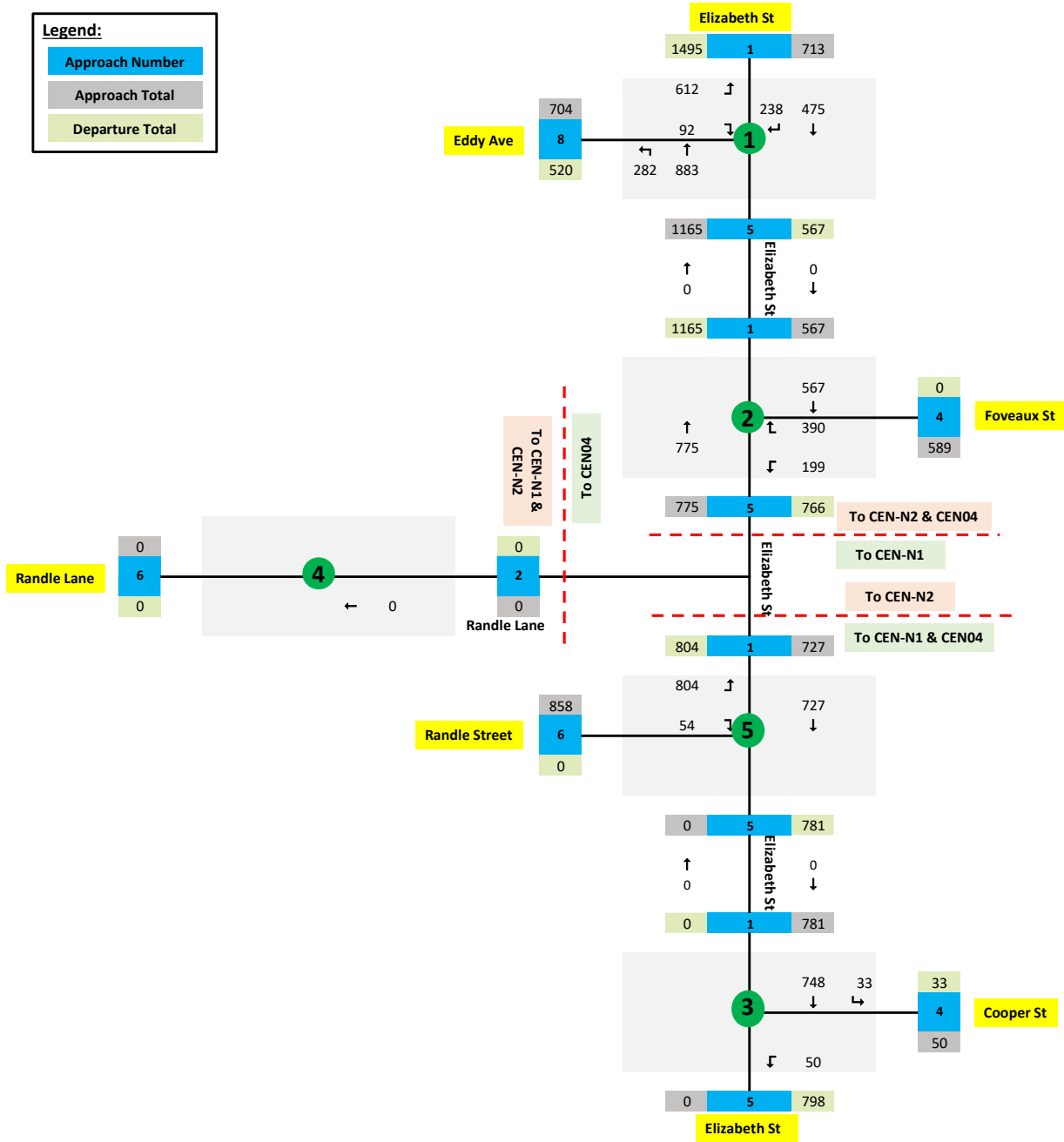
CEN-N2 - 12:15 PM (Sat)

Legend:

Approach Number

Approach Total

Departure Total

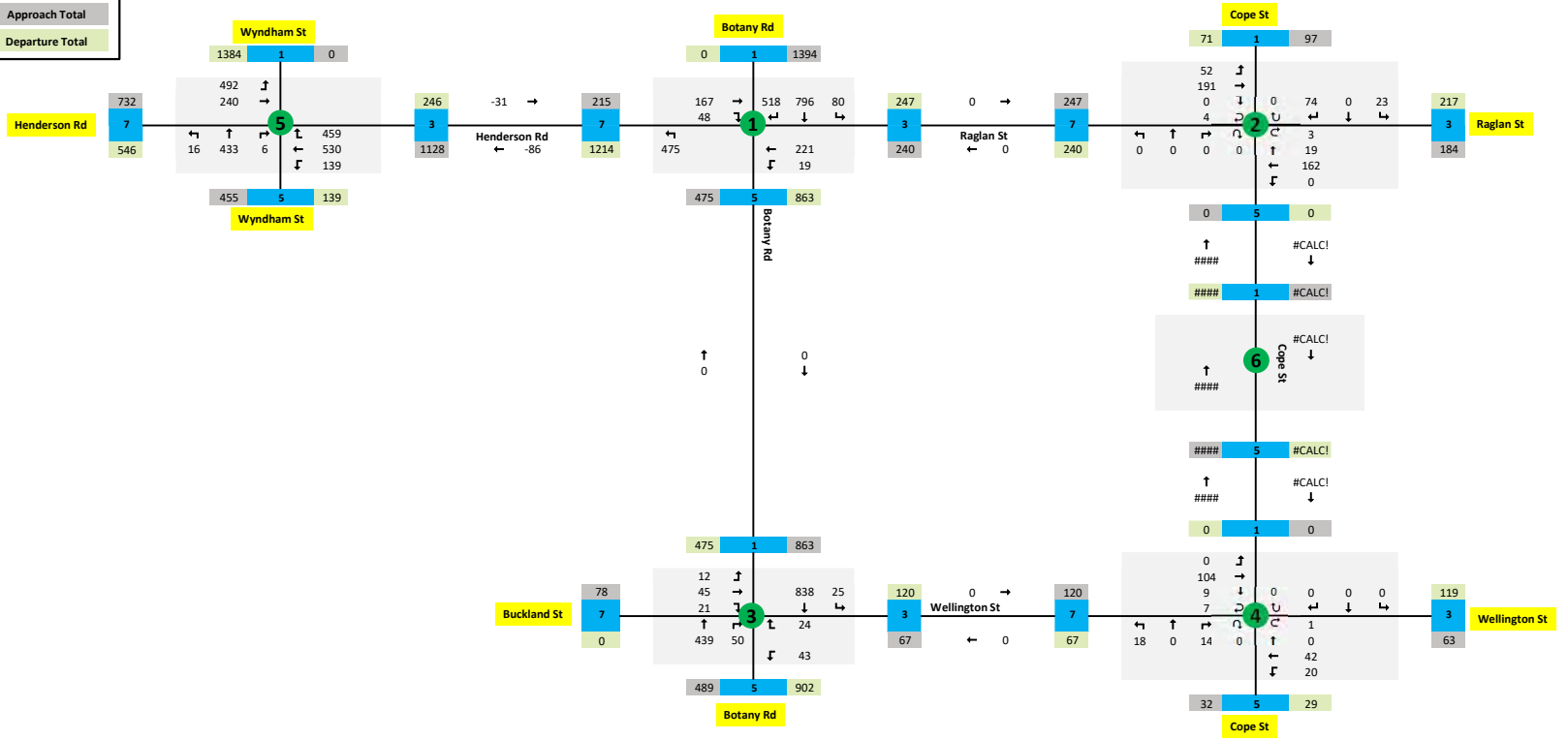


Block 2

Dropdowns:
 Vehicle Type: ALL VEHICLES
 Time Period: WEEKEND
 WLO-N1 - 11:45 AM (Sat)

Legend:

- Approach Number
- Approach Total
- Departure Total



Block 2

Dropdowns:

Vehicle Type:

ALL VEHICLES

Time Period:

WEEKEND

SYD-N1 - 12:30 PM (Sat)

SYD03 - 12:15 PM (Sat)

SYD04 - 12:15 PM (Sat)

SYD05 - 12:00 PM (Sat)

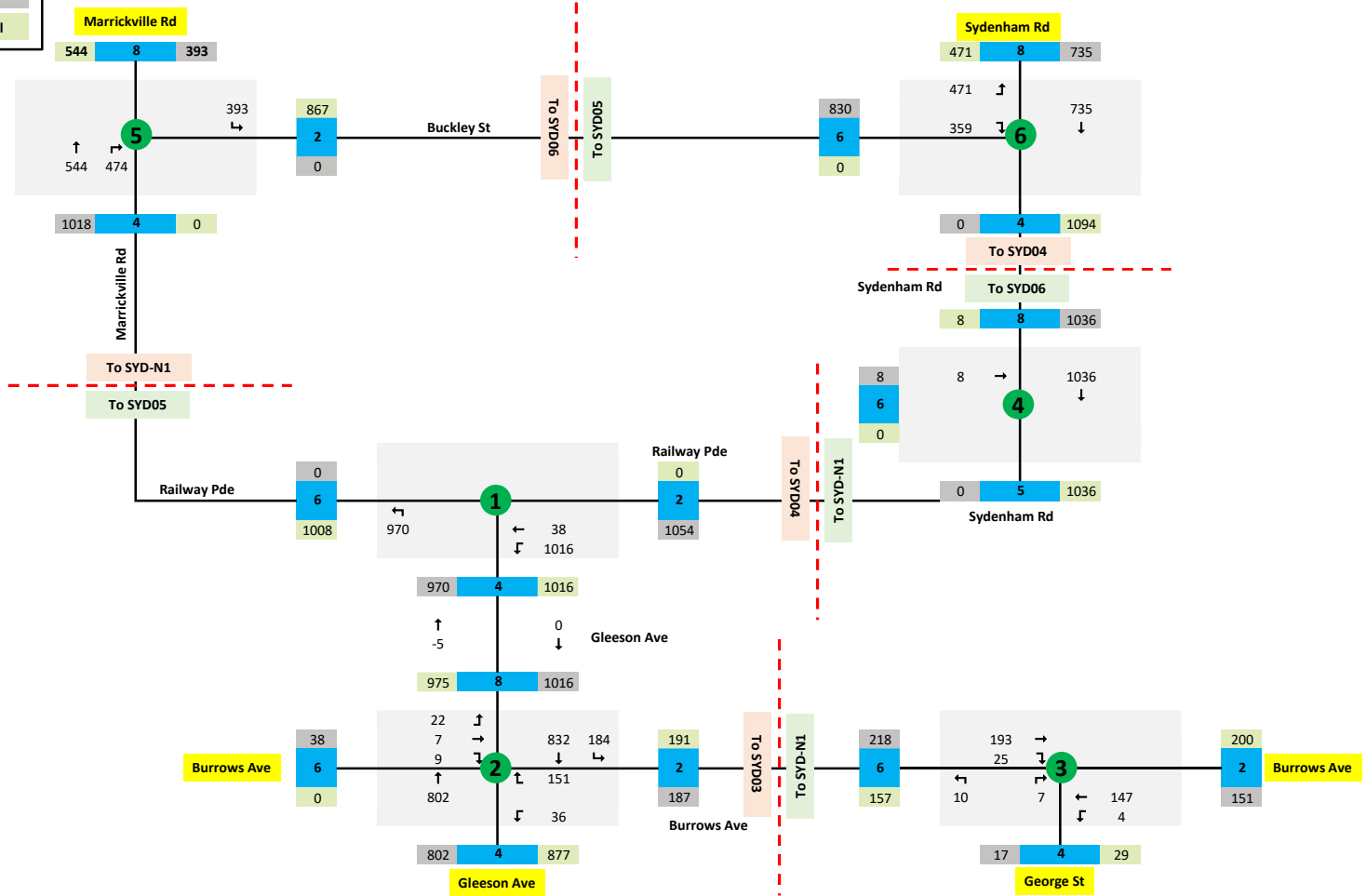
SYD06 - 12:45 PM (Sat)

Legend:

Approach Number

Approach Total

Departure Total



Appendix D

Traffic Monitoring – Station Overview

Appendix D Traffic Monitoring – Station Overview



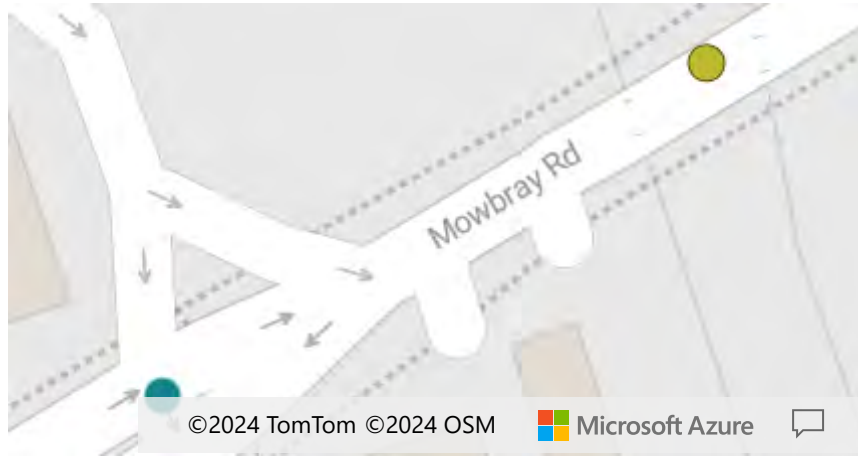
Chatswood Station

2

Intersections

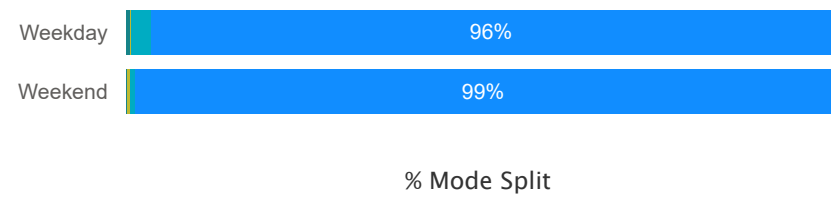
Map

ID ● CWD01 ● CWD02



Total Mode Split

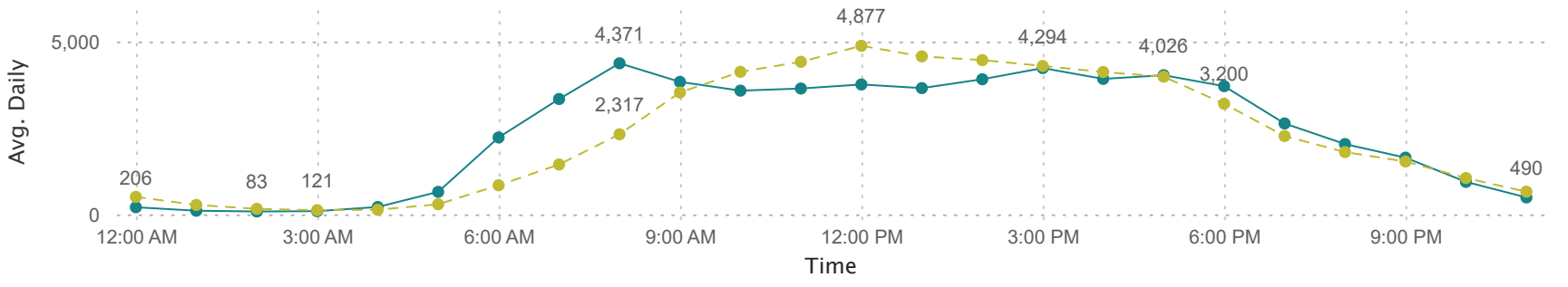
Mode ● Buses ● Cyclists ● Heavy Vehicles ● Light Vehicles



Day	Buses	Cyclists	Heavy Vehicles	Light Vehicles
Weekday	1%	0%	3%	96%
Weekend	0%	0%	1%	99%

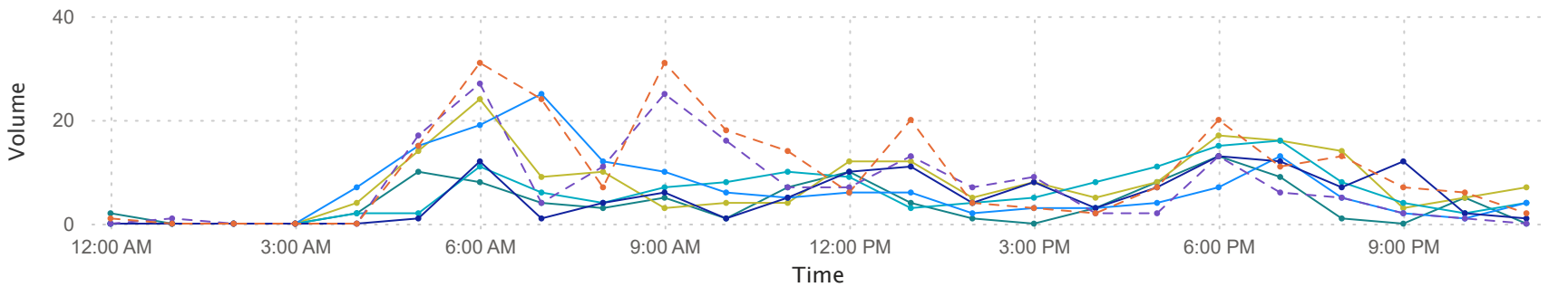
Average daily vehicles and cyclists profile for a weekday and weekend

Day ● Weekday ● Weekend



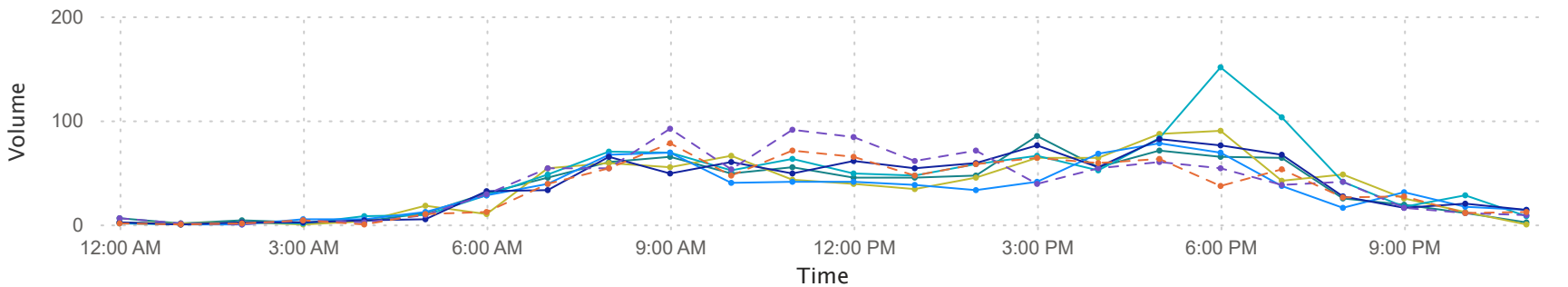
Cyclists volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday



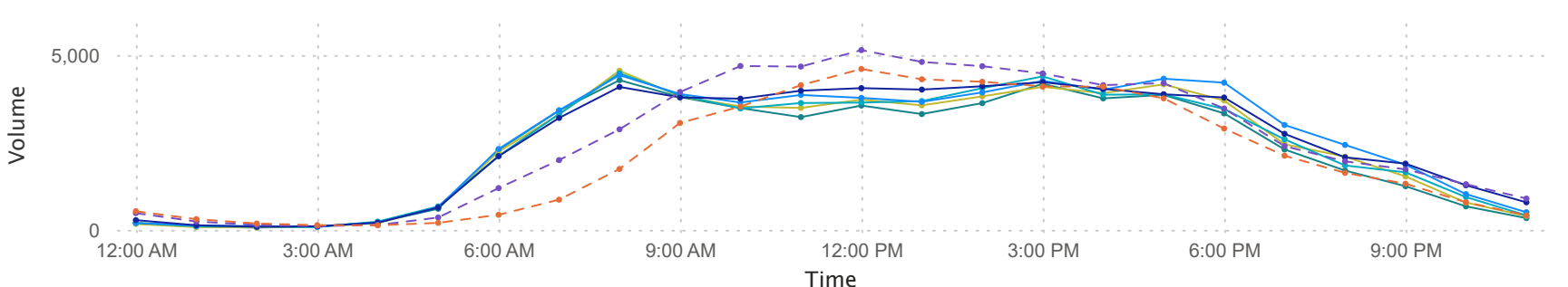
Pedestrian volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday



Vehicle volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday



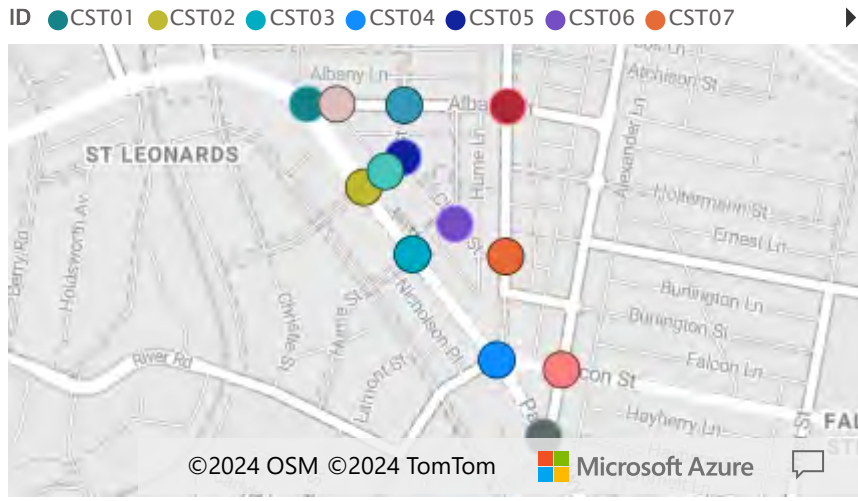


Crows Nest Station

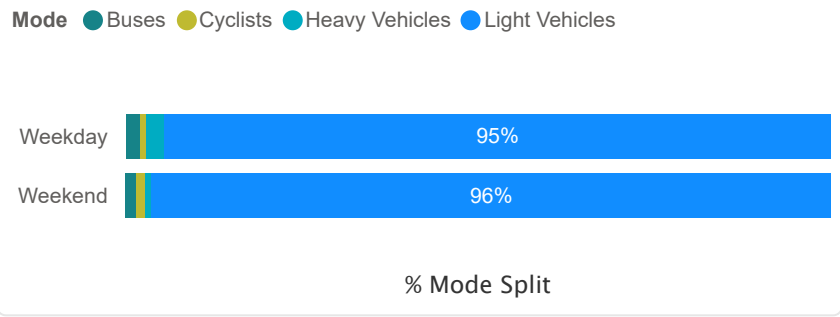
13

Intersections

Map

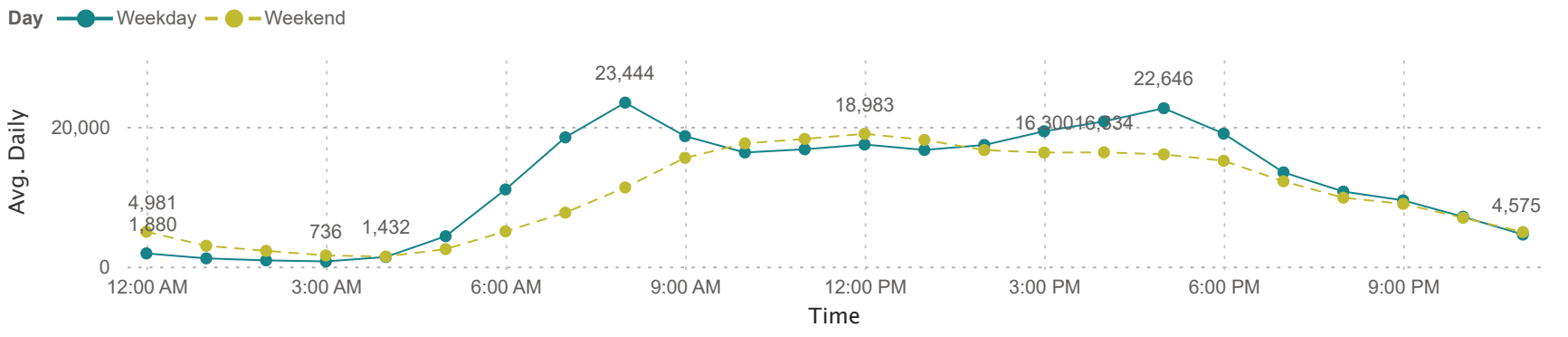


Total Mode Split

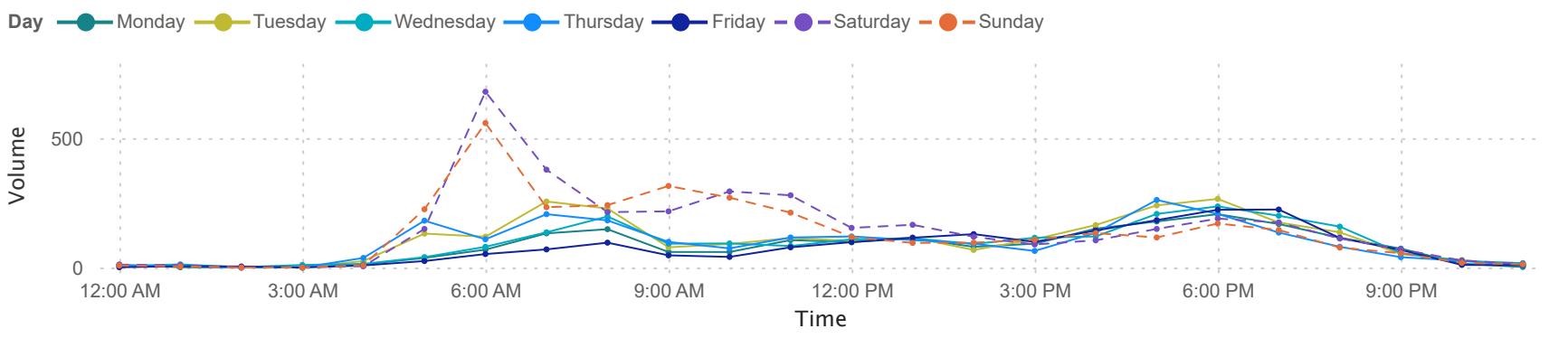


Day	Buses	Cyclists	Heavy Vehicles	Light Vehicles
Weekday	2%	1%	3%	95%
Weekend	1%	1%	1%	96%

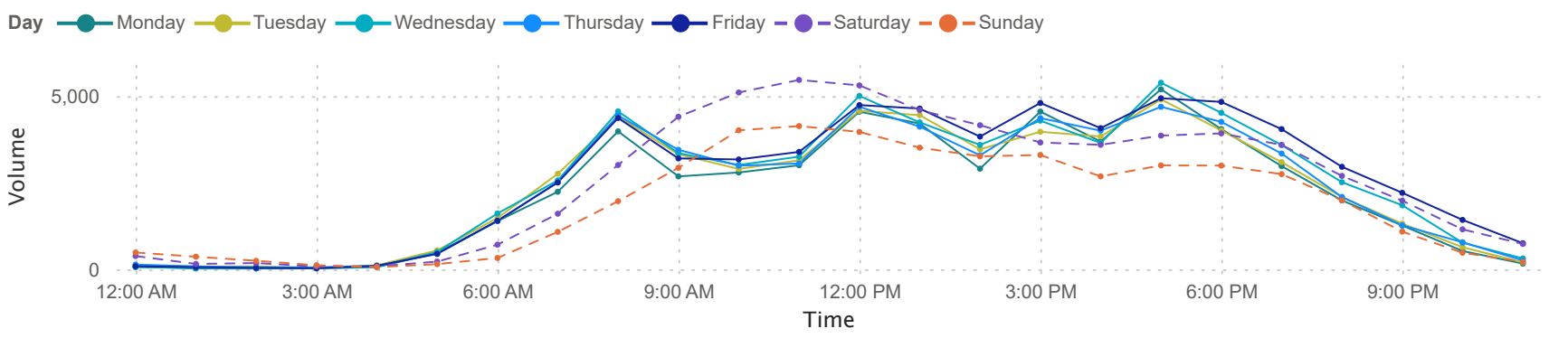
Average daily vehicles and cyclists profile for a weekday and weekend



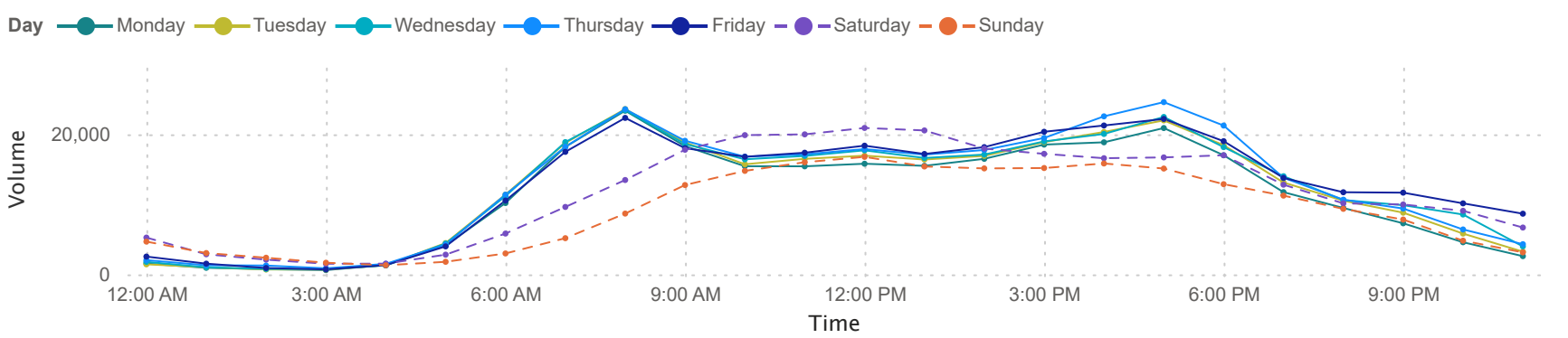
Cyclists volumes



Pedestrian volumes



Vehicle volumes





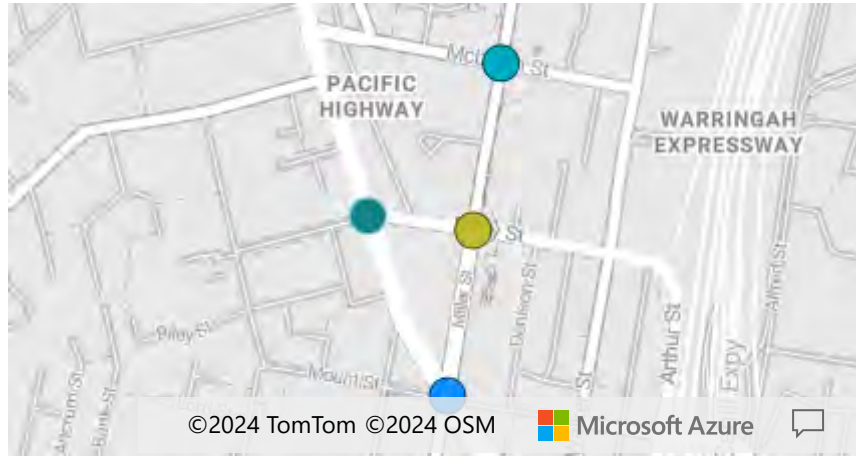
Victoria Cross Station

4

Intersections

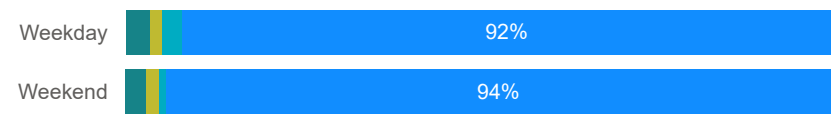
Map

ID ● VIC01 ● VIC02 ● VIC03 ● VIC04



Total Mode Split

Mode ● Buses ● Cyclists ● Heavy Vehicles ● Light Vehicles

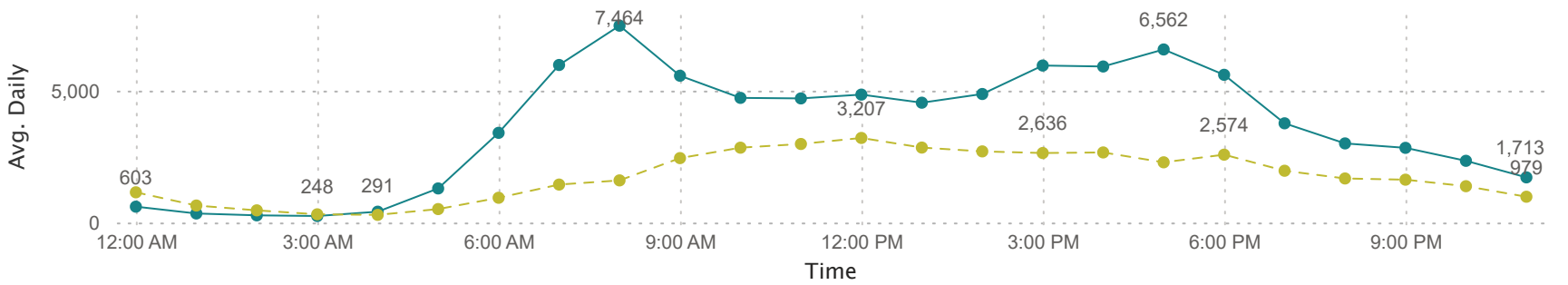


% Mode Split

Day	Buses	Cyclists	Heavy Vehicles	Light Vehicles
Weekday	3%	2%	3%	92%
Weekend	3%	2%	1%	94%

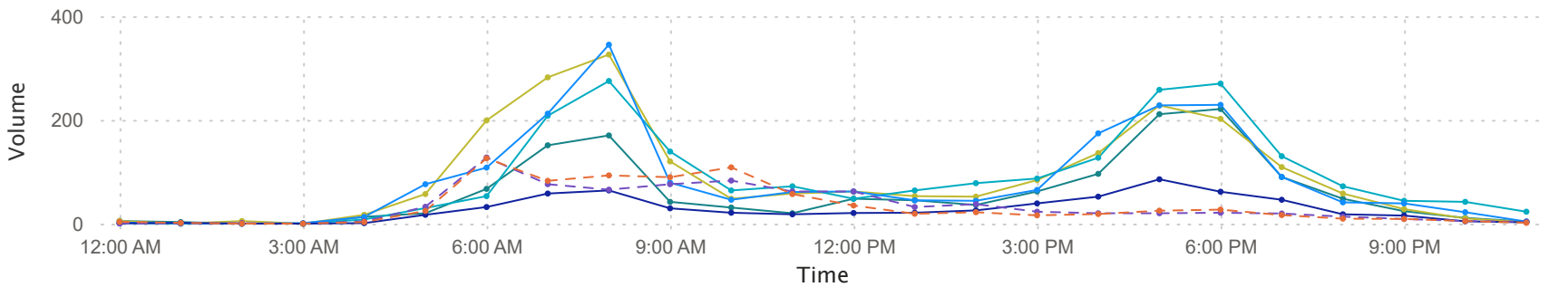
Average daily vehicles and cyclists profile for a weekday and weekend

Day ● Weekday ● Weekend



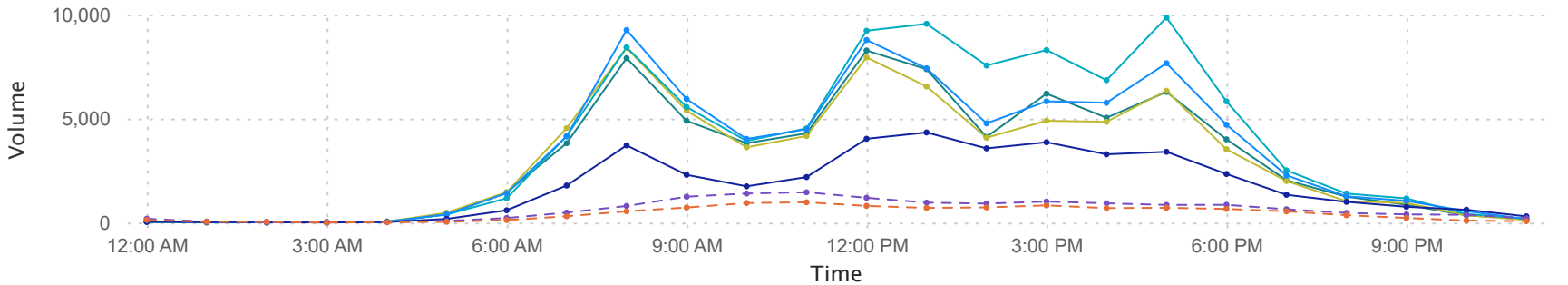
Cyclists volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday



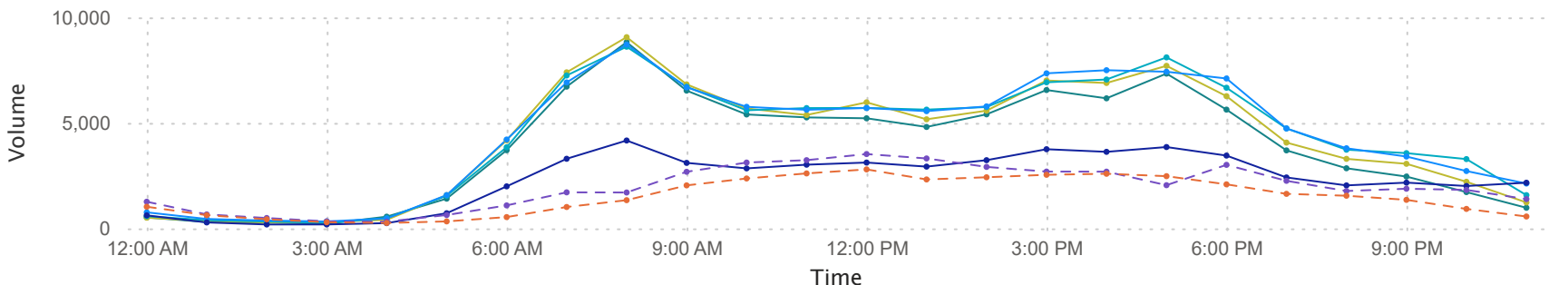
Pedestrian volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday



Vehicle volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday



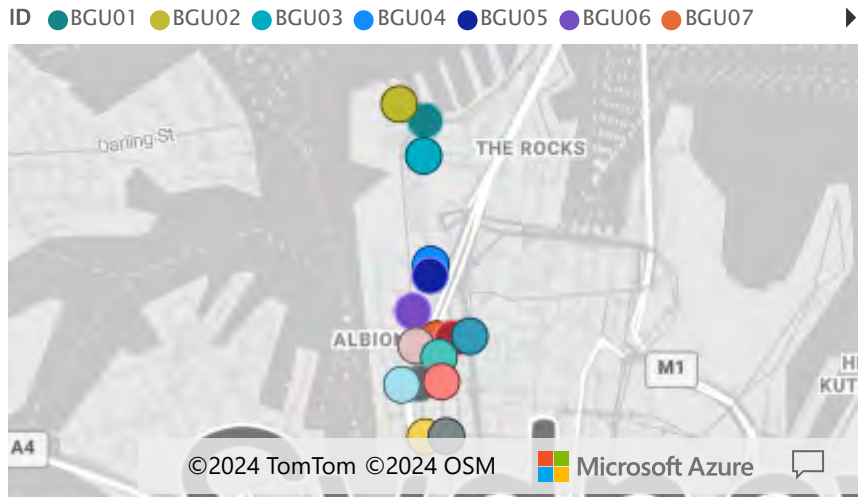


Barangaroo Station

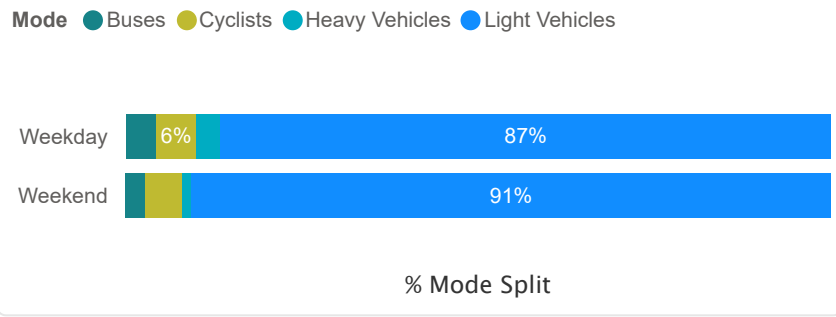
16

Intersections

Map

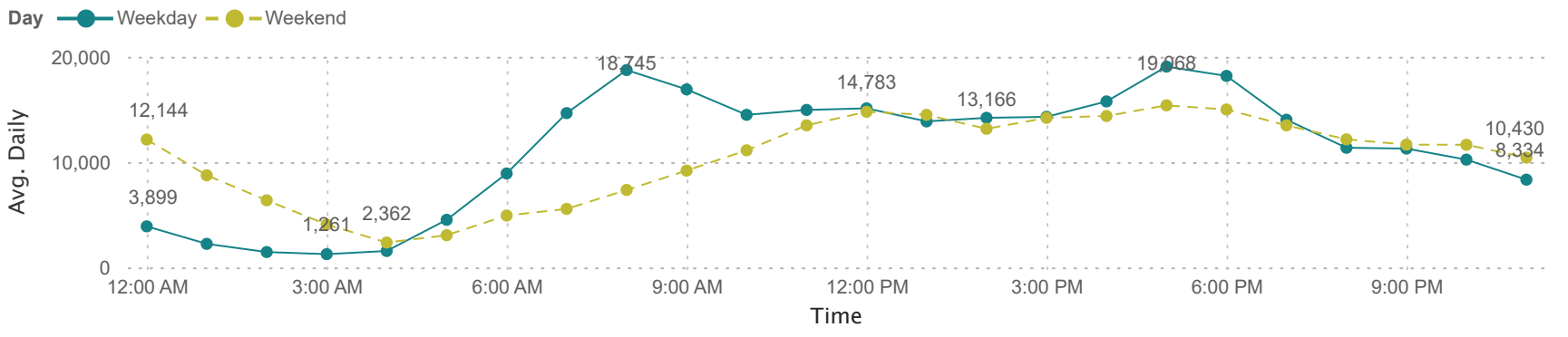


Total Mode Split

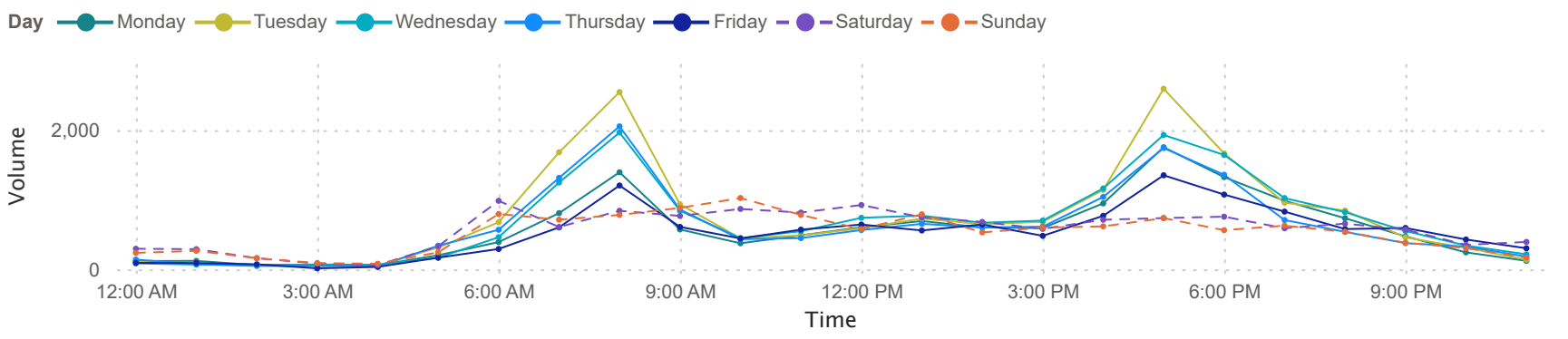


Day	Buses	Cyclists	Heavy Vehicles	Light Vehicles
Weekday	4%	6%	3%	87%
Weekend	3%	5%	1%	91%

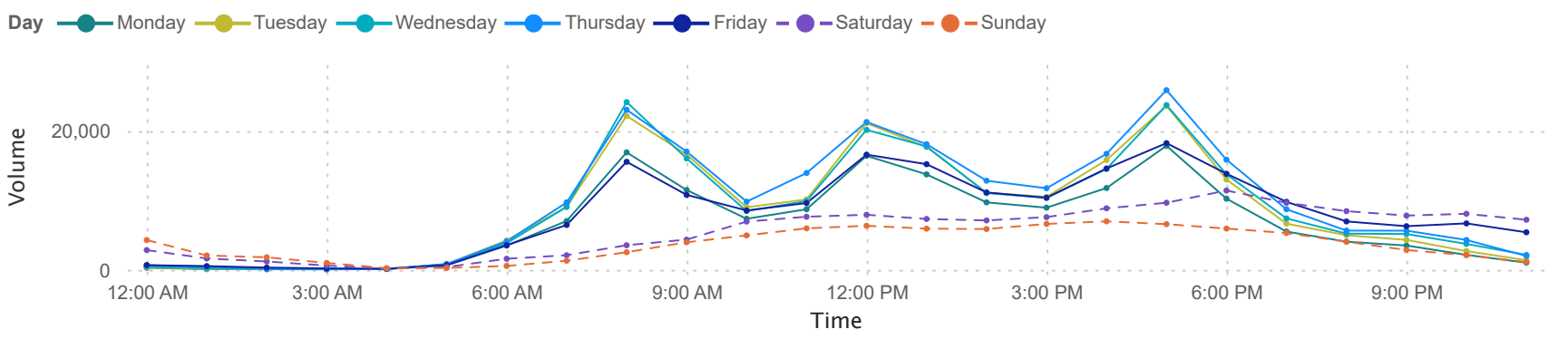
Average daily vehicles and cyclists profile for a weekday and weekend



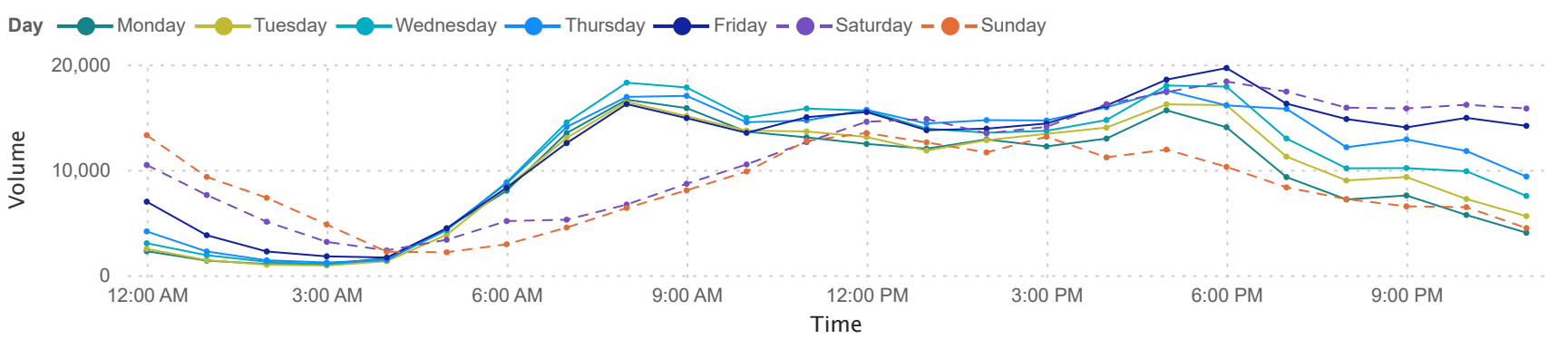
Cyclists volumes



Pedestrian volumes



Vehicle volumes





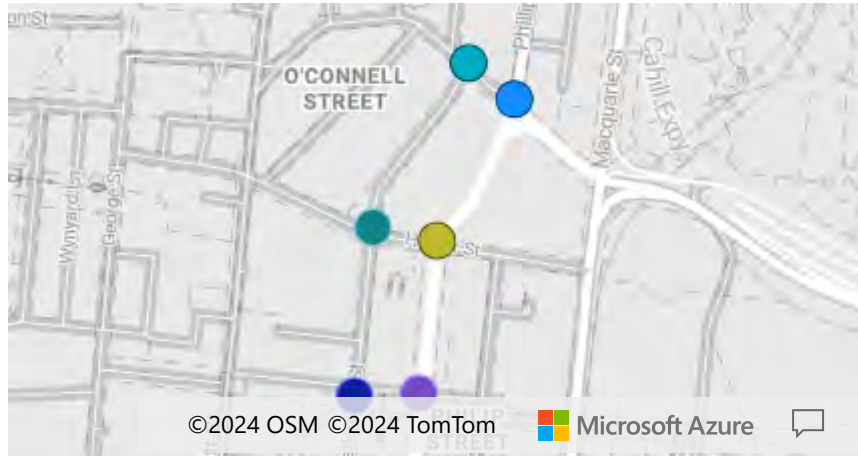
Martin Place Station

6

Intersections

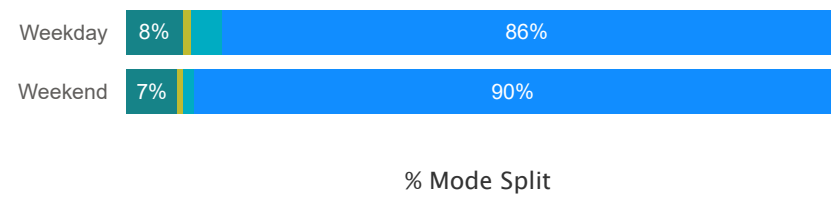
Map

ID ● MPL01 ● MPL02 ● MPL03 ● MPL04 ● MPL05 ● MPL06



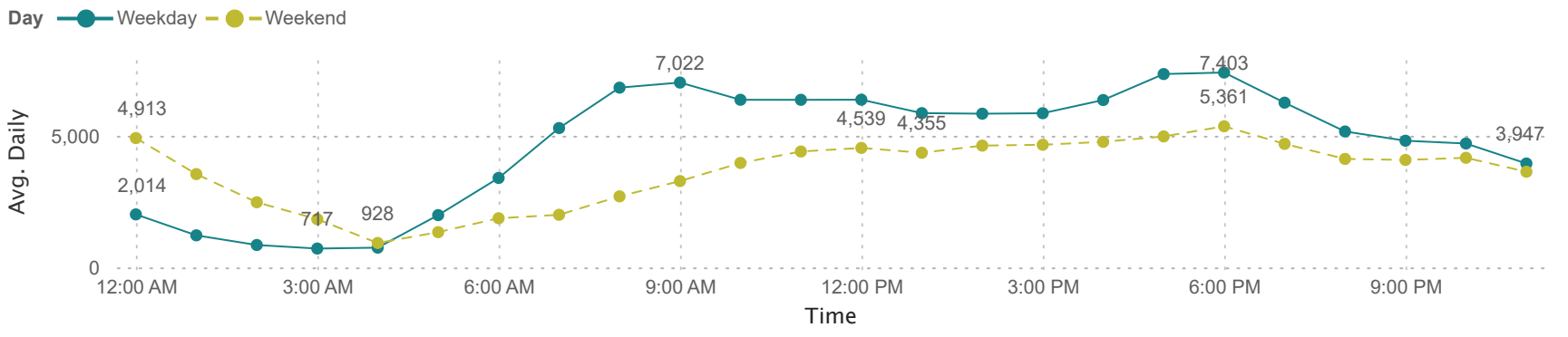
Total Mode Split

Mode ● Buses ● Cyclists ● Heavy Vehicles ● Light Vehicles

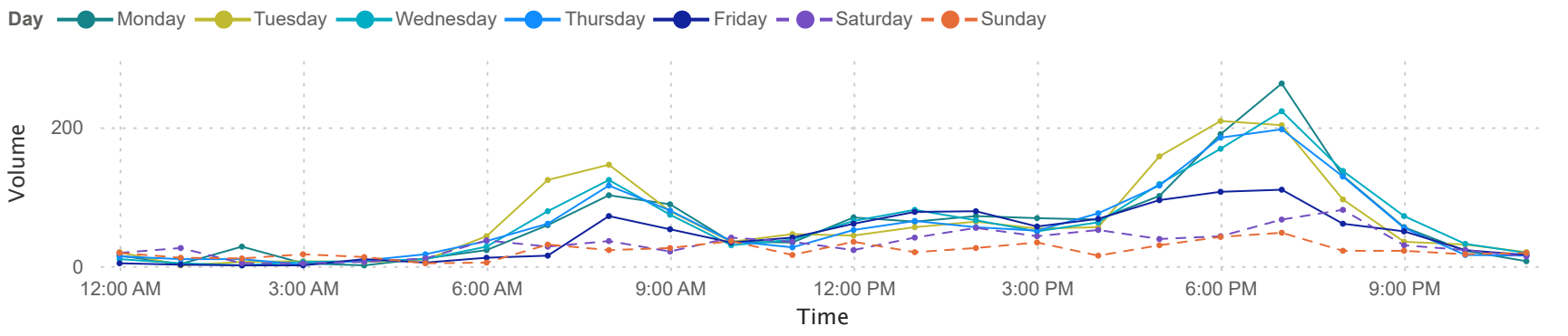


Day	Buses	Cyclists	Heavy Vehicles	Light Vehicles
Weekday	8%	1%	4%	86%
Weekend	7%	1%	2%	90%

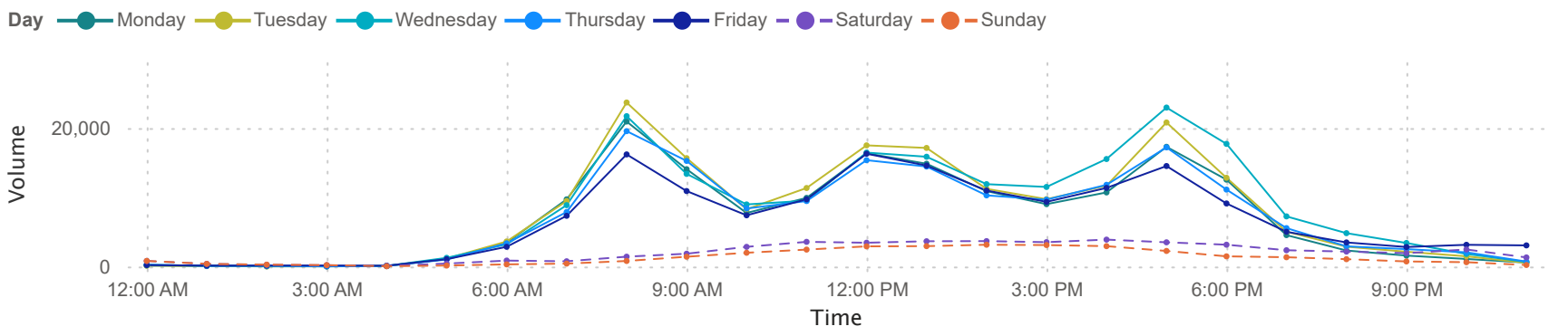
Average daily vehicles and cyclists profile for a weekday and weekend



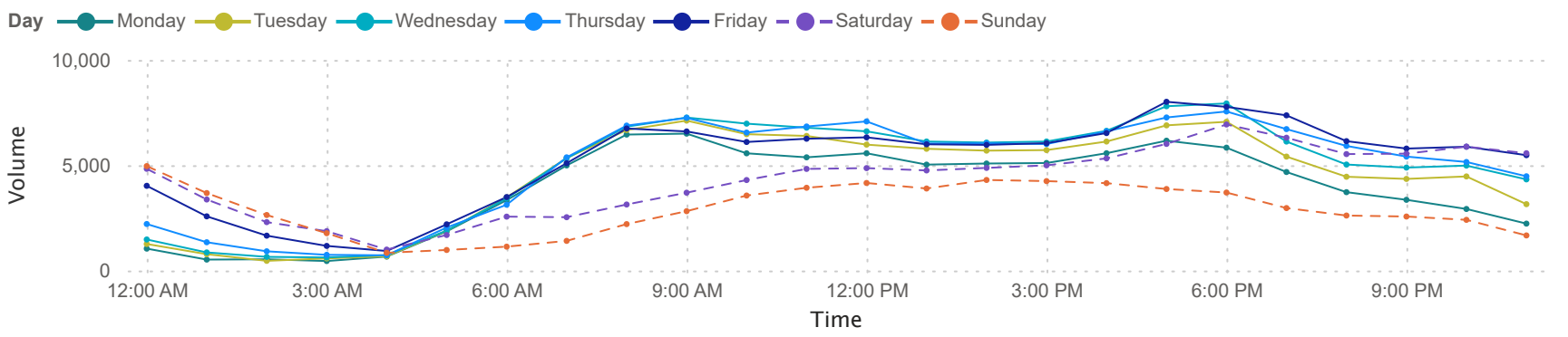
Cyclists volumes



Pedestrian volumes



Vehicle volumes





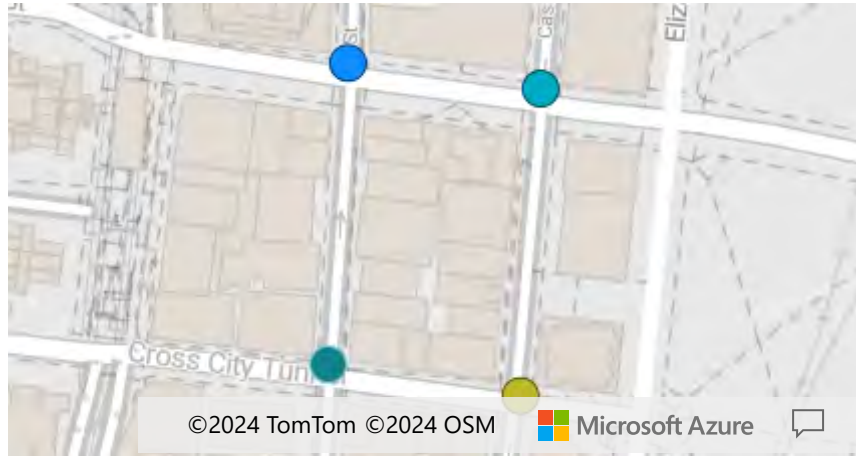
Pitt Street Station

4

Intersections

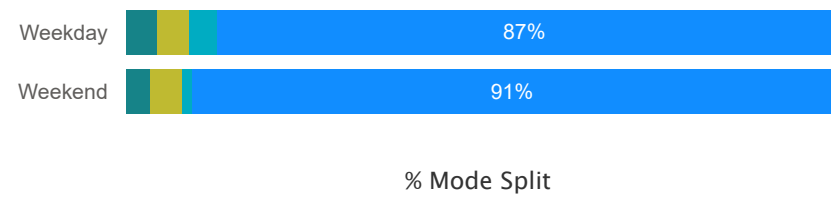
Map

ID ● PIT01 ● PIT02 ● PIT03 ● PIT04



Total Mode Split

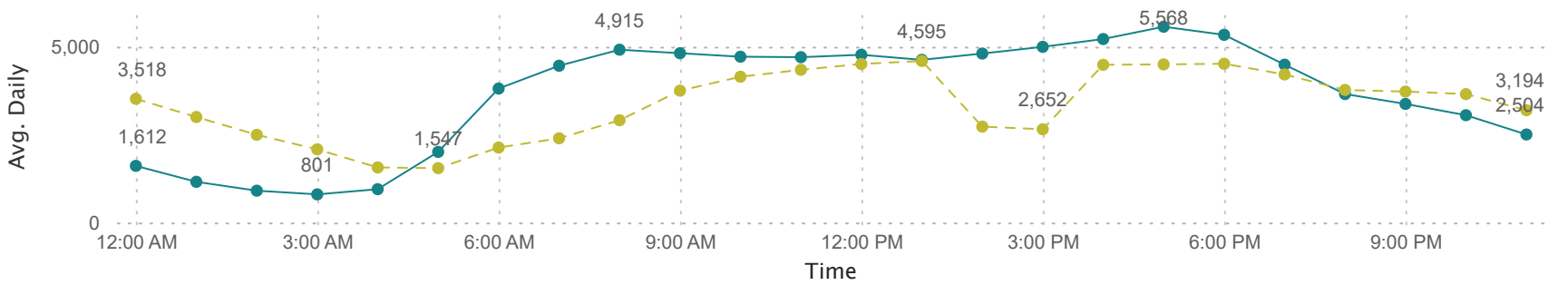
Mode ● Buses ● Cyclists ● Heavy Vehicles ● Light Vehicles



Day	Buses	Cyclists	Heavy Vehicles	Light Vehicles
Weekday	4%	5%	4%	87%
Weekend	3%	5%	2%	91%

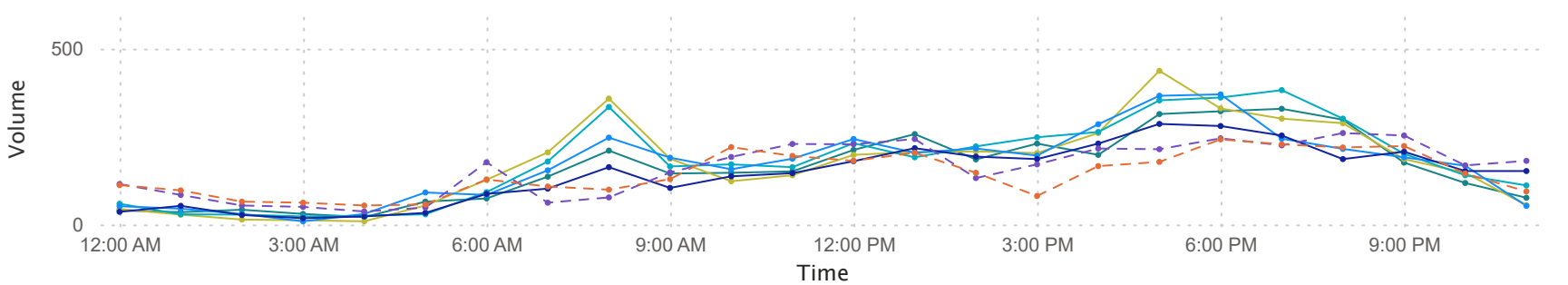
Average daily vehicles and cyclists profile for a weekday and weekend

Day ● Weekday ● Weekend



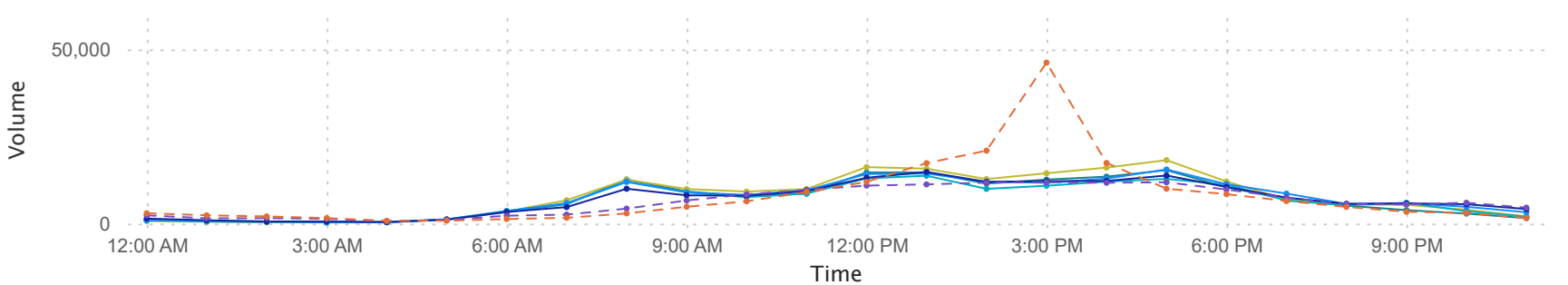
Cyclists volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday



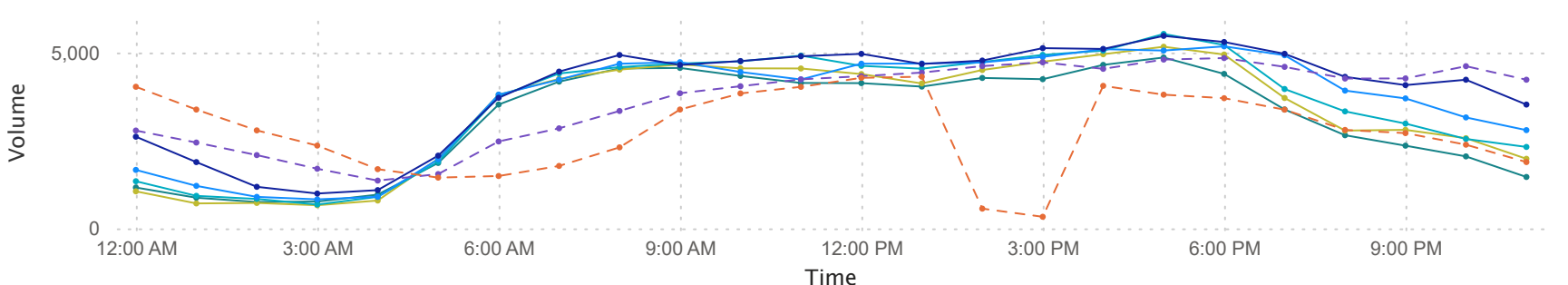
Pedestrian volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday



Vehicle volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday





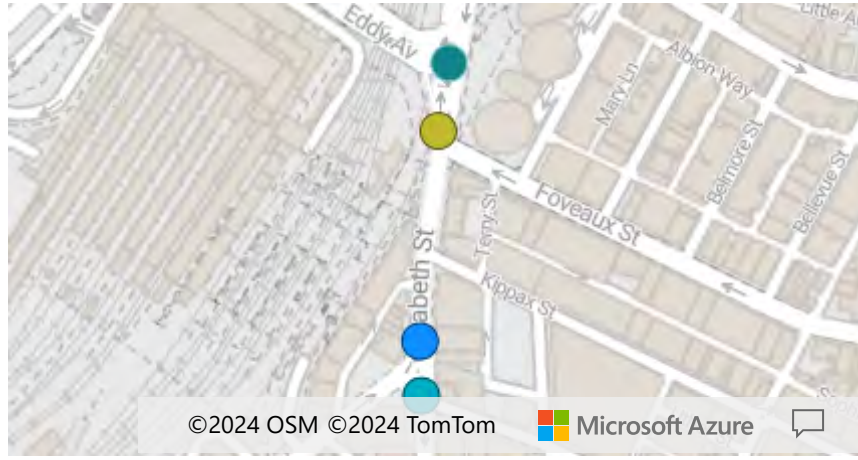
Central Station

4

Intersections

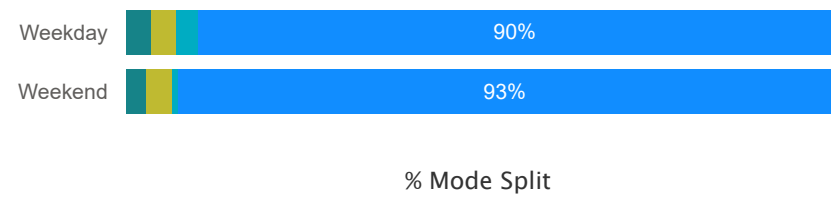
Map

ID ● CEN01 ● CEN02 ● CEN03 ● CEN05



Total Mode Split

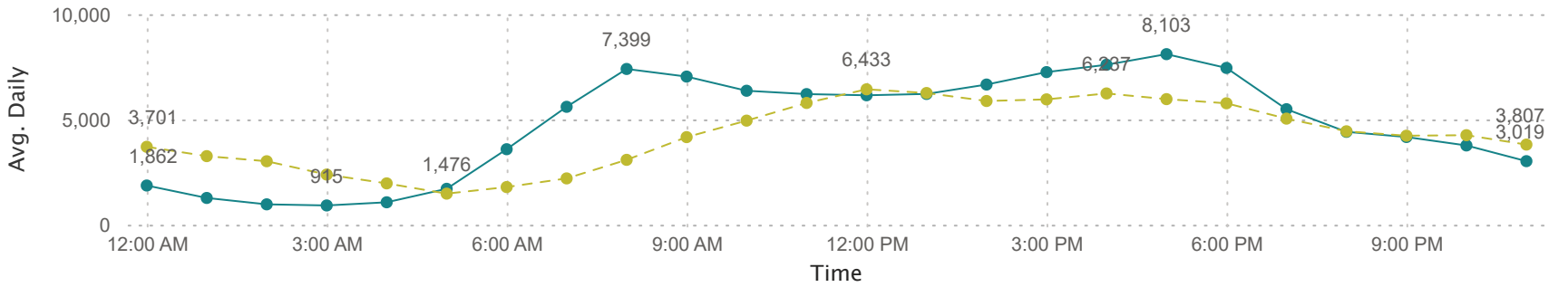
Mode ● Buses ● Cyclists ● Heavy Vehicles ● Light Vehicles



Day	Buses	Cyclists	Heavy Vehicles	Light Vehicles
Weekday	4%	3%	3%	90%
Weekend	3%	4%	1%	93%

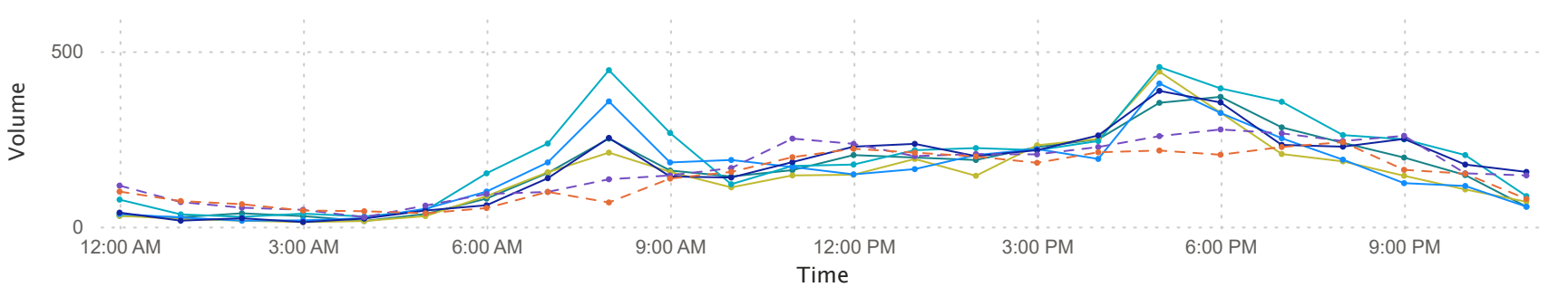
Average daily vehicles and cyclists profile for a weekday and weekend

Day ● Weekday ● Weekend



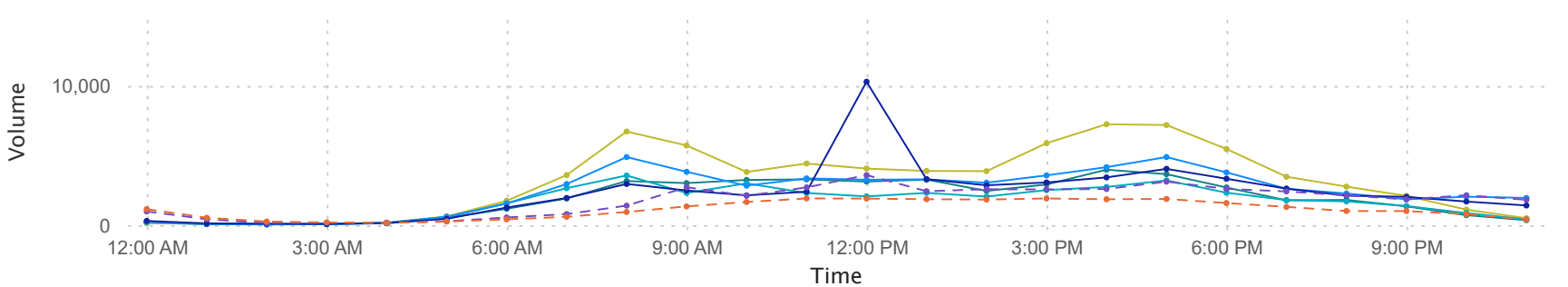
Cyclists volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday



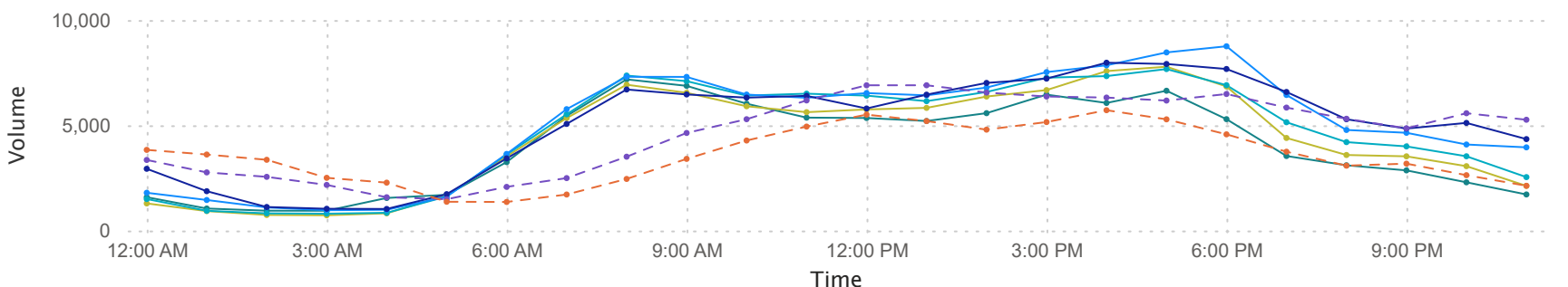
Pedestrian volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday



Vehicle volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday





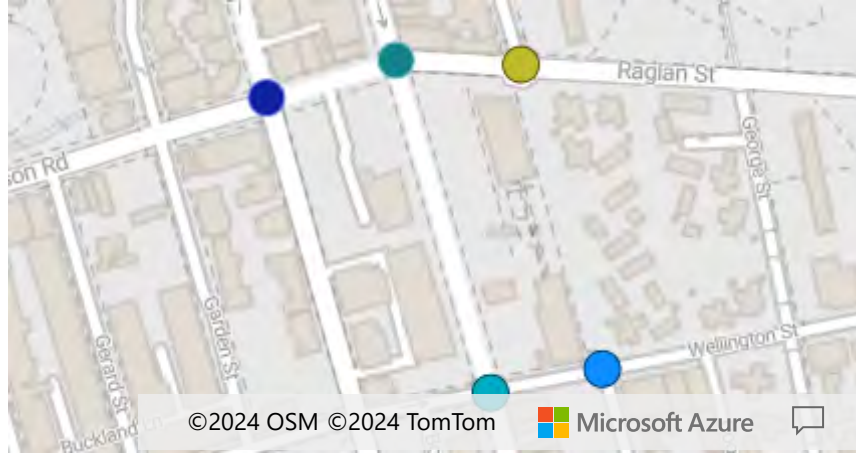
Waterloo Station

5

Intersections

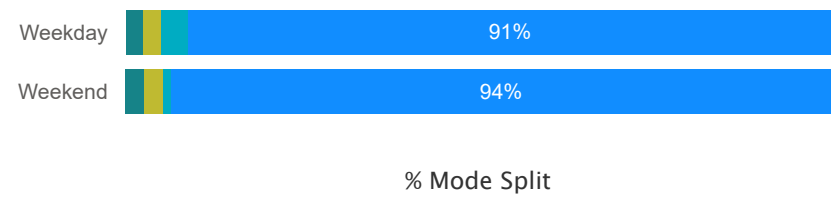
Map

ID ● WLO01 ● WLO02 ● WLO03 ● WLO04 ● WLO05



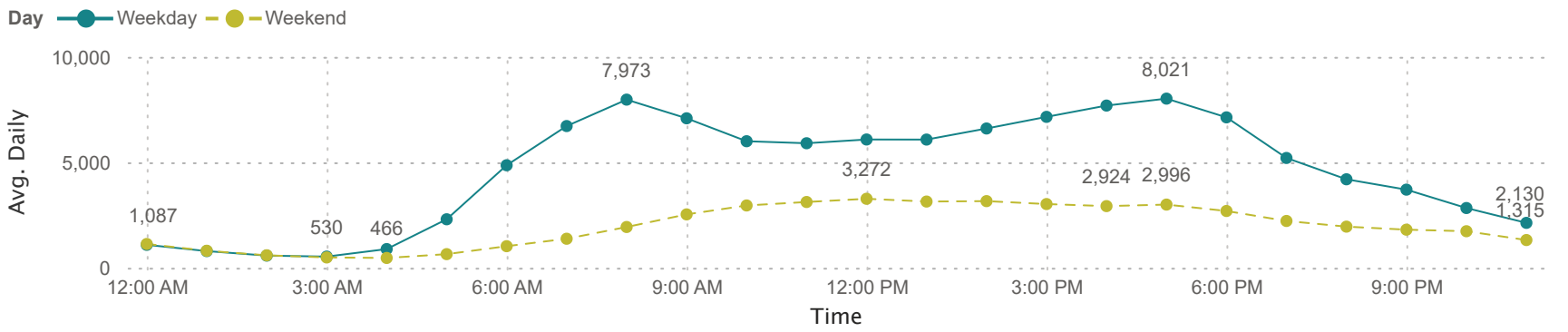
Total Mode Split

Mode ● Buses ● Cyclists ● Heavy Vehicles ● Light Vehicles

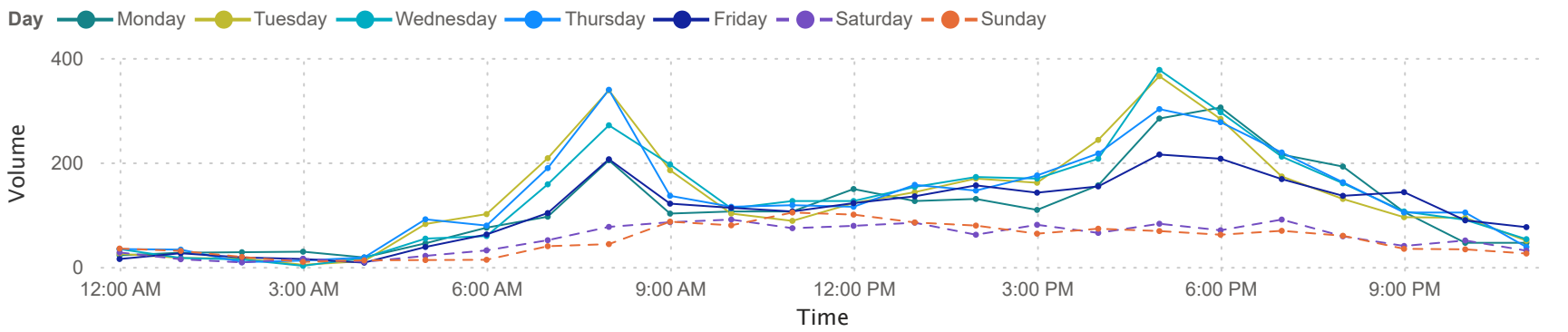


Day	Buses	Cyclists	Heavy Vehicles	Light Vehicles
Weekday	2%	3%	4%	91%
Weekend	3%	3%	1%	94%

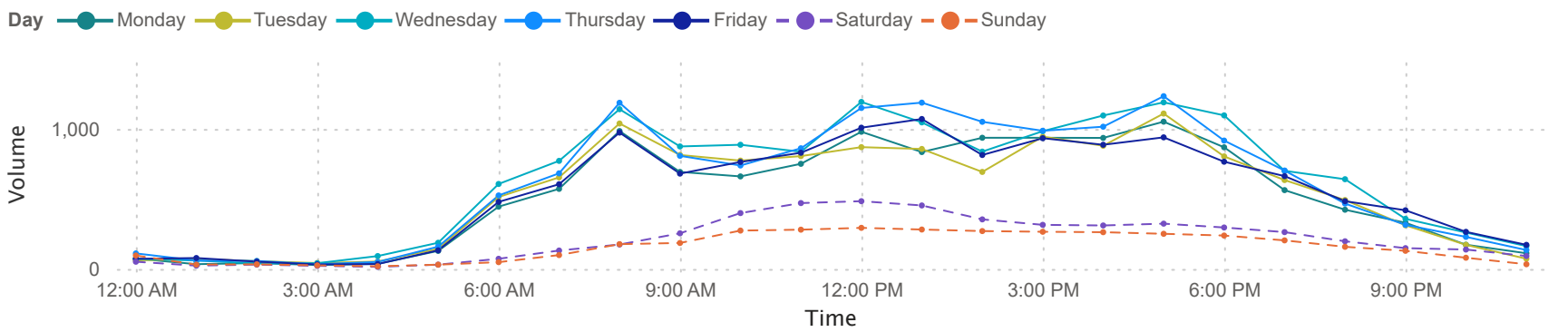
Average daily vehicles and cyclists profile for a weekday and weekend



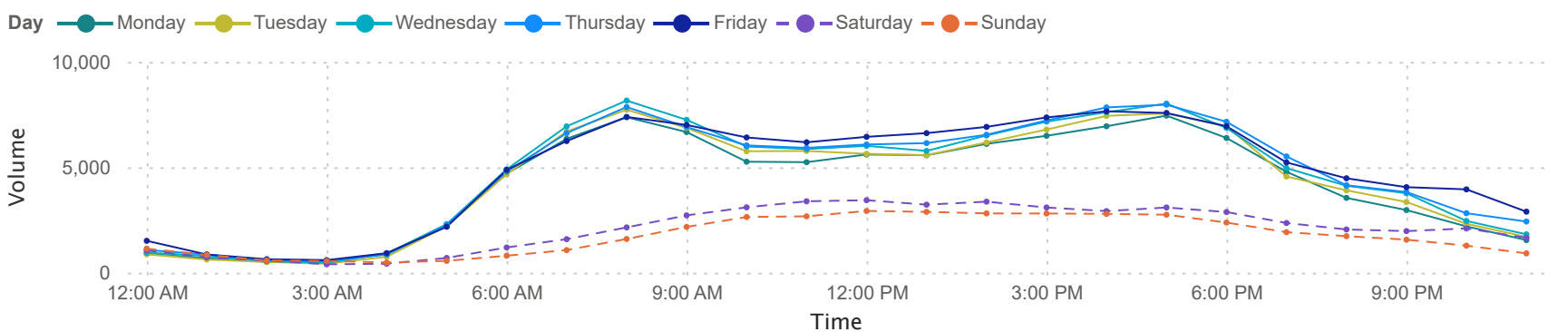
Cyclists volumes



Pedestrian volumes



Vehicle volumes





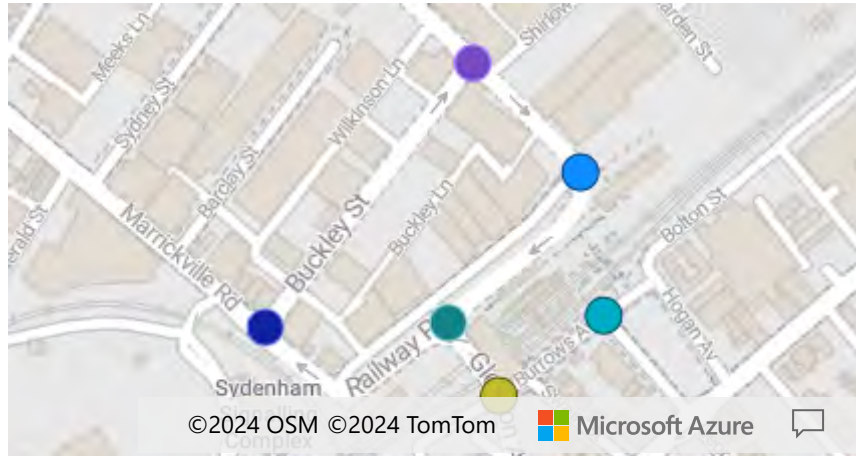
Sydenham Station

6

Intersections

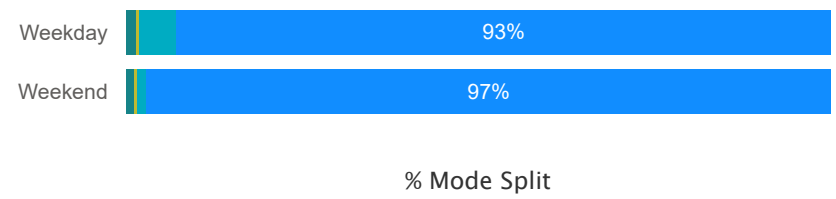
Map

ID ● SYD01 ● SYD02 ● SYD03 ● SYD04 ● SYD05 ● SYD06



Total Mode Split

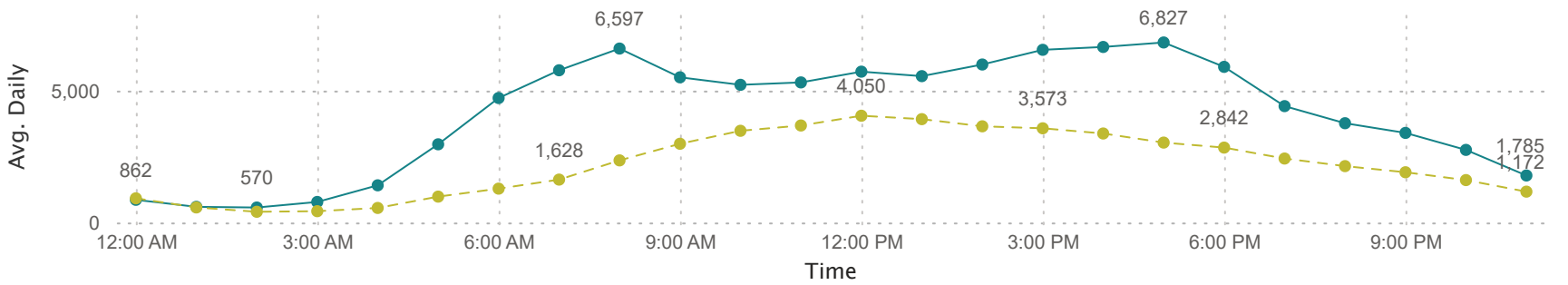
Mode ● Buses ● Cyclists ● Heavy Vehicles ● Light Vehicles



Day	Buses	Cyclists	Heavy Vehicles	Light Vehicles
Weekday	1%	0%	5%	93%
Weekend	1%	0%	1%	97%

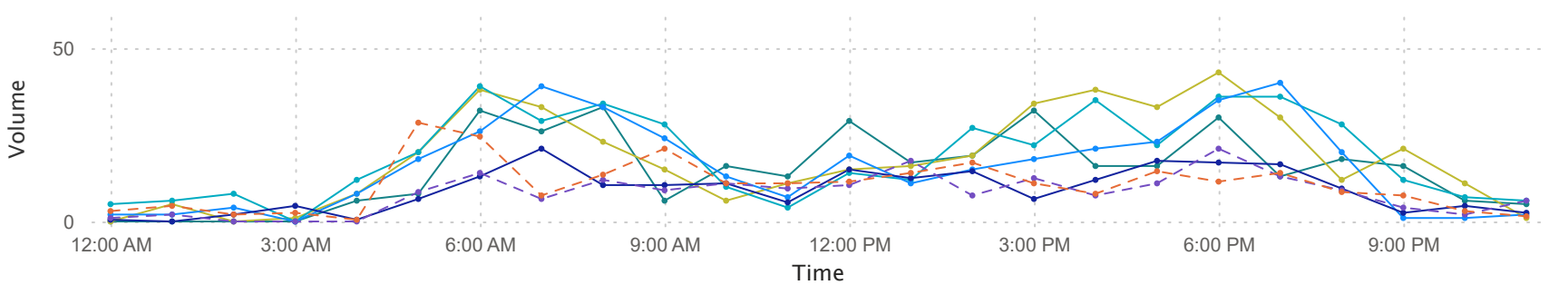
Average daily vehicles and cyclists profile for a weekday and weekend

Day ● Weekday ● Weekend



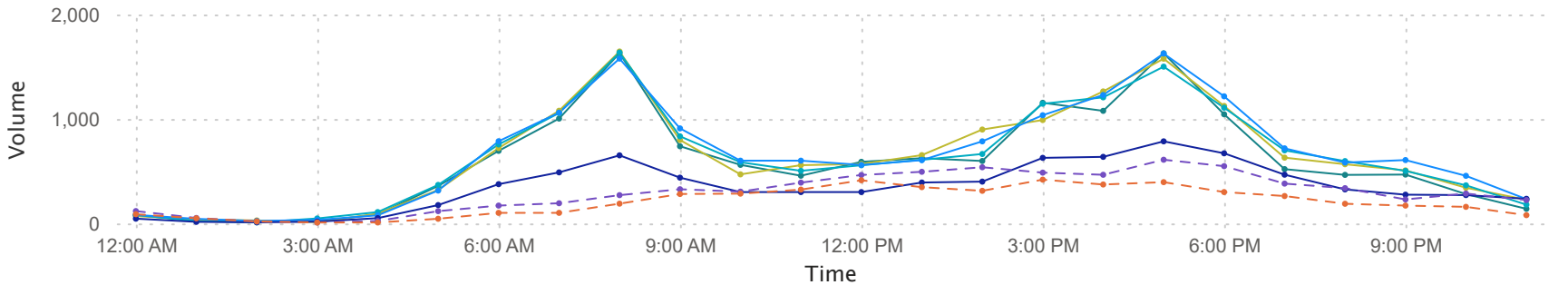
Cyclists volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday



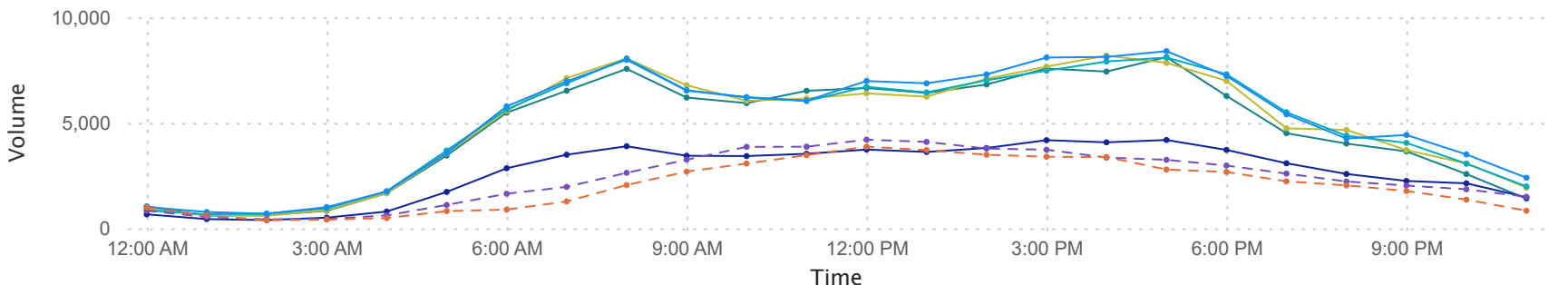
Pedestrian volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday



Vehicle volumes

Day ● Monday ● Tuesday ● Wednesday ● Thursday ● Friday ● Saturday ● Sunday



Appendix E

Movement Summary Outputs

Appendix E Movement Summary Outputs

MOVEMENT SUMMARY

Site: CWD01 [CWD01 Mowbray Rd / Hampden Rd (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 3037

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h	Arrival Flows [Total HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h			
SouthEast: Hampden Rd (SE)															
21	L2	All MCs	192	1.6	192	1.6	* 0.492	57.5	LOS E	11.0	78.0	0.93	0.94	0.93	18.4
Approach			192	1.6	192	1.6	0.492	57.5	LOS E	11.0	78.0	0.93	0.94	0.93	18.4
NorthEast: Mowbray Rd (NE)															
24	L2	All MCs	147	1.4	147	1.4	* 0.484	23.3	LOS B	21.9	156.9	0.62	0.61	0.62	31.4
25	T1	All MCs	933	3.2	933	3.2	0.484	18.2	LOS B	22.2	159.3	0.62	0.58	0.62	25.2
Approach			1080	2.9	1080	2.9	0.484	18.9	LOS B	22.2	159.3	0.62	0.58	0.62	26.4
NorthWest: Dive Site Access (NW)															
27	L2	All MCs	1	0.0	1	0.0	0.001	3.3	LOS A	0.0	0.1	0.12	0.43	0.12	35.2
29	R2	All MCs	1	0.0	1	0.0	* 0.009	74.6	LOS F	0.1	0.5	0.96	0.59	0.96	6.3
Approach			2	0.0	2	0.0	0.009	39.0	LOS C	0.1	0.5	0.54	0.51	0.54	11.5
SouthWest: Mowbray Rd (SW)															
31	T1	All MCs	1027	2.9	1027	2.9	0.336	4.0	LOS A	9.7	69.4	0.29	0.26	0.29	41.3
32	R2	All MCs	392	0.8	392	0.8	* 0.488	12.1	LOS A	11.1	78.5	0.56	0.74	0.56	35.5
Approach			1419	2.3	1419	2.3	0.488	6.3	LOS A	11.1	78.5	0.36	0.39	0.36	38.7
All Vehicles			2693	2.5	2693	2.5	0.492	15.0	LOS B	22.2	159.3	0.50	0.51	0.50	30.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped]	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec	
SouthEast: Hampden Rd (SE)												
P5	Full	9	9	48.9	LOS E	0.0	0.0	0.91	0.91	215.5	200.0	0.93
NorthEast: Mowbray Rd (NE)												
P6	Full	18	19	68.2	LOS F	0.1	0.1	0.95	0.95	234.9	200.0	0.85
NorthWest: Dive Site Access (NW)												
P7	Full	1	1	70.1	LOS F	0.0	0.0	0.97	0.97	236.8	200.0	0.84
All Pedestrians		28	29	62.1	LOS F	0.1	0.1	0.94	0.94	228.7	200.0	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.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Kcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 2:01:13 PM
Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\01 SM C&SW_CWD (Block 2).sip9

MOVEMENT SUMMARY

Site: CWD01 [CWD01 Mowbray Rd / Hampden Rd (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 3037

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h	%	Arrival Flows [Total HV] veh/h	%	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
SouthEast: Hampden Rd (SE)															
21	L2	All MCs	200	0.5	200	0.5	*0.451	53.3	LOS D	10.9	76.9	0.90	0.92	0.90	19.3
Approach			200	0.5	200	0.5	0.451	53.3	LOS D	10.9	76.9	0.90	0.92	0.90	19.3
NorthEast: Mowbray Rd (NE)															
24	L2	All MCs	28	0.0	28	0.0	*0.488	26.2	LOS B	22.8	160.7	0.65	0.60	0.65	30.5
25	T1	All MCs	1026	0.8	1026	0.8	0.488	21.0	LOS B	22.9	161.2	0.65	0.59	0.65	23.7
Approach			1055	0.8	1055	0.8	0.488	21.1	LOS B	22.9	161.2	0.65	0.59	0.65	24.0
NorthWest: Dive Site Access (NW)															
27	L2	All MCs	1	0.0	1	0.0	0.001	3.3	LOS A	0.0	0.1	0.12	0.43	0.12	35.2
29	R2	All MCs	1	0.0	1	0.0	0.009	73.3	LOS F	0.1	0.5	0.95	0.59	0.95	6.4
Approach			2	0.0	2	0.0	0.009	38.3	LOS C	0.1	0.5	0.54	0.51	0.54	11.6
SouthWest: Mowbray Rd (SW)															
31	T1	All MCs	1012	1.0	1012	1.0	0.328	4.2	LOS A	9.7	68.7	0.29	0.26	0.29	40.9
32	R2	All MCs	389	0.0	389	0.0	*0.544	13.3	LOS A	12.8	89.3	0.64	0.77	0.64	34.6
Approach			1401	0.8	1401	0.8	0.544	6.8	LOS A	12.8	89.3	0.39	0.41	0.39	38.1
All Vehicles			2658	0.8	2658	0.8	0.544	16.0	LOS B	22.9	161.2	0.53	0.52	0.53	29.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist] ped m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec	
SouthEast: Hampden Rd (SE)												
P5	Full	16	17	48.2	LOS E	0.1	0.1	0.91	0.91	214.9	200.0	0.93
NorthEast: Mowbray Rd (NE)												
P6	Full	18	19	68.2	LOS F	0.1	0.1	0.95	0.95	234.9	200.0	0.85
NorthWest: Dive Site Access (NW)												
P7	Full	1	1	70.1	LOS F	0.0	0.0	0.97	0.97	236.8	200.0	0.84
All Pedestrians		35	37	59.1	LOS E	0.1	0.1	0.93	0.93	225.8	200.0	0.89

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Kcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 2:01:14 PM
Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\01 SM C&SW_CWD (Block 2).sip9

MOVEMENT SUMMARY

Site: CWD01 [CWD01 Mowbray Rd / Hampden Rd (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 3037

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 135 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h	%	Arrival Flows [Total HV] veh/h	%	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh]	Dist [m]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Hampden Rd (SE)															
21	L2	All MCs	240	1.3	240	1.3	0.491	49.5	LOS D	13.3	94.4	0.90	0.81	0.90	20.1
Approach			240	1.3	240	1.3	0.491	49.5	LOS D	13.3	94.4	0.90	0.81	0.90	20.1
NorthEast: Mowbray Rd (NE)															
24	L2	All MCs	53	0.0	53	0.0	*0.493	18.2	LOS B	20.4	144.3	0.56	0.53	0.56	35.0
25	T1	All MCs	1165	1.4	1165	1.4	0.493	13.1	LOS A	20.5	145.0	0.56	0.52	0.56	29.4
Approach			1218	1.4	1218	1.4	0.493	13.4	LOS A	20.5	145.0	0.56	0.52	0.56	29.8
NorthWest: Dive Site Access (NW)															
27	L2	All MCs	1	0.0	1	0.0	0.002	2.9	LOS A	0.0	0.0	0.12	0.43	0.12	35.9
29	R2	All MCs	1	0.0	1	0.0	0.001	2.5	LOS A	0.0	0.0	0.00	0.44	0.00	31.8
Approach			2	0.0	2	0.0	0.002	2.7	LOS A	0.0	0.0	0.06	0.44	0.06	33.9
SouthWest: Mowbray Rd (SW)															
31	T1	All MCs	1196	1.1	1196	1.1	0.352	1.4	LOS A	6.6	46.4	0.19	0.17	0.19	46.5
32	R2	All MCs	352	1.2	352	1.2	*0.490	11.9	LOS A	11.1	78.7	0.54	0.74	0.54	35.6
Approach			1547	1.1	1547	1.1	0.490	3.8	LOS A	11.1	78.7	0.27	0.30	0.27	42.0
All Vehicles			3007	1.2	3007	1.2	0.493	11.3	LOS A	20.5	145.0	0.44	0.43	0.44	32.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped]	Dist [m]	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: Hampden Rd (SE)												
P5	Full	16	17	60.7	LOS F	0.1	0.1	0.95	0.95	227.4	200.0	0.88
NorthEast: Mowbray Rd (NE)												
P6	Full	21	22	60.7	LOS F	0.1	0.1	0.95	0.95	227.4	200.0	0.88
NorthWest: Dive Site Access (NW)												
P7	Full	1	1	33.8	LOS D	0.0	0.0	0.93	0.93	200.4	200.0	1.00
All Pedestrians		38	40	60.0	LOS F	0.1	0.1	0.95	0.95	226.7	200.0	0.88

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Kcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 2:01:14 PM
Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\01 SM C&SW_CWD (Block 2).sip9

MOVEMENT SUMMARY

Site: CST01 [CST01 Pacific Hwy / Albany St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 768

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
SouthEast: Pacific Hwy (SE)															
22	T1	All MCs	1156	4.9	1156	4.9	0.442	9.5	LOS A	17.7	129.5	0.48	0.42	0.48	39.9
23b	R3	All MCs	143	0.0	143	0.0	*0.850	81.2	LOS F	10.1	71.0	1.00	0.90	1.15	6.6
Approach			1299	4.4	1299	4.4	0.850	17.4	LOS B	17.7	129.5	0.54	0.47	0.56	30.3
East: Albany St (E)															
4b	L3	All MCs	16	0.0	16	0.0	*0.704	65.5	LOS E	6.8	49.0	0.99	0.85	1.01	2.6
6a	R1	All MCs	496	3.6	496	3.6	0.704	57.2	LOS E	6.8	49.0	0.99	0.85	1.01	9.9
Approach			512	3.5	512	3.5	0.704	57.5	LOS E	6.8	49.0	0.99	0.85	1.01	9.7
NorthWest: Pacific Hwy (NW)															
27a	L1	All MCs	402	1.3	402	1.3	0.374	12.4	LOS A	8.7	61.7	0.35	0.66	0.35	26.7
28	T1	All MCs	1268	6.5	1268	6.5	*0.615	21.3	LOS B	27.4	202.3	0.73	0.66	0.73	19.2
Approach			1671	5.2	1671	5.2	0.615	19.2	LOS B	27.4	202.3	0.63	0.66	0.63	20.5
All Vehicles			3481	4.7	3481	4.7	0.850	24.1	LOS B	27.4	202.3	0.65	0.62	0.66	20.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec					sec	m	m/sec	
SouthEast: Pacific Hwy (SE)											
P5	Full	184	61.2	LOS F	0.7	0.7	0.96	0.96	227.8	200.0	0.88
East: Albany St (E)											
P2	Full	194	61.2	LOS F	0.7	0.7	0.96	0.96	77.8	20.0	0.26
All Pedestrians		378	61.2	LOS F	0.7	0.7	0.96	0.96	150.9	107.7	0.71

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST02 [CST02 Pacific Hwy / Oxley St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 767

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	veh/h	veh/h	veh/h	v/c	sec			m				km/h
SouthEast: Pacific Hwy (SE)															
1	L2	All MCs	154	1.4	154	1.4	0.141	9.7	LOS A	1.5	10.5	0.13	0.53	0.13	24.3
2	T1	All MCs	1165	4.6	1165	4.6	0.460	3.3	LOS A	6.2	45.3	0.18	0.17	0.18	45.8
Approach			1319	4.2	1319	4.2	0.460	4.0	LOS A	6.2	45.3	0.17	0.21	0.17	36.7
NorthEast: Oxley St (NE)															
4	L2	All MCs	81	3.9	81	3.9	0.279	56.9	LOS E	4.7	34.3	0.92	0.76	0.92	2.7
5	T1	All MCs	148	1.4	148	1.4	0.521	58.1	LOS E	6.9	49.0	0.97	0.79	0.97	6.9
Approach			229	2.3	229	2.3	0.521	57.7	LOS E	6.9	49.0	0.95	0.78	0.95	5.5
NorthWest: Pacific Hwy (NW)															
7	L2	All MCs	59	3.6	59	3.6	0.047	6.2	LOS A	0.1	0.8	0.03	0.58	0.03	36.7
8	T1	All MCs	1225	6.6	1225	6.6	*0.461	0.5	LOS A	1.9	14.1	0.05	0.04	0.05	57.2
Approach			1284	6.5	1284	6.5	0.461	0.7	LOS A	1.9	14.1	0.05	0.07	0.05	55.8
SouthWest: Oxley St (SW)															
10	L2	All MCs	133	2.4	133	2.4	0.412	58.2	LOS E	7.8	56.0	0.93	0.79	0.93	5.0
11	T1	All MCs	147	1.4	147	1.4	0.431	53.7	LOS D	8.7	61.8	0.94	0.76	0.94	5.9
12	R2	All MCs	94	1.1	94	1.1	*0.654	71.9	LOS F	6.3	44.7	1.00	0.83	1.07	4.2
Approach			374	1.7	374	1.7	0.654	59.9	LOS E	8.7	61.8	0.95	0.79	0.97	5.1
All Vehicles			3206	4.7	3206	4.7	0.654	13.1	LOS A	8.7	61.8	0.27	0.26	0.27	22.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist]					
		ped/h	sec			m		sec	m	m/sec	
SouthEast: Pacific Hwy (SE)											
P1	Full	81	60.9	LOS F	0.3	0.3	0.95	0.95	77.6	20.0	0.26
NorthEast: Oxley St (NE)											

P2 Full	64	60.8	LOS F	0.2	0.2	0.95	0.95	77.5	20.0	0.26
SouthWest: Oxley St (SW)										
P4 Full	5	60.7	LOS F	0.0	0.0	0.95	0.95	77.4	20.0	0.26
All Pedestrians	151	60.9	LOS F	0.3	0.3	0.95	0.95	77.5	20.0	0.26

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST03 [CST03 Pacific Hwy / Hume St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 766

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
SouthEast: Pacific Hwy (SE)															
1	L2	All MCs	36	0.0	36	0.0	0.099	5.9	LOS A	0.2	1.5	0.02	0.16	0.02	36.0
2	T1	All MCs	1238	4.6	1238	4.6	0.370	0.4	LOS A	1.1	8.2	0.03	0.04	0.03	58.2
Approach			1274	4.5	1274	4.5	0.370	0.6	LOS A	1.1	8.2	0.03	0.05	0.03	56.9
NorthWest: Pacific Hwy (NW)															
8	T1	All MCs	1402	6.2	1402	6.2	0.494	2.4	LOS A	11.9	87.7	0.24	0.22	0.24	45.8
9	R2	All MCs	100	0	100	0	*0.494	8.4	LOS A	7.9	58.0	0.20	0.18	0.20	25.0
Approach			1403	6.2	1403	6.2	0.494	2.4	LOS A	11.9	87.7	0.24	0.22	0.24	45.7
SouthWest: Hume St (SW)															
10	L2	All MCs	85	0.0	85	0.0	*0.443	67.9	LOS E	5.4	38.1	0.98	0.77	0.98	4.2
12	R2	All MCs	29	0.0	29	0.0	0.160	65.2	LOS E	1.8	12.7	0.95	0.72	0.95	4.5
Approach			115	0.0	115	0.0	0.443	67.2	LOS E	5.4	38.1	0.97	0.76	0.97	4.3
All Vehicles			2792	5.2	2792	5.2	0.494	4.2	LOS A	11.9	87.7	0.17	0.16	0.17	41.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec						sec	m	m/sec
SouthEast: Pacific Hwy (SE)											
P1	Full	1	60.7	LOS F	0.0	0.0	0.95	0.95	77.4	20.0	0.26
NorthWest: Pacific Hwy (NW)											
P3	Full	1	60.7	LOS F	0.0	0.0	0.95	0.95	77.4	20.0	0.26
SouthWest: Hume St (SW)											
P4	Full	117	61.0	LOS F	0.4	0.4	0.95	0.95	77.6	20.0	0.26
All Pedestrians		119	61.0	LOS F	0.4	0.4	0.95	0.95	77.6	20.0	0.26

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST04 [CST04 Pacific Hwy / Falcon St / Shirley Rd (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 765

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
SouthEast: Pacific Hwy (SE)															
1	L2	All MCs	265	1.6	265	1.6	0.231	14.6	LOS B	6.1	43.5	0.38	0.69	0.38	31.2
2	T1	All MCs	852	5.1	852	5.1	0.607	31.1	LOS C	21.5	156.8	0.81	0.71	0.81	12.6
Approach			1117	4.2	1117	4.2	0.607	27.2	LOS B	21.5	156.8	0.71	0.70	0.71	17.0
East: Falcon St (E)															
21b	L3	All MCs	15	7.1	15	7.1	0.917	34.1	LOS C	18.3	130.6	1.00	0.99	1.18	5.0
21a	L1	All MCs	274	1.9	274	1.9	*0.917	68.1	LOS E	18.3	130.6	1.00	0.99	1.18	12.5
23a	R1	All MCs	413	3.6	413	3.6	0.917	57.4	LOS E	18.3	130.6	1.00	0.96	1.15	5.5
Approach			701	3.0	701	3.0	0.917	61.1	LOS E	18.3	130.6	1.00	0.97	1.17	8.8
North: Willoughby Rd (N)															
7	L2	All MCs	1	0.0	1	0.0	0.001	3.9	LOS A	0.0	0.0	0.08	0.47	0.08	36.9
Approach			1	0.0	1	0.0	0.001	3.9	LOS A	0.0	0.0	0.08	0.47	0.08	36.9
NorthWest: Pacific Hwy (NW)															
7a	L1	All MCs	418	7.1	418	7.1	0.529	22.8	LOS B	12.6	93.2	0.79	0.80	0.79	22.6
8	T1	All MCs	1005	5.5	1005	5.5	*0.745	30.5	LOS C	27.2	199.3	0.84	0.74	0.84	18.2
Approach			1423	6.0	1423	6.0	0.745	28.2	LOS B	27.2	199.3	0.82	0.76	0.82	18.6
SouthWest: Shirley Rd (SW)															
10	L2	All MCs	29	3.6	29	3.6	0.918	79.4	LOS F	28.7	207.1	1.00	1.09	1.26	9.3
12a	R1	All MCs	447	3.8	447	3.8	*0.918	74.0	LOS F	28.7	207.1	1.00	1.08	1.26	9.2
12	R2	All MCs	272	3.5	272	3.5	0.918	76.2	LOS F	28.5	205.3	1.00	1.05	1.26	8.9
Approach			748	3.7	748	3.7	0.918	75.0	LOS F	28.7	207.1	1.00	1.07	1.26	9.1
All Vehicles			3991	4.5	3991	4.5	0.918	42.5	LOS C	28.7	207.1	0.85	0.84	0.93	13.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped	Dist]					

		ped/h	sec		ped	m		sec	m	m/sec	
SouthEast: Pacific Hwy (SE)											
P1	Full	114	61.0	LOS F	0.4	0.4	0.95	0.95	77.6	20.0	0.26
East: Falcon St (E)											
P5	Full	188	61.2	LOS F	0.7	0.7	0.96	0.96	77.8	20.0	0.26
NorthWest: Pacific Hwy (NW)											
P3	Full	205	61.2	LOS F	0.8	0.8	0.96	0.96	77.9	20.0	0.26
SouthWest: Shirley Rd (SW)											
P4	Full	152	61.1	LOS F	0.6	0.6	0.95	0.95	77.7	20.0	0.26
All Pedestrians		659	61.1	LOS F	0.8	0.8	0.96	0.96	77.8	20.0	0.26

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST05 [CST05 Clarke St / Oxley St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

NA
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Clarke St (SE)															
1	L2	All MCs	37	5.7	37	5.7	0.095	5.4	LOS A	0.3	2.1	0.38	0.59	0.38	31.9
3a	R1	All MCs	42	5.0	42	5.0	0.095	6.3	LOS A	0.3	2.1	0.38	0.59	0.38	31.9
Approach			79	5.3	79	5.3	0.095	5.9	LOS A	0.3	2.1	0.38	0.59	0.38	31.9
North: Oxley St (N)															
24a	L1	All MCs	69	0.0	69	0.0	0.192	4.4	LOS A	0.0	0.0	0.00	0.53	0.00	29.8
26a	R1	All MCs	212	2.5	212	2.5	0.192	4.1	LOS A	0.0	0.0	0.00	0.53	0.00	29.8
Approach			281	1.9	281	1.9	0.192	4.2	NA	0.0	0.0	0.00	0.53	0.00	29.8
SouthWest: Oxley St (SW)															
10a	L1	All MCs	138	1.5	138	1.5	0.131	3.4	LOS A	0.5	3.7	0.29	0.55	0.29	22.4
12	R2	All MCs	77	2.7	77	2.7	0.131	3.9	LOS A	0.5	3.7	0.29	0.55	0.29	22.4
Approach			215	2.0	215	2.0	0.131	3.6	NA	0.5	3.7	0.29	0.55	0.29	22.4
All Vehicles			575	2.4	575	2.4	0.192	4.2	NA	0.5	3.7	0.16	0.54	0.16	28.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST06 [CST06 Clarke St / Hume St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

NA
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Clarke St (SE)															
1	L2	All MCs	15	0.0	15	0.0	0.051	4.9	LOS A	0.2	1.5	0.15	0.22	0.15	39.6
2	T1	All MCs	77	4.1	77	4.1	0.051	0.2	LOS A	0.2	1.5	0.15	0.22	0.15	39.6
23a	R1	All MCs	31	0.0	31	0.0	0.051	4.0	LOS A	0.2	1.5	0.15	0.22	0.15	42.6
Approach			122	2.6	122	2.6	0.051	1.7	NA	0.2	1.5	0.15	0.22	0.15	40.9
NorthWest: Clarke St (NW)															
8	T1	All MCs	138	1.5	138	1.5	0.044	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	49.6
9	R2	All MCs	3	0.0	3	0.0	0.044	4.6	LOS A	0.0	0.1	0.01	0.01	0.01	49.3
Approach			141	1.5	141	1.5	0.044	0.1	NA	0.0	0.1	0.01	0.01	0.01	49.6
SouthWest: Hume St (SW)															
10	L2	All MCs	100	0	100	0	0.006	3.6	LOS A	0.0	0.1	0.26	0.47	0.26	24.0
30a	L1	All MCs	1	0.0	1	0.0	0.006	3.0	LOS A	0.0	0.1	0.26	0.47	0.26	38.1
12	R2	All MCs	1	0.0	1	0.0	0.006	4.3	LOS A	0.0	0.1	0.26	0.47	0.26	32.1
Approach			333.3	0	333.3	0	0.006	3.7	LOS A	0.0	0.1	0.26	0.47	0.26	33.7
All Vehicles			266	2.4	266	2.4	0.051	0.9	NA	0.2	1.5	0.08	0.11	0.08	45.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST07 [CST07 Clarke St / Willoughby Rd (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Willoughby Rd (S)															
1	L2	All MCs	111	2.9	111	2.9	0.241	4.0	LOSA	1.2	9.4	0.33	0.32	0.33	31.4
2	T1	All MCs	141	14.9	141	14.9	0.241	1.4	LOSA	1.2	9.4	0.33	0.32	0.33	36.1
Approach			252	9.6	252	9.6	0.241	2.5	NA	1.2	9.4	0.33	0.32	0.33	34.5
North: Willoughby Rd (N)															
8	T1	All MCs	142	8.1	142	8.1	0.198	1.2	LOSA	0.9	6.4	0.33	0.29	0.33	36.5
9	R2	All MCs	46	2.3	46	2.3	0.198	6.6	LOSA	0.9	6.4	0.33	0.29	0.33	35.4
Approach			188	6.7	188	6.7	0.198	2.5	NA	0.9	6.4	0.33	0.29	0.33	36.2
West: Clarke St (W)															
10	L2	All MCs	42	2.5	42	2.5	0.143	5.1	LOSA	0.5	3.7	0.46	0.65	0.46	32.9
12	R2	All MCs	83	1.3	83	1.3	0.143	5.9	LOSA	0.5	3.7	0.46	0.65	0.46	27.0
Approach			125	1.7	125	1.7	0.143	5.7	LOSA	0.5	3.7	0.46	0.65	0.46	29.8
All Vehicles			565	6.9	565	6.9	0.241	3.2	NA	1.2	9.4	0.36	0.38	0.36	34.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 4:03:15 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST08 [CST08 Albany St / Willoughby Rd (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 516

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Willoughby Rd (S)															
1	L2	All MCs	74	14.3	74	14.3	0.149	26.8	LOS B	1.7	13.6	0.76	0.70	0.76	25.2
2	T1	All MCs	155	8.2	155	8.2	0.307	22.7	LOS B	3.8	28.3	0.77	0.63	0.77	29.0
3	R2	All MCs	7	0.0	7	0.0	0.307	33.2	LOS C	3.8	28.3	0.77	0.63	0.77	27.4
Approach			236	9.8	236	9.8	0.307	24.3	LOS B	3.8	28.3	0.76	0.65	0.76	25.1
East: Albany St (E)															
4	L2	All MCs	5	20.0	5	20.0	0.380	18.0	LOS B	7.0	50.6	0.67	0.58	0.67	31.5
5	T1	All MCs	348	2.7	348	2.7	0.380	11.5	LOS A	7.0	50.6	0.67	0.58	0.67	33.5
6	R2	All MCs	347	1.8	347	1.8	*0.942	49.4	LOS D	14.9	106.1	1.00	1.18	1.68	16.0
Approach			701	2.4	701	2.4	0.942	30.3	LOS C	14.9	106.1	0.83	0.87	1.17	21.5
North: Willoughby Rd (N)															
7	L2	All MCs	181	2.3	181	2.3	0.217	19.7	LOS B	3.5	24.6	0.63	0.72	0.63	28.7
8	T1	All MCs	224	4.2	224	4.2	0.622	23.7	LOS B	8.2	59.4	0.89	0.80	0.90	26.5
9	R2	All MCs	76	1.4	76	1.4	*0.622	32.8	LOS C	8.2	59.4	0.89	0.80	0.90	25.1
Approach			481	3.1	481	3.1	0.622	23.6	LOS B	8.2	59.4	0.79	0.77	0.80	25.1
West: Albany St (W)															
10	L2	All MCs	79	1.3	79	1.3	0.140	22.3	LOS B	1.8	13.0	0.76	0.72	0.76	25.0
11	T1	All MCs	318	1.3	318	1.3	*0.467	17.8	LOS B	7.9	56.2	0.82	0.70	0.82	28.1
Approach			397	1.3	397	1.3	0.467	18.7	LOS B	7.9	56.2	0.81	0.70	0.81	27.4
All Vehicles			1815	3.3	1815	3.3	0.942	25.2	LOS B	14.9	106.1	0.81	0.78	0.94	24.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		ped	m			sec	m	m/sec
South: Willoughby Rd (S)												
P1	Full	88	93	26.0	LOS C	0.2	0.2	0.90	0.90	42.6	20.0	0.47
East: Albany St (E)												
P2	Full	195	205	26.1	LOS C	0.3	0.3	0.90	0.90	42.8	20.0	0.47

North: Willoughby Rd (N)												
P3	Full	88	93	26.0	LOS C	0.2	0.2	0.90	0.90	42.6	20.0	0.47
West: Albany St (W)												
P4	Full	128	135	26.0	LOS C	0.2	0.2	0.90	0.90	42.7	20.0	0.47
All	Pedestrians	499	525	26.0	LOS C	0.3	0.3	0.90	0.90	42.7	20.0	0.47

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 4:03:15 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST09 [CST09 Albany St / Oxley St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
South: Oxley St (S)															
1	L2	All MCs	32	6.7	32	6.7	0.248	8.2	LOS A	1.6	11.8	0.72	0.66	0.72	21.7
2	T1	All MCs	93	2.3	93	2.3	0.248	7.8	LOS A	1.6	11.8	0.72	0.66	0.72	32.8
3	R2	All MCs	55	1.9	55	1.9	0.248	10.7	LOS A	1.6	11.8	0.72	0.66	0.72	30.8
3u	U	All MCs	1	0.0	1	0.0	0.248	12.0	LOS A	1.6	11.8	0.72	0.66	0.72	21.7
Approach			180	2.9	180	2.9	0.248	8.8	LOS A	1.6	11.8	0.72	0.66	0.72	30.9
East: Albany St (E)															
4	L2	All MCs	41	5.1	41	5.1	0.509	7.7	LOS A	3.6	25.9	0.60	0.69	0.62	30.9
5	T1	All MCs	358	4.4	358	4.4	0.509	7.5	LOS A	3.6	25.9	0.60	0.69	0.62	30.9
6	R2	All MCs	27	0.0	27	0.0	0.509	10.2	LOS A	3.6	25.9	0.60	0.69	0.62	35.8
6u	U	All MCs	1	0.0	1	0.0	0.509	11.6	LOS A	3.6	25.9	0.60	0.69	0.62	35.2
Approach			427	4.2	427	4.2	0.509	7.7	LOS A	3.6	25.9	0.60	0.69	0.62	31.4
North: Oxley St (N)															
7	L2	All MCs	37	2.9	37	2.9	0.377	8.2	LOS A	2.6	18.5	0.76	0.69	0.76	34.9
8	T1	All MCs	152	2.1	152	2.1	0.377	7.9	LOS A	2.6	18.5	0.76	0.69	0.76	30.5
9	R2	All MCs	92	1.1	92	1.1	0.377	10.8	LOS A	2.6	18.5	0.76	0.69	0.76	30.5
9u	U	All MCs	1	0.0	1	0.0	0.377	12.1	LOS A	2.6	18.5	0.76	0.69	0.76	35.2
Approach			281	1.9	281	1.9	0.377	8.9	LOS A	2.6	18.5	0.76	0.69	0.76	31.4
West: Albany St (W)															
10	L2	All MCs	127	0.8	127	0.8	0.520	5.8	LOS A	4.5	31.7	0.63	0.54	0.63	35.1
11	T1	All MCs	312	1.4	312	1.4	0.520	5.6	LOS A	4.5	31.7	0.63	0.54	0.63	34.9
12	R2	All MCs	86	2.4	86	2.4	0.520	8.5	LOS A	4.5	31.7	0.63	0.54	0.63	26.9
12u	U	All MCs	1	0.0	1	0.0	0.520	9.9	LOS A	4.5	31.7	0.63	0.54	0.63	26.9
Approach			526	1.4	526	1.4	0.520	6.2	LOS A	4.5	31.7	0.63	0.54	0.63	34.2
All Vehicles			1415	2.5	1415	2.5	0.520	7.5	LOS A	4.5	31.7	0.66	0.63	0.66	32.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST10 [CST10 Albany St / Clarke Ln (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

NA
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Clarke Ln (SE)															
21a	L1	All MCs	23	0.0	23	0.0	0.064	4.2	LOS A	4.6	33.3	0.22	0.49	0.22	29.2
23b	R3	All MCs	4	25.0	4	25.0	0.064	22.7	LOS B	4.6	33.3	0.22	0.49	0.22	29.2
Approach			27	3.8	27	3.8	0.064	7.0	LOS A	4.6	33.3	0.22	0.49	0.22	29.2
East: Albany St (E)															
5	T1	All MCs	504	3.8	504	3.8	0.244	0.0	LOS A	9.4	68.0	0.00	0.00	0.00	49.9
Approach			504	3.8	504	3.8	0.244	0.0	NA	9.4	68.0	0.00	0.00	0.00	49.9
West: Albany St (W)															
11	T1	All MCs	541	1.2	541	1.2	0.281	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			541	1.2	541	1.2	0.281	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
All Vehicles			1073	2.5	1073	2.5	0.281	0.2	NA	9.4	68.0	0.01	0.01	0.01	48.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST11 [CST11 Oxley St / Clarke Ln (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

NA
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
SouthEast: Clarke Ln (SE)															
1	L2	All MCs	1	0.0	1	0.0	0.004	4.9	LOSA	0.0	0.1	0.33	0.50	0.33	32.4
2	T1	All MCs	1	0.0	1	0.0	0.004	5.1	LOSA	0.0	0.1	0.33	0.50	0.33	32.4
3	R2	All MCs	1	0.0	1	0.0	0.004	6.8	LOSA	0.0	0.1	0.33	0.50	0.33	32.4
Approach			3	0.0	3	0.0	0.004	5.6	LOSA	0.0	0.1	0.33	0.50	0.33	32.4
NorthEast: Oxley St (NE)															
4	L2	All MCs	7	14.3	7	14.3	0.141	3.2	LOSA	3.3	23.9	0.02	0.04	0.02	39.9
5	T1	All MCs	229	2.3	229	2.3	0.141	0.0	LOSA	3.3	23.9	0.02	0.04	0.02	46.8
6	R2	All MCs	5	0.0	5	0.0	0.141	3.3	LOSA	3.3	23.9	0.02	0.04	0.02	46.8
Approach			242	2.6	242	2.6	0.141	0.2	NA	3.3	23.9	0.02	0.04	0.02	45.9
NorthWest: Clarke Ln (NW)															
7	L2	All MCs	14	0.0	14	0.0	0.021	5.1	LOSA	0.1	0.9	0.32	0.52	0.32	25.0
8	T1	All MCs	1	0.0	1	0.0	0.021	5.1	LOSA	0.1	0.9	0.32	0.52	0.32	34.1
9	R2	All MCs	4	0.0	4	0.0	0.021	6.8	LOSA	0.1	0.9	0.32	0.52	0.32	25.0
Approach			19	0.0	19	0.0	0.021	5.5	LOSA	0.1	0.9	0.32	0.52	0.32	25.9
SouthWest: Oxley St (SW)															
10	L2	All MCs	3	0.0	3	0.0	0.109	3.1	LOSA	0.0	0.1	0.01	0.02	0.01	48.4
11	T1	All MCs	201	2.1	201	2.1	0.109	0.0	LOSA	0.0	0.1	0.01	0.02	0.01	48.4
12	R2	All MCs	2	0.0	2	0.0	0.109	3.2	LOSA	0.0	0.1	0.01	0.02	0.01	42.7
Approach			206	2.0	206	2.0	0.109	0.1	NA	0.0	0.1	0.01	0.02	0.01	48.1
All Vehicles			471	2.2	471	2.2	0.141	0.4	NA	3.3	23.9	0.03	0.05	0.03	43.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

 Site: CST12 [CST12 Hume St / Clarke Ln (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

■ Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

NA
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
SouthEast: Clarke Ln (SE)															
3	R2	All MCs	1	0.0	1	0.0	0.001	6.9	LOS A	0.0	0.0	0.00	1.00	0.00	27.8
Approach			1	0.0	1	0.0	0.001	6.9	LOS A	0.0	0.0	0.00	1.00	0.00	27.8
NorthEast: Hume St (NE)															
4	L2	All MCs	1	0.0	1	0.0	0.001	3.2	LOS A	0.0	0.0	0.00	0.50	0.00	34.8
Approach			1	0.0	1	0.0	0.001	3.2	NA	0.0	0.0	0.00	0.50	0.00	34.8
All Vehicles			2	0.0	2	0.0	0.001	5.1	NA	0.0	0.0	0.00	0.75	0.00	31.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST13 [CST13 Pacific Hwy / Alexander St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 763

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Pacific Hwy (SE)															
2	T1	All MCs	1027	4.5	1027	4.5	0.470	8.8	LOS A	10.2	74.4	0.61	0.54	0.61	34.8
3a	R1	All MCs	317	6.6	317	6.6	*0.506	21.1	LOS B	9.4	69.3	0.67	0.77	0.67	22.4
Approach			1344	5.0	1344	5.0	0.506	11.7	LOS A	10.2	74.4	0.63	0.60	0.63	30.7
North: Alexander St (N)															
24a	L1	All MCs	269	4.3	269	4.3	0.432	31.2	LOS C	11.2	81.4	0.97	0.79	0.97	19.9
26b	R3	All MCs	89	3.5	89	3.5	*0.641	70.0	LOS E	5.9	42.7	0.99	0.80	1.04	4.9
Approach			359	4.1	359	4.1	0.641	40.9	LOS C	11.2	81.4	0.98	0.79	0.99	15.0
NorthWest: Pacific Hwy (NW)															
7b	L3	All MCs	13	0.0	13	0.0	0.116	17.9	LOS B	0.3	3.7	0.15	0.25	0.15	39.2
8	T1	All MCs	1307	5.3	1307	5.3	*0.768	14.8	LOS B	20.0	142.5	0.61	0.60	0.61	38.4
Approach			1320	5.3	1320	5.3	0.768	14.8	LOS B	20.0	142.5	0.60	0.60	0.60	34.1
All Vehicles			3023	5.0	3023	5.0	0.768	16.5	LOS B	20.0	142.5	0.66	0.62	0.66	28.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
North: Alexander St (N)											
P6	Full	333	28.2	LOS C	0.7	0.7	0.91	0.91	44.8	20.0	0.45
NorthWest: Pacific Hwy (NW)											
P3	Full	75	60.9	LOS F	0.3	0.3	0.95	0.95	77.5	20.0	0.26
All Pedestrians		407	34.2	LOS D	0.7	0.7	0.92	0.92	50.8	20.0	0.39

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST14 [CST14 Falcon St / Alexander St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 764

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
South: Alexander St (S)															
1	L2	All MCs	7	14.3	7	14.3	0.597	74.0	LOS F	13.2	98.6	1.00	0.87	1.00	5.0
2	T1	All MCs	251	7.1	251	7.1	0.664	65.5	LOS E	13.2	98.6	1.00	0.87	1.01	8.4
3	R2	All MCs	55	3.8	55	3.8	*0.664	83.6	LOS F	7.7	56.8	1.00	0.86	1.03	16.7
Approach			313	6.7	313	6.7	0.664	68.8	LOS E	13.2	98.6	1.00	0.87	1.01	10.2
East: Falcon St (E)															
4	L2	All MCs	29	7.1	29	7.1	0.445	25.0	LOS B	13.6	98.0	0.60	0.54	0.60	33.5
5	T1	All MCs	664	2.9	664	2.9	0.445	19.2	LOS B	13.6	98.0	0.59	0.53	0.59	33.7
6	R2	All MCs	7	100.0	7	100.0	0.445	25.6	LOS B	11.5	84.2	0.59	0.52	0.59	34.0
Approach			701	4.1	701	4.1	0.445	19.6	LOS B	13.6	98.0	0.59	0.53	0.59	33.7
North: Alexander St (N)															
7	L2	All MCs	32	6.7	32	6.7	0.539	61.4	LOS E	11.0	80.0	0.95	0.79	0.95	20.5
8	T1	All MCs	347	3.6	347	3.6	0.539	53.1	LOS D	11.7	84.4	0.95	0.79	0.95	6.2
Approach			379	3.9	379	3.9	0.539	53.8	LOS D	11.7	84.4	0.95	0.79	0.95	7.9
West: Falcon St (W)															
10	L2	All MCs	197	4.8	197	4.8	*0.364	8.1	LOS A	4.5	32.8	0.16	0.40	0.16	32.5
11	T1	All MCs	754	4.9	754	4.9	0.364	1.4	LOS A	4.5	32.8	0.10	0.18	0.10	54.8
Approach			951	4.9	951	4.9	0.364	2.8	LOS A	4.5	32.8	0.12	0.23	0.12	51.6
All Vehicles			2343	4.7	2343	4.7	0.664	24.9	LOS B	13.6	98.6	0.51	0.49	0.51	27.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Alexander St (S)											
P1	Full	134	61.0	LOS F	0.5	0.5	0.95	0.95	77.7	20.0	0.26

East: Falcon St (E)											
P2	Full	95	60.9	LOS F	0.3	0.3	0.95	0.95	77.6	20.0	0.26
North: Alexander St (N)											
P3	Full	92	60.9	LOS F	0.3	0.3	0.95	0.95	77.6	20.0	0.26
West: Falcon St (W)											
P4	Full	175	61.1	LOS F	0.6	0.6	0.96	0.96	77.8	20.0	0.26
All Pedestrians		495	61.0	LOS F	0.6	0.6	0.95	0.95	77.7	20.0	0.26

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST01 [CST01 Pacific Hwy / Albany St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 768

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 145 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
SouthEast: Pacific Hwy (SE)															
22	T1	All MCs	1049	5.6	1049	5.6	0.426	14.2	LOS A	19.9	146.2	0.54	0.44	0.54	36.2
23b	R3	All MCs	159	0.7	159	0.7	*0.892	88.3	LOS F	12.4	87.4	1.00	0.95	1.26	6.4
Approach			1208	5.0	1208	5.0	0.892	24.0	LOS B	19.9	146.2	0.60	0.50	0.64	25.4
East: Albany St (E)															
4b	L3	All MCs	29	0.0	29	0.0	*0.736	66.3	LOS E	6.8	49.0	0.99	0.86	1.02	2.6
6a	R1	All MCs	563	3.0	563	3.0	0.736	59.7	LOS E	6.8	49.0	0.99	0.86	1.01	9.6
Approach			593	2.8	593	2.8	0.736	60.0	LOS E	6.8	49.0	0.99	0.86	1.01	9.3
NorthWest: Pacific Hwy (NW)															
27a	L1	All MCs	425	2.0	425	2.0	0.347	8.3	LOS A	5.3	37.9	0.20	0.62	0.20	32.6
28	T1	All MCs	1443	2.8	1443	2.8	*0.943	56.6	LOS E	74.2	532.3	1.00	1.08	1.18	9.0
Approach			1868	2.6	1868	2.6	0.943	45.6	LOS D	74.2	532.3	0.82	0.98	0.96	10.8
All Vehicles			3669	3.4	3669	3.4	0.943	40.8	LOS C	74.2	532.3	0.78	0.80	0.86	14.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec					sec	m	m/sec	
SouthEast: Pacific Hwy (SE)											
P5	Full	102	65.9	LOS F	0.4	0.4	0.96	0.96	232.6	200.0	0.86
East: Albany St (E)											
P2	Full	251	66.4	LOS F	1.0	1.0	0.96	0.96	83.0	20.0	0.24
All Pedestrians		353	66.2	LOS F	1.0	1.0	0.96	0.96	126.3	72.1	0.57

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:47 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST02 [CST02 Pacific Hwy / Oxley St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 767

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 145 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
SouthEast: Pacific Hwy (SE)															
1	L2	All MCs	123	0.9	123	0.9	0.119	8.3	LOS A	1.3	9.4	0.14	0.52	0.14	23.9
2	T1	All MCs	1001	5.9	1001	5.9	0.390	3.7	LOS A	6.9	50.7	0.22	0.21	0.22	40.5
Approach			1124	5.3	1124	5.3	0.390	4.2	LOS A	6.9	50.7	0.21	0.24	0.21	36.4
NorthEast: Oxley St (NE)															
4	L2	All MCs	115	0.9	115	0.9	0.358	58.0	LOS E	6.9	49.0	0.91	0.78	0.91	2.7
5	T1	All MCs	129	0.8	129	0.8	0.373	56.6	LOS E	6.9	49.0	0.93	0.75	0.93	7.1
Approach			244	0.9	244	0.9	0.373	57.3	LOS E	6.9	49.0	0.92	0.76	0.92	5.1
NorthWest: Pacific Hwy (NW)															
7	L2	All MCs	62	0.0	62	0.0	0.050	33.1	LOS C	2.6	18.1	0.64	0.55	0.64	18.9
8	T1	All MCs	1404	3.1	1404	3.1	*0.609	29.1	LOS C	32.9	236.6	0.86	0.53	0.86	17.6
Approach			1466	2.9	1466	2.9	0.609	29.3	LOS C	32.9	236.6	0.85	0.53	0.85	14.9
SouthWest: Oxley St (SW)															
10	L2	All MCs	211	0.5	211	0.5	0.704	80.5	LOS F	14.1	98.8	0.98	0.84	1.01	4.7
11	T1	All MCs	177	0.0	177	0.0	0.540	72.4	LOS F	11.1	77.9	0.94	0.77	0.94	5.8
12	R2	All MCs	129	0.0	129	0.0	*0.717	76.4	LOS F	9.3	65.2	1.00	0.87	1.09	4.2
Approach			517	0.2	517	0.2	0.717	76.7	LOS F	14.1	98.8	0.97	0.83	1.01	4.1
All Vehicles			3352	3.2	3352	3.2	0.717	30.2	LOS C	32.9	236.6	0.66	0.50	0.66	12.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
SouthEast: Pacific Hwy (SE)											
P1	Full	144	66.1	LOS F	0.6	0.6	0.96	0.96	82.7	20.0	0.24
NorthEast: Oxley St (NE)											

P2 Full	56	65.8	LOS F	0.2	0.2	0.95	0.95	82.5	20.0	0.24
SouthWest: Oxley St (SW)										
P4 Full	7	65.7	LOS F	0.0	0.0	0.95	0.95	82.4	20.0	0.24
All Pedestrians	207	66.0	LOS F	0.6	0.6	0.96	0.96	82.7	20.0	0.24

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:47 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST03 [CST03 Pacific Hwy / Hume St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 766

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 145 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Pacific Hwy (SE)															
1	L2	All MCs	47	0.0	47	0.0	0.248	6.5	LOS A	1.4	10.1	0.06	0.13	0.06	36.3
2	T1	All MCs	1047	5.6	1047	5.6	0.248	0.4	LOS A	1.4	10.1	0.04	0.06	0.04	57.0
Approach			1095	5.4	1095	5.4	0.248	0.7	LOS A	1.4	10.1	0.04	0.06	0.04	55.3
NorthWest: Pacific Hwy (NW)															
8	T1	All MCs	1653	2.7	1653	2.7	0.547	4.0	LOS A	17.2	123.4	0.32	0.30	0.32	39.7
9	R2	All MCs	100	0	100	0	*0.547	10.9	LOS A	16.6	119.0	0.32	0.30	0.32	23.4
Approach			1654	2.7	1654	2.7	0.547	4.0	LOS A	17.2	123.4	0.32	0.30	0.32	39.7
SouthWest: Hume St (SW)															
10	L2	All MCs	84	0.0	84	0.0	*0.411	70.8	LOS F	5.7	39.8	0.98	0.77	0.98	4.0
12	R2	All MCs	61	0.0	61	0.0	0.280	68.6	LOS E	4.0	28.1	0.95	0.75	0.95	4.3
Approach			145	0.0	145	0.0	0.411	69.9	LOS E	5.7	39.8	0.97	0.77	0.97	4.1
All Vehicles			2894	3.6	2894	3.6	0.547	6.1	LOS A	17.2	123.4	0.25	0.23	0.25	36.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
SouthEast: Pacific Hwy (SE)											
P1	Full	8	65.7	LOS F	0.0	0.0	0.95	0.95	82.4	20.0	0.24
NorthWest: Pacific Hwy (NW)											
P3	Full	15	65.7	LOS F	0.1	0.1	0.95	0.95	82.4	20.0	0.24
SouthWest: Hume St (SW)											
P4	Full	138	66.0	LOS F	0.5	0.5	0.96	0.96	82.7	20.0	0.24
All Pedestrians		161	66.0	LOS F	0.5	0.5	0.96	0.96	82.7	20.0	0.24

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:47 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST04 [CST04 Pacific Hwy / Falcon St / Shirley Rd (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 765

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 145 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
SouthEast: Pacific Hwy (SE)															
1	L2	All MCs	433	0.7	433	0.7	0.366	14.9	LOS B	11.2	78.6	0.40	0.70	0.40	31.0
2	T1	All MCs	732	6.8	732	6.8	0.433	22.9	LOS B	16.1	119.3	0.64	0.56	0.64	15.9
Approach			1164	4.5	1164	4.5	0.433	19.9	LOS B	16.1	119.3	0.55	0.61	0.55	22.4
East: Falcon St (E)															
21b	L3	All MCs	17	0.0	17	0.0	0.918	25.2	LOS B	18.5	130.6	1.00	0.97	1.15	5.2
21a	L1	All MCs	364	0.9	364	0.9	*0.918	66.0	LOS E	18.5	130.6	1.00	0.97	1.15	12.8
23a	R1	All MCs	333	3.8	333	3.8	0.795	50.9	LOS D	18.1	130.6	0.95	0.86	0.98	6.1
Approach			714	2.2	714	2.2	0.918	58.0	LOS E	18.5	130.6	0.98	0.92	1.07	10.2
North: Willoughby Rd (N)															
7	L2	All MCs	1	0.0	1	0.0	0.001	4.6	LOS A	0.0	0.1	0.13	0.48	0.13	36.4
Approach			1	0.0	1	0.0	0.001	4.6	LOS A	0.0	0.1	0.13	0.48	0.13	36.4
NorthWest: Pacific Hwy (NW)															
7a	L1	All MCs	641	2.5	641	2.5	0.640	21.2	LOS B	19.7	140.9	0.82	0.84	0.82	23.3
8	T1	All MCs	1082	2.6	1082	2.6	*0.644	26.2	LOS B	27.5	197.2	0.74	0.67	0.74	20.0
Approach			1723	2.6	1723	2.6	0.644	24.4	LOS B	27.5	197.2	0.77	0.73	0.77	20.5
SouthWest: Shirley Rd (SW)															
10	L2	All MCs	28	0.0	28	0.0	*0.545	67.8	LOS E	14.9	105.7	0.97	0.81	0.97	10.6
12a	R1	All MCs	324	1.3	324	1.3	0.545	62.1	LOS E	15.0	107.5	0.97	0.81	0.97	10.5
12	R2	All MCs	109	3.8	109	3.8	0.545	64.3	LOS E	15.0	107.5	0.97	0.81	0.97	10.4
Approach			462	1.8	462	1.8	0.545	62.9	LOS E	15.0	107.5	0.97	0.81	0.97	10.5
All Vehicles			4064	3.0	4064	3.0	0.918	33.4	LOS C	27.5	197.2	0.77	0.74	0.78	16.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped	Dist]					

		ped/h	sec		ped	m		sec	m	m/sec	
SouthEast: Pacific Hwy (SE)											
P1	Full	113	66.0	LOS F	0.4	0.4	0.96	0.96	82.6	20.0	0.24
East: Falcon St (E)											
P5	Full	189	66.2	LOS F	0.7	0.7	0.96	0.96	82.9	20.0	0.24
NorthWest: Pacific Hwy (NW)											
P3	Full	289	66.5	LOS F	1.1	1.1	0.96	0.96	83.1	20.0	0.24
SouthWest: Shirley Rd (SW)											
P4	Full	167	66.1	LOS F	0.7	0.7	0.96	0.96	82.8	20.0	0.24
All Pedestrians		759	66.3	LOS F	1.1	1.1	0.96	0.96	82.9	20.0	0.24

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:47 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST05 [CST05 Clarke St / Oxley St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

NA
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
SouthEast: Clarke St (SE)															
1	L2	All MCs	31	6.9	31	6.9	0.095	5.4	LOS A	0.3	1.9	0.39	0.60	0.39	31.7
3a	R1	All MCs	39	2.7	39	2.7	0.095	6.5	LOS A	0.3	1.9	0.39	0.60	0.39	31.7
Approach			69	4.5	69	4.5	0.095	6.0	LOS A	0.3	1.9	0.39	0.60	0.39	31.7
North: Oxley St (N)															
24a	L1	All MCs	111	0.0	111	0.0	0.240	4.4	LOS A	0.0	0.0	0.00	0.53	0.00	29.7
26a	R1	All MCs	207	1.0	207	1.0	0.240	4.1	LOS A	0.0	0.0	0.00	0.53	0.00	29.7
Approach			318	0.7	318	0.7	0.240	4.2	NA	0.0	0.0	0.00	0.53	0.00	29.7
SouthWest: Oxley St (SW)															
10a	L1	All MCs	182	0.6	182	0.6	0.145	3.3	LOS A	0.5	3.4	0.24	0.55	0.24	22.7
12	R2	All MCs	64	0.0	64	0.0	0.145	4.1	LOS A	0.5	3.4	0.24	0.55	0.24	22.7
Approach			246	0.4	246	0.4	0.145	3.5	NA	0.5	3.4	0.24	0.55	0.24	22.7
All Vehicles			634	1.0	634	1.0	0.240	4.1	NA	0.5	3.4	0.14	0.54	0.14	28.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:47 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST06 [CST06 Clarke St / Hume St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

NA
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Clarke St (SE)															
1	L2	All MCs	1	0.0	1	0.0	0.056	5.1	LOS A	0.2	1.5	0.21	0.24	0.21	39.0
2	T1	All MCs	61	0.0	61	0.0	0.056	0.3	LOS A	0.2	1.5	0.21	0.24	0.21	39.0
23a	R1	All MCs	37	0.0	37	0.0	0.056	4.1	LOS A	0.2	1.5	0.21	0.24	0.21	42.3
Approach			99	0.0	99	0.0	0.056	1.8	NA	0.2	1.5	0.21	0.24	0.21	41.0
NorthWest: Clarke St (NW)															
8	T1	All MCs	167	0.0	167	0.0	0.086	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
9	R2	All MCs	1	0.0	1	0.0	0.086	4.6	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
Approach			168	0.0	168	0.0	0.086	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
SouthWest: Hume St (SW)															
10	L2	All MCs	1	0.0	1	0.0	0.005	3.4	LOS A	0.0	0.1	0.23	0.47	0.23	24.4
30a	L1	All MCs	1	0.0	1	0.0	0.005	3.1	LOS A	0.0	0.1	0.23	0.47	0.23	38.3
12	R2	All MCs	1	0.0	1	0.0	0.005	4.3	LOS A	0.0	0.1	0.23	0.47	0.23	32.4
Approach			3	0.0	3	0.0	0.005	3.6	LOS A	0.0	0.1	0.23	0.47	0.23	34.0
All Vehicles			271	0.0	271	0.0	0.086	0.7	NA	0.2	1.5	0.08	0.10	0.08	46.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:47 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST07 [CST07 Clarke St / Willoughby Rd (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Willoughby Rd (S)															
1	L2	All MCs	94	3.4	94	3.4	0.265	4.4	LOS A	1.3	9.8	0.48	0.44	0.48	29.7
2	T1	All MCs	133	11.9	133	11.9	0.265	3.5	LOS A	1.3	9.8	0.48	0.44	0.48	34.9
Approach			226	8.4	226	8.4	0.265	3.9	NA	1.3	9.8	0.48	0.44	0.48	33.3
North: Willoughby Rd (N)															
8	T1	All MCs	160	4.6	160	4.6	0.274	3.1	LOS A	1.2	8.4	0.49	0.47	0.49	34.3
9	R2	All MCs	44	0.0	44	0.0	0.274	8.9	LOS A	1.2	8.4	0.49	0.47	0.49	33.7
Approach			204	3.6	204	3.6	0.274	4.3	NA	1.2	8.4	0.49	0.47	0.49	34.2
West: Clarke St (W)															
10	L2	All MCs	89	0.0	89	0.0	0.248	7.1	LOS A	1.0	6.7	0.56	0.75	0.58	31.9
12	R2	All MCs	101	0.0	101	0.0	0.248	6.6	LOS A	1.0	6.7	0.56	0.75	0.58	25.6
Approach			191	0.0	191	0.0	0.248	6.8	LOS A	1.0	6.7	0.56	0.75	0.58	29.4
All Vehicles			621	4.2	621	4.2	0.274	4.9	NA	1.3	9.8	0.51	0.55	0.51	32.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 4:03:26 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST08 [CST08 Albany St / Willoughby Rd (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 516

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 66 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Willoughby Rd (S)															
1	L2	All MCs	68	12.3	68	12.3	0.145	27.3	LOS B	1.7	12.9	0.78	0.70	0.78	24.7
2	T1	All MCs	141	3.7	141	3.7	0.287	21.9	LOS B	3.6	25.9	0.76	0.63	0.76	28.8
3	R2	All MCs	11	0.0	11	0.0	0.287	29.8	LOS C	3.6	25.9	0.76	0.63	0.76	27.2
Approach			220	6.2	220	6.2	0.287	23.9	LOS B	3.6	25.9	0.77	0.65	0.77	25.1
East: Albany St (E)															
4	L2	All MCs	26	0.0	26	0.0	0.293	17.4	LOS B	5.2	37.0	0.62	0.55	0.62	31.9
5	T1	All MCs	342	1.5	342	1.5	0.587	11.2	LOS A	6.6	46.8	0.70	0.61	0.70	31.0
6	R2	All MCs	153	0.7	153	0.7	* 0.587	27.6	LOS B	6.6	46.8	0.91	0.78	0.91	25.1
Approach			521	1.2	521	1.2	0.587	16.3	LOS B	6.6	46.8	0.76	0.66	0.76	29.0
North: Willoughby Rd (N)															
7	L2	All MCs	132	0.0	132	0.0	0.151	15.3	LOS B	2.4	16.9	0.60	0.70	0.60	29.2
8	T1	All MCs	181	2.9	181	2.9	0.421	19.7	LOS B	5.9	42.4	0.83	0.74	0.83	26.8
9	R2	All MCs	47	0.0	47	0.0	* 0.421	28.5	LOS B	5.9	42.4	0.83	0.74	0.83	25.4
Approach			360	1.5	360	1.5	0.421	19.2	LOS B	5.9	42.4	0.75	0.73	0.75	27.4
West: Albany St (W)															
10	L2	All MCs	104	1.0	104	1.0	0.197	24.9	LOS B	2.6	18.2	0.79	0.74	0.79	24.1
11	T1	All MCs	394	1.6	394	1.6	* 0.596	20.2	LOS B	10.6	75.4	0.88	0.75	0.88	27.0
Approach			498	1.5	498	1.5	0.596	21.2	LOS B	10.6	75.4	0.86	0.75	0.86	25.8
All Vehicles			1599	2.0	1599	2.0	0.596	19.5	LOS B	10.6	75.4	0.79	0.70	0.79	27.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Willoughby Rd (S)												
P1	Full	104	109	26.5	LOS C	0.2	0.2	0.90	0.90	43.2	20.0	0.46
East: Albany St (E)												
P2	Full	205	216	26.6	LOS C	0.4	0.4	0.90	0.90	43.3	20.0	0.46

North: Willoughby Rd (N)												
P3	Full	109	115	26.5	LOS C	0.2	0.2	0.90	0.90	43.2	20.0	0.46
West: Albany St (W)												
P4	Full	158	166	26.6	LOS C	0.3	0.3	0.90	0.90	43.2	20.0	0.46
All	Pedestrians	576	606	26.6	LOS C	0.4	0.4	0.90	0.90	43.2	20.0	0.46

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 4:03:27 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST09 [CST09 Albany St / Oxley St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Oxley St (S)															
1	L2	All MCs	61	1.7	61	1.7	0.434	9.4	LOS A	3.0	20.7	0.84	0.74	0.89	20.2
2	T1	All MCs	142	0.0	142	0.0	0.434	9.1	LOS A	3.0	20.7	0.84	0.74	0.89	31.7
3	R2	All MCs	57	0.0	57	0.0	0.434	12.0	LOS A	3.0	20.7	0.84	0.74	0.89	29.8
3u	U	All MCs	1	0.0	1	0.0	0.434	13.4	LOS A	3.0	20.7	0.84	0.74	0.89	20.2
Approach			261	0.4	261	0.4	0.434	9.8	LOS A	3.0	20.7	0.84	0.74	0.89	29.6
East: Albany St (E)															
4	L2	All MCs	35	3.0	35	3.0	0.908	18.6	LOS B	9.5	67.9	0.97	1.18	1.54	20.0
5	T1	All MCs	347	3.0	347	3.0	0.908	18.3	LOS B	9.5	67.9	0.97	1.18	1.54	20.0
6	R2	All MCs	47	2.2	47	2.2	0.908	21.2	LOS B	9.5	67.9	0.97	1.18	1.54	27.2
6u	U	All MCs	1	0.0	1	0.0	0.908	22.4	LOS B	9.5	67.9	0.97	1.18	1.54	26.5
Approach			431	2.9	431	2.9	0.908	18.7	LOS B	9.5	67.9	0.97	1.18	1.54	21.2
North: Oxley St (N)															
7	L2	All MCs	51	2.1	51	2.1	0.509	10.5	LOS A	4.2	29.4	0.87	0.79	0.98	32.8
8	T1	All MCs	161	0.7	161	0.7	0.509	10.2	LOS A	4.2	29.4	0.87	0.79	0.98	27.7
9	R2	All MCs	121	1.7	121	1.7	0.509	13.1	LOS A	4.2	29.4	0.87	0.79	0.98	27.7
9u	U	All MCs	1	0.0	1	0.0	0.509	14.4	LOS A	4.2	29.4	0.87	0.79	0.98	33.2
Approach			334	1.3	334	1.3	0.509	11.3	LOS A	4.2	29.4	0.87	0.79	0.98	28.8
West: Albany St (W)															
10	L2	All MCs	115	0.9	115	0.9	0.634	7.7	LOS A	6.5	45.9	0.81	0.64	0.86	33.8
11	T1	All MCs	377	1.7	377	1.7	0.634	7.6	LOS A	6.5	45.9	0.81	0.64	0.86	33.6
12	R2	All MCs	83	0.0	83	0.0	0.634	10.4	LOS A	6.5	45.9	0.81	0.64	0.86	25.1
12u	U	All MCs	1	0.0	1	0.0	0.634	11.8	LOS A	6.5	45.9	0.81	0.64	0.86	25.1
Approach			576	1.3	576	1.3	0.634	8.0	LOS A	6.5	45.9	0.81	0.64	0.86	32.9
All Vehicles			1601	1.6	1601	1.6	0.908	11.9	LOS A	9.5	67.9	0.87	0.83	1.07	28.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:47 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST10 [CST10 Albany St / Clarke Ln (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

NA
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Clarke Ln (SE)															
21a	L1	All MCs	36	0.0	36	0.0	0.058	4.6	LOS A	0.1	0.8	0.30	0.53	0.30	32.5
23b	R3	All MCs	1	0.0	1	0.0	0.058	18.2	LOS B	0.1	0.8	0.30	0.53	0.30	32.5
Approach			37	0.0	37	0.0	0.058	5.0	LOS A	0.1	0.8	0.30	0.53	0.30	32.5
East: Albany St (E)															
5	T1	All MCs	547	3.1	547	3.1	0.193	0.0	LOS A	13.3	95.8	0.00	0.00	0.00	49.9
Approach			547	3.1	547	3.1	0.193	0.0	NA	13.3	95.8	0.00	0.00	0.00	49.9
West: Albany St (W)															
11	T1	All MCs	582	1.6	582	1.6	0.303	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			582	1.6	582	1.6	0.303	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
All Vehicles			1166	2.3	1166	2.3	0.303	0.2	NA	13.3	95.8	0.01	0.02	0.01	48.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:47 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST11 [CST11 Oxley St / Clarke Ln (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

NA
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
SouthEast: Clarke Ln (SE)															
1	L2	All MCs	2	0.0	2	0.0	0.008	4.9	LOS A	0.0	0.1	0.32	0.51	0.32	32.1
2	T1	All MCs	1	0.0	1	0.0	0.008	5.2	LOS A	0.0	0.1	0.32	0.51	0.32	32.1
3	R2	All MCs	2	0.0	2	0.0	0.008	6.8	LOS A	0.0	0.1	0.32	0.51	0.32	32.1
Approach			5	0.0	5	0.0	0.008	5.7	LOS A	0.0	0.1	0.32	0.51	0.32	32.1
NorthEast: Oxley St (NE)															
4	L2	All MCs	3	0.0	3	0.0	0.127	3.4	LOS A	1.9	13.6	0.03	0.03	0.03	42.9
5	T1	All MCs	234	0.9	234	0.9	0.127	0.0	LOS A	1.9	13.6	0.03	0.03	0.03	47.1
6	R2	All MCs	6	0.0	6	0.0	0.127	3.4	LOS A	1.9	13.6	0.03	0.03	0.03	47.1
Approach			243	0.9	243	0.9	0.127	0.2	NA	1.9	13.6	0.03	0.03	0.03	46.8
NorthWest: Clarke Ln (NW)															
7	L2	All MCs	12	0.0	12	0.0	0.019	5.2	LOS A	0.1	0.5	0.34	0.52	0.34	24.8
8	T1	All MCs	1	0.0	1	0.0	0.019	5.1	LOS A	0.1	0.5	0.34	0.52	0.34	34.0
9	R2	All MCs	4	0.0	4	0.0	0.019	6.9	LOS A	0.1	0.5	0.34	0.52	0.34	24.8
Approach			17	0.0	17	0.0	0.019	5.6	LOS A	0.1	0.5	0.34	0.52	0.34	25.9
SouthWest: Oxley St (SW)															
10	L2	All MCs	7	0.0	7	0.0	0.120	3.0	LOS A	0.0	0.1	0.00	0.02	0.00	48.1
11	T1	All MCs	225	0.0	225	0.0	0.120	0.0	LOS A	0.0	0.1	0.00	0.02	0.00	48.1
12	R2	All MCs	1	0.0	1	0.0	0.120	3.1	LOS A	0.0	0.1	0.00	0.02	0.00	42.6
Approach			234	0.0	234	0.0	0.120	0.1	NA	0.0	0.1	0.00	0.02	0.00	48.0
All Vehicles			499	0.4	499	0.4	0.127	0.4	NA	1.9	13.6	0.03	0.05	0.03	44.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com


Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:47 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

 Site: CST12 [CST12 Hume St / Clarke Ln (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

 Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

NA
 Site Category: (None)
 Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
SouthEast: Clarke Ln (SE)															
3	R2	All MCs	1	0.0	1	0.0	0.001	6.9	LOS A	0.0	0.0	0.00	1.00	0.00	27.8
Approach			1	0.0	1	0.0	0.001	6.9	LOS A	0.0	0.0	0.00	1.00	0.00	27.8
NorthEast: Hume St (NE)															
4	L2	All MCs	1	0.0	1	0.0	0.001	3.2	LOS A	0.0	0.0	0.00	0.50	0.00	34.8
Approach			1	0.0	1	0.0	0.001	3.2	NA	0.0	0.0	0.00	0.50	0.00	34.8
All Vehicles			2	0.0	2	0.0	0.001	5.1	NA	0.0	0.0	0.00	0.75	0.00	31.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:47 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST13 [CST13 Pacific Hwy / Alexander St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 763

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 145 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
SouthEast: Pacific Hwy (SE)															
2	T1	All MCs	1042	5.1	1042	5.1	*0.463	8.5	LOS A	10.4	76.1	0.59	0.52	0.59	35.3
3a	R1	All MCs	293	2.9	293	2.9	0.507	16.6	LOS B	7.1	51.2	0.55	0.73	0.55	25.8
Approach			1335	4.6	1335	4.6	0.507	10.3	LOS A	10.4	76.1	0.58	0.57	0.58	32.6
North: Alexander St (N)															
24a	L1	All MCs	266	2.0	266	2.0	*0.439	38.3	LOS C	13.1	93.0	1.00	0.76	1.00	17.6
26b	R3	All MCs	131	0.0	131	0.0	*0.938	95.9	LOS F	10.5	73.7	1.00	0.98	1.30	3.7
Approach			397	1.3	397	1.3	0.938	57.3	LOS E	13.1	93.0	1.00	0.83	1.10	11.2
NorthWest: Pacific Hwy (NW)															
7b	L3	All MCs	9	0.0	9	0.0	0.068	14.3	LOS A	0.3	3.1	0.20	0.31	0.20	34.9
8	T1	All MCs	1184	2.7	1184	2.7	*0.628	7.2	LOS A	10.7	75.7	0.39	0.38	0.39	46.7
Approach			1194	2.6	1194	2.6	0.628	7.3	LOS A	10.7	75.7	0.38	0.37	0.38	43.7
All Vehicles			2925	3.3	2925	3.3	0.938	15.4	LOS B	13.1	93.0	0.56	0.52	0.57	29.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec					sec	m	m/sec	
North: Alexander St (N)											
P6	Full	87	30.8	LOS D	0.2	0.2	0.91	0.91	47.4	20.0	0.42
NorthWest: Pacific Hwy (NW)											
P3	Full	93	65.9	LOS F	0.4	0.4	0.96	0.96	82.6	20.0	0.24
All Pedestrians		180	48.9	LOS E	0.4	0.4	0.93	0.93	65.5	20.0	0.31

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:47 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST14 [CST14 Falcon St / Alexander St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 764

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 145 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Alexander St (S)															
1	L2	All MCs	6	0.0	6	0.0	0.505	75.3	LOS F	14.2	102.6	1.00	0.87	1.00	4.9
2	T1	All MCs	240	3.5	240	3.5	0.561	66.7	LOS E	14.2	102.6	1.00	0.87	1.00	8.3
3	R2	All MCs	56	0.0	56	0.0	*0.561	86.9	LOS F	7.2	51.3	1.00	0.83	1.00	16.3
Approach			302	2.8	302	2.8	0.561	70.6	LOS F	14.2	102.6	1.00	0.86	1.00	10.1
East: Falcon St (E)															
4	L2	All MCs	34	0.0	34	0.0	0.475	27.8	LOS B	16.2	115.4	0.63	0.57	0.63	31.4
5	T1	All MCs	708	2.2	708	2.2	0.475	22.0	LOS B	16.2	115.4	0.62	0.56	0.62	31.7
6	R2	All MCs	5	100.0	5	100.0	0.475	28.3	LOS B	14.0	101.0	0.62	0.54	0.62	32.5
Approach			747	2.8	747	2.8	0.475	22.3	LOS B	16.2	115.4	0.62	0.56	0.62	31.7
North: Alexander St (N)															
7	L2	All MCs	41	0.0	41	0.0	0.518	62.2	LOS E	11.8	83.5	0.94	0.79	0.94	20.3
8	T1	All MCs	366	1.4	366	1.4	0.518	53.7	LOS D	13.7	97.1	0.93	0.78	0.93	6.2
Approach			407	1.3	407	1.3	0.518	54.5	LOS D	13.7	97.1	0.93	0.78	0.93	8.1
West: Falcon St (W)															
10	L2	All MCs	201	0.0	201	0.0	*0.408	8.9	LOS A	6.3	44.8	0.19	0.39	0.19	32.6
11	T1	All MCs	861	2.3	861	2.3	0.408	2.2	LOS A	6.3	44.8	0.15	0.22	0.15	53.6
Approach			1062	1.9	1062	1.9	0.408	3.5	LOS A	6.3	44.8	0.16	0.25	0.16	51.0
All Vehicles			2519	2.2	2519	2.2	0.561	25.4	LOS B	16.2	115.4	0.52	0.50	0.52	27.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist]					
			ped/h	sec		m		sec	m	m/sec	
South: Alexander St (S)											
P1	Full	83	65.9	LOS F	0.3	0.3	0.96	0.96	82.6	20.0	0.24

East: Falcon St (E)											
P2	Full	95	65.9	LOS F	0.4	0.4	0.96	0.96	82.6	20.0	0.24
North: Alexander St (N)											
P3	Full	119	66.0	LOS F	0.5	0.5	0.96	0.96	82.7	20.0	0.24
West: Falcon St (W)											
P4	Full	181	66.2	LOS F	0.7	0.7	0.96	0.96	82.8	20.0	0.24
All Pedestrians		478	66.0	LOS F	0.7	0.7	0.96	0.96	82.7	20.0	0.24

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:47 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST01 [CST01 Pacific Hwy / Albany St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 768

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
SouthEast: Pacific Hwy (SE)															
22	T1	All MCs	984	2.6	984	2.6	0.379	11.5	LOS A	17.9	127.9	0.50	0.38	0.50	38.9
23b	R3	All MCs	153	0.7	153	0.7	*0.912	85.6	LOS F	11.4	80.4	1.00	0.97	1.32	6.5
Approach			1137	2.3	1137	2.3	0.912	21.5	LOS B	17.9	127.9	0.57	0.46	0.61	27.0
East: Albany St (E)															
4b	L3	All MCs	39	0.0	39	0.0	*0.657	64.2	LOS E	6.9	49.0	0.98	0.83	0.98	2.7
6a	R1	All MCs	452	1.6	452	1.6	0.657	55.3	LOS D	6.9	49.0	0.98	0.83	0.98	10.2
Approach			491	1.5	491	1.5	0.657	56.0	LOS D	6.9	49.0	0.98	0.83	0.98	9.7
NorthWest: Pacific Hwy (NW)															
27a	L1	All MCs	351	0.3	351	0.3	0.285	8.5	LOS A	4.2	29.5	0.20	0.62	0.20	32.3
28	T1	All MCs	1051	2.3	1051	2.3	*0.503	20.1	LOS B	21.2	151.2	0.67	0.60	0.67	19.9
Approach			1401	1.8	1401	1.8	0.503	17.2	LOS B	21.2	151.2	0.55	0.61	0.55	22.0
All Vehicles			3028	1.9	3028	1.9	0.912	25.1	LOS B	21.2	151.2	0.63	0.59	0.64	20.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec					sec	m	m/sec	
SouthEast: Pacific Hwy (SE)											
P5	Full	257	61.3	LOS F	0.9	0.9	0.96	0.96	228.0	200.0	0.88
East: Albany St (E)											
P2	Full	195	61.2	LOS F	0.7	0.7	0.96	0.96	77.8	20.0	0.26
All Pedestrians		452	61.3	LOS F	0.9	0.9	0.96	0.96	163.3	122.4	0.75

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST02 [CST02 Pacific Hwy / Oxley St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 767

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
SouthEast: Pacific Hwy (SE)															
1	L2	All MCs	77	0.0	77	0.0	0.058	10.0	LOS A	0.6	4.3	0.13	0.61	0.13	32.2
2	T1	All MCs	993	2.8	993	2.8	0.380	3.7	LOS A	5.5	39.6	0.18	0.17	0.18	44.8
Approach			1069	2.6	1069	2.6	0.380	4.1	LOS A	5.5	39.6	0.18	0.20	0.18	39.4
NorthEast: Oxley St (NE)															
4	L2	All MCs	101	2.1	101	2.1	0.362	57.9	LOS E	6.0	42.8	0.93	0.78	0.93	2.7
5	T1	All MCs	81	0.0	81	0.0	0.281	55.6	LOS D	4.8	33.6	0.93	0.73	0.93	7.2
Approach			182	1.2	182	1.2	0.362	56.9	LOS E	6.0	42.8	0.93	0.75	0.93	4.7
NorthWest: Pacific Hwy (NW)															
7	L2	All MCs	73	0.0	73	0.0	0.057	15.2	LOS B	1.5	10.3	0.34	0.65	0.34	26.1
8	T1	All MCs	1016	2.3	1016	2.3	*0.401	9.1	LOS A	14.0	99.7	0.43	0.38	0.43	33.1
Approach			1088	2.1	1088	2.1	0.401	9.5	LOS A	14.0	99.7	0.42	0.40	0.42	30.3
SouthWest: Oxley St (SW)															
10	L2	All MCs	145	0.0	145	0.0	*0.422	57.4	LOS E	8.5	59.8	0.93	0.79	0.93	5.1
11	T1	All MCs	97	0.0	97	0.0	0.268	51.0	LOS D	5.5	38.4	0.90	0.71	0.90	6.1
12	R2	All MCs	83	0.0	83	0.0	0.439	64.5	LOS E	5.2	36.5	0.97	0.78	0.97	4.7
Approach			325	0.0	325	0.0	0.439	57.3	LOS E	8.5	59.8	0.93	0.77	0.93	5.3
All Vehicles			2665	2.0	2665	2.0	0.439	16.4	LOS B	14.0	99.7	0.42	0.39	0.42	19.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
SouthEast: Pacific Hwy (SE)											
P1	Full	149	61.1	LOS F	0.5	0.5	0.95	0.95	77.7	20.0	0.26
NorthEast: Oxley St (NE)											

P2 Full	64	60.8	LOS F	0.2	0.2	0.95	0.95	77.5	20.0	0.26
SouthWest: Oxley St (SW)										
P4 Full	4	60.7	LOS F	0.0	0.0	0.95	0.95	77.4	20.0	0.26
All Pedestrians	218	61.0	LOS F	0.5	0.5	0.95	0.95	77.7	20.0	0.26

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST03 [CST03 Pacific Hwy / Hume St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 766

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
SouthEast: Pacific Hwy (SE)															
1	L2	All MCs	45	2.3	45	2.3	0.081	7.3	LOS A	0.8	5.7	0.11	0.29	0.11	33.7
2	T1	All MCs	1013	2.5	1013	2.5	0.305	2.4	LOS A	7.9	56.3	0.20	0.19	0.20	50.1
Approach			1058	2.5	1058	2.5	0.305	2.6	LOS A	7.9	56.3	0.19	0.19	0.19	48.8
NorthWest: Pacific Hwy (NW)															
8	T1	All MCs	1189	2.2	1189	2.2	0.426	6.1	LOS A	17.7	126.1	0.46	0.29	0.46	33.7
9	R2	All MCs	100	0	100	0	*0.426	17.0	LOS B	14.6	104.2	0.46	0.29	0.46	21.8
Approach			1191	2.3	1191	2.3	0.426	6.1	LOS A	17.7	126.1	0.46	0.29	0.46	33.7
SouthWest: Hume St (SW)															
10	L2	All MCs	58	0.0	58	0.0	*0.301	66.6	LOS E	3.6	25.4	0.96	0.75	0.96	4.3
12	R2	All MCs	23	0.0	23	0.0	0.143	66.4	LOS E	1.4	10.1	0.95	0.71	0.95	4.4
Approach			81	0.0	81	0.0	0.301	66.6	LOS E	3.6	25.4	0.96	0.74	0.96	4.3
All Vehicles			2329	2.3	2329	2.3	0.426	6.7	LOS A	17.7	126.1	0.35	0.26	0.35	35.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec					sec	m	m/sec	
SouthEast: Pacific Hwy (SE)											
P1	Full	25	60.7	LOS F	0.1	0.1	0.95	0.95	77.4	20.0	0.26
NorthWest: Pacific Hwy (NW)											
P3	Full	12	60.7	LOS F	0.0	0.0	0.95	0.95	77.4	20.0	0.26
SouthWest: Hume St (SW)											
P4	Full	106	61.0	LOS F	0.4	0.4	0.95	0.95	77.6	20.0	0.26
All Pedestrians		143	60.9	LOS F	0.4	0.4	0.95	0.95	77.6	20.0	0.26

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST04 [CST04 Pacific Hwy / Falcon St / Shirley Rd (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 765

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
SouthEast: Pacific Hwy (SE)															
1	L2	All MCs	282	0.4	282	0.4	0.290	19.9	LOS B	8.2	57.9	0.48	0.72	0.48	27.5
2	T1	All MCs	703	2.5	703	2.5	0.735	42.2	LOS C	20.6	147.4	0.92	0.80	0.93	9.8
Approach			985	1.9	985	1.9	0.735	35.8	LOS C	20.6	147.4	0.80	0.78	0.81	14.4
East: Falcon St (E)															
21b	L3	All MCs	12	0.0	12	0.0	0.938	33.3	LOS C	18.5	130.6	0.99	1.00	1.18	5.9
21a	L1	All MCs	405	1.3	405	1.3	*0.938	56.3	LOS D	18.5	130.6	0.99	1.00	1.18	14.2
23a	R1	All MCs	395	2.1	395	2.1	0.648	31.1	LOS C	18.2	130.0	0.75	0.78	0.75	9.4
Approach			812	1.7	812	1.7	0.938	43.7	LOS D	18.5	130.6	0.88	0.89	0.97	12.6
North: Willoughby Rd (N)															
7	L2	All MCs	1	0.0	1	0.0	0.001	3.7	LOS A	0.0	0.0	0.07	0.47	0.07	37.0
Approach			1	0.0	1	0.0	0.001	3.7	LOS A	0.0	0.0	0.07	0.47	0.07	37.0
NorthWest: Pacific Hwy (NW)															
7a	L1	All MCs	378	3.6	378	3.6	0.495	21.8	LOS B	11.7	84.2	0.79	0.80	0.79	21.7
8	T1	All MCs	806	1.6	806	1.6	*0.926	48.9	LOS D	31.5	223.7	0.97	0.92	1.05	12.4
Approach			1184	2.2	1184	2.2	0.926	40.2	LOS C	31.5	223.7	0.91	0.88	0.97	14.3
SouthWest: Shirley Rd (SW)															
10	L2	All MCs	38	0.0	38	0.0	*0.685	63.8	LOS E	20.0	140.2	0.97	0.84	0.97	12.1
12a	R1	All MCs	483	0.2	483	0.2	0.685	51.0	LOS D	21.2	149.2	0.96	0.84	0.96	12.1
12	R2	All MCs	172	1.2	172	1.2	0.685	52.3	LOS D	21.2	149.2	0.96	0.84	0.96	12.2
Approach			693	0.5	693	0.5	0.685	52.0	LOS D	21.2	149.2	0.96	0.84	0.96	12.2
All Vehicles			3675	1.7	3675	1.7	0.938	42.0	LOS C	31.5	223.7	0.88	0.85	0.93	13.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped	Dist]					

	ped/h	sec		ped	m		sec	m	m/sec	
SouthEast: Pacific Hwy (SE)										
P1 Full	95	60.9	LOS F	0.3	0.3	0.95	0.95	77.6	20.0	0.26
East: Falcon St (E)										
P5 Full	168	61.1	LOS F	0.6	0.6	0.95	0.95	77.8	20.0	0.26
NorthWest: Pacific Hwy (NW)										
P3 Full	308	61.5	LOS F	1.1	1.1	0.96	0.96	78.1	20.0	0.26
SouthWest: Shirley Rd (SW)										
P4 Full	101	60.9	LOS F	0.4	0.4	0.95	0.95	77.6	20.0	0.26
All Pedestrians	673	61.2	LOS F	1.1	1.1	0.96	0.96	77.9	20.0	0.26

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST05 [CST05 Clarke St / Oxley St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

NA
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Clarke St (SE)															
1	L2	All MCs	31	0.0	31	0.0	0.058	5.1	LOS A	0.2	1.4	0.32	0.55	0.32	32.5
3a	R1	All MCs	33	0.0	33	0.0	0.058	5.7	LOS A	0.2	1.4	0.32	0.55	0.32	32.5
Approach			63	0.0	63	0.0	0.058	5.4	LOS A	0.2	1.4	0.32	0.55	0.32	32.5
North: Oxley St (N)															
24a	L1	All MCs	124	2.5	124	2.5	0.153	4.4	LOS A	0.0	0.0	0.00	0.53	0.00	29.6
26a	R1	All MCs	163	0.6	163	0.6	0.153	4.1	LOS A	0.0	0.0	0.00	0.53	0.00	29.6
Approach			287	1.5	287	1.5	0.153	4.2	NA	0.0	0.0	0.00	0.53	0.00	29.6
SouthWest: Oxley St (SW)															
10a	L1	All MCs	132	0.0	132	0.0	0.102	3.2	LOS A	0.3	2.3	0.22	0.54	0.22	23.0
12	R2	All MCs	45	0.0	45	0.0	0.102	3.9	LOS A	0.3	2.3	0.22	0.54	0.22	23.0
Approach			177	0.0	177	0.0	0.102	3.4	NA	0.3	2.3	0.22	0.54	0.22	23.0
All Vehicles			527	0.8	527	0.8	0.153	4.1	NA	0.3	2.3	0.11	0.54	0.11	28.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST06 [CST06 Clarke St / Hume St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

NA
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Clarke St (SE)															
1	L2	All MCs	1	0.0	1	0.0	0.050	5.1	LOS A	0.2	1.4	0.22	0.26	0.22	38.4
2	T1	All MCs	52	0.0	52	0.0	0.050	0.3	LOS A	0.2	1.4	0.22	0.26	0.22	38.4
23a	R1	All MCs	36	0.0	36	0.0	0.050	4.1	LOS A	0.2	1.4	0.22	0.26	0.22	42.1
Approach			88	0.0	88	0.0	0.050	1.9	NA	0.2	1.4	0.22	0.26	0.22	40.7
NorthWest: Clarke St (NW)															
8	T1	All MCs	167	1.9	167	1.9	0.088	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
9	R2	All MCs	1	0.0	1	0.0	0.088	4.6	LOS A	0.0	0.0	0.00	0.00	0.00	49.8
Approach			168	1.9	168	1.9	0.088	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
SouthWest: Hume St (SW)															
10	L2	All MCs	2	50.0	2	50.0	0.007	3.4	LOS A	0.0	0.1	0.19	0.46	0.19	24.8
30a	L1	All MCs	1	0.0	1	0.0	0.007	3.0	LOS A	0.0	0.1	0.19	0.46	0.19	38.5
12	R2	All MCs	1	0.0	1	0.0	0.007	4.3	LOS A	0.0	0.1	0.19	0.46	0.19	32.6
Approach			4	25.0	4	25.0	0.007	3.5	LOS A	0.0	0.1	0.19	0.46	0.19	33.0
All Vehicles			261	1.6	261	1.6	0.088	0.7	NA	0.2	1.4	0.08	0.10	0.08	46.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST07 [CST07 Clarke St / Willoughby Rd (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Willoughby Rd (S)															
1	L2	All MCs	65	0.0	65	0.0	0.262	4.7	LOS A	1.3	9.1	0.54	0.49	0.54	29.2
2	T1	All MCs	138	6.1	138	6.1	0.262	4.1	LOS A	1.3	9.1	0.54	0.49	0.54	34.4
Approach			203	4.1	203	4.1	0.262	4.3	NA	1.3	9.1	0.54	0.49	0.54	33.2
North: Willoughby Rd (N)															
8	T1	All MCs	159	3.3	159	3.3	0.311	4.2	LOS A	1.4	10.3	0.54	0.59	0.60	32.9
9	R2	All MCs	51	0.0	51	0.0	0.311	10.3	LOS A	1.4	10.3	0.54	0.59	0.60	32.5
Approach			209	2.5	209	2.5	0.311	5.7	NA	1.4	10.3	0.54	0.59	0.60	32.8
West: Clarke St (W)															
10	L2	All MCs	85	1.2	85	1.2	0.230	8.7	LOS A	0.9	6.0	0.60	0.80	0.63	31.1
12	R2	All MCs	65	0.0	65	0.0	0.230	6.9	LOS A	0.9	6.0	0.60	0.80	0.63	24.5
Approach			151	0.7	151	0.7	0.230	7.9	LOS A	0.9	6.0	0.60	0.80	0.63	29.0
All Vehicles			563	2.6	563	2.6	0.311	5.8	NA	1.4	10.3	0.56	0.61	0.59	31.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 4:03:38 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST08 [CST08 Albany St / Willoughby Rd (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 516

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Willoughby Rd (S)															
1	L2	All MCs	82	7.7	82	7.7	0.141	20.5	LOS B	1.8	13.7	0.73	0.70	0.73	26.0
2	T1	All MCs	124	3.4	124	3.4	0.182	14.2	LOS A	2.6	19.0	0.67	0.55	0.67	31.2
3	R2	All MCs	6	0.0	6	0.0	0.182	21.4	LOS B	2.6	19.0	0.67	0.55	0.67	29.5
Approach			213	5.0	213	5.0	0.182	16.8	LOS B	2.6	19.0	0.69	0.60	0.69	28.6
East: Albany St (E)															
4	L2	All MCs	17	0.0	17	0.0	0.162	19.1	LOS B	2.5	17.9	0.64	0.55	0.64	30.5
5	T1	All MCs	325	1.0	325	1.0	0.808	19.2	LOS B	12.1	85.2	0.88	0.85	1.02	24.8
6	R2	All MCs	160	1.3	160	1.3	*0.808	36.3	LOS C	12.1	85.2	1.00	1.00	1.21	22.2
Approach			502	1.0	502	1.0	0.808	24.6	LOS B	12.1	85.2	0.91	0.89	1.07	24.1
North: Willoughby Rd (N)															
7	L2	All MCs	95	0.0	95	0.0	0.095	12.4	LOS A	1.5	10.2	0.51	0.67	0.51	31.5
8	T1	All MCs	151	2.1	151	2.1	0.356	15.9	LOS B	5.0	35.5	0.77	0.72	0.77	28.3
9	R2	All MCs	62	0.0	62	0.0	*0.356	25.1	LOS B	5.0	35.5	0.77	0.72	0.77	27.1
Approach			307	1.0	307	1.0	0.356	16.7	LOS B	5.0	35.5	0.69	0.70	0.69	28.9
West: Albany St (W)															
10	L2	All MCs	149	0.7	149	0.7	0.351	27.8	LOS B	4.1	28.9	0.88	0.77	0.88	22.4
11	T1	All MCs	308	0.7	308	0.7	*0.575	22.4	LOS B	8.7	60.9	0.91	0.77	0.91	25.2
Approach			458	0.7	458	0.7	0.575	24.2	LOS B	8.7	60.9	0.90	0.77	0.90	24.2
All Vehicles			1480	1.5	1480	1.5	0.808	21.7	LOS B	12.1	85.2	0.83	0.77	0.88	25.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Willoughby Rd (S)												
P1	Full	162	171	26.1	LOS C	0.3	0.3	0.90	0.90	42.7	20.0	0.47
East: Albany St (E)												
P2	Full	335	353	26.3	LOS C	0.6	0.6	0.91	0.91	42.9	20.0	0.47

North: Willoughby Rd (N)												
P3	Full	93	98	26.0	LOS C	0.2	0.2	0.90	0.90	42.6	20.0	0.47
West: Albany St (W)												
P4	Full	267	281	26.2	LOS C	0.5	0.5	0.90	0.90	42.9	20.0	0.47
All	Pedestrians	857	902	26.2	LOS C	0.6	0.6	0.90	0.90	42.8	20.0	0.47

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 4:03:39 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST09 [CST09 Albany St / Oxley St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Oxley St (S)															
1	L2	All MCs	76	0.0	76	0.0	0.321	7.5	LOS A	2.2	15.5	0.70	0.63	0.70	22.4
2	T1	All MCs	98	0.0	98	0.0	0.321	7.3	LOS A	2.2	15.5	0.70	0.63	0.70	33.4
3	R2	All MCs	77	0.0	77	0.0	0.321	10.2	LOS A	2.2	15.5	0.70	0.63	0.70	31.5
3u	U	All MCs	1	0.0	1	0.0	0.321	11.6	LOS A	2.2	15.5	0.70	0.63	0.70	22.4
Approach			252	0.0	252	0.0	0.321	8.2	LOS A	2.2	15.5	0.70	0.63	0.70	30.7
East: Albany St (E)															
4	L2	All MCs	48	4.3	48	4.3	0.429	6.5	LOS A	2.8	19.6	0.51	0.61	0.51	32.8
5	T1	All MCs	311	1.7	311	1.7	0.429	6.2	LOS A	2.8	19.6	0.51	0.61	0.51	32.8
6	R2	All MCs	36	0.0	36	0.0	0.429	9.1	LOS A	2.8	19.6	0.51	0.61	0.51	37.0
6u	U	All MCs	1	0.0	1	0.0	0.429	10.5	LOS A	2.8	19.6	0.51	0.61	0.51	36.5
Approach			396	1.9	396	1.9	0.429	6.5	LOS A	2.8	19.6	0.51	0.61	0.51	33.4
North: Oxley St (N)															
7	L2	All MCs	37	0.0	37	0.0	0.285	7.7	LOS A	1.9	13.2	0.71	0.67	0.71	35.5
8	T1	All MCs	120	0.9	120	0.9	0.285	7.5	LOS A	1.9	13.2	0.71	0.67	0.71	31.2
9	R2	All MCs	60	1.8	60	1.8	0.285	10.5	LOS A	1.9	13.2	0.71	0.67	0.71	31.2
9u	U	All MCs	1	0.0	1	0.0	0.285	11.8	LOS A	1.9	13.2	0.71	0.67	0.71	35.7
Approach			218	1.0	218	1.0	0.285	8.4	LOS A	1.9	13.2	0.71	0.67	0.71	32.3
West: Albany St (W)															
10	L2	All MCs	108	0.0	108	0.0	0.483	6.0	LOS A	4.0	28.0	0.64	0.56	0.64	35.0
11	T1	All MCs	296	0.7	296	0.7	0.483	5.9	LOS A	4.0	28.0	0.64	0.56	0.64	34.8
12	R2	All MCs	75	0.0	75	0.0	0.483	8.7	LOS A	4.0	28.0	0.64	0.56	0.64	26.8
12u	U	All MCs	1	0.0	1	0.0	0.483	10.1	LOS A	4.0	28.0	0.64	0.56	0.64	26.8
Approach			480	0.4	480	0.4	0.483	6.4	LOS A	4.0	28.0	0.64	0.56	0.64	34.1
All Vehicles			1345	0.9	1345	0.9	0.483	7.1	LOS A	4.0	28.0	0.63	0.61	0.63	33.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST10 [CST10 Albany St / Clarke Ln (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

NA
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Clarke Ln (SE)															
21a	L1	All MCs	39	0.0	39	0.0	0.082	4.2	LOS A	5.6	38.9	0.18	0.50	0.18	31.4
23b	R3	All MCs	7	0.0	7	0.0	0.082	14.3	LOS A	5.6	38.9	0.18	0.50	0.18	31.4
Approach			46	0.0	46	0.0	0.082	5.8	LOS A	5.6	38.9	0.18	0.50	0.18	31.4
East: Albany St (E)															
5	T1	All MCs	448	1.6	448	1.6	0.212	0.0	LOS A	8.7	61.9	0.00	0.00	0.00	49.9
Approach			448	1.6	448	1.6	0.212	0.0	NA	8.7	61.9	0.00	0.00	0.00	49.9
West: Albany St (W)															
11	T1	All MCs	487	0.4	487	0.4	0.251	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			487	0.4	487	0.4	0.251	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
All Vehicles			982	1.0	982	1.0	0.251	0.3	NA	8.7	61.9	0.01	0.02	0.01	47.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST11 [CST11 Oxley St / Clarke Ln (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

NA
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h %	[Total HV] veh/h %	[Veh. veh	[Dist] m									
SouthEast: Clarke Ln (SE)															
1	L2	All MCs	2	50.0	2	50.0	0.005	5.4	LOS A	0.0	0.1	0.26	0.48	0.26	33.3
2	T1	All MCs	1	0.0	1	0.0	0.005	4.7	LOS A	0.0	0.1	0.26	0.48	0.26	33.3
3	R2	All MCs	1	0.0	1	0.0	0.005	6.2	LOS A	0.0	0.1	0.26	0.48	0.26	33.3
Approach			4	25.0	4	25.0	0.005	5.4	LOS A	0.0	0.1	0.26	0.48	0.26	33.3
NorthEast: Oxley St (NE)															
4	L2	All MCs	4	0.0	4	0.0	0.135	3.3	LOS A	0.1	0.6	0.04	0.05	0.04	42.6
5	T1	All MCs	178	0.6	178	0.6	0.135	0.0	LOS A	0.1	0.6	0.04	0.05	0.04	45.5
6	R2	All MCs	8	0.0	8	0.0	0.135	3.3	LOS A	0.1	0.6	0.04	0.05	0.04	45.5
Approach			191	0.6	191	0.6	0.135	0.2	NA	0.1	0.6	0.04	0.05	0.04	45.3
NorthWest: Clarke Ln (NW)															
7	L2	All MCs	16	0.0	16	0.0	0.016	5.0	LOS A	0.1	0.5	0.26	0.50	0.26	25.5
8	T1	All MCs	1	0.0	1	0.0	0.016	4.6	LOS A	0.1	0.5	0.26	0.50	0.26	34.4
9	R2	All MCs	3	0.0	3	0.0	0.016	6.2	LOS A	0.1	0.5	0.26	0.50	0.26	25.5
Approach			20	0.0	20	0.0	0.016	5.1	LOS A	0.1	0.5	0.26	0.50	0.26	26.4
SouthWest: Oxley St (SW)															
10	L2	All MCs	7	0.0	7	0.0	0.085	3.0	LOS A	0.0	0.1	0.00	0.03	0.00	47.3
11	T1	All MCs	157	0.0	157	0.0	0.085	0.0	LOS A	0.0	0.1	0.00	0.03	0.00	47.3
12	R2	All MCs	1	0.0	1	0.0	0.085	3.0	LOS A	0.0	0.1	0.00	0.03	0.00	42.5
Approach			165	0.0	165	0.0	0.085	0.2	NA	0.0	0.1	0.00	0.03	0.00	47.2
All Vehicles			380	0.6	380	0.6	0.135	0.5	NA	0.1	0.6	0.04	0.07	0.04	42.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

 Site: CST12 [CST12 Hume St / Clarke Ln (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

■ Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

NA
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
SouthEast: Clarke Ln (SE)															
3	R2	All MCs	1	0.0	1	0.0	0.001	6.9	LOS A	0.0	0.0	0.00	1.00	0.00	27.8
Approach			1	0.0	1	0.0	0.001	6.9	LOS A	0.0	0.0	0.00	1.00	0.00	27.8
NorthEast: Hume St (NE)															
4	L2	All MCs	1	0.0	1	0.0	0.001	3.2	LOS A	0.0	0.0	0.00	0.50	0.00	34.8
Approach			1	0.0	1	0.0	0.001	3.2	NA	0.0	0.0	0.00	0.50	0.00	34.8
All Vehicles			2	0.0	2	0.0	0.001	5.1	NA	0.0	0.0	0.00	0.75	0.00	31.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST13 [CST13 Pacific Hwy / Alexander St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 763

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
SouthEast: Pacific Hwy (SE)															
2	T1	All MCs	858	2.1	858	2.1	*0.374	7.6	LOS A	7.7	54.9	0.55	0.48	0.55	36.9
3a	R1	All MCs	259	4.5	259	4.5	0.397	11.4	LOS A	5.8	42.5	0.44	0.66	0.44	31.7
Approach			1117	2.6	1117	2.6	0.397	8.5	LOS A	7.7	54.9	0.53	0.52	0.53	35.5
North: Alexander St (N)															
24a	L1	All MCs	205	3.1	205	3.1	*0.365	27.0	LOS B	7.5	54.0	0.84	0.77	0.84	21.8
26b	R3	All MCs	103	0.0	103	0.0	*0.779	60.3	LOS E	6.7	46.7	0.97	0.81	1.02	5.6
Approach			308	2.0	308	2.0	0.779	38.1	LOS C	7.5	54.0	0.88	0.78	0.90	15.1
NorthWest: Pacific Hwy (NW)															
7b	L3	All MCs	7	0.0	7	0.0	0.031	14.8	LOS B	0.1	1.5	0.23	0.39	0.23	32.3
8	T1	All MCs	972	1.5	972	1.5	*0.503	5.7	LOS A	6.3	44.2	0.32	0.29	0.32	49.7
Approach			979	1.5	979	1.5	0.503	5.8	LOS A	6.3	44.2	0.32	0.29	0.32	46.2
All Vehicles			2404	2.1	2404	2.1	0.779	11.2	LOS A	7.7	54.9	0.49	0.46	0.49	34.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec					sec	m	m/sec	
North: Alexander St (N)											
P6	Full	79	28.4	LOS C	0.2	0.2	0.90	0.90	45.0	20.0	0.44
NorthWest: Pacific Hwy (NW)											
P3	Full	98	60.9	LOS F	0.4	0.4	0.95	0.95	77.6	20.0	0.26
All Pedestrians		177	46.4	LOS E	0.4	0.4	0.93	0.93	63.1	20.0	0.32

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: CST14 [CST14 Falcon St / Alexander St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CST-N1 [CST Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 764

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 135 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Alexander St (S)															
1	L2	All MCs	15	0.0	15	0.0	0.593	72.8	LOS F	13.1	96.2	1.00	0.87	1.00	5.1
2	T1	All MCs	214	5.9	214	5.9	0.659	63.5	LOS E	13.1	96.2	1.00	0.86	1.01	8.6
3	R2	All MCs	41	0.0	41	0.0	*0.659	88.5	LOS F	4.9	34.7	1.00	0.83	1.06	16.2
Approach			269	4.7	269	4.7	0.659	67.8	LOS E	13.1	96.2	1.00	0.86	1.02	10.0
East: Falcon St (E)															
4	L2	All MCs	27	0.0	27	0.0	0.796	40.0	LOS C	30.9	220.0	0.91	0.82	0.92	25.2
5	T1	All MCs	798	2.0	798	2.0	0.796	35.8	LOS C	30.9	220.0	0.90	0.83	0.94	24.6
6	R2	All MCs	3	100.0	3	100.0	0.796	45.4	LOS D	16.7	120.3	0.90	0.85	0.99	24.9
Approach			828	2.3	828	2.3	0.796	36.0	LOS C	30.9	220.0	0.90	0.83	0.94	24.6
North: Alexander St (N)															
7	L2	All MCs	35	0.0	35	0.0	0.156	89.9	LOS F	2.9	20.3	0.88	0.72	0.88	20.7
8	T1	All MCs	283	1.5	283	1.5	0.780	89.7	LOS F	17.4	123.7	0.99	0.90	1.07	5.8
Approach			318	1.3	318	1.3	0.780	89.8	LOS F	17.4	123.7	0.98	0.88	1.05	5.4
West: Falcon St (W)															
10	L2	All MCs	237	0.4	237	0.4	0.175	13.4	LOS A	6.4	45.3	0.45	0.62	0.45	24.4
11	T1	All MCs	715	1.9	715	1.9	*0.494	0.4	LOS A	1.8	12.7	0.04	0.04	0.04	59.3
Approach			952	1.5	952	1.5	0.494	3.6	LOS A	6.4	45.3	0.14	0.18	0.14	51.2
All Vehicles			2367	2.1	2367	2.1	0.796	33.8	LOS C	30.9	220.0	0.62	0.58	0.65	23.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist]					
		ped/h	sec			m			sec	m	m/sec
South: Alexander St (S)											
P1	Full	134	61.0	LOS F	0.5	0.5	0.95	0.95	77.7	20.0	0.26

East: Falcon St (E)											
P2	Full	94	60.9	LOS F	0.3	0.3	0.95	0.95	77.6	20.0	0.26
North: Alexander St (N)											
P3	Full	112	61.0	LOS F	0.4	0.4	0.95	0.95	77.6	20.0	0.26
West: Falcon St (W)											
P4	Full	287	61.4	LOS F	1.1	1.1	0.96	0.96	78.1	20.0	0.26
All Pedestrians		626	61.2	LOS F	1.1	1.1	0.96	0.96	77.8	20.0	0.26

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 12:10:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\02 SM C&SW_CST (Block 2).sip9

MOVEMENT SUMMARY

Site: VIC01 [VIC01 Pacific Hwy / Berry St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: VIC-N1 [VIC Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 1206

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 115 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
SouthEast: Pacific Hwy (SE)															
1	L2	All MCs	66	0.0	66	0.0	0.248	6.0	LOS A	3.5	25.7	0.20	0.25	0.20	41.5
2	T1	All MCs	942	7.6	942	7.6	0.248	3.0	LOS A	4.1	30.7	0.23	0.22	0.23	52.3
23b	R3	All MCs	257	4.9	257	4.9	*0.795	33.0	LOS C	7.8	57.1	0.98	0.87	1.09	18.8
Approach			1265	6.7	1265	6.7	0.795	9.2	LOS A	7.8	57.1	0.38	0.35	0.40	41.9
NorthWest: Pacific Hwy (NW)															
27a	L1	All MCs	786	5.8	786	5.8	0.343	8.4	LOS A	6.3	46.2	0.30	0.67	0.30	33.9
8	T1	All MCs	516	5.7	516	5.7	*0.731	24.5	LOS B	15.3	112.4	0.92	0.88	0.92	18.3
Approach			1302	5.7	1302	5.7	0.731	14.8	LOS B	15.3	112.4	0.54	0.75	0.54	25.4
SouthWest: Berry St (SW)															
10	L2	All MCs	57	3.7	57	3.7	0.132	6.7	LOS A	0.8	5.6	0.26	0.55	0.26	34.8
Approach			57	3.7	57	3.7	0.132	6.7	LOS A	0.8	5.6	0.26	0.55	0.26	34.8
All Vehicles			2624	6.1	2624	6.1	0.795	11.9	LOS A	15.3	112.4	0.46	0.56	0.47	34.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec					sec	m	m/sec	
SouthEast: Pacific Hwy (SE)											
P1	Full	236	51.2	LOS E	0.7	0.7	0.95	0.95	67.9	20.0	0.29
East: Berry St (E)											
P2	Full	339	51.4	LOS E	1.1	1.1	0.95	0.95	218.1	200.0	0.92
NorthWest: Pacific Hwy (NW)											
P3B	Slip/Bypass	1	50.7	LOS E	0.0	0.0	0.94	0.94	67.4	20.0	0.30
SouthWest: Berry St (SW)											
P4	Full	303	26.4	LOS C	0.6	0.6	0.91	0.91	43.0	20.0	0.46

All Pedestrians	879	42.7	LOS E	1.1	1.1	0.94	0.94	117.2	89.4	0.76
-----------------	-----	------	-------	-----	-----	------	------	-------	------	------

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 1:15:52 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical

\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\03 SM C&SW_VIC (Block 2).sip9

MOVEMENT SUMMARY

Site: VIC02 [VIC02 Miller St / Berry St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: VIC-N1 [VIC Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 874

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 115 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Veh. veh]	[Dist] m									
South: Miller St (S)															
2	T1	All MCs	313	10.8	313	10.8	0.879	19.8	LOS B	18.3	135.6	0.69	0.63	0.72	18.1
3	R2	All MCs	284	6.3	284	6.3	*0.879	45.7	LOS D	18.3	135.6	0.96	1.05	1.10	16.8
Approach			597	8.6	597	8.6	0.879	32.1	LOS C	18.3	135.6	0.82	0.83	0.90	17.2
North: Miller St (N)															
7	L2	All MCs	260	3.2	260	3.2	0.724	51.9	LOS D	14.2	102.3	0.99	0.87	1.04	15.6
8	T1	All MCs	298	15.9	298	15.9	0.636	39.6	LOS C	14.8	117.8	0.93	0.80	0.93	13.1
Approach			558	10.0	558	10.0	0.724	45.3	LOS D	14.8	117.8	0.96	0.83	0.99	14.5
West: Berry St (W)															
10	L2	All MCs	157	4.0	157	4.0	0.696	42.5	LOS D	15.7	112.6	0.86	0.77	0.86	10.4
11	T1	All MCs	934	1.9	934	1.9	0.696	29.8	LOS C	18.0	136.7	0.84	0.74	0.84	18.8
12	R2	All MCs	62	52.5	62	52.5	*0.696	38.2	LOS C	18.0	136.7	0.85	0.75	0.85	11.3
Approach			1153	4.9	1153	4.9	0.696	32.0	LOS C	18.0	136.7	0.84	0.75	0.84	16.8
All Vehicles			2307	7.1	2307	7.1	0.879	35.2	LOS C	18.3	136.7	0.87	0.79	0.89	16.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped]	[Dist] m					
South: Miller St (S)											
P1	Full	359	51.5	LOS E	1.1	1.1	0.95	0.95	68.1	20.0	0.29
East: Berry St (E)											
P2	Full	132	51.0	LOS E	0.4	0.4	0.94	0.94	67.7	20.0	0.30
North: Miller St (N)											
P3	Full	428	51.6	LOS E	1.3	1.3	0.96	0.96	68.3	20.0	0.29
West: Berry St (W)											
P4	Full	695	52.2	LOS E	2.2	2.2	0.97	0.97	68.9	20.0	0.29

All Pedestrians	1614	51.8	LOS E	2.2	2.2	0.96	0.96	68.5	20.0	0.29
-----------------	------	------	-------	-----	-----	------	------	------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 1:15:52 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\03 SM C&SW_VIC (Block 2).sip9

MOVEMENT SUMMARY

Site: VIC03 [VIC03 Miller St / McLaren St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: VIC-N1 [VIC Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 1156

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 105 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]			v/c	sec			Que	Stop Rate	No. of Cycles	Speed	
			veh/h	%	veh/h	%			[Veh. veh	Dist]				km/h	
			m												
South: Miller St (S)															
1	L2	All MCs	105	1.0	105	1.0	0.082	9.3	LOS A	1.7	12.0	0.34	0.58	0.34	34.5
2	T1	All MCs	327	10.9	327	10.9	0.360	9.1	LOS A	8.7	66.6	0.51	0.47	0.51	33.8
3	R2	All MCs	32	6.7	32	6.7	0.360	22.1	LOS B	8.7	66.6	0.51	0.47	0.51	28.1
Approach			464	8.4	464	8.4	0.360	10.0	LOS A	8.7	66.6	0.48	0.50	0.48	33.6
East: McLaren St (E)															
4	L2	All MCs	41	10.3	41	10.3	0.430	73.2	LOS F	2.2	16.8	1.00	0.74	1.00	8.7
5	T1	All MCs	116	5.5	116	5.5	*0.436	56.5	LOS E	5.5	40.2	0.95	0.75	0.95	20.2
Approach			157	6.7	157	6.7	0.436	60.9	LOS E	5.5	40.2	0.96	0.75	0.96	14.6
North: Miller St (N)															
7	L2	All MCs	68	3.1	68	3.1	0.408	18.0	LOS B	11.3	84.9	0.52	0.59	0.52	20.0
8	T1	All MCs	516	9.8	516	9.8	0.408	10.2	LOS A	11.3	84.9	0.54	0.61	0.54	27.7
9	R2	All MCs	152	0.7	152	0.7	*0.408	22.3	LOS B	7.9	57.2	0.61	0.69	0.61	31.4
Approach			736	7.3	736	7.3	0.408	13.4	LOS A	11.3	84.9	0.55	0.63	0.55	27.7
West: McLaren St (W)															
10	L2	All MCs	87	2.4	87	2.4	0.266	45.0	LOS D	3.9	27.8	0.89	0.76	0.89	20.6
11	T1	All MCs	96	4.4	96	4.4	0.680	42.8	LOS D	7.2	51.7	1.00	0.83	1.08	16.0
12	R2	All MCs	44	2.4	44	2.4	*0.680	62.6	LOS E	7.2	51.7	1.00	0.83	1.08	13.5
Approach			227	3.2	227	3.2	0.680	47.5	LOS D	7.2	51.7	0.96	0.80	1.01	17.5
All Vehicles			1584	7.0	1584	7.0	0.680	22.0	LOS B	11.3	84.9	0.63	0.63	0.63	24.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist]			sec	m	m/sec
					m						
South: Miller St (S)											
P1	Full	276	46.3	LOS E	0.8	0.8	0.94	0.94	62.9	20.0	0.32

East: McLaren St (E)											
P2	Full	189	46.1	LOS E	0.5	0.5	0.94	0.94	62.8	20.0	0.32
North: Miller St (N)											
P3	Full	83	45.9	LOS E	0.2	0.2	0.94	0.94	62.6	20.0	0.32
West: McLaren St (W)											
P4	Full	214	46.1	LOS E	0.6	0.6	0.94	0.94	62.8	20.0	0.32
All Pedestrians		762	46.1	LOS E	0.8	0.8	0.94	0.94	62.8	20.0	0.32

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 1:15:52 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\03 SM C&SW_VIC (Block 2).sip9

MOVEMENT SUMMARY

Site: VIC04 [VIC04 Pacific Hwy / Miller St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: VIC-N1 [VIC Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 630

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 115 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Miller St (S)															
1	L2	All MCs	8	0.0	8	0.0	0.167	20.0	LOS B	4.0	33.3	0.64	0.64	0.64	26.2
1a	L1	All MCs	108	24.3	108	24.3	0.167	22.7	LOS B	4.0	33.3	0.64	0.64	0.64	17.9
2	T1	All MCs	215	10.3	215	10.3	0.782	50.8	LOS D	14.3	107.7	1.00	0.94	1.12	10.6
3b	R3	All MCs	35	3.0	35	3.0	*0.782	66.0	LOS E	14.3	107.7	1.00	0.94	1.12	17.6
Approach			366	13.5	366	13.5	0.782	43.2	LOS D	14.3	107.7	0.88	0.85	0.96	13.3
SouthEast: Pacific Hwy (SE)															
21b	L3	All MCs	174	2.4	174	2.4	0.541	9.2	LOS A	12.6	90.2	0.81	0.79	0.81	27.8
21a	L1	All MCs	98	3.2	98	3.2	0.541	39.6	LOS C	12.6	90.2	0.81	0.79	0.81	29.6
22	T1	All MCs	859	3.9	859	3.9	0.541	30.8	LOS C	16.6	120.4	0.84	0.74	0.84	19.2
23a	R1	All MCs	408	6.4	408	6.4	*0.795	40.7	LOS C	17.3	127.7	0.98	0.98	1.06	15.6
Approach			1539	4.4	1539	4.4	0.795	31.6	LOS C	17.3	127.7	0.87	0.81	0.89	20.1
North: Miller St (N)															
7a	L1	All MCs	87	31.3	87	31.3	0.100	7.4	LOS A	1.1	9.5	0.23	0.45	0.23	36.8
8	T1	All MCs	253	19.6	253	19.6	0.471	15.4	LOS B	3.7	30.6	0.46	0.39	0.46	27.5
9	R2	All MCs	14	7.7	14	7.7	0.471	29.2	LOS C	3.4	27.9	0.56	0.50	0.56	26.5
9b	R3	All MCs	13	25.0	13	25.0	0.471	29.9	LOS C	3.4	27.9	0.56	0.50	0.56	18.3
Approach			366	22.1	366	22.1	0.471	14.5	LOS A	3.7	30.6	0.42	0.42	0.42	29.0
NorthWest: Pacific Hwy (NW)															
28	T1	All MCs	237	7.1	237	7.1	0.258	20.3	LOS B	3.3	24.5	0.52	0.42	0.52	34.5
29a	R1	All MCs	264	3.6	264	3.6	0.611	40.6	LOS C	12.5	90.0	0.88	0.80	0.88	21.9
Approach			501	5.3	501	5.3	0.611	31.0	LOS C	12.5	90.0	0.71	0.62	0.71	26.6
All Vehicles			2773	8.1	2773	8.1	0.795	30.7	LOS C	17.3	127.7	0.78	0.73	0.81	21.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped	Dist]					

		ped/h	sec		ped	m		sec	m	m/sec	
South: Miller St (S)											
P1	Full	988	52.9	LOS E	3.2	3.2	0.98	0.98	69.6	20.0	0.29
SouthEast: Pacific Hwy (SE)											
P5	Full	265	51.3	LOS E	0.8	0.8	0.95	0.95	67.9	20.0	0.29
North: Miller St (N)											
P3	Full	1774	54.8	LOS E	5.9	5.9	1.01	1.01	71.4	20.0	0.28
NorthWest: Pacific Hwy (NW)											
P7	Full	536	51.9	LOS E	1.7	1.7	0.96	0.96	68.5	20.0	0.29
All Pedestrians		3563	53.5	LOS E	5.9	5.9	0.99	0.99	70.2	20.0	0.28

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 1:15:52 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\03 SM C&SW_VIC (Block 2).sip9

MOVEMENT SUMMARY

Site: VIC01 [VIC01 Pacific Hwy / Berry St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [VIC Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 1206

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	% veh/h	veh/h	%	v/c	sec							km/h
SouthEast: Pacific Hwy (SE)															
1	L2	All MCs	28	0.0	28	0.0	0.065	8.7	LOS A	1.6	11.3	0.40	0.38	0.40	37.2
2	T1	All MCs	938	5.3	938	5.3	0.325	3.1	LOS A	6.9	50.8	0.25	0.22	0.25	52.9
23b	R3	All MCs	253	0.8	253	0.8	*0.825	36.0	LOS C	7.9	55.4	1.00	0.89	1.17	17.5
Approach			1219	4.2	1219	4.2	0.825	10.0	LOS A	7.9	55.4	0.41	0.36	0.44	41.3
NorthWest: Pacific Hwy (NW)															
27a	L1	All MCs	569	4.4	569	4.4	0.231	8.4	LOS A	3.8	27.8	0.30	0.66	0.30	33.8
8	T1	All MCs	328	1.6	328	1.6	*0.450	14.7	LOS B	8.6	60.9	0.79	0.67	0.79	25.4
Approach			898	3.4	898	3.4	0.450	10.7	LOS A	8.6	60.9	0.48	0.66	0.48	30.1
SouthWest: Berry St (SW)															
10	L2	All MCs	56	0.0	56	0.0	0.118	5.8	LOS A	0.6	4.3	0.23	0.54	0.23	36.1
Approach			56	0.0	56	0.0	0.118	5.8	LOS A	0.6	4.3	0.23	0.54	0.23	36.1
All Vehicles			2173	3.8	2173	3.8	0.825	10.2	LOS A	8.6	60.9	0.43	0.49	0.45	37.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec					sec	m	m/sec	
SouthEast: Pacific Hwy (SE)											
P1	Full	245	43.7	LOS E	0.7	0.7	0.94	0.94	60.4	20.0	0.33
East: Berry St (E)											
P2	Full	246	43.7	LOS E	0.7	0.7	0.94	0.94	210.4	200.0	0.95
NorthWest: Pacific Hwy (NW)											
P3B	Slip/Bypass	1	43.2	LOS E	0.0	0.0	0.93	0.93	59.9	20.0	0.33
SouthWest: Berry St (SW)											
P4	Full	287	23.2	LOS C	0.5	0.5	0.89	0.89	39.9	20.0	0.50

All Pedestrians	780	36.2	LOS D	0.7	0.7	0.92	0.92	100.2	76.8	0.77
-----------------	-----	------	-------	-----	-----	------	------	-------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 1:15:55 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\03 SM C&SW_VIC (Block 2).sip9

MOVEMENT SUMMARY

Site: VIC02 [VIC02 Miller St / Berry St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [VIC Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 874

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Miller St (S)															
2	T1	All MCs	359	10.6	359	10.6	0.351	17.6	LOS B	12.5	95.5	0.77	0.53	0.77	20.1
3	R2	All MCs	285	1.1	285	1.1	*0.634	27.5	LOS B	7.9	55.9	0.88	0.90	0.88	21.1
Approach			644	6.4	644	6.4	0.634	22.0	LOS B	12.5	95.5	0.82	0.69	0.82	20.7
North: Miller St (N)															
7	L2	All MCs	167	3.1	167	3.1	*0.715	51.2	LOS D	8.4	60.2	1.00	0.88	1.11	15.7
8	T1	All MCs	185	6.8	185	6.8	0.461	37.1	LOS C	8.0	59.2	0.92	0.76	0.92	13.6
Approach			353	5.1	353	5.1	0.715	43.8	LOS D	8.4	60.2	0.96	0.81	1.01	14.8
West: Berry St (W)															
10	L2	All MCs	152	2.1	152	2.1	0.671	53.5	LOS D	12.6	89.2	0.99	0.85	1.00	8.3
11	T1	All MCs	797	0.5	797	0.5	0.671	38.3	LOS C	16.9	119.7	0.98	0.85	0.98	16.2
12	R2	All MCs	45	69.8	45	69.8	*0.671	49.0	LOS D	15.8	119.7	0.98	0.85	0.98	9.3
Approach			994	3.9	994	3.9	0.671	41.2	LOS C	16.9	119.7	0.98	0.85	0.99	14.4
All Vehicles			1991	4.9	1991	4.9	0.715	35.4	LOS C	16.9	119.7	0.93	0.79	0.94	16.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
			ped/h	sec				sec	m	m/sec	
South: Miller St (S)											
P1	Full	445	44.1	LOS E	1.2	1.2	0.95	0.95	60.7	20.0	0.33
East: Berry St (E)											
P2	Full	149	43.5	LOS E	0.4	0.4	0.94	0.94	60.2	20.0	0.33
North: Miller St (N)											
P3	Full	281	43.8	LOS E	0.8	0.8	0.94	0.94	60.4	20.0	0.33
West: Berry St (W)											
P4	Full	551	44.3	LOS E	1.5	1.5	0.95	0.95	60.9	20.0	0.33

All Pedestrians	1426	44.0	LOS E	1.5	1.5	0.95	0.95	60.7	20.0	0.33
-----------------	------	------	-------	-----	-----	------	------	------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 1:15:55 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\03 SM C&SW_VIC (Block 2).sip9

MOVEMENT SUMMARY

Site: VIC03 [VIC03 Miller St / McLaren St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [VIC Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 1156

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Miller St (S)															
1	L2	All MCs	98	1.1	98	1.1	0.285	12.3	LOS A	4.8	35.3	0.60	0.57	0.60	33.2
2	T1	All MCs	392	8.1	392	8.1	0.285	9.7	LOS A	4.8	35.3	0.60	0.55	0.60	33.6
3	R2	All MCs	24	0.0	24	0.0	0.285	17.1	LOS B	4.5	33.2	0.61	0.54	0.61	28.1
Approach			514	6.4	514	6.4	0.285	10.5	LOS A	4.8	35.3	0.60	0.56	0.60	33.3
East: McLaren St (E)															
4	L2	All MCs	28	0.0	28	0.0	0.166	36.2	LOS C	0.9	6.2	0.95	0.71	0.95	13.0
5	T1	All MCs	120	0.0	120	0.0	*0.286	23.7	LOS B	3.3	23.0	0.88	0.70	0.88	27.8
Approach			148	0.0	148	0.0	0.286	26.1	LOS B	3.3	23.0	0.89	0.70	0.89	25.2
North: Miller St (N)															
7	L2	All MCs	31	3.4	31	3.4	0.137	17.6	LOS B	2.1	15.5	0.57	0.59	0.57	19.7
8	T1	All MCs	273	6.6	273	6.6	0.332	11.4	LOS A	4.8	34.8	0.63	0.64	0.63	27.2
9	R2	All MCs	57	0.0	57	0.0	*0.332	18.9	LOS B	4.8	34.8	0.66	0.66	0.66	33.8
Approach			360	5.3	360	5.3	0.332	13.1	LOS A	4.8	34.8	0.63	0.64	0.63	27.7
West: McLaren St (W)															
10	L2	All MCs	37	0.0	37	0.0	0.072	23.4	LOS B	0.9	6.1	0.77	0.69	0.77	28.1
11	T1	All MCs	66	1.6	66	1.6	0.258	17.5	LOS B	2.4	17.3	0.86	0.68	0.86	25.9
12	R2	All MCs	29	3.6	29	3.6	*0.258	30.0	LOS C	2.4	17.3	0.86	0.68	0.86	22.9
Approach			133	1.6	133	1.6	0.258	21.9	LOS B	2.4	17.3	0.83	0.68	0.83	26.1
All Vehicles			1155	4.6	1155	4.6	0.332	14.6	LOS B	4.8	35.3	0.68	0.61	0.68	29.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
		ped/h	sec					sec	m	m/sec	
South: Miller St (S)											
P1	Full	105	26.0	LOS C	0.2	0.2	0.90	0.90	42.7	20.0	0.47
East: McLaren St (E)											

P2 Full	174	26.1	LOS C	0.3	0.3	0.90	0.90	42.7	20.0	0.47
North: Miller St (N)										
P3 Full	48	25.9	LOS C	0.1	0.1	0.89	0.89	42.6	20.0	0.47
West: McLaren St (W)										
P4 Full	191	26.1	LOS C	0.3	0.3	0.90	0.90	42.8	20.0	0.47
All Pedestrians	518	26.0	LOS C	0.3	0.3	0.90	0.90	42.7	20.0	0.47

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 1:15:55 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\03 SM C&SW_VIC (Block 2).sip9

MOVEMENT SUMMARY

Site: VIC04 [VIC04 Pacific Hwy / Miller St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [VIC Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 630

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
South: Miller St (S)															
1	L2	All MCs	7	0.0	7	0.0	0.194	20.3	LOS B	3.8	31.7	0.70	0.67	0.70	25.8
1a	L1	All MCs	104	25.3	104	25.3	0.194	23.5	LOS B	3.8	31.7	0.70	0.67	0.70	17.5
2	T1	All MCs	315	8.7	315	8.7	*0.908	55.9	LOS D	20.9	157.5	0.99	1.15	1.33	10.0
3b	R3	All MCs	43	9.8	43	9.8	0.908	65.9	LOS E	20.9	157.5	1.00	1.16	1.34	16.7
Approach			469	12.3	469	12.3	0.908	49.1	LOS D	20.9	157.5	0.93	1.04	1.18	12.1
SouthEast: Pacific Hwy (SE)															
21b	L3	All MCs	160	3.3	160	3.3	0.461	8.1	LOS A	9.8	70.6	0.76	0.74	0.76	29.7
21a	L1	All MCs	45	2.3	45	2.3	0.461	34.3	LOS C	9.8	70.6	0.76	0.74	0.76	31.3
22	T1	All MCs	796	2.9	796	2.9	0.461	25.8	LOS B	12.2	87.2	0.79	0.70	0.79	21.9
23a	R1	All MCs	340	1.9	340	1.9	*0.907	58.5	LOS E	17.8	126.5	1.00	1.11	1.34	11.8
Approach			1341	2.7	1341	2.7	0.907	32.3	LOS C	17.8	126.5	0.84	0.81	0.93	19.5
North: Miller St (N)															
7a	L1	All MCs	58	38.2	58	38.2	0.076	10.1	LOS A	0.9	8.8	0.35	0.50	0.35	34.5
8	T1	All MCs	160	7.2	160	7.2	0.222	9.4	LOS A	1.3	9.6	0.28	0.24	0.28	31.4
9	R2	All MCs	2	0.0	2	0.0	0.222	17.4	LOS B	0.9	6.9	0.28	0.26	0.28	31.9
9b	R3	All MCs	5	0.0	5	0.0	0.222	18.0	LOS B	0.9	6.9	0.28	0.26	0.28	25.6
Approach			225	15.0	225	15.0	0.222	9.9	LOS A	1.3	9.6	0.30	0.31	0.30	32.1
NorthWest: Pacific Hwy (NW)															
28	T1	All MCs	179	1.2	179	1.2	0.166	26.7	LOS B	3.1	21.6	0.73	0.58	0.73	30.5
29a	R1	All MCs	185	2.3	185	2.3	0.551	53.4	LOS D	9.2	65.6	1.00	0.86	1.00	18.6
Approach			364	1.7	364	1.7	0.551	40.3	LOS C	9.2	65.6	0.87	0.72	0.87	23.1
All Vehicles			2400	5.6	2400	5.6	0.908	34.7	LOS C	20.9	157.5	0.81	0.79	0.91	19.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
		ped/h	sec					sec	m	m/sec	

South: Miller St (S)											
P1	Full	844	44.8	LOS E	2.3	2.3	0.96	0.96	61.5	20.0	0.33
SouthEast: Pacific Hwy (SE)											
P5	Full	269	43.7	LOS E	0.7	0.7	0.94	0.94	60.4	20.0	0.33
North: Miller St (N)											
P3	Full	1454	46.0	LOS E	4.1	4.1	0.99	0.99	62.7	20.0	0.32
NorthWest: Pacific Hwy (NW)											
P7	Full	423	44.0	LOS E	1.1	1.1	0.95	0.95	60.7	20.0	0.33
All Pedestrians		2991	45.2	LOS E	4.1	4.1	0.97	0.97	61.9	20.0	0.32

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 1:15:55 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\03 SM C&SW_VIC (Block 2).sip9

MOVEMENT SUMMARY

Site: VIC01 [VIC01 Pacific Hwy / Berry St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [VIC Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 1206

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
SouthEast: Pacific Hwy (SE)															
1	L2	All MCs	28	0.0	28	0.0	0.059	4.5	LOS A	0.3	2.5	0.09	0.22	0.09	41.6
2	T1	All MCs	852	3.8	852	3.8	0.279	1.0	LOS A	2.1	15.3	0.10	0.10	0.10	57.2
23b	R3	All MCs	131	4.8	131	4.8	*0.561	33.6	LOS C	3.8	28.0	1.00	0.79	1.00	18.6
Approach			1011	3.9	1011	3.9	0.561	5.3	LOS A	3.8	28.0	0.22	0.19	0.22	48.5
NorthWest: Pacific Hwy (NW)															
27a	L1	All MCs	864	2.9	864	2.9	0.372	7.2	LOS A	5.3	37.9	0.27	0.66	0.27	36.0
8	T1	All MCs	368	4.6	368	4.6	*0.412	13.8	LOS A	9.4	68.1	0.69	0.62	0.69	26.3
Approach			1233	3.4	1233	3.4	0.412	9.2	LOS A	9.4	68.1	0.39	0.65	0.39	32.5
SouthWest: Berry St (SW)															
10	L2	All MCs	42	0.0	42	0.0	0.063	8.3	LOS A	0.6	4.0	0.30	0.56	0.30	34.4
Approach			42	0.0	42	0.0	0.063	8.3	LOS A	0.6	4.0	0.30	0.56	0.30	34.4
All Vehicles			2285	3.5	2285	3.5	0.561	7.5	LOS A	9.4	68.1	0.31	0.44	0.31	41.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
SouthEast: Pacific Hwy (SE)											
P1	Full	108	43.4	LOS E	0.3	0.3	0.93	0.93	60.1	20.0	0.33
East: Berry St (E)											
P2	Full	93	43.4	LOS E	0.2	0.2	0.93	0.93	210.1	200.0	0.95
NorthWest: Pacific Hwy (NW)											
P3B	Slip/Bypass	1	43.2	LOS E	0.0	0.0	0.93	0.93	59.9	20.0	0.33
SouthWest: Berry St (SW)											
P4	Full	136	1.1	LOS A	0.0	0.0	0.21	0.21	17.8	20.0	1.12

All Pedestrians	338	26.4	LOS C	0.3	0.3	0.64	0.64	84.2	69.3	0.82
-----------------	-----	------	-------	-----	-----	------	------	------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 1:15:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\03 SM C&SW_VIC (Block 2).sip9

MOVEMENT SUMMARY

Site: VIC02 [VIC02 Miller St / Berry St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [VIC Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 874

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Veh. veh]	[Dist] m									
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Miller St (S)															
2	T1	All MCs	267	3.1	267	3.1	0.862	29.2	LOS C	14.2	100.5	0.94	0.68	0.97	14.7
3	R2	All MCs	279	1.1	279	1.1	*0.862	55.5	LOS D	14.2	100.5	1.00	1.12	1.20	14.7
Approach			546	2.1	546	2.1	0.862	42.7	LOS D	14.2	100.5	0.97	0.90	1.09	14.7
North: Miller St (N)															
7	L2	All MCs	119	6.2	119	6.2	0.756	63.8	LOS E	6.2	46.1	1.00	0.92	1.20	14.8
8	T1	All MCs	192	4.9	192	4.9	0.678	50.4	LOS D	9.2	66.9	0.99	0.85	1.04	12.1
Approach			311	5.4	311	5.4	0.756	55.5	LOS D	9.2	66.9	0.99	0.88	1.11	12.3
West: Berry St (W)															
10	L2	All MCs	117	2.7	117	2.7	0.196	39.3	LOS C	4.6	33.1	0.85	0.76	0.85	10.2
11	T1	All MCs	913	2.1	913	2.1	0.635	28.8	LOS C	19.7	140.1	0.87	0.77	0.87	19.9
12	R2	All MCs	49	21.3	49	21.3	*0.635	33.9	LOS C	18.3	132.8	0.84	0.75	0.84	12.7
Approach			1079	3.0	1079	3.0	0.635	30.2	LOS C	19.7	140.1	0.87	0.77	0.87	17.6
All Vehicles			1936	3.2	1936	3.2	0.862	37.8	LOS C	19.7	140.1	0.92	0.82	0.97	15.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped]	[Dist] m					
		ped/h	sec					sec	m	m/sec	
South: Miller St (S)											
P1	Full	86	43.4	LOS E	0.2	0.2	0.93	0.93	60.1	20.0	0.33
East: Berry St (E)											
P2	Full	65	43.4	LOS E	0.2	0.2	0.93	0.93	60.0	20.0	0.33
North: Miller St (N)											
P3	Full	74	43.4	LOS E	0.2	0.2	0.93	0.93	60.0	20.0	0.33
West: Berry St (W)											
P4	Full	187	43.6	LOS E	0.5	0.5	0.94	0.94	60.3	20.0	0.33

All Pedestrians	413	43.5	LOS E	0.5	0.5	0.93	0.93	60.1	20.0	0.33
-----------------	-----	------	-------	-----	-----	------	------	------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 1:15:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\03 SM C&SW_VIC (Block 2).sip9

MOVEMENT SUMMARY

Site: VIC03 [VIC03 Miller St / McLaren St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [VIC Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 1156

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Miller St (S)															
1	L2	All MCs	80	1.3	80	1.3	0.075	9.8	LOS A	1.1	7.7	0.46	0.61	0.46	33.9
2	T1	All MCs	281	3.4	281	3.4	0.319	8.7	LOS A	5.4	39.0	0.59	0.52	0.59	34.5
3	R2	All MCs	24	4.3	24	4.3	0.319	16.8	LOS B	5.4	39.0	0.59	0.52	0.59	28.9
Approach			385	3.0	385	3.0	0.319	9.4	LOS A	5.4	39.0	0.57	0.54	0.57	34.1
East: McLaren St (E)															
4	L2	All MCs	34	3.1	34	3.1	0.244	38.1	LOS C	1.1	7.9	0.97	0.72	0.97	12.6
5	T1	All MCs	62	0.0	62	0.0	*0.159	23.8	LOS B	1.7	11.7	0.86	0.66	0.86	27.7
Approach			96	1.1	96	1.1	0.244	28.8	LOS C	1.7	11.7	0.90	0.68	0.90	22.6
North: Miller St (N)															
7	L2	All MCs	41	2.6	41	2.6	0.069	15.6	LOS B	1.0	7.3	0.57	0.63	0.57	19.1
8	T1	All MCs	274	5.0	274	5.0	0.343	10.4	LOS A	5.6	40.4	0.62	0.63	0.62	28.6
9	R2	All MCs	44	0.0	44	0.0	*0.343	17.9	LOS B	5.6	40.4	0.62	0.63	0.62	35.4
Approach			359	4.1	359	4.1	0.343	11.9	LOS A	5.6	40.4	0.61	0.63	0.61	28.0
West: McLaren St (W)															
10	L2	All MCs	58	5.5	58	5.5	0.126	25.3	LOS B	1.4	10.5	0.80	0.72	0.80	27.4
11	T1	All MCs	60	3.5	60	3.5	0.266	19.7	LOS B	2.3	16.8	0.90	0.70	0.90	24.5
12	R2	All MCs	26	4.0	26	4.0	*0.266	33.7	LOS C	2.3	16.8	0.90	0.70	0.90	21.4
Approach			144	4.4	144	4.4	0.266	24.5	LOS B	2.3	16.8	0.86	0.70	0.86	25.4
All Vehicles			984	3.4	984	3.4	0.343	14.4	LOS A	5.6	40.4	0.66	0.61	0.66	29.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
		ped/h	sec					sec	m	m/sec	
South: Miller St (S)											
P1	Full	87	26.0	LOS C	0.1	0.1	0.90	0.90	42.6	20.0	0.47
East: McLaren St (E)											

P2 Full	99	26.0	LOS C	0.2	0.2	0.90	0.90	42.7	20.0	0.47
North: Miller St (N)										
P3 Full	31	25.9	LOS C	0.1	0.1	0.89	0.89	42.6	20.0	0.47
West: McLaren St (W)										
P4 Full	140	26.0	LOS C	0.2	0.2	0.90	0.90	42.7	20.0	0.47
All Pedestrians	357	26.0	LOS C	0.2	0.2	0.90	0.90	42.7	20.0	0.47

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 1:15:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\03 SM C&SW_VIC (Block 2).sip9

MOVEMENT SUMMARY

Site: VIC04 [VIC04 Pacific Hwy / Miller St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [VIC Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 630

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Miller St (S)															
1	L2	All MCs	6	16.7	6	16.7	0.165	18.0	LOS B	3.6	27.4	0.63	0.64	0.63	27.4
1a	L1	All MCs	117	10.8	117	10.8	0.165	20.5	LOS B	3.6	27.4	0.63	0.64	0.63	19.4
2	T1	All MCs	247	4.3	247	4.3	0.771	43.2	LOS D	14.0	101.6	1.00	0.93	1.11	12.0
3b	R3	All MCs	37	2.9	37	2.9	*0.771	52.6	LOS D	14.0	101.6	1.00	0.93	1.11	19.4
Approach			407	6.2	407	6.2	0.771	37.2	LOS C	14.0	101.6	0.89	0.84	0.96	14.6
SouthEast: Pacific Hwy (SE)															
21b	L3	All MCs	198	14.4	198	14.4	0.200	8.5	LOS A	2.1	16.5	0.32	0.67	0.32	37.9
21a	L1	All MCs	20	5.3	20	5.3	0.200	23.3	LOS B	2.1	16.5	0.32	0.67	0.32	38.4
22	T1	All MCs	731	3.0	731	3.0	0.508	25.6	LOS B	13.7	98.3	0.82	0.71	0.82	21.0
23a	R1	All MCs	341	0.6	341	0.6	*0.718	33.4	LOS C	11.1	78.2	0.97	0.91	1.00	18.0
Approach			1289	4.2	1289	4.2	0.718	25.0	LOS B	13.7	98.3	0.78	0.76	0.78	23.0
North: Miller St (N)															
7a	L1	All MCs	57	25.9	57	25.9	0.064	7.7	LOS A	0.7	6.0	0.27	0.46	0.27	36.6
8	T1	All MCs	154	4.8	154	4.8	0.402	9.0	LOS A	1.9	13.6	0.29	0.26	0.29	31.7
9	R2	All MCs	7	14.3	7	14.3	0.402	15.4	LOS B	1.9	13.6	0.31	0.29	0.31	32.2
9b	R3	All MCs	8	0.0	8	0.0	0.402	16.0	LOS B	1.9	13.6	0.31	0.29	0.31	26.2
Approach			226	10.2	226	10.2	0.402	9.2	LOS A	1.9	13.6	0.28	0.31	0.28	32.7
NorthWest: Pacific Hwy (NW)															
28	T1	All MCs	147	0.7	147	0.7	*0.152	24.8	LOS B	2.3	16.1	0.66	0.52	0.66	31.6
29a	R1	All MCs	214	6.9	214	6.9	0.600	53.3	LOS D	10.6	78.6	1.00	0.87	1.00	18.7
Approach			361	4.4	361	4.4	0.600	41.7	LOS C	10.6	78.6	0.86	0.73	0.86	22.5
All Vehicles			2284	5.2	2284	5.2	0.771	28.3	LOS B	14.0	101.6	0.76	0.72	0.78	22.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec						sec	m	m/sec

South: Miller St (S)											
P1	Full	192	43.6	LOS E	0.5	0.5	0.94	0.94	60.3	20.0	0.33
SouthEast: Pacific Hwy (SE)											
P5	Full	136	43.5	LOS E	0.4	0.4	0.94	0.94	60.2	20.0	0.33
North: Miller St (N)											
P3	Full	340	43.9	LOS E	0.9	0.9	0.94	0.94	60.5	20.0	0.33
NorthWest: Pacific Hwy (NW)											
P7	Full	189	43.6	LOS E	0.5	0.5	0.94	0.94	60.3	20.0	0.33
All Pedestrians		857	43.7	LOS E	0.9	0.9	0.94	0.94	60.4	20.0	0.33

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Thursday, 29 February 2024 1:15:58 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\03 SM C&SW_VIC (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU01 [BGU01 Hickson Rd / Towns PI (Site Folder: Block 2 - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N1 [BGU Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
East: Hickson Rd (E)															
4a	L1	All MCs	114	13.0	114	13.0	0.154	4.4	LOS A	0.7	5.1	0.36	0.53	0.36	37.4
6a	R1	All MCs	62	3.4	62	3.4	0.154	4.7	LOS A	0.7	5.1	0.36	0.53	0.36	35.1
Approach			176	9.6	176	9.6	0.154	4.5	NA	0.7	5.1	0.36	0.53	0.36	37.0
NorthWest: Towns PI (NW)															
27a	L1	All MCs	116	9.1	116	9.1	0.409	4.5	LOS A	2.2	16.8	0.53	0.73	0.66	34.1
29	R2	All MCs	233	10.4	233	10.4	0.409	7.6	LOS A	2.2	16.8	0.53	0.73	0.66	35.6
Approach			348	10.0	348	10.0	0.409	6.6	LOS A	2.2	16.8	0.53	0.73	0.66	35.2
SouthWest: Hickson Rd (SW)															
30	L2	All MCs	117	7.2	117	7.2	0.143	4.3	LOS A	0.6	4.8	0.31	0.47	0.31	37.1
32a	R1	All MCs	60	14.0	60	14.0	0.143	3.2	LOS A	0.6	4.8	0.31	0.47	0.31	37.8
Approach			177	9.5	177	9.5	0.143	3.9	NA	0.6	4.8	0.31	0.47	0.31	37.4
All Vehicles			701	9.8	701	9.8	0.409	5.4	NA	2.2	16.8	0.43	0.62	0.50	36.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:21 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU02 [BGU02 Dalgety Rd / Towns PI (Site Folder: Block 2 - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N1 [BGU Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Dalgety Rd (S)															
30	L2	All MCs	20	0.0	20	0.0	0.267	6.3	LOS A	1.8	13.9	0.21	0.55	0.21	24.3
3b	R3	All MCs	332	10.2	332	10.2	0.267	6.5	LOS A	1.8	13.9	0.21	0.55	0.21	31.8
32u	U	All MCs	1272.7		1272.7		0.267	7.8	LOS A	1.8	13.9	0.21	0.55	0.21	34.2
Approach			363	11.6	363	11.6	0.267	6.6	LOS A	1.8	13.9	0.21	0.55	0.21	31.4
SouthEast: Towns PI (SE)															
21b	L3	All MCs	139	4.5	139	4.5	0.126	2.7	LOS A	0.7	5.5	0.12	0.49	0.12	34.9
21a	L1	All MCs	2616.0		2616.0		0.126	8.4	LOS A	0.7	5.5	0.12	0.49	0.12	18.6
23u	U	All MCs	14	0.0	14	0.0	0.126	7.0	LOS A	0.7	5.5	0.12	0.49	0.12	29.0
Approach			179	5.9	179	5.9	0.126	3.9	LOS A	0.7	5.5	0.12	0.49	0.12	32.6
West: Parking Access (W)															
12a	R1	All MCs	2	0.0	2	0.0	0.008	2.1	LOS A	0.0	0.3	0.54	0.30	0.54	9.3
29	R2	All MCs	333.3		333.3		0.008	3.0	LOS A	0.0	0.3	0.54	0.30	0.54	20.7
29u	U	All MCs	1	0.0	1	0.0	0.008	2.1	LOS A	0.0	0.3	0.54	0.30	0.54	9.5
Approach			616.7		616.7		0.008	2.5	LOS A	0.0	0.3	0.54	0.30	0.54	16.2
All Vehicles			548	9.8	548	9.8	0.267	5.6	LOS A	1.8	13.9	0.18	0.52	0.18	31.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:21 AM
Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: **BGU03 [BGU03 Kent St / Argyle St (Site Folder: Block 2 - 2023 AM Peak)]**

Output produced by **SIDRA INTERSECTION Version: 9.1.6.228**

Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Kent St (S)															
1	L2	All MCs	106	8.9	106	8.9	0.699	8.3	LOS A	7.8	58.6	0.75	1.07	1.45	32.7
2	T1	All MCs	45	7.0	45	7.0	0.699	9.9	LOS A	7.8	58.6	0.75	1.07	1.45	30.9
3	R2	All MCs	321	8.9	321	8.9	0.699	15.2	LOS B	7.8	58.6	0.75	1.07	1.45	31.4
Approach			473	8.7	473	8.7	0.699	13.1	LOS A	7.8	58.6	0.75	1.07	1.45	31.7
East: Argyle St (E)															
4	L2	All MCs	188	5.0	188	5.0	0.236	4.4	LOS A	1.1	8.4	0.35	0.43	0.35	36.5
5	T1	All MCs	67	9.4	67	9.4	0.236	1.3	LOS A	1.1	8.4	0.35	0.43	0.35	36.1
6	R2	All MCs	3	0.0	3	0.0	0.236	4.5	LOS A	1.1	8.4	0.35	0.43	0.35	31.5
Approach			259	6.1	259	6.1	0.236	3.6	NA	1.1	8.4	0.35	0.43	0.35	36.4
North: Kent St (N)															
7	L2	All MCs	1	0.0	1	0.0	0.026	7.6	LOS A	0.1	0.6	0.46	0.93	0.46	27.1
8	T1	All MCs	14	0.0	14	0.0	0.026	9.4	LOS A	0.1	0.6	0.46	0.93	0.46	33.4
9	R2	All MCs	3	0.0	3	0.0	0.026	8.8	LOS A	0.1	0.6	0.46	0.93	0.46	30.5
Approach			18	0.0	18	0.0	0.026	9.2	LOS A	0.1	0.6	0.46	0.93	0.46	32.8
West: Argyle PI (W)															
10	L2	All MCs	4	0.0	4	0.0	0.149	4.6	LOS A	0.7	5.3	0.36	0.36	0.36	35.3
11	T1	All MCs	89	7.1	89	7.1	0.149	1.1	LOS A	0.7	5.3	0.36	0.36	0.36	37.0
12	R2	All MCs	68	4.6	68	4.6	0.149	4.9	LOS A	0.7	5.3	0.36	0.36	0.36	37.4
Approach			162	5.8	162	5.8	0.149	2.8	NA	0.7	5.3	0.36	0.36	0.36	37.2
All Vehicles			912	7.3	912	7.3	0.699	8.5	NA	7.8	58.6	0.56	0.76	0.93	33.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [TCS 4272]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 2 (Network Folder: Block 2 Network - 2023 AM Peak)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (CCG User-Given Phase Times)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist] m				
Site: BGU04 [BGU04 Pedestrian Mid-block Crossing at Kent St near Gas Ln]															
South: Kent St															
2	T1	All MCs	378	6.4	378	6.4	0.344	8.8	LOS A	7.5	55.2	0.55	0.48	0.55	33.5
Approach			378	6.4	378	6.4	0.344	8.8	LOS A	7.5	55.2	0.55	0.48	0.55	33.5
North: Kent St															
8	T1	All MCs	260	5.3	260	5.3	0.374	31.5	LOS C	4.6	33.5	0.92	0.73	0.92	22.5
Approach			260	5.3	260	5.3	0.374	31.5	LOS C	4.6	33.5	0.92	0.73	0.92	22.5
All Vehicles			638	5.9	638	5.9	0.374	18.0	LOS B	7.5	55.2	0.70	0.58	0.70	28.2
Site: BGU05 [BGU05 Kent St / Sydney Harbour Bridge (SHB) On-ramp]															
South: Kent St (S)															
2	T1	All MCs	240	6.6	240	6.6	0.254	7.0	LOS A	3.9	29.2	0.45	0.38	0.45	29.7
3a	R1	All MCs	439	4.3	439	4.3	*0.718	23.4	LOS B	14.0	101.5	0.87	0.80	0.89	23.8
Approach			679	5.1	679	5.1	0.718	17.6	LOS B	14.0	101.5	0.72	0.66	0.74	25.1
East: Clarence St (E)															
4	L2	All MCs	88	1.2	88	1.2	0.300	37.0	LOS C	3.2	21.2	0.93	0.75	0.93	12.1
6	R2	All MCs	142	1.5	142	1.5	0.402	32.8	LOS C	4.9	34.6	0.90	0.78	0.90	13.2
Approach			231	1.4	231	1.4	0.402	34.4	LOS C	4.9	34.6	0.91	0.77	0.91	12.8
NorthEast: SHB On-ramp (NE)															
24a	L1	All MCs	15	0.0	15	0.0	0.012	28.4	LOS B	0.5	1.2	0.84	0.59	0.84	20.5
Approach			15	0.0	15	0.0	0.012	28.4	LOS B	0.5	1.2	0.84	0.59	0.84	20.5
North: Kent St (N)															
7b	L3	All MCs	142	3.7	142	3.7	*0.403	41.1	LOS C	5.7	40.9	1.00	0.84	1.00	12.7
8	T1	All MCs	24	52.2	24	52.2	*0.137	8.9	LOS A	0.3	2.6	0.26	0.19	0.26	16.1
Approach			166	10.8	166	10.8	0.403	36.4	LOS C	5.7	40.9	0.89	0.75	0.89	12.9
All Vehicles			1091	5.1	1091	5.1	0.718	24.2	LOS B	14.0	101.5	0.79	0.69	0.80	20.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance (CCG)											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE	Prop. Que	Eff. Stop	Travel Time	Travel Dist.	Aver. Speed	

	ped/h	sec		[Ped ped	Dist] m		Rate		sec	m	m/sec
Site: BGU04 [BGU04 Pedestrian Mid-block Crossing at Kent St near Gas Ln]											
South: Kent St											
P1 Full	213	33.6	LOS D	0.4	0.4	0.92	0.92	200.3	200.0	1.00	
All Pedestrians	213	33.6	LOS D	0.4	0.4	0.92	0.92	200.3	200.0	1.00	
Site: BGU05 [BGU05 Kent St / Sydney Harbour Bridge (SHB) On-ramp]											
South: Kent St (S)											
P1 Full	377	33.8	LOS D	0.8	0.8	0.93	0.93	50.5	20.0	0.40	
All Pedestrians	377	33.8	LOS D	0.8	0.8	0.93	0.93	50.5	20.0	0.40	

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Kcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:25 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU06 [BGU06 Hickson Rd / Napoleon St / Sussex St
(Site Folder: Block 2 - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU
Network 3 (Network Folder:
Block 2 Network - 2023 AM
Peak)]

TCS 4625

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Sussex St (S)															
2	T1	All MCs	203	8.3	203	8.3	0.232	11.2	LOS A	4.0	30.2	0.61	0.51	0.61	24.4
3	R2	All MCs	154	4.1	154	4.1	*0.366	19.3	LOS B	3.7	26.7	0.82	0.75	0.82	21.8
Approach			357	6.5	357	6.5	0.366	14.7	LOS B	4.0	30.2	0.70	0.61	0.70	23.0
East: Napoleon St (E)															
4	L2	All MCs	138	13.7	138	13.7	0.213	18.5	LOS B	3.1	24.4	0.69	0.70	0.69	17.0
6	R2	All MCs	178	7.7	178	7.7	*0.427	28.2	LOS B	5.3	39.6	0.89	0.78	0.89	16.0
Approach			316	10.3	316	10.3	0.427	24.0	LOS B	5.3	39.6	0.80	0.74	0.80	16.3
North: Hickson Rd (N)															
7	L2	All MCs	91	7.0	91	7.0	0.175	23.3	LOS B	2.3	17.2	0.77	0.71	0.77	17.5
8	T1	All MCs	183	15.5	183	15.5	*0.330	19.7	LOS B	4.8	38.1	0.80	0.66	0.80	10.8
Approach			274	12.7	274	12.7	0.330	20.9	LOS B	4.8	38.1	0.79	0.68	0.79	13.8
West: Car Park Access (W)															
10	L2	All MCs	1	0.0	1	0.0	0.040	39.6	LOS C	0.1	0.6	0.99	0.59	0.99	5.8
11	T1	All MCs	6	0.0	6	0.0	*0.192	40.7	LOS C	0.4	2.8	1.00	0.65	1.00	9.0
12	R2	All MCs	5	0.0	5	0.0	0.192	40.9	LOS C	0.4	2.8	1.00	0.66	1.00	2.4
Approach			13	0.0	13	0.0	0.192	40.7	LOS C	0.4	2.8	1.00	0.65	1.00	6.4
All Vehicles			959	9.4	959	9.4	0.427	19.9	LOS B	5.3	39.6	0.76	0.68	0.76	17.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Sussex St (S)											
P1	Full	62	28.4	LOS C	0.1	0.1	0.90	0.90	45.1	20.0	0.44
East: Napoleon St (E)											
P2	Full	153	28.5	LOS C	0.3	0.3	0.91	0.91	45.2	20.0	0.44

North: Hickson Rd (N)											
P3	Full	91	28.5	LOS C	0.2	0.2	0.90	0.90	45.1	20.0	0.44
West: Car Park Access (W)											
P4	Full	213	28.6	LOS C	0.4	0.4	0.91	0.91	45.3	20.0	0.44
All Pedestrians		518	28.5	LOS C	0.4	0.4	0.91	0.91	45.2	20.0	0.44

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:29 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU07 [BGU07 Margaret St / Kent St / Napoleon St (Site Folder: Block 2 - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 2 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 308

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]				km/h
			veh/h		veh/h					veh	m				
South: Kent St (S)															
1a	L1	All MCs	60	22.8	60	22.8	0.480	25.3	LOS B	10.5	78.5	0.75	0.67	0.75	20.0
2	T1	All MCs	596	4.4	596	4.4	0.480	21.4	LOS B	10.5	78.5	0.83	0.70	0.83	8.1
3	R2	All MCs	27	0.0	27	0.0	*0.480	60.9	LOS E	6.2	45.1	0.92	0.76	0.92	6.6
Approach			683	5.9	683	5.9	0.480	23.3	LOS B	10.5	78.5	0.82	0.70	0.82	9.3
East: Margaret St (E)															
4	L2	All MCs	105	0.0	105	0.0	0.227	33.8	LOS C	3.8	26.5	0.95	0.78	0.95	8.9
6a	R1	All MCs	244	7.8	244	7.8	0.572	29.6	LOS C	8.8	65.3	0.95	0.82	0.95	15.0
6	R2	All MCs	63	1.7	63	1.7	*0.572	31.6	LOS C	8.8	65.3	0.95	0.82	0.95	6.6
Approach			413	4.8	413	4.8	0.572	31.0	LOS C	8.8	65.3	0.95	0.81	0.95	12.5
North: Kent St (N)															
7	L2	All MCs	31	0.0	31	0.0	0.138	38.3	LOS C	1.7	13.4	0.84	0.68	0.84	16.5
8	T1	All MCs	181	3.5	181	3.5	*0.161	28.9	LOS C	5.2	14.0	0.89	0.69	0.89	15.9
9b	R3	All MCs	48	13.0	48	13.0	0.181	28.2	LOS B	1.5	11.4	0.77	0.72	0.77	21.1
Approach			260	4.9	260	4.9	0.181	29.9	LOS C	5.2	14.0	0.86	0.69	0.86	17.0
NorthWest: Napoleon St (NW)															
27b	L3	All MCs	134	5.5	134	5.5	0.355	14.7	LOS B	4.9	35.8	0.67	0.70	0.67	20.3
27a	L1	All MCs	72	7.4	72	7.4	0.355	22.7	LOS B	4.9	35.8	0.67	0.70	0.67	20.3
Approach			205	6.2	205	6.2	0.355	17.5	LOS B	4.9	35.8	0.67	0.70	0.67	20.3
All Vehicles			1561	5.5	1561	5.5	0.572	25.7	LOS B	10.5	78.5	0.84	0.73	0.84	13.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist]			sec	m	m/sec
					ped	m					
South: Kent St (S)											

P1 Full	1146	33.1	LOS D	2.4	2.4	0.93	0.93	49.8	20.0	0.40
East: Margaret St (E)										
P2 Full	117	31.7	LOS D	0.2	0.2	0.89	0.89	48.3	20.0	0.41
North: Kent St (N)										
P3 Full	297	31.9	LOS D	0.6	0.6	0.90	0.90	48.6	20.0	0.41
NorthWest: Napoleon St (NW)										
P7 Full	996	32.9	LOS D	2.1	2.1	0.93	0.93	199.5	200.0	1.00
All Pedestrians	2556	32.8	LOS D	2.4	2.4	0.92	0.92	107.9	90.1	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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:25 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU08 [BGU08 Margaret St / Clarence St (Site Folder: Block 2 - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 2 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 319

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 80 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Clarence St (S)															
1	L2	All MCs	47	2.2	47	2.2	0.338	28.9	LOS C	6.2	44.6	0.79	0.68	0.79	15.9
2	T1	All MCs	515	34.4	515	34.4	*0.338	20.1	LOS B	6.3	45.7	0.77	0.65	0.77	19.5
3	R2	All MCs	26	0.0	26	0.0	0.338	28.7	LOS C	6.3	45.7	0.78	0.67	0.78	16.3
Approach			588	30.2	588	30.2	0.338	21.2	LOS B	6.3	45.7	0.77	0.65	0.77	19.1
East: Margaret St (E)															
5	T1	All MCs	378	5.0	378	5.0	0.503	15.3	LOS B	7.4	53.1	0.75	0.65	0.75	10.5
6	R2	All MCs	62	91.5	62	91.5	*0.503	20.4	LOS B	4.4	40.4	0.81	0.72	0.81	14.3
Approach			440	17.2	440	17.2	0.503	16.0	LOS B	7.4	53.1	0.76	0.66	0.76	11.2
West: Margaret St (W)															
10	L2	All MCs	80	9.2	80	9.2	*0.471	41.1	LOS C	5.4	39.3	0.98	0.79	0.98	8.6
11	T1	All MCs	64	6.6	64	6.6	0.471	31.6	LOS C	5.4	39.3	0.98	0.79	0.98	4.8
Approach			144	8.0	144	8.0	0.471	36.9	LOS C	5.4	39.3	0.98	0.79	0.98	7.0
All Vehicles			1173	22.6	1173	22.6	0.503	21.2	LOS B	7.4	53.1	0.79	0.67	0.79	15.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist]					
		ped/h	sec			m			sec	m	m/sec
South: Clarence St (S)											
P1	Full	1849	36.1	LOS D	4.2	4.2	0.99	0.99	52.8	20.0	0.38
East: Margaret St (E)											
P2	Full	667	34.3	LOS D	1.4	1.4	0.94	0.94	50.9	20.0	0.39
North: Clarence St (N)											
P3	Full	753	34.4	LOS D	1.6	1.6	0.94	0.94	51.1	20.0	0.39
West: Margaret St (W)											
P4	Full	1242	35.1	LOS D	2.7	2.7	0.96	0.96	51.8	20.0	0.39

All Pedestrians	4512	35.3	LOS D	4.2	4.2	0.97	0.97	51.9	20.0	0.39
-----------------	------	------	-------	-----	-----	------	------	------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:25 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU09 [BGU09 Margaret St / York St (Site Folder: Block 2 - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 2 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 3042

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Margaret St (E)															
4	L2	All MCs	28	22.2	28	22.2	0.274	39.1	LOS C	3.2	28.0	0.85	0.70	0.85	15.4
5	T1	All MCs	174	33.9	174	33.9	0.274	27.4	LOS B	4.0	35.9	0.83	0.67	0.83	8.0
Approach			202	32.3	202	32.3	0.274	29.1	LOS C	4.0	35.9	0.83	0.68	0.83	9.4
North: York St (N)															
7	L2	All MCs	1	0.0	1	0.0	0.000	14.5	LOS A	0.0	0.1	0.53	0.47	0.53	16.2
8	T1	All MCs	887	25.4	887	25.4	0.336	11.2	LOS A	6.9	59.0	0.57	0.50	0.57	26.1
9	R2	All MCs	258	7.8	258	7.8	*0.329	17.8	LOS B	6.7	49.7	0.63	0.74	0.63	11.5
Approach			1146	21.4	1146	21.4	0.336	12.7	LOS A	6.9	59.0	0.58	0.55	0.58	23.4
West: Margaret St (W)															
12	R2	All MCs	67	0.0	67	0.0	0.250	37.1	LOS C	2.6	18.1	0.88	0.75	0.88	12.8
Approach			67	0.0	67	0.0	0.250	37.1	LOS C	2.6	18.1	0.88	0.75	0.88	12.8
All Vehicles			1416	21.9	1416	21.9	0.336	16.2	LOS B	6.9	59.0	0.63	0.58	0.63	20.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: York St (S)											
P1	Full	1378	38.7	LOS D	3.4	3.4	0.95	0.95	55.3	20.0	0.36
East: Margaret St (E)											
P2	Full	1872	39.5	LOS D	4.7	4.7	0.98	0.98	56.2	20.0	0.36
North: York St (N)											
P3	Full	785	37.7	LOS D	1.9	1.9	0.93	0.93	54.3	20.0	0.37
West: Margaret St (W)											
P4	Full	531	37.3	LOS D	1.2	1.2	0.92	0.92	53.9	20.0	0.37
All Pedestrians		4565	38.7	LOS D	4.7	4.7	0.96	0.96	55.4	20.0	0.36


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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Kcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:25 AM
Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

 Site: **BGU10 [BGU10 Pedestrian Mid-block Crossing at Sussex St under Exchange PI (Site Folder: Block 2 - 2023 AM Peak)]**

 Network: **BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 AM Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 3939 (?)

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]			v/c	sec		[Veh. veh	[Dist] m				km/h
South: Sussex St (S)															
2	T1	All MCs	358	6.5	358	6.5	*0.167	7.1	LOS A	2.8	20.6	0.49	0.40	0.49	26.2
Approach			358	6.5	358	6.5	0.167	7.1	LOS A	2.8	20.6	0.49	0.40	0.49	26.2
North: Sussex St (N)															
8	T1	All MCs	327	14.5	327	14.5	0.164	7.1	LOS A	2.6	20.1	0.49	0.40	0.49	24.5
Approach			327	14.5	327	14.5	0.164	7.1	LOS A	2.6	20.1	0.49	0.40	0.49	24.5
All Vehicles			685	10.3	685	10.3	0.167	7.1	LOS A	2.8	20.6	0.49	0.40	0.49	25.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	[Dist] m			sec	m	m/sec
South: Sussex St (S)											
P1	Full	522	29.0	LOS C	1.0	1.0	0.92	0.92	45.6	20.0	0.44
All Pedestrians		522	29.0	LOS C	1.0	1.0	0.92	0.92	45.6	20.0	0.44

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com


Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:29 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

 Site: **BGU11 [BGU11 Pedestrian Mid-block Crossing at Kent St near Margaret St (Site Folder: Block 2 - 2023 AM Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

 Network: **BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 AM Peak)]**

TCS 4109

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 45 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
South: Kent St (S)															
2	T1	All MCs	709	6.4	709	6.4	* 0.389	10.2	LOS A	4.5	33.9	0.73	0.60	0.73	21.6
Approach			709	6.4	709	6.4	0.389	10.2	LOS A	4.5	33.9	0.73	0.60	0.73	21.6
North: Kent St (N)															
8	T1	All MCs	273	2.3	273	2.3	0.174	9.1	LOS A	1.9	13.7	0.66	0.52	0.66	14.6
Approach			273	2.3	273	2.3	0.174	9.1	LOS A	1.9	13.7	0.66	0.52	0.66	14.6
All Vehicles			982	5.3	982	5.3	0.389	9.9	LOS A	4.5	33.9	0.71	0.58	0.71	20.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Kent St (S)											
P1	Full	1759	15.5	LOS B	1.9	1.9	0.86	0.86	32.2	20.0	0.62
All Pedestrians		1759	15.5	LOS B	1.9	1.9	0.86	0.86	32.2	20.0	0.62

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:29 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU12 [BGU12 Sussex St / Erskine St (Site Folder: Block 2 - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 310

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Sussex St (S)															
1	L2	All MCs	79	2.7	79	2.7	0.335	36.1	LOS C	5.3	38.7	0.87	0.74	0.87	14.7
2	T1	All MCs	236	6.7	236	6.7	*0.335	28.2	LOS B	6.0	44.5	0.85	0.70	0.85	15.7
Approach			315	5.7	315	5.7	0.335	30.2	LOS C	6.0	44.5	0.85	0.71	0.85	15.5
East: Erskine St (E)															
4	L2	All MCs	359	4.1	359	4.1	*0.404	11.3	LOS A	6.2	45.0	0.42	0.63	0.42	26.7
5	T1	All MCs	105	10.0	105	10.0	0.162	2.8	LOS A	0.8	6.0	0.15	0.19	0.15	27.5
6	R2	All MCs	21	5.0	21	5.0	0.162	7.4	LOS A	0.8	6.0	0.15	0.19	0.15	27.5
Approach			485	5.4	485	5.4	0.404	9.3	LOS A	6.2	45.0	0.35	0.51	0.35	26.8
North: Sussex St (N)															
7	L2	All MCs	42	42.5	42	42.5	0.100	26.1	LOS B	1.3	12.3	0.72	0.68	0.72	14.0
8	T1	All MCs	267	10.2	267	10.2	0.206	21.0	LOS B	4.0	30.6	0.72	0.59	0.72	24.0
9	R2	All MCs	18	11.8	18	11.8	*0.070	31.0	LOS C	0.6	4.7	0.84	0.68	0.84	12.4
Approach			327	14.5	327	14.5	0.206	22.2	LOS B	4.0	30.6	0.73	0.61	0.73	22.5
West: Erskine St (W)															
10	L2	All MCs	101	6.3	101	6.3	0.362	14.1	LOS A	8.9	64.6	0.61	0.58	0.61	12.3
11	T1	All MCs	267	4.3	267	4.3	0.362	13.1	LOS A	8.9	64.6	0.61	0.58	0.61	12.1
12	R2	All MCs	155	6.1	155	6.1	0.362	20.6	LOS B	4.7	34.7	0.68	0.72	0.68	20.7
Approach			523	5.2	523	5.2	0.362	15.5	LOS B	8.9	64.6	0.63	0.62	0.63	16.3
All Vehicles			1651	7.2	1651	7.2	0.404	17.8	LOS B	8.9	64.6	0.61	0.60	0.61	20.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist]					
		ped/h	sec			m			sec	m	m/sec
South: Sussex St (S)											
P1	Full	243	38.7	LOS D	0.6	0.6	0.93	0.93	55.3	20.0	0.36

East: Erskine St (E)											
P2	Full	227	38.6	LOS D	0.5	0.5	0.93	0.93	55.3	20.0	0.36
North: Sussex St (N)											
P3	Full	346	38.8	LOS D	0.8	0.8	0.94	0.94	55.5	20.0	0.36
West: Erskine St (W)											
P4	Full	239	38.7	LOS D	0.6	0.6	0.93	0.93	55.3	20.0	0.36
All Pedestrians		1056	38.7	LOS D	0.8	0.8	0.93	0.93	55.4	20.0	0.36

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:29 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU13 [BGU13 Kent St / Erskine St (Site Folder: Block 2 - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 307

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Kent St (S)															
1	L2	All MCs	100	11.6	100	11.6	0.176	25.7	LOS B	3.1	23.7	0.73	0.71	0.73	17.2
2	T1	All MCs	581	7.2	581	7.2	*0.351	20.4	LOS B	7.1	53.7	0.72	0.60	0.72	18.7
3	R2	All MCs	1	0.0	1	0.0	0.046	12.9	LOS A	3.1	8.5	0.51	0.41	0.51	21.9
Approach			682	7.9	682	7.9	0.351	21.2	LOS B	7.1	53.7	0.72	0.61	0.72	18.5
East: Erskine St (E)															
5	T1	All MCs	261	3.2	261	3.2	0.227	22.5	LOS B	4.6	33.2	0.75	0.62	0.75	7.7
6	R2	All MCs	18	0.0	18	0.0	0.227	28.6	LOS C	4.1	29.5	0.75	0.63	0.75	7.5
Approach			279	3.0	279	3.0	0.227	22.8	LOS B	4.6	33.2	0.75	0.62	0.75	7.6
North: Kent St (N)															
7	L2	All MCs	8	0.0	8	0.0	0.042	12.8	LOS A	2.9	7.8	0.51	0.41	0.51	17.7
8	T1	All MCs	133	0.0	133	0.0	0.042	10.8	LOS A	2.9	7.8	0.51	0.41	0.51	22.9
9	R2	All MCs	129	4.9	129	4.9	*0.705	48.9	LOS D	6.0	43.6	1.00	0.89	1.14	6.2
Approach			271	2.3	271	2.3	0.705	29.1	LOS C	6.0	43.6	0.75	0.64	0.81	13.8
West: Erskine St (W)															
10	L2	All MCs	115	2.8	115	2.8	0.257	20.1	LOS B	3.9	28.6	0.59	0.62	0.59	11.1
11	T1	All MCs	195	13.5	195	13.5	*0.257	18.2	LOS B	4.1	32.1	0.64	0.55	0.64	14.9
Approach			309	9.5	309	9.5	0.257	18.9	LOS B	4.1	32.1	0.62	0.58	0.62	13.6
All Vehicles			1541	6.4	1541	6.4	0.705	22.4	LOS B	7.1	53.7	0.71	0.61	0.72	15.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
		ped/h	sec					sec	m	m/sec	
South: Kent St (S)											
P1	Full	384	38.9	LOS D	0.9	0.9	0.94	0.94	55.6	20.0	0.36
East: Erskine St (E)											

P2 Full	418	39.0	LOS D	1.0	1.0	0.94	0.94	55.6	20.0	0.36
North: Kent St (N)										
P3 Full	464	39.0	LOS D	1.1	1.1	0.94	0.94	55.7	20.0	0.36
West: Erskine St (W)										
P4 Full	534	39.1	LOS D	1.3	1.3	0.94	0.94	55.8	20.0	0.36
All Pedestrians	1800	39.0	LOS D	1.3	1.3	0.94	0.94	55.7	20.0	0.36

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:29 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU14 [BGU14 Sussex St / King St (Site Folder: Block 2 - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 4 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 284

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
East: King St (E)															
4a	L1	All MCs	52	0.0	52	0.0	0.066	41.7	LOS C	2.2	5.9	1.00	0.73	1.00	18.8
Approach			52	0.0	52	0.0	0.066	41.7	LOS C	2.2	5.9	1.00	0.73	1.00	18.8
North: Sussex St (N)															
7	L2	All MCs	65	11.3	65	11.3	*0.749	43.8	LOS D	12.3	92.8	0.99	0.91	1.09	13.2
8	T1	All MCs	526	8.8	526	8.8	0.749	37.4	LOS C	13.7	102.8	0.99	0.91	1.08	20.4
Approach			592	9.1	592	9.1	0.749	38.1	LOS C	13.7	102.8	0.99	0.91	1.08	19.8
SouthWest: King St (SW)															
30a	L1	All MCs	364	6.1	364	6.1	0.456	22.5	LOS B	11.1	82.1	0.74	0.77	0.74	32.7
32a	R1	All MCs	1601	2.2	1601	2.2	*0.721	19.5	LOS B	19.9	142.2	0.77	0.78	0.77	30.5
32b	R3	All MCs	434	7.3	434	7.3	0.452	14.3	LOS A	9.7	72.5	0.55	0.76	0.55	36.3
Approach			2399	3.7	2399	3.7	0.721	19.0	LOS B	19.9	142.2	0.73	0.78	0.73	32.1
All Vehicles			3042	4.7	3042	4.7	0.749	23.1	LOS B	19.9	142.2	0.78	0.80	0.80	29.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Sussex St (S)											
P1	Full	168	40.4	LOS E	0.4	0.4	0.95	0.95	57.1	20.0	0.35
East: King St (E)											
P2	Full	186	38.6	LOS D	0.4	0.4	0.93	0.93	55.2	20.0	0.36
North: Sussex St (N)											
P3	Full	572	39.2	LOS D	1.4	1.4	0.94	0.94	55.9	20.0	0.36
SouthWest: King St (SW)											
P8	Full	373	38.9	LOS D	0.9	0.9	0.94	0.94	205.5	200.0	0.97

P8B Slip/ Bypass	176	40.4	LOS E	0.4	0.4	0.95	0.95	207.1	200.0	0.97
All Pedestrians	1475	39.3	LOS D	1.4	1.4	0.94	0.94	111.8	86.9	0.78

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:31 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU15 [BGU15 Kent St / King St (Site Folder: Block 2 - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 4 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 283

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
South: Kent St (S)															
1	L2	All MCs	4	0.0	4	0.0	0.158	41.9	LOS C	4.5	12.0	0.94	0.71	0.94	14.2
2	T1	All MCs	445	9.9	445	9.9	*0.418	33.8	LOS C	6.4	49.9	0.91	0.73	0.91	21.5
3	R2	All MCs	141	3.0	141	3.0	*0.355	38.3	LOS C	4.9	35.5	0.91	0.76	0.91	15.1
Approach			591	8.2	591	8.2	0.418	34.9	LOS C	6.4	49.9	0.91	0.74	0.91	20.0
East: King St (E)															
5	T1	All MCs	8	0.0	8	0.0	0.055	41.1	LOS C	0.5	1.4	0.97	0.64	0.97	4.5
6	R2	All MCs	4	0.0	4	0.0	0.055	52.8	LOS D	0.5	1.4	0.97	0.64	0.97	13.6
Approach			13	0.0	13	0.0	0.055	45.0	LOS D	0.5	1.4	0.97	0.64	0.97	8.2
North: Kent St (N)															
7	L2	All MCs	21	0.0	21	0.0	0.128	41.7	LOS C	3.6	9.7	0.94	0.70	0.94	11.3
8	T1	All MCs	71	0.0	71	0.0	0.128	38.3	LOS C	3.6	9.7	0.94	0.70	0.94	20.0
9	R2	All MCs	40	0.0	40	0.0	0.142	43.8	LOS D	1.6	4.4	0.95	0.71	0.95	12.6
Approach			132	0.0	132	0.0	0.142	40.5	LOS C	3.6	9.7	0.94	0.70	0.94	16.5
West: King St (W)															
10	L2	All MCs	266	3.6	266	3.6	*0.622	23.1	LOS B	10.4	75.5	0.61	0.59	0.61	23.0
11	T1	All MCs	1379	2.4	1379	2.4	0.622	8.5	LOS A	11.7	83.6	0.50	0.46	0.50	22.3
Approach			1645	2.6	1645	2.6	0.622	10.9	LOS A	11.7	83.6	0.52	0.48	0.52	22.5
All Vehicles			2380	3.8	2380	3.8	0.622	18.7	LOS B	11.7	83.6	0.64	0.56	0.64	20.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Kent St (S)											
P1	Full	421	39.0	LOS D	1.0	1.0	0.94	0.94	55.6	20.0	0.36
East: King St (E)											

P2 Full	273	38.7	LOS D	0.7	0.7	0.93	0.93	55.4	20.0	0.36
North: Kent St (N)										
P3 Full	563	39.2	LOS D	1.4	1.4	0.94	0.94	55.9	20.0	0.36
West: King St (W)										
P4 Full	503	39.1	LOS D	1.2	1.2	0.94	0.94	55.8	20.0	0.36
All Pedestrians	1760	39.0	LOS D	1.4	1.4	0.94	0.94	55.7	20.0	0.36

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:31 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU18 [BGU18 Shelley St / Erskine St (Site Folder: Block 2 - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 305

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 45 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Shelley St (S)															
1	L2	All MCs	13	0.0	13	0.0	0.162	16.3	LOS B	1.7	11.8	0.70	0.57	0.70	18.0
2	T1	All MCs	99	2.1	99	2.1	0.162	9.9	LOS A	1.7	11.8	0.70	0.57	0.70	24.7
3	R2	All MCs	319	3.3	319	3.3	*0.691	20.4	LOS B	6.9	49.6	0.93	0.89	1.05	13.3
Approach			431	2.9	431	2.9	0.691	17.8	LOS B	6.9	49.6	0.87	0.81	0.96	15.9
East: Erskine St (E)															
4	L2	All MCs	37	11.4	37	11.4	0.077	16.3	LOS B	0.6	4.7	0.76	0.67	0.76	18.1
5	T1	All MCs	78	12.2	78	12.2	*0.339	13.1	LOS A	2.8	20.7	0.81	0.70	0.81	15.8
6	R2	All MCs	79	1.3	79	1.3	0.339	17.4	LOS B	2.8	20.7	0.81	0.70	0.81	17.1
Approach			194	7.6	194	7.6	0.339	15.4	LOS B	2.8	20.7	0.80	0.70	0.80	16.8
North: Shelley St (N)															
7	L2	All MCs	92	9.2	92	9.2	0.262	16.1	LOS B	1.6	11.9	0.77	0.72	0.77	13.5
8	T1	All MCs	5	20.0	5	20.0	0.014	10.0	LOS A	0.1	0.8	0.67	0.50	0.67	24.1
9	R2	All MCs	2	0.0	2	0.0	0.014	14.2	LOS A	0.1	0.8	0.67	0.50	0.67	14.9
Approach			99	9.6	99	9.6	0.262	15.7	LOS B	1.6	11.9	0.76	0.70	0.76	14.2
West: Erskine St (W)															
10	L2	All MCs	3	33.3	3	33.3	0.118	17.5	LOS B	0.7	5.4	0.70	0.55	0.70	20.2
11	T1	All MCs	113	7.5	113	7.5	0.118	10.8	LOS A	1.1	8.3	0.70	0.55	0.70	14.0
12	R2	All MCs	4	0.0	4	0.0	0.118	14.9	LOS B	1.1	8.3	0.70	0.55	0.70	22.2
Approach			120	7.9	120	7.9	0.118	11.1	LOS A	1.1	8.3	0.70	0.55	0.70	14.7
All Vehicles			843	5.5	843	5.5	0.691	16.1	LOS B	6.9	49.6	0.82	0.73	0.86	15.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Shelley St (S)											
P1	Full	147	16.1	LOS B	0.2	0.2	0.85	0.85	182.8	200.0	1.09

East: Erskine St (E)											
P2	Full	101	16.1	LOS B	0.1	0.1	0.85	0.85	182.8	200.0	1.09
North: Shelley St (N)											
P3	Full	217	16.2	LOS B	0.2	0.2	0.85	0.85	182.9	200.0	1.09
West: Erskine St (W)											
P4	Full	199	16.2	LOS B	0.2	0.2	0.85	0.85	182.8	200.0	1.09
All Pedestrians		664	16.2	LOS B	0.2	0.2	0.85	0.85	182.8	200.0	1.09

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:29 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BUG01 [BGU01 Hickson Rd / Towns PI (Site Folder: Block 2 - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N1 [BGU Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn Class	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec			m				km/h
East: Hickson Rd (E)															
4a	L1	All MCs	77	9.6	77	9.6	0.158	4.2	LOS A	0.7	5.1	0.41	0.54	0.41	37.3
6a	R1	All MCs	91	2.3	91	2.3	0.158	5.8	LOS A	0.7	5.1	0.41	0.54	0.41	34.8
Approach			167	5.7	167	5.7	0.158	5.0	NA	0.7	5.1	0.41	0.54	0.41	36.5
NorthWest: Towns PI (NW)															
27a	L1	All MCs	137	3.8	137	3.8	0.194	4.1	LOS A	0.8	5.5	0.46	0.60	0.46	35.3
29	R2	All MCs	53	4.0	53	4.0	0.194	6.7	LOS A	0.8	5.5	0.46	0.60	0.46	36.5
Approach			189	3.9	189	3.9	0.194	4.8	LOS A	0.8	5.5	0.46	0.60	0.46	35.7
SouthWest: Hickson Rd (SW)															
30	L2	All MCs	197	3.7	197	3.7	0.261	4.1	LOS A	1.3	9.7	0.29	0.45	0.29	37.2
32a	R1	All MCs	160	5.3	160	5.3	0.261	3.0	LOS A	1.3	9.7	0.29	0.45	0.29	37.9
Approach			357	4.4	357	4.4	0.261	3.6	NA	1.3	9.7	0.29	0.45	0.29	37.6
All Vehicles			714	4.6	714	4.6	0.261	4.2	NA	1.3	9.7	0.36	0.51	0.36	36.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:34 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU02 [BGU02 Dalgety Rd / Towns PI (Site Folder: Block 2 - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N1 [BGU Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Dalgety Rd (S)															
30	L2	All MCs	2	0.0	2	0.0	0.119	6.0	LOS A	0.7	5.1	0.08	0.57	0.08	24.6
3b	R3	All MCs	177	4.2	177	4.2	0.119	6.2	LOS A	0.7	5.1	0.08	0.57	0.08	32.4
32u	U	All MCs	3	0.0	3	0.0	0.119	6.9	LOS A	0.7	5.1	0.08	0.57	0.08	34.8
Approach			182	4.0	182	4.0	0.119	6.2	LOS A	0.7	5.1	0.08	0.57	0.08	32.3
SouthEast: Towns PI (SE)															
21b	L3	All MCs	279	3.4	279	3.4	0.194	2.7	LOS A	1.3	9.4	0.13	0.40	0.13	35.6
21a	L1	All MCs	3	0.0	3	0.0	0.194	8.3	LOS A	1.3	9.4	0.13	0.40	0.13	18.9
23u	U	All MCs	6	0.0	6	0.0	0.194	7.0	LOS A	1.3	9.4	0.13	0.40	0.13	30.6
Approach			288	3.3	288	3.3	0.194	2.9	LOS A	1.3	9.4	0.13	0.40	0.13	35.5
West: Parking Access (W)															
12a	R1	All MCs	7	0.0	7	0.0	0.022	1.1	LOS A	0.1	0.8	0.37	0.18	0.37	9.7
29	R2	All MCs	16	0.0	16	0.0	0.022	1.1	LOS A	0.1	0.8	0.37	0.18	0.37	21.6
29u	U	All MCs	1	0.0	1	0.0	0.022	1.1	LOS A	0.1	0.8	0.37	0.18	0.37	9.8
Approach			24	0.0	24	0.0	0.022	1.1	LOS A	0.1	0.8	0.37	0.18	0.37	18.7
All Vehicles			495	3.4	495	3.4	0.194	4.0	LOS A	1.3	9.4	0.12	0.45	0.12	33.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:34 AM
Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: **BGU03 [BGU03 Kent St / Argyle St (Site Folder: Block 2 - 2023 PM Peak)]**

Output produced by **SIDRA INTERSECTION Version: 9.1.6.228**

Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Kent St (S)															
1	L2	All MCs	167	1.9	167	1.9	0.923	21.7	LOS B	18.0	127.5	0.96	2.12	3.60	27.5
2	T1	All MCs	32	0.0	32	0.0	0.923	24.4	LOS B	18.0	127.5	0.96	2.12	3.60	24.8
3	R2	All MCs	364	1.4	364	1.4	0.923	31.4	LOS C	18.0	127.5	0.96	2.12	3.60	25.7
Approach			563	1.5	563	1.5	0.923	28.1	LOS B	18.0	127.5	0.96	2.12	3.60	26.2
East: Argyle St (E)															
4	L2	All MCs	218	1.4	218	1.4	0.312	5.1	LOSA	1.6	11.4	0.44	0.47	0.44	36.4
5	T1	All MCs	99	3.2	99	3.2	0.312	1.4	LOSA	1.6	11.4	0.44	0.47	0.44	36.0
6	R2	All MCs	6	0.0	6	0.0	0.312	4.5	LOSA	1.6	11.4	0.44	0.47	0.44	31.3
Approach			323	2.0	323	2.0	0.312	4.0	NA	1.6	11.4	0.44	0.47	0.44	36.3
North: Kent St (N)															
7	L2	All MCs	3	0.0	3	0.0	0.037	7.6	LOSA	0.1	0.9	0.51	0.94	0.51	26.0
8	T1	All MCs	12	9.1	12	9.1	0.037	12.2	LOSA	0.1	0.9	0.51	0.94	0.51	32.7
9	R2	All MCs	6	0.0	6	0.0	0.037	9.5	LOSA	0.1	0.9	0.51	0.94	0.51	29.6
Approach			21	5.0	21	5.0	0.037	10.7	LOSA	0.1	0.9	0.51	0.94	0.51	31.3
West: Argyle PI (W)															
10	L2	All MCs	4	0.0	4	0.0	0.160	5.1	LOSA	0.8	5.5	0.43	0.44	0.43	34.5
11	T1	All MCs	74	8.6	74	8.6	0.160	1.3	LOSA	0.8	5.5	0.43	0.44	0.43	36.3
12	R2	All MCs	87	0.0	87	0.0	0.160	5.6	LOSA	0.8	5.5	0.43	0.44	0.43	37.0
Approach			165	3.8	165	3.8	0.160	3.7	NA	0.8	5.5	0.43	0.44	0.43	36.7
All Vehicles			1073	2.1	1073	2.1	0.923	16.7	NA	18.0	127.5	0.71	1.34	2.10	29.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [TCS 4272]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 2 (Network Folder: Block 2 Network - 2023 PM Peak)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (CCG User-Given Phase Times)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh]	[Dist]			km/h	
			veh/h	%	veh/h	%				m					
Site: BGU04 [BGU04 Pedestrian Mid-block Crossing at Kent St near Gas Ln]															
South: Kent St															
2	T1	All MCs	562	1.5	562	1.5	0.470	9.6	LOS A	11.5	81.6	0.57	0.51	0.57	33.0
Approach			562	1.5	562	1.5	0.470	9.6	LOS A	11.5	81.6	0.57	0.51	0.57	33.0
North: Kent St															
8	T1	All MCs	371	0.6	371	0.6	0.788	44.5	LOS D	9.6	67.4	1.00	0.99	1.22	19.0
Approach			371	0.6	371	0.6	0.788	44.5	LOS D	9.6	67.4	1.00	0.99	1.22	19.0
All Vehicles			933	1.1	933	1.1	0.788	23.5	LOS B	11.5	81.6	0.74	0.70	0.83	25.9
Site: BGU05 [BGU05 Kent St / Sydney Harbour Bridge (SHB) On-ramp]															
South: Kent St (S)															
2	T1	All MCs	393	2.9	393	2.9	0.666	7.3	LOS A	8.8	63.1	0.54	0.49	0.54	29.5
3a	R1	All MCs	498	5.3	498	5.3	*0.726	16.0	LOS B	13.8	101.4	0.70	0.69	0.71	27.6
Approach			891	4.3	891	4.3	0.726	12.2	LOS A	13.8	101.4	0.63	0.60	0.63	28.2
East: Clarence St (E)															
4	L2	All MCs	41	0.0	41	0.0	0.140	39.5	LOS C	1.6	11.0	0.90	0.71	0.90	11.6
6	R2	All MCs	188	0.6	188	0.6	*0.919	64.4	LOS E	11.1	77.8	1.00	1.19	1.57	8.0
Approach			229	0.5	229	0.5	0.919	60.0	LOS E	11.1	77.8	0.98	1.11	1.45	8.5
NorthEast: SHB On-ramp (NE)															
24a	L1	All MCs	11	0.0	11	0.0	0.009	32.5	LOS C	0.4	1.0	0.85	0.58	0.85	19.6
Approach			11	0.0	11	0.0	0.009	32.5	LOS C	0.4	1.0	0.85	0.58	0.85	19.6
North: Kent St (N)															
7b	L3	All MCs	200	0.0	200	0.0	0.554	46.8	LOS D	8.9	62.4	1.00	0.86	1.00	11.6
8	T1	All MCs	233	0.9	233	0.9	*0.903	28.0	LOS B	10.2	72.1	0.96	0.89	1.11	7.0
Approach			433	0.5	433	0.5	0.903	36.7	LOS C	10.2	72.1	0.98	0.88	1.06	9.9
All Vehicles			1563	2.6	1563	2.6	0.919	26.1	LOS B	13.8	101.4	0.78	0.75	0.87	18.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance (CCG)											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE	Prop. Que	Eff. Stop	Travel Time	Travel Dist.	Aver. Speed	

	ped/h	sec		[Ped ped	Dist] m		Rate		sec	m	m/sec
Site: BGU04 [BGU04 Pedestrian Mid-block Crossing at Kent St near Gas Ln]											
South: Kent St											
P1 Full	168	38.5	LOS D	0.4	0.4	0.93	0.93	205.2	200.0	0.97	
All Pedestrians	168	38.5	LOS D	0.4	0.4	0.93	0.93	205.2	200.0	0.97	
Site: BGU05 [BGU05 Kent St / Sydney Harbour Bridge (SHB) On-ramp]											
South: Kent St (S)											
P1 Full	314	38.8	LOS D	0.7	0.7	0.93	0.93	55.4	20.0	0.36	
All Pedestrians	314	38.8	LOS D	0.7	0.7	0.93	0.93	55.4	20.0	0.36	

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Kcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:38 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU06 [BGU06 Hickson Rd / Napoleon St / Sussex St
(Site Folder: Block 2 - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU
Network 3 (Network Folder:
Block 2 Network - 2023 PM
Peak)]

TCS 4625

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 85 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Sussex St (S)															
2	T1	All MCs	321	2.0	321	2.0	0.332	13.3	LOS A	7.9	55.9	0.63	0.55	0.63	22.7
3	R2	All MCs	103	3.1	103	3.1	*0.315	23.6	LOS B	3.0	21.7	0.82	0.74	0.82	19.9
Approach			424	2.2	424	2.2	0.332	15.8	LOS B	7.9	55.9	0.68	0.59	0.68	21.8
East: Napoleon St (E)															
4	L2	All MCs	151	11.9	151	11.9	0.288	27.2	LOS B	4.7	36.6	0.79	0.74	0.79	13.3
6	R2	All MCs	185	5.7	185	5.7	*0.450	33.9	LOS C	6.7	49.4	0.90	0.78	0.90	14.3
Approach			336	8.5	336	8.5	0.450	30.9	LOS C	6.7	49.4	0.85	0.77	0.85	14.0
North: Hickson Rd (N)															
7	L2	All MCs	166	2.5	166	2.5	0.252	25.1	LOS B	4.8	34.6	0.74	0.73	0.74	17.3
8	T1	All MCs	292	7.2	292	7.2	*0.429	21.8	LOS B	8.9	66.3	0.78	0.67	0.78	10.3
Approach			458	5.5	458	5.5	0.429	23.0	LOS B	8.9	66.3	0.77	0.69	0.77	13.2
West: Car Park Access (W)															
10	L2	All MCs	1	0.0	1	0.0	0.101	45.0	LOS D	0.4	2.8	0.98	0.65	0.98	5.3
11	T1	All MCs	33	0.0	33	0.0	*0.483	46.6	LOS D	1.9	13.6	1.00	0.72	1.01	8.3
12	R2	All MCs	19	0.0	19	0.0	0.483	47.0	LOS D	1.9	13.6	1.00	0.75	1.01	2.2
Approach			53	0.0	53	0.0	0.483	46.7	LOS D	1.9	13.6	1.00	0.73	1.01	6.4
All Vehicles			1271	5.0	1271	5.0	0.483	23.7	LOS B	8.9	66.3	0.77	0.68	0.77	15.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Sussex St (S)											
P1	Full	53	35.9	LOS D	0.1	0.1	0.92	0.92	52.5	20.0	0.38
East: Napoleon St (E)											
P2	Full	82	35.9	LOS D	0.2	0.2	0.92	0.92	52.6	20.0	0.38

North: Hickson Rd (N)											
P3	Full	47	35.9	LOS D	0.1	0.1	0.92	0.92	52.5	20.0	0.38
West: Car Park Access (W)											
P4	Full	148	36.0	LOS D	0.3	0.3	0.92	0.92	52.7	20.0	0.38
All Pedestrians		331	35.9	LOS D	0.3	0.3	0.92	0.92	52.6	20.0	0.38

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:42 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU07 [BGU07 Margaret St / Kent St / Napoleon St (Site Folder: Block 2 - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 2 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 308

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Kent St (S)															
1a	L1	All MCs	63	10.0	63	10.0	0.446	21.1	LOS B	11.6	85.3	0.65	0.59	0.65	22.1
2	T1	All MCs	654	4.7	654	4.7	*0.446	17.4	LOS B	11.6	85.3	0.73	0.64	0.73	9.5
3	R2	All MCs	33	3.2	33	3.2	*0.446	51.9	LOS D	8.7	63.3	0.82	0.71	0.82	7.9
Approach			749	5.1	749	5.1	0.446	19.2	LOS B	11.6	85.3	0.72	0.64	0.72	10.8
East: Margaret St (E)															
4	L2	All MCs	35	0.0	35	0.0	0.099	38.5	LOS C	1.4	9.5	0.92	0.72	0.92	8.1
6a	R1	All MCs	189	7.8	189	7.8	0.506	32.6	LOS C	8.6	63.6	0.91	0.78	0.91	14.2
6	R2	All MCs	34	0.0	34	0.0	0.506	34.6	LOS C	8.6	63.6	0.91	0.78	0.91	6.2
Approach			258	5.7	258	5.7	0.506	33.7	LOS C	8.6	63.6	0.91	0.77	0.91	12.5
North: Kent St (N)															
7	L2	All MCs	98	0.0	98	0.0	0.360	9.6	LOS A	1.9	13.5	0.21	0.33	0.21	31.1
8	T1	All MCs	177	0.6	177	0.6	0.360	12.7	LOS A	1.9	13.5	0.41	0.43	0.41	23.8
9b	R3	All MCs	47	2.2	47	2.2	0.147	4.8	LOS A	0.0	0.4	0.02	0.52	0.02	33.8
Approach			322	0.7	322	0.7	0.360	10.6	LOS A	1.9	13.5	0.29	0.41	0.29	26.9
NorthWest: Napoleon St (NW)															
27b	L3	All MCs	240	3.1	240	3.1	0.391	8.6	LOS A	4.9	35.0	0.56	0.67	0.56	24.6
27a	L1	All MCs	49	2.1	49	2.1	*0.391	23.5	LOS B	4.9	35.0	0.56	0.67	0.56	24.6
Approach			289	2.9	289	2.9	0.391	11.1	LOS A	4.9	35.0	0.56	0.67	0.56	24.6
All Vehicles			1619	3.9	1619	3.9	0.506	18.4	LOS B	11.6	85.3	0.64	0.62	0.64	16.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		ped	m			sec	m	m/sec
South: Kent St (S)											

P1 Full	843	37.8	LOS D	2.0	2.0	0.93	0.93	54.4	20.0	0.37
East: Margaret St (E)										
P2 Full	132	36.7	LOS D	0.3	0.3	0.90	0.90	53.3	20.0	0.38
North: Kent St (N)										
P3 Full	218	36.8	LOS D	0.5	0.5	0.91	0.91	53.5	20.0	0.37
NorthWest: Napoleon St (NW)										
P7 Full	527	37.3	LOS D	1.2	1.2	0.92	0.92	203.9	200.0	0.98
All Pedestrians	1720	37.4	LOS D	2.0	2.0	0.92	0.92	100.1	75.2	0.75

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:38 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU08 [BGU08 Margaret St / Clarence St (Site Folder: Block 2 - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 2 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 319

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Clarence St (S)															
1	L2	All MCs	26	4.0	26	4.0	0.421	32.6	LOS C	9.4	66.4	0.82	0.70	0.82	14.9
2	T1	All MCs	680	20.7	680	20.7	*0.421	23.6	LOS B	9.7	68.2	0.80	0.68	0.80	18.2
3	R2	All MCs	27	0.0	27	0.0	0.230	30.7	LOS C	2.8	30.7	0.76	0.65	0.76	14.8
Approach			734	19.4	734	19.4	0.421	24.1	LOS B	9.7	68.2	0.80	0.68	0.80	18.0
East: Margaret St (E)															
5	T1	All MCs	232	5.9	232	5.9	0.329	14.1	LOS A	4.9	36.4	0.65	0.56	0.65	11.0
6	R2	All MCs	79	68.0	79	68.0	*0.329	19.3	LOS B	3.2	30.9	0.74	0.70	0.74	14.1
Approach			311	21.7	311	21.7	0.329	15.4	LOS B	4.9	36.4	0.67	0.60	0.67	12.1
West: Margaret St (W)															
10	L2	All MCs	86	1.2	86	1.2	*0.454	47.1	LOS D	6.7	47.4	1.00	0.82	1.00	7.7
11	T1	All MCs	68	1.5	68	1.5	0.454	37.2	LOS C	6.7	47.4	1.00	0.82	1.00	4.2
Approach			155	1.4	155	1.4	0.454	42.7	LOS D	6.7	47.4	1.00	0.82	1.00	6.3
All Vehicles			1199	17.6	1199	17.6	0.454	24.3	LOS B	9.7	68.2	0.79	0.67	0.79	15.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist]					
		ped/h	sec			m			sec	m	m/sec
South: Clarence St (S)											
P1	Full	811	39.6	LOS D	2.0	2.0	0.95	0.95	56.3	20.0	0.36
East: Margaret St (E)											
P2	Full	440	39.0	LOS D	1.1	1.1	0.94	0.94	55.7	20.0	0.36
North: Clarence St (N)											
P3	Full	478	39.0	LOS D	1.1	1.1	0.94	0.94	55.7	20.0	0.36
West: Margaret St (W)											
P4	Full	525	39.1	LOS D	1.3	1.3	0.94	0.94	55.8	20.0	0.36

All Pedestrians	2254	39.3	LOS D	2.0	2.0	0.95	0.95	55.9	20.0	0.36
-----------------	------	------	-------	-----	-----	------	------	------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:38 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU09 [BGU09 Margaret St / York St (Site Folder: Block 2 - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 2 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 3042

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
East: Margaret St (E)															
4	L2	All MCs	119	1.8	119	1.8	0.255	32.5	LOS C	4.2	29.9	0.84	0.75	0.84	15.1
5	T1	All MCs	119	43.4	119	43.4	0.254	23.1	LOS B	3.8	36.5	0.76	0.62	0.76	9.5
Approach			238	22.6	238	22.6	0.255	27.8	LOS B	4.2	36.5	0.80	0.68	0.80	13.1
North: York St (N)															
7	L2	All MCs	1	0.0	1	0.0	0.000	17.3	LOS B	0.0	0.1	0.59	0.48	0.59	14.9
8	T1	All MCs	843	21.1	843	21.1	*0.341	14.0	LOS A	7.3	60.3	0.63	0.54	0.63	24.0
9	R2	All MCs	193	8.7	193	8.7	0.249	20.1	LOS B	5.2	39.0	0.65	0.73	0.65	10.6
Approach			1037	18.8	1037	18.8	0.341	15.1	LOS B	7.3	60.3	0.64	0.58	0.64	22.0
West: Margaret St (W)															
12	R2	All MCs	81	0.0	81	0.0	0.290	36.5	LOS C	3.1	21.7	0.88	0.75	0.88	13.0
Approach			81	0.0	81	0.0	0.290	36.5	LOS C	3.1	21.7	0.88	0.75	0.88	13.0
All Vehicles			1356	18.3	1356	18.3	0.341	18.6	LOS B	7.3	60.3	0.68	0.61	0.68	19.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: York St (S)											
P1	Full	1217	38.4	LOS D	2.9	2.9	0.95	0.95	55.1	20.0	0.36
East: Margaret St (E)											
P2	Full	1199	38.4	LOS D	2.9	2.9	0.95	0.95	55.0	20.0	0.36
North: York St (N)											
P3	Full	704	37.6	LOS D	1.7	1.7	0.93	0.93	54.2	20.0	0.37
West: Margaret St (W)											
P4	Full	652	37.5	LOS D	1.5	1.5	0.93	0.93	54.1	20.0	0.37
All Pedestrians		3772	38.1	LOS D	2.9	2.9	0.94	0.94	54.7	20.0	0.37


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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Kcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:38 AM
Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

 Site: **BGU10 [BGU10 Pedestrian Mid-block Crossing at Sussex St under Exchange PI (Site Folder: Block 2 - 2023 PM Peak)]**

 Network: **BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 PM Peak)]**

Output produced by **SIDRA INTERSECTION Version: 9.1.6.228**

TCS 3939 (?)

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 55 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Sussex St (S)															
2	T1	All MCs	427	2.2	427	2.2	0.237	9.4	LOS A	3.4	24.5	0.63	0.52	0.63	23.6
Approach			427	2.2	427	2.2	0.237	9.4	LOS A	3.4	24.5	0.63	0.52	0.63	23.6
North: Sussex St (N)															
8	T1	All MCs	464	8.4	464	8.4	*0.273	9.6	LOS A	3.8	28.7	0.64	0.54	0.64	21.6
Approach			464	8.4	464	8.4	0.273	9.6	LOS A	3.8	28.7	0.64	0.54	0.64	21.6
All Vehicles			892	5.4	892	5.4	0.273	9.5	LOS A	3.8	28.7	0.64	0.53	0.64	22.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Sussex St (S)											
P1	Full	260	21.2	LOS C	0.4	0.4	0.88	0.88	37.8	20.0	0.53
All Pedestrians		260	21.2	LOS C	0.4	0.4	0.88	0.88	37.8	20.0	0.53

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.


SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:42 AM
 Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

 Site: **BGU11 [BGU11 Pedestrian Mid-block Crossing at Kent St near Margaret St (Site Folder: Block 2 - 2023 PM Peak)]**

Output produced by **SIDRA INTERSECTION** Version: 9.1.6.228

 Network: **BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 PM Peak)]**

TCS 4109

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 45 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Kent St (S)															
2	T1	All MCs	759	5.0	759	5.0	*0.470	10.9	LOS A	5.8	42.7	0.77	0.65	0.77	21.5
Approach			759	5.0	759	5.0	0.470	10.9	LOS A	5.8	42.7	0.77	0.65	0.77	21.5
North: Kent St (N)															
8	T1	All MCs	214	0.5	214	0.5	0.209	9.4	LOS A	2.4	16.8	0.67	0.53	0.67	14.9
Approach			214	0.5	214	0.5	0.209	9.4	LOS A	2.4	16.8	0.67	0.53	0.67	14.9
All Vehicles			973	4.0	973	4.0	0.470	10.6	LOS A	5.8	42.7	0.75	0.63	0.75	20.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Kent St (S)											
P1	Full	385	14.6	LOS B	0.4	0.4	0.81	0.81	31.3	20.0	0.64
All Pedestrians		385	14.6	LOS B	0.4	0.4	0.81	0.81	31.3	20.0	0.64

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:42 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU12 [BGU12 Sussex St / Erskine St (Site Folder: Block 2 - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 310

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
South: Sussex St (S)															
1	L2	All MCs	95	2.2	95	2.2	0.341	32.0	LOS C	6.7	47.7	0.82	0.72	0.82	16.3
2	T1	All MCs	335	1.6	335	1.6	*0.341	23.1	LOS B	7.5	53.3	0.79	0.67	0.79	17.6
Approach			429	1.7	429	1.7	0.341	25.0	LOS B	7.5	53.3	0.80	0.68	0.80	17.3
East: Erskine St (E)															
4	L2	All MCs	396	0.8	396	0.8	*0.523	13.2	LOS A	8.1	57.1	0.50	0.66	0.50	25.4
5	T1	All MCs	98	8.6	98	8.6	0.239	2.8	LOS A	0.8	6.2	0.14	0.23	0.14	26.0
6	R2	All MCs	44	0.0	44	0.0	0.239	7.2	LOS A	0.8	6.2	0.14	0.23	0.14	26.0
Approach			538	2.2	538	2.2	0.523	10.8	LOS A	8.1	57.1	0.40	0.55	0.40	25.4
North: Sussex St (N)															
7	L2	All MCs	54	23.5	54	23.5	0.086	20.2	LOS B	1.4	11.8	0.63	0.66	0.63	16.4
8	T1	All MCs	391	6.7	391	6.7	0.240	16.7	LOS B	5.3	39.3	0.66	0.55	0.66	26.2
9	R2	All MCs	20	0.0	20	0.0	*0.066	26.9	LOS B	0.6	4.4	0.79	0.67	0.79	13.7
Approach			464	8.4	464	8.4	0.240	17.5	LOS B	5.3	39.3	0.66	0.57	0.66	24.9
West: Erskine St (W)															
10	L2	All MCs	48	8.7	48	8.7	0.377	17.8	LOS B	9.2	66.1	0.69	0.62	0.69	10.4
11	T1	All MCs	276	2.3	276	2.3	0.377	17.1	LOS B	9.2	66.1	0.69	0.62	0.69	10.4
12	R2	All MCs	174	3.6	174	3.6	0.452	28.1	LOS B	6.0	43.5	0.81	0.77	0.81	17.5
Approach			498	3.4	498	3.4	0.452	21.0	LOS B	9.2	66.1	0.73	0.67	0.73	14.3
All Vehicles			1929	3.9	1929	3.9	0.523	18.2	LOS B	9.2	66.1	0.64	0.62	0.64	20.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Sussex St (S)											
P1	Full	403	38.9	LOS D	1.0	1.0	0.94	0.94	55.6	20.0	0.36

East: Erskine St (E)											
P2	Full	127	38.5	LOS D	0.3	0.3	0.93	0.93	55.1	20.0	0.36
North: Sussex St (N)											
P3	Full	413	38.9	LOS D	1.0	1.0	0.94	0.94	55.6	20.0	0.36
West: Erskine St (W)											
P4	Full	302	38.8	LOS D	0.7	0.7	0.93	0.93	55.4	20.0	0.36
All Pedestrians		1245	38.8	LOS D	1.0	1.0	0.94	0.94	55.5	20.0	0.36

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:42 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU13 [BGU13 Kent St / Erskine St (Site Folder: Block 2 - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 307

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Kent St (S)															
1	L2	All MCs	128	0.0	128	0.0	0.145	17.4	LOS B	3.1	21.9	0.59	0.67	0.59	21.1
2	T1	All MCs	682	5.4	682	5.4	*0.350	14.8	LOS B	8.4	61.6	0.64	0.54	0.64	22.3
3	R2	All MCs	1	0.0	1	0.0	0.018	7.6	LOS A	1.1	2.9	0.36	0.28	0.36	25.1
Approach			812	4.5	812	4.5	0.350	15.2	LOS B	8.4	61.6	0.63	0.56	0.63	22.1
East: Erskine St (E)															
5	T1	All MCs	248	4.2	248	4.2	0.357	33.4	LOS C	5.4	39.1	0.90	0.73	0.90	5.5
6	R2	All MCs	15	7.1	15	7.1	0.357	42.6	LOS D	4.7	34.5	0.91	0.73	0.91	5.4
Approach			263	4.4	263	4.4	0.357	33.9	LOS C	5.4	39.1	0.90	0.73	0.90	5.5
North: Kent St (N)															
7	L2	All MCs	1	0.0	1	0.0	0.021	7.5	LOS A	1.3	3.5	0.37	0.28	0.37	22.0
8	T1	All MCs	88	0.0	88	0.0	0.021	5.6	LOS A	1.3	3.5	0.37	0.28	0.37	25.9
9	R2	All MCs	161	0.7	161	0.7	*0.841	53.6	LOS D	8.0	56.0	1.00	1.03	1.34	5.7
Approach			251	0.4	251	0.4	0.841	36.5	LOS C	8.0	56.0	0.77	0.76	0.99	11.1
West: Erskine St (W)															
10	L2	All MCs	71	0.0	71	0.0	0.427	28.4	LOS B	5.3	38.6	0.75	0.66	0.75	8.8
11	T1	All MCs	259	7.3	259	7.3	*0.427	26.7	LOS B	5.6	42.0	0.79	0.66	0.79	11.7
Approach			329	5.8	329	5.8	0.427	27.0	LOS B	5.6	42.0	0.78	0.66	0.78	11.1
All Vehicles			1655	4.1	1655	4.1	0.841	23.7	LOS B	8.4	61.6	0.72	0.64	0.76	15.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
		ped/h	sec					sec	m	m/sec	
South: Kent St (S)											
P1	Full	377	38.9	LOS D	0.9	0.9	0.94	0.94	55.5	20.0	0.36
East: Erskine St (E)											

P2 Full	352	38.8	LOS D	0.8	0.8	0.94	0.94	55.5	20.0	0.36
North: Kent St (N)										
P3 Full	542	39.2	LOS D	1.3	1.3	0.94	0.94	55.8	20.0	0.36
West: Erskine St (W)										
P4 Full	239	38.7	LOS D	0.6	0.6	0.93	0.93	55.3	20.0	0.36
All Pedestrians	1509	38.9	LOS D	1.3	1.3	0.94	0.94	55.6	20.0	0.36

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:42 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU14 [BGU14 Sussex St / King St (Site Folder: Block 2 - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 4 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 284

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
East: King St (E)															
4a	L1	All MCs	88	0.0	88	0.0	0.125	42.7	LOS D	3.8	10.2	1.00	0.75	1.00	18.7
Approach			88	0.0	88	0.0	0.125	42.7	LOS D	3.8	10.2	1.00	0.75	1.00	18.7
North: Sussex St (N)															
7	L2	All MCs	111	15.2	111	15.2	0.603	27.2	LOS B	15.3	112.6	0.84	0.75	0.84	18.1
8	T1	All MCs	804	2.6	804	2.6	0.603	22.2	LOS B	16.2	116.1	0.84	0.74	0.84	25.4
Approach			915	4.1	915	4.1	0.603	22.8	LOS B	16.2	116.1	0.84	0.75	0.84	24.7
SouthWest: King St (SW)															
30a	L1	All MCs	476	1.5	476	1.5	*0.555	13.7	LOS A	8.7	62.0	0.78	0.79	0.78	36.8
32a	R1	All MCs	1082	2.2	1082	2.2	*0.603	24.0	LOS B	16.9	120.5	0.81	0.79	0.81	29.7
32b	R3	All MCs	220	11.5	220	11.5	0.331	22.3	LOS B	6.2	47.9	0.68	0.77	0.68	32.8
Approach			1778	3.2	1778	3.2	0.603	21.0	LOS B	16.9	120.5	0.79	0.79	0.79	32.2
All Vehicles			2781	3.4	2781	3.4	0.603	22.3	LOS B	16.9	120.5	0.81	0.77	0.81	29.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Sussex St (S)											
P1	Full	267	40.6	LOS E	0.7	0.7	0.96	0.96	57.3	20.0	0.35
East: King St (E)											
P2	Full	142	38.5	LOS D	0.3	0.3	0.93	0.93	55.2	20.0	0.36
North: Sussex St (N)											
P3	Full	664	39.4	LOS D	1.6	1.6	0.95	0.95	56.0	20.0	0.36
SouthWest: King St (SW)											
P8	Full	587	39.2	LOS D	1.4	1.4	0.95	0.95	205.9	200.0	0.97

P8B Slip/ Bypass	394	40.8	LOS E	1.0	1.0	0.96	0.96	207.5	200.0	0.96
All Pedestrians	2055	39.7	LOS D	1.6	1.6	0.95	0.95	128.0	105.9	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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:45 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU15 [BGU15 Kent St / King St (Site Folder: Block 2 - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 4 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 283

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Kent St (S)															
1	L2	All MCs	2	0.0	2	0.0	0.063	41.3	LOS C	1.7	4.7	0.93	0.66	0.93	14.3
2	T1	All MCs	584	5.6	584	5.6	*0.630	34.4	LOS C	10.9	80.4	0.95	0.79	0.95	21.3
3	R2	All MCs	179	2.4	179	2.4	0.477	38.8	LOS C	6.9	49.2	0.93	0.79	0.93	14.9
Approach			765	4.8	765	4.8	0.630	35.5	LOS C	10.9	80.4	0.95	0.79	0.95	19.9
East: King St (E)															
5	T1	All MCs	34	0.0	34	0.0	0.081	38.8	LOS C	1.5	4.1	0.94	0.67	0.94	5.0
6	R2	All MCs	4	0.0	4	0.0	0.081	46.9	LOS D	1.5	4.1	0.94	0.67	0.94	14.7
Approach			38	0.0	38	0.0	0.081	39.7	LOS C	1.5	4.1	0.94	0.67	0.94	6.5
North: Kent St (N)															
7	L2	All MCs	14	0.0	14	0.0	0.075	41.4	LOS C	2.1	5.6	0.93	0.67	0.93	11.3
8	T1	All MCs	40	0.0	40	0.0	0.075	38.0	LOS C	2.1	5.6	0.93	0.67	0.93	20.1
9	R2	All MCs	40	0.0	40	0.0	*0.131	42.6	LOS D	1.6	4.4	0.94	0.71	0.94	12.8
Approach			94	0.0	94	0.0	0.131	40.5	LOS C	2.1	5.6	0.93	0.69	0.93	15.9
West: King St (W)															
10	L2	All MCs	222	1.9	222	1.9	*0.514	23.7	LOS B	7.7	55.2	0.64	0.65	0.64	21.7
11	T1	All MCs	969	3.8	969	3.8	0.514	5.1	LOS A	7.7	55.2	0.32	0.29	0.32	27.0
Approach			1192	3.4	1192	3.4	0.514	8.5	LOS A	7.7	55.2	0.38	0.36	0.38	25.0
All Vehicles			2088	3.7	2088	3.7	0.630	20.4	LOS B	10.9	80.4	0.62	0.54	0.62	20.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec						sec	m	m/sec
South: Kent St (S)											
P1	Full	319	38.8	LOS D	0.8	0.8	0.93	0.93	55.5	20.0	0.36
East: King St (E)											

P2 Full	208	38.6	LOS D	0.5	0.5	0.93	0.93	55.3	20.0	0.36
North: Kent St (N)										
P3 Full	479	39.1	LOS D	1.2	1.2	0.94	0.94	55.7	20.0	0.36
West: King St (W)										
P4 Full	191	38.6	LOS D	0.5	0.5	0.93	0.93	55.2	20.0	0.36
All Pedestrians	1197	38.8	LOS D	1.2	1.2	0.94	0.94	55.5	20.0	0.36

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:45 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU18 [BGU18 Shelley St / Erskine St (Site Folder: Block 2 - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 305

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 45 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Shelley St (S)															
1	L2	All MCs	14	0.0	14	0.0	0.107	15.1	LOS B	1.1	7.6	0.68	0.55	0.68	18.0
2	T1	All MCs	60	1.8	60	1.8	0.107	9.6	LOS A	1.1	7.6	0.68	0.55	0.68	24.7
3	R2	All MCs	112	0.9	112	0.9	0.263	17.4	LOS B	2.0	14.0	0.81	0.73	0.81	14.8
Approach			185	1.1	185	1.1	0.263	14.7	LOS B	2.0	14.0	0.76	0.66	0.76	18.2
East: Erskine St (E)															
4	L2	All MCs	40	2.6	40	2.6	0.083	17.1	LOS B	0.7	4.9	0.78	0.68	0.78	17.7
5	T1	All MCs	104	1.0	104	1.0	*0.272	11.8	LOS A	2.5	17.6	0.77	0.66	0.77	17.1
6	R2	All MCs	45	0.0	45	0.0	0.272	16.9	LOS B	2.5	17.6	0.77	0.66	0.77	18.4
Approach			189	1.1	189	1.1	0.272	14.1	LOS A	2.5	17.6	0.77	0.66	0.77	17.6
North: Shelley St (N)															
7	L2	All MCs	153	0.0	153	0.0	*0.386	15.8	LOS B	2.7	18.7	0.79	0.75	0.79	13.6
8	T1	All MCs	9	55.6	9	55.6	0.041	10.2	LOS A	0.3	2.4	0.68	0.56	0.68	23.0
9	R2	All MCs	8	12.5	8	12.5	0.041	14.4	LOS A	0.3	2.4	0.68	0.56	0.68	14.3
Approach			171	3.7	171	3.7	0.386	15.5	LOS B	2.7	18.7	0.78	0.73	0.78	14.3
West: Erskine St (W)															
10	L2	All MCs	9	0.0	9	0.0	0.110	17.7	LOS B	0.7	5.1	0.72	0.58	0.72	19.4
11	T1	All MCs	105	4.0	105	4.0	0.110	10.8	LOS A	1.1	7.8	0.71	0.56	0.71	13.8
12	R2	All MCs	1	0.0	1	0.0	0.110	16.4	LOS B	1.1	7.8	0.70	0.54	0.70	22.3
Approach			116	3.6	116	3.6	0.110	11.4	LOS A	1.1	7.8	0.71	0.56	0.71	14.6
All Vehicles			661	2.2	661	2.2	0.386	14.2	LOS A	2.7	18.7	0.76	0.66	0.76	16.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Shelley St (S)											
P1	Full	327	16.3	LOS B	0.4	0.4	0.86	0.86	182.9	200.0	1.09

East: Erskine St (E)											
P2	Full	60	16.1	LOS B	0.1	0.1	0.85	0.85	182.8	200.0	1.09
North: Shelley St (N)											
P3	Full	340	16.3	LOS B	0.4	0.4	0.86	0.86	182.9	200.0	1.09
West: Erskine St (W)											
P4	Full	138	16.1	LOS B	0.1	0.1	0.85	0.85	182.8	200.0	1.09
All Pedestrians		865	16.2	LOS B	0.4	0.4	0.85	0.85	182.9	200.0	1.09

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:42 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BUG01 [BGU01 Hickson Rd / Towns PI (Site Folder: Block 2 - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N1 [BGU Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec			m				km/h
East: Hickson Rd (E)															
4a	L1	All MCs	173	7.3	173	7.3	0.259	3.8	LOS A	1.3	9.5	0.30	0.48	0.30	37.5
6a	R1	All MCs	139	5.3	139	5.3	0.259	5.4	LOS A	1.3	9.5	0.30	0.48	0.30	35.3
Approach			312	6.4	312	6.4	0.259	4.5	NA	1.3	9.5	0.30	0.48	0.30	36.9
NorthWest: Towns PI (NW)															
27a	L1	All MCs	259	2.4	259	2.4	0.279	4.2	LOS A	1.2	8.6	0.49	0.60	0.49	35.4
29	R2	All MCs	28	7.4	28	7.4	0.279	8.8	LOS A	1.2	8.6	0.49	0.60	0.49	36.5
Approach			287	2.9	287	2.9	0.279	4.7	LOS A	1.2	8.6	0.49	0.60	0.49	35.6
SouthWest: Hickson Rd (SW)															
30	L2	All MCs	65	1.6	65	1.6	0.183	4.1	LOS A	0.9	6.7	0.21	0.40	0.21	37.6
32a	R1	All MCs	213	5.9	213	5.9	0.183	2.7	LOS A	0.9	6.7	0.21	0.40	0.21	38.2
Approach			278	4.9	278	4.9	0.183	3.0	NA	0.9	6.7	0.21	0.40	0.21	38.1
All Vehicles			877	4.8	877	4.8	0.279	4.1	NA	1.3	9.5	0.34	0.49	0.34	37.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:48 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU02 [BGU02 Dalgety Rd / Towns PI (Site Folder: Block 2 - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N1 [BGU Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
South: Dalgety Rd (S)															
30	L2	All MCs	16	0.0	16	0.0	0.201	6.2	LOS A	1.3	9.0	0.17	0.56	0.17	24.4
3b	R3	All MCs	263	2.8	263	2.8	0.201	6.4	LOS A	1.3	9.0	0.17	0.56	0.17	32.0
32u	U	All MCs	7	0.0	7	0.0	0.201	7.1	LOS A	1.3	9.0	0.17	0.56	0.17	34.6
Approach			286	2.6	286	2.6	0.201	6.4	LOS A	1.3	9.0	0.17	0.56	0.17	31.5
SouthEast: Towns PI (SE)															
21b	L3	All MCs	168	5.0	168	5.0	0.134	2.6	LOS A	0.8	5.8	0.08	0.46	0.08	35.2
21a	L1	All MCs	16	0.0	16	0.0	0.134	8.2	LOS A	0.8	5.8	0.08	0.46	0.08	18.8
23u	U	All MCs	20	0.0	20	0.0	0.134	6.9	LOS A	0.8	5.8	0.08	0.46	0.08	29.7
Approach			204	4.1	204	4.1	0.134	3.5	LOS A	0.8	5.8	0.08	0.46	0.08	33.8
West: Parking Access (W)															
12a	R1	All MCs	3	0.0	3	0.0	0.006	1.6	LOS A	0.0	0.2	0.46	0.23	0.46	9.5
29	R2	All MCs	2	0.0	2	0.0	0.006	1.6	LOS A	0.0	0.2	0.46	0.23	0.46	21.3
29u	U	All MCs	1	0.0	1	0.0	0.006	1.6	LOS A	0.0	0.2	0.46	0.23	0.46	9.7
Approach			6	0.0	6	0.0	0.006	1.6	LOS A	0.0	0.2	0.46	0.23	0.46	14.7
All Vehicles			497	3.2	497	3.2	0.201	5.2	LOS A	1.3	9.0	0.14	0.51	0.14	32.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:48 AM
Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: **BGU03 [BGU03 Kent St / Argyle St (Site Folder: Block 2 - 2023 Weekend Peak)]**

Output produced by **SIDRA INTERSECTION Version: 9.1.6.228**

Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Kent St (S)															
1	L2	All MCs	79	2.7	79	2.7	0.308	4.6	LOSA	1.3	9.8	0.51	0.67	0.55	35.8
2	T1	All MCs	21	0.0	21	0.0	0.308	4.6	LOSA	1.3	9.8	0.51	0.67	0.55	34.7
3	R2	All MCs	138	6.1	138	6.1	0.308	7.9	LOSA	1.3	9.8	0.51	0.67	0.55	34.8
Approach			238	4.4	238	4.4	0.308	6.5	LOSA	1.3	9.8	0.51	0.67	0.55	35.1
East: Argyle St (E)															
4	L2	All MCs	124	13.6	124	13.6	0.197	4.7	LOSA	0.9	7.1	0.30	0.35	0.30	37.0
5	T1	All MCs	84	1.3	84	1.3	0.197	0.6	LOSA	0.9	7.1	0.30	0.35	0.30	36.8
6	R2	All MCs	4	0.0	4	0.0	0.197	3.9	LOSA	0.9	7.1	0.30	0.35	0.30	32.5
Approach			213	8.4	213	8.4	0.197	3.1	NA	0.9	7.1	0.30	0.35	0.30	36.9
North: Kent St (N)															
7	L2	All MCs	3	0.0	3	0.0	0.020	7.1	LOSA	0.1	0.5	0.40	0.89	0.40	27.5
8	T1	All MCs	12	0.0	12	0.0	0.020	9.2	LOSA	0.1	0.5	0.40	0.89	0.40	33.6
9	R2	All MCs	1	0.0	1	0.0	0.020	8.0	LOSA	0.1	0.5	0.40	0.89	0.40	30.8
Approach			16	0.0	16	0.0	0.020	8.7	LOSA	0.1	0.5	0.40	0.89	0.40	32.8
West: Argyle PI (W)															
10	L2	All MCs	2	0.0	2	0.0	0.084	4.5	LOSA	0.4	2.7	0.31	0.37	0.31	34.9
11	T1	All MCs	37	5.7	37	5.7	0.084	0.5	LOSA	0.4	2.7	0.31	0.37	0.31	36.6
12	R2	All MCs	60	0.0	60	0.0	0.084	4.9	LOSA	0.4	2.7	0.31	0.37	0.31	37.2
Approach			99	2.1	99	2.1	0.084	3.3	NA	0.4	2.7	0.31	0.37	0.31	37.0
All Vehicles			565	5.4	565	5.4	0.308	4.7	NA	1.3	9.8	0.39	0.50	0.41	36.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [TCS 4272]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 2 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 65 seconds (CCG User-Given Phase Times)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist] m			km/h	
Site: BGU04 [BGU04 Pedestrian Mid-block Crossing at Kent St near Gas Ln]															
South: Kent St															
2	T1	All MCs	299	1.8	298	1.8	0.281	9.5	LOS A	5.6	40.1	0.64	0.53	0.64	33.0
Approach			299	1.8	298	1.8	0.281	9.5	LOS A	5.6	40.1	0.64	0.53	0.64	33.0
North: Kent St															
8	T1	All MCs	244	6.5	244	6.5	0.333	24.9	LOS B	3.4	25.5	0.90	0.71	0.90	24.8
Approach			244	6.5	244	6.5	0.333	24.9	LOS B	3.4	25.5	0.90	0.71	0.90	24.8
All Vehicles			543	3.9	542	3.9	0.333	16.5	LOS B	5.6	40.1	0.75	0.61	0.75	28.9
Site: BGU05 [BGU05 Kent St / Sydney Harbour Bridge (SHB) On-ramp]															
South: Kent St (S)															
2	T1	All MCs	213	1.5	212	1.5	0.199	9.0	LOS A	3.8	27.1	0.60	0.50	0.60	27.7
3a	R1	All MCs	258	1.2	257	1.2	*0.511	25.9	LOS B	6.7	47.8	0.92	0.78	0.92	22.5
Approach			471	1.3	469	1.3	0.511	18.2	LOS B	6.7	47.8	0.78	0.65	0.78	24.1
East: Clarence St (E)															
4	L2	All MCs	13	0.0	13	0.0	0.035	27.1	LOS B	0.3	2.2	0.85	0.65	0.85	14.9
6	R2	All MCs	103	3.1	103	3.1	0.249	26.1	LOS B	2.8	19.8	0.86	0.74	0.86	15.3
Approach			116	2.7	116	2.7	0.249	26.2	LOS B	2.8	19.8	0.85	0.73	0.85	15.3
NorthEast: SHB On-ramp (NE)															
24a	L1	All MCs	11	0.0	11	0.0	0.008	22.6	LOS B	0.3	0.7	0.82	0.57	0.82	22.0
Approach			11	0.0	11	0.0	0.008	22.6	LOS B	0.3	0.7	0.82	0.57	0.82	22.0
North: Kent St (N)															
7b	L3	All MCs	103	5.1	103	5.1	*0.289	33.3	LOS C	3.4	24.5	1.00	0.82	1.00	14.7
8	T1	All MCs	148	7.8	148	7.8	*0.593	12.6	LOS A	3.0	22.2	0.62	0.50	0.63	12.8
Approach			252	6.7	252	6.7	0.593	21.1	LOS B	3.4	24.5	0.78	0.63	0.78	14.0
All Vehicles			848	3.1	847	3.1	0.593	20.2	LOS B	6.7	47.8	0.79	0.66	0.79	20.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance (CCG)										
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE	Prop. Que	Eff. Stop	Travel Time	Travel Dist.	Aver. Speed

	ped/h	sec		[Ped ped	Dist] m		Rate		sec	m	m/sec
Site: BGU04 [BGU04 Pedestrian Mid-block Crossing at Kent St near Gas Ln]											
South: Kent St											
P1 Full	131	26.0	LOS C	0.2	0.2	0.90	0.90	192.7	200.0	1.04	
All Pedestrians	131	26.0	LOS C	0.2	0.2	0.90	0.90	192.7	200.0	1.04	
Site: BGU05 [BGU05 Kent St / Sydney Harbour Bridge (SHB) On-ramp]											
South: Kent St (S)											
P1 Full	91	26.0	LOS C	0.1	0.1	0.90	0.90	42.6	20.0	0.47	
All Pedestrians	91	26.0	LOS C	0.1	0.1	0.90	0.90	42.6	20.0	0.47	

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Kcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:52 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU06 [BGU06 Hickson Rd / Napoleon St / Sussex St
(Site Folder: Block 2 - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU
Network 3 (Network Folder:
Block 2 Network - 2023
Weekend Peak)]

TCS 4625

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Sussex St (S)															
2	T1	All MCs	289	1.8	289	1.8	0.294	10.5	LOS A	5.7	40.2	0.61	0.52	0.61	25.0
3	R2	All MCs	96	2.2	96	2.2	*0.243	18.6	LOS B	2.2	15.6	0.79	0.72	0.79	22.2
Approach			385	1.9	385	1.9	0.294	12.5	LOS A	5.7	40.2	0.66	0.57	0.66	24.1
East: Napoleon St (E)															
4	L2	All MCs	60	14.0	60	14.0	0.096	18.4	LOS B	1.3	10.3	0.67	0.67	0.67	17.0
6	R2	All MCs	128	7.4	128	7.4	*0.290	26.3	LOS B	3.6	26.9	0.84	0.74	0.84	16.6
Approach			188	9.5	188	9.5	0.290	23.8	LOS B	3.6	26.9	0.79	0.72	0.79	16.7
North: Hickson Rd (N)															
7	L2	All MCs	113	1.9	113	1.9	0.188	21.8	LOS B	2.8	19.8	0.75	0.71	0.75	18.2
8	T1	All MCs	260	6.1	260	6.1	*0.413	19.4	LOS B	6.9	50.9	0.81	0.68	0.81	10.8
Approach			373	4.8	373	4.8	0.413	20.1	LOS B	6.9	50.9	0.79	0.69	0.79	13.8
West: Car Park Access (W)															
10	L2	All MCs	1	0.0	1	0.0	0.040	43.0	LOS D	0.0	0.3	1.00	0.57	1.00	5.4
11	T1	All MCs	1	0.0	1	0.0	*0.077	43.5	LOS D	0.1	0.6	1.00	0.59	1.00	8.7
12	R2	All MCs	1	0.0	1	0.0	0.077	43.5	LOS D	0.1	0.6	1.00	0.59	1.00	2.3
Approach			3	0.0	3	0.0	0.077	43.4	LOS D	0.1	0.6	1.00	0.58	1.00	5.7
All Vehicles			949	4.5	949	4.5	0.413	17.8	LOS B	6.9	50.9	0.74	0.65	0.74	18.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Sussex St (S)											
P1	Full	44	28.4	LOS C	0.1	0.1	0.90	0.90	45.1	20.0	0.44
East: Napoleon St (E)											
P2	Full	62	28.4	LOS C	0.1	0.1	0.90	0.90	45.1	20.0	0.44

North: Hickson Rd (N)											
P3	Full	37	28.4	LOS C	0.1	0.1	0.90	0.90	45.1	20.0	0.44
West: Car Park Access (W)											
P4	Full	112	28.5	LOS C	0.2	0.2	0.90	0.90	45.1	20.0	0.44
All Pedestrians		255	28.4	LOS C	0.2	0.2	0.90	0.90	45.1	20.0	0.44

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:57 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU07 [BGU07 Margaret St / Kent St / Napoleon St (Site Folder: Block 2 - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 2 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 308

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 65 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows [Total HV]	Arrival Flows [Total HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. veh	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Kent St (S)													
1a	L1	All MCs	33 19.4	33 19.4	0.303	16.1	LOS B	5.2	37.6	0.63	0.56	0.63	24.0
2	T1	All MCs	338 1.2	338 1.2	0.303	13.0	LOS A	5.2	37.6	0.71	0.59	0.71	11.4
3	R2	All MCs	25 0.0	25 0.0	*0.303	49.5	LOS D	2.6	18.7	0.90	0.72	0.90	7.6
Approach			396 2.7	396 2.7	0.303	15.6	LOS B	5.2	37.6	0.71	0.60	0.71	12.5
East: Margaret St (E)													
4	L2	All MCs	34 0.0	30 0.0	0.080	26.5	LOS B	0.8	5.5	0.84	0.69	0.84	10.6
6a	R1	All MCs	135 6.3	119 7.1	0.261	16.7	LOS B	2.7	20.2	0.68	0.61	0.68	20.7
6	R2	All MCs	13 0.0	11 0.0	0.261	18.7	LOS B	2.7	20.2	0.68	0.61	0.68	10.6
Approach			181 4.7	160 5.3	0.261	18.6	LOS B	2.7	20.2	0.71	0.63	0.71	18.2
North: Kent St (N)													
7	L2	All MCs	45 0.0	45 0.0	0.356	25.3	LOS B	2.5	18.4	0.58	0.53	0.58	23.3
8	T1	All MCs	138 6.1	138 6.1	*0.356	14.1	LOS A	2.5	18.4	0.68	0.56	0.68	22.1
9b	R3	All MCs	20 10.5	20 10.5	0.069	6.1	LOS A	0.0	0.4	0.08	0.53	0.08	32.7
Approach			203 5.2	203 5.2	0.356	15.8	LOS B	2.5	18.4	0.59	0.55	0.59	23.3
NorthWest: Napoleon St (NW)													
27b	L3	All MCs	128 1.6	128 1.6	0.272	7.3	LOS A	2.8	19.9	0.63	0.67	0.63	24.4
27a	L1	All MCs	76 1.4	76 1.4	*0.272	14.2	LOS A	2.8	19.9	0.63	0.67	0.63	24.4
Approach			204 1.5	204 1.5	0.272	9.9	LOS A	2.8	19.9	0.63	0.67	0.63	24.4
All Vehicles			984 3.3	963 3.4	0.356	14.9	LOS B	5.2	37.6	0.67	0.61	0.67	19.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist]	Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		ped	m			sec	m	m/sec
South: Kent St (S)											

P1 Full	392	24.5	LOS C	0.6	0.6	0.88	0.88	41.2	20.0	0.49
East: Margaret St (E)										
P2 Full	55	24.2	LOS C	0.1	0.1	0.86	0.86	40.8	20.0	0.49
North: Kent St (N)										
P3 Full	77	24.2	LOS C	0.1	0.1	0.86	0.86	40.9	20.0	0.49
NorthWest: Napoleon St (NW)										
P7 Full	123	24.2	LOS C	0.2	0.2	0.87	0.87	190.9	200.0	1.05
All Pedestrians	646	24.4	LOS C	0.6	0.6	0.87	0.87	69.7	54.3	0.78

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:52 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU08 [BGU08 Margaret St / Clarence St (Site Folder: Block 2 - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 2 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 319

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 65 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Clarence St (S)															
1	L2	All MCs	0	0.0	0	0.0	0.000	0.0	NA	0.0	0.0	0.00	0.00	0.00	0.0
2	T1	All MCs	362	10.8	362	10.8	*0.281	16.8	LOS B	4.3	30.5	0.76	0.63	0.76	21.5
3	R2	All MCs	27	0.0	27	0.0	0.281	22.5	LOS B	3.9	27.6	0.76	0.64	0.76	18.2
Approach			411	9.5	389	10.0	0.281	17.2	LOS B	4.3	30.5	0.76	0.63	0.76	21.3
East: Margaret St (E)															
5	T1	All MCs	160	5.3	160	5.3	0.140	10.4	LOS A	2.2	16.1	0.61	0.51	0.61	13.3
6	R2	All MCs	42	25.0	42	25.0	*0.140	15.5	LOS B	1.5	12.0	0.68	0.61	0.68	16.3
Approach			202	9.4	202	9.4	0.140	11.5	LOS A	2.2	16.1	0.62	0.53	0.62	14.2
West: Margaret St (W)															
10	L2	All MCs	76	2.8	76	2.8	0.257	25.6	LOS B	4.0	28.7	0.87	0.74	0.87	12.4
11	T1	All MCs	74	2.9	74	2.9	*0.257	18.7	LOS B	4.0	28.7	0.87	0.74	0.87	7.4
Approach			149	2.8	149	2.8	0.257	22.2	LOS B	4.0	28.7	0.87	0.74	0.87	10.2
All Vehicles			762	8.1	762	8.1	0.281	16.2	LOS B	4.3	30.5	0.73	0.61	0.73	17.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Clarence St (S)											
P1	Full	328	26.2	LOS C	0.5	0.5	0.90	0.90	42.9	20.0	0.47
East: Margaret St (E)											
P2	Full	99	26.0	LOS C	0.2	0.2	0.90	0.90	42.7	20.0	0.47
North: Clarence St (N)											
P3	Full	122	26.0	LOS C	0.2	0.2	0.90	0.90	42.7	20.0	0.47
West: Margaret St (W)											
P4	Full	134	26.0	LOS C	0.2	0.2	0.90	0.90	42.7	20.0	0.47

All Pedestrians	683	26.1	LOS C	0.5	0.5	0.90	0.90	42.8	20.0	0.47
-----------------	-----	------	-------	-----	-----	------	------	------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:52 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU09 [BGU09 Margaret St / York St (Site Folder: Block 2 - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 2 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 3042

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
East: Margaret St (E)															
4	L2	All MCs	54	3.9	54	3.9	0.109	22.6	LOS B	1.3	9.3	0.78	0.69	0.78	18.5
5	T1	All MCs	45	25.6	45	25.6	0.076	13.8	LOS A	0.9	7.8	0.66	0.51	0.66	13.7
Approach			99	13.8	99	13.8	0.109	18.6	LOS B	1.3	9.3	0.72	0.61	0.72	17.1
North: York St (N)															
7	L2	All MCs	1	0.0	1	0.0	0.001	18.0	LOS B	0.0	0.1	0.70	0.50	0.70	14.6
8	T1	All MCs	635	8.8	635	8.8	*0.284	13.7	LOS A	4.5	33.8	0.70	0.59	0.70	24.2
9	R2	All MCs	157	4.7	157	4.7	0.240	19.4	LOS B	3.5	25.4	0.73	0.74	0.73	10.8
Approach			793	8.0	793	8.0	0.284	14.8	LOS B	4.5	33.8	0.71	0.62	0.71	22.1
West: Margaret St (W)															
12	R2	All MCs	101	2.1	101	2.1	*0.263	24.5	LOS B	2.6	18.8	0.83	0.74	0.83	16.5
Approach			101	2.1	101	2.1	0.263	24.5	LOS B	2.6	18.8	0.83	0.74	0.83	16.5
All Vehicles			993	8.0	993	8.0	0.284	16.2	LOS B	4.5	33.8	0.72	0.63	0.72	20.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: York St (S)											
P1	Full	471	24.6	LOS C	0.8	0.8	0.88	0.88	41.3	20.0	0.48
East: Margaret St (E)											
P2	Full	460	24.6	LOS C	0.7	0.7	0.88	0.88	41.3	20.0	0.48
North: York St (N)											
P3	Full	206	24.3	LOS C	0.3	0.3	0.87	0.87	41.0	20.0	0.49
West: Margaret St (W)											
P4	Full	239	24.4	LOS C	0.4	0.4	0.87	0.87	41.0	20.0	0.49
All Pedestrians		1376	24.5	LOS C	0.8	0.8	0.88	0.88	41.2	20.0	0.49

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.


SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Kcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:52 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

 Site: BGU10 [BGU10 Pedestrian Mid-block Crossing at Sussex St under Exchange PI (Site Folder: Block 2 - 2023 Weekend Peak)]

 Network: BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 3939 (?)

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]			v/c	sec		[Veh. veh	[Dist] m				km/h
South: Sussex St (S)															
2	T1	All MCs	388	2.2	388	2.2	*0.179	7.2	LOS A	2.9	21.0	0.51	0.42	0.51	26.1
Approach			388	2.2	388	2.2	0.179	7.2	LOS A	2.9	21.0	0.51	0.42	0.51	26.1
North: Sussex St (N)															
8	T1	All MCs	324	7.8	324	7.8	0.157	7.1	LOS A	2.4	18.1	0.50	0.41	0.50	24.5
Approach			324	7.8	324	7.8	0.157	7.1	LOS A	2.4	18.1	0.50	0.41	0.50	24.5
All Vehicles			713	4.7	713	4.7	0.179	7.2	LOS A	2.9	21.0	0.50	0.42	0.50	25.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	[Dist] m			sec	m	m/sec
South: Sussex St (S)											
P1	Full	51	25.9	LOS C	0.1	0.1	0.89	0.89	42.6	20.0	0.47
All Pedestrians		51	25.9	LOS C	0.1	0.1	0.89	0.89	42.6	20.0	0.47

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com


Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:57 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

 Site: **BGU11 [BGU11 Pedestrian Mid-block Crossing at Kent St near Margaret St (Site Folder: Block 2 - 2023 Weekend Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

 Network: **BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 Weekend Peak)]**

TCS 4109

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 45 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
South: Kent St (S)															
2	T1	All MCs	406	3.1	406	3.1	* 0.232	9.0	LOS A	2.7	19.1	0.67	0.54	0.67	23.2
Approach			406	3.1	406	3.1	0.232	9.0	LOS A	2.7	19.1	0.67	0.54	0.67	23.2
North: Kent St (N)															
8	T1	All MCs	184	4.6	184	4.6	0.165	8.6	LOS A	1.8	13.1	0.64	0.50	0.64	15.6
Approach			184	4.6	184	4.6	0.165	8.6	LOS A	1.8	13.1	0.64	0.50	0.64	15.6
All Vehicles			591	3.6	591	3.6	0.232	8.9	LOS A	2.7	19.1	0.66	0.53	0.66	21.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Kent St (S)											
P1	Full	23	14.4	LOS B	0.0	0.0	0.80	0.80	31.1	20.0	0.64
All Pedestrians		23	14.4	LOS B	0.0	0.0	0.80	0.80	31.1	20.0	0.64

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:57 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU12 [BGU12 Sussex St / Erskine St (Site Folder: Block 2 - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 310

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
South: Sussex St (S)															
1	L2	All MCs	57	0.0	57	0.0	0.301	32.3	LOS C	5.4	37.9	0.83	0.71	0.83	15.8
2	T1	All MCs	257	1.6	257	1.6	*0.301	27.6	LOS B	5.6	39.7	0.83	0.69	0.83	16.1
Approach			314	1.3	314	1.3	0.301	28.4	LOS B	5.6	39.7	0.83	0.69	0.83	16.0
East: Erskine St (E)															
4	L2	All MCs	345	2.7	345	2.7	0.367	11.9	LOS A	6.4	45.6	0.45	0.64	0.45	26.2
5	T1	All MCs	132	7.2	132	7.2	0.217	3.1	LOS A	1.3	9.5	0.18	0.23	0.18	26.1
6	R2	All MCs	38	8.3	38	8.3	0.217	8.1	LOS A	1.3	9.5	0.18	0.23	0.18	26.1
Approach			515	4.3	515	4.3	0.367	9.4	LOS A	6.4	45.6	0.36	0.51	0.36	26.2
North: Sussex St (N)															
7	L2	All MCs	27	23.1	27	23.1	0.053	24.9	LOS B	0.8	6.7	0.69	0.65	0.69	14.5
8	T1	All MCs	278	6.8	278	6.8	0.214	21.8	LOS B	4.3	31.5	0.74	0.60	0.74	23.7
9	R2	All MCs	19	0.0	19	0.0	*0.065	28.4	LOS B	0.6	4.2	0.81	0.67	0.81	13.2
Approach			324	7.8	324	7.8	0.214	22.4	LOS B	4.3	31.5	0.74	0.61	0.74	22.6
West: Erskine St (W)															
10	L2	All MCs	94	1.1	94	1.1	0.148	12.3	LOS A	3.2	22.3	0.49	0.55	0.49	13.5
11	T1	All MCs	221	1.0	221	1.0	0.717	14.7	LOS B	10.2	73.4	0.74	0.74	0.75	9.1
12	R2	All MCs	264	4.0	264	4.0	*0.717	25.9	LOS B	10.2	73.4	0.84	0.81	0.86	19.8
Approach			579	2.4	579	2.4	0.717	19.4	LOS B	10.2	73.4	0.74	0.74	0.76	16.3
All Vehicles			1732	3.8	1732	3.8	0.717	18.6	LOS B	10.2	73.4	0.64	0.64	0.65	20.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Sussex St (S)											
P1	Full	217	38.6	LOS D	0.5	0.5	0.93	0.93	55.3	20.0	0.36

East: Erskine St (E)											
P2	Full	48	38.3	LOS D	0.1	0.1	0.92	0.92	55.0	20.0	0.36
North: Sussex St (N)											
P3	Full	328	38.8	LOS D	0.8	0.8	0.94	0.94	55.5	20.0	0.36
West: Erskine St (W)											
P4	Full	55	38.4	LOS D	0.1	0.1	0.92	0.92	55.0	20.0	0.36
All Pedestrians		648	38.7	LOS D	0.8	0.8	0.93	0.93	55.3	20.0	0.36

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:57 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU13 [BGU13 Kent St / Erskine St (Site Folder: Block 2 - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 307

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Kent St (S)															
1	L2	All MCs	111	1.9	111	1.9	0.161	23.3	LOS B	3.2	22.8	0.70	0.70	0.70	18.2
2	T1	All MCs	333	3.2	333	3.2	*0.208	19.0	LOS B	4.4	31.6	0.68	0.56	0.68	19.9
3	R2	All MCs	1	0.0	1	0.0	0.011	10.7	LOS A	0.7	1.8	0.44	0.33	0.44	23.3
Approach			444	2.8	444	2.8	0.208	20.0	LOS B	4.4	31.6	0.69	0.59	0.69	19.4
East: Erskine St (E)															
5	T1	All MCs	277	4.2	277	4.2	0.403	40.6	LOS C	5.1	36.7	0.85	0.69	0.85	6.5
6	R2	All MCs	5	0.0	5	0.0	*0.403	49.2	LOS D	5.0	36.1	0.85	0.69	0.85	6.5
Approach			282	4.1	282	4.1	0.403	40.8	LOS C	5.1	36.7	0.85	0.69	0.85	4.7
North: Kent St (N)															
7	L2	All MCs	1	0.0	1	0.0	0.016	10.5	LOS A	1.1	2.9	0.44	0.33	0.44	19.6
8	T1	All MCs	59	0.0	59	0.0	0.016	8.3	LOS A	1.1	2.9	0.44	0.33	0.44	24.3
9	R2	All MCs	127	6.6	127	6.6	*0.588	45.1	LOS D	5.6	41.1	0.99	0.81	1.01	6.6
Approach			187	4.5	187	4.5	0.588	33.3	LOS C	5.6	41.1	0.81	0.65	0.83	11.5
West: Erskine St (W)															
10	L2	All MCs	68	3.1	68	3.1	0.132	29.8	LOS C	1.8	12.8	0.62	0.65	0.62	9.5
11	T1	All MCs	180	3.5	180	3.5	0.372	28.1	LOS B	5.3	38.3	0.70	0.58	0.70	13.7
Approach			248	3.4	248	3.4	0.372	28.6	LOS C	5.3	38.3	0.68	0.60	0.68	10.5
All Vehicles			1162	3.5	1162	3.5	0.588	29.0	LOS C	5.6	41.1	0.74	0.63	0.75	12.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
		ped/h	sec					sec	m	m/sec	
South: Kent St (S)											
P1	Full	167	38.5	LOS D	0.4	0.4	0.93	0.93	55.2	20.0	0.36
East: Erskine St (E)											

P2 Full	72	38.4	LOS D	0.2	0.2	0.92	0.92	55.1	20.0	0.36
North: Kent St (N)										
P3 Full	366	38.9	LOS D	0.9	0.9	0.94	0.94	55.5	20.0	0.36
West: Erskine St (W)										
P4 Full	82	38.4	LOS D	0.2	0.2	0.93	0.93	55.1	20.0	0.36
All Pedestrians	687	38.7	LOS D	0.9	0.9	0.93	0.93	55.3	20.0	0.36

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:57 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU14 [BGU14 Sussex St / King St (Site Folder: Block 2 - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 4 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 284

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
East: King St (E)															
4a	L1	All MCs	47	0.0	47	0.0	0.061	41.7	LOS C	2.0	5.4	1.00	0.72	1.00	18.8
Approach			47	0.0	47	0.0	0.061	41.7	LOS C	2.0	5.4	1.00	0.72	1.00	18.8
North: Sussex St (N)															
7	L2	All MCs	102	8.2	102	8.2	0.527	24.2	LOS B	13.5	98.7	0.78	0.71	0.78	19.4
8	T1	All MCs	763	3.7	763	3.7	0.527	19.4	LOS B	14.0	101.3	0.78	0.69	0.78	26.6
Approach			865	4.3	865	4.3	0.527	19.9	LOS B	14.0	101.3	0.78	0.69	0.78	26.0
SouthWest: King St (SW)															
30a	L1	All MCs	345	1.2	345	1.2	*0.433	14.0	LOS A	6.2	43.7	0.75	0.76	0.75	36.7
32a	R1	All MCs	847	1.0	847	1.0	*0.508	24.5	LOS B	13.1	92.5	0.79	0.77	0.79	29.6
32b	R3	All MCs	160	7.2	160	7.2	0.250	23.4	LOS B	4.6	33.9	0.68	0.76	0.68	32.3
Approach			1353	1.8	1353	1.8	0.508	21.7	LOS B	13.1	92.5	0.77	0.77	0.77	31.9
All Vehicles			2265	2.7	2265	2.7	0.527	21.4	LOS B	14.0	101.3	0.78	0.74	0.78	29.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Sussex St (S)											
P1	Full	182	40.4	LOS E	0.4	0.4	0.95	0.95	57.1	20.0	0.35
East: King St (E)											
P2	Full	84	38.4	LOS D	0.2	0.2	0.93	0.93	55.1	20.0	0.36
North: Sussex St (N)											
P3	Full	423	39.0	LOS D	1.0	1.0	0.94	0.94	55.6	20.0	0.36
SouthWest: King St (SW)											
P8	Full	263	38.7	LOS D	0.6	0.6	0.93	0.93	205.4	200.0	0.97

P8B Slip/ Bypass	145	40.4	LOS E	0.4	0.4	0.95	0.95	207.1	200.0	0.97
All Pedestrians	1098	39.3	LOS D	1.0	1.0	0.94	0.94	111.8	87.0	0.78

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:09:00 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU15 [BGU15 Kent St / King St (Site Folder: Block 2 - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 4 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 283

Site Category: NA

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Kent St (S)															
1	L2	All MCs	6	0.0	6	0.0	0.056	41.2	LOS C	1.5	4.2	0.92	0.66	0.92	14.2
2	T1	All MCs	321	3.9	321	3.9	0.333	29.1	LOS C	6.1	44.4	0.85	0.70	0.85	22.7
3	R2	All MCs	199	0.0	199	0.0	*0.333	35.2	LOS C	5.8	41.6	0.87	0.75	0.87	16.2
Approach			526	2.4	526	2.4	0.333	31.5	LOS C	6.1	44.4	0.86	0.72	0.86	20.3
East: King St (E)															
5	T1	All MCs	11	0.0	11	0.0	0.032	39.1	LOS C	0.5	1.4	0.94	0.63	0.94	4.9
6	R2	All MCs	2	0.0	2	0.0	0.032	48.2	LOS D	0.5	1.4	0.94	0.63	0.94	14.6
Approach			13	0.0	13	0.0	0.032	40.6	LOS C	0.5	1.4	0.94	0.63	0.94	7.0
North: Kent St (N)															
7	L2	All MCs	6	0.0	6	0.0	0.051	41.2	LOS C	1.4	3.8	0.92	0.65	0.92	11.4
8	T1	All MCs	31	0.0	31	0.0	0.051	37.8	LOS C	1.4	3.8	0.92	0.65	0.92	20.2
9	R2	All MCs	32	0.0	32	0.0	*0.103	42.4	LOS C	1.3	3.4	0.93	0.70	0.93	12.9
Approach			68	0.0	68	0.0	0.103	40.2	LOS C	1.4	3.8	0.93	0.67	0.93	16.3
West: King St (W)															
10	L2	All MCs	123	0.0	123	0.0	*0.453	44.4	LOS D	7.9	56.0	0.93	0.79	0.93	16.5
11	T1	All MCs	820	2.1	820	2.1	0.453	10.4	LOS A	7.9	56.0	0.47	0.40	0.47	20.2
Approach			943	1.8	943	1.8	0.453	14.9	LOS B	7.9	56.0	0.53	0.45	0.53	19.1
All Vehicles			1551	1.9	1551	1.9	0.453	21.9	LOS B	7.9	56.0	0.66	0.55	0.66	19.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
		ped/h	sec					sec	m	m/sec	
South: Kent St (S)											
P1	Full	241	38.7	LOS D	0.6	0.6	0.93	0.93	55.3	20.0	0.36
East: King St (E)											

P2 Full	100	38.4	LOS D	0.2	0.2	0.93	0.93	55.1	20.0	0.36
North: Kent St (N)										
P3 Full	323	38.8	LOS D	0.8	0.8	0.93	0.93	55.5	20.0	0.36
West: King St (W)										
P4 Full	131	38.5	LOS D	0.3	0.3	0.93	0.93	55.1	20.0	0.36
All Pedestrians	795	38.7	LOS D	0.8	0.8	0.93	0.93	55.3	20.0	0.36

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:09:00 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: BGU18 [BGU18 Shelley St / Erskine St (Site Folder: Block 2 - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: BGU-N2 [BGU Network 3 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 305

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 45 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Shelley St (S)															
1	L2	All MCs	27	0.0	27	0.0	0.200	17.1	LOS B	2.1	14.9	0.73	0.61	0.73	17.3
2	T1	All MCs	107	1.0	107	1.0	0.200	10.5	LOS A	2.1	14.9	0.73	0.61	0.73	23.7
3	R2	All MCs	224	1.4	224	1.4	*0.910	40.3	LOS C	7.8	55.0	1.00	1.35	1.92	8.1
Approach			359	1.2	359	1.2	0.910	29.6	LOS C	7.8	55.0	0.90	1.07	1.47	11.8
East: Erskine St (E)															
4	L2	All MCs	83	5.1	83	5.1	0.193	18.6	LOS B	1.5	11.1	0.83	0.72	0.83	16.9
5	T1	All MCs	132	1.6	132	1.6	*0.372	13.1	LOS A	3.4	23.7	0.82	0.70	0.82	16.2
6	R2	All MCs	56	0.0	56	0.0	0.372	18.3	LOS B	3.4	23.7	0.82	0.70	0.82	17.5
Approach			271	2.3	271	2.3	0.372	15.8	LOS B	3.4	23.7	0.82	0.71	0.82	16.8
North: Shelley St (N)															
7	L2	All MCs	140	1.5	140	1.5	0.215	14.6	LOS B	2.2	15.7	0.73	0.71	0.73	14.3
8	T1	All MCs	12	0.0	12	0.0	0.040	10.5	LOS A	0.3	2.3	0.70	0.57	0.70	23.1
9	R2	All MCs	9	11.1	9	11.1	0.040	15.5	LOS B	0.3	2.3	0.70	0.57	0.70	14.4
Approach			161	2.0	161	2.0	0.215	14.4	LOS A	2.2	15.7	0.73	0.69	0.73	15.1
West: Erskine St (W)															
10	L2	All MCs	11	0.0	11	0.0	0.260	18.8	LOS B	2.7	19.5	0.75	0.62	0.75	20.0
11	T1	All MCs	227	6.0	227	6.0	0.260	11.3	LOS A	2.7	19.5	0.75	0.61	0.75	13.4
12	R2	All MCs	8	0.0	8	0.0	0.260	18.4	LOS B	1.4	10.1	0.75	0.61	0.75	21.1
Approach			246	5.6	246	5.6	0.260	11.9	LOS A	2.7	19.5	0.75	0.61	0.75	14.2
All Vehicles			1037	2.6	1037	2.6	0.910	19.4	LOS B	7.8	55.0	0.82	0.81	1.02	13.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Shelley St (S)											
P1	Full	399	16.3	LOS B	0.4	0.4	0.86	0.86	183.0	200.0	1.09

East: Erskine St (E)											
P2	Full	64	16.1	LOS B	0.1	0.1	0.85	0.85	182.8	200.0	1.09
North: Shelley St (N)											
P3	Full	437	16.3	LOS B	0.5	0.5	0.86	0.86	183.0	200.0	1.09
West: Erskine St (W)											
P4	Full	185	16.2	LOS B	0.2	0.2	0.85	0.85	182.8	200.0	1.09
All Pedestrians		1085	16.3	LOS B	0.5	0.5	0.86	0.86	183.0	200.0	1.09

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 9:08:57 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\04 SM C&SW_BGU (Block 2).sip9

MOVEMENT SUMMARY

Site: MPL01 [MPL01 Hunter St / Castlereagh St / Bligh St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: MPL-N1 [MPL Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 244

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Veh. veh]	[Dist] m									
			veh/h	%	veh/h	%	v/c	sec							km/h
East: Hunter St (E)															
4	L2	All MCs	253	19.6	253	19.6	*0.353	16.5	LOS B	6.1	49.9	0.58	0.69	0.58	19.7
6a	R1	All MCs	219	6.3	219	6.3	0.229	7.9	LOS A	3.0	21.8	0.33	0.47	0.33	25.6
Approach			472	13.4	472	13.4	0.353	12.5	LOS A	6.1	49.9	0.47	0.58	0.47	21.8
North: Bligh St (N)															
7	L2	All MCs	61	37.9	61	37.9	*0.398	53.3	LOS D	2.8	21.9	1.00	0.81	1.00	10.4
8	T1	All MCs	146	14.4	146	14.4	0.256	41.2	LOS C	3.2	19.8	0.97	0.77	0.97	17.1
9b	R3	All MCs	7	14.3	7	14.3	0.256	49.3	LOS D	3.2	19.8	0.98	0.76	0.98	15.6
Approach			215	21.1	215	21.1	0.398	44.9	LOS D	3.2	21.9	0.98	0.78	0.98	14.4
NorthWest: Hunter St (NW)															
27a	L1	All MCs	218	15.5	218	15.5	0.192	8.7	LOS A	2.6	20.7	0.44	0.57	0.44	21.8
29a	R1	All MCs	76	25.0	76	25.0	*0.192	10.8	LOS A	2.4	20.0	0.53	0.62	0.53	26.8
Approach			294	17.9	294	17.9	0.192	9.2	LOS A	2.6	20.7	0.46	0.58	0.46	23.7
All Vehicles			980	16.4	980	16.4	0.398	18.6	LOS B	6.1	49.9	0.58	0.63	0.58	19.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped]	[Dist] m					
		ped/h	sec						sec	m	m/sec
South: Castlereagh St (S)											
P1	Full	532	39.1	LOS D	1.3	1.3	0.94	0.94	205.8	200.0	0.97
East: Hunter St (E)											
P2	Full	233	38.6	LOS D	0.6	0.6	0.93	0.93	205.3	200.0	0.97
North: Bligh St (N)											
P3	Full	460	39.0	LOS D	1.1	1.1	0.94	0.94	205.7	200.0	0.97
NorthWest: Hunter St (NW)											
P7	Full	420	39.0	LOS D	1.0	1.0	0.94	0.94	205.6	200.0	0.97

All Pedestrians	1644	39.0	LOS D	1.3	1.3	0.94	0.94	205.7	200.0	0.97
-----------------	------	------	-------	-----	-----	------	------	-------	-------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 11:57:12 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

Site: MPL02 [MPL02 Hunter St / Elizabeth St / Chifley Square
(Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: MPL-N1 [MPL
Network 1 (Network Folder:
Block 2 Network - 2023 AM
Peak)]

TCS 302

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Elizabeth St (S)															
1	L2	All MCs	178	17.8	178	17.8	0.194	22.4	LOS B	3.6	22.2	0.49	0.64	0.49	20.4
3a	R1	All MCs	615	20.0	615	20.0	*0.857	43.0	LOS D	28.1	230.2	0.96	0.99	1.11	11.7
3	R2	All MCs	154	7.5	154	7.5	0.396	26.4	LOS B	5.1	27.9	0.85	0.77	0.85	18.7
Approach			946	17.6	946	17.6	0.857	36.4	LOS C	28.1	230.2	0.85	0.89	0.95	11.8
East: Hunter St (E)															
4	L2	All MCs	141	6.0	141	6.0	0.424	26.1	LOS B	7.3	38.9	0.84	0.75	0.84	17.7
5	T1	All MCs	265	5.2	265	5.2	*0.424	31.9	LOS C	7.5	39.7	0.87	0.74	0.87	11.9
Approach			406	5.4	406	5.4	0.424	29.9	LOS C	7.5	39.7	0.86	0.74	0.86	14.2
NorthEast: Chifley Square (NE)															
24b	L3	All MCs	58	1.8	58	1.8	0.305	28.9	LOS C	3.0	28.7	0.71	0.70	0.71	19.0
24a	L1	All MCs	273	29.0	273	29.0	0.460	20.0	LOS B	6.3	50.4	0.66	0.66	0.66	22.0
Approach			331	24.2	331	24.2	0.460	21.6	LOS B	6.3	50.4	0.67	0.67	0.67	21.4
West: Hunter St (W)															
10a	L1	All MCs	120	9.6	120	9.6	0.354	31.3	LOS C	7.7	50.3	0.86	0.75	0.86	6.1
11	T1	All MCs	95	4.4	95	4.4	0.354	23.6	LOS B	7.7	50.3	0.86	0.75	0.86	14.5
12	R2	All MCs	89	54.1	89	54.1	*0.391	33.6	LOS C	3.4	31.4	0.94	0.78	0.94	13.1
Approach			304	21.1	304	21.1	0.391	29.6	LOS C	7.7	50.3	0.88	0.76	0.88	11.4
All Vehicles			1987	16.7	1987	16.7	0.857	31.6	LOS C	28.1	230.2	0.83	0.80	0.87	13.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Elizabeth St (S)											
P1	Full	1163	40.2	LOS E	2.9	2.9	0.97	0.97	206.9	200.0	0.97
East: Hunter St (E)											

P2 Full	1188	40.3	LOS E	2.9	2.9	0.97	0.97	206.9	200.0	0.97
NorthEast: Chifley Square (NE)										
P6 Full	635	39.3	LOS D	1.5	1.5	0.95	0.95	206.0	200.0	0.97
West: Hunter St (W)										
P4 Full	632	39.3	LOS D	1.5	1.5	0.95	0.95	206.0	200.0	0.97
All Pedestrians	3618	39.9	LOS D	2.9	2.9	0.96	0.96	206.6	200.0	0.97

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 11:57:12 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

Site: MPL03 [MPL03 Bent St / Bligh St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: MPL-N1 [MPL Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 1412

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Bent St (SE)															
21	L2	All MCs	159	21.2	159	21.2	0.300	7.9	LOS A	5.1	40.4	0.37	0.46	0.37	16.2
22	T1	All MCs	539	11.5	539	11.5	*0.300	2.6	LOS A	5.1	40.4	0.21	0.22	0.21	29.3
Approach			698	13.7	698	13.7	0.300	3.8	LOS A	5.1	40.4	0.24	0.28	0.24	26.4
NorthWest: Bent St (NW)															
28	T1	All MCs	207	5.1	207	5.1	0.144	2.6	LOS A	2.2	16.3	0.27	0.23	0.27	26.1
29	R2	All MCs	79	5.3	79	5.3	*0.169	8.4	LOS A	1.2	8.5	0.42	0.62	0.42	15.1
Approach			286	5.1	286	5.1	0.169	4.2	LOS A	2.2	16.3	0.31	0.34	0.31	21.6
All Vehicles			984	11.2	984	11.2	0.300	3.9	LOS A	5.1	40.4	0.26	0.29	0.26	25.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
SouthEast: Bent St (SE)											
P5	Full	281	38.7	LOS D	0.7	0.7	0.93	0.93	205.4	200.0	0.97
NorthWest: Bent St (NW)											
P7	Full	540	39.2	LOS D	1.3	1.3	0.94	0.94	205.8	200.0	0.97
SouthWest: Bligh St (SW)											
P8	Full	475	39.0	LOS D	1.1	1.1	0.94	0.94	205.7	200.0	0.97
All Pedestrians		1296	39.0	LOS D	1.3	1.3	0.94	0.94	205.7	200.0	0.97

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 11:57:12 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

Site: MPL04 [MPL04 Bent St / Phillip St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: MPL-N1 [MPL Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 242

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
SouthEast: Bent St (SE)															
21	L2	All MCs	96	35.2	96	35.2	0.093	34.5	LOS C	0.7	6.2	0.02	0.40	0.02	29.9
22	T1	All MCs	451	6.1	451	6.1	0.567	40.4	LOS C	13.5	99.6	0.85	0.72	0.85	10.4
23a	R1	All MCs	121	5.2	121	5.2	*0.567	35.1	LOS C	7.0	51.6	0.89	0.76	0.89	16.6
Approach			667	10.1	667	10.1	0.567	38.6	LOS C	13.5	99.6	0.74	0.68	0.74	9.9
North: Phillip St (N)															
7a	L1	All MCs	171	5.6	171	5.6	*0.249	19.5	LOS B	5.0	38.9	0.66	0.68	0.66	21.5
9a	R1	All MCs	217	20.9	217	20.9	0.249	15.7	LOS B	5.1	40.5	0.61	0.63	0.61	20.1
Approach			387	14.1	387	14.1	0.249	17.4	LOS B	5.1	40.5	0.63	0.65	0.63	20.8
NorthWest: Bent St (NW)															
27b	L3	All MCs	13	0.0	13	0.0	0.246	31.9	LOS C	3.7	26.8	0.73	0.60	0.73	17.2
28	T1	All MCs	177	5.4	177	5.4	0.246	23.7	LOS B	3.7	26.8	0.73	0.60	0.73	13.3
29	R2	All MCs	18	5.9	18	5.9	0.246	35.4	LOS C	2.8	20.2	0.73	0.60	0.73	6.3
Approach			207	5.1	207	5.1	0.246	25.2	LOS B	3.7	26.8	0.73	0.60	0.73	13.1
SouthWest: Phillip St (SW)															
30	L2	All MCs	247	27.7	247	27.7	0.388	17.7	LOS B	6.8	58.9	0.66	0.73	0.66	17.4
30a	L1	All MCs	321	17.0	321	17.0	0.324	11.0	LOS A	6.8	54.2	0.52	0.59	0.52	28.5
32	R2	All MCs	166	7.0	166	7.0	*0.360	20.5	LOS B	4.8	35.8	0.78	0.75	0.78	20.0
Approach			735	18.3	735	18.3	0.388	15.4	LOS B	6.8	58.9	0.63	0.67	0.63	23.2
All Vehicles			1997	13.4	1997	13.4	0.567	24.6	LOS B	13.5	99.6	0.68	0.66	0.68	16.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
SouthEast: Bent St (SE)											
P5	Full	366	38.9	LOS D	0.9	0.9	0.94	0.94	205.5	200.0	0.97

North: Phillip St (N)											
P3	Full	795	39.6	LOS D	1.9	1.9	0.95	0.95	206.2	200.0	0.97
NorthWest: Bent St (NW)											
P7	Full	774	39.5	LOS D	1.9	1.9	0.95	0.95	206.2	200.0	0.97
SouthWest: Phillip St (SW)											
P8	Full	935	39.8	LOS D	2.3	2.3	0.96	0.96	206.5	200.0	0.97
All Pedestrians		2869	39.6	LOS D	2.3	2.3	0.95	0.95	206.2	200.0	0.97

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 11:57:12 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

 **Site: MPL05 [MPL05 Pedestrian Mid-block Crossing at Castlereagh St (Site Folder: Block 2 Model - 2023 AM Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 245

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 45 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]	Arrival Flows [Total HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.]	Dist [m]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed		
			veh/h	%	veh/h	%	v/c	sec					km/h		
North: Castlereagh St (N)															
8	T1	All MCs	371	23.0	371	23.0	* 0.486	9.2	LOSA	5.7	47.2	0.73	0.63	0.73	29.0
Approach			371	23.0	371	23.0	0.486	9.2	LOSA	5.7	47.2	0.73	0.63	0.73	29.0
All Vehicles			371	23.0	371	23.0	0.486	9.2	LOSA	5.7	47.2	0.73	0.63	0.73	29.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped]	Dist [m]	Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		ped	m			sec	m	m/sec
South: Castlereagh St (S)												
P1	Full	2263	2382	17.8	LOS B	2.9	2.9	0.94	0.94	184.5	200.0	1.08
All Pedestrians		2263	2382	17.8	LOS B	2.9	2.9	0.94	0.94	184.5	200.0	1.08

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 16 February 2024 8:45:13 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

 **Site: MPL06 [MPL06 Pedestrian Mid-block Crossing at Elizabeth St (Site Folder: Block 2 Model - 2023 AM Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 287

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 75 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]	Arrival Flows [Total HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.]	Dist [m]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed		
			veh/h	%	veh/h	%	v/c	sec					km/h		
South: Elizabeth St (S)															
2	T1	All MCs	897	18.4	897	18.4	* 0.462	12.9	LOS A	9.3	75.4	0.61	0.53	0.61	28.5
Approach			897	18.4	897	18.4	0.462	10.5	LOS A	9.3	75.4	0.61	0.53	0.61	26.2
North: Elizabeth St (N)															
8	T1	All MCs	572	26.5	572	26.5	0.427	9.5	LOS A	9.2	68.3	0.59	0.51	0.59	28.8
Approach			572	26.5	572	26.5	0.427	9.5	LOS A	9.2	68.3	0.59	0.51	0.59	28.8
All Vehicles			1468	21.6	1468	21.6	0.462	11.6	LOS A	9.3	75.4	0.60	0.52	0.60	27.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		Ped	Dist			sec	m	m/sec
South: Elizabeth St (S)												
P1	Full	4764	5015	39.0	LOS D	12.2	12.2	1.15	1.15	205.6	200.0	0.97
All Pedestrians		4764	5015	39.0	LOS D	12.2	12.2	1.15	1.15	205.6	200.0	0.97

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 16 February 2024 8:45:14 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

Site: MPL01 [MPL01 Hunter St / Castlereagh St / Bligh St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: MPL-N1 [MPL Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 244

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Veh. veh	[Dist] m									
			veh/h	%	veh/h	%	v/c	sec							km/h
East: Hunter St (E)															
4	L2	All MCs	169	15.5	169	15.5	*0.266	18.3	LOS B	4.1	32.5	0.58	0.67	0.58	18.8
6a	R1	All MCs	205	3.1	205	3.1	0.238	9.8	LOS A	3.2	22.7	0.37	0.49	0.37	23.7
Approach			375	8.7	375	8.7	0.266	13.6	LOS A	4.1	32.5	0.47	0.57	0.47	21.0
North: Bligh St (N)															
7	L2	All MCs	114	23.1	114	23.1	*0.780	64.1	LOS E	5.2	35.5	0.99	0.87	1.14	10.6
8	T1	All MCs	73	15.9	73	15.9	0.125	42.0	LOS C	1.4	8.5	0.85	0.63	0.85	18.7
9b	R3	All MCs	1	0.0	1	0.0	0.125	42.5	LOS D	1.3	8.4	0.85	0.63	0.85	17.2
Approach			187	20.2	187	20.2	0.780	55.4	LOS D	5.2	35.5	0.93	0.78	1.03	11.2
NorthWest: Hunter St (NW)															
27a	L1	All MCs	395	7.2	395	7.2	0.362	9.1	LOS A	5.3	39.0	0.50	0.61	0.50	21.3
29a	R1	All MCs	111	2.9	111	2.9	*0.362	10.6	LOS A	5.3	39.0	0.54	0.64	0.54	27.2
Approach			505	6.3	505	6.3	0.362	9.4	LOS A	5.3	39.0	0.51	0.62	0.51	23.2
All Vehicles			1067	9.6	1067	9.6	0.780	19.0	LOS B	5.3	39.0	0.57	0.63	0.58	17.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec						sec	m	m/sec
South: Castlereagh St (S)											
P1	Full	736	39.5	LOS D	1.8	1.8	0.95	0.95	206.1	200.0	0.97
East: Hunter St (E)											
P2	Full	443	39.0	LOS D	1.1	1.1	0.94	0.94	205.7	200.0	0.97
North: Bligh St (N)											
P3	Full	662	39.4	LOS D	1.6	1.6	0.95	0.95	206.0	200.0	0.97
NorthWest: Hunter St (NW)											
P7	Full	595	39.2	LOS D	1.4	1.4	0.95	0.95	205.9	200.0	0.97

All Pedestrians	2436	39.3	LOS D	1.8	1.8	0.95	0.95	206.0	200.0	0.97
-----------------	------	------	-------	-----	-----	------	------	-------	-------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 11:57:15 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

Site: MPL02 [MPL02 Hunter St / Elizabeth St / Chifley Square
(Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: MPL-N1 [MPL
Network 1 (Network Folder:
Block 2 Network - 2023 PM
Peak)]

TCS 302

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec	m						
South: Elizabeth St (S)															
1	L2	All MCs	158	3.3	158	3.3	0.142	21.5	LOS B	2.8	14.8	0.44	0.62	0.44	21.9
3a	R1	All MCs	721	11.8	721	11.8	*0.943	61.2	LOS E	41.3	318.5	1.00	1.20	1.35	8.5
3	R2	All MCs	168	0.0	168	0.0	0.418	29.3	LOS C	6.0	29.8	0.89	0.78	0.89	17.7
Approach			1047	8.6	1047	8.6	0.943	50.1	LOS D	41.3	318.5	0.90	1.05	1.14	9.3
East: Hunter St (E)															
4	L2	All MCs	151	4.2	151	4.2	0.414	27.0	LOS B	7.4	40.4	0.86	0.76	0.86	17.2
5	T1	All MCs	215	11.8	215	11.8	0.414	35.1	LOS C	7.4	40.4	0.89	0.74	0.89	11.3
Approach			365	8.6	365	8.6	0.414	31.7	LOS C	7.4	40.4	0.88	0.75	0.88	14.0
NorthEast: Chifley Square (NE)															
24b	L3	All MCs	45	0.0	45	0.0	0.344	39.3	LOS C	3.5	34.6	0.88	0.76	0.88	16.2
24a	L1	All MCs	304	16.6	304	16.6	0.519	33.3	LOS C	10.0	71.1	0.91	0.79	0.91	17.1
Approach			349	14.5	349	14.5	0.519	34.1	LOS C	10.0	71.1	0.91	0.79	0.91	16.9
West: Hunter St (W)															
10a	L1	All MCs	231	0.0	231	0.0	0.531	34.0	LOS C	10.2	65.3	0.92	0.81	0.92	5.4
11	T1	All MCs	149	0.7	149	0.7	0.531	25.3	LOS B	10.2	65.3	0.93	0.81	0.93	13.4
12	R2	All MCs	128	41.8	128	41.8	*0.531	34.5	LOS C	6.5	49.0	0.94	0.79	0.94	13.7
Approach			508	10.8	508	10.8	0.531	31.6	LOS C	10.2	65.3	0.93	0.81	0.93	10.4
All Vehicles			2271	10.0	2271	10.0	0.943	40.5	LOS C	41.3	318.5	0.90	0.91	1.01	11.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist]					
			ped/h	sec	m						
South: Elizabeth St (S)											
P1	Full	1220	40.3	LOS E	3.0	3.0	0.97	0.97	207.0	200.0	0.97
East: Hunter St (E)											

P2 Full	1609	41.0	LOS E	4.1	4.1	0.99	0.99	207.7	200.0	0.96
NorthEast: Chifley Square (NE)										
P6 Full	609	39.3	LOS D	1.5	1.5	0.95	0.95	205.9	200.0	0.97
West: Hunter St (W)										
P4 Full	521	39.1	LOS D	1.3	1.3	0.94	0.94	205.8	200.0	0.97
All Pedestrians	3960	40.3	LOS E	4.1	4.1	0.97	0.97	207.0	200.0	0.97

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 11:57:15 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

Site: MPL03 [MPL03 Bent St / Bligh St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: MPL-N1 [MPL Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 1412

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	[Dist] m				
SouthEast: Bent St (SE)															
21	L2	All MCs	127	26.4	127	26.4	0.268	6.0	LOS A	2.8	21.9	0.23	0.34	0.23	20.7
22	T1	All MCs	509	5.4	509	5.4	*0.268	2.3	LOS A	2.8	21.9	0.19	0.22	0.19	30.0
Approach			637	9.6	637	9.6	0.268	3.1	LOS A	2.8	21.9	0.20	0.24	0.20	28.6
NorthWest: Bent St (NW)															
28	T1	All MCs	202	1.0	202	1.0	0.127	2.9	LOS A	2.1	14.7	0.28	0.25	0.28	24.6
29	R2	All MCs	60	7.0	60	7.0	*0.127	7.4	LOS A	0.9	6.8	0.36	0.54	0.36	17.5
Approach			262	2.4	262	2.4	0.127	3.9	LOS A	2.1	14.7	0.30	0.32	0.30	22.4
All Vehicles			899	7.5	899	7.5	0.268	3.3	LOS A	2.8	21.9	0.23	0.26	0.23	27.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
SouthEast: Bent St (SE)											
P5	Full	227	38.6	LOS D	0.5	0.5	0.93	0.93	205.3	200.0	0.97
NorthWest: Bent St (NW)											
P7	Full	560	39.2	LOS D	1.4	1.4	0.94	0.94	205.9	200.0	0.97
SouthWest: Bligh St (SW)											
P8	Full	281	38.7	LOS D	0.7	0.7	0.93	0.93	205.4	200.0	0.97
All Pedestrians		1068	38.9	LOS D	1.4	1.4	0.94	0.94	205.6	200.0	0.97

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 11:57:15 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

Site: MPL04 [MPL04 Bent St / Phillip St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: MPL-N1 [MPL Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 242

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
SouthEast: Bent St (SE)															
21	L2	All MCs	103	1.0	103	1.0	0.139	8.3	LOS A	0.7	5.3	0.26	0.52	0.26	27.0
22	T1	All MCs	378	2.8	378	2.8	*0.730	41.6	LOS C	10.3	73.7	1.00	0.91	1.11	7.3
23a	R1	All MCs	37	8.6	37	8.6	0.730	50.8	LOS D	8.4	60.5	1.00	0.91	1.13	14.0
Approach			518	2.8	518	2.8	0.730	35.6	LOS C	10.3	73.7	0.85	0.83	0.94	9.2
North: Phillip St (N)															
7a	L1	All MCs	209	0.5	209	0.5	*0.258	17.5	LOS B	5.7	41.6	0.63	0.67	0.63	22.4
9a	R1	All MCs	226	21.4	226	21.4	0.258	14.7	LOS B	5.7	42.2	0.59	0.62	0.59	20.9
Approach			436	11.4	436	11.4	0.258	16.1	LOS B	5.7	42.2	0.61	0.64	0.61	21.7
NorthWest: Bent St (NW)															
27b	L3	All MCs	19	0.0	19	0.0	0.430	41.3	LOS C	4.5	31.8	0.87	0.70	0.87	14.3
28	T1	All MCs	163	0.6	163	0.6	0.430	32.9	LOS C	4.5	31.8	0.88	0.70	0.88	10.6
29	R2	All MCs	20	5.3	20	5.3	0.430	46.5	LOS D	3.2	23.0	0.89	0.70	0.89	4.7
Approach			202	1.0	202	1.0	0.430	35.0	LOS C	4.5	31.8	0.88	0.70	0.88	10.5
SouthWest: Phillip St (SW)															
30	L2	All MCs	257	18.9	257	18.9	0.263	12.2	LOS A	5.4	44.1	0.52	0.66	0.52	21.2
30a	L1	All MCs	423	8.0	423	8.0	0.354	9.7	LOS A	9.0	67.2	0.53	0.56	0.53	29.5
32	R2	All MCs	272	1.2	272	1.2	*0.472	23.5	LOS B	9.5	67.0	0.95	0.70	0.95	18.7
Approach			952	9.0	952	9.0	0.472	14.3	LOS A	9.5	67.2	0.65	0.63	0.65	24.1
All Vehicles			2107	7.2	2107	7.2	0.730	21.9	LOS B	10.3	73.7	0.71	0.69	0.73	17.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
SouthEast: Bent St (SE)											
P5	Full	214	38.6	LOS D	0.5	0.5	0.93	0.93	205.3	200.0	0.97

North: Phillip St (N)											
P3	Full	452	39.0	LOS D	1.1	1.1	0.94	0.94	205.7	200.0	0.97
NorthWest: Bent St (NW)											
P7	Full	387	38.9	LOS D	0.9	0.9	0.94	0.94	205.6	200.0	0.97
SouthWest: Phillip St (SW)											
P8	Full	329	38.8	LOS D	0.8	0.8	0.94	0.94	205.5	200.0	0.97
All Pedestrians		1382	38.9	LOS D	1.1	1.1	0.94	0.94	205.5	200.0	0.97

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 11:57:15 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

 **Site: MPL05 [MPL05 Pedestrian Mid-block Crossing at Castlereagh St (Site Folder: Block 2 Model - 2023 PM Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 245

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 45 seconds (Site User-Given Phase Times)

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %	Arrival Flows [Total HV] veh/h %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
North: Castlereagh St (N)													
8	T1	All MCs	435 12.6	435 12.6	* 0.409	7.9	LOS A	5.5 39.0	0.67	0.57	0.67	30.1	
Approach			435 12.6	435 12.6	0.409	7.9	LOS A	5.5 39.0	0.67	0.57	0.67	30.1	
All Vehicles			435 12.6	435 12.6	0.409	7.9	LOS A	5.5 39.0	0.67	0.57	0.67	30.1	

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist] ped m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec	
South: Castlereagh St (S)												
P1	Full	5784	6088	21.5	LOS C	8.8 8.8	1.13	1.13	188.2	200.0	1.06	
All Pedestrians		5784	6088	21.5	LOS C	8.8 8.8	1.13	1.13	188.2	200.0	1.06	

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 16 February 2024 8:45:16 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

 **Site: MPL06 [MPL06 Pedestrian Mid-block Crossing at Elizabeth St (Site Folder: Block 2 Model - 2023 PM Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 287

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Elizabeth St (S)															
2	T1	All MCs	1047	8.6	1047	8.6	* 0.442	11.2	LOS A	11.0	83.0	0.52	0.46	0.52	29.8
Approach			1047	8.6	1047	8.6	0.442	8.9	LOS A	11.0	83.0	0.52	0.46	0.52	27.5
North: Elizabeth St (N)															
8	T1	All MCs	583	19.0	583	19.0	0.383	7.8	LOS A	9.8	68.8	0.49	0.43	0.49	30.3
Approach			583	19.0	583	19.0	0.383	7.8	LOS A	9.8	68.8	0.49	0.43	0.49	30.3
All Vehicles			1631	12.3	1631	12.3	0.442	10.0	LOS A	11.0	83.0	0.51	0.45	0.51	28.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped]	[Dist]			sec	m	m/sec
						ped	m					
South: Elizabeth St (S)												
P1	Full	7005	7374	55.2	LOS E	25.1	25.1	1.33	1.33	221.9	200.0	0.90
All Pedestrians		7005	7374	55.2	LOS E	25.1	25.1	1.33	1.33	221.9	200.0	0.90

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 16 February 2024 8:45:17 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

Site: MPL01 [MPL01 Hunter St / Castlereagh St / Bligh St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: MPL-N1 [MPL Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 244

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Veh. veh]	[Dist] m									
			veh/h	%	veh/h	%	v/c	sec							km/h
East: Hunter St (E)															
4	L2	All MCs	83	3.8	83	3.8	0.117	12.7	LOS A	1.2	9.0	0.46	0.61	0.46	22.2
6a	R1	All MCs	147	0.7	147	0.7	*0.165	9.7	LOS A	2.1	14.9	0.45	0.52	0.45	23.8
Approach			231	1.8	231	1.8	0.165	10.8	LOS A	2.1	14.9	0.45	0.55	0.45	23.1
North: Bligh St (N)															
7	L2	All MCs	49	40.4	49	40.4	*0.191	33.9	LOS C	1.7	13.4	0.97	0.76	0.97	13.3
8	T1	All MCs	46	9.1	46	9.1	0.070	25.3	LOS B	1.0	5.6	0.93	0.69	0.93	20.9
9b	R3	All MCs	12	9.1	12	9.1	0.070	33.3	LOS C	0.8	5.3	0.93	0.70	0.93	18.5
Approach			107	23.5	107	23.5	0.191	30.1	LOS C	1.7	13.4	0.95	0.72	0.95	17.3
NorthWest: Hunter St (NW)															
27a	L1	All MCs	175	21.7	175	21.7	0.126	10.7	LOS A	1.8	14.7	0.52	0.59	0.52	19.8
29a	R1	All MCs	31	0.0	31	0.0	*0.126	11.9	LOS A	1.8	13.8	0.54	0.58	0.54	25.7
Approach			205	18.5	205	18.5	0.126	10.9	LOS A	1.8	14.7	0.52	0.59	0.52	21.1
All Vehicles			543	12.4	543	12.4	0.191	14.6	LOS B	2.1	14.9	0.57	0.60	0.57	20.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped]	[Dist] m					
		ped/h	sec						sec	m	m/sec
South: Castlereagh St (S)											
P1	Full	308	28.7	LOS C	0.6	0.6	0.91	0.91	195.4	200.0	1.02
East: Hunter St (E)											
P2	Full	116	28.5	LOS C	0.2	0.2	0.90	0.90	195.2	200.0	1.02
North: Bligh St (N)											
P3	Full	137	28.5	LOS C	0.2	0.2	0.91	0.91	195.2	200.0	1.02
NorthWest: Hunter St (NW)											
P7	Full	138	28.5	LOS C	0.2	0.2	0.91	0.91	195.2	200.0	1.02

All Pedestrians	699	28.6	LOS C	0.6	0.6	0.91	0.91	195.3	200.0	1.02
-----------------	-----	------	-------	-----	-----	------	------	-------	-------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 11:57:18 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

Site: MPL02 [MPL02 Hunter St / Elizabeth St / Chifley Square
(Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: MPL-N1 [MPL
Network 1 (Network Folder:
Block 2 Network - 2023
Weekend Peak)]

TCS 302

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Elizabeth St (S)															
1	L2	All MCs	98	1.1	98	1.1	0.093	10.7	LOS A	1.5	7.6	0.48	0.62	0.48	22.1
3a	R1	All MCs	546	13.7	546	13.7	*0.654	15.9	LOS B	14.0	109.7	0.80	0.76	0.80	18.6
3	R2	All MCs	158	4.0	158	4.0	0.339	17.7	LOS B	3.6	18.9	0.79	0.74	0.79	22.5
Approach			802	10.2	802	10.2	0.654	15.6	LOS B	14.0	109.7	0.76	0.74	0.76	20.0
East: Hunter St (E)															
4	L2	All MCs	59	3.6	59	3.6	0.085	18.6	LOS B	1.3	6.8	0.66	0.67	0.66	22.2
5	T1	All MCs	131	2.4	131	2.4	*0.256	22.3	LOS B	3.6	18.3	0.82	0.66	0.82	14.8
Approach			189	2.8	189	2.8	0.256	21.1	LOS B	3.6	18.3	0.77	0.66	0.77	17.3
NorthEast: Chifley Square (NE)															
24b	L3	All MCs	11	0.0	11	0.0	0.135	10.0	LOS A	0.4	4.2	0.23	0.45	0.23	29.3
24a	L1	All MCs	163	24.5	163	24.5	0.204	10.1	LOS A	1.7	12.5	0.37	0.50	0.37	28.2
Approach			174	23.0	174	23.0	0.204	10.1	LOS A	1.7	12.5	0.36	0.49	0.36	28.3
West: Hunter St (W)															
10a	L1	All MCs	72	2.9	72	2.9	0.219	22.5	LOS B	3.9	23.9	0.80	0.69	0.80	8.3
11	T1	All MCs	80	1.3	80	1.3	0.219	16.8	LOS B	3.9	23.9	0.80	0.69	0.80	18.0
12	R2	All MCs	72	75.0	72	75.0	*0.280	22.8	LOS B	1.9	20.8	0.88	0.74	0.88	16.6
Approach			223	25.5	223	25.5	0.280	20.5	LOS B	3.9	23.9	0.82	0.71	0.82	15.2
All Vehicles			1388	13.3	1388	13.3	0.654	16.5	LOS B	14.0	109.7	0.72	0.69	0.72	19.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Elizabeth St (S)											
P1	Full	185	28.6	LOS C	0.3	0.3	0.91	0.91	195.2	200.0	1.02
East: Hunter St (E)											

P2 Full	106	28.5	LOS C	0.2	0.2	0.90	0.90	195.1	200.0	1.02
NorthEast: Chifley Square (NE)										
P6 Full	116	28.5	LOS C	0.2	0.2	0.90	0.90	195.2	200.0	1.02
West: Hunter St (W)										
P4 Full	189	28.6	LOS C	0.3	0.3	0.91	0.91	195.2	200.0	1.02
All Pedestrians	597	28.5	LOS C	0.3	0.3	0.91	0.91	195.2	200.0	1.02

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 11:57:18 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

Site: MPL03 [MPL03 Bent St / Bligh St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: MPL-N1 [MPL Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 1412

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
SouthEast: Bent St (SE)															
21	L2	All MCs	77	24.7	77	24.7	0.085	7.3	LOS A	0.6	5.5	0.26	0.53	0.26	16.6
22	T1	All MCs	353	5.4	353	5.4	*0.332	4.1	LOS A	3.2	23.4	0.29	0.25	0.29	28.5
Approach			429	8.8	429	8.8	0.332	4.7	LOS A	3.2	23.4	0.28	0.30	0.28	24.5
NorthWest: Bent St (NW)															
28	T1	All MCs	169	1.2	169	1.2	0.085	3.2	LOS A	1.2	8.5	0.34	0.30	0.34	22.8
29	R2	All MCs	26	8.0	26	8.0	*0.085	8.1	LOS A	0.9	6.2	0.38	0.39	0.38	20.2
Approach			196	2.2	196	2.2	0.085	3.9	LOS A	1.2	8.5	0.35	0.31	0.35	22.4
All Vehicles			625	6.7	625	6.7	0.332	4.4	LOS A	3.2	23.4	0.30	0.30	0.30	24.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
SouthEast: Bent St (SE)											
P5	Full	62	28.4	LOS C	0.1	0.1	0.90	0.90	195.1	200.0	1.03
NorthWest: Bent St (NW)											
P7	Full	142	28.5	LOS C	0.3	0.3	0.91	0.91	195.2	200.0	1.02
SouthWest: Bligh St (SW)											
P8	Full	71	28.4	LOS C	0.1	0.1	0.90	0.90	195.1	200.0	1.03
All Pedestrians		275	28.5	LOS C	0.3	0.3	0.90	0.90	195.1	200.0	1.02

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 11:57:18 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

Site: MPL04 [MPL04 Bent St / Phillip St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: MPL-N1 [MPL Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 242

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
SouthEast: Bent St (SE)															
21	L2	All MCs	41	2.6	41	2.6	0.032	4.3	LOS A	0.2	1.3	0.18	0.47	0.18	28.4
22	T1	All MCs	311	1.4	311	1.4	0.563	21.9	LOS B	8.5	60.7	0.87	0.73	0.87	11.9
23a	R1	All MCs	43	4.9	43	4.9	*0.563	27.3	LOS B	8.5	60.7	0.89	0.76	0.89	20.1
Approach			395	1.9	395	1.9	0.563	20.6	LOS B	8.5	60.7	0.80	0.70	0.80	13.9
North: Phillip St (N)															
7a	L1	All MCs	69	0.0	69	0.0	0.149	17.4	LOS B	2.2	16.9	0.67	0.65	0.67	22.8
9a	R1	All MCs	120	32.5	120	32.5	*0.149	15.9	LOS B	2.2	17.0	0.66	0.63	0.66	19.9
Approach			189	20.6	189	20.6	0.149	16.4	LOS B	2.2	17.0	0.66	0.64	0.66	21.1
NorthWest: Bent St (NW)															
27b	L3	All MCs	4	0.0	4	0.0	0.166	22.6	LOS B	2.0	14.5	0.66	0.53	0.66	21.0
28	T1	All MCs	151	1.4	151	1.4	0.166	16.2	LOS B	2.0	14.5	0.66	0.53	0.66	17.0
29	R2	All MCs	15	0.0	15	0.0	0.166	23.9	LOS B	1.7	11.7	0.66	0.54	0.66	8.7
Approach			169	1.2	169	1.2	0.166	17.0	LOS B	2.0	14.5	0.66	0.54	0.66	16.6
SouthWest: Phillip St (SW)															
30	L2	All MCs	119	28.3	119	28.3	0.167	16.2	LOS B	2.6	22.3	0.66	0.69	0.66	18.7
30a	L1	All MCs	283	14.1	283	14.1	0.306	11.5	LOS A	5.4	42.7	0.60	0.63	0.60	28.2
32	R2	All MCs	216	1.5	216	1.5	*0.384	20.5	LOS B	5.8	41.3	0.97	0.71	0.97	20.0
Approach			618	12.4	618	12.4	0.384	15.5	LOS B	5.8	42.7	0.74	0.67	0.74	23.7
All Vehicles			1372	9.1	1372	9.1	0.563	17.3	LOS B	8.5	60.7	0.74	0.66	0.74	20.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
SouthEast: Bent St (SE)											
P5	Full	65	28.4	LOS C	0.1	0.1	0.90	0.90	195.1	200.0	1.03

North: Phillip St (N)											
P3	Full	128	28.5	LOS C	0.2	0.2	0.90	0.90	195.2	200.0	1.02
NorthWest: Bent St (NW)											
P7	Full	177	28.6	LOS C	0.3	0.3	0.91	0.91	195.2	200.0	1.02
SouthWest: Phillip St (SW)											
P8	Full	41	28.4	LOS C	0.1	0.1	0.90	0.90	195.1	200.0	1.03
All Pedestrians		412	28.5	LOS C	0.3	0.3	0.90	0.90	195.2	200.0	1.02

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 11:57:18 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

 **Site: MPL05 [MPL05 Pedestrian Mid-block Crossing at Castlereagh St (Site Folder: Block 2 Model - 2023 Weekend Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 245

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 45 seconds (Site User-Given Phase Times)

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows [Total HV]	Arrival Flows [Total HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.]	Dist [m]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
North: Castlereagh St (N)													
8	T1	All MCs	182 12.1	182 12.1	* 0.206	7.2	LOSA	2.3	17.3	0.60	0.49	0.60	30.9
Approach			182 12.1	182 12.1	0.206	7.2	LOSA	2.3	17.3	0.60	0.49	0.60	30.9
All Vehicles			182 12.1	182 12.1	0.206	7.2	LOSA	2.3	17.3	0.60	0.49	0.60	30.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped]	Dist [m]	Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
		ped/h	ped/h	sec	ped	m			sec	m	m/sec	
South: Castlereagh St (S)												
P1	Full	885	932	16.7	LOS B	1.0	1.0	0.88	0.88	183.4	200.0	1.09
All Pedestrians		885	932	16.7	LOS B	1.0	1.0	0.88	0.88	183.4	200.0	1.09

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 16 February 2024 8:45:20 AM
 Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

 **Site: MPL06 [MPL06 Pedestrian Mid-block Crossing at Elizabeth St (Site Folder: Block 2 Model - 2023 Weekend Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 287

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 45 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh.]	[Dist]				
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Elizabeth St (S)															
2	T1	All MCs	843	9.7	843	9.7	* 0.796	24.7	LOS B	9.8	74.6	0.96	0.99	1.21	22.0
Approach			843	9.7	843	9.7	0.796	20.9	LOS B	9.8	74.6	0.96	0.99	1.21	19.9
North: Elizabeth St (N)															
8	T1	All MCs	271	35.4	271	35.4	0.351	14.3	LOS A	3.4	24.9	0.83	0.67	0.83	25.2
Approach			271	35.4	271	35.4	0.351	14.3	LOS A	3.4	24.9	0.83	0.67	0.83	25.2
All Vehicles			1114	16.0	1114	16.0	0.796	22.2	LOS B	9.8	74.6	0.93	0.91	1.11	20.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
						[Ped]	[Dist]					
		ped/h	ped/h	sec		ped	m			sec	m	m/sec
South: Elizabeth St (S)												
P1	Full	542	571	16.4	LOS B	0.6	0.6	0.87	0.87	183.1	200.0	1.09
All Pedestrians		542	571	16.4	LOS B	0.6	0.6	0.87	0.87	183.1	200.0	1.09

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 16 February 2024 8:45:21 AM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\05 SM C&SW_MPL (Block 2).sip9

MOVEMENT SUMMARY

Site: PIT01 [PIT01 Pitt St / Bathurst St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: PIT-N1 [PIT Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 2312

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
South: Pitt St (S)															
2	T1	All MCs	261	10.9	261	10.9	0.406	40.4	LOS C	6.3	48.4	0.89	0.72	0.89	16.0
3	R2	All MCs	132	6.4	132	6.4	*0.634	66.0	LOS E	5.6	41.5	0.97	0.82	1.04	13.0
Approach			393	9.4	393	9.4	0.634	49.0	LOS D	6.3	48.4	0.92	0.76	0.94	12.0
West: Bathurst St (W)															
10	L2	All MCs	238	5.8	238	5.8	*0.325	16.9	LOS B	5.4	39.5	0.55	0.68	0.55	15.3
11	T1	All MCs	1038	4.3	1038	4.3	0.318	8.9	LOS A	7.5	54.5	0.49	0.43	0.49	20.4
Approach			1276	4.5	1276	4.5	0.325	10.4	LOS A	7.5	54.5	0.50	0.48	0.50	18.0
All Vehicles			1668	5.7	1668	5.7	0.634	19.4	LOS B	7.5	54.5	0.60	0.54	0.61	14.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Pitt St (S)											
P1	Full	1076	41.0	LOS E	2.7	2.7	0.98	0.98	57.7	20.0	0.35
East: Bathurst St (E)											
P2	Full	323	39.7	LOS D	0.8	0.8	0.95	0.95	56.4	20.0	0.35
North: Pitt St (N)											
P3	Full	783	40.5	LOS E	1.9	1.9	0.96	0.96	57.2	20.0	0.35
West: Bathurst St (W)											
P4	Full	501	39.1	LOS D	1.2	1.2	0.94	0.94	55.8	20.0	0.36
All Pedestrians		2683	40.4	LOS E	2.7	2.7	0.96	0.96	57.0	20.0	0.35

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:28:21 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\06 SM C&SW_PIT (Block 2).sip9

MOVEMENT SUMMARY

Site: PIT02 [PIT02 Castlereagh St / Bathurst St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: PIT-N1 [PIT Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 2281

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
North: Castlereagh St (N)															
7	L2	All MCs	24	17.4	24	17.4	0.063	31.8	LOS C	0.8	6.6	0.80	0.68	0.80	13.2
8	T1	All MCs	220	12.4	220	12.4	*0.204	24.7	LOS B	3.6	27.7	0.77	0.62	0.77	22.9
Approach			244	12.9	244	12.9	0.204	25.4	LOS B	3.6	27.7	0.78	0.63	0.78	22.1
West: Bathurst St (W)															
11	T1	All MCs	1024	4.5	1024	4.5	0.290	4.3	LOS A	5.9	43.0	0.25	0.23	0.25	28.0
12	R2	All MCs	145	4.3	145	4.3	*0.290	16.9	LOS B	5.9	43.0	0.54	0.60	0.54	25.8
Approach			1169	4.5	1169	4.5	0.290	5.9	LOS A	5.9	43.0	0.29	0.28	0.29	27.4
All Vehicles			1414	6.0	1414	6.0	0.290	9.2	LOS A	5.9	43.0	0.37	0.34	0.37	25.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec			ped	m	sec	m	m/sec	
South: Castlereagh St (S)											
P1	Full	832	39.6	LOS D	2.0	2.0	0.96	0.96	56.3	20.0	0.36
East: Bathurst St (E)											
P2	Full	338	38.8	LOS D	0.8	0.8	0.94	0.94	55.5	20.0	0.36
North: Castlereagh St (N)											
P3	Full	681	39.4	LOS D	1.7	1.7	0.95	0.95	56.1	20.0	0.36
West: Bathurst St (W)											
P4	Full	351	38.8	LOS D	0.8	0.8	0.94	0.94	55.5	20.0	0.36
All Pedestrians		2201	39.3	LOS D	2.0	2.0	0.95	0.95	56.0	20.0	0.36

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:28:21 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\06 SM C&SW_PIT (Block 2).sip9

MOVEMENT SUMMARY

Site: PIT03 [PIT03 Park St / Castlereagh St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: PIT-N1 [PIT Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 250

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Park St (E)															
4	L2	All MCs	86	8.5	86	8.5	0.101	15.6	LOS B	2.0	14.8	0.55	0.64	0.55	9.1
5	T1	All MCs	413	16.3	413	16.3	*0.358	11.1	LOS A	8.8	65.0	0.57	0.49	0.57	11.8
Approach			499	15.0	499	15.0	0.358	11.9	LOS A	8.8	65.0	0.57	0.52	0.57	11.2
North: Castlereagh St (N)															
7	L2	All MCs	93	11.4	93	11.4	0.194	29.7	LOS C	3.1	23.8	0.79	0.72	0.79	18.7
8	T1	All MCs	116	11.8	116	11.8	*0.294	31.9	LOS C	4.3	32.7	0.87	0.70	0.87	17.4
9	R2	All MCs	82	10.3	82	10.3	0.316	41.2	LOS C	3.3	25.3	0.93	0.76	0.93	14.5
Approach			291	11.2	291	11.2	0.316	33.8	LOS C	4.3	32.7	0.86	0.72	0.86	16.9
West: Park St (W)															
11	T1	All MCs	157	43.0	157	43.0	0.188	10.0	LOS A	2.9	21.9	0.53	0.47	0.53	20.2
12	R2	All MCs	43	26.8	43	26.8	*0.188	14.1	LOS A	2.9	21.9	0.56	0.52	0.56	16.3
Approach			200	39.5	200	39.5	0.188	10.9	LOS A	2.9	21.9	0.54	0.48	0.54	19.5
All Vehicles			989	18.8	989	18.8	0.358	18.1	LOS B	8.8	65.0	0.65	0.57	0.65	15.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Castlereagh St (S)											
P1	Full	806	39.6	LOS D	2.0	2.0	0.95	0.95	56.3	20.0	0.36
East: Park St (E)											
P2	Full	452	39.0	LOS D	1.1	1.1	0.94	0.94	55.7	20.0	0.36
North: Castlereagh St (N)											
P3	Full	719	39.5	LOS D	1.7	1.7	0.95	0.95	56.1	20.0	0.36
West: Park St (W)											
P4	Full	398	38.9	LOS D	1.0	1.0	0.94	0.94	55.6	20.0	0.36

All Pedestrians	2375	39.3	LOS D	2.0	2.0	0.95	0.95	56.0	20.0	0.36
-----------------	------	------	-------	-----	-----	------	------	------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:28:21 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\06 SM C&SW_PIT (Block 2).sip9

MOVEMENT SUMMARY

Site: PIT04 [PIT04 Park St / Pitt St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: PIT-N1 [PIT Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 235

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Pitt St (S)															
1	L2	All MCs	138	9.9	138	9.9	0.528	24.2	LOS B	3.4	25.5	0.96	0.78	0.96	17.2
2	T1	All MCs	283	8.9	283	8.9	*0.632	25.8	LOS B	6.4	48.3	0.92	0.77	0.92	27.1
3	R2	All MCs	78	4.1	78	4.1	0.281	32.9	LOS C	1.8	13.0	0.92	0.74	0.92	14.1
Approach			499	8.4	499	8.4	0.632	26.5	LOS B	6.4	48.3	0.93	0.77	0.93	19.8
East: Park St (E)															
5	T1	All MCs	409	17.5	409	17.5	0.688	11.9	LOS A	8.7	65.0	0.86	0.74	0.86	20.7
6	R2	All MCs	85	4.9	85	4.9	*0.688	17.7	LOS B	8.7	65.0	0.88	0.78	0.88	26.3
Approach			495	15.3	495	15.3	0.688	12.9	LOS A	8.7	65.0	0.86	0.75	0.86	22.1
West: Park St (W)															
10	L2	All MCs	100	0	100	0	0.244	16.9	LOS B	1.8	19.9	0.68	0.55	0.68	28.8
11	T1	All MCs	122	62.1	122	62.1	0.244	9.4	LOS A	1.8	19.9	0.68	0.55	0.68	17.6
Approach			123	62.4	123	62.4	0.244	9.5	LOS A	1.8	19.9	0.68	0.55	0.68	17.8
All Vehicles			1117	17.4	1117	17.4	0.688	18.6	LOS B	8.7	65.0	0.87	0.74	0.87	20.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Pitt St (S)											
P1	Full	1216	17.1	LOS B	1.5	1.5	0.89	0.89	33.8	20.0	0.59
East: Park St (E)											
P2	Full	428	16.5	LOS B	0.5	0.5	0.86	0.86	33.2	20.0	0.60
North: Pitt St (N)											
P3	Full	880	18.6	LOS B	1.1	1.1	0.92	0.92	35.3	20.0	0.57
West: Park St (W)											
P4	Full	725	16.7	LOS B	0.9	0.9	0.87	0.87	33.4	20.0	0.60

All Pedestrians	3249	17.4	LOS B	1.5	1.5	0.89	0.89	34.0	20.0	0.59
-----------------	------	------	-------	-----	-----	------	------	------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:28:21 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\06 SM C&SW_PIT (Block 2).sip9

MOVEMENT SUMMARY

Site: PIT01 [PIT01 Pitt St / Bathurst St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: PIT-N1 [PIT Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 2312

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
South: Pitt St (S)															
2	T1	All MCs	312	1.7	312	1.7	0.348	31.5	LOS C	5.8	41.2	0.88	0.71	0.88	16.1
3	R2	All MCs	155	4.1	155	4.1	*0.489	40.9	LOS C	6.3	45.8	0.95	0.80	0.95	13.4
Approach			466	2.5	466	2.5	0.489	34.6	LOS C	6.3	45.8	0.90	0.74	0.90	15.1
West: Bathurst St (W)															
10	L2	All MCs	168	1.3	168	1.3	0.159	16.2	LOS B	3.4	24.0	0.49	0.64	0.49	16.1
11	T1	All MCs	1186	2.1	1186	2.1	*0.350	9.2	LOS A	8.6	61.6	0.51	0.44	0.51	20.2
Approach			1355	2.0	1355	2.0	0.350	10.1	LOS A	8.6	61.6	0.50	0.47	0.50	18.2
All Vehicles			1821	2.1	1821	2.1	0.489	16.4	LOS B	8.6	61.6	0.61	0.54	0.61	16.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Pitt St (S)											
P1	Full	1264	41.4	LOS E	3.2	3.2	0.99	0.99	58.0	20.0	0.34
East: Bathurst St (E)											
P2	Full	559	40.1	LOS E	1.4	1.4	0.96	0.96	56.8	20.0	0.35
North: Pitt St (N)											
P3	Full	834	40.6	LOS E	2.1	2.1	0.97	0.97	57.3	20.0	0.35
West: Bathurst St (W)											
P4	Full	1029	40.0	LOS D	2.5	2.5	0.96	0.96	56.7	20.0	0.35
All Pedestrians		3686	40.6	LOS E	3.2	3.2	0.97	0.97	57.3	20.0	0.35

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:28:24 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\06 SM C&SW_PIT (Block 2).sip9

MOVEMENT SUMMARY

Site: PIT02 [PIT02 Castlereagh St / Bathurst St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: PIT-N1 [PIT Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 2281

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	[Dist] m				
North: Castlereagh St (N)															
7	L2	All MCs	60	0.0	60	0.0	0.145	34.0	LOS C	2.1	15.0	0.84	0.72	0.84	12.7
8	T1	All MCs	345	18.0	345	18.0	*0.521	28.8	LOS C	10.7	76.3	0.87	0.73	0.87	21.4
Approach			405	15.3	405	15.3	0.521	29.6	LOS C	10.7	76.3	0.87	0.73	0.87	20.3
West: Bathurst St (W)															
11	T1	All MCs	1226	1.7	1226	1.7	0.311	4.0	LOS A	5.8	41.2	0.25	0.23	0.25	28.7
12	R2	All MCs	115	9.2	115	9.2	*0.311	13.2	LOS A	5.3	38.2	0.42	0.48	0.42	28.7
Approach			1341	2.4	1341	2.4	0.311	4.8	LOS A	5.8	41.2	0.26	0.26	0.26	28.7
All Vehicles			1746	5.4	1746	5.4	0.521	10.6	LOS A	10.7	76.3	0.40	0.37	0.40	24.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Castlereagh St (S)											
P1	Full	1160	40.2	LOS E	2.9	2.9	0.97	0.97	56.9	20.0	0.35
East: Bathurst St (E)											
P2	Full	371	38.9	LOS D	0.9	0.9	0.94	0.94	55.5	20.0	0.36
North: Castlereagh St (N)											
P3	Full	706	39.4	LOS D	1.7	1.7	0.95	0.95	56.1	20.0	0.36
West: Bathurst St (W)											
P4	Full	442	39.0	LOS D	1.1	1.1	0.94	0.94	55.7	20.0	0.36
All Pedestrians		2679	39.6	LOS D	2.9	2.9	0.95	0.95	56.3	20.0	0.36

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:28:24 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\06 SM C&SW_PIT (Block 2).sip9

MOVEMENT SUMMARY

Site: PIT03 [PIT03 Park St / Castlereagh St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: PIT-N1 [PIT Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 250

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Park St (E)															
4	L2	All MCs	56	3.8	56	3.8	0.097	17.4	LOS B	1.7	14.0	0.58	0.61	0.58	8.9
5	T1	All MCs	393	19.8	393	19.8	*0.329	12.4	LOS A	8.1	58.7	0.59	0.51	0.59	10.7
Approach			448	17.8	448	17.8	0.329	13.0	LOS A	8.1	58.7	0.59	0.52	0.59	10.5
North: Castlereagh St (N)															
7	L2	All MCs	196	1.1	196	1.1	0.355	30.2	LOS C	6.8	48.0	0.83	0.77	0.83	18.5
8	T1	All MCs	271	17.9	271	17.9	*0.716	55.8	LOS D	9.7	68.6	0.96	0.85	1.03	16.1
9	R2	All MCs	102	5.2	102	5.2	0.694	69.0	LOS E	4.6	33.2	0.99	0.87	1.16	13.6
Approach			568	9.8	568	9.8	0.716	49.4	LOS D	9.7	68.6	0.92	0.82	0.99	13.5
West: Park St (W)															
11	T1	All MCs	168	30.0	168	30.0	0.299	12.7	LOS A	5.0	36.9	0.61	0.55	0.61	17.7
12	R2	All MCs	79	14.7	79	14.7	*0.299	17.0	LOS B	5.0	36.9	0.65	0.60	0.65	13.8
Approach			247	25.1	247	25.1	0.299	14.1	LOS A	5.0	36.9	0.63	0.56	0.63	16.5
All Vehicles			1264	15.7	1264	15.7	0.716	29.6	LOS C	9.7	68.6	0.75	0.67	0.78	13.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Castlereagh St (S)											
P1	Full	941	39.8	LOS D	2.3	2.3	0.96	0.96	56.5	20.0	0.35
East: Park St (E)											
P2	Full	391	38.9	LOS D	0.9	0.9	0.94	0.94	55.6	20.0	0.36
North: Castlereagh St (N)											
P3	Full	1066	40.1	LOS E	2.6	2.6	0.97	0.97	56.7	20.0	0.35
West: Park St (W)											
P4	Full	502	39.1	LOS D	1.2	1.2	0.94	0.94	55.8	20.0	0.36

All Pedestrians	2900	39.7	LOS D	2.6	2.6	0.96	0.96	56.3	20.0	0.36
-----------------	------	------	-------	-----	-----	------	------	------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:28:24 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\06 SM C&SW_PIT (Block 2).sip9

MOVEMENT SUMMARY

Site: PIT04 [PIT04 Park St / Pitt St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: PIT-N1 [PIT Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 235

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Pitt St (S)															
1	L2	All MCs	119	3.5	119	3.5	0.427	23.6	LOS B	2.8	20.4	0.95	0.77	0.95	17.3
2	T1	All MCs	247	1.7	247	1.7	*0.542	23.4	LOS B	5.4	38.4	0.89	0.74	0.89	27.5
3	R2	All MCs	115	0.0	115	0.0	0.397	31.4	LOS C	2.7	18.9	0.94	0.76	0.94	14.0
Approach			481	1.8	481	1.8	0.542	25.4	LOS B	5.4	38.4	0.92	0.75	0.92	19.8
East: Park St (E)															
5	T1	All MCs	441	18.4	441	18.4	0.595	11.0	LOS A	7.7	55.8	0.80	0.69	0.80	21.8
6	R2	All MCs	53	4.0	53	4.0	*0.595	16.7	LOS B	7.7	55.8	0.83	0.73	0.83	27.2
Approach			494	16.8	494	16.8	0.595	11.6	LOS A	7.7	55.8	0.80	0.69	0.80	22.7
West: Park St (W)															
10	L2	All MCs	100	0	100	0	0.240	16.8	LOS B	2.0	19.6	0.68	0.55	0.68	28.9
11	T1	All MCs	133	46.8	133	46.8	0.240	9.4	LOS A	2.0	19.6	0.68	0.55	0.68	17.7
Approach			134	47.2	134	47.2	0.240	9.4	LOS A	2.0	19.6	0.68	0.55	0.68	17.9
All Vehicles			1108	14.0	1108	14.0	0.595	17.3	LOS B	7.7	55.8	0.84	0.70	0.84	20.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Pitt St (S)											
P1	Full	1394	17.2	LOS B	1.8	1.8	0.90	0.90	33.9	20.0	0.59
East: Park St (E)											
P2	Full	689	16.7	LOS B	0.8	0.8	0.87	0.87	33.4	20.0	0.60
North: Pitt St (N)											
P3	Full	1076	18.8	LOS B	1.4	1.4	0.93	0.93	35.5	20.0	0.56
West: Park St (W)											
P4	Full	1235	17.1	LOS B	1.6	1.6	0.89	0.89	33.8	20.0	0.59

All Pedestrians	4394	17.5	LOS B	1.8	1.8	0.90	0.90	34.2	20.0	0.59
-----------------	------	------	-------	-----	-----	------	------	------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:28:24 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\06 SM C&SW_PIT (Block 2).sip9

MOVEMENT SUMMARY

Site: PIT01 [PIT01 Pitt St / Bathurst St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: PIT-N1 [PIT Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 2312

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 45 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
South: Pitt St (S)															
2	T1	All MCs	232	0.9	232	0.9	0.245	15.4	LOS B	2.1	15.1	0.84	0.66	0.84	23.2
3	R2	All MCs	121	7.8	121	7.8	0.454	24.1	LOS B	2.6	19.6	0.95	0.77	0.95	18.5
Approach			353	3.3	353	3.3	0.454	18.4	LOS B	2.6	19.6	0.88	0.70	0.88	21.4
West: Bathurst St (W)															
10	L2	All MCs	206	1.0	206	1.0	*0.297	15.0	LOS B	3.3	23.1	0.74	0.73	0.74	15.0
11	T1	All MCs	975	1.8	975	1.8	0.355	8.0	LOS A	4.6	32.8	0.66	0.56	0.66	20.7
Approach			1181	1.7	1181	1.7	0.355	9.3	LOS A	4.6	32.8	0.67	0.59	0.67	19.0
All Vehicles			1534	2.1	1534	2.1	0.454	11.4	LOS A	4.6	32.8	0.72	0.61	0.72	20.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Pitt St (S)											
P1	Full	714	17.4	LOS B	0.8	0.8	0.89	0.89	34.1	20.0	0.59
East: Bathurst St (E)											
P2	Full	455	17.2	LOS B	0.5	0.5	0.88	0.88	33.9	20.0	0.59
North: Pitt St (N)											
P3	Full	583	17.3	LOS B	0.7	0.7	0.89	0.89	34.0	20.0	0.59
West: Bathurst St (W)											
P4	Full	993	16.7	LOS B	1.1	1.1	0.88	0.88	33.4	20.0	0.60
All Pedestrians		2744	17.1	LOS B	1.1	1.1	0.89	0.89	33.8	20.0	0.59

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:28:26 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\06 SM C&SW_PIT (Block 2).sip9

MOVEMENT SUMMARY

Site: PIT02 [PIT02 Castlereagh St / Bathurst St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: PIT-N1 [PIT Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 2281

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 45 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
North: Castlereagh St (N)															
7	L2	All MCs	28	3.7	28	3.7	0.072	18.9	LOS B	0.5	3.7	0.82	0.68	0.82	18.0
8	T1	All MCs	188	6.1	188	6.1	*0.165	12.5	LOS A	1.6	11.4	0.76	0.60	0.76	29.0
Approach			217	5.8	217	5.8	0.165	13.3	LOS A	1.6	11.4	0.77	0.61	0.77	27.8
West: Bathurst St (W)															
11	T1	All MCs	993	2.1	993	2.1	0.362	3.8	LOS A	3.1	22.2	0.35	0.31	0.35	29.1
12	R2	All MCs	103	6.1	103	6.1	*0.362	12.1	LOS A	2.4	17.4	0.51	0.55	0.51	29.2
Approach			1096	2.5	1096	2.5	0.362	4.6	LOS A	3.1	22.2	0.36	0.33	0.36	29.1
All Vehicles			1313	3.0	1313	3.0	0.362	6.0	LOS A	3.1	22.2	0.43	0.38	0.43	28.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Castlereagh St (S)											
P1	Full	674	16.5	LOS B	0.7	0.7	0.87	0.87	33.2	20.0	0.60
East: Bathurst St (E)											
P2	Full	195	16.2	LOS B	0.2	0.2	0.85	0.85	32.8	20.0	0.61
North: Castlereagh St (N)											
P3	Full	437	16.3	LOS B	0.5	0.5	0.86	0.86	33.0	20.0	0.61
West: Bathurst St (W)											
P4	Full	211	16.2	LOS B	0.2	0.2	0.85	0.85	32.9	20.0	0.61
All Pedestrians		1516	16.4	LOS B	0.7	0.7	0.86	0.86	33.0	20.0	0.61

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:28:26 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\06 SM C&SW_PIT (Block 2).sip9

MOVEMENT SUMMARY

Site: PIT03 [PIT03 Park St / Castlereagh St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: PIT-N1 [PIT Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 250

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h		veh/h		v/c	sec			m				km/h
East: Park St (E)															
4	L2	All MCs	62	3.4	62	3.4	0.061	12.2	LOS A	1.2	8.7	0.47	0.61	0.47	10.9
5	T1	All MCs	405	2.1	405	2.1	*0.333	8.1	LOS A	8.1	57.9	0.50	0.44	0.50	14.5
Approach			467	2.3	467	2.3	0.333	8.7	LOS A	8.1	57.9	0.49	0.46	0.49	13.9
North: Castlereagh St (N)															
7	L2	All MCs	102	1.0	102	1.0	0.192	29.5	LOS C	3.4	24.0	0.79	0.73	0.79	18.8
8	T1	All MCs	128	8.2	128	8.2	*0.343	34.8	LOS C	4.8	34.3	0.91	0.72	0.91	16.6
9	R2	All MCs	74	4.3	74	4.3	0.336	44.2	LOS D	3.1	22.3	0.96	0.76	0.96	13.9
Approach			304	4.8	304	4.8	0.343	35.3	LOS C	4.8	34.3	0.88	0.73	0.88	16.5
West: Park St (W)															
11	T1	All MCs	132	32.0	132	32.0	0.135	9.2	LOS A	2.3	16.4	0.50	0.43	0.50	21.0
12	R2	All MCs	26	0.0	26	0.0	*0.135	13.0	LOS A	2.3	16.4	0.52	0.46	0.52	17.3
Approach			158	26.7	158	26.7	0.135	9.8	LOS A	2.3	16.4	0.50	0.44	0.50	20.5
All Vehicles			929	7.2	929	7.2	0.343	17.6	LOS B	8.1	57.9	0.62	0.54	0.62	16.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist]					
		ped/h	sec			m			sec	m	m/sec
South: Castlereagh St (S)											
P1	Full	912	39.8	LOS D	2.2	2.2	0.96	0.96	56.4	20.0	0.35
East: Park St (E)											
P2	Full	188	38.6	LOS D	0.4	0.4	0.93	0.93	55.2	20.0	0.36
North: Castlereagh St (N)											
P3	Full	988	39.9	LOS D	2.4	2.4	0.96	0.96	56.6	20.0	0.35
West: Park St (W)											
P4	Full	393	38.9	LOS D	0.9	0.9	0.94	0.94	55.6	20.0	0.36

All Pedestrians	2481	39.6	LOS D	2.4	2.4	0.95	0.95	56.3	20.0	0.36
-----------------	------	------	-------	-----	-----	------	------	------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com
Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:28:26 PM
Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\06 SM C&SW_PIT (Block 2).sip9

MOVEMENT SUMMARY

Site: PIT04 [PIT04 Park St / Pitt St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: PIT-N1 [PIT Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 235

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Pitt St (S)															
1	L2	All MCs	116	0.9	116	0.9	0.405	23.5	LOS B	2.7	19.3	0.94	0.76	0.94	17.4
2	T1	All MCs	224	0.9	224	0.9	*0.470	21.8	LOS B	4.8	33.7	0.87	0.71	0.87	27.7
3	R2	All MCs	98	1.1	98	1.1	0.343	30.1	LOS C	2.3	16.1	0.93	0.75	0.93	14.0
Approach			438	1.0	438	1.0	0.470	24.1	LOS B	4.8	33.7	0.90	0.74	0.90	20.3
East: Park St (E)															
5	T1	All MCs	413	2.8	413	2.8	0.659	11.8	LOS A	9.0	64.2	0.86	0.76	0.86	21.0
6	R2	All MCs	65	0.0	65	0.0	*0.659	16.3	LOS B	9.0	64.2	0.86	0.76	0.86	26.9
Approach			478	2.4	478	2.4	0.659	12.4	LOS A	9.0	64.2	0.86	0.76	0.86	22.2
West: Park St (W)															
10	L2	All MCs	100	0	100	0	0.126	16.1	LOS B	0.9	9.6	0.64	0.50	0.64	29.1
11	T1	All MCs	60	68.4	60	68.4	0.126	8.9	LOS A	0.9	9.6	0.64	0.50	0.64	18.1
Approach			61	69.0	61	69.0	0.126	9.0	LOS A	0.9	9.6	0.64	0.50	0.64	18.5
All Vehicles			977	5.9	977	5.9	0.659	17.5	LOS B	9.0	64.2	0.87	0.73	0.87	20.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Pitt St (S)											
P1	Full	1322	17.2	LOS B	1.7	1.7	0.89	0.89	33.8	20.0	0.59
East: Park St (E)											
P2	Full	823	16.8	LOS B	1.0	1.0	0.87	0.87	33.5	20.0	0.60
North: Pitt St (N)											
P3	Full	1588	19.2	LOS B	2.1	2.1	0.95	0.95	35.9	20.0	0.56
West: Park St (W)											
P4	Full	1682	17.4	LOS B	2.2	2.2	0.91	0.91	34.1	20.0	0.59

All Pedestrians	5416	17.8	LOS B	2.2	2.2	0.91	0.91	34.5	20.0	0.58
-----------------	------	------	-------	-----	-----	------	------	------	------	------

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:28:26 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\06 SM C&SW_PIT (Block 2).sip9

CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [CEN-N1]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CEN-N1 [CEN Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (CCG User-Given Phase Times)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]				km/h
			veh/h		veh/h					veh	m				
Site: CEN01 [CEN01 Elizabeth St / Eddy Ave]															
South: Elizabeth St (S)															
1a	L1	All MCs	306	7.6	306	7.6	0.294	3.3	LOS A	1.2	10.2	0.10	0.36	0.10	30.2
2	T1	All MCs	1126	7.5	1126	7.5	*0.692	12.6	LOS A	7.9	57.1	0.66	0.67	0.66	21.5
Approach			1433	7.5	1433	7.5	0.692	10.6	LOS A	7.9	57.1	0.54	0.60	0.54	21.9
North: Elizabeth St (N)															
8	T1	All MCs	561	10.1	561	10.1	*0.879	43.5	LOS D	31.4	231.8	0.98	1.01	1.15	8.1
9b	R3	All MCs	200	23.2	200	23.2	0.417	48.5	LOS D	4.9	41.3	0.93	0.78	0.93	10.3
Approach			761	13.6	761	13.6	0.879	44.8	LOS D	31.4	231.8	0.97	0.95	1.09	8.7
NorthWest: Eddy Ave (NW)															
27b	L3	All MCs	680	8.2	680	8.2	*0.803	33.7	LOS C	14.2	106.5	0.99	0.93	1.11	13.5
29a	R1	All MCs	133	15.1	133	15.1	*0.805	61.4	LOS E	7.7	61.3	1.00	0.98	1.24	3.7
Approach			813	9.3	813	9.3	0.805	38.3	LOS C	14.2	106.5	0.99	0.94	1.13	11.5
All Vehicles			3006	9.5	3006	9.5	0.879	26.8	LOS B	31.4	231.8	0.77	0.78	0.84	13.4
Site: CEN02 [CEN02 Elizabeth St / Foveaux St]															
South: Elizabeth St (S)															
2	T1	All MCs	921	8.8	921	8.8	0.642	28.6	LOS C	19.9	150.0	0.87	0.76	0.87	12.8
Approach			921	8.8	921	8.8	0.642	28.6	LOS C	19.9	150.0	0.87	0.76	0.87	12.8
SouthEast: Foveaux St (SE)															
21b	L3	All MCs	141	8.2	141	8.2	0.235	27.6	LOS B	5.0	37.5	0.70	0.73	0.70	18.8
23a	R1	All MCs	512	5.1	512	5.1	0.597	25.8	LOS B	10.3	75.1	0.79	0.77	0.79	12.6
Approach			653	5.8	653	5.8	0.597	26.2	LOS B	10.3	75.1	0.77	0.76	0.77	14.4
North: Elizabeth St (N)															
8	T1	All MCs	694	11.1	694	11.1	0.444	9.6	LOS A	7.8	57.1	0.35	0.30	0.35	25.5
Approach			694	11.1	694	11.1	0.444	9.6	LOS A	7.8	57.1	0.35	0.30	0.35	25.5
All Vehicles			2267	8.6	2267	8.6	0.642	22.1	LOS B	19.9	150.0	0.68	0.62	0.68	16.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:40:13 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\07 SM C&SW_CEN (Block 2).sip9

MOVEMENT SUMMARY

Site: CEN03 [CEN03 Elizabeth St / Cooper St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CEN-N2 [CEN Network 2 (Network Folder: Block 2 Network - 2023 AM Peak)]

NA
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Cooper St (SE)															
21b	L3	All MCs	91	4.7	91	4.7	0.087	6.0	LOS A	0.4	2.6	0.46	0.62	0.46	33.8
Approach			91	4.7	91	4.7	0.087	6.0	LOS A	0.4	2.6	0.46	0.62	0.46	33.8
North: Elizabeth St (N)															
7a	L1	All MCs	57	1.9	57	1.9	0.169	2.9	LOS A	0.4	3.3	0.15	0.17	0.15	37.2
8	T1	All MCs	816	9.8	816	9.8	0.169	0.1	LOS A	0.4	3.3	0.04	0.04	0.04	39.2
Approach			873	9.3	873	9.3	0.169	0.3	NA	0.4	3.3	0.05	0.05	0.05	38.9
All Vehicles			963	8.9	963	8.9	0.169	0.8	NA	0.4	3.3	0.09	0.11	0.09	37.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:40:15 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\07 SM C&SW_CEN (Block 2).sip9

MOVEMENT SUMMARY

Site: CEN05 [CEN05 Elizabeth St / Randle St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CEN-N2 [CEN Network 2 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 2916

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
North: Elizabeth St (N)															
8	T1	All MCs	753	9.9	753	9.9	0.277	3.3	LOS A	4.8	36.6	0.32	0.28	0.32	32.2
Approach			753	9.9	753	9.9	0.277	3.3	LOS A	4.8	36.6	0.32	0.28	0.32	32.2
SouthWest: Randle St (SW)															
30a	L1	All MCs	961	7.7	961	7.7	*0.349	6.2	LOS A	7.5	56.2	0.22	0.53	0.22	30.7
32b	R3	All MCs	120	5.3	120	5.3	0.349	4.2	LOS A	0.0	0.0	0.00	0.45	0.00	31.5
Approach			1081	7.4	1081	7.4	0.349	6.0	LOS A	7.5	56.2	0.20	0.52	0.20	30.6
All Vehicles			1834	8.4	1834	8.4	0.349	4.9	LOS A	7.5	56.2	0.25	0.42	0.25	31.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Elizabeth St (S)											
P1	Full	209	38.6	LOS D	0.5	0.5	0.93	0.93	205.3	200.0	0.97
SouthWest: Randle St (SW)											
P8	Full	199	36.8	LOS D	0.5	0.5	0.91	0.91	203.4	200.0	0.98
All Pedestrians		408	37.7	LOS D	0.5	0.5	0.92	0.92	204.4	200.0	0.98

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.

CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [CCGName]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CEN-N1 [CEN Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (CCG User-Given Phase Times)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back	Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]				km/h
			veh/h		veh/h					veh	m				
Site: CEN01 [CEN01 Elizabeth St / Eddy Ave]															
South: Elizabeth St (S)															
1a	L1	All MCs	301	2.1	301	2.1	0.283	3.1	LOS A	2.4	18.9	0.19	0.41	0.19	28.6
2	T1	All MCs	1217	3.8	1217	3.8	*0.643	8.4	LOS A	8.2	57.1	0.58	0.57	0.58	25.2
Approach			1518	3.5	1518	3.5	0.643	7.4	LOS A	8.2	57.1	0.50	0.53	0.50	25.5
North: Elizabeth St (N)															
8	T1	All MCs	757	5.0	757	5.0	*0.878	38.4	LOS C	40.1	283.1	0.97	0.97	1.09	8.9
9b	R3	All MCs	332	10.2	332	10.2	0.824	62.0	LOS E	9.8	74.3	1.00	0.99	1.25	8.5
Approach			1088	6.6	1088	6.6	0.878	45.6	LOS D	40.1	283.1	0.98	0.97	1.14	8.8
NorthWest: Eddy Ave (NW)															
27b	L3	All MCs	659	3.0	659	3.0	*0.884	44.7	LOS D	15.6	111.8	1.00	1.04	1.26	11.2
29a	R1	All MCs	191	7.7	191	7.7	*0.980	86.1	LOS F	13.6	101.6	1.00	1.30	1.64	2.7
Approach			849	4.1	849	4.1	0.980	54.0	LOS D	15.6	111.8	1.00	1.10	1.35	8.7
All Vehicles			3456	4.6	3456	4.6	0.980	30.9	LOS C	40.1	283.1	0.77	0.81	0.91	12.1
Site: CEN02 [CEN02 Elizabeth St / Foveaux St]															
South: Elizabeth St (S)															
2	T1	All MCs	969	4.0	969	4.0	0.605	26.1	LOS B	20.0	144.8	0.83	0.73	0.83	13.7
Approach			969	4.0	969	4.0	0.605	26.1	LOS B	20.0	144.8	0.83	0.73	0.83	13.7
SouthEast: Foveaux St (SE)															
21b	L3	All MCs	211	1.0	211	1.0	0.351	30.9	LOS C	8.2	57.6	0.77	0.76	0.77	17.8
23a	R1	All MCs	548	2.5	548	2.5	0.661	28.7	LOS C	11.8	84.5	0.84	0.80	0.84	11.7
Approach			759	2.1	759	2.1	0.661	29.3	LOS C	11.8	84.5	0.82	0.79	0.82	13.8
North: Elizabeth St (N)															
8	T1	All MCs	947	5.6	947	5.6	0.545	10.2	LOS A	8.1	57.1	0.39	0.34	0.39	25.0
Approach			947	5.6	947	5.6	0.545	10.2	LOS A	8.1	57.1	0.39	0.34	0.39	25.0
All Vehicles			2676	4.0	2676	4.0	0.661	21.4	LOS B	20.0	144.8	0.67	0.61	0.67	16.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:40:17 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\07 SM C&SW_CEN (Block 2).sip9

MOVEMENT SUMMARY

Site: CEN03 [CEN03 Elizabeth St / Cooper St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CEN-N2 [CEN Network 2 (Network Folder: Block 2 Network - 2023 PM Peak)]

NA
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Cooper St (SE)															
21b	L3	All MCs	65	3.2	65	3.2	0.063	5.9	LOS A	0.3	1.8	0.46	0.61	0.46	33.9
Approach			65	3.2	65	3.2	0.063	5.9	LOS A	0.3	1.8	0.46	0.61	0.46	33.9
North: Elizabeth St (N)															
7a	L1	All MCs	46	0.0	46	0.0	0.204	2.5	LOS A	0.3	2.5	0.08	0.09	0.08	37.7
8	T1	All MCs	1062	5.6	1062	5.6	0.204	0.0	LOS A	0.3	2.5	0.02	0.03	0.02	39.5
Approach			1108	5.3	1108	5.3	0.204	0.1	NA	0.3	2.5	0.03	0.03	0.03	39.3
All Vehicles			1174	5.2	1174	5.2	0.204	0.5	NA	0.3	2.5	0.05	0.06	0.05	38.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:40:19 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\07 SM C&SW_CEN (Block 2).sip9

MOVEMENT SUMMARY

Site: CEN05 [CEN05 Elizabeth St / Randle St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CEN-N2 [CEN Network 2 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 2916

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
North: Elizabeth St (N)															
8	T1	All MCs	1037	5.4	1037	5.4	0.365	3.6	LOS A	7.3	53.2	0.35	0.31	0.35	31.6
Approach			1037	5.4	1037	5.4	0.365	3.6	LOS A	7.3	53.2	0.35	0.31	0.35	31.6
SouthWest: Randle St (SW)															
30a	L1	All MCs	935	4.3	935	4.3	*0.312	5.7	LOS A	6.8	49.5	0.21	0.52	0.21	31.0
32b	R3	All MCs	72	4.4	72	4.4	0.312	4.2	LOS A	0.0	0.0	0.00	0.43	0.00	31.8
Approach			1006	4.3	1006	4.3	0.312	5.6	LOS A	6.8	49.5	0.19	0.51	0.19	31.1
All Vehicles			2043	4.8	2043	4.8	0.365	4.6	LOS A	7.3	53.2	0.27	0.41	0.27	31.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Elizabeth St (S)											
P1	Full	248	38.7	LOS D	0.6	0.6	0.93	0.93	205.3	200.0	0.97
SouthWest: Randle St (SW)											
P8	Full	259	36.8	LOS D	0.6	0.6	0.91	0.91	203.5	200.0	0.98
All Pedestrians		507	37.7	LOS D	0.6	0.6	0.92	0.92	204.4	200.0	0.98

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.

CCG MOVEMENT SUMMARY

Common Control Group: CCG1 [CCGName]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CEN-N1 [CEN Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (CCG User-Given Phase Times)

Vehicle Movement Performance (CCG)															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]			km/h	
			veh/h		veh/h					veh	m				
Site: CEN01 [CEN01 Elizabeth St / Eddy Ave]															
South: Elizabeth St (S)															
1a	L1	All MCs	297	2.1	297	2.1	0.394	3.0	LOS A	6.2	44.5	0.36	0.46	0.36	26.5
2	T1	All MCs	929	4.1	929	4.1	*0.394	6.3	LOS A	6.2	44.5	0.46	0.43	0.46	28.1
Approach			1226	3.6	1226	3.6	0.394	5.5	LOS A	6.2	44.5	0.44	0.43	0.44	27.8
North: Elizabeth St (N)															
8	T1	All MCs	500	4.6	500	4.6	0.314	22.2	LOS B	8.8	64.0	0.70	0.60	0.70	13.3
9b	R3	All MCs	251	12.2	251	12.2	0.528	51.1	LOS D	6.4	49.4	0.96	0.80	0.96	9.9
Approach			751	7.2	751	7.2	0.528	31.9	LOS C	8.8	64.0	0.79	0.66	0.79	11.5
NorthWest: Eddy Ave (NW)															
27b	L3	All MCs	644	3.9	644	3.9	*0.839	38.1	LOS C	14.3	103.5	1.00	0.96	1.18	12.5
29a	R1	All MCs	97	6.5	97	6.5	0.662	59.0	LOS E	5.4	40.0	1.00	0.85	1.09	3.9
Approach			741	4.3	741	4.3	0.839	40.9	LOS C	14.3	103.5	1.00	0.95	1.17	11.2
All Vehicles			2718	4.8	2718	4.8	0.839	22.4	LOS B	14.3	103.5	0.69	0.64	0.74	15.1
Site: CEN02 [CEN02 Elizabeth St / Foveaux St]															
South: Elizabeth St (S)															
2	T1	All MCs	816	3.7	816	3.7	*0.508	24.6	LOS B	15.9	114.9	0.78	0.69	0.78	14.2
Approach			816	3.7	816	3.7	0.508	24.6	LOS B	15.9	114.9	0.78	0.69	0.78	14.2
SouthEast: Foveaux St (SE)															
21b	L3	All MCs	209	2.0	209	2.0	0.353	30.9	LOS C	8.1	57.8	0.77	0.76	0.77	17.7
23a	R1	All MCs	411	3.3	411	3.3	0.331	23.7	LOS B	7.4	53.1	0.69	0.70	0.69	13.4
Approach			620	2.9	620	2.9	0.353	26.2	LOS B	8.1	57.8	0.72	0.72	0.72	15.3
North: Elizabeth St (N)															
8	T1	All MCs	597	4.9	597	4.9	0.321	7.8	LOS A	6.7	47.8	0.28	0.24	0.28	27.4
Approach			597	4.9	597	4.9	0.321	7.8	LOS A	6.7	47.8	0.28	0.24	0.28	27.4
All Vehicles			2033	3.8	2033	3.8	0.508	20.2	LOS B	15.9	114.9	0.62	0.57	0.62	17.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:40:21 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\07 SM C&SW_CEN (Block 2).sip9

MOVEMENT SUMMARY

Site: CEN03 [CEN03 Elizabeth St / Cooper St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CEN-N2 [CEN Network 2 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

NA
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Cooper St (SE)															
21b	L3	All MCs	53	0.0	53	0.0	0.047	5.6	LOS A	0.2	1.4	0.43	0.58	0.43	34.0
Approach			53	0.0	53	0.0	0.047	5.6	LOS A	0.2	1.4	0.43	0.58	0.43	34.0
North: Elizabeth St (N)															
7a	L1	All MCs	35	0.0	35	0.0	0.149	2.7	LOS A	0.3	1.9	0.09	0.10	0.09	37.6
8	T1	All MCs	787	3.9	787	3.9	0.149	0.1	LOS A	0.3	1.9	0.03	0.03	0.03	39.5
Approach			822	3.7	822	3.7	0.149	0.2	NA	0.3	1.9	0.03	0.03	0.03	39.3
All Vehicles			875	3.5	875	3.5	0.149	0.5	NA	0.3	1.9	0.05	0.07	0.05	38.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 12:40:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\07 SM C&SW_CEN (Block 2).sip9

MOVEMENT SUMMARY

Site: CEN05 [CEN05 Elizabeth St / Randle St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: CEN-N2 [CEN Network 2 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 2916

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 85 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
North: Elizabeth St (N)															
8	T1	All MCs	765	3.7	765	3.7	0.270	3.4	LOS A	4.8	35.0	0.33	0.29	0.33	31.9
Approach			765	3.7	765	3.7	0.270	3.4	LOS A	4.8	35.0	0.33	0.29	0.33	31.9
SouthWest: Randle St (SW)															
30a	L1	All MCs	846	3.2	846	3.2	*0.280	5.7	LOS A	5.8	41.9	0.21	0.52	0.21	31.0
32b	R3	All MCs	57	3.7	57	3.7	0.280	4.2	LOS A	0.0	0.0	0.00	0.43	0.00	31.8
Approach			903	3.3	903	3.3	0.280	5.6	LOS A	5.8	41.9	0.20	0.51	0.20	31.1
All Vehicles			1668	3.5	1668	3.5	0.280	4.6	LOS A	5.8	41.9	0.26	0.41	0.26	31.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Elizabeth St (S)											
P1	Full	115	36.0	LOS D	0.3	0.3	0.92	0.92	202.6	200.0	0.99
SouthWest: Randle St (SW)											
P8	Full	135	34.2	LOS D	0.3	0.3	0.90	0.90	200.8	200.0	1.00
All Pedestrians		249	35.0	LOS D	0.3	0.3	0.91	0.91	201.7	200.0	0.99

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: WLO01 [WLO01 Botany Rd / Raglan St / Henderson Rd
(Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO
Network 1 (Network Folder:
Block 2 Network - 2023 AM
Peak)]

TCS 47

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Botany Rd (S)															
1	L2	All MCs	720	8.0	720	8.0	*0.683	34.5	LOS C	16.9	126.3	0.84	0.81	0.84	16.5
Approach			720	8.0	720	8.0	0.683	34.5	LOS C	16.9	126.3	0.84	0.81	0.84	16.5
East: Raglan St (E)															
4	L2	All MCs	24	13.0	24	13.0	0.634	79.5	LOS F	6.9	51.3	0.98	0.81	1.02	5.0
5	T1	All MCs	221	6.7	221	6.7	0.634	74.0	LOS F	7.0	51.8	0.98	0.81	1.02	5.0
Approach			245	7.3	245	7.3	0.634	74.5	LOS F	7.0	51.8	0.98	0.81	1.02	3.7
North: Botany Rd (N)															
7	L2	All MCs	53	18.0	53	18.0	0.371	11.2	LOS A	10.0	75.1	0.38	0.38	0.38	35.0
8	T1	All MCs	938	7.3	938	7.3	0.371	5.8	LOS A	10.2	75.9	0.38	0.36	0.38	35.4
9	R2	All MCs	634	3.3	634	3.3	*0.757	53.2	LOS D	18.0	129.8	0.99	0.88	1.05	10.5
Approach			1624	6.1	1624	6.1	0.757	24.5	LOS B	18.0	129.8	0.62	0.56	0.64	18.6
West: Henderson Rd (W)															
11	T1	All MCs	231	3.7	231	3.7	0.596	11.9	LOS A	3.9	28.0	0.36	0.30	0.36	15.9
12	R2	All MCs	36	0.0	36	0.0	*0.596	41.3	LOS C	3.9	28.0	0.75	0.64	0.76	7.3
Approach			266	3.2	266	3.2	0.596	15.8	LOS B	3.9	28.0	0.41	0.35	0.42	13.7
All Vehicles			2856	6.4	2856	6.4	0.757	30.5	LOS C	18.0	129.8	0.69	0.63	0.70	15.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist]					
			ped/h	sec		m		sec	m	m/sec	
South: Botany Rd (S)											
P1	Full	25	53.3	LOS E	0.1	0.1	0.94	0.94	69.9	20.0	0.29
East: Raglan St (E)											
P2	Full	29	53.3	LOS E	0.1	0.1	0.94	0.94	69.9	20.0	0.29

North: Botany Rd (N)											
P3	Full	105	53.4	LOS E	0.3	0.3	0.95	0.95	70.1	20.0	0.29
West: Henderson Rd (W)											
P4	Full	62	53.3	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29
All Pedestrians		222	53.4	LOS E	0.3	0.3	0.94	0.94	70.0	20.0	0.29

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:12 PM
 Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO02 [WLO02 Raglan St / Cope St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Raglan St (E)															
5	T1	All MCs	194	8.2	194	8.2	0.183	4.1	LOS A	1.2	9.2	0.24	0.45	0.24	40.5
6	R2	All MCs	33	6.5	33	6.5	0.183	7.2	LOS A	1.2	9.2	0.24	0.45	0.24	42.1
6u	U	All MCs	4	50.0	4	50.0	0.183	9.1	LOS A	1.2	9.2	0.24	0.45	0.24	42.2
Approach			231	8.7	231	8.7	0.183	4.6	LOS A	1.2	9.2	0.24	0.45	0.24	40.9
North: Cope St (N)															
7	L2	All MCs	21	0.0	21	0.0	0.072	5.2	LOS A	0.4	3.0	0.44	0.59	0.44	40.7
9	R2	All MCs	51	2.1	51	2.1	0.072	8.3	LOS A	0.4	3.0	0.44	0.59	0.44	36.1
9u	U	All MCs	1	0.0	1	0.0	0.072	9.7	LOS A	0.4	3.0	0.44	0.59	0.44	39.7
Approach			73	1.4	73	1.4	0.072	7.4	LOS A	0.4	3.0	0.44	0.59	0.44	38.1
West: Raglan St (W)															
10	L2	All MCs	71	4.5	71	4.5	0.213	3.9	LOS A	1.3	9.3	0.17	0.43	0.17	39.7
11	T1	All MCs	213	6.9	213	6.9	0.213	3.8	LOS A	1.3	9.3	0.17	0.43	0.17	41.2
12u	U	All MCs	1	0.0	1	0.0	0.213	8.4	LOS A	1.3	9.3	0.17	0.43	0.17	28.7
Approach			284	6.3	284	6.3	0.213	3.9	LOS A	1.3	9.3	0.17	0.43	0.17	40.9
All Vehicles			587	6.6	587	6.6	0.213	4.6	LOS A	1.3	9.3	0.23	0.46	0.23	40.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:12 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO03 [WLO03 Botany Rd / Wellington St / Buckland St
(Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO
Network 1 (Network Folder:
Block 2 Network - 2023 AM
Peak)]

TCS 137

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Veh. veh	[Dist] m									
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Botany Rd (S)															
2	T1	All MCs	687	8.4	687	8.4	0.374	5.3	LOS A	9.8	73.8	0.38	0.36	0.38	39.4
3	R2	All MCs	74	10.0	74	10.0	*0.374	14.7	LOS B	5.7	42.8	0.42	0.46	0.42	36.3
Approach			761	8.6	761	8.6	0.374	6.2	LOS A	9.8	73.8	0.38	0.37	0.38	39.1
East: Wellington St (E)															
4	L2	All MCs	43	2.4	43	2.4	0.238	59.7	LOS E	2.4	17.2	0.96	0.74	0.96	15.1
6	R2	All MCs	22	0.0	22	0.0	0.143	59.3	LOS E	1.2	8.6	0.95	0.71	0.95	4.1
Approach			65	1.6	65	1.6	0.238	59.5	LOS E	2.4	17.2	0.95	0.73	0.95	12.1
North: Botany Rd (N)															
7	L2	All MCs	21	5.0	21	5.0	0.362	9.3	LOS A	8.1	60.4	0.31	0.29	0.31	39.8
8	T1	All MCs	977	7.2	977	7.2	0.362	4.1	LOS A	8.2	61.0	0.31	0.29	0.31	45.0
Approach			998	7.2	998	7.2	0.362	4.2	LOS A	8.2	61.0	0.31	0.29	0.31	45.0
West: Buckland St (W)															
10	L2	All MCs	11	0.0	11	0.0	0.369	56.5	LOS D	5.4	37.9	0.95	0.75	0.95	5.2
11	T1	All MCs	88	1.2	88	1.2	*0.369	51.1	LOS D	5.4	37.9	0.95	0.75	0.95	5.2
12	R2	All MCs	20	0.0	20	0.0	0.119	58.1	LOS E	1.1	7.7	0.94	0.70	0.94	15.3
Approach			119	0.9	119	0.9	0.369	52.7	LOS D	5.4	37.9	0.95	0.74	0.95	7.6
All Vehicles			1943	7.2	1943	7.2	0.374	9.8	LOS A	9.8	73.8	0.40	0.36	0.40	37.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec					sec	m	m/sec	
South: Botany Rd (S)											
P1	Full	142	53.5	LOS E	0.5	0.5	0.95	0.95	70.2	20.0	0.28
East: Wellington St (E)											

P2 Full	32	53.3	LOS E	0.1	0.1	0.94	0.94	69.9	20.0	0.29
North: Botany Rd (N)										
P3 Full	46	53.3	LOS E	0.1	0.1	0.94	0.94	70.0	20.0	0.29
West: Buckland St (W)										
P4 Full	55	53.3	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29
All Pedestrians	275	53.4	LOS E	0.5	0.5	0.95	0.95	70.1	20.0	0.29

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:12 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO04 [WLO04 Cope St / Wellington St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
South: Cope St (S)															
1	L2	All MCs	25	0.0	25	0.0	0.030	4.2	LOS A	0.2	1.2	0.18	0.52	0.18	33.9
3	R2	All MCs	11	0.0	11	0.0	0.030	6.9	LOS A	0.2	1.2	0.18	0.52	0.18	36.2
3u	U	All MCs	1	0.0	1	0.0	0.030	8.3	LOS A	0.2	1.2	0.18	0.52	0.18	37.0
Approach			37	0.0	37	0.0	0.030	5.1	LOS A	0.2	1.2	0.18	0.52	0.18	34.9
East: Wellington St (E)															
4	L2	All MCs	11	10.0	11	10.0	0.039	4.2	LOS A	0.2	1.7	0.14	0.44	0.14	36.8
5	T1	All MCs	36	2.9	36	2.9	0.039	3.9	LOS A	0.2	1.7	0.14	0.44	0.14	34.2
6u	U	All MCs	2	0.0	2	0.0	0.039	8.2	LOS A	0.2	1.7	0.14	0.44	0.14	36.5
Approach			48	4.3	48	4.3	0.039	4.2	LOS A	0.2	1.7	0.14	0.44	0.14	35.2
West: Wellington St (W)															
11	T1	All MCs	156	6.1	156	6.1	0.128	3.5	LOS A	0.6	4.7	0.07	0.46	0.07	35.3
12	R2	All MCs	23	0.0	23	0.0	0.128	6.5	LOS A	0.6	4.7	0.07	0.46	0.07	35.7
12u	U	All MCs	4	0.0	4	0.0	0.128	7.9	LOS A	0.6	4.7	0.07	0.46	0.07	28.6
Approach			183	5.2	183	5.2	0.128	4.0	LOS A	0.6	4.7	0.07	0.46	0.07	35.2
All Vehicles			268	4.3	268	4.3	0.128	4.2	LOS A	0.6	4.7	0.10	0.47	0.10	35.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:12 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO05 [WLO05 Wyndham St / Henderson Rd (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 55

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Veh. veh]	[Dist] m									
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Wyndham St (S)															
1	L2	All MCs	23	4.5	23	4.5	*0.653	63.3	LOS E	12.1	89.3	0.95	0.80	0.95	12.9
2	T1	All MCs	435	6.1	435	6.1	0.653	53.9	LOS D	12.3	90.4	0.95	0.80	0.95	20.8
3	R2	All MCs	6	16.7	6	16.7	0.653	60.7	LOS E	12.3	90.4	0.95	0.80	0.95	14.0
Approach			464	6.1	464	6.1	0.653	54.5	LOS D	12.3	90.4	0.95	0.80	0.95	17.6
East: Henderson Rd (E)															
4	L2	All MCs	192	2.7	192	2.7	0.377	10.5	LOS A	6.9	49.9	0.30	0.43	0.30	34.6
5	T1	All MCs	695	4.1	695	4.1	0.377	4.3	LOS A	6.9	49.9	0.26	0.29	0.26	32.8
6	R2	All MCs	688	8.7	688	8.7	*0.657	17.1	LOS B	7.8	58.8	0.74	0.77	0.74	25.2
Approach			1575	5.9	1575	5.9	0.657	10.7	LOS A	7.8	58.8	0.48	0.52	0.48	28.3
West: Henderson Rd (W)															
10	L2	All MCs	311	3.4	311	3.4	*0.801	85.3	LOS F	14.8	106.4	0.97	0.88	1.09	12.4
11	T1	All MCs	260	2.8	260	2.8	0.588	44.4	LOS D	13.6	97.8	0.94	0.80	0.94	5.2
Approach			571	3.1	571	3.1	0.801	66.6	LOS E	14.8	106.4	0.96	0.84	1.02	7.9
All Vehicles			2609	5.4	2609	5.4	0.801	30.7	LOS C	14.8	106.4	0.67	0.64	0.68	17.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped]	[Dist] m					
			ped/h	sec					sec	m	m/sec
South: Wyndham St (S)											
P1	Full	76	53.4	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29
East: Henderson Rd (E)											
P2	Full	79	53.4	LOS E	0.3	0.3	0.94	0.94	70.0	20.0	0.29
North: Wyndham St (N)											
P3	Full	86	53.4	LOS E	0.3	0.3	0.95	0.95	70.1	20.0	0.29
West: Henderson Rd (W)											

P4 Full	166	53.6	LOS E	0.5	0.5	0.95	0.95	70.2	20.0	0.28
All Pedestrians	407	53.5	LOS E	0.5	0.5	0.95	0.95	70.1	20.0	0.29

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Kcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:12 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO01 [WLO01 Botany Rd / Raglan St / Henderson Rd
(Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO
Network 1 (Network Folder:
Block 2 Network - 2023 PM
Peak)]

TCS 47

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Botany Rd (S)															
1	L2	All MCs	597	4.9	597	4.9	*0.700	57.0	LOS E	17.2	125.7	1.00	0.87	1.01	11.5
Approach			597	4.9	597	4.9	0.700	57.0	LOS E	17.2	125.7	1.00	0.87	1.01	11.5
East: Raglan St (E)															
4	L2	All MCs	31	0.0	31	0.0	0.596	75.4	LOS F	7.6	54.7	0.96	0.78	0.96	5.4
5	T1	All MCs	249	4.6	249	4.6	0.596	70.0	LOS E	7.6	55.1	0.96	0.78	0.96	5.4
Approach			280	4.1	280	4.1	0.596	70.6	LOS F	7.6	55.1	0.96	0.78	0.96	3.9
North: Botany Rd (N)															
7	L2	All MCs	48	8.7	48	8.7	0.399	13.7	LOS A	12.0	88.0	0.44	0.42	0.44	32.4
8	T1	All MCs	986	5.7	986	5.7	0.399	7.4	LOS A	12.1	89.1	0.44	0.41	0.44	32.7
9	R2	All MCs	657	2.1	657	2.1	*0.775	54.0	LOS D	18.9	134.8	1.00	0.89	1.07	10.4
Approach			1692	4.4	1692	4.4	0.775	25.7	LOS B	18.9	134.8	0.66	0.59	0.68	18.0
West: Henderson Rd (W)															
11	T1	All MCs	311	1.0	311	1.0	0.708	9.5	LOS A	5.1	36.2	0.39	0.34	0.40	18.2
12	R2	All MCs	63	3.3	63	3.3	*0.708	36.1	LOS C	5.1	36.2	0.76	0.70	0.80	7.9
Approach			374	1.4	374	1.4	0.708	14.0	LOS A	5.1	36.2	0.45	0.40	0.47	15.0
All Vehicles			2942	4.1	2942	4.1	0.775	34.8	LOS C	18.9	134.8	0.73	0.64	0.75	13.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Botany Rd (S)											
P1	Full	34	53.3	LOS E	0.1	0.1	0.94	0.94	69.9	20.0	0.29
East: Raglan St (E)											
P2	Full	60	53.3	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29

North: Botany Rd (N)											
P3	Full	114	53.5	LOS E	0.4	0.4	0.95	0.95	70.1	20.0	0.29
West: Henderson Rd (W)											
P4	Full	76	53.4	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29
All Pedestrians		283	53.4	LOS E	0.4	0.4	0.94	0.94	70.1	20.0	0.29

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:16 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO02 [WLO02 Raglan St / Cope St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
East: Raglan St (E)															
5	T1	All MCs	211	5.0	211	5.0	0.200	4.2	LOS A	1.4	9.9	0.28	0.45	0.28	40.2
6	R2	All MCs	35	3.0	35	3.0	0.200	7.2	LOS A	1.4	9.9	0.28	0.45	0.28	42.0
6u	U	All MCs	4	0.0	4	0.0	0.200	8.6	LOS A	1.4	9.9	0.28	0.45	0.28	42.5
Approach			249	4.6	249	4.6	0.200	4.7	LOS A	1.4	9.9	0.28	0.45	0.28	40.7
North: Cope St (N)															
7	L2	All MCs	20	0.0	20	0.0	0.088	5.8	LOS A	0.5	3.6	0.50	0.61	0.50	40.2
9	R2	All MCs	61	0.0	61	0.0	0.088	8.7	LOS A	0.5	3.6	0.50	0.61	0.50	35.3
9u	U	All MCs	1	0.0	1	0.0	0.088	10.2	LOS A	0.5	3.6	0.50	0.61	0.50	39.2
Approach			82	0.0	82	0.0	0.088	8.0	LOS A	0.5	3.6	0.50	0.61	0.50	37.2
West: Raglan St (W)															
10	L2	All MCs	68	0.0	68	0.0	0.260	3.9	LOS A	1.6	11.6	0.18	0.43	0.18	39.6
11	T1	All MCs	284	2.6	284	2.6	0.260	3.8	LOS A	1.6	11.6	0.18	0.43	0.18	41.2
12u	U	All MCs	6	0.0	6	0.0	0.260	8.5	LOS A	1.6	11.6	0.18	0.43	0.18	28.6
Approach			359	2.1	359	2.1	0.260	3.9	LOS A	1.6	11.6	0.18	0.43	0.18	40.9
All Vehicles			691	2.7	691	2.7	0.260	4.7	LOS A	1.6	11.6	0.25	0.46	0.25	40.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:16 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO03 [WLO03 Botany Rd / Wellington St / Buckland St
(Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO
Network 1 (Network Folder:
Block 2 Network - 2023 PM
Peak)]

TCS 137

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Veh. veh	[Dist] m									
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Botany Rd (S)															
2	T1	All MCs	567	5.2	567	5.2	0.360	4.8	LOS A	9.4	69.0	0.35	0.34	0.35	40.5
3	R2	All MCs	102	0.0	102	0.0	0.360	11.6	LOS A	3.4	24.1	0.39	0.55	0.39	35.2
Approach			669	4.4	669	4.4	0.360	5.8	LOS A	9.4	69.0	0.36	0.37	0.36	39.6
East: Wellington St (E)															
4	L2	All MCs	57	7.4	57	7.4	0.330	60.5	LOS E	3.2	24.0	0.97	0.75	0.97	15.0
6	R2	All MCs	23	0.0	23	0.0	0.148	59.3	LOS E	1.3	9.0	0.95	0.71	0.95	4.1
Approach			80	5.3	80	5.3	0.330	60.2	LOS E	3.2	24.0	0.96	0.74	0.96	12.5
North: Botany Rd (N)															
7	L2	All MCs	21	0.0	21	0.0	*0.381	6.7	LOS A	4.8	35.1	0.17	0.17	0.17	44.7
8	T1	All MCs	1059	5.5	1059	5.5	0.381	1.7	LOS A	4.8	35.1	0.16	0.16	0.16	47.7
Approach			1080	5.4	1080	5.4	0.381	1.8	LOS A	4.8	35.1	0.16	0.16	0.16	47.7
West: Buckland St (W)															
10	L2	All MCs	6	0.0	6	0.0	0.318	56.1	LOS D	4.4	31.1	0.95	0.74	0.95	5.2
11	T1	All MCs	75	1.4	75	1.4	*0.318	51.7	LOS D	4.4	31.1	0.95	0.74	0.95	5.2
12	R2	All MCs	16	0.0	16	0.0	0.094	57.8	LOS E	0.9	6.0	0.94	0.69	0.94	15.3
Approach			97	1.1	97	1.1	0.318	53.0	LOS D	4.4	31.1	0.95	0.73	0.95	7.5
All Vehicles			1926	4.8	1926	4.8	0.381	8.2	LOS A	9.4	69.0	0.30	0.28	0.30	39.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec					sec	m	m/sec	
South: Botany Rd (S)											
P1	Full	60	53.3	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29
East: Wellington St (E)											

P2 Full	47	53.3	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29
North: Botany Rd (N)										
P3 Full	33	53.3	LOS E	0.1	0.1	0.94	0.94	69.9	20.0	0.29
West: Buckland St (W)										
P4 Full	64	53.3	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29
All Pedestrians	204	53.3	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:16 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO04 [WLO04 Cope St / Wellington St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Cope St (S)															
1	L2	All MCs	23	0.0	23	0.0	0.028	4.3	LOS A	0.2	1.1	0.21	0.52	0.21	33.7
3	R2	All MCs	9	0.0	9	0.0	0.028	7.0	LOS A	0.2	1.1	0.21	0.52	0.21	36.0
3u	U	All MCs	1	0.0	1	0.0	0.028	8.4	LOS A	0.2	1.1	0.21	0.52	0.21	36.9
Approach			34	0.0	34	0.0	0.028	5.2	LOS A	0.2	1.1	0.21	0.52	0.21	34.7
East: Wellington St (E)															
4	L2	All MCs	11	0.0	11	0.0	0.048	4.1	LOS A	0.3	2.0	0.14	0.44	0.14	38.1
5	T1	All MCs	48	4.3	48	4.3	0.048	3.9	LOS A	0.3	2.0	0.14	0.44	0.14	34.3
6u	U	All MCs	2	0.0	2	0.0	0.048	8.2	LOS A	0.3	2.0	0.14	0.44	0.14	36.6
Approach			61	3.4	61	3.4	0.048	4.1	LOS A	0.3	2.0	0.14	0.44	0.14	35.4
West: Wellington St (W)															
11	T1	All MCs	171	0.6	171	0.6	0.134	3.5	LOS A	0.7	4.8	0.07	0.46	0.07	36.0
12	R2	All MCs	21	0.0	21	0.0	0.134	6.5	LOS A	0.7	4.8	0.07	0.46	0.07	35.7
12u	U	All MCs	6	0.0	6	0.0	0.134	7.8	LOS A	0.7	4.8	0.07	0.46	0.07	28.7
Approach			198	0.5	198	0.5	0.134	3.9	LOS A	0.7	4.8	0.07	0.46	0.07	35.8
All Vehicles			293	1.1	293	1.1	0.134	4.1	LOS A	0.7	4.8	0.10	0.46	0.10	35.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:16 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO05 [WLO05 Wyndham St / Henderson Rd (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 55

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Wyndham St (S)															
1	L2	All MCs	17	0.0	17	0.0	* 0.725	69.6	LOS E	12.9	91.3	0.98	0.87	1.05	12.0
2	T1	All MCs	428	1.7	428	1.7	0.725	61.1	LOS E	12.9	91.9	0.98	0.87	1.05	19.2
3	R2	All MCs	922.2		922.2		0.725	67.9	LOS E	12.8	91.9	0.98	0.87	1.05	12.7
Approach			455	2.1	455	2.1	0.725	61.5	LOS E	12.9	91.9	0.98	0.87	1.05	16.4
East: Henderson Rd (E)															
4	L2	All MCs	171	2.5	171	2.5	0.353	9.4	LOS A	6.3	44.8	0.27	0.39	0.27	36.2
5	T1	All MCs	729	2.3	729	2.3	0.353	3.3	LOS A	6.3	44.8	0.22	0.25	0.22	35.4
6	R2	All MCs	603	5.6	603	5.6	* 0.530	16.1	LOS B	5.9	43.4	0.66	0.74	0.66	25.9
Approach			1503	3.6	1503	3.6	0.530	9.1	LOS A	6.3	44.8	0.40	0.47	0.40	29.8
West: Henderson Rd (W)															
10	L2	All MCs	342	1.2	342	1.2	* 0.770	80.9	LOS F	15.6	110.6	0.96	0.86	1.04	13.0
11	T1	All MCs	364	0.9	364	0.9	0.729	44.6	LOS D	19.8	139.7	0.97	0.85	0.99	5.2
Approach			706	1.0	706	1.0	0.770	62.2	LOS E	19.8	139.7	0.97	0.85	1.01	7.9
All Vehicles			2664	2.7	2664	2.7	0.770	32.1	LOS C	19.8	139.7	0.65	0.64	0.68	16.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Wyndham St (S)											
P1	Full	66	53.4	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29
East: Henderson Rd (E)											
P2	Full	104	53.4	LOS E	0.3	0.3	0.95	0.95	70.1	20.0	0.29
North: Wyndham St (N)											
P3	Full	123	53.5	LOS E	0.4	0.4	0.95	0.95	70.1	20.0	0.29
West: Henderson Rd (W)											

P4 Full	138	53.5	LOS E	0.4	0.4	0.95	0.95	70.2	20.0	0.28
All Pedestrians	432	53.5	LOS E	0.4	0.4	0.95	0.95	70.1	20.0	0.29

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Kcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:16 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO01 [WLO01 Botany Rd / Raglan St / Henderson Rd
(Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO
Network 1 (Network Folder:
Block 2 Network - 2023
Weekend Peak)]

TCS 47

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Veh. veh]	[Dist]				v/c	sec				
South: Botany Rd (S)															
1	L2	All MCs	500	3.2	500	3.2	*0.597	55.1	LOS D	13.9	100.3	1.00	0.84	1.00	11.8
Approach			500	3.2	500	3.2	0.597	55.1	LOS D	13.9	100.3	1.00	0.84	1.00	11.8
East: Raglan St (E)															
4	L2	All MCs	20	5.3	20	5.3	0.565	76.2	LOS F	6.8	49.5	0.96	0.78	0.96	5.3
5	T1	All MCs	233	3.6	233	3.6	0.565	69.6	LOS E	6.9	49.8	0.96	0.77	0.96	5.3
Approach			253	3.8	253	3.8	0.565	70.1	LOS E	6.9	49.8	0.96	0.78	0.96	3.9
North: Botany Rd (N)															
7	L2	All MCs	84	8.8	84	8.8	0.123	13.6	LOS A	2.7	20.4	0.33	0.47	0.33	32.3
8	T1	All MCs	838	4.5	838	4.5	0.616	11.6	LOS A	21.9	159.1	0.52	0.49	0.52	31.4
9	R2	All MCs	545	3.1	545	3.1	*0.613	48.5	LOS D	14.2	101.8	0.94	0.83	0.94	11.6
Approach			1467	4.2	1467	4.2	0.616	25.4	LOS B	21.9	159.1	0.67	0.62	0.67	18.2
West: Henderson Rd (W)															
11	T1	All MCs	176	1.8	176	1.8	0.475	26.4	LOS B	5.4	38.6	0.64	0.52	0.64	8.9
12	R2	All MCs	51	0.0	51	0.0	*0.475	66.3	LOS E	3.9	27.6	0.99	0.77	0.99	4.4
Approach			226	1.4	226	1.4	0.475	35.3	LOS C	5.4	38.6	0.72	0.57	0.72	7.2
All Vehicles			2446	3.7	2446	3.7	0.616	37.0	LOS C	21.9	159.1	0.77	0.68	0.77	13.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped]	[Dist]					
South: Botany Rd (S)											
P1	Full	35	53.3	LOS E	0.1	0.1	0.94	0.94	69.9	20.0	0.29
East: Raglan St (E)											
P2	Full	58	53.3	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29

North: Botany Rd (N)											
P3	Full	73	53.4	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29
West: Henderson Rd (W)											
P4	Full	73	53.4	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29
All Pedestrians		238	53.3	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:20 PM
 Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO02 [WLO02 Raglan St / Cope St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Raglan St (E)															
5	T1	All MCs	171	5.6	171	5.6	0.163	4.3	LOS A	1.0	7.6	0.30	0.45	0.30	40.2
6	R2	All MCs	20	0.0	20	0.0	0.163	7.3	LOS A	1.0	7.6	0.30	0.45	0.30	42.0
6u	U	All MCs	3	0.0	3	0.0	0.163	8.7	LOS A	1.0	7.6	0.30	0.45	0.30	42.5
Approach			194	4.9	194	4.9	0.163	4.7	LOS A	1.0	7.6	0.30	0.45	0.30	40.6
North: Cope St (N)															
7	L2	All MCs	24	0.0	24	0.0	0.102	5.2	LOS A	0.6	4.3	0.43	0.58	0.43	40.6
9	R2	All MCs	78	0.0	78	0.0	0.102	8.2	LOS A	0.6	4.3	0.43	0.58	0.43	35.9
9u	U	All MCs	1	0.0	1	0.0	0.102	9.6	LOS A	0.6	4.3	0.43	0.58	0.43	39.6
Approach			103	0.0	103	0.0	0.102	7.5	LOS A	0.6	4.3	0.43	0.58	0.43	37.7
West: Raglan St (W)															
10	L2	All MCs	55	0.0	55	0.0	0.184	3.8	LOS A	1.0	7.4	0.12	0.43	0.12	40.0
11	T1	All MCs	201	5.2	201	5.2	0.184	3.7	LOS A	1.0	7.4	0.12	0.43	0.12	41.6
12u	U	All MCs	4	0.0	4	0.0	0.184	8.3	LOS A	1.0	7.4	0.12	0.43	0.12	29.4
Approach			260	4.0	260	4.0	0.184	3.8	LOS A	1.0	7.4	0.12	0.43	0.12	41.2
All Vehicles			557	3.6	557	3.6	0.184	4.8	LOS A	1.0	7.6	0.24	0.47	0.24	40.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:20 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO03 [WLO03 Botany Rd / Wellington St / Buckland St
(Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO
Network 1 (Network Folder:
Block 2 Network - 2023
Weekend Peak)]

TCS 137

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				
South: Botany Rd (S)															
2	T1	All MCs	462	3.4	462	3.4	0.393	5.2	LOS A	8.6	62.2	0.37	0.36	0.37	39.3
3	R2	All MCs	53	2.0	53	2.0	0.393	16.6	LOS B	8.6	62.2	0.40	0.40	0.40	38.1
Approach			515	3.3	515	3.3	0.393	6.3	LOS A	8.6	62.2	0.37	0.36	0.37	39.1
East: Wellington St (E)															
4	L2	All MCs	45	2.3	45	2.3	0.273	63.3	LOS E	2.6	18.3	0.97	0.74	0.97	14.9
6	R2	All MCs	25	0.0	25	0.0	0.157	59.3	LOS E	1.4	9.8	0.95	0.72	0.95	4.1
Approach			71	1.5	71	1.5	0.273	61.9	LOS E	2.6	18.3	0.96	0.73	0.96	11.8
North: Botany Rd (N)															
7	L2	All MCs	26	0.0	26	0.0	0.123	9.5	LOS A	1.2	8.4	0.13	0.18	0.13	44.0
8	T1	All MCs	882	4.4	882	4.4	*0.614	5.8	LOS A	9.4	68.4	0.22	0.22	0.22	47.1
Approach			908	4.3	908	4.3	0.614	5.9	LOS A	9.4	68.4	0.22	0.21	0.22	43.6
West: Buckland St (W)															
10	L2	All MCs	13	0.0	13	0.0	0.251	56.8	LOS E	3.2	22.7	0.94	0.72	0.94	5.1
11	T1	All MCs	47	0.0	47	0.0	*0.251	52.0	LOS D	3.2	22.7	0.94	0.72	0.94	5.1
12	R2	All MCs	22	4.8	22	4.8	0.148	59.6	LOS E	1.2	9.0	0.95	0.71	0.95	15.0
Approach			82	1.3	82	1.3	0.251	54.8	LOS D	3.2	22.7	0.95	0.72	0.95	8.6
All Vehicles			1576	3.7	1576	3.7	0.614	11.1	LOS A	9.4	68.4	0.34	0.31	0.34	36.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Botany Rd (S)											
P1	Full	95	53.4	LOS E	0.3	0.3	0.95	0.95	70.1	20.0	0.29
East: Wellington St (E)											

P2 Full	40	53.3	LOS E	0.1	0.1	0.94	0.94	70.0	20.0	0.29
North: Botany Rd (N)										
P3 Full	19	53.2	LOS E	0.1	0.1	0.94	0.94	69.9	20.0	0.29
West: Buckland St (W)										
P4 Full	84	53.4	LOS E	0.3	0.3	0.94	0.94	70.1	20.0	0.29
All Pedestrians	238	53.4	LOS E	0.3	0.3	0.94	0.94	70.0	20.0	0.29

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:20 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO04 [WLO04 Cope St / Wellington St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

NA
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
South: Cope St (S)															
1	L2	All MCs	19	0.0	19	0.0	0.029	4.3	LOS A	0.2	1.1	0.20	0.54	0.20	33.2
3	R2	All MCs	15	0.0	15	0.0	0.029	7.0	LOS A	0.2	1.1	0.20	0.54	0.20	35.7
3u	U	All MCs	1	0.0	1	0.0	0.029	8.4	LOS A	0.2	1.1	0.20	0.54	0.20	36.5
Approach			35	0.0	35	0.0	0.029	5.5	LOS A	0.2	1.1	0.20	0.54	0.20	34.7
East: Wellington St (E)															
4	L2	All MCs	21	5.0	21	5.0	0.050	4.1	LOS A	0.3	2.1	0.10	0.45	0.10	37.7
5	T1	All MCs	44	2.4	44	2.4	0.050	3.9	LOS A	0.3	2.1	0.10	0.45	0.10	34.7
6u	U	All MCs	1	0.0	1	0.0	0.050	8.1	LOS A	0.3	2.1	0.10	0.45	0.10	36.9
Approach			66	3.2	66	3.2	0.050	4.0	LOS A	0.3	2.1	0.10	0.45	0.10	36.1
West: Wellington St (W)															
11	T1	All MCs	109	1.0	109	1.0	0.090	3.5	LOS A	0.4	3.2	0.09	0.46	0.09	35.8
12	R2	All MCs	9	0.0	9	0.0	0.090	6.5	LOS A	0.4	3.2	0.09	0.46	0.09	35.6
12u	U	All MCs	7	0.0	7	0.0	0.090	7.9	LOS A	0.4	3.2	0.09	0.46	0.09	28.5
Approach			126	0.8	126	0.8	0.090	4.0	LOS A	0.4	3.2	0.09	0.46	0.09	35.6
All Vehicles			227	1.4	227	1.4	0.090	4.2	LOS A	0.4	3.2	0.11	0.47	0.11	35.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:20 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: WLO05 [WLO05 Wyndham St / Henderson Rd (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: WLO-N1 [WLO Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 55

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Veh. veh]	[Dist] m									
South: Wyndham St (S)															
1	L2	All MCs	17	0.0	17	0.0	*0.743	70.4	LOS E	13.6	97.9	0.98	0.88	1.06	12.1
2	T1	All MCs	456	3.9	456	3.9	0.743	61.8	LOS E	13.6	98.6	0.98	0.88	1.06	19.3
3	R2	All MCs	6	0.0	6	0.0	0.743	68.5	LOS E	13.6	98.6	0.98	0.88	1.06	12.8
Approach			479	3.7	479	3.7	0.743	62.2	LOS E	13.6	98.6	0.98	0.88	1.06	16.3
East: Henderson Rd (E)															
4	L2	All MCs	146	0.7	146	0.7	0.286	7.4	LOS A	3.1	21.9	0.16	0.33	0.16	38.2
5	T1	All MCs	558	4.2	558	4.2	0.286	2.2	LOS A	3.1	21.9	0.14	0.19	0.14	38.3
6	R2	All MCs	483	7.0	483	7.0	*0.524	17.6	LOS B	5.1	37.7	0.68	0.74	0.68	24.9
Approach			1187	4.9	1187	4.9	0.524	9.1	LOS A	5.1	37.7	0.37	0.43	0.37	29.9
West: Henderson Rd (W)															
10	L2	All MCs	518	2.4	518	2.4	*0.990	116.9	LOS F	33.8	241.6	0.96	1.08	1.37	9.2
11	T1	All MCs	253	0.8	253	0.8	0.435	36.3	LOS C	11.9	83.8	0.86	0.72	0.86	6.2
Approach			771	1.9	771	1.9	0.990	90.5	LOS F	33.8	241.6	0.93	0.96	1.20	6.8
All Vehicles			2437	3.7	2437	3.7	0.990	45.3	LOS D	33.8	241.6	0.66	0.69	0.77	14.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped]	[Dist] m					
South: Wyndham St (S)											
P1	Full	54	53.3	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29
East: Henderson Rd (E)											
P2	Full	48	53.3	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29
North: Wyndham St (N)											
P3	Full	54	53.3	LOS E	0.2	0.2	0.94	0.94	70.0	20.0	0.29
West: Henderson Rd (W)											

P4 Full	83	53.4	LOS E	0.3	0.3	0.94	0.94	70.1	20.0	0.29
All Pedestrians	239	53.3	LOS E	0.3	0.3	0.94	0.94	70.0	20.0	0.29

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Kcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:21:20 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\08 SM C&SW_WLO (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD01 [SYD01 Railway Pde / Gleeson Ave (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: SYD-N1 [SYD Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 3320

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 75 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Gleeson Ave (SE)															
1	L2	All MCs	915	7.4	915	7.4	0.401	4.9	LOS A	0.0	0.0	0.00	0.51	0.00	42.2
Approach			915	7.4	915	7.4	0.401	4.9	LOS A	0.0	0.0	0.00	0.51	0.00	42.2
NorthEast: Railway Pde (NE)															
4	L2	All MCs	1022	6.1	1022	6.1	*0.442	12.2	LOS A	8.3	61.4	0.46	0.69	0.46	33.3
5	T1	All MCs	53	6.0	53	6.0	*0.042	8.4	LOS A	0.3	2.5	0.34	0.26	0.34	55.0
Approach			1075	6.1	1075	6.1	0.442	12.0	LOS A	8.3	61.4	0.45	0.67	0.45	32.4
All Vehicles			1989	6.7	1989	6.7	0.442	8.7	LOS A	8.3	61.4	0.24	0.60	0.24	36.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
		ped/h	sec					sec	m	m/sec	
NorthEast: Railway Pde (NE)											
P2	Full	227	16.6	LOS B	0.3	0.3	0.82	0.82	33.3	20.0	0.60
P2S	Slip/Bypass	254	31.2	LOS D	0.5	0.5	0.92	0.92	47.8	20.0	0.42
All Pedestrians		481	24.3	LOS C	0.5	0.5	0.87	0.87	41.0	20.0	0.49

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: SYD02 [SYD02 Burrows Ave / Gleeson Ave (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: SYD-N1 [SYD Network 1 (Network Folder: Block 2 Network - 2023 AM Peak)]

TCS 1152

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 105 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]				km/h
			veh/h		veh/h					veh	m				
SouthEast: Gleeson Ave (SE)															
2	T1	All MCs	680	6.2	680	6.2	0.353	15.5	LOS B	10.1	74.2	0.63	0.54	0.63	20.7
Approach			680	6.2	680	6.2	0.353	15.5	LOS B	10.1	74.2	0.63	0.54	0.63	20.7
NorthEast: Burrows Ave (NE)															
4	L2	All MCs	33	6.5	33	6.5	0.152	50.1	LOS D	1.5	11.3	0.93	0.72	0.93	14.6
6	R2	All MCs	202	5.2	202	5.2	*0.431	51.3	LOS D	4.9	36.1	0.96	0.78	0.96	9.8
Approach			235	5.4	235	5.4	0.431	51.1	LOS D	4.9	36.1	0.96	0.77	0.96	10.5
NorthWest: Gleeson Ave (NW)															
7	L2	All MCs	181	1.7	181	1.7	0.539	6.8	LOS A	7.2	52.9	0.30	0.41	0.30	34.8
8	T1	All MCs	840	7.0	840	7.0	*0.539	5.3	LOS A	7.4	54.9	0.30	0.33	0.30	40.8
Approach			1021	6.1	1021	6.1	0.539	5.5	LOS A	7.4	54.9	0.30	0.34	0.30	39.4
SouthWest: Burrows Ave (SW)															
10	L2	All MCs	31	48.3	31	48.3	0.140	55.1	LOS D	1.0	9.0	0.94	0.70	0.94	11.2
11	T1	All MCs	6	0.0	6	0.0	0.140	42.5	LOS C	1.0	9.0	0.94	0.70	0.94	17.3
12	R2	All MCs	5	0.0	5	0.0	0.017	43.3	LOS D	0.2	1.6	0.85	0.65	0.85	17.2
Approach			42	35.0	42	35.0	0.140	51.7	LOS D	1.0	9.0	0.93	0.69	0.93	13.0
All Vehicles			1978	6.7	1978	6.7	0.539	15.4	LOS B	10.1	74.2	0.51	0.47	0.51	23.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist]			sec	m	m/sec
					ped	m					
SouthEast: Gleeson Ave (SE)											
P1	Full	13	43.9	LOS E	0.0	0.0	0.91	0.91	60.6	20.0	0.33
NorthEast: Burrows Ave (NE)											
P2	Full	148	46.0	LOS E	0.4	0.4	0.94	0.94	62.7	20.0	0.32
NorthWest: Gleeson Ave (NW)											

P3 Full	365	42.7	LOS E	1.0	1.0	0.91	0.91	59.4	20.0	0.34
SouthWest: Burrows Ave (SW)										
P4 Full	253	46.2	LOS E	0.7	0.7	0.94	0.94	62.9	20.0	0.32
All Pedestrians	779	44.5	LOS E	1.0	1.0	0.93	0.93	61.2	20.0	0.33

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:50:20 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD03 [SYD03 Burrows Ave / George St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
SouthEast: George St (SE)															
4	L2	All MCs	16	0.0	16	0.0	0.025	8.2	LOSA	0.1	0.5	0.28	0.88	0.28	30.4
6	R2	All MCs	8	0.0	8	0.0	0.025	9.4	LOSA	0.1	0.5	0.28	0.88	0.28	26.5
Approach			24	0.0	24	0.0	0.025	8.6	LOSA	0.1	0.5	0.28	0.88	0.28	29.2
NorthEast: Burrows Ave (NE)															
7	L2	All MCs	5	0.0	5	0.0	0.189	4.0	LOSA	1.0	7.2	0.28	0.15	0.28	39.8
8	T1	All MCs	191	6.1	191	6.1	0.189	0.8	LOSA	1.0	7.2	0.28	0.15	0.28	45.9
Approach			196	5.9	196	5.9	0.189	0.9	NA	1.0	7.2	0.28	0.15	0.28	45.7
SouthWest: Burrows Ave (SW)															
2	T1	All MCs	200	5.8	200	5.8	0.200	0.8	LOSA	0.9	6.6	0.23	0.13	0.23	45.4
3	R2	All MCs	8	12.5	8	12.5	0.200	5.6	LOSA	0.9	6.6	0.23	0.13	0.23	39.6
Approach			208	6.1	208	6.1	0.200	1.0	NA	0.9	6.6	0.23	0.13	0.23	45.1
All Vehicles			428	5.7	428	5.7	0.200	1.4	NA	1.0	7.2	0.25	0.18	0.25	43.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 9 February 2024 2:44:26 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD04 [SYD04 Pedestrian Mid-block Crossing at Sydenham Rd (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 4946

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 95 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
NorthWest: Sydenham Rd (NW)															
28	T1	All MCs	1075	5.9	1075	5.9	*0.429	6.4	LOS A	8.6	63.5	0.48	0.47	0.48	44.5
29	R2	All MCs	24	4.3	24	4.3	0.429	12.1	LOS A	8.4	61.5	0.48	0.48	0.48	39.3
Approach			1099	5.8	1099	5.8	0.429	6.5	LOS A	8.6	63.5	0.48	0.47	0.48	44.3
SouthWest: Railway Pde (SW)															
32	R2	All MCs	11	40.0	11	40.0	*0.036	31.6	LOS C	0.3	3.3	0.86	0.67	0.86	24.7
Approach			11	40.0	11	40.0	0.036	31.6	LOS C	0.3	3.3	0.86	0.67	0.86	24.7
All Vehicles			1109	6.2	1109	6.2	0.429	6.7	LOS A	8.6	63.5	0.48	0.47	0.48	43.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped]	[Dist]			sec	m	m/sec
						ped	m					
NorthWest: Sydenham Rd (NW)												
P7	Full	16	17	26.1	LOS C	0.0	0.0	0.81	0.81	192.7	200.0	1.04
All Pedestrians		16	17	26.1	LOS C	0.0	0.0	0.81	0.81	192.7	200.0	1.04

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 9 February 2024 2:44:27 PM
 Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD05 [SYD05 Marrickville Rd / Buckley St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
SouthEast: Marrickville Rd (SE)															
2	T1	All MCs	473	8.2	473	8.2	0.262	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	All MCs	549	9.0	549	9.0	0.753	8.7	LOS A	5.5	41.4	0.57	0.69	0.74	42.2
Approach			1022	8.7	1022	8.7	0.753	4.7	NA	5.5	41.4	0.31	0.37	0.40	49.8
NorthWest: Marrickville Rd (NW)															
7	L2	All MCs	439	6.5	439	6.5	0.752	9.0	LOS A	4.9	36.1	0.64	0.73	0.83	47.0
Approach			439	6.5	439	6.5	0.752	9.0	NA	4.9	36.1	0.64	0.73	0.83	47.0
All Vehicles			1461	8.0	1461	8.0	0.753	6.0	NA	5.5	41.4	0.40	0.48	0.53	48.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 9 February 2024 2:44:27 PM
 Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD06 [SYD06 Sydenham Rd / Buckley St (Site Folder: Block 2 Model - 2023 AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
NorthWest: Sydenham Rd (NW)															
2	T1	All MCs	674	5.3	674	5.3	0.363	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			674	5.3	674	5.3	0.363	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
SouthWest: Buckley St (SW)															
4	L2	All MCs	540	8.8	540	8.8	0.318	5.7	LOS A	0.0	0.0	0.00	0.52	0.00	50.8
6	R2	All MCs	420	6.3	420	6.3	0.241	5.8	LOS A	0.0	0.0	0.00	0.63	0.00	43.4
Approach			960	7.7	960	7.7	0.318	5.8	NA	0.0	0.0	0.00	0.57	0.00	48.4
All Vehicles			1634	6.7	1634	6.7	0.363	3.4	NA	0.0	0.0	0.00	0.34	0.00	52.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 9 February 2024 2:44:27 PM
 Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD01 [SYD01 Railway Pde / Gleeson Ave (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: SYD-N1 [SYD Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 3320

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 75 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	[Dist] m				km/h
SouthEast: Gleeson Ave (SE)															
1	L2	All MCs	1288	2.6	1288	2.6	0.538	5.5	LOS A	0.0	0.0	0.00	0.51	0.00	43.0
Approach			1288	2.6	1288	2.6	0.538	5.5	LOS A	0.0	0.0	0.00	0.51	0.00	43.0
NorthEast: Railway Pde (NE)															
4	L2	All MCs	845	4.1	845	4.1	*0.318	8.9	LOS A	4.8	34.4	0.32	0.64	0.32	36.9
5	T1	All MCs	67	0.0	67	0.0	0.046	10.3	LOS A	0.6	4.4	0.28	0.22	0.28	54.0
Approach			913	3.8	913	3.8	0.318	9.0	LOS A	4.8	34.4	0.32	0.61	0.32	37.4
All Vehicles			2201	3.1	2201	3.1	0.538	7.0	LOS A	4.8	34.4	0.13	0.55	0.13	40.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	[Dist] m			sec	m	m/sec
NorthEast: Railway Pde (NE)											
P2	Full	269	31.2	LOS D	0.5	0.5	0.92	0.92	47.8	20.0	0.42
P2S	Slip/Bypass	317	31.2	LOS D	0.6	0.6	0.92	0.92	47.9	20.0	0.42
All Pedestrians		586	31.2	LOS D	0.6	0.6	0.92	0.92	47.9	20.0	0.42

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: SYD02 [SYD02 Burrows Ave / Gleeson Ave (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: SYD-N1 [SYD Network 1 (Network Folder: Block 2 Network - 2023 PM Peak)]

TCS 1152

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Site User-Given Phase Times)

Vehicle Movement Performance													
Mov ID	Turn	Mov Class	Demand Flows [Total HV]	Arrival Flows [Total HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. veh]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			veh/h %	veh/h %	v/c	sec		Dist] m				km/h	
SouthEast: Gleeson Ave (SE)													
2	T1	All MCs	916 1.6	916 1.6	*0.410	13.4	LOS A	13.3	94.3	0.59	0.52	0.59	22.8
Approach			916 1.6	916 1.6	0.410	13.4	LOS A	13.3	94.3	0.59	0.52	0.59	22.8
NorthEast: Burrows Ave (NE)													
4	L2	All MCs	41 0.0	41 0.0	0.187	72.1	LOS F	2.0	14.3	0.94	0.73	0.94	14.1
6	R2	All MCs	345 1.2	345 1.2	*0.776	68.7	LOS E	10.2	72.1	1.00	0.90	1.16	8.7
Approach			386 1.1	386 1.1	0.776	69.1	LOS E	10.2	72.1	0.99	0.88	1.14	8.1
NorthWest: Gleeson Ave (NW)													
7	L2	All MCs	196 1.6	196 1.6	0.399	6.8	LOS A	5.1	37.1	0.25	0.42	0.25	34.7
8	T1	All MCs	654 5.0	654 5.0	0.399	4.9	LOS A	5.4	39.5	0.25	0.29	0.25	41.6
Approach			849 4.2	849 4.2	0.399	5.3	LOS A	5.4	39.5	0.25	0.32	0.25	39.5
SouthWest: Burrows Ave (SW)													
10	L2	All MCs	32 46.7	32 46.7	0.163	58.9	LOS E	1.0	9.3	0.96	0.70	0.96	10.5
11	T1	All MCs	4 0.0	4 0.0	*0.163	46.8	LOS D	1.0	9.3	0.95	0.70	0.95	16.2
12	R2	All MCs	24 17.4	24 17.4	0.106	49.6	LOS D	1.2	9.3	0.90	0.71	0.90	15.7
Approach			60 31.6	60 31.6	0.163	54.3	LOS D	1.2	9.3	0.93	0.71	0.93	13.1
All Vehicles			2212 3.3	2212 3.3	0.776	21.1	LOS B	13.3	94.3	0.54	0.51	0.57	19.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
SouthEast: Gleeson Ave (SE)											
P1	Full	22	46.4	LOS E	0.1	0.1	0.92	0.92	63.1	20.0	0.32
NorthEast: Burrows Ave (NE)											
P2	Full	171	48.6	LOS E	0.5	0.5	0.94	0.94	65.2	20.0	0.31
NorthWest: Gleeson Ave (NW)											

P3 Full	245	45.0	LOS E	0.7	0.7	0.91	0.91	61.7	20.0	0.32
SouthWest: Burrows Ave (SW)										
P4 Full	123	48.5	LOS E	0.4	0.4	0.94	0.94	65.1	20.0	0.31
All Pedestrians	561	46.9	LOS E	0.7	0.7	0.93	0.93	63.6	20.0	0.31

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:50:21 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD03 [SYD03 Burrows Ave / George St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
SouthEast: George St (SE)															
4	L2	All MCs	13	0.0	13	0.0	0.018	8.9	LOS A	0.1	0.4	0.34	0.88	0.34	29.9
6	R2	All MCs	3	0.0	3	0.0	0.018	10.7	LOS A	0.1	0.4	0.34	0.88	0.34	25.9
Approach			16	0.0	16	0.0	0.018	9.3	LOS A	0.1	0.4	0.34	0.88	0.34	29.2
NorthEast: Burrows Ave (NE)															
7	L2	All MCs	6	16.7	6	16.7	0.332	4.2	LOS A	2.0	14.2	0.33	0.17	0.33	37.3
8	T1	All MCs	343	1.8	343	1.8	0.332	0.9	LOS A	2.0	14.2	0.33	0.17	0.33	45.5
Approach			349	2.1	349	2.1	0.332	1.0	NA	2.0	14.2	0.33	0.17	0.33	45.4
SouthWest: Burrows Ave (SW)															
2	T1	All MCs	201	3.1	201	3.1	0.202	0.8	LOS A	0.9	6.5	0.23	0.14	0.23	45.2
3	R2	All MCs	11	10.0	11	10.0	0.202	6.4	LOS A	0.9	6.5	0.23	0.14	0.23	39.7
Approach			212	3.5	212	3.5	0.202	1.1	NA	0.9	6.5	0.23	0.14	0.23	44.8
All Vehicles			577	2.6	577	2.6	0.332	1.2	NA	2.0	14.2	0.29	0.18	0.29	44.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 9 February 2024 2:44:29 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD04 [SYD04 Pedestrian Mid-block Crossing at Sydenham Rd (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 4946

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 95 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
NorthWest: Sydenham Rd (NW)															
28	T1	All MCs	1086	4.1	1086	4.1	*0.421	6.3	LOS A	8.6	63.0	0.47	0.46	0.47	44.7
29	R2	All MCs	18	0.0	18	0.0	0.421	12.0	LOS A	8.4	60.4	0.47	0.47	0.47	39.6
Approach			1104	4.0	1104	4.0	0.421	6.4	LOS A	8.6	63.0	0.47	0.46	0.47	44.6
SouthWest: Railway Pde (SW)															
32	R2	All MCs	15	7.1	15	7.1	*0.045	31.2	LOS C	0.5	3.6	0.86	0.68	0.86	26.1
Approach			15	7.1	15	7.1	0.045	31.2	LOS C	0.5	3.6	0.86	0.68	0.86	26.1
All Vehicles			1119	4.0	1119	4.0	0.421	6.7	LOS A	8.6	63.0	0.48	0.46	0.48	43.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped]	[Dist]			sec	m	m/sec
						ped	m					
NorthWest: Sydenham Rd (NW)												
P7	Full	18	19	26.1	LOS C	0.0	0.0	0.81	0.81	192.7	200.0	1.04
All Pedestrians		18	19	26.1	LOS C	0.0	0.0	0.81	0.81	192.7	200.0	1.04

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 9 February 2024 2:44:30 PM
 Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD05 [SYD05 Marrickville Rd / Buckley St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
SouthEast: Marrickville Rd (SE)															
2	T1	All MCs	831	3.2	831	3.2	0.439	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
3	R2	All MCs	529	2.8	529	2.8	0.694	7.9	LOS A	4.3	30.8	0.49	0.66	0.60	43.4
Approach			1360	3.0	1360	3.0	0.694	3.1	NA	4.3	30.8	0.19	0.26	0.23	53.0
NorthWest: Marrickville Rd (NW)															
7	L2	All MCs	328	6.1	328	6.1	0.696	8.1	LOS A	2.9	21.7	0.57	0.67	0.69	47.8
Approach			328	6.1	328	6.1	0.696	8.1	NA	2.9	21.7	0.57	0.67	0.69	47.8
All Vehicles			1688	3.6	1688	3.6	0.696	4.1	NA	4.3	30.8	0.26	0.34	0.32	51.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 9 February 2024 2:44:30 PM
 Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD06 [SYD06 Sydenham Rd / Buckley St (Site Folder: Block 2 Model - 2023 PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
NorthWest: Sydenham Rd (NW)															
2	T1	All MCs	811	4.5	811	4.5	0.434	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			811	4.5	811	4.5	0.434	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.7
SouthWest: Buckley St (SW)															
4	L2	All MCs	494	5.5	494	5.5	0.282	5.7	LOS A	0.0	0.0	0.00	0.53	0.00	51.0
6	R2	All MCs	346	7.6	346	7.6	0.202	5.8	LOS A	0.0	0.0	0.00	0.63	0.00	43.5
Approach			840	6.4	840	6.4	0.282	5.8	NA	0.0	0.0	0.00	0.57	0.00	48.7
All Vehicles			1651	5.5	1651	5.5	0.434	3.0	NA	0.0	0.0	0.00	0.29	0.00	53.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 9 February 2024 2:44:31 PM
 Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD01 [SYD01 Railway Pde / Gleeson Ave (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: SYD-N1 [SYD Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 3320

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 115 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
SouthEast: Gleeson Ave (SE)															
1	L2	All MCs	1021	2.4	1021	2.4	0.425	4.9	LOS A	0.0	0.0	0.00	0.52	0.00	43.1
Approach			1021	2.4	1021	2.4	0.425	4.9	LOS A	0.0	0.0	0.00	0.52	0.00	43.1
NorthEast: Railway Pde (NE)															
4	L2	All MCs	1069	2.3	1069	2.3	*0.394	8.0	LOS A	7.4	52.9	0.24	0.62	0.24	38.2
5	T1	All MCs	40	5.3	40	5.3	0.026	6.1	LOS A	0.3	2.5	0.17	0.13	0.17	56.5
Approach			1109	2.4	1109	2.4	0.394	8.0	LOS A	7.4	52.9	0.24	0.60	0.24	38.2
All Vehicles			2131	2.4	2131	2.4	0.425	6.5	LOS A	7.4	52.9	0.12	0.56	0.12	40.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
NorthEast: Railway Pde (NE)											
P2	Full	140	51.0	LOS E	0.4	0.4	0.94	0.94	67.7	20.0	0.30
P2S	Slip/Bypass	139	51.0	LOS E	0.4	0.4	0.94	0.94	67.7	20.0	0.30
All Pedestrians		279	51.0	LOS E	0.4	0.4	0.94	0.94	67.7	20.0	0.30

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:50:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD02 [SYD02 Burrows Ave / Gleeson Ave (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: SYD-N1 [SYD Network 1 (Network Folder: Block 2 Network - 2023 Weekend Peak)]

TCS 1152

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 115 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]				km/h
			veh/h		veh/h					veh	m				
SouthEast: Gleeson Ave (SE)															
2	T1	All MCs	844	1.6	844	1.6	0.367	12.5	LOS A	11.9	84.6	0.55	0.49	0.55	23.8
Approach			844	1.6	844	1.6	0.367	12.5	LOS A	11.9	84.6	0.55	0.49	0.55	23.8
NorthEast: Burrows Ave (NE)															
4	L2	All MCs	38	5.6	38	5.6	0.191	57.7	LOS E	2.0	14.6	0.94	0.73	0.94	13.5
6	R2	All MCs	159	0.7	159	0.7	*0.416	56.1	LOS D	5.0	35.3	0.96	0.77	0.96	9.1
Approach			197	1.6	197	1.6	0.416	56.4	LOS D	5.0	35.3	0.96	0.76	0.96	10.1
NorthWest: Gleeson Ave (NW)															
7	L2	All MCs	194	0.5	194	0.5	0.423	6.6	LOS A	6.1	43.2	0.25	0.40	0.25	35.2
8	T1	All MCs	876	2.5	876	2.5	*0.529	5.4	LOS A	9.2	65.8	0.28	0.31	0.28	41.8
Approach			1069	2.2	1069	2.2	0.529	5.6	LOS A	9.2	65.8	0.28	0.33	0.28	40.2
SouthWest: Burrows Ave (SW)															
10	L2	All MCs	23	40.9	23	40.9	*0.189	60.2	LOS E	1.2	11.0	0.96	0.71	0.96	10.2
11	T1	All MCs	7	0.0	7	0.0	0.044	47.4	LOS D	0.5	3.5	0.91	0.63	0.91	17.6
12	R2	All MCs	9	11.1	9	11.1	0.041	51.3	LOS D	0.5	3.6	0.89	0.67	0.89	15.4
Approach			40	26.3	40	26.3	0.189	55.7	LOS D	1.2	11.0	0.93	0.68	0.93	12.8
All Vehicles			2151	2.3	2151	2.3	0.529	13.9	LOS A	11.9	84.6	0.46	0.44	0.46	25.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist]			sec	m	m/sec
					ped	m					
SouthEast: Gleeson Ave (SE)											
P1	Full	17	48.9	LOS E	0.1	0.1	0.92	0.92	65.6	20.0	0.31
NorthEast: Burrows Ave (NE)											
P2	Full	180	51.1	LOS E	0.6	0.6	0.95	0.95	67.8	20.0	0.30
NorthWest: Gleeson Ave (NW)											

P3 Full	112	47.2	LOS E	0.3	0.3	0.91	0.91	63.9	20.0	0.31
SouthWest: Burrows Ave (SW)										
P4 Full	91	50.9	LOS E	0.3	0.3	0.94	0.94	67.6	20.0	0.30
All Pedestrians	399	49.9	LOS E	0.6	0.6	0.93	0.93	66.5	20.0	0.30

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 1 March 2024 2:50:23 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD03 [SYD03 Burrows Ave / George St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
SouthEast: George St (SE)															
4	L2	All MCs	11	0.0	11	0.0	0.018	8.0	LOSA	0.1	0.4	0.25	0.88	0.25	30.6
6	R2	All MCs	7	0.0	7	0.0	0.018	8.9	LOSA	0.1	0.4	0.25	0.88	0.25	26.7
Approach			18	0.0	18	0.0	0.018	8.4	LOSA	0.1	0.4	0.25	0.88	0.25	29.2
NorthEast: Burrows Ave (NE)															
7	L2	All MCs	4	0.0	4	0.0	0.140	3.8	LOSA	0.7	5.0	0.17	0.07	0.17	40.9
8	T1	All MCs	155	1.4	155	1.4	0.140	0.3	LOSA	0.7	5.0	0.17	0.07	0.17	47.3
Approach			159	1.3	159	1.3	0.140	0.4	NA	0.7	5.0	0.17	0.07	0.17	47.1
SouthWest: Burrows Ave (SW)															
2	T1	All MCs	203	0.5	203	0.5	0.196	0.3	LOSA	0.9	6.2	0.15	0.11	0.15	45.4
3	R2	All MCs	26	0.0	26	0.0	0.196	5.1	LOSA	0.9	6.2	0.15	0.11	0.15	41.0
Approach			229	0.5	229	0.5	0.196	0.9	NA	0.9	6.2	0.15	0.11	0.15	44.7
All Vehicles			406	0.8	406	0.8	0.196	1.0	NA	0.9	6.2	0.16	0.13	0.16	44.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 9 February 2024 2:44:32 PM

Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD04 [SYD04 Pedestrian Mid-block Crossing at Sydenham Rd (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

TCS 4946

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 95 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
NorthWest: Sydenham Rd (NW)															
28	T1	All MCs	1091	2.5	1091	2.5	*0.422	6.3	LOS A	8.6	62.2	0.48	0.46	0.48	44.7
29	R2	All MCs	22	4.8	22	4.8	0.422	12.0	LOS A	8.5	60.6	0.48	0.47	0.48	39.4
Approach			1113	2.6	1113	2.6	0.422	6.4	LOS A	8.6	62.2	0.48	0.46	0.48	44.5
SouthWest: Railway Pde (SW)															
32	R2	All MCs	8	0.0	8	0.0	*0.027	31.0	LOS C	0.3	1.9	0.86	0.66	0.86	26.2
Approach			8	0.0	8	0.0	0.027	31.0	LOS C	0.3	1.9	0.86	0.66	0.86	26.2
All Vehicles			1121	2.5	1121	2.5	0.422	6.6	LOS A	8.6	62.2	0.48	0.47	0.48	44.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped]	[Dist]			sec	m	m/sec
						ped	m					
NorthWest: Sydenham Rd (NW)												
P7	Full	20	21	26.1	LOS C	0.0	0.0	0.81	0.81	192.7	200.0	1.04
All Pedestrians		20	21	26.1	LOS C	0.0	0.0	0.81	0.81	192.7	200.0	1.04

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 9 February 2024 2:44:33 PM
 Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical\432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD05 [SYD05 Marrickville Rd / Buckley St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
SouthEast: Marrickville Rd (SE)															
2	T1	All MCs	573	2.4	573	2.4	0.301	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	All MCs	499	2.1	499	2.1	0.303	6.1	LOS A	1.6	11.1	0.19	0.60	0.19	45.0
Approach			1072	2.3	1072	2.3	0.303	2.9	NA	1.6	11.1	0.09	0.28	0.09	52.7
NorthWest: Marrickville Rd (NW)															
7	L2	All MCs	414	1.8	414	1.8	0.315	6.0	LOS A	1.5	10.7	0.22	0.56	0.22	49.4
Approach			414	1.8	414	1.8	0.315	6.0	NA	1.5	10.7	0.22	0.56	0.22	49.4
All Vehicles			1485	2.1	1485	2.1	0.315	3.7	NA	1.6	11.1	0.12	0.36	0.12	51.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 9 February 2024 2:44:34 PM
 Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9

MOVEMENT SUMMARY

Site: SYD06 [SYD06 Sydenham Rd / Buckley St (Site Folder: Block 2 Model - 2023 Weekend Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

NA

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
NorthWest: Sydenham Rd (NW)															
2	T1	All MCs	775	1.9	775	1.9	0.404	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach			775	1.9	775	1.9	0.404	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.7
SouthWest: Buckley St (SW)															
4	L2	All MCs	496	1.5	496	1.5	0.271	5.7	LOS A	0.0	0.0	0.00	0.53	0.00	51.2
6	R2	All MCs	378	2.2	378	2.2	0.208	5.8	LOS A	0.0	0.0	0.00	0.63	0.00	43.7
Approach			874	1.8	874	1.8	0.271	5.7	NA	0.0	0.0	0.00	0.57	0.00	48.7
All Vehicles			1648	1.9	1648	1.9	0.404	3.1	NA	0.0	0.0	0.00	0.30	0.00	53.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2024 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise Level 1 | Processed: Friday, 9 February 2024 2:44:34 PM
 Project: C:\Users\WanJ2\OneDrive - AECOM\General - ANZ-NAC-Sydney Metro-Sydney Metro C&SW Operational Monitoring\400_Technical
 \432_Traffic Analysis\SIDRA Modelling\02 Block 2\00 Block 2 Models (Volume + Phase Times updated)\09 SM C&SW_SYD (Block 2).sip9