33-35 Treacy Street, Hurstville
Traffic Impact Assessment

Prepared for:

Icon Construction Group

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The Transport Planning Partnership

33-35 Treacy Street, Hurstville

Traffic Impact Assessment

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APPENDICES

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1 Introduction

This traffic impact assessment report has been prepared by The Transport Planning Partnership (TTPP) on behalf of Icon Construction Group to satisfy the development application (DA) conditions required by Georges River Council (Council) of a development consent to construct a mixed-use development located at 33-35 Treacy Street, Hurstville.

Council's approval condition is as follows:

> *d) The intersections at Forest Road and The Avenue, Railway Parade and The Avenue and Forest Road, Park Road and Alfred Street require further assessment on their performances and measures to be recommended to improve their performances. The assessment report shall be reviewed by the RTA and submitted to Council as part of any future applications.*

The proposal involves demolition of the existing structures and construction of a residential building with ground floor retail. The subject development is the Stage 3 west stage of the overall development at 21-35 Treacy Street known as 'Imperial Hurstville'.

This report reviews the potential traffic implications of the proposed development on the surrounding road network in accordance with Hurstville City Centre Development Control Plan 2015 (DCP) and relevant standards.

The remainder of the report is set out as follows:

- Section 2 describes the site location and existing transport conditions
- Section 3 provides a brief description of the proposed development
- Section 4 briefly outlines the proposed on-site parking provision (a detailed assessment is provided in a separate document)
- Section 5 examines the traffic generation and implications of the proposed development, and
- Section 6 presents the conclusions of the assessment,

2 Existing Conditions

2.1 Site Description

The subject site is located within Hurstville City Centre, as shown in Figure 2.1.

The proposed development is bounded by Treacy Street to the north, Hurstville Council Car Park to the west, Imperial Hurstville Centre Stage to the east and rail corridor to the south.

The site area is approximately 880m^2 and is currently occupied by two commercial establishments.

Figure 2.1: Subject Site and Surrounding Environs

Map Source: Google Maps Australia

2.2 Road Network

The road network surrounding the subject site is described as follows:

Treacy Street is a one-way westbound local road fronting the subject site. It runs with an east-west alignment connecting Hill street, Forest Road and Railway Parade. On-street parking operates on some sections of the road. A speed limit of 50km/h is observed along the road.

Forest Road is a local road (from Queens Road to Lily Street) that serves as the main east-west road within the city centre. The road connects Pacific Highway in Arncliffe on the east to Henry Lawson Drive in Peakhurst on the west and continues south to Lugarno. The road has a general posted speed limit of 50km/h within the city centre.

From Queens Road to Treacy Street, it operates as a one-way eastbound road with a 40km/h speed limit.

Railway Parade is a local road that serves as an alternative east-west route connecting to Princes Highway towards the Sydney Airport and Sydney CBD. Railway Parade is generally configured with two traffic lanes in each direction with sections of kerbside parking permitted during the day.

Alfred Street is one-way northbound and **The Avenue** is one-way southbound local road that form a pair connecting Forest Road and Treacy Street. Both roads have two traffic lanes with no kerbside parking.

2.3 Existing Traffic Volumes

Traffic movement surveys were undertaken at three key nearby intersections. Surveys were commissioned on Thursday 30 July 2020 and Saturday 1 August 2020 during the following road network peak periods:

- Thursday AM survey period: 7:00am – 9:00am
- Thursday PM survey periods: 4:00pm – 6:00pm
- Saturday midday survey periods: 10:00am – 12:00pm

The following intersections were surveyed to collect the existing traffic movement counts:

- Forest Road – Park Road – Alfred Street
- Forest Road – The Avenue
- Railway Parade – The Avenue

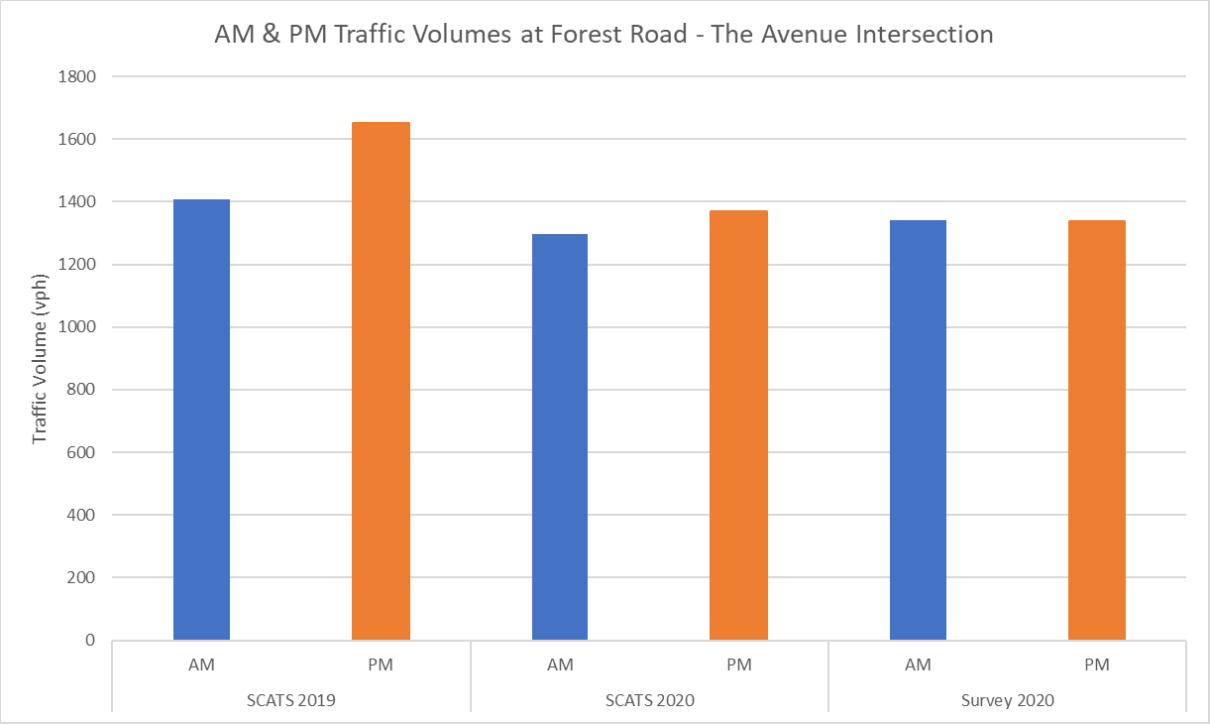
In consultation with Georges River Council in early July, TTPP was advised that traffic conditions were almost back to normal despite the current Covid-19 issue. However, a new Covid-19 case was diagnosed in the Hurstville area just before the traffic surveys were undertaken, which could affect the typical number of vehicle trips to work or for shopping in the survey area.

In order to appreciate the level of traffic reduction, a comparative assessment of the traffic volumes at the Forest Road and The Avenue intersection has been undertaken to quantify the traffic reduction and to derive adjustment factors that could apply to the traffic survey data with an increase to the Year 2019 level.

SCATS traffic count data at the Forest Road and The Avenue intersection was obtained from TfNSW for Thursday 1 August 2019 and Thursday 30 July 2020.

Figure 2.2 shows the difference in the total traffic movement volumes at the Forest Road and The Avenue intersection between Year 2019 and Year 2020 for the weekday AM and PM peak hours.

Figure 2.2: Comparison of Total Traffic Volumes at the Forest Road and The Avenue Intersection in 2019 and 2020



From Figure 2.2, the SCATS 2019 data shows that there were a total traffic volume of 1,406 vehicles per hour (vph) in the AM peak and 1,650 vph in the PM peak. The SCATS 2020 and traffic survey data shows a definitive decrease with traffic volumes ranging between 1,296 vph and 1,340 vph in the AM peak, and between 1,337 vph and 1,368 vph in the PM peak. The reduction in traffic volume is in the order of up to 110 vph in the AM peak and 313 vph in the PM peak primarily due to Covid effects.

The SCATS 2019 and 2020 data was used to derive adjustment factors for each road by direction on Forest Road, Alfred Street and The Avenue for the AM and PM peak hours. The same adjustment factors have been applied to the Forest Road and Railway Parade that are parallel to each other. In addition, the same PM peak adjustment factors have been applied to the Saturday midday peak period.

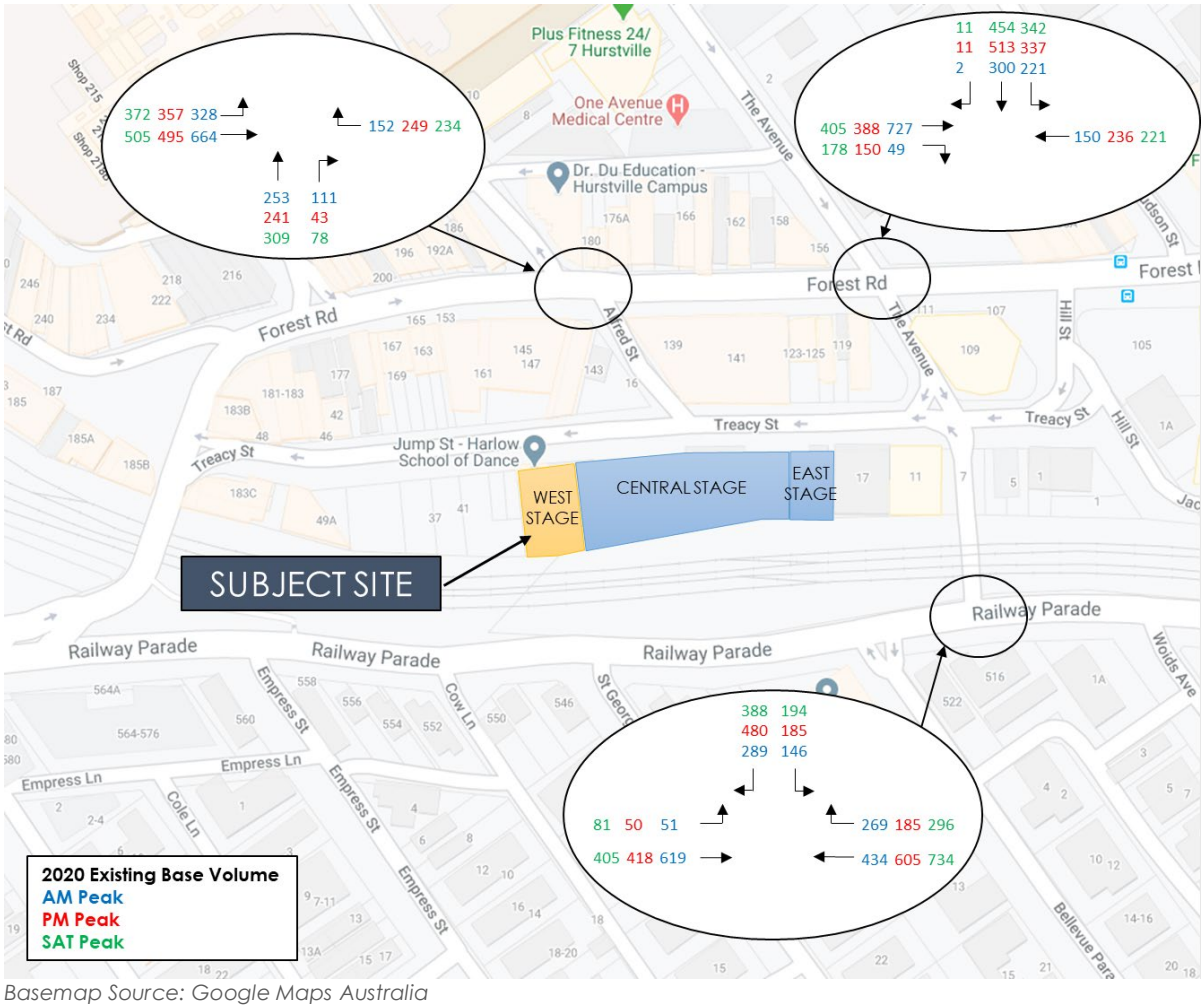
A summary of the derived adjustment factors is presented in Table 2.1. Conservatively, where higher traffic volumes were recorded in Year 2020 in certain traffic movements, the higher traffic volumes have been adopted for analytical purposes.

Table 2.1: Covid-19 Adjustment Factors

Road	AM Peak	PM Peak	SAT Peak
Forest Road	0% – 16%	8% – 47%	8% – 47%
Alfred Street	0% – 16%	8% – 23%	8% – 23%
The Avenue	0% – 1%	19% – 23%	19% – 23%
Railway Parade	0% – 16%	8% – 47%	8% – 47%

The adjusted traffic volumes of the road network surrounding the site during the Thursday AM and PM peak periods and Saturday midday peak periods are shown in Figure 2.3.

Figure 2.3: 2020 Existing Traffic Volumes

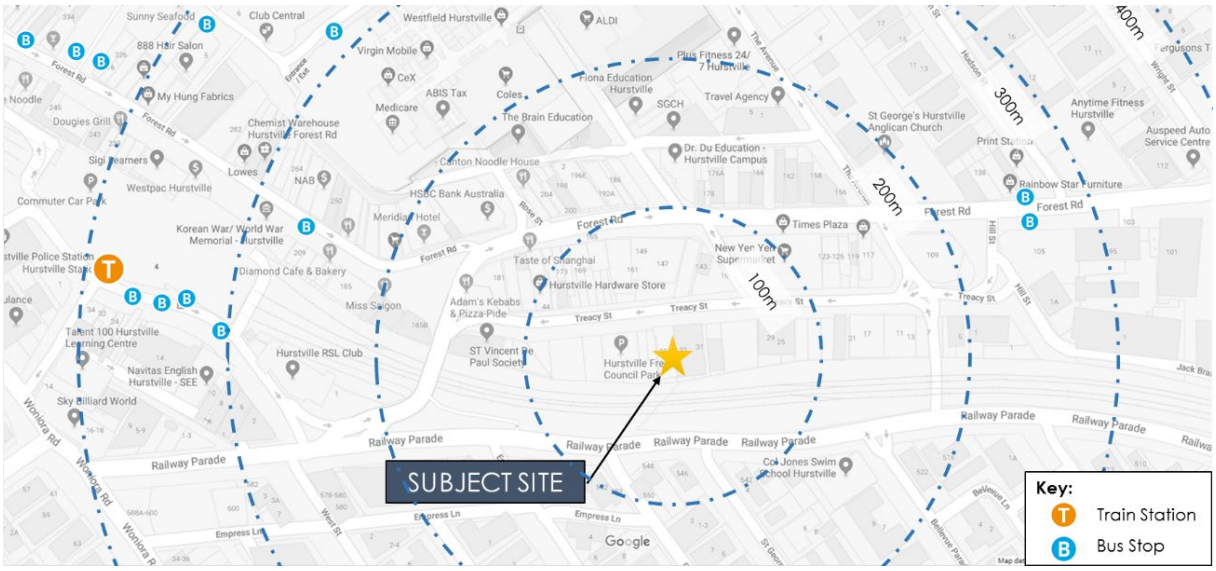


Basemap Source: Google Maps Australia

2.4 Public Transport Facilities

The subject site is well-served by public transport services, as shown in Figure 2.1.

Figure 2.4: Surrounding Public Transport Services



Map Source: Google Maps Australia

Hurstville railway station is located within 400m from the proposed development. The station is regularly serviced by trains running on T4 Eastern Suburbs and Illawarra Line and South Coast Line.

A number of bus stops are also located within walking distance from the site. Bus routes servicing these stops are presented in Table 2.1.

Table 2.2: Bus Routes

Bus Operator	Route	Route Description
Transdev NSW	452	Beverly Hills to Rockdale
	455	Kingsgrove to St George Hospital
	947	Hurstville to Kogarah via Dolls Pt
	958	Hurstville to Kogarah via Carss Park
	959	Hurstville to Bald Face Pt
	970	Hurstville to Miranda
	971	Hurstville to Cronulla
	M91	Hurstville to Parramatta
Punchbowl Bus	450	Hurstville to Strathfield
	940	Hurstville to Bankstown via Riverwood
	941	Hurstville to Bankstown via Greenacre
	943	Hurstville to Lugarno
	945	Hurstville to Bankstown via Mortdale
	953	Hurstville to Connells Pt
	954	Hurstville to Hurstville Grove
	955	Hurstville to Mortdale via Oatley
Sydney Buses	490	Hurstville to Drummoyne
	491	Hurstville to Five Dock
	M41	Hurstville to Macquarie Park

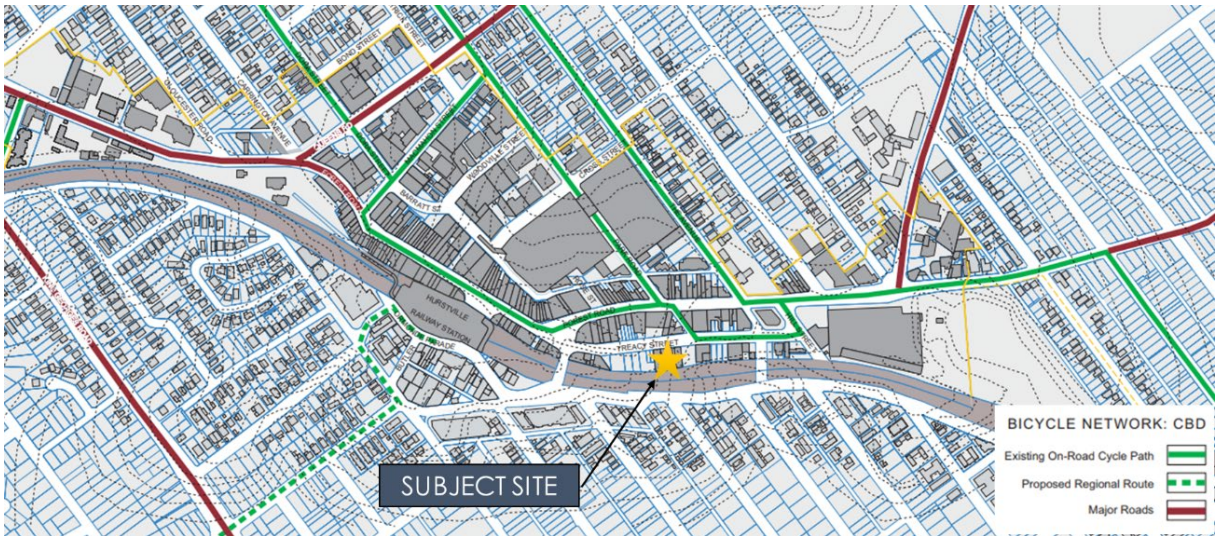
Reference: Transport for NSW

2.5 Pedestrian and Cycling Facilities

Paved footpaths alongside the roads surrounding the subject site provide good quality pedestrian access to surrounding areas. Signalised pedestrian crossings are present at the intersection of Treacy Street and The Avenue, as well as the intersections along Forest Road within the vicinity of the site.

Hurstville City Centre is currently serviced by on-road cycle paths. Existing bicycle routes surrounding the subject site are shown in Figure 2.5.

Figure 2.5: Hurstville CBD Bicycle Network



Reference: Hurstville City Centre Concept Master Plan 2004

3 Proposed Development

3.1 Imperial Hurstville – Stage 1 to 3

The proposed development located at 33-35 Treacy Street, Hurstville. The subject development is Stage 3 West Stage of the "Imperial Hurstville" development located at 21-35 Treacy Street. Adjacent to the subject site is the "Central Stage" which is a 15-storey residential apartment with ground floor retail.

A summary of the yield of the wider development is provided in Table 3.1.

Table 3.1: Development Yield of Imperial Hurstville

Stage	Location	GFA of Retail (Specialty Shops)	Community by type and GFA	No. of Units	Total No. of Units	Status	Occupancy
S75W Modification	**21-35 Treacy Street**	**1,499m²**	**200m²**	**-**	**283**	**Approved**	**See below**
Stage 1 Central Stage	23-31 Treacy Street	Two retail shops: 377m² 418m²	Mental health space 200m²	36 x 1-Bed 184 x 2-Bed 7 x 3-Bed	227	Approved	Full occupancy in residential units Retail shops are vacant, but the 418m² retail space has recently been approved to be a children indoor playground Mental health space is vacant
Stage 2 East Stage	21-23 Treacy Street	217m²	Nil	12 x 3-Bed	12	Approved	Full occupancy in residential units Retail shop is vacant
Modification Stage 2 East Stage	21-23 Treacy Street	149m²	Nil	Nil	Nil	Approved	Retail shop is vacant
Stage 3 West Stage	33-35 Treacy Street	206m²	Nil	7 x 1-Bed 19 x 2-Bed 11 x 3-Bed 4 x 4-Bed	41	Under Assessment	-
Total		**1,384m²**	**200m²**	**280**	**280**		**-**

3.2 Proposal Description – Stage 3 West Stage

The proposed development known as the Stage 3 west stage comprises 41 residential units across 12 levels and two retail units on ground level. The development will be served by three levels of basement car parking containing 58 car parking spaces.

The proposed development yield of the subject site is presented in Table 3.2.

Table 3.2: Development Yield

Land Use	Size
Residential	
1-bedroom	7 units
2-bedroom	19 units
3-bedroom	11 units
4-bedroom	4 units
Total	41 units
Retail	206 m^2

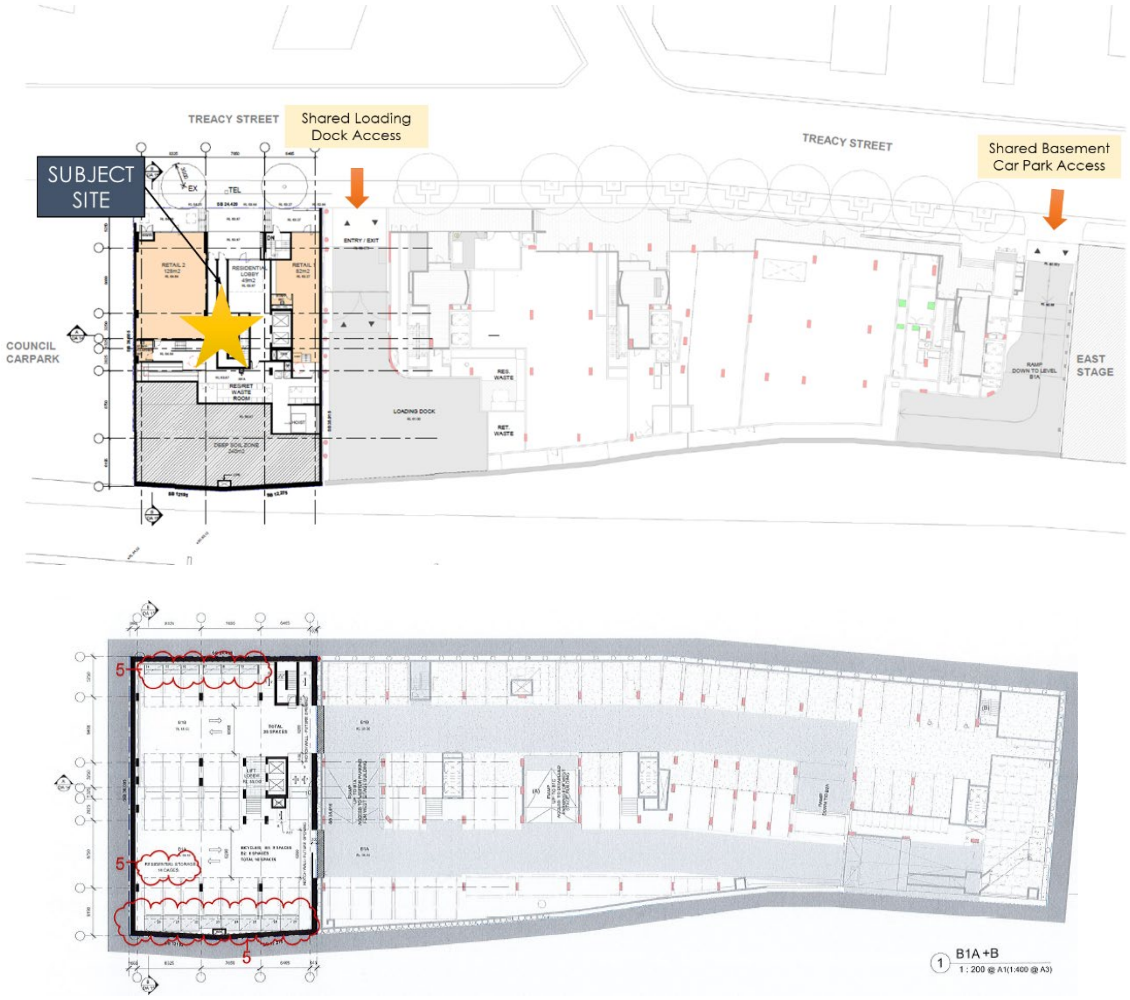
3.3 Shared Vehicle Access Arrangement

Access to the basement car park serving the subject proposed development will be shared with the adjacent site (Central Stage) which is currently provided off Treacy Street via a two-way driveway. Each basement level will be accessed through their respective level in the neighbouring site. No internal ramps or driveways are proposed within the subject proposed car park.

The loading dock provided on the ground level within the adjacent building will be shared by all developments within the overall site.

Figure 3.1 shows the proposed shared access arrangement of the site.

Figure 3.1: Shared Vehicle Access Arrangement



Source: Stanisic Architects (August 2018) and Icon Construction Group (July 2020)

3.4 Pedestrian Access

Pedestrian access to residential units is through a separate residential lobby with an entrance off Treacy Street. Both retail units have access on the site frontage. Two lifts are provided connecting all levels and the basement car park.

4 Parking Assessment

A parking assessment for the proposed development has been undertaken comparing the provision against the requirements set out in the Apartment Design Guide (ADG) for residential units and Hurstville City Centre Development Control Plan 2015 (DCP) for retail use.

A summary of and comparison of the car parking requirements is provided in Table 4.1. Details are provided in a separate Parking Assessment, namely, 18069-L01V03-200722 Parking Statement, TTPP, 22 July 2020.

Table 4.1: Summary Car Parking Requirement and Compliance

Land Use	Type	Yield	Minimum Parking Rate [1]		Minimum Parking Requirement			Proposed	Compliant?
			DCP	TfNSW [2]	DCP	TfNSW	Adopted		
Residential	1-bedroom	7 units	1 space per dwelling	0.4 space per dwelling	7	2.8	2.8	58	Yes
	2-bedroom	19 units	1 space per dwelling	0.7 space per dwelling	19	13.3	13.3		
	3-bedroom	11 units	2 space per dwelling	1.2 space per dwelling	22	13.2	13.2		
	4-bedroom	4 units	2 space per dwelling	1.2 space per dwelling	8	4.8	4.8		
	Visitor	-	1 space per 4 dwellings (or part thereof)	1 space per 7 dwellings	10.3	5.9	5.9		
Retail	Specialty	206m² GFA	1 space per 50m²	45 spaces per 1,000m²	4.1	7.0	4.1		
Total					70.4	46.9	44.1	-	-
				Rounded	**71**	**47**	**44**	**58**	**Yes**

Notes:
[1] Based on ADG, the lesser parking requirement is taken for resident and visitor parking; Council DCP requirement is adopted for retail parking
[2] Hurstville is classified as a Metropolitan Regional (CBD) centre based on *A Plan for Growing Sydney*, Department of Planning and Environment.

Based on the above, the minimum parking provision required for the subject mixed use development is 44 car parking spaces. The proposed development proposes 58 car parking spaces in the 3-level basement car park. On this basis, the parking provision is compliant with the requirements specified in the Apartment Design Guide for residential units, and are DCP compliant for the retail use.

5 Traffic Impact Assessment

5.1 Background Traffic Growth

Background traffic growth has been adopted based on the Sydney Strategic Traffic Forecasting Model (STFM) traffic volumes obtained from RMS. From the STFM traffic growth plots, the background growth rates (per cent per annum) from 2019 to 2029 can be determined and are based on approved developments and major infrastructure projects in Sydney. STFM growth plots have been used to increase background traffic flows for SIDRA modelling of future year scenarios. The STFM growth plots are shown in Appendix B.

Future traffic associated with the Proposal has been distributed through the road network proportionally based on traffic distribution detailed in Section 5.4.

5.2 Proposed Development Traffic Generation

The proposed development is classified as a high density residential flat dwelling. Based on Roads and Maritime Guide to Traffic Generating Developments and Technical Direction (TDT 2013/04a), the residential units would generate 0.19 trips, 0.15 trips and 0.21 trips per unit during the Thursday AM and PM peak hours and Saturday midday peak hour, respectively.

Roads and Maritime guidelines do not provide traffic generation rates for retail uses similar to those proposed. In reality the proposed retail tenancies will serve walk-in customers living and working in nearby developments as such they are not expected to generate any significant vehicle movements to and from the retail shops.

The traffic generated by the future retail staff is determined by a first principles approach. The retail shop is allocated four car parking spaces in the basement car park which equates to four vehicle trips in the AM and PM peaks. The retail staff would arrive to the site at Saturday morning and hence there would be no vehicle trips during the Saturday midday peak.

A summary of the estimated traffic generation is presented in Table 5.1.

Table 5.1: Peak Hour Traffic Generation

Land Use	Yield	Traffic Generation Rate			Estimated Two-Way Trips		
		AM Peak Hour	PM Peak Hour	SAT Midday Peak Hour	AM Peak Hour	PM Peak Hour	SAT Midday Peak Hour
Residential	41 units	0.19 per unit	0.15 per unit	0.21 per unit	8	6	9
Retail	4 parking spaces	1 per parking space	1 per parking space	-	4	4	-
Total					**12**	**10**	**9**

Based on the above calculations, the proposed development would generate up to 12 two-way trips during the Thursday AM peak hour, 10 two-way trips during the Thursday PM peak hour and up to 9 two-way trips during the Saturday midday peak hour.

5.3 Cumulative Traffic Generation

It is understood that the east and central stages of Imperial Hurstville is currently fully occupied by residents. The traffic surveys have captured the traffic volumes generated by the residents associated with the east and central buildings. However, the retail/commercial and community space in the Stage 1 and Stage 2 buildings are currently vacant based on site observations in August 2020.

Potential traffic generation associated with the vacant retail/commercial spaces of the east and central stage buildings has been estimated based on a first principles approach. The future staff trips of the retail/commercial spaces have been determined by the number of allocated car parking spaces in the basement car park. The retail/commercial visitor trips are assumed to be walk ins only, given the site is located within the Hurstville CBD.

A development application for one of the three vacant retail spaces has been approved by Council for the fit-out of an indoor children playground located at Shop 1, 25 Treacy Street in Stage 1 Central Stage. Traffic generation in the DA traffic report has been adopted in this assessment for analytical purposes.

The community space in Stage 1 Central Stage is planned to provide a free community service for mental health care as advised by Council. Based on this future use, the traffic rates of a medical centre has been applied to estimate the number of trips that would generate in the Thursday AM and PM peak hours and Saturday midday peak hour.

A summary of the future net traffic generation considered is presented in Table 5.2.

Table 5.2: Cumulative Traffic Generation

Location	Land Use	Size	Traffic Generation Rate			Estimated Two-Way Trips		
			AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM Peak Hour	PM Peak Hour	SAT Peak Hour
Stage 3 (proposed development)	Residential	41 units	0.19 per unit	0.15 per unit	0.21 per unit	8	6	9
	Retail (Visitors)	206m^2 GFA	On Foot	On Foot	On Foot	0	0	0
	Retail (Staff)	4 parking spaces	1 per space	1 per space	-	4	4	0
Stage 1 and 2 (in operation but retail/community space currently vacant)	Mental space (medical)	200m^2 GFA	4 per 100m^2	4.6 per 100m^2	5 per 100m^2	8	9	10
	Retail/Commercial (Staff)	20 parking spaces	1 per space	1 per space	-	20	20	0

Location	Land Use	Size	Traffic Generation Rate			Estimated Two-Way Trips		
			AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM Peak Hour	PM Peak Hour	SAT Peak Hour
	Retail/Commercial (Visitors)	800m² GFA (two shops)	On Foot	On Foot	On Foot	0	0	0
	Indoor Playground Area (based on approved DA)	418m² GFA	-	3 per 100m²	3.6 per 100m²	0	13	15
Total						**40**	**52**	**34**

From Table 5.2, the traffic generated by the proposed development and the currently vacant retail/commercial and community spaces in the Stage 1 and 2 buildings is as follows which have been superimposed to the road network for intersection capacity assessment:

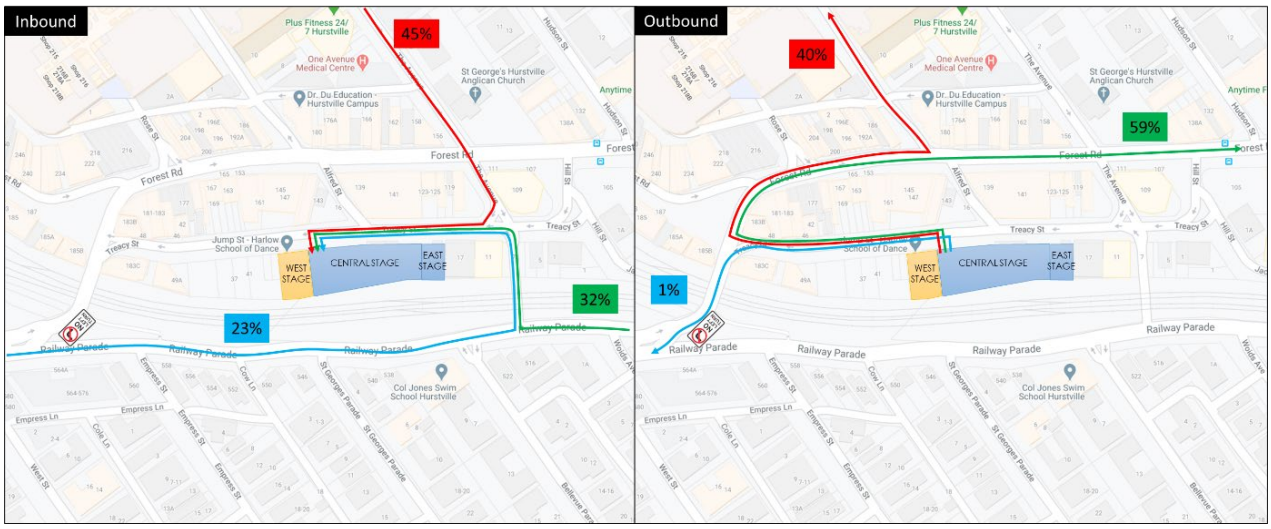
- 40 two-way vehicle trips in the Thursday AM peak hour
- 52 two-way vehicle trips in the Thursday PM peak hour
- 34 two-way vehicle trips in the Saturday midday peak hour.

5.4 Traffic Distribution

The directional distribution and assignment of traffic generated by the proposed development will be influenced by Journey to Work (JTW) 2016 data for employed residents, as car drivers/passengers, travelling to/from the most common suburbs in Sydney.

Based on the JTW 2016 data, distribution of the inbound and outbound traffic to/from the site is shown in Figure 5.1 for the weekday morning and afternoon and Saturday peak hours.

Figure 5.1: Traffic Distribution



Basemap Source: Nearmap

From Figure 5.1, traffic approaching the site from the northern suburbs would generally travel via The Avenue southbound while traffic approaching the site from the eastern, western and southern suburbs would travel along Railway Parade and turn left/right onto The Avenue and subsequently turn left onto Treacy Street.

Traffic leaving the site in order to travel to the northern and eastern suburbs is assumed to travel via Park Road northbound and Forest Road eastbound as there is a "No Left Turn" restriction at the Treacy Street approach to the Railway Parade intersection. Based on the JTW 2016 data, there is minimal traffic heading to the west and south but it is assumed that the traffic will travel via Treacy Street westbound and Railway Parade westbound.

5.5 Assessment Scenarios

To assess the traffic implication arising from the proposed development, intersection capacity analysis has been undertaken for the key nearby intersections including:

- Forest Road – Park Road – Alfred Street
- Forest Road – The Avenue
- Railway Parade – The Avenue

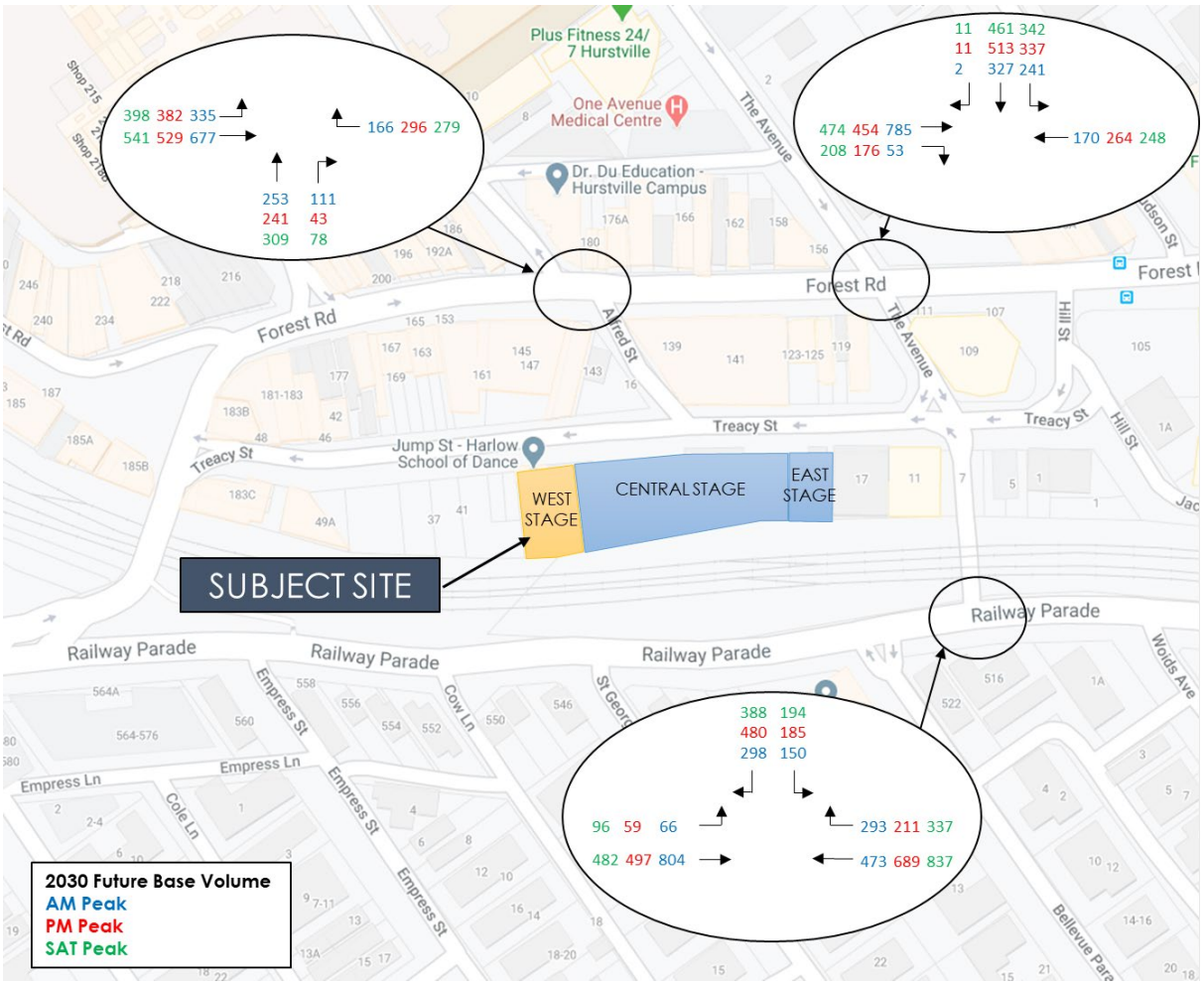
The following assessment scenarios have been assessed using SIDRA Intersection 9.0 modelling software to provide an analysis of the potential traffic impact on the surrounding road network by the proposed development:

- **Scenario 0 (S0): 2020 Existing Base Case –** this scenario is based on traffic surveys applied by a factor to take into consideration of the reduction in traffic volume due to the ongoing Covid-19 conditions. The adjustment factors have been derived from comparing the SCATS traffic count data of July 2019 and July 2020.
- **Scenario 1 (S1): 2030 Future Base without Development –** this scenario includes the S0 traffic with the addition of the annual background traffic growth data obtained from TfNSW' Strategic Traffic Forecast Model.
- **Scenario 2 (S2): 2030 Future Base with Development –** This scenario includes the S1 traffic and the development traffic associated with the proposed west stage development and the vacant retail/commercial and community spaces.

5.6 Traffic Volumes

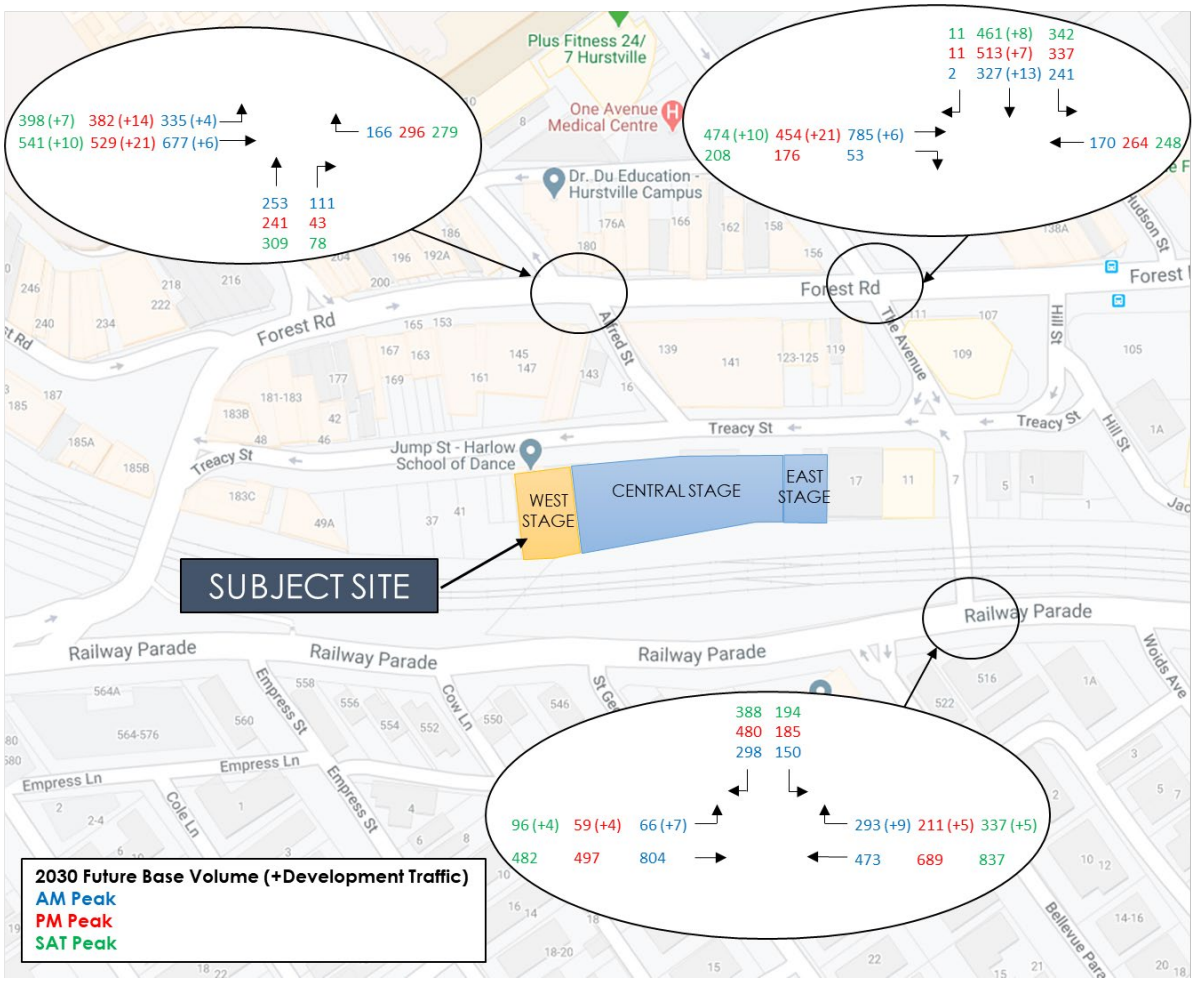
The traffic volumes of each assessment scenario in the Thursday AM and PM peak periods and Saturday midday peak period are shown in Figure 5.2 for Scenario 2 and Figure 5.3 for Scenario 3. The existing traffic volumes which have been adjusted to overcome the traffic reduction issue under the current Covid-19 condition and are shown in Figure 2.3.

Figure 5.2: 2030 Future Base without Development Traffic Volumes



Basemap Source: Google Maps Australia

Figure 5.3: 2030 Future Base with Development Traffic Volumes



Basemap Source: Google Maps Australia

5.7 Intersection Modelling Criteria

The existing operation of the nearby intersections to the site have been assessed using SIDRA Intersection version 9.0, a computer-based modelling package which assesses intersection performance under prevailing traffic conditions.

SIDRA calculates intersection performance as a level of service (LoS). SIDRA provides analysis of the operating conditions which can be compared to the performance criteria set out in Table 5.3.

Table 5.3: Level of Service Criteria for Intersection Operation

Level of Service	Average Delay (seconds per vehicle)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	Less than 14	good operation	good operation
B	15 to 28	good with acceptable delays and spare capacity	acceptable delays and spare capacity
C	29 to 42	satisfactory	satisfactory, but accident study required
D	43 to 56	operating near capacity	near capacity and accident study required
E	57 to 70	at capacity, at signals, incidents will cause excessive delays, roundabouts require other control mode	at capacity, requires other control mode
F	Greater than 71	unsatisfactory with excessive queuing	unsatisfactory with excessive queuing; requires other control mode

Source: Guide to Traffic Generating Developments 2002

5.8 Intersection Modelling Results

The intersection operational performance in each scenario during the Thursday AM and PM peak periods and Saturday peak period are summarised in Table 5.4.

The SIDRA output results are provided in Appendix B.

Table 5.4: Intersection Performance

Scenario	Intersection	AM Peak			PM Peak			SAT Peak		
		95th Percentile Queue (m)	Ave. Delay (sec/veh)	Level of Service (LoS)	95th Percentile Queue (m)	Ave. Delay (sec/veh)	Level of Service (LoS)	95th Percentile Queue (m)	Ave. Delay (sec/veh)	Level of Service (LoS)
S0 2020 Existing Base Case	Forest Road – Park Road – Alfred Street	65	21	B	106	32	C	101	30	C
	Forest Road – The Avenue	52	17	B	129	36	C	191	59	E
	Railway Parade – The Avenue	256	35	C	240	34	C	290	35	C
S1 2030 Future Base without Development	Forest Road – Park Road – Alfred Street	68	21	B	116	33	C	112	31	C
	Forest Road – The Avenue	59	18	B	129	36	C	191	59	E
	Railway Parade – The Avenue	288	40	C	246	37	C	335	40	C
S2 2030 Future Base with Development	Forest Road – Park Road – Alfred Street	69	21	B	121	33	C	112	31	C
	Forest Road – The Avenue	59	18	B	129	36	C	191	62	E
	Railway Parade – The Avenue	288	41	C	255	38	C	335	42	C

Scenario 0 – 2020 Existing Base Case

Generally, the performance levels of the intersections are acceptable and operate at LoS C or better under the existing conditions. However, the Forest Road and The Avenue intersection has significant delays with a LoS E due to the long delay at The Avenue southbound through movement in the Saturday peak. It was observed that southbound traffic is not always cleared in one traffic phase.

The modelling results reasonably reflect the observed traffic conditions at the key intersections, with consideration given to the Covid situation. The "normal" conditions are expected to be slightly worse than observations, as the existing traffic volumes adopted in the modelling have been adjusted to overcome the traffic reduction issue under the current Covid conditions.

Scenario 1 – 2030 Future Base without Development

The background traffic growth in 10 years would marginally increase the average delay at the Forest Road, Park Road and Alfred Street intersection which is expected to maintain the same LoS B and C in the AM, PM and Saturday peak periods.

Similarly, the average delay and queues at the Forest Road and The Avenue intersection would increase slightly but would maintain LoS B, C and E in the AM, PM and Saturday peak periods, respectively as per the existing conditions.

The Railway Parade and The Avenue intersection would experience a slight increase in delay but would maintain operating at LoS C in the Thursday AM and PM peak periods and Saturday midday peak period.

Scenario 2 – 2030 Future Base with Development

Additional vehicle trips generated by the proposed development in year 2030 would result in a minor increase of delay by one to three seconds at the assessed intersections but the intersection LoS would be maintained, as compared with the Scenario 2 results.

Overall, the proposed development is not expected to result in adverse impacts on the road network.

6 Summary and Conclusion

This report examines the traffic implications of a proposed mixed-use development at 33-35 Treacy Street, Hurstville. A summary of the findings in this report are presented below:

- The proposed development known as Stage 3 (west stage) involves the construction of 41 residential units across 12 levels and 206m^2 of ground floor retail.
- A three-level basement car park is proposed with access via the shared driveway off Treacy Street. Each basement level will be accessed through their respective level in the neighbouring site.
- The proposed provision of 58 car parking spaces satisfies the minimum requirements set out in Hurstville City Centre Development Control Plan and ADG requirements. Parking assessment has been prepared in a separate report for Council's consideration.
- The traffic generation of the proposed development has been conservatively estimated to be approximately 12 vehicles per hour during the Thursday AM peak period, 10 vehicles per hour during the Thursday PM peak period and 9 vehicle trips in the Saturday midday peak period.
- The cumulative traffic generation of the site including the vacant retail/commercial spaces and community space has been estimated to be 40 vehicles per hour in the Thursday AM peak period, 52 vehicles per hour in the Thursday PM peak period and 34 vehicles per hour in the Saturday midday peak period based on relevant traffic rates and first principles approach.
- The intersection performance of the modelled road network is generally operating at an acceptable LoS C or better in the 2020 existing base case scenario, except for the Forest Road and The Avenue intersection that currently operate at LoS E with a long delay at the southbound through movement in the Saturday peak period.
- With a 10-year background traffic growth, performance of the assessed intersections would maintain with the same LoS in the Thursday AM and PM peak periods and Saturday midday peak period.
- The development traffic would cause a minor increase in the average delays by up to three seconds at the assessed intersections but would maintain the same level of service as per the future base case without the development. The estimated development traffic is considered to be low and is not expected to cause any adverse traffic impacts on the surrounding road network.

The overall traffic effects of the proposed development are considered to be satisfactory.

Appendix A

Traffic Survey and SCATS Data

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY trafficsurvey.com.au

Intersection of Forest Rd and Park Rd, Hurstville

GPS -33.96737, 151.10662

Date:	Thu 30/07/20
Weather:	Overcast
Suburban:	Hurstville
Customer:	TTPP

North:	Park Rd
East:	Forest Rd
South:	Alfred St
West:	Forest Rd

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	4:00 PM-6:00 PM
Traffic Peak	AM:	7:45 AM-8:45 AM
	PM:	4:45 PM-5:45 PM

All Vehicles

Time		North Approach Park Rd				East Approach Forest Rd				South Approach Alfred St				West Approach Forest Rd				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	0	0	0	0	5	0	0	0	12	26	0	0	0	74	36	830	
7:15	7:30	0	0	0	0	0	10	0	0	0	12	21	0	0	0	80	33	1039	
7:30	7:45	0	0	0	0	0	18	0	0	0	11	31	0	0	0	111	41	1230	
7:45	8:00	0	0	0	0	0	25	0	0	0	17	47	0	0	0	138	82	1399	Peak
8:00	8:15	0	0	0	0	0	27	0	0	0	32	77	0	0	0	140	86	1390	
8:15	8:30	0	0	0	0	0	48	0	0	0	21	53	0	0	0	158	67		
8:30	8:45	0	0	0	0	0	52	0	0	0	26	75	0	0	0	136	92		
8:45	9:00	0	0	0	0	0	48	0	0	0	23	77	0	0	0	84	68		
16:00	16:15	0	0	0	0	0	47	0	0	0	13	62	0	0	0	103	44	1104	
16:15	16:30	0	0	0	0	0	43	0	0	0	9	46	0	0	0	115	73	1152	
16:30	16:45	0	0	0	0	0	35	0	0	0	12	41	0	0	0	113	74	1145	
16:45	17:00	0	0	0	0	0	43	0	0	0	12	52	0	0	0	106	61	1175	Peak
17:00	17:15	0	0	0	0	0	49	0	0	0	7	56	0	0	0	124	81	1167	
17:15	17:30	0	0	0	0	0	48	0	0	0	12	58	0	0	0	108	53		
17:30	17:45	0	0	0	0	0	52	0	0	0	15	60	0	0	0	112	66		
17:45	18:00	0	0	0	0	0	34	0	0	0	13	43	0	0	0	115	61		

Peak Time		North Approach Park Rd				East Approach Forest Rd				South Approach Alfred St				West Approach Forest Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:45	8:45	0	0	0	0	0	152	0	0	0	96	252	0	0	0	572	327	1399
16:45	17:45	0	0	0	0	0	192	0	0	0	46	226	0	0	0	450	261	1175

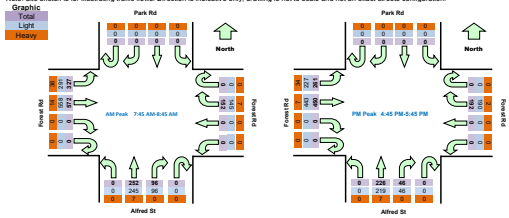
Pedestrians Crossing

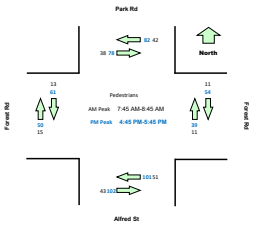
Time		North Approach Park Rd		East Approach Forest Rd		South Approach Alfred St		West Approach Forest Rd		Hourly Total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	
7:00	7:15	4	2	0	0	2	2	0	1	107
7:15	7:30	2	6	1	0	10	2	2	2	137
7:30	7:45	5	3	0	2	7	3	0	0	187
7:45	8:00	11	10	1	3	17	3	2	4	224
8:00	8:15	8	3	1	2	8	12	2	5	259
8:15	8:30	13	12	7	4	15	14	5	5	
8:30	8:45	10	13	2	2	11	14	4	1	
8:45	9:00	24	8	7	6	15	15	5	6	
16:00	16:15	24	22	10	8	11	22	10	6	591
16:15	16:30	17	27	14	7	24	41	18	14	619
16:30	16:45	25	26	12	10	26	29	24	19	594
16:45	17:00	23	18	11	9	22	25	21	16	567
17:00	17:15	25	20	14	5	23	27	9	18	523
17:15	17:30	19	23	17	12	16	26	15	9	
17:30	17:45	15	17	12	13	40	24	16	7	
17:45	18:00	3	21	16	9	19	27	4	2	

Peak Time		North Approach Park Rd		East Approach Forest Rd		South Approach Alfred St		West Approach Forest Rd		Peak hour total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	
7:45	8:45	42	38	11	11	51	43	13	15	224
16:45	17:45	82	78	54	39	101	102	61	50	567

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic
Total
Light
Heavy





Light Vehicles

Time		North Approach Park Rd				East Approach Forest Rd				South Approach Alfred St				West Approach Forest Rd			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	0	0	0	0	4	0	0	0	11	24	0	0	0	71	27
7:15	7:30	0	0	0	0	0	9	0	0	0	12	19	0	0	0	76	26
7:30	7:45	0	0	0	0	0	17	0	0	0	11	31	0	0	0	105	33
7:45	8:00	0	0	0	0	0	23	0	0	0	17	46	0	0	0	134	71
8:00	8:15	0	0	0	0	0	23	0	0	0	32	74	0	0	0	136	78
8:15	8:30	0	0	0	0	0	47	0	0	0	21	52	0	0	0	154	58
8:30	8:45	0	0	0	0	0	52	0	0	0	26	73	0	0	0	134	84
8:45	9:00	0	0	0	0	0	47	0	0	0	22	76	0	0	0	79	58
16:00	16:15	0	0	0	0	0	45	0	0	0	13	58	0	0	0	100	36
16:15	16:30	0	0	0	0	0	42	0	0	0	9	45	0	0	0	112	66
16:30	16:45	0	0	0	0	0	35	0	0	0	12	38	0	0	0	111	65
16:45	17:00	0	0	0	0	0	43	0	0	0	12	51	0	0	0	104	53
17:00	17:15	0	0	0	0	0	48	0	0	0	7	53	0	0	0	122	72
17:15	17:30	0	0	0	0	0	47	0	0	0	12	58	0	0	0	105	45
17:30	17:45	0	0	0	0	0	52	0	0	0	15	57	0	0	0	112	57
17:45	18:00	0	0	0	0	0	33	0	0	0	13	43	0	0	0	112	54

Peak Time		North Approach Park Rd				East Approach Forest Rd				South Approach Alfred St				West Approach Forest Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:45	8:45	0	0	0	0	0	145	0	0	0	96	245	0	0	0	558	291	1335
16:45	17:45	0	0	0	0	0	190	0	0	0	46	219	0	0	0	443	227	1125

Heavy Vehicles

Time		North Approach Park Rd				East Approach Forest Rd				South Approach Alfred St				West Approach Forest Rd			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	0	0	0	0	1	0	0	0	1	2	0	0	0	3	9
7:15	7:30	0	0	0	0	0	1	0	0	0	0	2	0	0	0	4	7
7:30	7:45	0	0	0	0	0	1	0	0	0	0	0	0	0	0	6	8
7:45	8:00	0	0	0	0	0	2	0	0	0	0	1	0	0	0	4	11
8:00	8:15	0	0	0	0	0	4	0	0	0	0	3	0	0	0	4	8
8:15	8:30	0	0	0	0	0	1	0	0	0	0	1	0	0	0	4	9
8:30	8:45	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	8
8:45	9:00	0	0	0	0	0	1	0	0	0	1	1	0	0	0	5	10
16:00	16:15	0	0	0	0	0	2	0	0	0	0	4	0	0	0	3	8
16:15	16:30	0	0	0	0	0	1	0	0	0	0	1	0	0	0	3	7
16:30	16:45	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	9
16:45	17:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	8
17:00	17:15	0	0	0	0	0	1	0	0	0	0	3	0	0	0	2	9
17:15	17:30	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	8
17:30	17:45	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	9
17:45	18:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	7

Peak Time		North Approach Park Rd				East Approach Forest Rd				South Approach Alfred St				West Approach Forest Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:45	8:45	0	0	0	0	0	7	0	0	0	0	7	0	0	0	14	36	64
16:45	17:45	0	0	0	0	0	2	0	0	0	0	7	0	0	0	7	34	50

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au

Intersection of Forest Rd and The Ave, Hurstville

GPS -33.9673, 151.10796

Date:	Thu 30/07/20
Weather:	Overcast
Suburban:	Hurstville
Customer:	TTPP

North:	The Ave
East:	Forest Rd
South:	The Ave
West:	Forest Rd

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	4:00 PM-6:00 PM
Traffic Peak	AM:	7:45 AM-8:45 AM
	PM:	4:15 PM-5:15 PM

All Vehicles

Time		North Approach The Ave				East Approach Forest Rd				South Approach The Ave				West Approach Forest Rd				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	0	16	21	0	0	5	0	0	0	0	0	0	6	80	0	766	
7:15	7:30	0	1	18	26	0	0	9	0	0	0	0	0	0	6	86	0	956	
7:30	7:45	0	0	26	31	0	0	18	0	0	0	0	0	0	5	117	0	1185	
7:45	8:00	0	0	62	53	0	0	25	0	0	0	0	0	0	8	147	0	1340	Peak
8:00	8:15	0	1	62	57	0	0	26	0	0	0	0	0	0	14	158	0	1321	
8:15	8:30	0	1	84	63	0	0	47	1	0	0	0	0	0	9	170	0		
8:30	8:45	0	0	91	47	0	0	52	0	0	0	0	0	0	11	151	0		
8:45	9:00	0	4	84	37	0	0	44	0	0	0	0	0	0	11	96	0		
16:00	16:15	0	3	83	51	0	0	44	0	0	0	0	0	0	24	92	0	1312	
16:15	16:30	0	3	99	83	0	0	40	0	0	0	0	0	0	34	90	0	1358	Peak
16:30	16:45	0	1	122	65	0	0	34	2	0	0	0	0	0	30	95	0	1345	
16:45	17:00	0	3	99	57	0	0	40	0	0	0	0	0	0	37	81	0	1337	
17:00	17:15	0	2	95	68	0	0	47	0	0	0	0	0	0	38	93	0	1338	
17:15	17:30	0	1	92	76	0	0	47	0	0	0	0	0	0	29	91	0		
17:30	17:45	0	4	88	74	0	0	48	0	0	0	0	0	0	26	101	0		
17:45	18:00	0	2	82	74	0	0	32	0	0	0	0	0	0	36	92	0		

Peak Time		North Approach The Ave				East Approach Forest Rd				South Approach The Ave				West Approach Forest Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:45	8:45	0	2	299	220	0	0	150	1	0	0	0	0	0	42	626	0	1340
16:15	17:15	0	9	415	273	0	0	161	2	0	0	0	0	0	139	359	0	1358

Pedestrians Crossing

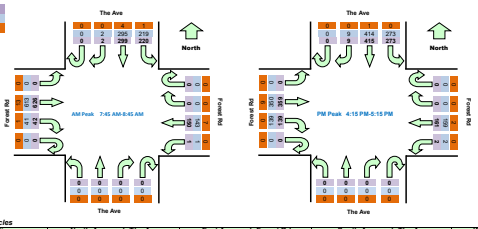
Time		North Approach The Ave		East Approach Forest Rd		South Approach The Ave		West Approach Forest Rd		Hourly Total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	
7:00	7:15	3	0	0	1	4	1	0	0	94
7:15	7:30	4	3	2	1	6	3	1	1	124
7:30	7:45	5	1	0	0	11	1	1	1	171
7:45	8:00	10	7	0	2	14	4	0	7	210
8:00	8:15	17	4	0	5	7	3	2	1	296
8:15	8:30	18	10	1	12	11	13	0	3	
8:30	8:45	13	13	2	13	8	7	1	2	
8:45	9:00	19	17	11	36	25	12	1	9	
16:00	16:15	9	23	13	1	16	20	4	4	387
16:15	16:30	18	25	6	10	14	13	5	5	383
16:30	16:45	12	15	7	9	19	24	2	8	373
16:45	17:00	23	15	9	2	21	12	10	13	370
17:00	17:15	8	29	9	5	10	16	3	6	343
17:15	17:30	12	13	3	7	10	27	8	6	
17:30	17:45	14	16	7	3	18	21	8	6	
17:45	18:00	19	16	5	6	10	18	0	4	

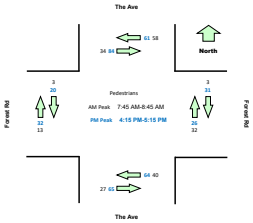
Peak Time		North Approach The Ave		East Approach Forest Rd		South Approach The Ave		West Approach Forest Rd		Peak hour total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	
7:45	8:45	58	34	3	32	40	27	3	13	210
16:15	17:15	61	84	31	26	64	65	20	32	383

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy





Light Vehicles

Time		North Approach The Ave				East Approach Forest Rd				South Approach The Ave				West Approach Forest Rd			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	0	14	20	0	0	4	0	0	0	0	0	0	5	77	0
7:15	7:30	0	1	17	26	0	0	8	0	0	0	0	0	0	5	83	0
7:30	7:45	0	0	26	31	0	0	17	0	0	0	0	0	0	3	113	0
7:45	8:00	0	0	61	53	0	0	23	0	0	0	0	0	0	8	143	0
8:00	8:15	0	1	61	56	0	0	22	0	0	0	0	0	0	14	154	0
8:15	8:30	0	1	83	63	0	0	46	1	0	0	0	0	0	9	166	0
8:30	8:45	0	0	90	47	0	0	52	0	0	0	0	0	0	10	150	0
8:45	9:00	0	4	83	37	0	0	43	0	0	0	0	0	0	10	91	0
16:00	16:15	0	3	82	49	0	0	42	0	0	0	0	0	0	24	89	0
16:15	16:30	0	3	99	83	0	0	39	0	0	0	0	0	0	34	87	0
16:30	16:45	0	1	121	65	0	0	34	2	0	0	0	0	0	30	93	0
16:45	17:00	0	3	99	57	0	0	40	0	0	0	0	0	0	37	79	0
17:00	17:15	0	2	95	68	0	0	46	0	0	0	0	0	0	38	91	0
17:15	17:30	0	1	92	76	0	0	46	0	0	0	0	0	0	29	88	0
17:30	17:45	0	4	88	74	0	0	48	0	0	0	0	0	0	26	101	0
17:45	18:00	0	2	82	73	0	0	31	0	0	0	0	0	0	36	89	0

Peak Time		North Approach The Ave				East Approach Forest Rd				South Approach The Ave				West Approach Forest Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:45	8:45	0	2	295	219	0	0	143	1	0	0	0	0	0	41	613	0	1314
16:15	17:15	0	9	414	273	0	0	159	2	0	0	0	0	0	139	350	0	1346

Heavy Vehicles

Time		North Approach The Ave				East Approach Forest Rd				South Approach The Ave				West Approach Forest Rd			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	0	2	1	0	0	1	0	0	0	0	0	0	1	3	0
7:15	7:30	0	0	1	0	0	0	1	0	0	0	0	0	0	1	3	0
7:30	7:45	0	0	0	0	0	0	1	0	0	0	0	0	0	2	4	0
7:45	8:00	0	0	1	0	0	0	2	0	0	0	0	0	0	0	4	0
8:00	8:15	0	0	1	1	0	0	4	0	0	0	0	0	0	0	4	0
8:15	8:30	0	0	1	0	0	0	1	0	0	0	0	0	0	0	4	0
8:30	8:45	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0
8:45	9:00	0	0	1	0	0	0	1	0	0	0	0	0	0	1	5	0
16:00	16:15	0	0	1	2	0	0	2	0	0	0	0	0	0	0	3	0
16:15	16:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0
16:30	16:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0
16:45	17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
17:00	17:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0
17:15	17:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0
17:30	17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3	0

Peak Time		North Approach The Ave				East Approach Forest Rd				South Approach The Ave				West Approach Forest Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
7:45	8:45	0	0	4	1	0	0	7	0	0	0	0	0	0	1	13	0	26
16:15	17:15	0	0	1	0	0	0	2	0	0	0	0	0	0	0	9	0	12

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au

Intersection of Railway Pde and The Ave, Hurstville

GPS	-33.96855, 151.10838
Date:	Thu 30/07/20
Weather:	Overcast
Suburban:	Hurstville
Customer:	TTPP

North:	The Ave
East:	Railway Pde
South:	N/A
West:	Railway Pde

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	4:00 PM-6:00 PM
Traffic Peak	AM:	7:45 AM-8:45 AM
	PM:	4:30 PM-5:30 PM

All Vehicles

Time		North Approach The Ave			East Approach Railway Pde			West Approach Railway Pde			Hourly Total	
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	Hour	Peak
7:00	7:15	0	29	7	0	20	84	0	104	5	1170	
7:15	7:30	0	27	10	0	22	73	0	121	4	1331	
7:30	7:45	0	42	13	0	34	91	0	91	2	1496	
7:45	8:00	0	56	28	0	64	96	0	138	9	1712	Peak
8:00	8:15	0	59	38	0	75	98	0	135	5	1701	
8:15	8:30	0	69	40	0	62	110	0	128	13		
8:30	8:45	0	103	39	0	68	130	0	132	17		
8:45	9:00	0	91	28	0	57	97	0	101	6		
16:00	16:15	0	79	33	0	44	159	0	84	12	1663	
16:15	16:30	0	90	38	0	37	119	0	88	10	1725	
16:30	16:45	0	106	41	0	39	131	0	98	9	1764	Peak
16:45	17:00	0	98	32	0	52	150	0	100	14	1746	
17:00	17:15	0	111	45	0	43	160	0	101	13	1717	
17:15	17:30	0	83	43	0	49	135	0	97	14		
17:30	17:45	0	90	39	0	52	133	0	81	11		
17:45	18:00	0	102	38	0	41	134	0	91	11		

Peak Time		North Approach The Ave			East Approach Railway Pde			West Approach Railway Pde			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
7:45	8:45	0	287	145	0	269	434	0	533	44	1712
16:30	17:30	0	398	161	0	183	576	0	396	50	1764

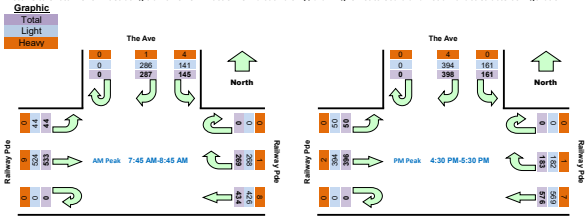
Pedestrians Crossing

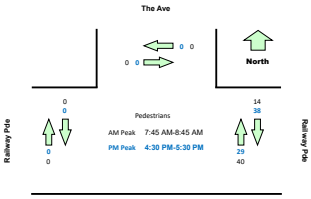
Time		North Approach The Ave		East Approach Railway Pde		West Approach Railway Pde		Hourly Total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Southbound	Northbound	
7:00	7:15	0	0	0	1	0	0	24
7:15	7:30	0	0	0	11	0	0	34
7:30	7:45	0	0	1	1	0	0	39
7:45	8:00	0	0	2	8	0	0	54
8:00	8:15	0	0	4	7	0	0	64
8:15	8:30	0	0	4	12	0	0	
8:30	8:45	0	0	4	13	0	0	
8:45	9:00	0	0	6	14	0	0	
16:00	16:15	0	0	10	7	0	0	70
16:15	16:30	0	0	10	7	0	0	66
16:30	16:45	0	0	10	6	0	0	67
16:45	17:00	0	0	9	11	0	0	67
17:00	17:15	0	0	8	5	0	0	59
17:15	17:30	0	0	11	7	0	0	
17:30	17:45	0	0	14	2	0	0	
17:45	18:00	0	0	10	2	0	0	

Peak Time		North Approach The Ave		East Approach Railway Pde		West Approach Railway Pde		Peak total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Southbound	Northbound	
7:45	8:45	0	0	14	40	0	0	54
16:30	17:30	0	0	38	29	0	0	67

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic





Light Vehicles

Time		North Approach The Ave			East Approach Railway Pde			West Approach Railway Pde		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
7:00	7:15	0	27	7	0	20	80	0	101	5
7:15	7:30	0	27	8	0	22	66	0	117	4
7:30	7:45	0	40	13	0	33	82	0	90	2
7:45	8:00	0	56	27	0	64	94	0	135	9
8:00	8:15	0	58	37	0	75	96	0	133	5
8:15	8:30	0	69	40	0	62	109	0	126	13
8:30	8:45	0	103	37	0	67	127	0	130	17
8:45	9:00	0	91	27	0	54	91	0	99	6
16:00	16:15	0	79	32	0	44	154	0	84	12
16:15	16:30	0	89	37	0	37	118	0	87	10
16:30	16:45	0	104	41	0	39	128	0	98	9
16:45	17:00	0	97	32	0	51	149	0	99	14
17:00	17:15	0	110	45	0	43	157	0	101	13
17:15	17:30	0	83	43	0	49	135	0	96	14
17:30	17:45	0	88	39	0	52	130	0	80	11
17:45	18:00	0	101	38	0	41	134	0	89	11

Peak Time		North Approach The Ave			East Approach Railway Pde			West Approach Railway Pde			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
7:45	8:45	0	286	141	0	268	426	0	524	44	1689
16:30	17:30	0	394	161	0	182	569	0	394	50	1750

Heavy Vehicles

Time		North Approach The Ave			East Approach Railway Pde			West Approach Railway Pde		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
7:00	7:15	0	2	0	0	0	4	0	3	0
7:15	7:30	0	0	2	0	0	7	0	4	0
7:30	7:45	0	2	0	0	1	9	0	1	0
7:45	8:00	0	0	1	0	0	2	0	3	0
8:00	8:15	0	1	1	0	0	2	0	2	0
8:15	8:30	0	0	0	0	0	1	0	2	0
8:30	8:45	0	0	2	0	1	3	0	2	0
8:45	9:00	0	0	1	0	3	6	0	2	0
16:00	16:15	0	0	1	0	0	5	0	0	0
16:15	16:30	0	1	1	0	0	1	0	1	0
16:30	16:45	0	2	0	0	0	3	0	0	0
16:45	17:00	0	1	0	0	1	1	0	1	0
17:00	17:15	0	1	0	0	0	3	0	0	0
17:15	17:30	0	0	0	0	0	0	0	1	0
17:30	17:45	0	2	0	0	0	3	0	1	0
17:45	18:00	0	1	0	0	0	0	0	2	0

Peak Time		North Approach The Ave			East Approach Railway Pde			West Approach Railway Pde			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
7:45	8:45	0	1	4	0	1	8	0	9	0	23
16:30	17:30	0	4	0	0	1	7	0	2	0	14

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY trafficsurvey.com.au

Intersection of Forest Rd and Park Rd, Hurstville

GPS -33.96737, 151.10662

Date:	Sat 01/08/20
Weather:	Overcast
Suburban:	Hurstville
Customer:	TTPP

North:	Park Rd
East:	Forest Rd
South:	Alfred St
West:	Forest Rd

Survey Period	AM:	10:00 AM-12:00 PM
	PM:	12:00 AM-12:00 AM
Traffic Peak	AM:	10:45 AM-11:45 AM
	PM:	#REF!

All Vehicles

Time		North Approach Park Rd				East Approach Forest Rd				South Approach Alfred St				West Approach Forest Rd				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
10:00	10:15	0	0	0	0	0	42	0	0	0	10	58	0	0	0	115	67	1196	
10:15	10:30	0	0	0	0	0	38	0	0	0	14	60	0	0	0	120	59	1209	
10:30	10:45	0	0	0	0	0	49	0	0	0	13	43	0	0	0	108	75	1238	
10:45	11:00	0	0	0	0	0	38	0	0	0	22	69	0	0	0	117	79	1251	Peak
11:00	11:15	0	0	0	0	0	43	0	0	0	14	56	0	0	0	110	82	1227	
11:15	11:30	0	0	0	0	0	38	0	0	0	21	57	0	0	0	124	80		
11:30	11:45	0	0	0	0	0	41	0	0	0	15	68	0	0	0	117	60		
11:45	12:00	0	0	0	0	0	35	0	0	0	13	53	0	0	0	112	88		

Peak Time		North Approach Park Rd				East Approach Forest Rd				South Approach Alfred St				West Approach Forest Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
10:45	11:45	0	0	0	0	0	160	0	0	0	72	250	0	0	0	468	301	1251

Pedestrians Crossing

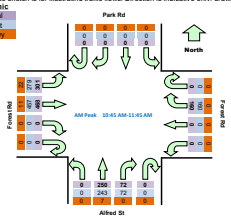
Time		North Approach Park Rd		East Approach Forest Rd		South Approach Alfred St		West Approach Forest Rd		Hourly Total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	
10:00	10:15	30	45	23	16	39	32	28	13	933
10:15	10:30	41	45	29	33	45	23	23	11	954
10:30	10:45	46	30	28	18	26	28	15	20	930
10:45	11:00	36	45	23	13	33	42	26	28	964
11:00	11:15	31	36	32	32	35	43	27	11	964
11:15	11:30	37	39	23	18	51	28	19	11	
11:30	11:45	53	40	25	24	40	22	22	19	
11:45	12:00	41	58	22	19	34	32	21	19	

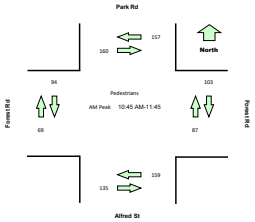
Peak Time		North Approach Park Rd		East Approach Forest Rd		South Approach Alfred St		West Approach Forest Rd		Peak hour total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	
10:45	11:45	157	160	103	87	159	135	94	69	964

Note: Site sketch is for illustratino traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy





Light Vehicles

Time		North Approach Park Rd				East Approach Forest Rd				South Approach Alfred St				West Approach Forest Rd			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
10:00	10:15	0	0	0	0	0	42	0	0	0	10	56	0	0	0	113	61
10:15	10:30	0	0	0	0	0	38	0	0	0	14	58	0	0	0	117	55
10:30	10:45	0	0	0	0	0	49	0	0	0	13	43	0	0	0	108	69
10:45	11:00	0	0	0	0	0	38	0	0	0	22	67	0	0	0	114	74
11:00	11:15	0	0	0	0	0	43	0	0	0	14	54	0	0	0	107	79
11:15	11:30	0	0	0	0	0	38	0	0	0	21	55	0	0	0	123	73
11:30	11:45	0	0	0	0	0	41	0	0	0	15	67	0	0	0	113	53
11:45	12:00	0	0	0	0	0	35	0	0	0	12	52	0	0	0	109	83

Peak Time		North Approach Park Rd				East Approach Forest Rd				South Approach Alfred St				West Approach Forest Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
10:45	11:45	0	0	0	0	0	160	0	0	0	72	243	0	0	0	457	279	1211

Heavy Vehicles

Time		North Approach Park Rd				East Approach Forest Rd				South Approach Alfred St				West Approach Forest Rd			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
10:00	10:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	6
10:15	10:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	4
10:30	10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
10:45	11:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	5
11:00	11:15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	3
11:15	11:30	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	7
11:30	11:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	7
11:45	12:00	0	0	0	0	0	0	0	0	0	1	1	0	0	0	3	5

Peak Time		North Approach Park Rd				East Approach Forest Rd				South Approach Alfred St				West Approach Forest Rd				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
10:45	11:45	0	0	0	0	0	0	0	0	0	0	7	0	0	0	11	22	40

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Forest Rd and The Ave, Hurstville

GPS -33.9673, 151.10796

Date:	Sat 01/08/20
Weather:	Overcast
Suburban:	Hurstville
Customer:	TTPP

North:	The Ave
East:	Forest Rd
South:	The Ave
West:	Forest Rd

Survey Period	AM:	10:00 AM-12:00 PM
	PM:	12:00 AM-12:00 AM
Traffic Peak	AM:	10:45 AM-11:45 AM
	PM:	#REF!

All Vehicles

Time		North Approach The Ave				East Approach Forest Rd				South Approach The Ave				West Approach Forest Rd				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
10:00	10:15	0	2	89	66	0	0	40	0	0	0	0	0	0	39	86	0	1261	
10:15	10:30	0	3	62	59	0	0	35	1	0	0	0	0	0	34	100	0	1263	
10:30	10:45	0	5	76	70	0	0	44	0	0	0	0	0	0	26	95	0	1315	
10:45	11:00	0	1	88	64	0	0	37	0	0	0	0	0	0	44	95	0	1346	Peak
11:00	11:15	0	1	95	62	0	0	42	0	0	0	0	0	0	40	84	0	1317	
11:15	11:30	0	4	84	78	0	0	34	1	0	0	0	0	0	42	103	0		
11:30	11:45	0	3	101	73	0	0	38	0	0	0	0	0	0	39	93	0		
11:45	12:00	0	0	76	63	0	0	35	1	0	0	0	0	0	36	89	0		

Peak Time		North Approach The Ave				East Approach Forest Rd				South Approach The Ave				West Approach Forest Rd				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
10:45	11:45	0	9	368	277	0	0	151	1	0	0	0	0	0	165	375	0	1346

Pedestrians Crossing

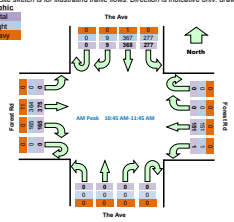
Time		North Approach The Ave		East Approach Forest Rd		South Approach The Ave		West Approach Forest Rd		Hourly Total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	
10:00	10:15	25	25	6	4	39	22	7	20	501
10:15	10:30	23	12	6	13	16	29	2	11	509
10:30	10:45	21	13	10	9	26	14	12	14	538
10:45	11:00	24	23	9	13	18	16	8	11	561
11:00	11:15	46	26	5	14	20	15	11	19	582
11:15	11:30	25	27	3	11	29	23	10	13	
11:30	11:45	26	21	6	2	38	22	17	10	
11:45	12:00	29	18	7	9	21	27	11	21	

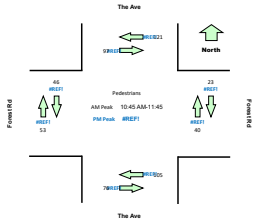
Peak Time		North Approach The Ave		East Approach Forest Rd		South Approach The Ave		West Approach Forest Rd		Peak hour
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	Southbound	Northbound	total
10:45	11:45	121	97	23	40	105	76	46	53	561

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy





Light Vehicles

Time		North Approach The Ave				East Approach Forest Rd				South Approach The Ave				West Approach Forest Rd			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
10:00	10:15	0	2	89	66	0	0	40	0	0	0	0	0	0	39	84	0
10:15	10:30	0	3	62	59	0	0	35	1	0	0	0	0	0	34	97	0
10:30	10:45	0	5	76	70	0	0	44	0	0	0	0	0	0	26	95	0
10:45	11:00	0	1	87	64	0	0	37	0	0	0	0	0	0	44	92	0
11:00	11:15	0	1	95	62	0	0	42	0	0	0	0	0	0	40	81	0
11:15	11:30	0	4	84	78	0	0	34	1	0	0	0	0	0	42	102	0
11:30	11:45	0	3	101	73	0	0	38	0	0	0	0	0	0	39	89	0
11:45	12:00	0	0	76	62	0	0	35	1	0	0	0	0	0	35	86	0

Peak Time		North Approach The Ave				East Approach Forest Rd				South Approach The Ave				West Approach Forest Rd				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
10:45	11:45	0	9	367	277	0	0	151	1	0	0	0	0	0	165	364	0	1334

Heavy Vehicles

Time		North Approach The Ave				East Approach Forest Rd				South Approach The Ave				West Approach Forest Rd			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
10:00	10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
10:15	10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
10:30	10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	11:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0
11:00	11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
11:15	11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
11:30	11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
11:45	12:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1	3	0

Peak Time		North Approach The Ave				East Approach Forest Rd				South Approach The Ave				West Approach Forest Rd				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
10:45	11:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	11	0	12

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Railway Pde and The Ave, Hurstville

GPS	-33.96855, 151.10838
Date:	Sat 01/08/20
Weather:	Overcast
Suburban:	Hurstville
Customer:	TTPP

North:	The Ave
East:	Railway Pde
South:	N/A
West:	Railway Pde

Survey Period	AM:	10:00 AM-12:00 PM
	PM:	12:00 AM-12:00 AM
Traffic Peak	AM:	10:45 AM-11:45 AM
	PM:	#REF!

All Vehicles

Time		North Approach The Ave			East Approach Railway Pde			West Approach Railway Pde			Hourly Total	
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	Hour	Peak
10:00	10:15	0	65	44	0	53	91	0	97	24	1537	
10:15	10:30	0	69	22	0	43	88	0	104	20	1570	
10:30	10:45	0	80	37	0	47	112	0	96	8	1625	
10:45	11:00	0	69	36	0	63	138	0	106	25	1644	Peak
11:00	11:15	0	96	50	0	41	123	0	81	16	1591	
11:15	11:30	0	79	31	0	51	126	0	95	19		
11:30	11:45	0	83	47	0	47	114	0	93	15		
11:45	12:00	0	79	41	0	44	122	0	82	16		

Peak Time		North Approach The Ave			East Approach Railway Pde			West Approach Railway Pde			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
10:45	11:45	0	327	164	0	202	501	0	375	75	1644

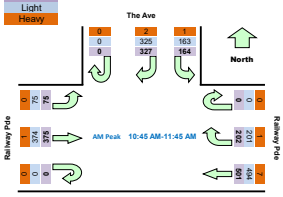
Pedestrians Crossing

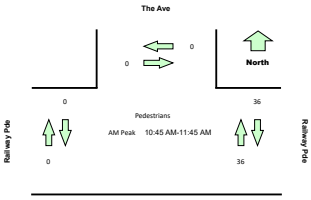
Time		North Approach The Ave		East Approach Railway Pde		West Approach Railway Pde		Hourly Total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Southbound	Northbound	
10:00	10:15	0	0	11	9	0	0	78
10:15	10:30	0	0	9	11	0	0	63
10:30	10:45	0	0	11	5	0	0	66
10:45	11:00	0	0	11	11	0	0	72
11:00	11:15	0	0	2	3	0	0	69
11:15	11:30	0	0	8	15	0	0	
11:30	11:45	0	0	15	7	0	0	
11:45	12:00	0	0	5	14	0	0	

Peak Time		North Approach The Ave		East Approach Railway Pde		West Approach Railway Pde		Peak total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Southbound	Northbound	
10:45	11:45	0	0	36	36	0	0	72

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic: Total / Light / Heavy





Light Vehicles

Time		North Approach The Ave			East Approach Railway Pde			West Approach Railway Pde		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
10:00	10:15	0	64	44	0	53	90	0	97	24
10:15	10:30	0	69	21	0	43	87	0	103	20
10:30	10:45	0	80	37	0	47	110	0	92	8
10:45	11:00	0	69	36	0	63	137	0	106	25
11:00	11:15	0	95	50	0	40	120	0	80	16
11:15	11:30	0	78	30	0	51	125	0	95	19
11:30	11:45	0	83	47	0	47	112	0	93	15
11:45	12:00	0	79	40	0	43	119	0	81	16

Peak Time		North Approach The Ave			East Approach Railway Pde			West Approach Railway Pde			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
10:45	11:45	0	325	163	0	201	494	0	374	75	1632

Heavy Vehicles

Time		North Approach The Ave			East Approach Railway Pde			West Approach Railway Pde		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
10:00	10:15	0	1	0	0	0	1	0	0	0
10:15	10:30	0	0	1	0	0	1	0	1	0
10:30	10:45	0	0	0	0	0	2	0	4	0
10:45	11:00	0	0	0	0	0	1	0	0	0
11:00	11:15	0	1	0	0	1	3	0	1	0
11:15	11:30	0	1	1	0	0	1	0	0	0
11:30	11:45	0	0	0	0	0	2	0	0	0
11:45	12:00	0	0	1	0	1	3	0	1	0

Peak Time		North Approach The Ave			East Approach Railway Pde			West Approach Railway Pde			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
10:45	11:45	0	2	1	0	1	7	0	1	0	12

TCS 2348

HURSTVILLE 293N6

KOG SS=37

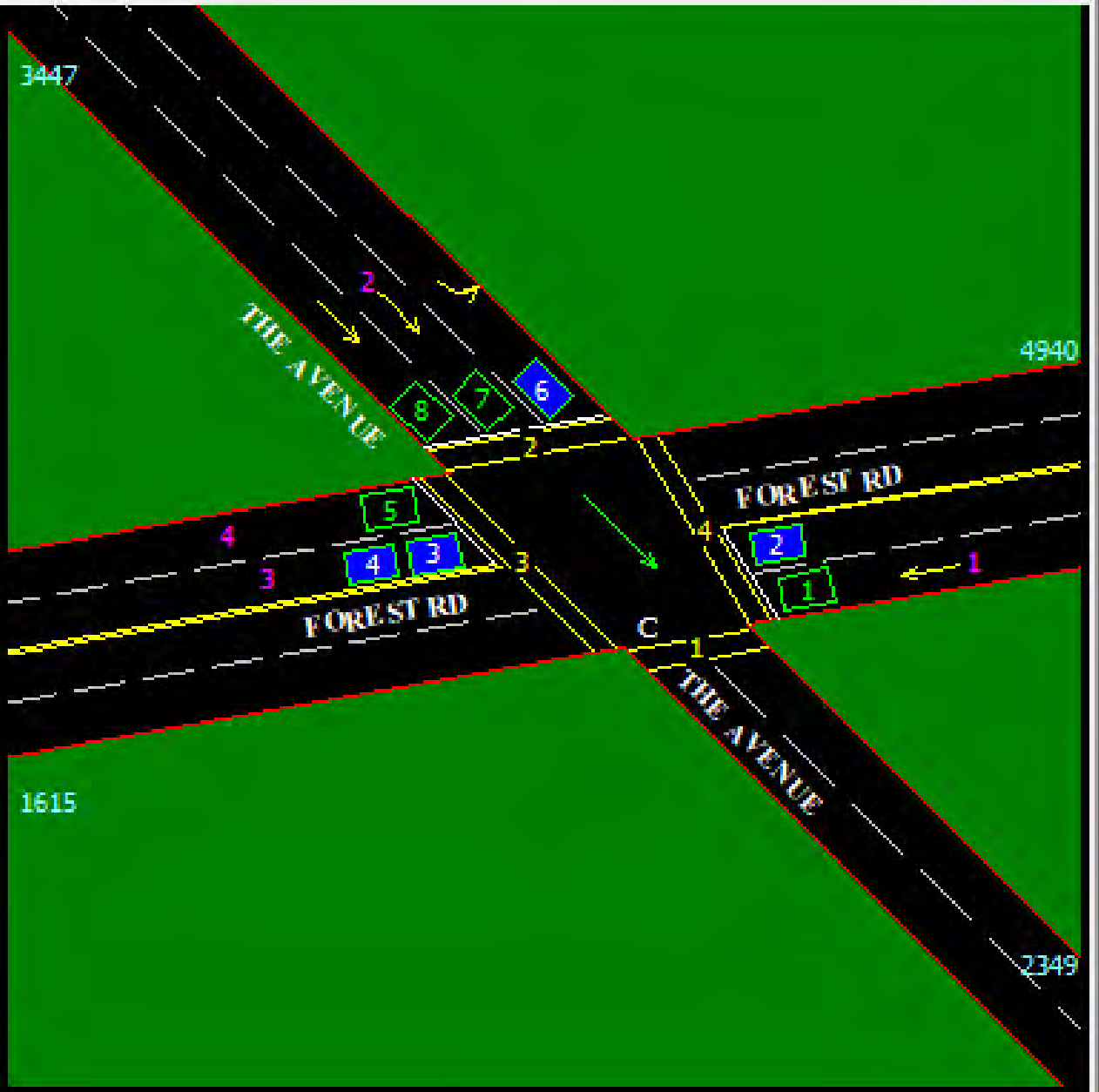
4 PHASES

A

B

C

D



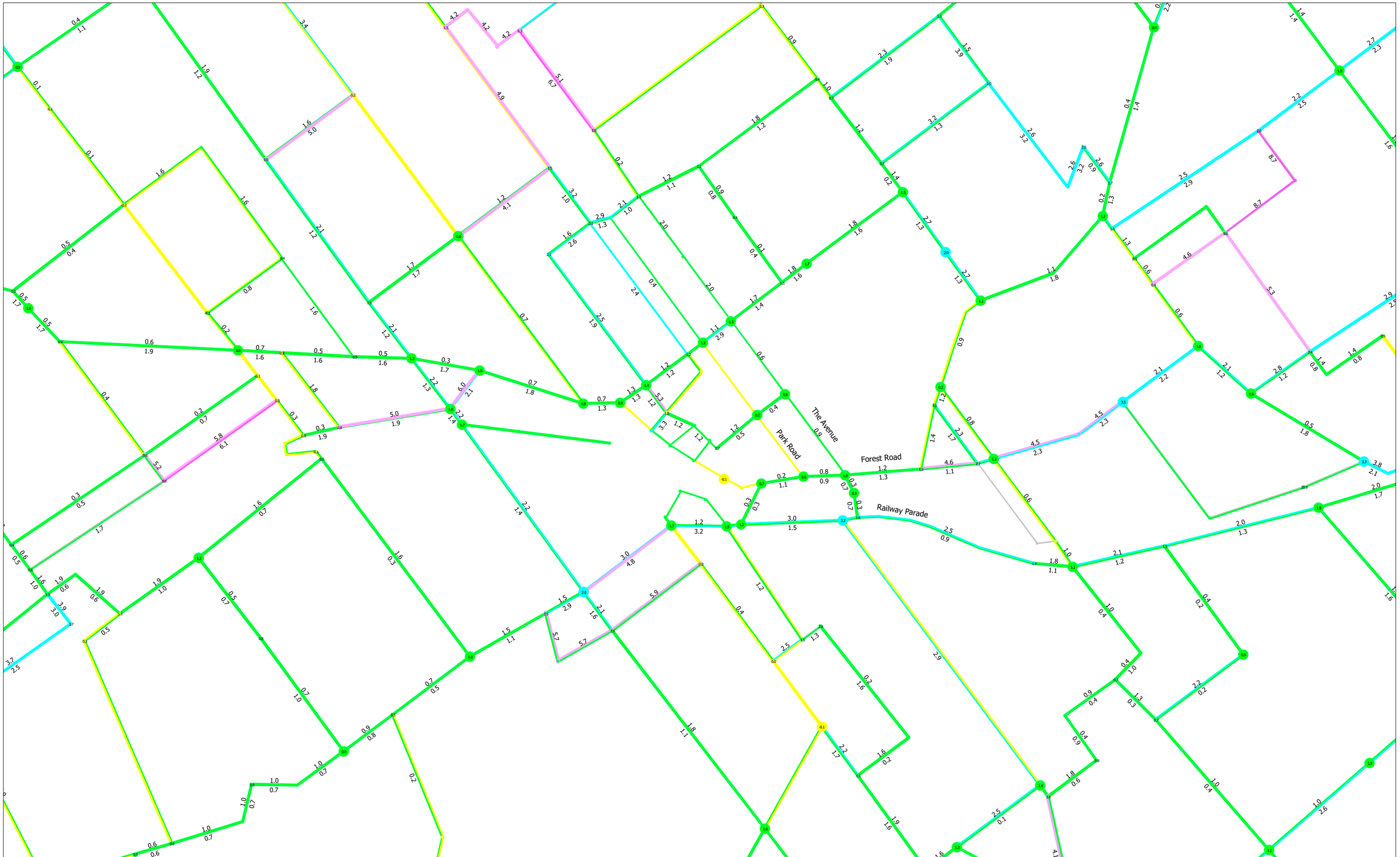
Site	Date	Interval start	Interval end	Detector 1	Detector 2	Detector 3	Detector 4	Detector 5	Detector 6	Detector 7	Detector 8	Total
2348	Thursday,	12:00:00 AM AEST	12:15:00 AM AEST	0	6	0	15	3	7	9	1	41
2348	Thursday,	12:15:00 AM AEST	12:30:00 AM AEST	0	0	0	18	2	5	5	1	31
2348	Thursday,	12:30:00 AM AEST	12:45:00 AM AEST	0	4	0	13	2	4	4	0	27
2348	Thursday,	12:45:00 AM AEST	1:00:00 AM AEST	0	1	1	12	3	5	3	1	26
2348	Thursday,	1:00:00 AM AEST	1:15:00 AM AEST	0	0	0	12	0	1	2	0	15
2348	Thursday,	1:15:00 AM AEST	1:30:00 AM AEST	0	2	0	6	0	2	2	0	12
2348	Thursday,	1:30:00 AM AEST	1:45:00 AM AEST	0	0	0	12	1	3	3	0	19
2348	Thursday,	1:45:00 AM AEST	2:00:00 AM AEST	0	0	0	6	0	1	3	0	10
2348	Thursday,	2:00:00 AM AEST	2:15:00 AM AEST	0	0	0	8	0	3	1	1	13
2348	Thursday,	2:15:00 AM AEST	2:30:00 AM AEST	0	1	0	6	1	6	0	0	14
2348	Thursday,	2:30:00 AM AEST	2:45:00 AM AEST	0	1	0	6	2	1	1	1	12
2348	Thursday,	2:45:00 AM AEST	3:00:00 AM AEST	0	1	0	7	0	3	1	0	12
2348	Thursday,	3:00:00 AM AEST	3:15:00 AM AEST	0	0	0	5	0	0	1	0	6
2348	Thursday,	3:15:00 AM AEST	3:30:00 AM AEST	0	1	0	7	0	0	1	0	9
2348	Thursday,	3:30:00 AM AEST	3:45:00 AM AEST	0	1	0	7	0	1	8	0	17
2348	Thursday,	3:45:00 AM AEST	4:00:00 AM AEST	0	1	0	7	0	3	3	0	14
2348	Thursday,	4:00:00 AM AEST	4:15:00 AM AEST	0	2	0	8	1	0	1	0	12
2348	Thursday,	4:15:00 AM AEST	4:30:00 AM AEST	0	3	0	13	0	0	2	2	20
2348	Thursday,	4:30:00 AM AEST	4:45:00 AM AEST	0	0	0	25	5	0	3	1	34
2348	Thursday,	4:45:00 AM AEST	5:00:00 AM AEST	0	3	1	17	2	3	7	0	33
2348	Thursday,	5:00:00 AM AEST	5:15:00 AM AEST	0	2	0	18	3	6	5	1	35
2348	Thursday,	5:15:00 AM AEST	5:30:00 AM AEST	0	4	0	27	8	6	6	0	51
2348	Thursday,	5:30:00 AM AEST	5:45:00 AM AEST	0	2	0	24	6	10	6	2	50
2348	Thursday,	5:45:00 AM AEST	6:00:00 AM AEST	0	2	2	35	5	5	5	1	55
2348	Thursday,	6:00:00 AM AEST	6:15:00 AM AEST	1	3	1	59	16	9	5	1	95
2348	Thursday,	6:15:00 AM AEST	6:30:00 AM AEST	0	6	0	45	14	9	6	4	84
2348	Thursday,	6:30:00 AM AEST	6:45:00 AM AEST	0	12	0	50	28	15	19	1	125
2348	Thursday,	6:45:00 AM AEST	7:00:00 AM AEST	0	15	0	72	27	20	23	5	162
2348	Thursday,	7:00:00 AM AEST	7:15:00 AM AEST	0	14	6	69	34	15	17	1	156
2348	Thursday,	7:15:00 AM AEST	7:30:00 AM AEST	0	11	1	95	55	19	18	2	201
2348	Thursday,	7:30:00 AM AEST	7:45:00 AM AEST	0	19	0	94	44	25	30	5	217
2348	Thursday,	7:45:00 AM AEST	8:00:00 AM AEST	1	14	7	133	57	40	36	4	292
2348	Thursday,	8:00:00 AM AEST	8:15:00 AM AEST	1	33	0	124	66	49	55	12	340
2348	Thursday,	8:15:00 AM AEST	8:30:00 AM AEST	0	21	21	135	70	60	71	15	393
2348	Thursday,	8:30:00 AM AEST	8:45:00 AM AEST	0	43	17	134	82	49	89	12	426
2348	Thursday,	8:45:00 AM AEST	9:00:00 AM AEST	0	42	1	101	51	49	101	12	357
2348	Thursday,	9:00:00 AM AEST	9:15:00 AM AEST	2	42	11	96	50	36	63	11	311
2348	Thursday,	9:15:00 AM AEST	9:30:00 AM AEST	1	43	5	92	41	49	60	11	302
2348	Thursday,	9:30:00 AM AEST	9:45:00 AM AEST	2	38	0	96	52	42	72	12	314
2348	Thursday,	9:45:00 AM AEST	10:00:00 AM AEST	1	38	0	70	51	56	56	26	298
2348	Thursday,	10:00:00 AM AEST	10:15:00 AM AEST	1	42	1	78	28	50	50	11	261
2348	Thursday,	10:15:00 AM AEST	10:30:00 AM AEST	0	35	26	93	17	56	66	12	305
2348	Thursday,	10:30:00 AM AEST	10:45:00 AM AEST	1	36	3	86	16	64	67	14	287
2348	Thursday,	10:45:00 AM AEST	11:00:00 AM AEST	4	55	7	92	37	69	78	19	361
2348	Thursday,	11:00:00 AM AEST	11:15:00 AM AEST	0	41	4	97	20	68	60	19	309
2348	Thursday,	11:15:00 AM AEST	11:30:00 AM AEST	1	54	27	102	23	71	70	11	359
2348	Thursday,	11:30:00 AM AEST	11:45:00 AM AEST	2	44	13	78	36	71	79	15	338
2348	Thursday,	11:45:00 AM AEST	12:00:00 PM AEST	2	45	5	97	16	92	73	19	349
2348	Thursday,	12:00:00 PM AEST	12:15:00 PM AEST	1	46	12	88	26	66	78	19	336
2348	Thursday,	12:15:00 PM AEST	12:30:00 PM AEST	2	46	1	91	27	74	77	19	337
2348	Thursday,	12:30:00 PM AEST	12:45:00 PM AEST	2	47	1	104	19	68	69	19	329
2348	Thursday,	12:45:00 PM AEST	1:00:00 PM AEST	6	55	5	121	31	75	71	20	384
2348	Thursday,	1:00:00 PM AEST	1:15:00 PM AEST	0	47	2	79	44	76	82	22	352
2348	Thursday,	1:15:00 PM AEST	1:30:00 PM AEST	0	53	9	84	38	79	88	13	364
2348	Thursday,	1:30:00 PM AEST	1:45:00 PM AEST	3	44	6	89	18	79	68	17	324
2348	Thursday,	1:45:00 PM AEST	2:00:00 PM AEST	2	38	6	95	31	67	69	17	325
2348	Thursday,	2:00:00 PM AEST	2:15:00 PM AEST	0	42	5	112	17	82	85	18	361
2348	Thursday,	2:15:00 PM AEST	2:30:00 PM AEST	1	42	17	113	23	80	104	19	399
2348	Thursday,	2:30:00 PM AEST	2:45:00 PM AEST	1	40	9	101	34	80	81	23	369
2348	Thursday,	2:45:00 PM AEST	3:00:00 PM AEST	3	41	6	102	63	104	89	14	422
2348	Thursday,	3:00:00 PM AEST	3:15:00 PM AEST	0	52	0	67	66	84	113	16	398
2348	Thursday,	3:15:00 PM AEST	3:30:00 PM AEST	1	71	8	62	57	78	96	18	391
2348	Thursday,	3:30:00 PM AEST	3:45:00 PM AEST	2	42	6	61	69	86	82	28	376
2348	Thursday,	3:45:00 PM AEST	4:00:00 PM AEST	0	63	15	64	106	85	84	29	446
2348	Thursday,	4:00:00 PM AEST	4:15:00 PM AEST	1	40	4	67	61	94	107	28	402
2348	Thursday,	4:15:00 PM AEST	4:30:00 PM AEST	0	64	0	74	66	80	87	17	388
2348	Thursday,	4:30:00 PM AEST	4:45:00 PM AEST	0	50	0	81	49	97	104	19	400
2348	Thursday,	4:45:00 PM AEST	5:00:00 PM AEST	4	57	0	57	68	69	87	15	357
2348	Thursday,	5:00:00 PM AEST	5:15:00 PM AEST	3	59	0	71	78	92	96	22	421
2348	Thursday,	5:15:00 PM AEST	5:30:00 PM AEST	3	60	8	43	82	104	102	30	432
2348	Thursday,	5:30:00 PM AEST	5:45:00 PM AEST	2	67	0	64	91	103	101	20	448
2348	Thursday,	5:45:00 PM AEST	6:00:00 PM AEST	1	48	3	57	59	98	128	25	419
2348	Thursday,	6:00:00 PM AEST	6:15:00 PM AEST	4	60	12	58	70	92	118	25	439
2348	Thursday,	6:15:00 PM AEST	6:30:00 PM AEST	2	73	2	65	62	61	75	16	356
2348	Thursday,	6:30:00 PM AEST	6:45:00 PM AEST	3	59	4	82	55	107	97	23	430
2348	Thursday,	6:45:00 PM AEST	7:00:00 PM AEST	5	55	9	79	53	69	79	20	369
2348	Thursday,	7:00:00 PM AEST	7:15:00 PM AEST	2	36	1	99	42	85	70	19	354
2348	Thursday,	7:15:00 PM AEST	7:30:00 PM AEST	0	42	1	73	31	68	79	12	306
2348	Thursday,	7:30:00 PM AEST	7:45:00 PM AEST	1	42	0	81	36	78	73	12	323
2348	Thursday,	7:45:00 PM AEST	8:00:00 PM AEST	2	36	2	81	24	86	69	8	308
2348	Thursday,	8:00:00 PM AEST	8:15:00 PM AEST	1	28	5	74	34	79	77	12	310
2348	Thursday,	8:15:00 PM AEST	8:30:00 PM AEST	0	35	9	64	25	59	69	6	267
2348	Thursday,	8:30:00 PM AEST	8:45:00 PM AEST	3	17	1	65	30	83	53	9	261
2348	Thursday,	8:45:00 PM AEST	9:00:00 PM AEST	1	24	1	51	32	79	70	5	263
2348	Thursday,	9:00:00 PM AEST	9:15:00 PM AEST	1	19	5	51	34	95	83	7	295
2348	Thursday,	9:15:00 PM AEST	9:30:00 PM AEST	0	10	32	72	23	51	51	6	245
2348	Thursday,	9:30:00 PM AEST	9:45:00 PM AEST	0	19	0	55	32	41	52	3	202
2348	Thursday,	9:45:00 PM AEST	10:00:00 PM AEST	1	10	24	47	22	21	32	7	164
2348	Thursday,	10:00:00 PM AEST	10:15:00 PM AEST	1	11	2	31	19	31	37	5	137
2348	Thursday,	10:15:00 PM AEST	10:30:00 PM AEST	0	6	10	34	5	21	21	3	100
2348	Thursday,	10:30:00 PM AEST	10:45:00 PM AEST	1	6	10	33	7	16	18	4	95
2348	Thursday,	10:45:00 PM AEST	11:00:00 PM AEST	1	5	32	32	7	13	10	2	102
2348	Thursday,	11:00:00 PM AEST	11:15:00 PM AEST	0	6	11	26	10	13	12	2	80
2348	Thursday,	11:15:00 PM AEST	11:30:00 PM AEST	2	6	11	31	3	8	7	1	69
2348	Thursday,	11:30:00 PM AEST	11:45:00 PM AEST	0	5	0	18	2	5	9	2	41
2348	Thursday,	11:45:00 PM AEST	12:00:00 AM AEST	0	4	0	21	2	6	8	1	42

Site	Date	Interval start	Interval end	Detector 1	Detector 2	Detector 3	Detector 4	Detector 5	Detector 6	Detector 7	Detector 8	Total
2348	Thursday,	12:00:00 AM AEST	12:15:00 AM AEST	1	5	10	10	1	6	6	0	39
2348	Thursday,	12:15:00 AM AEST	12:30:00 AM AEST	0	3	18	16	2	3	0	2	44
2348	Thursday,	12:30:00 AM AEST	12:45:00 AM AEST	0	3	6	6	1	2	2	1	21
2348	Thursday,	12:45:00 AM AEST	1:00:00 AM AEST	0	0	5	5	0	1	1	0	12
2348	Thursday,	1:00:00 AM AEST	1:15:00 AM AEST	0	1	11	9	2	2	1	1	27
2348	Thursday,	1:15:00 AM AEST	1:30:00 AM AEST	0	3	13	13	1	0	1	2	33
2348	Thursday,	1:30:00 AM AEST	1:45:00 AM AEST	0	1	7	6	2	1	1	1	19
2348	Thursday,	1:45:00 AM AEST	2:00:00 AM AEST	0	1	3	3	0	0	0	2	9
2348	Thursday,	2:00:00 AM AEST	2:15:00 AM AEST	0	2	7	6	2	4	1	0	22
2348	Thursday,	2:15:00 AM AEST	2:30:00 AM AEST	1	0	2	2	1	1	1	0	8
2348	Thursday,	2:30:00 AM AEST	2:45:00 AM AEST	0	1	5	5	0	3	0	0	14
2348	Thursday,	2:45:00 AM AEST	3:00:00 AM AEST	1	0	6	6	1	1	1	0	16
2348	Thursday,	3:00:00 AM AEST	3:15:00 AM AEST	0	1	2	2	0	1	0	0	6
2348	Thursday,	3:15:00 AM AEST	3:30:00 AM AEST	0	0	2	2	0	1	1	0	6
2348	Thursday,	3:30:00 AM AEST	3:45:00 AM AEST	0	1	2	2	0	1	3	0	9
2348	Thursday,	3:45:00 AM AEST	4:00:00 AM AEST	0	3	8	8	2	1	0	0	22
2348	Thursday,	4:00:00 AM AEST	4:15:00 AM AEST	0	1	6	6	0	0	4	1	18
2348	Thursday,	4:15:00 AM AEST	4:30:00 AM AEST	0	1	6	6	0	1	0	0	14
2348	Thursday,	4:30:00 AM AEST	4:45:00 AM AEST	0	0	15	15	3	4	1	1	39
2348	Thursday,	4:45:00 AM AEST	5:00:00 AM AEST	0	0	14	13	3	4	4	1	39
2348	Thursday,	5:00:00 AM AEST	5:15:00 AM AEST	0	0	14	14	0	2	1	1	32
2348	Thursday,	5:15:00 AM AEST	5:30:00 AM AEST	0	5	23	23	1	3	3	0	58
2348	Thursday,	5:30:00 AM AEST	5:45:00 AM AEST	1	5	23	24	6	8	7	1	75
2348	Thursday,	5:45:00 AM AEST	6:00:00 AM AEST	0	4	24	24	5	10	10	2	79
2348	Thursday,	6:00:00 AM AEST	6:15:00 AM AEST	0	3	39	45	9	8	8	2	114
2348	Thursday,	6:15:00 AM AEST	6:30:00 AM AEST	0	3	42	44	9	3	10	1	112
2348	Thursday,	6:30:00 AM AEST	6:45:00 AM AEST	0	9	52	54	18	17	13	0	163
2348	Thursday,	6:45:00 AM AEST	7:00:00 AM AEST	Unknown	8	71	73	20	11	11	3	Unknown
2348	Thursday,	7:00:00 AM AEST	7:15:00 AM AEST	Unknown	7	68	70	17	22	15	1	Unknown
2348	Thursday,	7:15:00 AM AEST	7:30:00 AM AEST	Unknown	13	66	74	26	15	19	6	Unknown
2348	Thursday,	7:30:00 AM AEST	7:45:00 AM AEST	Unknown	15	89	98	25	19	24	4	Unknown
2348	Thursday,	7:45:00 AM AEST	8:00:00 AM AEST	1	16	89	101	39	40	30	5	321
2348	Thursday,	8:00:00 AM AEST	8:15:00 AM AEST	1	26	98	111	77	52	49	13	427
2348	Thursday,	8:15:00 AM AEST	8:30:00 AM AEST	2	22	119	124	70	60	71	20	488
2348	Thursday,	8:30:00 AM AEST	8:45:00 AM AEST	2	46	97	103	65	46	82	22	463
2348	Thursday,	8:45:00 AM AEST	9:00:00 AM AEST	1	47	91	98	69	53	74	28	461
2348	Thursday,	9:00:00 AM AEST	9:15:00 AM AEST	0	37	71	75	38	32	47	25	325
2348	Thursday,	9:15:00 AM AEST	9:30:00 AM AEST	2	37	42	54	51	45	50	8	289
2348	Thursday,	9:30:00 AM AEST	9:45:00 AM AEST	2	34	54	68	49	34	54	13	308
2348	Thursday,	9:45:00 AM AEST	10:00:00 AM AEST	1	28	46	52	44	49	54	20	294
2348	Thursday,	10:00:00 AM AEST	10:15:00 AM AEST	1	28	98	109	18	47	49	21	371
2348	Thursday,	10:15:00 AM AEST	10:30:00 AM AEST	3	31	75	87	25	65	61	13	360
2348	Thursday,	10:30:00 AM AEST	10:45:00 AM AEST	1	44	75	83	22	47	53	14	339
2348	Thursday,	10:45:00 AM AEST	11:00:00 AM AEST	1	40	61	75	27	48	53	25	330
2348	Thursday,	11:00:00 AM AEST	11:15:00 AM AEST	1	42	71	87	30	45	43	11	330
2348	Thursday,	11:15:00 AM AEST	11:30:00 AM AEST	0	28	77	81	25	49	56	15	331
2348	Thursday,	11:30:00 AM AEST	11:45:00 AM AEST	2	29	70	91	20	50	53	13	328
2348	Thursday,	11:45:00 AM AEST	12:00:00 PM AEST	3	33	69	87	30	53	48	13	336
2348	Thursday,	12:00:00 PM AEST	12:15:00 PM AEST	0	35	83	97	22	60	39	16	352
2348	Thursday,	12:15:00 PM AEST	12:30:00 PM AEST	0	30	97	106	26	61	58	9	387
2348	Thursday,	12:30:00 PM AEST	12:45:00 PM AEST	2	34	61	77	22	51	58	11	316
2348	Thursday,	12:45:00 PM AEST	1:00:00 PM AEST	1	34	83	98	32	59	51	12	370
2348	Thursday,	1:00:00 PM AEST	1:15:00 PM AEST	1	49	67	73	27	61	43	13	334
2348	Thursday,	1:15:00 PM AEST	1:30:00 PM AEST	1	35	69	76	30	42	63	10	326
2348	Thursday,	1:30:00 PM AEST	1:45:00 PM AEST	0	24	84	100	34	54	48	15	359
2348	Thursday,	1:45:00 PM AEST	2:00:00 PM AEST	2	34	84	92	27	50	68	19	376
2348	Thursday,	2:00:00 PM AEST	2:15:00 PM AEST	0	38	81	92	31	61	59	15	377
2348	Thursday,	2:15:00 PM AEST	2:30:00 PM AEST	0	33	89	103	45	62	72	14	418
2348	Thursday,	2:30:00 PM AEST	2:45:00 PM AEST	3	40	99	126	42	68	62	21	461
2348	Thursday,	2:45:00 PM AEST	3:00:00 PM AEST	0	47	87	99	37	75	80	20	445
2348	Thursday,	3:00:00 PM AEST	3:15:00 PM AEST	1	37	81	107	62	80	94	28	490
2348	Thursday,	3:15:00 PM AEST	3:30:00 PM AEST	1	57	59	78	36	72	106	25	434
2348	Thursday,	3:30:00 PM AEST	3:45:00 PM AEST	0	40	54	74	57	65	77	22	389
2348	Thursday,	3:45:00 PM AEST	4:00:00 PM AEST	1	44	70	84	53	57	65	15	389
2348	Thursday,	4:00:00 PM AEST	4:15:00 PM AEST	1	46	65	71	46	55	61	19	364
2348	Thursday,	4:15:00 PM AEST	4:30:00 PM AEST	1	28	77	89	48	77	80	22	422
2348	Thursday,	4:30:00 PM AEST	4:45:00 PM AEST	5	38	90	107	27	60	98	29	454
2348	Thursday,	4:45:00 PM AEST	5:00:00 PM AEST	1	35	62	71	46	64	83	23	385
2348	Thursday,	5:00:00 PM AEST	5:15:00 PM AEST	1	44	67	82	61	67	76	24	422
2348	Thursday,	5:15:00 PM AEST	5:30:00 PM AEST	2	42	69	76	44	65	70	17	385
2348	Thursday,	5:30:00 PM AEST	5:45:00 PM AEST	3	46	58	76	57	86	87	19	432
2348	Thursday,	5:45:00 PM AEST	6:00:00 PM AEST	3	33	58	72	51	73	78	22	390
2348	Thursday,	6:00:00 PM AEST	6:15:00 PM AEST	1	43	75	83	49	74	85	18	428
2348	Thursday,	6:15:00 PM AEST	6:30:00 PM AEST	0	35	59	71	55	61	79	19	379
2348	Thursday,	6:30:00 PM AEST	6:45:00 PM AEST	1	25	55	66	53	70	66	18	354
2348	Thursday,	6:45:00 PM AEST	7:00:00 PM AEST	0	32	61	66	50	53	61	12	335
2348	Thursday,	7:00:00 PM AEST	7:15:00 PM AEST	0	19	54	66	30	46	58	13	286
2348	Thursday,	7:15:00 PM AEST	7:30:00 PM AEST	1	22	49	56	26	45	46	9	254
2348	Thursday,	7:30:00 PM AEST	7:45:00 PM AEST	1	26	45	54	24	42	57	7	256
2348	Thursday,	7:45:00 PM AEST	8:00:00 PM AEST	2	13	46	52	36	57	46	7	259
2348	Thursday,	8:00:00 PM AEST	8:15:00 PM AEST	1	15	54	60	29	34	34	7	234
2348	Thursday,	8:15:00 PM AEST	8:30:00 PM AEST	2	22	50	51	10	35	35	5	210
2348	Thursday,	8:30:00 PM AEST	8:45:00 PM AEST	0	11	37	43	22	30	35	11	189
2348	Thursday,	8:45:00 PM AEST	9:00:00 PM AEST	1	16	39	40	15	46	22	4	183
2348	Thursday,	9:00:00 PM AEST	9:15:00 PM AEST	1	16	39	46	13	37	28	3	183
2348	Thursday,	9:15:00 PM AEST	9:30:00 PM AEST	0	8	37	45	10	27	20	6	153
2348	Thursday,	9:30:00 PM AEST	9:45:00 PM AEST	1	7	42	44	7	19	20	5	145
2348	Thursday,	9:45:00 PM AEST	10:00:00 PM AEST	1	7	31	35	12	20	20	2	128
2348	Thursday,	10:00:00 PM AEST	10:15:00 PM AEST	2	12	49	49	5	12	20	3	152
2348	Thursday,	10:15:00 PM AEST	10:30:00 PM AEST	0	6	45	43	6	12	21	2	135
2348	Thursday,	10:30:00 PM AEST	10:45:00 PM AEST	0	4	24	23	6	9	15	3	84
2348	Thursday,	10:45:00 PM AEST	11:00:00 PM AEST	1	10	27	25	2	7	11	1	84
2348	Thursday,	11:00:00 PM AEST	11:15:00 PM AEST	0	7	15	15	0	8	10	1	56
2348	Thursday,	11:15:00 PM AEST	11:30:00 PM AEST	2	9	16	15	3	5	10	0	60
2348	Thursday,	11:30:00 PM AEST	11:45:00 PM AEST	0	1	24	23	1	5	6	1	61
2348	Thursday,	11:45:00 PM AEST	12:00:00 AM AEST	1	3	14	13	2	3	8	0	44

Appendix B

STFM Traffic Growth

ROAD TRAFFIC GROWTH (%YR, 2HRSPK) LINKS & INTERSECTIONS



2011TZ SYDNEY GMA STRATEGIC TRAFFIC FORECASTING MODEL
Scenario 2031: 2031 SYDTRAFFICFORECASTMODELTZ11LU16V151STMV362-7-9AM(mf35)
2020-08-11 16:43

Growth(YR):

- *<0*
- *<2.00*
- *2.01-4.00*
- *4.01-6.00*
- *>6.00*
- *New Links=999*

ROAD TRAFFIC GROWTH (%YR, 2HRSPK) LINKS & INTERSECTIONS

2011TZ SYDNEY GMA STRATEGIC TRAFFIC FORECASTING MODEL
Scenario 20310: 2031 SYDTRAFFICFORECASTMODELTZ11LU16V151STMV362-4-6PM(mf55)
2020-08-11 16:44

Growth(YR):

- <0
- <2.00
- 2.01-4.00
- 4.01-6.00
- >6.00
- New Links=999

Appendix C

SIDRA Results

MOVEMENT SUMMARY

Site: 101 [S0 (AM) - Forest Road-Alfred Street-Park Road (Site Folder: S0 - 2020 Existing Base Case)]

Network: N101 [S0 (AM) - Forest Road Corridor (Network Folder: S0 - 2020 Existing Case)]

2020 Existing Case AM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred Street														
2	T1	266	2.8	266	2.8	* 0.556	27.1	LOS B	5.8	41.8	0.96	0.78	0.96	36.2
3	R2	117	0.0	117	0.0	0.556	31.7	LOS C	5.7	40.5	0.96	0.79	0.96	27.6
Approach		383	1.9	383	1.9	0.556	28.5	LOS C	5.8	41.8	0.96	0.79	0.96	34.2
East: Forest Road														
6	R2	160	4.6	160	4.6	* 0.365	34.6	LOS C	2.5	18.2	0.96	0.76	0.96	27.4
Approach		160	4.6	160	4.6	0.365	34.6	LOS C	2.5	18.2	0.96	0.76	0.96	27.4
West: Forest Road														
10	L2	345	11.0	345	11.0	* 0.676	20.9	LOS B	8.5	64.9	0.78	0.80	0.83	38.5
11	T1	699	2.4	699	2.4	0.475	13.4	LOS A	9.0	64.5	0.73	0.62	0.73	36.7
Approach		1044	5.2	1044	5.2	0.676	15.8	LOS B	9.0	64.9	0.75	0.68	0.76	37.6
All Vehicles		1587	4.4	1587	4.4	0.676	20.8	LOS B	9.0	64.9	0.82	0.72	0.83	35.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Alfred Street											
P1	Full	99	26.9	LOS C	0.2	0.2	0.91	0.91	186.9	208.0	1.11
East: Forest Road											
P2	Full	23	26.8	LOS C	0.0	0.0	0.91	0.91	192.0	214.8	1.12
North: Park Road											
P3	Full	84	26.9	LOS C	0.1	0.1	0.91	0.91	187.9	209.4	1.11
West: Forest Road											
P4	Full	29	26.8	LOS C	0.0	0.0	0.91	0.91	189.1	211.0	1.12
All Pedestrians		236	26.9	LOS C	0.2	0.2	0.91	0.91	188.1	209.5	1.11

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: 101 [S0 (AM) - Forest Road-The Avenue (Site Folder: S0 - 2020 Existing Base Case)]

Network: N101 [S0 (AM) - Forest Road Corridor (Network Folder: S0 - 2020 Existing Case)]

2020 Existing Case AM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 67 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Forest Road														
5	T1	158	4.7	158	4.7	* 0.567	30.5	LOS C	4.1	30.2	0.96	0.76	0.98	27.4
Approach		158	4.7	158	4.7	0.567	30.5	LOS C	4.1	30.2	0.96	0.76	0.98	27.4
North: The Avenue														
7	L2	233	0.5	233	0.5	* 0.645	33.0	LOS C	7.4	52.2	0.97	0.84	1.02	34.2
8	T1	316	1.3	316	1.3	0.465	25.4	LOS B	4.6	32.8	0.91	0.73	0.91	30.6
9	R2	2	0.0	2	0.0	0.465	30.0	LOS C	4.6	32.8	0.91	0.73	0.91	29.7
Approach		551	1.0	551	1.0	0.645	28.7	LOS C	7.4	52.2	0.93	0.78	0.95	32.5
West: Forest Road														
11	T1	765	2.1	765	2.1	0.355	6.8	LOS A	6.8	48.2	0.53	0.46	0.53	43.0
12	R2	52	2.4	52	2.4	* 0.355	11.7	LOS A	6.8	48.2	0.56	0.48	0.56	25.9
Approach		817	2.1	817	2.1	0.355	7.1	LOS A	6.8	48.2	0.53	0.47	0.53	42.6
All Vehicles		1525	2.0	1525	2.0	0.645	17.3	LOS B	7.4	52.2	0.72	0.61	0.73	36.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Avenue											
P1	Full	71	27.9	LOS C	0.1	0.1	0.91	0.91	187.9	208.0	1.11
East: Forest Road											
P2	Full	37	27.8	LOS C	0.1	0.1	0.91	0.91	193.0	214.8	1.11
North: The Avenue											
P3	Full	97	27.9	LOS C	0.2	0.2	0.91	0.91	191.0	212.0	1.11
West: Forest Road											
P4	Full	17	27.8	LOS C	0.0	0.0	0.91	0.91	193.0	214.8	1.11
All Pedestrians		221	27.9	LOS C	0.2	0.2	0.91	0.91	190.5	211.4	1.11

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: 101 [S0 (PM) - Forest Road-Alfred Street-Park Road (Site Folder: S0 - 2020 Existing Base Case)]

Network: N101 [S0 (PM) - Forest Road Corridor (Network Folder: S0 - 2020 Existing Case)]

2020 Existing Case PM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 118 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred Street														
2	T1	254	4.1	254	4.1	* 0.473	48.5	LOS D	7.9	57.6	0.95	0.77	0.95	29.9
3	R2	45	0.0	45	0.0	0.473	53.1	LOS D	7.9	56.6	0.95	0.78	0.95	21.3
Approach		299	3.5	299	3.5	0.473	49.2	LOS D	7.9	57.6	0.95	0.78	0.95	28.9
East: Forest Road														
6	R2	262	1.2	262	1.2	* 0.514	51.6	LOS D	6.8	48.2	0.93	0.78	0.93	22.6
Approach		262	1.2	262	1.2	0.514	51.6	LOS D	6.8	48.2	0.93	0.78	0.93	22.6
West: Forest Road														
10	L2	376	11.4	376	11.4	* 0.593	24.9	LOS B	13.8	105.8	0.69	0.77	0.69	37.0
11	T1	521	2.0	521	2.0	0.339	18.3	LOS B	11.0	78.0	0.62	0.53	0.62	33.4
Approach		897	5.9	897	5.9	0.593	21.0	LOS B	13.8	105.8	0.65	0.63	0.65	35.4
All Vehicles		1458	4.6	1458	4.6	0.593	32.3	LOS C	13.8	105.8	0.76	0.69	0.76	31.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Alfred Street											
P1	Full	228	53.7	LOS E	0.7	0.7	0.96	0.96	213.7	208.0	0.97
East: Forest Road											
P2	Full	86	53.3	LOS E	0.3	0.3	0.95	0.95	218.6	214.8	0.98
North: Park Road											
P3	Full	191	53.6	LOS E	0.6	0.6	0.96	0.96	214.7	209.4	0.98
West: Forest Road											
P4	Full	146	53.5	LOS E	0.5	0.5	0.95	0.95	215.8	211.0	0.98
All Pedestrians		652	53.6	LOS E	0.7	0.7	0.96	0.96	215.1	210.0	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.

MOVEMENT SUMMARY

Site: 101 [S0 (PM) - Forest Road-The Avenue (Site Folder: S0 - 2020 Existing Base Case)]

Network: N101 [S0 (PM) - Forest Road Corridor (Network Folder: S0 - 2020 Existing Case)]

2020 Existing Case PM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 121 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Forest Road														
5	T1	248	1.2	248	1.2	* 0.672	49.1	LOS D	11.2	79.1	0.95	0.79	0.97	21.5
Approach		248	1.2	248	1.2	0.672	49.1	LOS D	11.2	79.1	0.95	0.79	0.97	21.5
North: The Avenue														
7	L2	355	0.0	355	0.0	0.657	45.3	LOS D	18.4	129.0	0.94	0.84	0.94	30.7
8	T1	540	0.2	540	0.2	0.813	44.0	LOS D	14.8	103.7	0.86	0.85	1.03	23.8
9	R2	12	0.0	12	0.0	* 0.813	48.6	LOS D	14.8	103.5	0.86	0.85	1.03	22.8
Approach		906	0.1	906	0.1	0.813	44.6	LOS D	18.4	129.0	0.89	0.85	0.99	27.1
West: Forest Road														
11	T1	408	2.5	408	2.5	0.286	14.1	LOS A	9.2	65.7	0.55	0.50	0.55	37.4
12	R2	158	0.0	158	0.0	* 0.286	24.4	LOS B	8.8	62.2	0.66	0.67	0.66	14.9
Approach		566	1.8	566	1.8	0.286	16.9	LOS B	9.2	65.7	0.58	0.55	0.58	33.2
All Vehicles		1721	0.8	1721	0.8	0.813	36.1	LOS C	18.4	129.0	0.80	0.74	0.85	27.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Avenue											
P1	Full	136	55.0	LOS E	0.4	0.4	0.96	0.96	215.0	208.0	0.97
East: Forest Road											
P2	Full	60	54.8	LOS E	0.2	0.2	0.95	0.95	220.0	214.8	0.98
North: The Avenue											
P3	Full	153	55.0	LOS E	0.5	0.5	0.96	0.96	218.1	212.0	0.97
West: Forest Road											
P4	Full	55	54.8	LOS E	0.2	0.2	0.95	0.95	220.0	214.8	0.98
All Pedestrians		403	54.9	LOS E	0.5	0.5	0.96	0.96	217.6	211.4	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.

MOVEMENT SUMMARY

Site: 101 [S0 (SAT) - Forest Road-Alfred Street-Park Road (Site Folder: S0 - 2020 Existing Base Case)]

Network: N101 [S0 (SAT) - Forest Road Corridor (Network Folder: S0 - 2020 Existing Case)]

2020 Existing Case SAT Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred Street														
2	T1	325	2.8	325	2.8	* 0.544	39.5	LOS C	9.2	65.7	0.95	0.79	0.95	32.3
3	R2	82	0.0	82	0.0	0.544	44.0	LOS D	9.1	64.3	0.95	0.79	0.95	23.6
Approach		407	2.2	407	2.2	0.544	40.4	LOS C	9.2	65.7	0.95	0.79	0.95	31.0
East: Forest Road														
6	R2	246	0.0	246	0.0	* 0.420	45.3	LOS D	5.5	38.4	0.93	0.78	0.93	24.2
Approach		246	0.0	246	0.0	0.420	45.3	LOS D	5.5	38.4	0.93	0.78	0.93	24.2
West: Forest Road														
10	L2	392	7.3	392	7.3	* 0.669	25.6	LOS B	13.5	100.7	0.76	0.79	0.76	36.7
11	T1	532	2.4	532	2.4	0.380	19.0	LOS B	10.4	74.3	0.69	0.59	0.69	33.0
Approach		923	4.5	923	4.5	0.669	21.8	LOS B	13.5	100.7	0.72	0.67	0.72	35.1
All Vehicles		1577	3.2	1577	3.2	0.669	30.3	LOS C	13.5	100.7	0.81	0.72	0.81	32.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Alfred Street											
P1	Full	309	44.8	LOS E	0.8	0.8	0.95	0.95	204.8	208.0	1.02
East: Forest Road											
P2	Full	200	44.6	LOS E	0.5	0.5	0.95	0.95	209.8	214.8	1.02
North: Park Road											
P3	Full	334	44.8	LOS E	0.9	0.9	0.95	0.95	205.9	209.4	1.02
West: Forest Road											
P4	Full	172	44.5	LOS E	0.5	0.5	0.95	0.95	206.8	211.0	1.02
All Pedestrians		1015	44.7	LOS E	0.9	0.9	0.95	0.95	206.5	210.3	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.

MOVEMENT SUMMARY

Site: 101 [S0 (SAT) - Forest Road-The Avenue (Site Folder: S0 - 2020 Existing Base Case)]

Network: N101 [S0 (SAT) - Forest Road Corridor (Network Folder: S0 - 2020 Existing Case)]

2020 Existing Case SAT Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 123 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Forest Road														
5	T1	233	0.0	233	0.0	* 0.490	42.4	LOS C	9.7	67.7	0.88	0.72	0.88	23.3
Approach		233	0.0	233	0.0	0.490	42.4	LOS C	9.7	67.7	0.88	0.72	0.88	23.3
North: The Avenue														
7	L2	360	0.0	360	0.0	0.949	82.1	LOS F	27.3	190.9	1.00	1.06	1.43	23.4
8	T1	478	0.0	478	0.0	* 1.003	108.9	LOS F	22.2	155.7	1.00	1.32	1.75	13.4
9	R2	12	0.0	12	0.0	1.003	113.6	LOS F	22.1	154.7	1.00	1.32	1.75	12.7
Approach		849	0.0	849	0.0	1.003	97.6	LOS F	27.3	190.9	1.00	1.21	1.61	17.8
West: Forest Road														
11	T1	426	2.9	426	2.9	0.268	8.9	LOS A	7.9	57.0	0.44	0.42	0.44	41.1
12	R2	187	0.0	187	0.0	* 0.268	17.6	LOS B	7.9	55.8	0.56	0.64	0.56	18.3
Approach		614	2.0	614	2.0	0.268	11.5	LOS A	7.9	57.0	0.48	0.49	0.48	36.7
All Vehicles		1696	0.7	1696	0.7	1.003	58.9	LOS E	27.3	190.9	0.79	0.88	1.10	21.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Avenue											
P1	Full	191	56.1	LOS E	0.6	0.6	0.96	0.96	216.1	208.0	0.96
East: Forest Road											
P2	Full	66	55.8	LOS E	0.2	0.2	0.95	0.95	221.0	214.8	0.97
North: The Avenue											
P3	Full	229	56.2	LOS E	0.8	0.8	0.96	0.96	219.3	212.0	0.97
West: Forest Road											
P4	Full	104	55.9	LOS E	0.3	0.3	0.96	0.96	221.1	214.8	0.97
All Pedestrians		591	56.1	LOS E	0.8	0.8	0.96	0.96	218.8	211.5	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.

MOVEMENT SUMMARY

Site: 101 [S1 (AM) - Forest Road-Alfred Street-Park Road (Site Folder: S1 - 2030 Future Base Case)]

Network: N101 [S1 (AM) - Forest Road Corridor (Network Folder: S1 - 2030 Future Base Case)]

2020 Existing Case AM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred Street														
2	T1	266	2.8	266	2.8	* 0.556	27.1	LOS B	5.8	41.8	0.96	0.78	0.96	36.2
3	R2	117	0.0	117	0.0	0.556	31.7	LOS C	5.7	40.5	0.96	0.79	0.96	27.6
Approach		383	1.9	383	1.9	0.556	28.5	LOS C	5.8	41.8	0.96	0.79	0.96	34.2
East: Forest Road														
6	R2	175	4.6	175	4.6	* 0.399	34.8	LOS C	2.7	19.9	0.96	0.76	0.96	27.3
Approach		175	4.6	175	4.6	0.399	34.8	LOS C	2.7	19.9	0.96	0.76	0.96	27.3
West: Forest Road														
10	L2	353	11.0	353	11.0	* 0.694	21.4	LOS B	8.8	67.8	0.79	0.82	0.85	38.3
11	T1	713	2.4	713	2.4	0.487	13.4	LOS A	9.3	66.6	0.73	0.63	0.73	36.6
Approach		1065	5.2	1065	5.2	0.694	16.1	LOS B	9.3	67.8	0.75	0.69	0.77	37.4
All Vehicles		1623	4.4	1623	4.4	0.694	21.0	LOS B	9.3	67.8	0.82	0.72	0.84	35.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Alfred Street											
P1	Full	99	26.9	LOS C	0.2	0.2	0.91	0.91	186.9	208.0	1.11
East: Forest Road											
P2	Full	23	26.8	LOS C	0.0	0.0	0.91	0.91	192.0	214.8	1.12
North: Park Road											
P3	Full	84	26.9	LOS C	0.1	0.1	0.91	0.91	187.9	209.4	1.11
West: Forest Road											
P4	Full	29	26.8	LOS C	0.0	0.0	0.91	0.91	189.1	211.0	1.12
All Pedestrians		236	26.9	LOS C	0.2	0.2	0.91	0.91	188.1	209.5	1.11

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: 101 [S1 (AM) - Forest Road-The Avenue (Site Folder: S1 - 2030 Future Base Case)]

Network: N101 [S1 (AM) - Forest Road Corridor (Network Folder: S1 - 2030 Future Base Case)]

2020 Existing Case AM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 67 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Forest Road														
5	T1	179	4.7	179	4.7	* 0.650	31.3	LOS C	4.8	35.0	0.97	0.80	1.06	27.1
Approach		179	4.7	179	4.7	0.650	31.3	LOS C	4.8	35.0	0.97	0.80	1.06	27.1
North: The Avenue														
7	L2	254	0.5	254	0.5	* 0.703	34.2	LOS C	8.4	58.8	0.99	0.87	1.09	33.8
8	T1	344	1.3	344	1.3	0.541	25.7	LOS B	5.1	36.1	0.91	0.74	0.91	30.5
9	R2	2	0.0	2	0.0	0.541	30.2	LOS C	5.1	36.0	0.91	0.74	0.91	29.5
Approach		600	1.0	600	1.0	0.703	29.3	LOS C	8.4	58.8	0.95	0.80	0.99	32.3
West: Forest Road														
11	T1	826	2.1	826	2.1	0.384	6.9	LOS A	7.5	53.6	0.55	0.48	0.55	42.9
12	R2	56	2.4	56	2.4	* 0.384	12.0	LOS A	7.5	53.6	0.57	0.50	0.57	25.6
Approach		882	2.1	882	2.1	0.384	7.3	LOS A	7.5	53.6	0.55	0.48	0.55	42.4
All Vehicles		1661	2.0	1661	2.0	0.703	17.8	LOS B	8.4	58.8	0.74	0.63	0.76	35.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Avenue											
P1	Full	71	27.9	LOS C	0.1	0.1	0.91	0.91	187.9	208.0	1.11
East: Forest Road											
P2	Full	37	27.8	LOS C	0.1	0.1	0.91	0.91	193.0	214.8	1.11
North: The Avenue											
P3	Full	97	27.9	LOS C	0.2	0.2	0.91	0.91	191.0	212.0	1.11
West: Forest Road											
P4	Full	17	27.8	LOS C	0.0	0.0	0.91	0.91	193.0	214.8	1.11
All Pedestrians		221	27.9	LOS C	0.2	0.2	0.91	0.91	190.5	211.4	1.11

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: 101 [S1 (PM) - Forest Road-Alfred Street-Park Road (Site Folder: S1 - 2030 Future Base Case)]

Network: N101 [S1 (PM) - Forest Road Corridor (Network Folder: S1 - 2030 Future Base Case)]

2020 Existing Case PM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 118 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred Street														
2	T1	254	4.1	254	4.1	* 0.473	48.5	LOS D	7.9	57.6	0.95	0.77	0.95	29.9
3	R2	45	0.0	45	0.0	0.473	53.1	LOS D	7.9	56.6	0.95	0.78	0.95	21.3
Approach		299	3.5	299	3.5	0.473	49.2	LOS D	7.9	57.6	0.95	0.78	0.95	28.9
East: Forest Road														
6	R2	312	1.2	312	1.2	* 0.676	53.5	LOS D	8.4	59.3	0.95	0.82	1.01	22.2
Approach		312	1.2	312	1.2	0.676	53.5	LOS D	8.4	59.3	0.95	0.82	1.01	22.2
West: Forest Road														
10	L2	402	11.4	402	11.4	* 0.634	25.3	LOS B	15.0	115.6	0.70	0.77	0.70	36.8
11	T1	557	2.0	557	2.0	0.370	18.6	LOS B	12.2	87.0	0.63	0.54	0.63	33.2
Approach		959	5.9	959	5.9	0.634	21.4	LOS B	15.0	115.6	0.66	0.64	0.66	35.3
All Vehicles		1569	4.5	1569	4.5	0.676	33.1	LOS C	15.0	115.6	0.77	0.70	0.79	30.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Alfred Street											
P1	Full	228	53.7	LOS E	0.7	0.7	0.96	0.96	213.7	208.0	0.97
East: Forest Road											
P2	Full	86	53.3	LOS E	0.3	0.3	0.95	0.95	218.6	214.8	0.98
North: Park Road											
P3	Full	191	53.6	LOS E	0.6	0.6	0.96	0.96	214.7	209.4	0.98
West: Forest Road											
P4	Full	146	53.5	LOS E	0.5	0.5	0.95	0.95	215.8	211.0	0.98
All Pedestrians		652	53.6	LOS E	0.7	0.7	0.96	0.96	215.1	210.0	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.

MOVEMENT SUMMARY

Site: 101 [S1 (PM) - Forest Road-The Avenue (Site Folder: S1 - 2030 Future Base Case)]

Network: N101 [S1 (PM) - Forest Road Corridor (Network Folder: S1 - 2030 Future Base Case)]

2020 Existing Case PM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 121 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Forest Road														
5	T1	278	1.2	278	1.2	* 0.747	51.2	LOS D	13.1	92.7	0.96	0.84	1.04	21.0
Approach		278	1.2	278	1.2	0.747	51.2	LOS D	13.1	92.7	0.96	0.84	1.04	21.0
North: The Avenue														
7	L2	355	0.0	355	0.0	0.657	45.3	LOS D	18.4	129.0	0.94	0.84	0.94	30.7
8	T1	540	0.2	540	0.2	0.813	44.0	LOS D	14.8	103.7	0.86	0.85	1.03	23.8
9	R2	12	0.0	12	0.0	* 0.813	48.6	LOS D	14.8	103.5	0.86	0.85	1.03	22.8
Approach		906	0.1	906	0.1	0.813	44.6	LOS D	18.4	129.0	0.89	0.85	0.99	27.1
West: Forest Road														
11	T1	478	2.5	478	2.5	0.339	15.0	LOS B	11.3	80.9	0.57	0.53	0.57	36.9
12	R2	185	0.0	185	0.0	* 0.339	27.2	LOS B	10.4	73.3	0.70	0.76	0.70	13.8
Approach		663	1.8	663	1.8	0.339	18.4	LOS B	11.3	80.9	0.61	0.60	0.61	32.3
All Vehicles		1847	0.9	1847	0.9	0.813	36.2	LOS C	18.4	129.0	0.80	0.76	0.86	27.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Avenue											
P1	Full	136	55.0	LOS E	0.4	0.4	0.96	0.96	215.0	208.0	0.97
East: Forest Road											
P2	Full	60	54.8	LOS E	0.2	0.2	0.95	0.95	220.0	214.8	0.98
North: The Avenue											
P3	Full	153	55.0	LOS E	0.5	0.5	0.96	0.96	218.1	212.0	0.97
West: Forest Road											
P4	Full	55	54.8	LOS E	0.2	0.2	0.95	0.95	220.0	214.8	0.98
All Pedestrians		403	54.9	LOS E	0.5	0.5	0.96	0.96	217.6	211.4	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.

MOVEMENT SUMMARY

Site: 101 [S1 (SAT) - Forest Road-Alfred Street-Park Road (Site Folder: S1 - 2030 Future Base Case)]

Network: N101 [S1 (SAT) - Forest Road Corridor (Network Folder: S1 - 2030 Future Base Case)]

2020 Existing Case SAT Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred Street														
2	T1	325	2.8	325	2.8	* 0.544	39.5	LOS C	9.2	65.7	0.95	0.79	0.95	32.3
3	R2	82	0.0	82	0.0	0.544	44.0	LOS D	9.1	64.3	0.95	0.79	0.95	23.6
Approach		407	2.2	407	2.2	0.544	40.4	LOS C	9.2	65.7	0.95	0.79	0.95	31.0
East: Forest Road														
6	R2	294	0.0	293	0.0	* 0.582	45.9	LOS D	6.6	46.5	0.95	0.79	0.95	24.0
Approach		294	0.0	293 N1	0.0	0.582	45.9	LOS D	6.6	46.5	0.95	0.79	0.95	24.0
West: Forest Road														
10	L2	419	7.3	419	7.3	* 0.716	26.6	LOS B	15.0	111.6	0.78	0.80	0.79	36.4
11	T1	569	2.4	569	2.4	0.417	19.3	LOS B	11.6	83.2	0.70	0.60	0.70	32.8
Approach		988	4.5	988	4.5	0.716	22.4	LOS B	15.0	111.6	0.73	0.68	0.74	34.8
All Vehicles		1689	3.2	1689	3.2	0.716	30.8	LOS C	15.0	111.6	0.82	0.73	0.83	31.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Alfred Street											
P1	Full	309	44.8	LOS E	0.8	0.8	0.95	0.95	204.8	208.0	1.02
East: Forest Road											
P2	Full	200	44.6	LOS E	0.5	0.5	0.95	0.95	209.8	214.8	1.02
North: Park Road											
P3	Full	334	44.8	LOS E	0.9	0.9	0.95	0.95	205.9	209.4	1.02
West: Forest Road											
P4	Full	172	44.5	LOS E	0.5	0.5	0.95	0.95	206.8	211.0	1.02
All Pedestrians		1015	44.7	LOS E	0.9	0.9	0.95	0.95	206.5	210.3	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.

MOVEMENT SUMMARY

Site: 101 [S1 (SAT) - Forest Road-The Avenue (Site Folder: S1 - 2030 Future Base Case)]

Network: N101 [S1 (SAT) - Forest Road Corridor (Network Folder: S1 - 2030 Future Base Case)]

2020 Existing Case SAT Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 123 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Forest Road														
5	T1	261	0.0	261	0.0	* 0.540	42.9	LOS D	11.0	76.9	0.89	0.73	0.89	23.2
Approach		261	0.0	261	0.0	0.540	42.9	LOS D	11.0	76.9	0.89	0.73	0.89	23.2
North: The Avenue														
7	L2	360	0.0	360	0.0	0.949	82.1	LOS F	27.3	190.9	1.00	1.06	1.43	23.4
8	T1	485	0.0	485	0.0	* 1.018	116.9	LOS F	23.5	164.2	1.00	1.36	1.81	12.7
9	R2	12	0.0	12	0.0	1.018	121.6	LOS F	23.3	163.2	1.00	1.36	1.81	12.0
Approach		857	0.0	857	0.0	1.018	102.4	LOS F	27.3	190.9	1.00	1.23	1.65	17.2
West: Forest Road														
11	T1	499	2.9	499	2.9	0.317	9.3	LOS A	9.8	69.4	0.46	0.43	0.46	40.8
12	R2	219	0.0	219	0.0	* 0.317	18.8	LOS B	9.8	69.4	0.60	0.67	0.60	17.5
Approach		718	2.0	718	2.0	0.317	12.2	LOS A	9.8	70.1	0.50	0.51	0.50	36.2
All Vehicles		1836	0.8	1836	0.8	1.018	58.7	LOS E	27.3	190.9	0.79	0.88	1.09	21.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Avenue											
P1	Full	191	56.1	LOS E	0.6	0.6	0.96	0.96	216.1	208.0	0.96
East: Forest Road											
P2	Full	66	55.8	LOS E	0.2	0.2	0.95	0.95	221.0	214.8	0.97
North: The Avenue											
P3	Full	229	56.2	LOS E	0.8	0.8	0.96	0.96	219.3	212.0	0.97
West: Forest Road											
P4	Full	104	55.9	LOS E	0.3	0.3	0.96	0.96	221.1	214.8	0.97
All Pedestrians		591	56.1	LOS E	0.8	0.8	0.96	0.96	218.8	211.5	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.

MOVEMENT SUMMARY

Site: 101 [S2 (AM) - Forest Road-Alfred Street-Park Road (Site Folder: S2 - 2030 Future Base + Development Case)]

Network: N101 [S2 (AM) - Forest Road Corridor (Network Folder: S2 - 2030 Future Base + Development Case)]

2020 Existing Case AM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred Street														
2	T1	266	2.8	266	2.8	* 0.556	27.1	LOS B	5.8	41.8	0.96	0.78	0.96	36.2
3	R2	117	0.0	117	0.0	0.556	31.7	LOS C	5.7	40.5	0.96	0.79	0.96	27.6
Approach		383	1.9	383	1.9	0.556	28.5	LOS C	5.8	41.8	0.96	0.79	0.96	34.2
East: Forest Road														
6	R2	175	4.6	175	4.6	* 0.399	34.8	LOS C	2.7	19.9	0.96	0.76	0.96	27.3
Approach		175	4.6	175	4.6	0.399	34.8	LOS C	2.7	19.9	0.96	0.76	0.96	27.3
West: Forest Road														
10	L2	357	11.0	357	11.0	* 0.705	21.7	LOS B	9.1	69.4	0.79	0.82	0.86	38.2
11	T1	719	2.4	719	2.4	0.493	13.5	LOS A	9.5	67.7	0.73	0.63	0.73	36.6
Approach		1076	5.3	1076	5.3	0.705	16.2	LOS B	9.5	69.4	0.75	0.69	0.78	37.4
All Vehicles		1634	4.4	1634	4.4	0.705	21.1	LOS B	9.5	69.4	0.82	0.72	0.84	35.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Alfred Street											
P1	Full	99	26.9	LOS C	0.2	0.2	0.91	0.91	186.9	208.0	1.11
East: Forest Road											
P2	Full	23	26.8	LOS C	0.0	0.0	0.91	0.91	192.0	214.8	1.12
North: Park Road											
P3	Full	84	26.9	LOS C	0.1	0.1	0.91	0.91	187.9	209.4	1.11
West: Forest Road											
P4	Full	29	26.8	LOS C	0.0	0.0	0.91	0.91	189.1	211.0	1.12
All Pedestrians		236	26.9	LOS C	0.2	0.2	0.91	0.91	188.1	209.5	1.11

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: 101 [S2 (AM) - Forest Road-The Avenue (Site Folder: S2 - 2030 Future Base + Development Case)]

Network: N101 [S2 (AM) - Forest Road Corridor (Network Folder: S2 - 2030 Future Base + Development Case)]

2020 Existing Case AM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 67 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Forest Road														
5	T1	179	4.7	179	4.7	* 0.650	31.3	LOS C	4.8	35.0	0.97	0.80	1.06	27.1
Approach		179	4.7	179	4.7	0.650	31.3	LOS C	4.8	35.0	0.97	0.80	1.06	27.1
North: The Avenue														
7	L2	254	0.5	254	0.5	* 0.703	34.2	LOS C	8.4	58.8	0.99	0.87	1.09	33.8
8	T1	359	1.3	359	1.3	0.581	25.9	LOS B	5.4	37.9	0.92	0.75	0.93	30.4
9	R2	2	0.0	2	0.0	0.581	30.4	LOS C	5.3	37.9	0.92	0.75	0.93	29.4
Approach		615	1.0	615	1.0	0.703	29.3	LOS C	8.4	58.8	0.95	0.80	1.00	32.2
West: Forest Road														
11	T1	833	2.1	833	2.1	0.387	7.0	LOS A	7.6	54.1	0.55	0.48	0.55	42.9
12	R2	56	2.4	56	2.4	* 0.387	12.0	LOS A	7.6	54.1	0.57	0.50	0.57	25.6
Approach		888	2.1	888	2.1	0.387	7.3	LOS A	7.6	54.1	0.55	0.48	0.55	42.4
All Vehicles		1682	2.0	1682	2.0	0.703	17.9	LOS B	8.4	58.8	0.74	0.63	0.77	35.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Avenue											
P1	Full	71	27.9	LOS C	0.1	0.1	0.91	0.91	187.9	208.0	1.11
East: Forest Road											
P2	Full	37	27.8	LOS C	0.1	0.1	0.91	0.91	193.0	214.8	1.11
North: The Avenue											
P3	Full	97	27.9	LOS C	0.2	0.2	0.91	0.91	191.0	212.0	1.11
West: Forest Road											
P4	Full	17	27.8	LOS C	0.0	0.0	0.91	0.91	193.0	214.8	1.11
All Pedestrians		221	27.9	LOS C	0.2	0.2	0.91	0.91	190.5	211.4	1.11

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: 101 [S2 (PM) - Forest Road-Alfred Street-Park Road (Site Folder: S2 - 2030 Future Base + Development Case)]

Network: N101 [S2 (PM) - Forest Road Corridor (Network Folder: S2 - 2030 Future Base + Development Case)]

2020 Existing Case PM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 118 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred Street														
2	T1	254	4.1	254	4.1	* 0.473	48.5	LOS D	7.9	57.6	0.95	0.77	0.95	29.9
3	R2	45	0.0	45	0.0	0.473	53.1	LOS D	7.9	56.6	0.95	0.78	0.95	21.3
Approach		299	3.5	299	3.5	0.473	49.2	LOS D	7.9	57.6	0.95	0.78	0.95	28.9
East: Forest Road														
6	R2	312	1.2	312	1.2	* 0.676	53.5	LOS D	8.4	59.3	0.95	0.82	1.01	22.2
Approach		312	1.2	312	1.2	0.676	53.5	LOS D	8.4	59.3	0.95	0.82	1.01	22.2
West: Forest Road														
10	L2	417	11.4	417	11.4	* 0.658	25.5	LOS B	15.8	121.2	0.71	0.78	0.71	36.7
11	T1	580	2.0	580	2.0	0.391	18.8	LOS B	13.0	92.9	0.64	0.55	0.64	33.1
Approach		997	5.9	997	5.9	0.658	21.6	LOS B	15.8	121.2	0.67	0.65	0.67	35.1
All Vehicles		1607	4.6	1607	4.6	0.676	32.9	LOS C	15.8	121.2	0.78	0.70	0.79	30.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Alfred Street											
P1	Full	228	53.7	LOS E	0.7	0.7	0.96	0.96	213.7	208.0	0.97
East: Forest Road											
P2	Full	86	53.3	LOS E	0.3	0.3	0.95	0.95	218.6	214.8	0.98
North: Park Road											
P3	Full	191	53.6	LOS E	0.6	0.6	0.96	0.96	214.7	209.4	0.98
West: Forest Road											
P4	Full	146	53.5	LOS E	0.5	0.5	0.95	0.95	215.8	211.0	0.98
All Pedestrians		652	53.6	LOS E	0.7	0.7	0.96	0.96	215.1	210.0	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.

MOVEMENT SUMMARY

Site: 101 [S2 (PM) - Forest Road-The Avenue (Site Folder: S2 - 2030 Future Base + Development Case)]

Network: N101 [S2 (PM) - Forest Road Corridor (Network Folder: S2 - 2030 Future Base + Development Case)]

2020 Existing Case PM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 121 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Forest Road														
5	T1	278	1.2	278	1.2	* 0.747	51.2	LOS D	13.1	92.7	0.96	0.84	1.04	21.0
Approach		278	1.2	278	1.2	0.747	51.2	LOS D	13.1	92.7	0.96	0.84	1.04	21.0
North: The Avenue														
7	L2	355	0.0	355	0.0	0.657	45.3	LOS D	18.4	129.0	0.94	0.84	0.94	30.7
8	T1	547	0.2	547	0.2	0.826	45.3	LOS D	15.3	107.0	0.86	0.87	1.05	23.4
9	R2	12	0.0	12	0.0	* 0.826	49.9	LOS D	15.2	106.8	0.86	0.87	1.05	22.5
Approach		914	0.1	914	0.1	0.826	45.4	LOS D	18.4	129.0	0.89	0.86	1.01	26.8
West: Forest Road														
11	T1	500	2.5	500	2.5	0.350	15.1	LOS B	11.8	84.1	0.58	0.54	0.58	36.8
12	R2	185	0.0	185	0.0	* 0.350	27.1	LOS B	10.8	76.1	0.70	0.77	0.70	13.9
Approach		685	1.8	685	1.8	0.350	18.4	LOS B	11.8	84.1	0.61	0.60	0.61	32.4
All Vehicles		1877	0.9	1877	0.9	0.826	36.4	LOS C	18.4	129.0	0.80	0.76	0.87	27.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Avenue											
P1	Full	136	55.0	LOS E	0.4	0.4	0.96	0.96	215.0	208.0	0.97
East: Forest Road											
P2	Full	60	54.8	LOS E	0.2	0.2	0.95	0.95	220.0	214.8	0.98
North: The Avenue											
P3	Full	153	55.0	LOS E	0.5	0.5	0.96	0.96	218.1	212.0	0.97
West: Forest Road											
P4	Full	55	54.8	LOS E	0.2	0.2	0.95	0.95	220.0	214.8	0.98
All Pedestrians		403	54.9	LOS E	0.5	0.5	0.96	0.96	217.6	211.4	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.

MOVEMENT SUMMARY

Site: 101 [S2 (SAT) - Forest Road-Alfred Street-Park Road (Site Folder: S2 - 2030 Future Base + Development Case)]

Network: N101 [S2 (SAT) - Forest Road Corridor (Network Folder: S2 - 2030 Future Base + Development Case)]

2020 Existing Case SAT Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Alfred Street														
2	T1	325	2.8	325	2.8	* 0.544	39.5	LOS C	9.2	65.7	0.95	0.79	0.95	32.3
3	R2	82	0.0	82	0.0	0.544	44.0	LOS D	9.1	64.3	0.95	0.79	0.95	23.6
Approach		407	2.2	407	2.2	0.544	40.4	LOS C	9.2	65.7	0.95	0.79	0.95	31.0
East: Forest Road														
6	R2	294	0.0	293	0.0	* 0.581	45.9	LOS D	6.6	46.5	0.95	0.79	0.95	24.0
Approach		294	0.0	293 N1	0.0	0.581	45.9	LOS D	6.6	46.5	0.95	0.79	0.95	24.0
West: Forest Road														
10	L2	419	7.3	419	7.3	* 0.716	26.6	LOS B	15.0	111.6	0.78	0.80	0.79	36.4
11	T1	569	2.4	569	2.4	0.417	19.3	LOS B	11.6	83.2	0.70	0.60	0.70	32.8
Approach		988	4.5	988	4.5	0.716	22.4	LOS B	15.0	111.6	0.73	0.68	0.74	34.8
All Vehicles		1689	3.2	1689	3.2	0.716	30.8	LOS C	15.0	111.6	0.82	0.73	0.83	31.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Alfred Street											
P1	Full	309	44.8	LOS E	0.8	0.8	0.95	0.95	204.8	208.0	1.02
East: Forest Road											
P2	Full	200	44.6	LOS E	0.5	0.5	0.95	0.95	209.8	214.8	1.02
North: Park Road											
P3	Full	334	44.8	LOS E	0.9	0.9	0.95	0.95	205.9	209.4	1.02
West: Forest Road											
P4	Full	172	44.5	LOS E	0.5	0.5	0.95	0.95	206.8	211.0	1.02
All Pedestrians		1015	44.7	LOS E	0.9	0.9	0.95	0.95	206.5	210.3	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.

MOVEMENT SUMMARY

Site: 101 [S2 (SAT) - Forest Road-The Avenue (Site Folder: S2 - 2030 Future Base + Development Case)]

Network: N101 [S2 (SAT) - Forest Road Corridor (Network Folder: S2 - 2030 Future Base + Development Case)]

2020 Existing Case SAT Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 123 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Forest Road														
5	T1	261	0.0	261	0.0	* 0.540	42.9	LOS D	11.0	76.9	0.89	0.73	0.89	23.2
Approach		261	0.0	261	0.0	0.540	42.9	LOS D	11.0	76.9	0.89	0.73	0.89	23.2
North: The Avenue														
7	L2	360	0.0	360	0.0	0.949	82.1	LOS F	27.3	190.9	1.00	1.06	1.43	23.4
8	T1	494	0.0	494	0.0	* 1.035	127.0	LOS F	24.9	174.5	1.00	1.40	1.88	11.8
9	R2	12	0.0	12	0.0	1.035	131.6	LOS F	24.8	173.5	1.00	1.40	1.88	11.2
Approach		865	0.0	865	0.0	1.035	108.4	LOS F	27.3	190.9	1.00	1.26	1.69	16.4
West: Forest Road														
11	T1	499	2.9	499	2.9	0.317	9.3	LOS A	9.8	69.4	0.46	0.43	0.46	40.8
12	R2	219	0.0	219	0.0	* 0.317	18.8	LOS B	9.8	69.4	0.60	0.67	0.60	17.5
Approach		718	2.0	718	2.0	0.317	12.2	LOS A	9.8	70.1	0.50	0.51	0.50	36.2
All Vehicles		1844	0.8	1844	0.8	1.035	61.7	LOS E	27.3	190.9	0.79	0.89	1.12	20.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: The Avenue											
P1	Full	191	56.1	LOS E	0.6	0.6	0.96	0.96	216.1	208.0	0.96
East: Forest Road											
P2	Full	66	55.8	LOS E	0.2	0.2	0.95	0.95	221.0	214.8	0.97
North: The Avenue											
P3	Full	229	56.2	LOS E	0.8	0.8	0.96	0.96	219.3	212.0	0.97
West: Forest Road											
P4	Full	104	55.9	LOS E	0.3	0.3	0.96	0.96	221.1	214.8	0.97
All Pedestrians		591	56.1	LOS E	0.8	0.8	0.96	0.96	218.8	211.5	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.

MOVEMENT SUMMARY

Site: 101 [S1 (PM) - Railway Parade-The Avenue (Site Folder: S1 - 2030 Future Base Case)]

2020 Existing Case PM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 111 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Railway Parade														
5	T1	689	1.4	725	1.4	* 0.835	36.6	LOS C	34.8	246.4	0.97	0.93	1.05	33.2
6	R2	211	0.6	222	0.6	0.835	54.6	LOS D	15.8	111.6	1.00	1.03	1.22	28.6
Approach		900	1.2	947	1.2	0.835	40.8	LOS C	34.8	246.4	0.98	0.96	1.09	32.0
North: The Avenue														
7	L2	185	0.6	195	0.6	* 0.816	33.8	LOS C	33.9	239.7	0.93	0.90	0.97	34.0
9	R2	480	1.2	505	1.2	0.816	33.8	LOS C	33.9	239.7	0.93	0.90	0.97	33.9
Approach		665	1.0	700	1.0	0.816	33.8	LOS C	33.9	239.7	0.93	0.90	0.97	33.9
West: Railway Parade														
10	L2	59	0.0	62	0.0	0.512	39.3	LOS C	13.1	92.2	0.88	0.76	0.88	33.3
11	T1	497	0.5	523	0.5	0.512	34.8	LOS C	13.2	92.5	0.88	0.76	0.88	33.7
Approach		556	0.4	585	0.4	0.512	35.3	LOS C	13.2	92.5	0.88	0.76	0.88	33.6
All Vehicles		2121	1.0	2233	1.0	0.835	37.2	LOS C	34.8	246.4	0.93	0.89	1.00	33.0

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

* 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	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Railway Parade												
P2	Full	66	69	49.8	LOS E	0.2	0.2	0.95	0.95	215.0	214.8	1.00
All Pedestrians		66	69	49.8	LOS E	0.2	0.2	0.95	0.95	215.0	214.8	1.00

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: 101 [S0 (AM) - Railway Parade-The Avenue (Site Folder: S0 - 2020 Existing Base Case)]

2020 Existing Case AM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 111 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Railway Parade														
5	T1	434	1.8	457	1.8	0.376	10.5	LOS B	11.8	83.6	0.52	0.46	0.52	43.7
6	R2	269	0.4	283	0.4	* 0.635	25.5	LOS C	11.3	79.6	0.83	0.82	0.83	36.7
Approach		703	1.3	740	1.3	0.635	16.2	LOS B	11.8	83.6	0.64	0.60	0.64	40.7
North: The Avenue														
7	L2	146	2.8	154	2.8	0.989	92.1	LOS F	36.3	256.3	1.00	1.15	1.59	22.0
9	R2	289	0.3	304	0.3	* 0.989	92.1	LOS F	36.3	256.3	1.00	1.15	1.59	22.0
Approach		435	1.1	458	1.1	0.989	92.1	LOS F	36.3	256.3	1.00	1.15	1.59	22.0
West: Railway Parade														
10	L2	51	0.0	54	0.0	0.353	20.9	LOS C	11.0	77.9	0.62	0.57	0.62	40.2
11	T1	619	1.7	652	1.7	* 0.353	16.4	LOS B	11.0	77.9	0.63	0.56	0.63	40.6
Approach		670	1.6	705	1.6	0.353	16.8	LOS B	11.0	78.1	0.63	0.56	0.63	40.6
All Vehicles		1808	1.3	1903	1.3	0.989	34.7	LOS C	36.3	256.3	0.72	0.72	0.86	33.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* 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	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Railway Parade												
P2	Full	54	57	49.8	LOS E	0.2	0.2	0.95	0.95	215.0	214.8	1.00
All Pedestrians		54	57	49.8	LOS E	0.2	0.2	0.95	0.95	215.0	214.8	1.00

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: 101 [S0 (PM) - Railway Parade-The Avenue (Site Folder: S0 - 2020 Existing Base Case)]

2020 Existing Case PM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 111 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Railway Parade														
5	T1	605	1.4	637	1.4	0.704	29.8	LOS C	25.1	178.1	0.90	0.80	0.90	35.3
6	R2	185	0.6	195	0.6	* 0.704	42.3	LOS C	13.4	94.4	0.98	0.87	1.02	31.7
Approach		790	1.2	832	1.2	0.704	32.7	LOS C	25.1	178.1	0.92	0.82	0.93	34.4
North: The Avenue														
7	L2	185	0.6	195	0.6	* 0.816	33.8	LOS C	33.9	239.7	0.93	0.90	0.97	34.0
9	R2	480	1.2	505	1.2	0.816	33.8	LOS C	33.9	239.7	0.93	0.90	0.97	33.9
Approach		665	1.0	700	1.0	0.816	33.8	LOS C	33.9	239.7	0.93	0.90	0.97	33.9
West: Railway Parade														
10	L2	50	0.0	53	0.0	0.431	38.3	LOS C	10.7	75.4	0.85	0.74	0.85	33.6
11	T1	418	0.5	440	0.5	* 0.431	33.8	LOS C	10.8	75.6	0.85	0.73	0.85	34.0
Approach		468	0.4	493	0.4	0.431	34.3	LOS C	10.8	75.6	0.85	0.73	0.85	34.0
All Vehicles		1923	1.0	2024	1.0	0.816	33.5	LOS C	33.9	239.7	0.91	0.82	0.92	34.1

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

* 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	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Railway Parade												
P2	Full	66	69	49.8	LOS E	0.2	0.2	0.95	0.95	215.0	214.8	1.00
All Pedestrians		66	69	49.8	LOS E	0.2	0.2	0.95	0.95	215.0	214.8	1.00

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: 101 [S0 (SAT) - Railway Parade-The Avenue (Site Folder: S0 - 2020 Existing Base Case)]

2020 Existing Case SAT Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 122 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Railway Parade														
5	T1	734	1.4	773	1.4	* 0.733	23.4	LOS B	34.0	240.8	0.83	0.76	0.83	37.8
6	R2	296	0.5	312	0.5	0.733	35.9	LOS C	16.8	118.1	0.92	0.87	0.96	33.3
Approach		1030	1.1	1084	1.1	0.733	27.0	LOS B	34.0	240.8	0.86	0.79	0.87	36.4
North: The Avenue														
7	L2	194	0.6	204	0.6	0.906	58.1	LOS E	41.3	290.3	1.00	0.99	1.20	27.7
9	R2	388	0.6	408	0.6	* 0.906	58.1	LOS E	41.3	290.3	1.00	0.99	1.20	27.6
Approach		582	0.6	613	0.6	0.906	58.1	LOS E	41.3	290.3	1.00	0.99	1.20	27.7
West: Railway Parade														
10	L2	81	0.0	85	0.0	0.307	28.4	LOS B	9.7	68.3	0.69	0.65	0.69	36.8
11	T1	405	0.3	426	0.3	0.307	23.9	LOS B	9.8	68.9	0.69	0.61	0.69	37.4
Approach		486	0.3	512	0.3	0.307	24.6	LOS B	9.8	68.9	0.69	0.62	0.69	37.3
All Vehicles		2098	0.8	2208	0.8	0.906	35.1	LOS C	41.3	290.3	0.86	0.81	0.92	33.6

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

* 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	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Railway Parade												
P2	Full	72	76	55.3	LOS E	0.3	0.3	0.95	0.95	220.6	214.8	0.97
All Pedestrians		72	76	55.3	LOS E	0.3	0.3	0.95	0.95	220.6	214.8	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.

MOVEMENT SUMMARY

Site: 101 [S1 (AM) - Railway Parade-The Avenue (Site Folder: S1 - 2030 Future Base Case)]

2020 Existing Case AM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 111 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Railway Parade														
5	T1	473	1.8	498	1.8	0.410	10.8	LOS B	13.2	93.7	0.54	0.48	0.54	43.5
6	R2	293	0.4	308	0.4	* 0.852	50.0	LOS D	19.1	134.0	1.00	1.02	1.26	29.4
Approach		766	1.3	806	1.3	0.852	25.8	LOS C	19.1	134.0	0.71	0.68	0.81	36.8
North: The Avenue														
7	L2	150	2.8	158	2.8	1.019	108.1	LOS F	40.7	287.9	1.00	1.21	1.73	20.0
9	R2	298	0.3	314	0.3	* 1.019	108.1	LOS F	40.7	287.9	1.00	1.21	1.73	20.0
Approach		448	1.1	472	1.1	1.019	108.1	LOS F	40.7	287.9	1.00	1.21	1.73	20.0
West: Railway Parade														
10	L2	66	0.0	69	0.0	0.458	22.1	LOS C	15.3	108.5	0.67	0.62	0.67	39.7
11	T1	804	1.7	846	1.7	* 0.458	17.6	LOS B	15.3	108.9	0.67	0.61	0.67	40.1
Approach		870	1.6	916	1.6	0.458	18.0	LOS B	15.3	108.9	0.67	0.61	0.67	40.1
All Vehicles		2084	1.4	2194	1.4	1.019	40.2	LOS D	40.7	287.9	0.76	0.77	0.95	32.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* 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	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Railway Parade												
P2	Full	54	57	49.8	LOS E	0.2	0.2	0.95	0.95	215.0	214.8	1.00
All Pedestrians		54	57	49.8	LOS E	0.2	0.2	0.95	0.95	215.0	214.8	1.00

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: 101 [S1 (SAT) - Railway Parade-The Avenue (Site Folder: S1 - 2030 Future Base Case)]

2020 Existing Case SAT Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 122 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Railway Parade														
5	T1	837	1.4	881	1.4	* 0.856	29.6	LOS C	47.2	334.6	0.93	0.89	0.97	35.6
6	R2	337	0.5	355	0.5	0.896	62.0	LOS E	25.0	175.4	1.00	1.04	1.30	26.8
Approach		1174	1.1	1236	1.1	0.896	38.9	LOS C	47.2	334.6	0.95	0.93	1.07	32.5
North: The Avenue														
7	L2	194	0.6	204	0.6	0.906	58.1	LOS E	41.3	290.3	1.00	0.99	1.20	27.7
9	R2	388	0.6	408	0.6	* 0.906	58.1	LOS E	41.3	290.3	1.00	0.99	1.20	27.6
Approach		582	0.6	613	0.6	0.906	58.1	LOS E	41.3	290.3	1.00	0.99	1.20	27.7
West: Railway Parade														
10	L2	96	0.0	101	0.0	0.365	29.1	LOS C	11.9	83.7	0.71	0.67	0.71	36.6
11	T1	482	0.3	507	0.3	0.365	24.6	LOS B	12.0	84.5	0.72	0.64	0.72	37.1
Approach		578	0.3	608	0.3	0.365	25.3	LOS B	12.0	84.5	0.72	0.64	0.72	37.0
All Vehicles		2334	0.8	2457	0.8	0.906	40.3	LOS C	47.2	334.6	0.91	0.88	1.01	32.1

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

* 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	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Railway Parade												
P2	Full	72	76	55.3	LOS E	0.3	0.3	0.95	0.95	220.6	214.8	0.97
All Pedestrians		72	76	55.3	LOS E	0.3	0.3	0.95	0.95	220.6	214.8	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.

MOVEMENT SUMMARY

Site: 101 [S2 (AM) - Railway Parade-The Avenue (Site Folder: S2 - 2030 Future Base + Development Case)]

2020 Existing Case AM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 111 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Railway Parade														
5	T1	473	1.8	498	1.8	0.410	10.8	LOS B	13.2	93.7	0.54	0.48	0.54	43.5
6	R2	303	0.4	319	0.4	* 0.887	58.4	LOS E	21.1	148.3	1.00	1.07	1.34	27.5
Approach		776	1.3	817	1.3	0.887	29.4	LOS C	21.1	148.3	0.72	0.71	0.85	35.5
North: The Avenue														
7	L2	150	2.8	158	2.8	1.019	108.1	LOS F	40.7	287.9	1.00	1.21	1.73	20.0
9	R2	298	0.3	314	0.3	* 1.019	108.1	LOS F	40.7	287.9	1.00	1.21	1.73	20.0
Approach		448	1.1	472	1.1	1.019	108.1	LOS F	40.7	287.9	1.00	1.21	1.73	20.0
West: Railway Parade														
10	L2	73	0.0	77	0.0	0.462	22.2	LOS C	15.5	109.6	0.67	0.62	0.67	39.6
11	T1	804	1.7	846	1.7	* 0.462	17.7	LOS B	15.5	110.1	0.67	0.61	0.67	40.1
Approach		877	1.6	923	1.6	0.462	18.0	LOS B	15.5	110.1	0.67	0.61	0.67	40.0
All Vehicles		2101	1.4	2212	1.4	1.019	41.4	LOS D	40.7	287.9	0.76	0.78	0.96	31.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* 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	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Railway Parade												
P2	Full	54	57	49.8	LOS E	0.2	0.2	0.95	0.95	215.0	214.8	1.00
All Pedestrians		54	57	49.8	LOS E	0.2	0.2	0.95	0.95	215.0	214.8	1.00

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: 101 [S2 (SAT) - Railway Parade-The Avenue (Site Folder: S2 - 2030 Future Base + Development Case)]

2020 Existing Case SAT Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 122 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Railway Parade														
5	T1	837	1.4	881	1.4	* 0.856	29.6	LOS C	47.2	334.6	0.93	0.89	0.97	35.6
6	R2	343	0.5	361	0.5	0.920	69.6	LOS E	26.7	187.4	1.00	1.08	1.37	25.4
Approach		1180	1.1	1242	1.1	0.920	41.2	LOS C	47.2	334.6	0.95	0.95	1.09	31.8
North: The Avenue														
7	L2	194	0.6	204	0.6	0.906	58.1	LOS E	41.3	290.3	1.00	0.99	1.20	27.7
9	R2	388	0.6	408	0.6	* 0.906	58.1	LOS E	41.3	290.3	1.00	0.99	1.20	27.6
Approach		582	0.6	613	0.6	0.906	58.1	LOS E	41.3	290.3	1.00	0.99	1.20	27.7
West: Railway Parade														
10	L2	100	0.0	105	0.0	0.367	29.1	LOS C	12.0	84.3	0.72	0.67	0.72	36.5
11	T1	482	0.3	507	0.3	0.367	24.6	LOS B	12.1	85.3	0.72	0.64	0.72	37.1
Approach		582	0.2	613	0.2	0.367	25.4	LOS B	12.1	85.3	0.72	0.64	0.72	37.0
All Vehicles		2344	0.8	2467	0.8	0.920	41.5	LOS C	47.2	334.6	0.91	0.88	1.02	31.8

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

* 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	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Railway Parade												
P2	Full	72	76	55.3	LOS E	0.3	0.3	0.95	0.95	220.6	214.8	0.97
All Pedestrians		72	76	55.3	LOS E	0.3	0.3	0.95	0.95	220.6	214.8	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.

MOVEMENT SUMMARY

Site: 101 [S2 (PM) - Railway Parade-The Avenue (Site Folder: S2 - 2030 Future Base + Development Case)]

2020 Existing Case PM Peak
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 111 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Railway Parade														
5	T1	689	1.4	725	1.4	* 0.847	37.7	LOS C	36.0	255.2	0.97	0.95	1.07	32.9
6	R2	216	0.6	227	0.6	0.847	56.5	LOS E	15.8	111.5	1.00	1.05	1.25	28.1
Approach		905	1.2	953	1.2	0.847	42.2	LOS C	36.0	255.2	0.98	0.97	1.11	31.6
North: The Avenue														
7	L2	185	0.6	195	0.6	* 0.816	33.8	LOS C	33.9	239.7	0.93	0.90	0.97	34.0
9	R2	480	1.2	505	1.2	0.816	33.8	LOS C	33.9	239.7	0.93	0.90	0.97	33.9
Approach		665	1.0	700	1.0	0.816	33.8	LOS C	33.9	239.7	0.93	0.90	0.97	33.9
West: Railway Parade														
10	L2	63	0.0	66	0.0	0.515	39.4	LOS C	13.2	93.0	0.88	0.76	0.88	33.3
11	T1	497	0.5	523	0.5	0.515	34.9	LOS C	13.3	93.4	0.88	0.76	0.88	33.7
Approach		560	0.4	589	0.4	0.515	35.4	LOS C	13.3	93.4	0.88	0.76	0.88	33.6
All Vehicles		2130	1.0	2242	1.0	0.847	37.8	LOS C	36.0	255.2	0.94	0.89	1.01	32.8

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

* 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	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: Railway Parade												
P2	Full	66	69	49.8	LOS E	0.2	0.2	0.95	0.95	215.0	214.8	1.00
All Pedestrians		66	69	49.8	LOS E	0.2	0.2	0.95	0.95	215.0	214.8	1.00

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.

The Transport Planning Partnership
Suite 402 Level 4, 22 Atchison Street
St Leonards NSW 2065

P.O. Box 237
St Leonards NSW 1590

02 8437 7800

info@ttpp.net.au

www.ttpp.net.au