



2 Percy Street, Auburn Planning Proposal Transport Impact Assessment

Client // Australian Turkish Maarif Foundation
Office // NSW
Reference // N124470
Date // 06/06/19

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Quality Record


Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
A	12/07/17	Final	Clifford Widjaja, Siew Hwee Kong, Mackenzie Brinums	Rhys Hazell	Rhys Hazell	Rhys Hazell
B	05/06/19	Final – Addressing Council comments	Mackenzie Brinums	Karen McNatty	Karen McNatty	Karen McNatty
C	06/06/19	Final	Mackenzie Brinums	Karen McNatty	Karen McNatty	

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1. Introduction

1.1 Background

A Planning Proposal was lodged with Cumberland Council (Council) to amend the existing planning controls for the site located at 2 Percy Street, Auburn.

The Planning Proposal seeks to allow additional permitted land uses for the site, including kindergarten, primary school, secondary school and administration office uses which accommodates up to 650 students. These land uses are currently prohibited under the Light Industrial Zone (IN2). It is proposed to construct a new independent, coeducational school (K-12) known as the International Maarif Schools of Australia (IMSA) – Gallipoli Campus within the 7,143-square metre site.

GTA Consultants (GTA) was commissioned by Australian Turkish Maarif Foundation in April 2017 to undertake a transport impact assessment for the proposed development.

This report has been updated in response to the Cumberland Council (Council) comments on 27 May 2019.

1.2 Purpose of this Report

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

- i existing traffic and parking conditions surrounding the site
- ii suitability of the proposed parking in terms of supply (quantum) and layout
- iii service vehicle requirements
- iv pedestrian and bicycle requirements
- v the traffic generating characteristics of the proposed development
- vi suitability of the proposed access arrangements for the site
- vii the transport impact of the development proposal on the surrounding road network.

1.3 References

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

- o an inspection of the site and its surrounds
- o Cumberland (previously Auburn) Council Development Control Plan (DCP) 2010
- o RMS Guide to Traffic Generating Developments October 2002
- o RMS Guide to Traffic Generating Developments – Technical Direction August 2013
- o Australian Standard/ New Zealand Standard, Parking Facilities, Part 1: Off-Street Car Parking AS/NZS 2890.1:2004
- o Australian Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities AS 2890.2:2002
- o Australian Standard / New Zealand Standard, Parking Facilities, Part 6: Off-Street Parking for People with Disabilities AS/NZS 2890.6:2009
- o traffic surveys undertaken by Matrix Traffic and Transport Data on Tuesday 2 May 2017, Thursday 29 June 2017 and Friday 30 June 2017 as referenced in the context of this report

- traffic and car parking surveys undertaken by GTA on Tuesday 2 May 2017 and 23 June 2017 as referenced in the context of this report
- proposed school program prepared by Architecture Design Studio, dated 09 May 2017
- other documents and data as referenced in this report.

1.4 Other Studies and References

Several previous transport studies have been completed as part of the broader Auburn local government area (LGA) study as well as the proposed three storey residential aged care facility located west of the site at 9, 11 and 13 Gelibolu Parade and 2, 2A, 4 and 6 St Hilliers Road, Auburn.

1.4.1 Traffic, Access and Land Use Study for Gelibolu Precinct, Auburn (GHD, 2018)

Noting the exclusion of the Gelibolu Precinct in the Hyder report (outlined in Section 1.4.2) Council engaged GHD to undertake a traffic and access study of the precinct. The precinct consists of mostly residential development with the Auburn Gallipoli Mosque in the middle of the precinct.

The key objectives of the study are:

- to identify the existing capacity of the road network to support the proposed increase in density in the Gelibolu Precinct under the controls proposed in the Draft Auburn and Lidcombe Town Centre Strategy
- to identify any improvements in access arrangements (entry and egress points) and/or intersection upgrades that would be required for improved/satisfactory movement functions to and from, and within the precinct to support development under these controls
- to understand whether the traffic impacts of the proposed school development would impact on the future development potential of the precinct as a whole, and if so, the extent of such an impact.

The study builds upon a range of strategic work Council has undertaken which supported an increase in heights in some parts of the Auburn town centre and will be used to inform the final Auburn and Lidcombe Town Centres Strategy. This informs the preparation of a planning proposal and amendments to Auburn Local Environmental Plan (LEP) 2010 and Auburn Development Control Plan (DCP) 2010.

Any upgrades or new intersection arrangements will inform Council's Contributions Plan.

1.4.2 Auburn LGA-wide Traffic and Transport Study (Hyder Consulting, 2012)

Hyder Consulting prepared a report in October 2012 to assess the impact of a potential increase in development capacity to accommodate additional floor space ratios (FSR) in the Auburn LGA on the surrounding road network.

This included an additional 3,238 dwellings and 153,030 square metres of mixed use podium gross floor area (GFA) for employment uses, generating 3,700 to 4,900 additional vehicle trips in one peak hour. The report provides recommendations on potential upgrading works at critical intersections required to minimise impact from increased FSR.

The report indicated that the intersection of Boorea Road/ St Hilliers Road/ Rawson Street will operate over capacity at a Level of Service (LOS) F in 2021 and identified the following road capacity improvements to cater for the additional traffic demand:

- Conversion of the four-leg intersection to a three-leg T-junction by closing the St Hilliers Road south approach as this approach carries small traffic volumes (less than 20 vehicles in one hour).
- Provision of an alternative access for traffic to/ from St Hilliers Road south via North Parade-Dartbrook Road or North Parade-Percy Street.
- Provision of dual left turn signalised slip lanes on the Rawson Street western approach onto St Hilliers Road.

It is noted that the Hyder report did not analyse the traffic implications of the increased growth of the Gelibolu Precinct.

1.4.3 Traffic Impact Assessment for 9, 11 and 13 Gelibolu Parade and 2, 2A, 4 and 6 St Hilliers Road, Auburn (Jacobs, 2015)

Jacobs prepared a Traffic Impact Assessment in May 2015 for a development west of the subject site, at 9, 11 and 13 Gelibolu Parade and 2, 2A, 4 and 6 St Hilliers Road, Auburn. The proposed development involved the demolition of the existing buildings and construction of a three-storey residential aged care facility comprising of 102 beds and a neighbourhood shop, with basement parking (DA189/2015). The report states that the peak trip generation (based on parking demand) will occur between 2pm and 3pm during a shift changeover with a total of 44 vehicle trips per hour. The report also concluded that there is more than sufficient on-street parking to accommodate the staff changeover period.

2. Existing Conditions

The subject site is located at 2 Percy Street, Auburn. The site of approximately 7,143 square metres has frontages of 140 metres, 130 metres and 120 metres to Percy Street, Gelibolu Parade and St Hilliers Road respectively. The site currently has a land use classification as Light Industrial Zone (IN2) and is occupied by a two-level office building, tenanted by the Master Plumbers (and Mechanical Contractors) Association of NSW and the Master Plumbers College of Excellence.

The surrounding properties predominantly include industrial, residential and community land uses.

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

Figure 2.1: Subject Site and Its Environs



Basemap source: Sydway Publishing Pty Ltd

2.1 Road Network

2.1.1 Adjlying Roads

Percy Street

Percy Street is classified as a local road and is aligned in a north-south direction in the vicinity of the site. It is a two-way road configured with one lane in each direction within a 12-metre-wide carriageway.

Kerbside parking is permitted on both sides of the road, with parallel parking on the western side and a mix of 90-degree and parallel parking along the eastern side of the road.

Percy Street is shown in Figure 2.2 and Figure 2.3.

Figure 2.2: Percy Street (looking north)



Figure 2.3: Percy Street (looking south)



Gelibolu Parade

Gelibolu Parade functions as a local road and in the vicinity of the site is aligned in a northwest-southeast direction. It is a two-way road configured with one lane in each direction within a 10-metre-wide carriageway.

Kerbside parking is permitted along the northern edge of Gelibolu Parade between Percy Street and St Hilliers Road. A mix of angled and parallel kerbside parking is permitted along Gelibolu Parade north west of St Hilliers Road.

Gelibolu Parade is shown in Figure 2.4 and Figure 2.5.

Figure 2.4: Gelibolu Parade (looking east)



Figure 2.5: Gelibolu Parade (looking west)



St Hilliers Road

St Hilliers Road is a classified State Road (RMS controlled) and is aligned in a north-south direction. In the vicinity of the site, it is a two-way road configured with one travel lane and one kerbside parking lane in each direction. Kerbside parking is permitted on both sides of the road. The road carriageway is approximately 12 metres wide.

St Hilliers Road is shown in Figure 2.6 and Figure 2.7.

Figure 2.6: St Hilliers Road (looking north)



Figure 2.7: St Hilliers Road (looking south)



A summary of the surrounding roads is shown in Table 2.1.

Table 2.1: Adjoining roads summary

Road name	Road type	Carriageway width	Speed limit
Percy Street	Local	12 m	50 km/h
Gelibolu Parade	Local	10 m	
St Hilliers Road	State (RMS controlled)	12 m	

2.1.2 Surrounding Intersections

The following intersections currently exist in the vicinity of the site:

- St Hilliers Road/ Gelibolu Parade (unsignalised)
- Boorea Road/ St Hilliers Road/ Rawson Street (signalised)
- Boorea Street/ Percy Street (unsignalised)
- Dartbrook Road/ Rawson Street (unsignalised)
- Station Road/ Gelibolu Parade (unsignalised)
- Station Road/ Rawson Street (signalised).

2.2 Traffic Volumes

GTA commissioned traffic movement counts at the above six key intersections in the vicinity of the site on:

- Tuesday 5 May 2017 and Thursday 29 June 2017 during AM peak period (7:00am and 9:00am) and PM peak period (3:00pm and 5:00pm) to understand the traffic conditions during the school's AM and PM peak periods.
- Wednesday 14 March 2018 during AM peak period (7:00am to 9:00am) and PM peak period (3:00pm to 5:00pm) to understand the traffic conditions during the school's AM and PM peak periods along Olympic Drive.
- Friday 30 June 2017 during Friday midday peak (11:30am and 1:30pm) to understand the traffic conditions of the Auburn Gallipoli Mosque's Friday prayer.

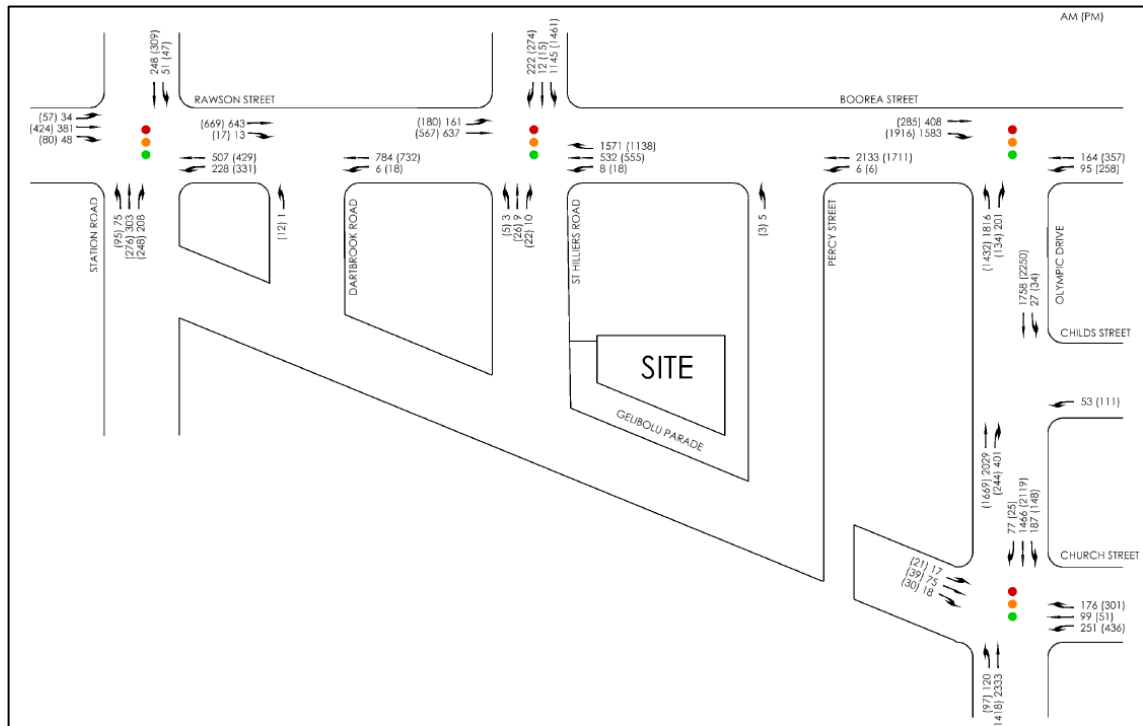
The kindergarten proposes to operate from 8:30am to 3:15pm while the primary and high schools will hold classes from 8:30am to 3:30pm, Monday to Friday.

Noting the proposed operating hours of the school, the AM and PM hour traffic volumes during the following school peak periods are used for the traffic impact assessment:

- 8:00am and 9:00am
- 3:00pm and 4:00pm.

These Weekday AM and PM school peak hour traffic volumes are summarised in Figure 2.8.

Figure 2.8: Existing Weekday AM/ Weekday PM School Peak Hour Traffic Volumes



2.3 Intersection Operation

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

The commonly used measure of intersection performance, as defined by the RTA, is vehicle delay. SIDRA INTERSECTION determines the average delay that vehicles encounter and provides a measure of the Level of Service.

Table 2.2 shows the criteria that SIDRA INTERSECTION adopts in assessing the Level of Service.

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

Table 2.2: SIDRA INTERSECTION Level of Service Criteria

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

Table 2.3 presents a summary of the existing operation of each intersection as it operates modelled under network conditions, with full results presented in Appendix B of this report.

Table 2.3: Existing Operating Conditions

Intersection	Peak	Degree of Saturation (DoS)	Average Delay (sec)	50th Percentile Queue (m)	Level of Service (LoS)
Boorea Road/ St Hilliers Road/ Rawson Street (signalised)	AM	0.72	35	118	C
	PM	0.88	38	151	C
Boorea Street/ Percy Street ^[1] (left in/ left out)	AM	0.02	7	1	A
	PM	0.01	7	0	A
Dartbrook Road/ Rawson Street ^[1] (Priority controlled)	AM	0.25	11	1	A
	PM	0.24	10	3	A
Station Road/ Rawson Street (signalised)	AM	0.58	43	50	D
	PM	0.9	42	50	C
Olympic Drive/ Church Street (Signalised)	AM	0.97	55	355	D
	PM	0.89	42	210	C
Olympic Drive/ Childs Street ^[1] (Priority)	AM	1.00	31	25	C
	PM	1.00	43	19	D
Olympic Drive/ Boorea Street (Signalised)	AM	0.7	21	170	B
	PM	0.9	27	150	B

[1] Worst movement reported for unsignalised intersection.

The analysis indicated that the intersections of Boorea Street/ Percy Street, Dartbrook Road/ Rawson Street and Olympic Drive/ Boorea Street currently operate with acceptable levels of service in both the AM and PM peak periods.

The intersection of Station Road/ Rawson Street currently overall operates satisfactorily in the AM peak, however is nearing capacity in the PM peak.

The intersection of Boorea Street/ St Hilliers Road/ Rawson Street generally operates satisfactorily, with some peak period queuing and delay on the northeast, southeast and northwest approaches. This is influenced by the signalised intersection of Station Road/ Rawson Street.

During the PM peak period, queuing at the Station Road/Rawson Street intersection (located northwest) extends back to the Boorea Street/ St Hilliers Road/ Rawson Street intersection, which in turn affects the traffic efficiency and operation of this intersection. This mostly impacts traffic on the southeast and northeast approaches of the Boorea Street/ St Hilliers Road/ Rawson Street

intersection. As such, it should be recognised that this impact is as a result of the Station Road/ Rawson Street intersection and associated congestion, rather than the intersection in isolation.

Overall the intersection of Olympic Drive/ Church Street operates near to capacity in the AM peak and satisfactorily in the PM peak. Delays and queuing are occurring in both peak periods, the delays on the Church Street approaches are due to the congestion along Olympic Drive and the long cycle time at the intersections of 150 and 140 seconds during the AM and PM peak hours. It is observed that the entire vehicle queue (approximately seven cars) on Church Street on the northwest approach clears the intersection during each green phase.

The intersection of Olympic Drive/ Childs Street currently operates satisfactorily in the AM peak at a Level of Service C and is nearing capacity in the PM peak at a Level of Service D.

2.4 Car Parking

2.4.1 Supply

GTA compiled an inventory of publicly available on-street car parking within approximately 200m of the subject site. The inventory identified a total of 246 unrestricted on-street spaces, with the breakdown presented below:

- Percy Street south of Boorea Street – 117 spaces
- Gelibolu Parade between St Hilliers Road and Percy Street – 20 spaces
- Gelibolu Parade between Dartbrook Road and St Hilliers Road – 79 spaces
- Gelibolu Parade between Station Road and Dartbrook Road – 66 spaces
- St Hilliers Road south of Boorea Street – 50 spaces
- Dartbrook Road south of Rawson Street – 34 spaces
- Informal car park facility (Rawson Street car park) on the southwest corner of the intersection of Boorea Street/ St Hilliers Road/ Rawson Street – 40 spaces.

2.4.2 Demand

Parking demand surveys were undertaken by GTA within the nominated area on:

- typical weekday Tuesday 2 May 2017 (7:00am, 7:30am, 8:00am, 8:30am and 9:00am as well as 3:00pm, 3:30pm, 4:00pm, 4:30pm and 5:00pm) to capture the parking demand during the school's AM and PM peak periods.
- Friday 23 June 2017 (11:30am, 12:00pm, 12:30pm, 1:00pm and 1:30pm) to capture the parking demand due to the Auburn Gallipoli Mosque's Friday prayer.

The peak results for AM, PM and Friday midday peak periods are summarised in Table 2.4, Table 2.5 and Table 2.6 respectively.

Table 2.4: Summary of AM Peak Public Parking Demand

Location	Restrictions	Supply (No of spaces)	Peak Demand (Vehicles)					Minimum Vacancies
			7:00am	7:30am	8:00am	8:30am	9:00am	
Percy Street south of Boorea Street	Unrestricted	117	18	22	30	33	35	82
Gelibolu Parade between St Hilliers Road and Percy Street		20	0	0	0	1	1	19
Gelibolu Parade between Dartbrook Road and St Hilliers Road		79	32	29	27	27	26	47
St Hilliers Road south of Boorea		50	49	46	44	40	38	1
Total		266	99	97	101	101	100	149

Table 2.5: Summary of PM Peak Public Parking Demand

Location	Restrictions	Supply (No of spaces)	Peak Demand (Vehicles)					Minimum Vacancies
			3:00pm	3:30pm	4:00pm	4:30pm	5:00pm	
Percy Street south of Boorea Street	Unrestricted	117	37	34	36	36	35	80
Gelibolu Parade between St Hilliers Road and Percy Street		20	1	1	1	1	1	19
Gelibolu Parade between Dartbrook Road and St Hilliers Road		79	34	28	24	23	23	45
St Hilliers Road south of Boorea Street		50	31	27	30	33	30	17
Total		266	103	90	91	93	89	161

Table 2.6: Summary of Friday Midday Peak Public Parking Demand

Location	Restrictions	Supply (No of spaces)	Peak Demand (Vehicles)					Minimum Vacancies
			11:30am	12:00pm	12:30pm	1:00pm	1:30pm	
Percy Street south of Boorea Street	Unrestricted	117	34	74	155	179	59	-62
Gelibolu Parade between St Hilliers Road and Percy Street		20	5	22	34	39	3	-19
Gelibolu Parade between Dartbrook Road and St Hilliers Road		79	68	76	113	102	31	-34
Gelibolu Parade between Station Road and Dartbrook Road		66	64	70	92	69	21	-26
St Hilliers Road south of Boorea Street		50	49	57	67	71	46	-21
Dartbrook Road south of Rawson Street		34	36	38	45	42	13	-11
Rawson Street Car Park		40	29	65	70	70	20	-30
Total		406	285	402	576	572	180	-170

Table 2.4 and Table 2.5 indicate that public on-street car parking demands in the nominated area are relatively low, with AM and PM peak period demands respectively equal to an occupancy rate of 38% (149 vacancies) and 39% (161 vacancies) for parking in the vicinity of the site.

Table 2.6 indicates that the parking demand exceeded the capacity during the Friday's prayer, with some of the visitors parking illegally in the "no stopping" zones as well as double parking along Gelibolu Parade. However, it should be noted that the parking demand decreased significantly within 15 to 30 minutes after the end of the Friday's prayer session, with 180 vehicles remaining in the nominated area by 1:30pm.

Overall, the peak parking demand for the Mosque occurring between 12:00pm and 1:00pm, this peak parking activity does not overlap with the school's peak periods.

2.5 Public Transport

A review of the public transport available in the vicinity of the site is summarised in Table 2.7 and illustrated in Figure 2.9.

Table 2.7: Public Transport Provision

Service	Route #	Route Description	Location of Stop	Distance to Nearest Stop	Frequency On/Off Peak
Bus	908	Bankstown to South Granville and Merrylands	Auburn Road opposite Queen Street	950m Northwest	35 minutes peak/ 1 hourly off peak
	909	Bankstown to Auburn and Parramatta			30 minutes peak and off peak
	911	Bankstown to Auburn			30 minutes peak/ hourly off peak
	S3	Auburn to Chrisholm Road			2.5 hours off peak
Train	T1	North Shore, Northern and Western Line	Auburn Station	700m Northwest	6 minutes peak/ 30 minutes off peak
	T2	Airport, Inner West and South Line			
	T6	Carlingford Line			

Figure 2.9: Public Transport Network Map



Source: http://www.transdevnsw.com.au/uploads/16447/Region_13_Network_Map_NOV16.pdf (18 April 2017)

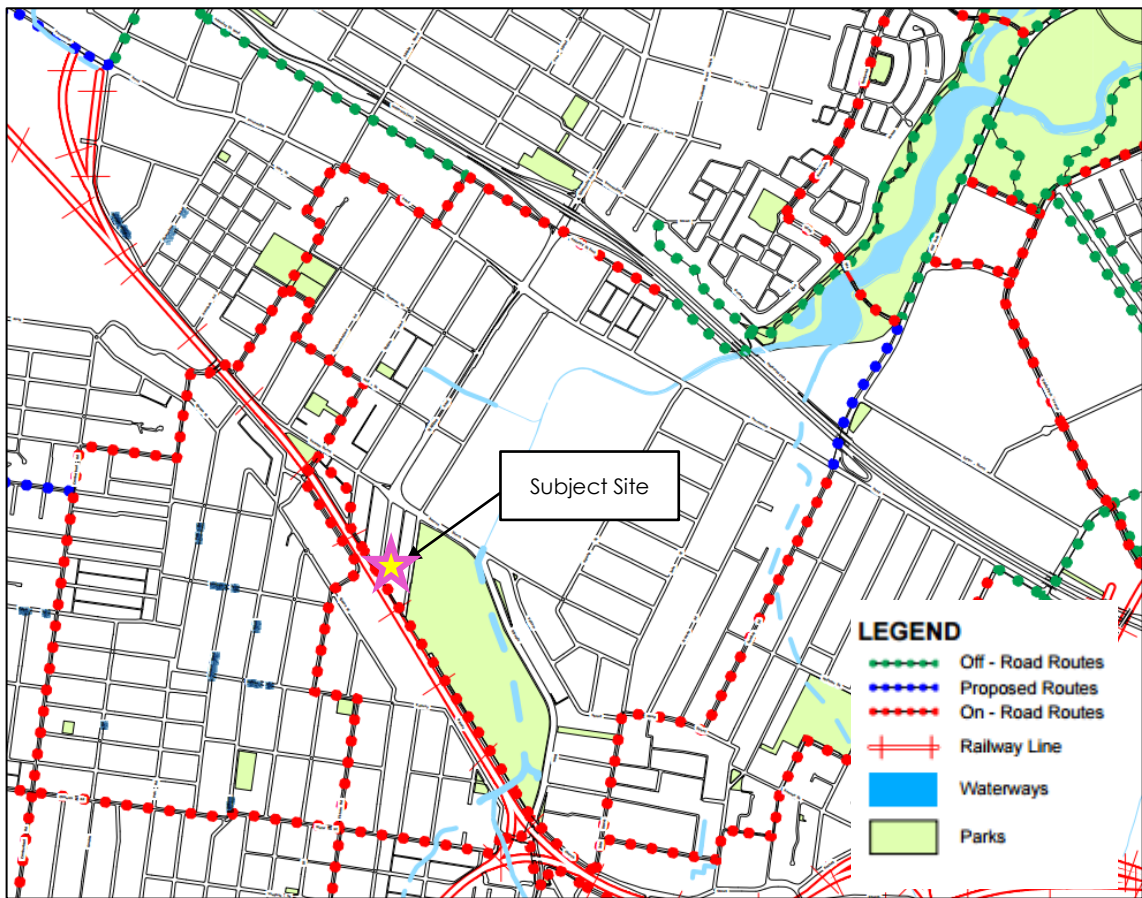
2.6 Pedestrian Infrastructure

Pedestrian paths are located along both sides of the majority of roads in the vicinity of the site. In addition, signalised pedestrian crossings are provided on all legs of the Boorea Road/ St Hilliers Road/ Rawson Street intersection except for the western leg across Rawson Street. The existing pedestrian infrastructure provides a convenient link between the site and Auburn Town Centre (including Auburn railway station).

2.7 Cycle Infrastructure

There exists a well-developed network of cycling facilities in the vicinity of the site, as illustrated the Auburn bicycle route map presented Figure 2.10.

Figure 2.10: Extract of the Auburn Bicycle Route Map



Source: <http://www.auburn.nsw.gov.au/Explore/Transport/TransportDocuments/Cycle%20Routes.pdf> (18 April 2017)

Based on the Auburn bicycle route map, on-road bicycle lanes are located along Gelibolu Parade, through the southern edge of the Ashfield field and Church Street. These bike paths provide connectivity to off-road cycle route along the M4 Western Motorway to the north and the suburb of Lidcombe to the south.

3. Development Proposal

3.1 Land Uses

The Planning Proposal seeks to allow additional permitted uses for the site, including kindergarten, primary school, secondary school and administration office uses, which are currently prohibited under the current Light Industrial Zone (IN2).

The indicative schedule for the conceptual scheme is summarised in Table 3.1.

Table 3.1: Indicative Schedule

Use	Description	Size	
		Staff	Student
Educational	Kindergarten	2	50
	Primary School	19	300
	Secondary School	21	300
	Administration Office	8	-
Total		50	650

Source: Proposed school program by Architecture Design Studio, dated 09 May 2017 (See Appendix C)

3.2 Vehicle Access

3.2.1 General Vehicles

A single 8.3-metre-wide two-way vehicular crossover will be provided along Percy Street, providing access to the proposed basement car park on the north-eastern corner of the site.

3.2.2 Service Vehicles

A loading area is proposed to be provided from St Hilliers Road. This access would allow for only left-in and left-out movements to reduce vehicular conflicts at the intersection of St Hilliers Road/Gelibolu Parade. This restriction is considered appropriate given the proximity of the access to the intersection.

3.3 Car Parking

On-site car parking is to be provided for use by staff, students and visitors. Further detail on the car parking requirements in accordance with the DCP 2010 for the proposed development is provided in Section 3.3 of this report.

3.4 Loading Areas

All garbage collection and loading activities related to deliveries, courier activity, maintenance etc. are proposed to be carried out at the proposed loading area on the north-western corner of the site along St Hilliers Road. It is noted that the loading areas would be generally used outside of the school's peak hours. The loading area is proposed for use of service vehicles up to 8.8 metres and a 10.5 metre-Council garbage truck.

It is noted that all service vehicles would arrive and depart outside the peak hours to minimise disruption to the local road network.

Vehicle movements would consist of vehicles from external organisations which support the school's operation such as:

- electrical contractors
- lift technicians
- hydraulic services
- building maintenance contractors
- laboratory equipment service/ repair
- caterers
- coffee machine providers
- water cooler providers
- indoor plant hire/ maintenance
- project managers
- sales representatives.

It is expected that there would be no more than four service vehicle movements per day.

3.5 Pick-up/ Drop-off

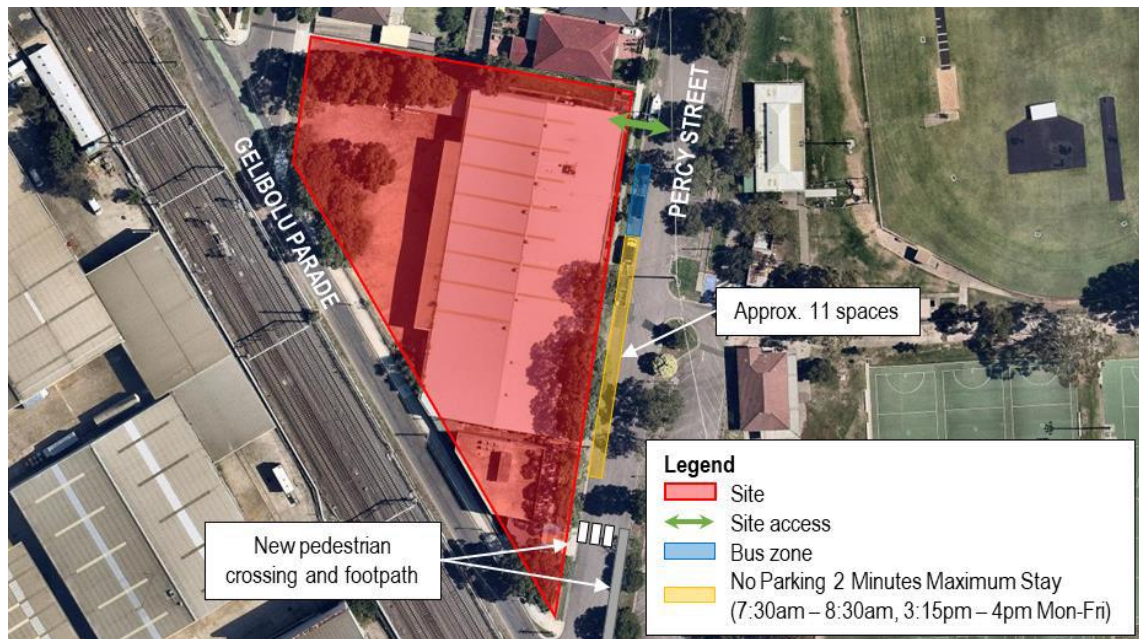
The proposal would include two drop-off and pick-up areas, as shown in Figure 3.1 (along Percy Street) and Figure 3.2 (along Church Street):

- Bus
 - 10-metre bus zone along the southern side of Church Street (one space for up to 7-metre mini bus)
 - 10-metre bus zone along the western side of Percy Street (one space for up to 7-metre mini bus).
- Car
 - 54-metre drop off/ pick up zone along the southern side of Church Street (nine car spaces)
 - 66-metre drop off/ pick up zone along the western side of Percy Street (south) (11 car spaces)

The drop off and pick up zones would be unrestricted parking outside of the school pick up and drop off times.

It is expected that potentially two buses would arrive and depart in each of the school peak periods. A swept path assessment has been completed for a 7-metre mini bus performing a U-turn at the end of Church Street and is shown in Appendix D.

Figure 3.1: Pick-up/ Drop-off Zones along Percy Street



Basemap: Nearmap

Figure 3.2: Pick-up/ Drop-off Zones along Church Street



Basemap: Nearmap

3.6 Future Travel Mode

ATMF has circulated an Expression of Interest (EOI) for the proposed school for coordinating potential enrolment applications. Based on the expected home addresses and the existing travel mode choices, the anticipated mode shares of the proposed school are shown in Table 3.2.

Table 3.2: Proposed mode shares based on potential student's home addresses and ABS data

Mode	Staff (per cent)	Student/ Parent/ Carer (per cent)
Train	8	13
Bus	5	10
Car - Driver	70	5
Car – Passenger (Single passenger)	5	15
Car – Passenger (three passengers)	0	40
Bicycle	2	5
Walking	10	12
Total	100	100

In addition, it is also noted that most of the registered student addresses are within 800 metres of the T2 Line. The future travel mode can be improved through the implementation of a Travel Plan at the commencement of the school operation.

4. Car Parking

4.1 Car Parking Requirements

The parking provision objectives detailed in the Cumberland Council 'Parking and Loading' DCP 2010 are reproduced below:

- a. To promote greater bicycle use, decrease the reliance on private vehicles and encourage alternative, more sustainable modes of transport.*
- b. To provide convenient and safe access and parking to meet the needs of all residents and visitors.*
- c. To provide access arrangements which do not impact upon the efficient or safe operation of the surrounding road system.*
- d. To encourage the integrated design of access and parking facilities to minimise visual and environmental impacts"*

The car parking requirements for different development types are set out in Cumberland Council's 'Parking and Loading' DCP 2010. DCP 2010 does not specify a parking rate for kindergarten. As such, the car parking rate for child care use has been applied for kindergarten use. A review of the car parking rates and the floor area schedule results in a parking requirement for the proposed development is summarised in Table 4.1.

Table 4.1: DCP 2010 Car Parking Requirements

Land Use	Size		DCP Parking Rate	DCP Parking Requirement	
	Staff	Child/Student		Staff	Child/Student
Kindergarten	2	50	1 space per 4 children + drop-off pick-up facility	13	drop-off pick-up facility
Primary School	19	300	1 space per 2 staff	10	-
Secondary School	21	300 (including 50 year 12 students)	1 space per 20 year 12 students + 1 space per 2 staff	11	3
Administration Office	8	-	1 space per 2 staff	4	
Subtotal				38	3 + drop-off pick-up facility
Visitor	10% of overall parking			4	
Total				45 + drop-off pick-up facility	

Based on the above, the proposal would generate a requirement to provide 45 car spaces and a drop-off/ pick-up facility.

4.2 Empirical Assessment of Car Parking Demand

Guide to Traffic Generating Developments (RMS, 2002) does not have car parking rate for kindergarten use. As such, reference has been made to the Guide (2002) and the GTA database to determine the likely car parking requirements of the child care centre use.

RMS Guide

The RMS Guide recommends that child care centre car parking be provided at a rate of 1 space per 4 children. This rate includes staff parking requirements as well as pick-up/ drop-off spaces for parents. The Guide continues to state that "*consideration could be given to reducing parking required if convenient and safe on-street parking is available (e.g. indented parking bays), provided that the use of such parking does not adversely affect the amenity of the adjacent area.*"

GTA Database

The GTA database includes car parking survey results of 18 child care centres. The data indicates the following peak hour car parking demands:

- Average: 0.19 spaces per child
- 85th Percentile: 0.26 spaces per child

This rate includes staff parking requirements as well as pick-up/ drop-off spaces for parents/ carers.

Summary

Application of the above rates (conservatively using 0.26 spaces per child) indicates a peak car parking demand of 13 spaces for the child care centre use, incorporating staff and pick up/ drop off spaces.

Based on the above, the proposal would generate a requirement to provide 45 car spaces (including drop-off/ pick-up facility).

5. Sustainable Transport Infrastructure

5.1 Bicycle Parking Requirements

The *NSW Planning Guidelines for Walking and Cycling* (Department of Infrastructure, Planning and Natural Resources, 2004) aims to assist land use planners and related professionals to improve consideration of walking and cycling in their work. The guidelines have been designed to provide a walking and cycling focus to the NSW Government's *Integrating Land Use & Transport Planning* policy package. The *Planning Guidelines for Walking and Cycling* contains suggested bicycle parking provision rates for different land use types.

On the above basis, the suggested bicycle parking provision for the development is summarised in Table 5.1.

Table 5.1: Recommended Bicycle Parking Rates

Land Use	Size		Bicycle Parking Rate		Bicycle Parking Provision	
	Staff	Student	Staff	Student/Visitors	Staff	Student/Visitors
Kindergarten	2	50	3% to 5%	5% to 10%	1	2-5
Primary and High Schools & Administration Office	48	600			2-3	30-60
Total					3-4	32-65
					35 to 69 spaces	

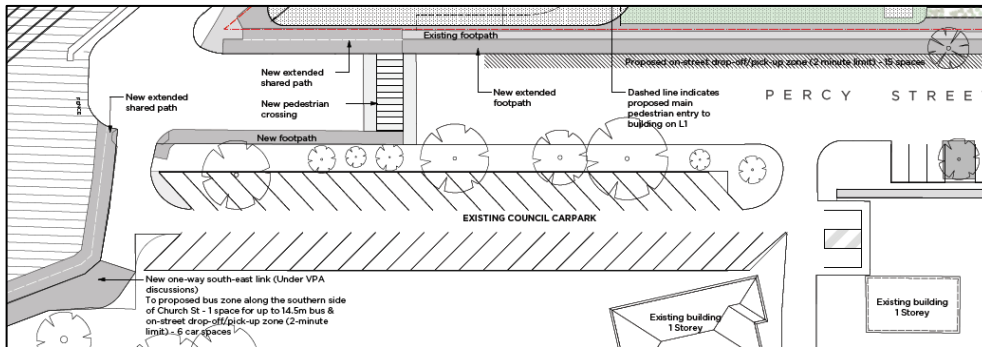
It is therefore recommended that the above bicycle provisions of between 35 and 69 be provided, with such details to be shown on detailed design plans to be prepared as part of any future development application for the site.

5.2 Pedestrian and Bicycle Facilities

The proposal would incorporate pedestrian access points along all frontages to Percy Street, Gelibolu Parade and St Hilliers Road. Improvements to existing pedestrian and bicycle facilities should include line marking, bicycle/ pedestrian crossings, signage and where appropriate speed humps.

Figure 5.1 shows the infrastructure treatments proposed to be carried out to improve safety for cyclists and pedestrians near the site.

Figure 5.1: Proposed Infrastructure Treatments for Cyclists and Pedestrians



Basemap source: PMDL

The exit point of site access requires the following safety devices to be installed within the boundary of the property:

- stop signs
- a white, unbroken line at the exit point appropriate to accompany stop signs
- two fish eye mirrors to improve sighting of pedestrians/ bikes traversing the adjacent footpaths
- a speed hump within eight metres of the exit point
- speed limit of 10 kilometres per hour to be enforced within the property
- speed limit of 40 kilometres per hour to be enforced outside the property along Percy Street, Gelibolu Parade and St Hilliers Road; which should be clearly sign posted.

5.3 Public Transport

As discussed in Section 2.5, ATMF would coordinate with existing education facilities/ TfNSW and transport operators to provide school bus services or extend the existing school bus services to the IMSA school. The proposed arrival and departure routes for buses are illustrated in Figure 5.2.

Figure 5.2: Proposed Arrival and Departure Routes for School Buses



Basemap source: Nearmap

6. Traffic Impact Assessment

6.1 Traffic Generation

The anticipated traffic generation of the proposed school has been derived based on the future mode shares as discussed in Section 3.6.

The directional splits of traffic (i.e. the ratio between the inbound and outbound traffic movements) have been assumed as follows:

- AM Peak
 - Driver (staff and students) 100 per cent in/ 0 per cent out
 - Passenger (students) 50 per cent in/ 50 per cent out
- PM Peak
 - Driver (staff and students) 0 per cent in/ 100 per cent out
 - Passenger (students) 50 per cent in/ 50 per cent out.

The peak-hour and daily number of staff and student anticipated for each mode for the proposed development are summarised in Table 6.1 and Table 6.2 respectively.

Table 6.1: Anticipated Number of Staff by Mode

Mode	Mode share (per cent)	Anticipated Number of Staff
Train	8	4
Bus	5	3
Car – Driver	70	35
Car – Passenger (Single passenger)	5	3
Car – Passenger (three passengers)	0	0
Bicycle	2	0
Walking	10	5
Total	100	50

Table 6.2: Anticipated Number of Student by Mode

Mode	Mode share (per cent)	Anticipated Number of Student
Train	13	84
Bus	10	64
Car – Driver	5	33
Car – Passenger (Single passenger)	15	98
Car – Passenger (three passengers)	40	260
Bicycle	5	33
Walking	12	78
Total	100	650

A summary of the estimated traffic generation for the proposed development is presented in Table 6.3.

Table 6.3: Proposed Traffic Generation Estimate

Mode	Anticipated Number		AM Peak Trip Generation			PM Peak Trip Generation			Daily Trip Generation
	Staff	Student	In	Out	Total	In	Out	Total	
Car – Driver	35	33	68	0	68	0	68	68	136
Car – Passenger (Single passenger)	3	98	101	101	202	101	101	202	404
Car – Passenger (three passengers)	0	260	87 ^[1]	87 ^[1]	173	87 ^[1]	87 ^[1]	173	347
Total	38	391	256	188	443	188	256	443	887

[1] Three students per vehicle trip

Table 6.3 indicates that the proposed development of the proposed development would generate up to 443 vehicle trip movements during the school's AM/ PM peak hours.

6.1.1 Bus Movement

Based on a bus frequency of 15 minutes, it is expected that a maximum of four bus trips (eight movements) would be generated during the school's AM/ PM peak hour.

6.1.2 Conservative Assessment

Notwithstanding the above, it is also considered to be a conservative estimate given the nature of the site, for the following reasons:

- o The above assessment makes no account of existing traffic generation of the land uses within the development site and is therefore considered a conservative approach.
- o A significant portion of traffic would be pass-by and diverted trips, that is, part of existing road network traffic.

6.2 Distribution and Assignment

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

- i registered home addresses
- ii configuration of the arterial road network near the site
- iii existing operation of intersections providing access between the local and arterial road network
- iv surrounding employment centres and retail centres in relation to the site
- v configuration of access points to the site.

For clarification purposes any previously proposed Church Street link is no longer proposed and is not part of this Planning Proposal.

6.3 Traffic Impact

The completed school development is expected to be operational by 2027. In order to understand the impact of the proposed development on the surrounding road network in 2027 an assessment of the expected background traffic growth that is likely to occur has been undertaken.

Council has commissioned a Gelibolu Precinct Traffic Study. As this study is still in progress, Council has advised to refer to the Hyder Consulting (Hyder) 2012 report which considers the potential increase in development capacity in Auburn, Lidcombe, Berala and Regents Park town centres and villages.

Council has increased the floor space ratio (FSR) controls applying to certain land zoned B4 Mixed Use and R4 High Density Residential under the Auburn LEP 2010. The Auburn City Urban Design Study prepared by AECOM dated 30 September 2012 identified that if the proposed increase in FSRs were achieved there would be capacity for an additional 6,566 dwellings and 162,864 square metres of mixed use podium gross floor area (GFA) for employment uses.

Hyder prepared a traffic impact assessment report² to assess the impact from the potential increase in development capacity on the road network and provided recommendations on the potential upgrading works at critical intersections required to minimise the impact from the increased FSR. The additional development capacity is forecast to generate around 5,000 to 6,300 additional vehicle trips in the peak hour across the road network.

It is important to note that the Hyder (2012) report assesses the potential FSR not what has been developed or is approved to be developed and therefore the analysis prepared is likely to substantially overestimate what would be on the surrounding road network at the completion of the school. In addition to this, as the Hyder assessment was prepared in 2012 it is likely that some development has already occurred and the associated traffic is already on the surrounding road network prior to GTA surveys undertaken in 2017/2018. The increase in traffic volumes were extracted from the Hyder (2012) report for the following intersections:

- Boorea Road/ St Hilliers Road/ Rawson Street
- Station Road/ Rawson Street
- Olympic Drive/ Church Street.

Given that no data was provided in the Hyder (2012) report for the following intersections, the projected turning volumes have been estimated based on the existing travel patterns and the increase in traffic volumes on the above and adjacent intersections:

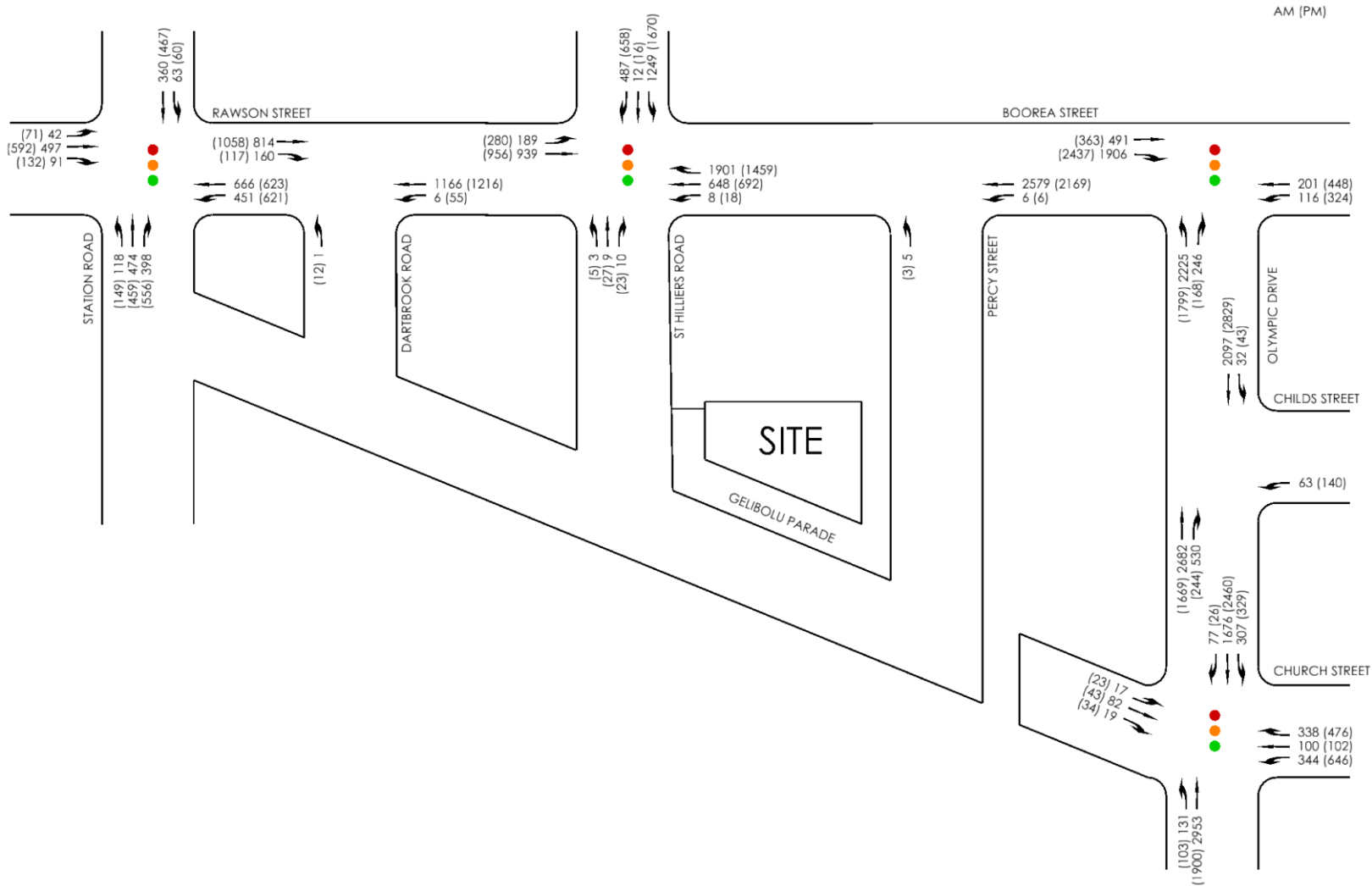
- Boorea Street/ Percy Street
- Dartbrook Road/ Rawson Street
- Olympic Drive/ Childs Street
- Olympic Drive/ Boorea Street.

Future Year 2027 Intersection Operation without Proposed Development

This assessment considers the impact of the additional traffic volumes on the surrounding road network to accommodate additional floor space ratios (FSR) in the Auburn LGA, during the proposed AM and PM school peak periods. The school AM and PM peak hour traffic volumes are summarised in Figure 6.1.

² Traffic Modelling – Increased Floor Space Ratio Controls for Certain Land Zone B4 Mixed Use and R4 High Density Residential within the Auburn Local Government Area, Hyder Consulting, September 2013.

Figure 6.1: Future year 2027 School's AM and PM peak hour traffic volumes (without proposed development)



The key intersections were analysed as a network in SIDRA under 2027 traffic conditions without the inclusion of traffic generated by the proposed school to confirm the future intersection operation. A summary of the expected 2027 operating conditions of the key intersections is shown in Table 6.4.

Table 6.4: Future year 2027 operating conditions (without proposed development)

Intersection	Peak	Degree of Saturation (DoS)	Average Delay (sec)	50th Percentile Queue (m)	Level of Service (LoS)
Boorea Road/ St Hilliers Road/ Rawson Street (signalised)	AM	1.26	73	212	F
	PM	1.51	109	304	F
Boorea Street/ Percy Street [1] (left in/left out)	AM	0.03	10	1	A
	PM	0.01	9	1	A
Dartbrook Road/ Rawson Street ^[1] (Priority controlled)	AM	0.56	17	41	B
	PM	0.48	18	7	B
Station Road/ Rawson Street (signalised)	AM	0.93	51	50	D
	PM	1.05	52	50	D
Olympic Drive/ Church Street (Signalised)	AM	1.21	161	774	F
	PM	1.28	96	531	F
Olympic Drive/ Childs Street ^[1] (Priority)	AM	1.00	21	19	B
	PM	1.00	35	21	C
Olympic Drive/ Boorea Street (Signalised)	AM	0.95	24	222	B
	PM	1.40	61	354	E

[1] Worst movement reported for unsignalised intersection.

Based on Table 6.4, the potential increase in FSR would result in the following intersections operating near to or over capacity during both the AM and PM peak hours:

- Boorea Road/ St Hilliers Road/ Rawson Street
- Olympic Drive/ Church Street
- Olympic Drive/ Boorea Street.

Although the intersection of Station Road/ Rawson Street is expected to operate at an overall Level of Service B during the peak hours, some approaches at this intersection will operate near capacity.

The potential increase in FSR would have notable impacts to the operation of the above four key intersections during the peak hours.

As clearly demonstrated in Table 6.4, the intersections of Boorea Road/ St Hilliers Road/ Rawson Street and Olympic Drive/ Church Street would experience extensive intersection delays and vehicle queues.

Additional Analysis

GTA has completed additional analysis to assess potential intersection upgrades to accommodate the FSR increase in traffic volumes. This analysis indicated major road upgrades and land acquisition would be required to accommodate additional FSR for the following intersections:

- Boorea Road/ St Hilliers Road/ Rawson Street
- Olympic Drive/ Church Street
- Olympic Drive/ Boorea Street
- Station Road/ Rawson Street.

It should be noted that the road upgrades required based on the Hyder (2012) report are significantly extensive and not the responsibility of this development to resolve. Council is currently undertaking a traffic and access study of the Gelibolu Precinct, which will determine the required road network improvements to accommodate the additional FSR.

The other intersections are not expected to require any mitigation measures except for the intersection of Dartbrook Road/ Rawson Street, where the "No Stopping" zone along the southern side of Rawson Street should be extended in the AM peak hour to allow increased capacity at this intersection.

2027 Intersection Operation with Proposed Development

The 2027 school's AM and PM peak hour traffic volumes with the proposed development are illustrated in Figure 6.2. Table 6.5 provides an understanding of the percentage increase in traffic for each intersection resulting from the proposed development.

Table 6.5: Traffic Contributions of Potential FSR Increase and Proposed Development

Intersection	Peak Hour	2017 Traffic	Potential FSR Increase		2 Percy Street Development	
			Traffic	Traffic Contribution	Traffic	Traffic Contribution
Boorea Road/ St Hilliers Road/ Rawson Street	AM	4,310	1,145	27%	161	3%
	PM	4,261	1,543	36%	169	3%
Boorea Street/ Percy Street	AM	4,135	852	21%	209	4%
	PM	3,921	1,057	27%	209	4%
Dartbrook Road/ Rawson Street	AM	1,540	699	45%	191	9%
	PM	1,649	1,010	61%	192	7%
Station Road/ Rawson Street	AM	2,083	1,077	52%	198	6%
	PM	2,296	1,434	62%	198	5%
Olympic Drive/ Church Street	AM	4,819	1,225	25%	189	3%
	PM	4,685	1,457	31%	189	3%
Olympic Drive/ Childs Street	AM	4,268	1,136	27%	187	3%
	PM	4,308	1,275	30%	187	3%
Olympic Drive/ Boorea Street	AM	4,267	919	22%	198	4%
	PM	4,382	1,157	26%	198	4%

The proposed school represents only a small proportion of the change (no more than four per cent) in intersection operation at the following major intersections which are expected to operate at and beyond capacity in future year 2027 (as shown in Table 6.4) without the proposed development:

- Boorea Road/ St Hilliers Road/ Rawson Street: no more than 169 vehicle trips per hour (three per cent)
- Olympic Drive/ Church Street: no more than 189 vehicle trips per hour (three per cent)
- Olympic Drive/ Boorea Street: no more than 198 vehicle trips per hour (four per cent).

The traffic contribution by the proposed school is no more than nine per cent for the remaining minor intersections which are expected to operate within capacity in future year 2027 without the proposed development:

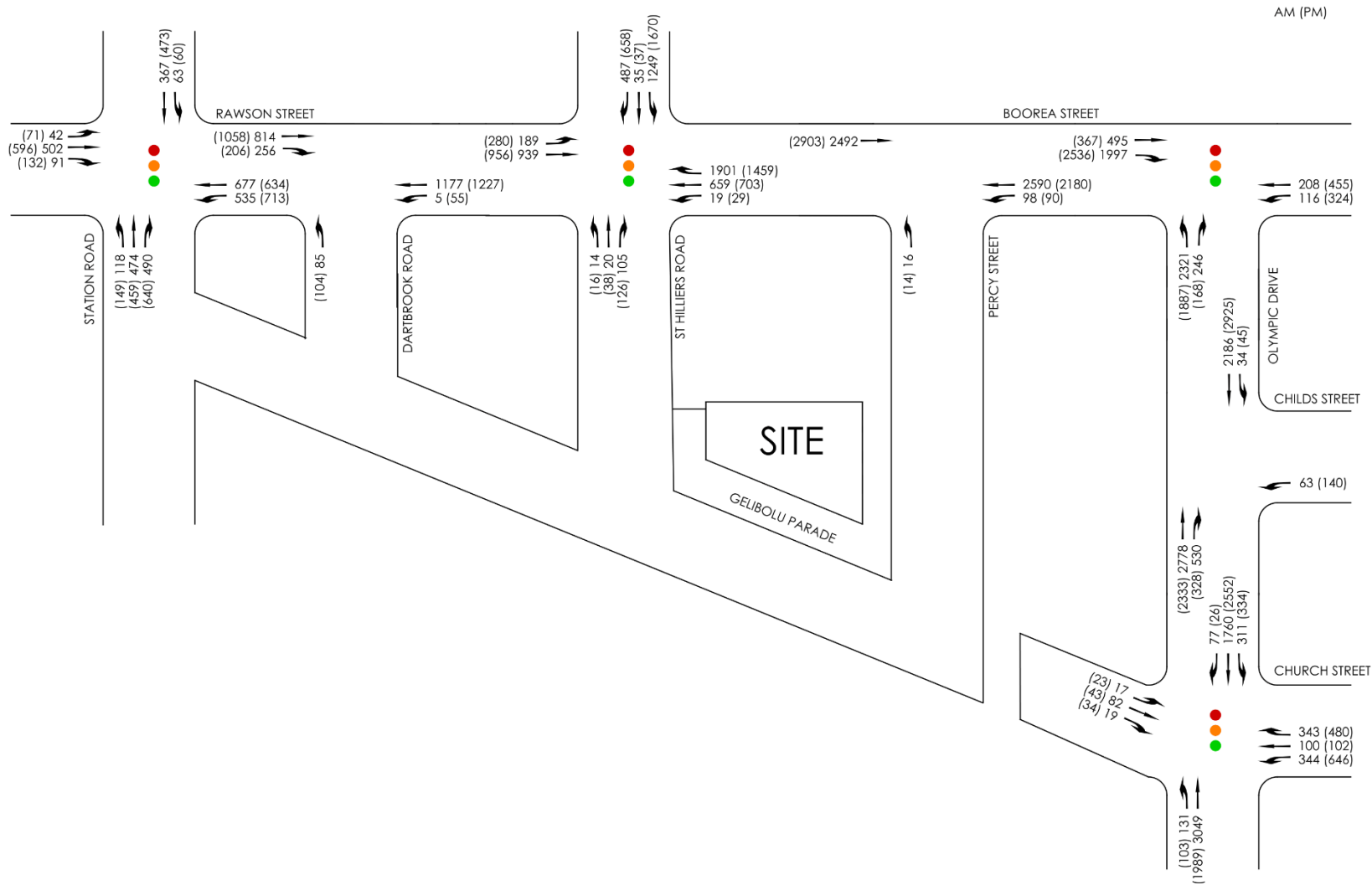
- Boorea Street/ Percy Street: no more than 209 vehicle trips per hour (five per cent)
- Dartbrook Road/ Rawson Street: no more than 192 vehicle trips per hour (nine per cent)

- Station Road/ Rawson Street: no more than 198 vehicle trips per hour (six per cent)
- Olympic Drive/ Childs Street: no more than 187 vehicle trips per hour (three per cent).

The other intersections would continue to operate satisfactorily with the proposed "No Stopping" zone installed along the southern side of Rawson Street. It is also recommended that a "Keep Clear" zone is proposed on the westbound lane of Rawson Street at the intersection of Dartbrook Road/ Rawson Street. This is to ensure that the main access from the west via Dartbrook Road will not be blocked by the westbound traffic queues along Rawson Street.

In summary, the increase in traffic due to the proposed development is considered minimal in relation to the impact of the background growth resulting from the increased FSR.

Figure 6.2: 2027 AM and PM Peak Hour Traffic Volumes with Proposed Development



6.4 Auburn Gallipoli Mosque Friday's Prayer Traffic

As discussed, the traffic associated with the Friday's prayer session will arrive between 11:00am and 2:00pm, which will occur outside the school's peak hours.

It is recommended to implement three-hour car parking restrictions (Friday only) with associated signage of the parking spaces along Gelibolu Parade. The proposed car parking restrictions are to support the existing parking demand due to Friday prayer by ensuring that parking adjacent to the Auburn Gallipoli Mosque is available during Friday noon periods for the visitors along Gelibolu Parade.

7. Traffic Management Plan

The future school has developed and will implement a traffic management plan (TMP) at the same time as the school commences operation. A TMP is commonly implemented by schools in the metropolitan Sydney region and can work effectively to manage the traffic impacts at drop off and pick up times.

The suggested TMP can communicate the school's policies and practices around traffic management to staff, parents and the school community, and help assist schools to proactively identify and resolve any issues/ challenges. The TMP will be designed to prompt the proposed school to:

- identify their current traffic management arrangements
- identify common problems and find solutions
- develop an action plan to address issues.

A TMP will benefit schools, students, parents, caregivers, general traffic and surrounding residents. The proposed school may choose to establish a traffic management committee or appoint a traffic management champion to coordinate the development of the plan and to monitor its effectiveness.

The TMP would include the following measures:

General Drop Off and Pick Up Information:

- Recommended speed within the pickup and drop off zone is 10kph.
- Bus zones are for buses only. Please do not park in the bus zones to drop off or pick up student(s).

Specific Drop Off Procedures:

- Enter the student drop off/ pick up area along Percy Street or Church Street.
- Parents should not get out of their car but continue to move forward with the line of cars.
- Staff will be available to pick up the student at the drop off zone approximately 30 minutes before the start of school.
- Parents are asked to remain in the car and a staff member will assist students in exiting the vehicle quickly and safely.
- Parents should drive off in a safe manner.

Specific Pick Up Procedures:

- Enter the student drop off/ pick up area Percy Street and Church Street.
- Display colour coded 'pick up sign' (given by staff) with child's name facing outward in the passenger window and/ or face up on the dashboard of the passenger side.
- When the dismissal bell goes the students (with their siblings if any) go to their respective colour seating area.
- Parents in their cars pull up in the zone with the family name in the dashboard window and the teacher on duty calls out the name.
- The students would have bag tags which show which colour they are supposed to go to on which day.
- Parents should not get out of their car but continue to move forward with the line of cars.
- Student(s) will be delivered to the respective car by a staff member.
- The student gets into car and the car drives off.
- Do not double park to drop off or pick up student(s).

- Parents should assist in buckling their student(s) into their car seat.
- If parents wish to have someone else pick up their child, a note should be sent to the child's teacher before pick up. The adult assigned to pick up the student will be required to show identification if school staff does not know them.
- Only people designated to the staff by parents (or named on the emergency card) will be allowed to pick up students.

8. Conclusion

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

- i The Planning Proposal seeks to allow “educational establishment” as an additional permitted use for the site. This land use is currently prohibited under the Light Industrial Zone (IN2).
- ii It is proposed to construct a new independent, coeducational school (K-12) known as the International Maarif Schools of Australia (IMSA) – Gallipoli Campus within the 7,143-square metre site.
- iii The proposed school development will accommodate a total of 50 staff and 650 students.
- iv Based on DCP 2010 and empirical assessment of car parking demand, the proposal would generate a requirement to provide 45 car spaces (including drop-off/ pick-up facility).
- v It is recommended that the above bicycle provisions between 35 and 69 be provided and shown on detailed plans to be prepared as part of any future development application for the site.
- vi The proposal is anticipated to generate a total of 443 vehicle trips per hour during any peak periods.
- vii There is adequate capacity in the surrounding road network to cater for the traffic generated by the proposal.
- viii The impacts of traffic generated by the proposal are not expected to compromise the safety or function of the road network.
- ix For clarification purposes any previously proposed Church Street link is no longer proposed and is not part of this Planning Proposal.
- x The school's peak periods will not overlap with the Auburn Gallipoli Mosque Friday's prayer midday and the proposed adjacent residential aged care facility's shift changeover peak periods.

Appendix A

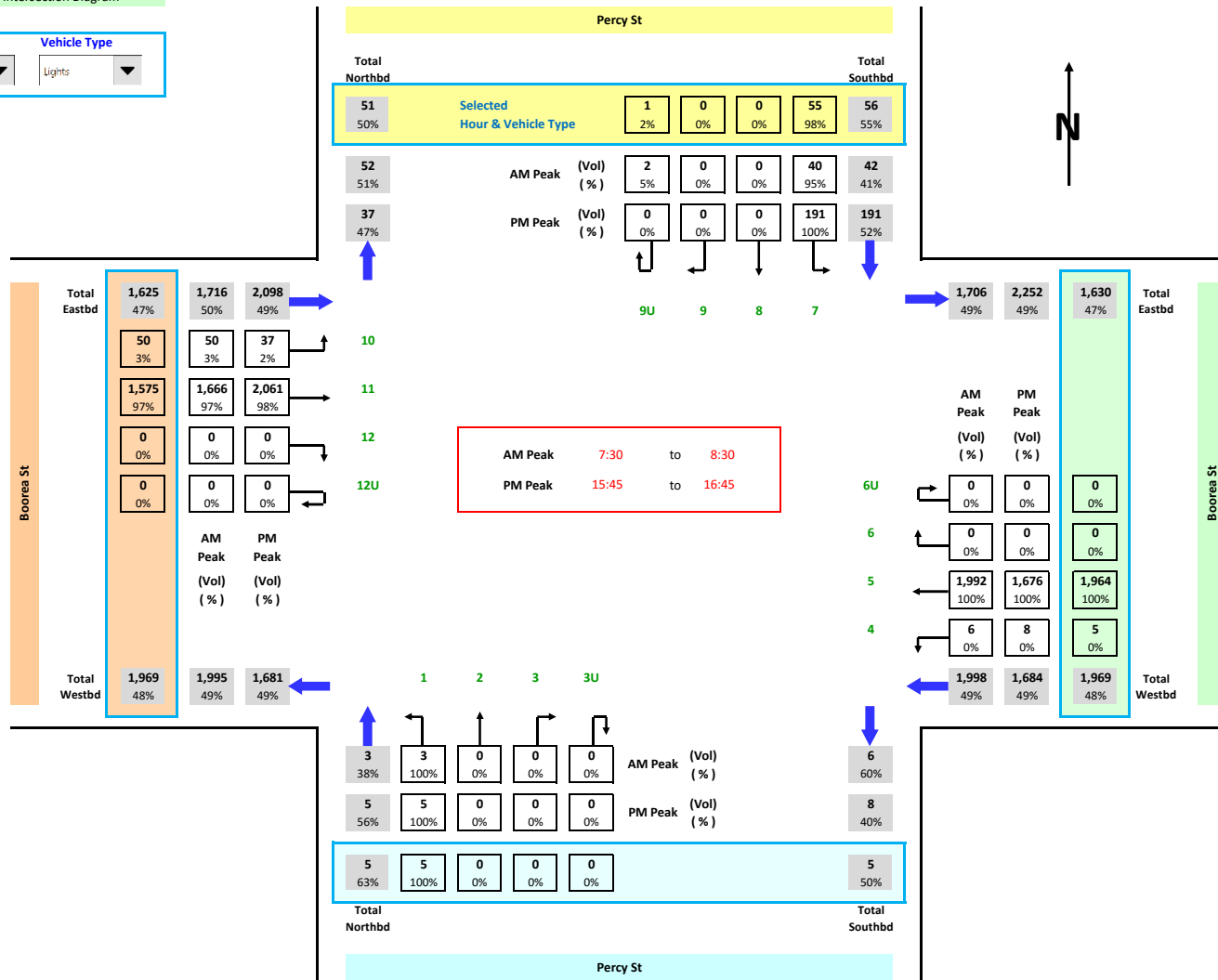
Survey Results

Job No. : N3188
 Client : GTA
 Suburb : Boorea Street
 Location : 2. Boorea St / Percy St

Day/Date : Tuesday, 2nd May 2017
 Weather : Fine
 Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting: 8:00
 Vehicle Type: Lights

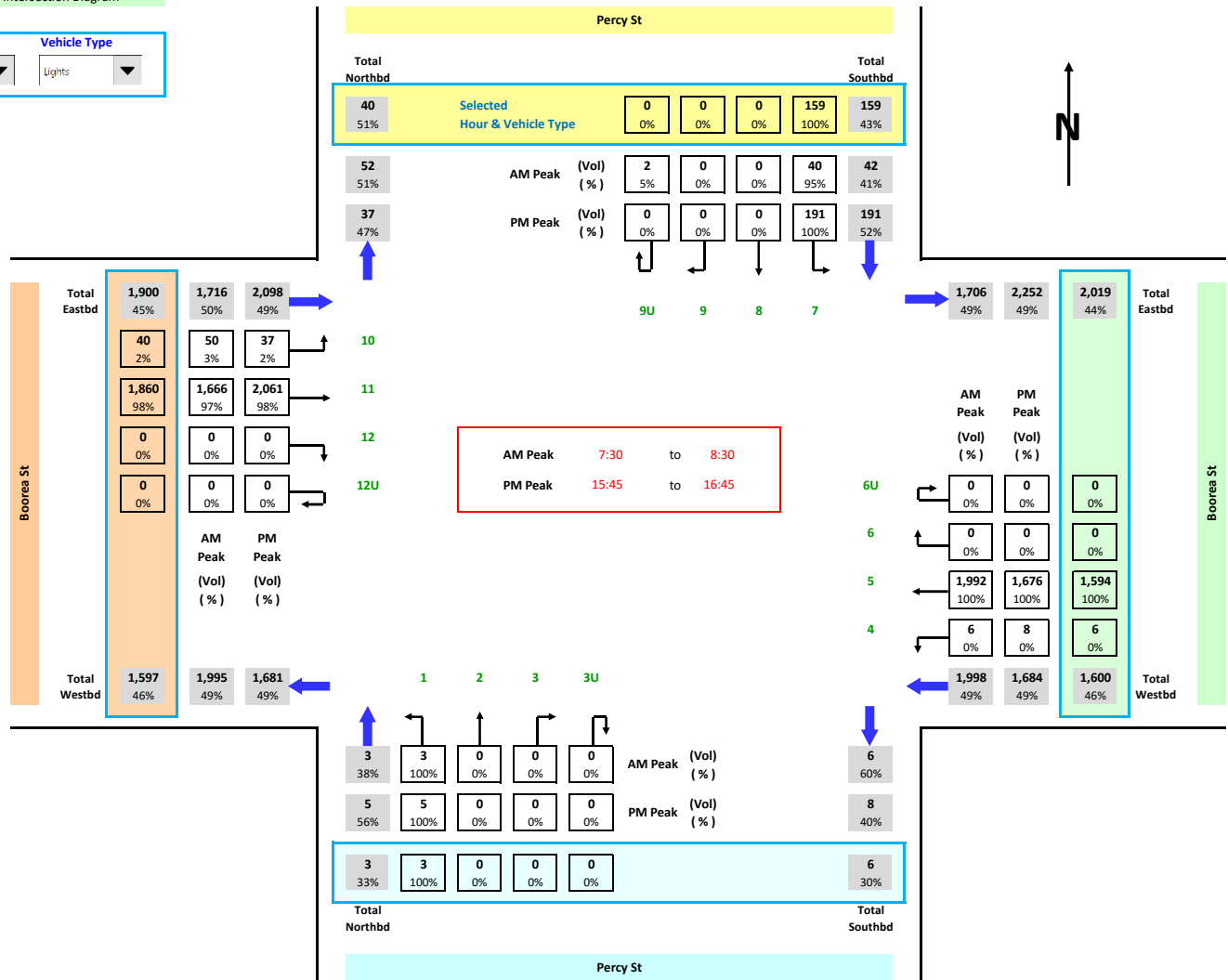


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 Suburb : Boorea Street
 Location : 2. Boorea St / Percy St

Day/Date : Tuesday, 2nd May 2017
 Weather : Fine
 Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting : 5:00
 Vehicle Type : Lights

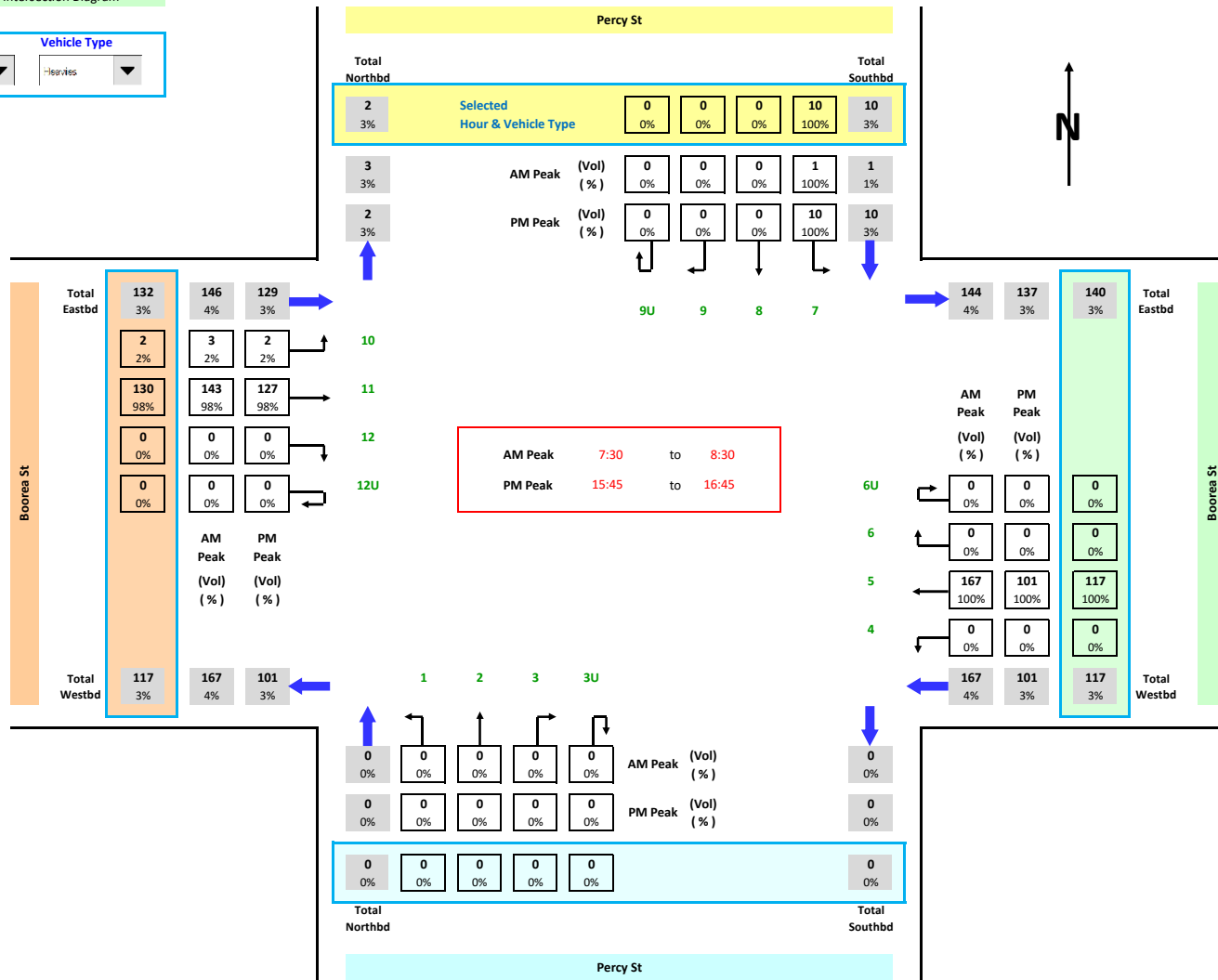


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 Location : 2. Boorea St / Percy St

Day/Date : Tuesday, 2nd May 2017
 Weather : Fine
 Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting: 5:00
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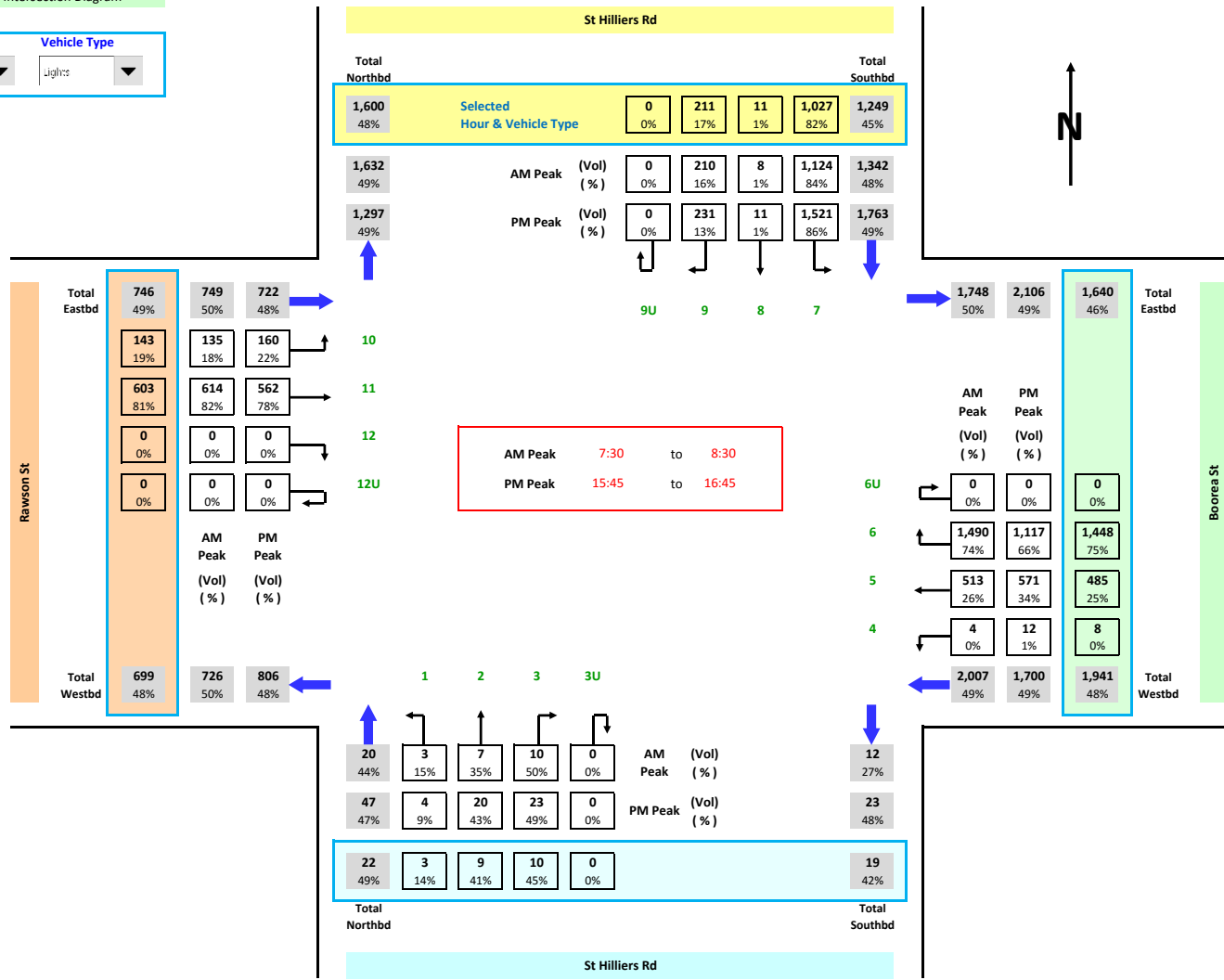


Job No. : N3188
Client : GTA
Suburb : Boorea Street
Location : 1. St Hilliers Rd / Boorea St / Rawson St

Day/Date : Tuesday, 2nd May 2017
Weather : Fine
Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting : 8:00
Vehicle Type : Lights

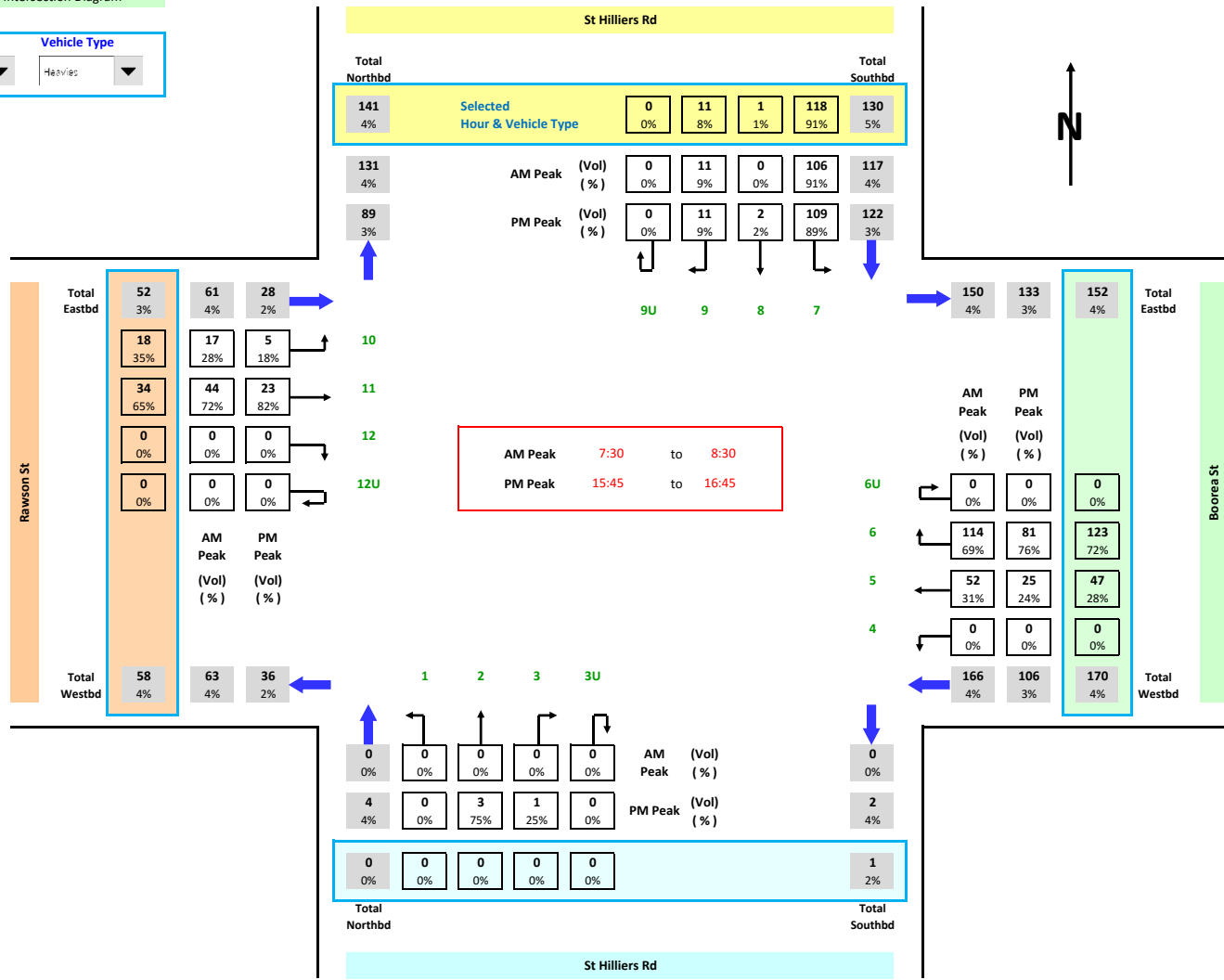


Job No. : N3188
Client : GTA
Suburb : Boorea Street
Location : 1. St Hilliers Rd / Boorea St / Rawson St

Day/Date : Tuesday, 2nd May 2017
Weather : Fine
Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting : 8:00
Vehicle Type : HeavyVeh

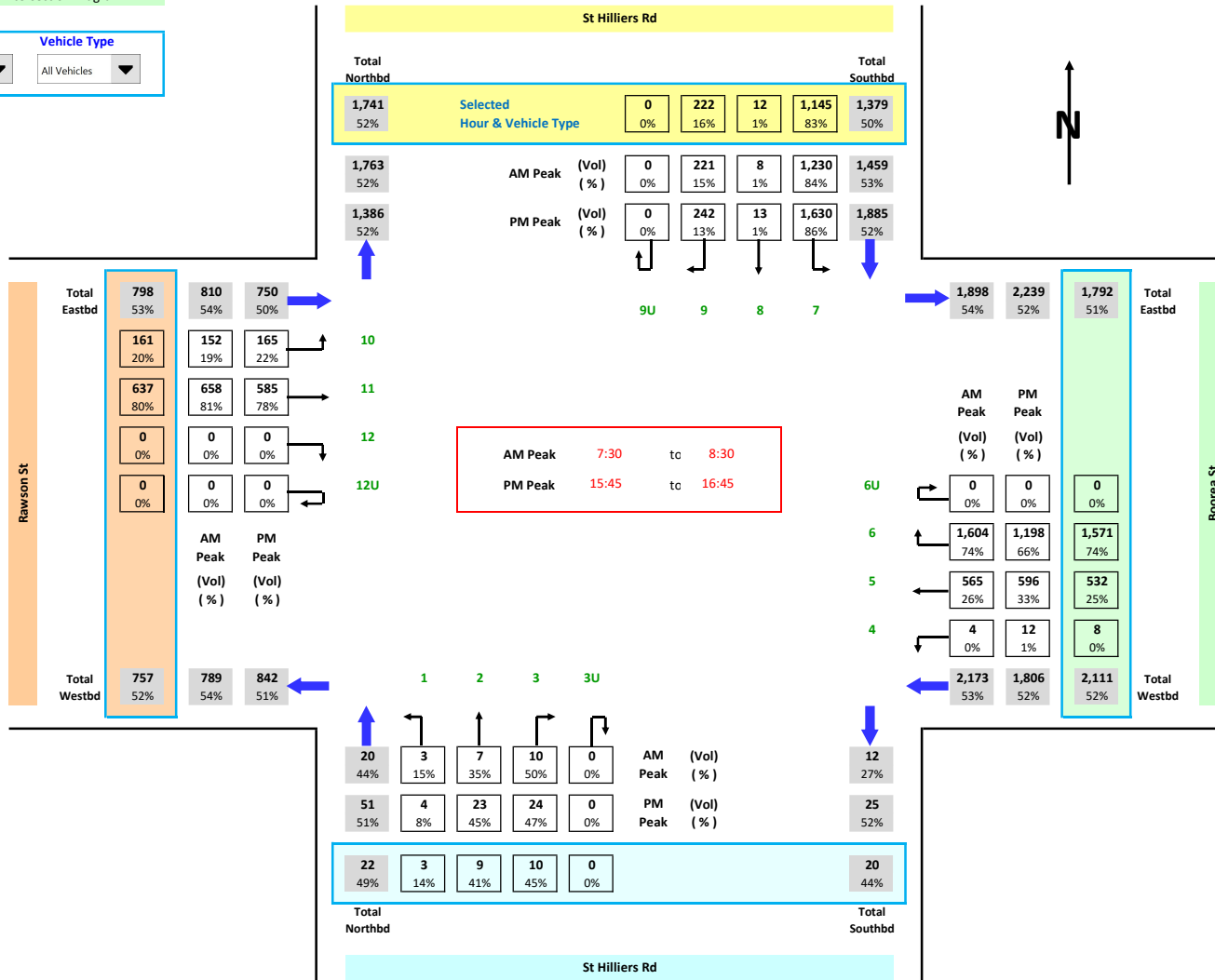


Job No. : N3188
Client : GTA
Suburb : Boorea Street
Location : 1. St Hilliers Rd / Boorea St / Rawson St

Day/Date : Tuesday, 2nd May 2017
Weather : Fine
Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting : 8:00
Vehicle Type : All Vehicles

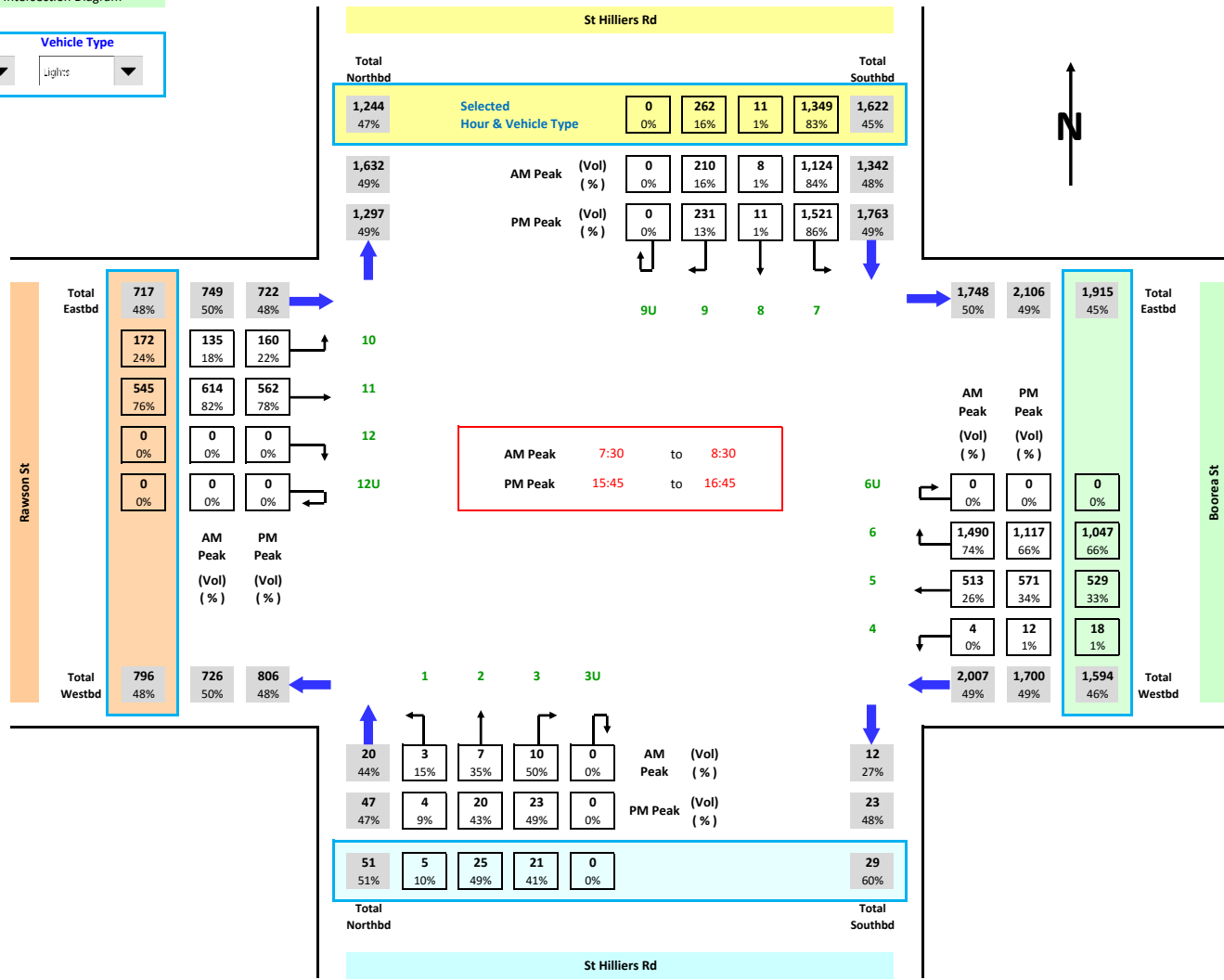


Job No. : N3188
Client : GTA
Suburb : Boorea Street
Location : 1. St Hilliers Rd / Boorea St / Rawson St

Day/Date : Tuesday, 2nd May 2017
Weather : Fine
Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting : 15:00
Vehicle Type : Lights

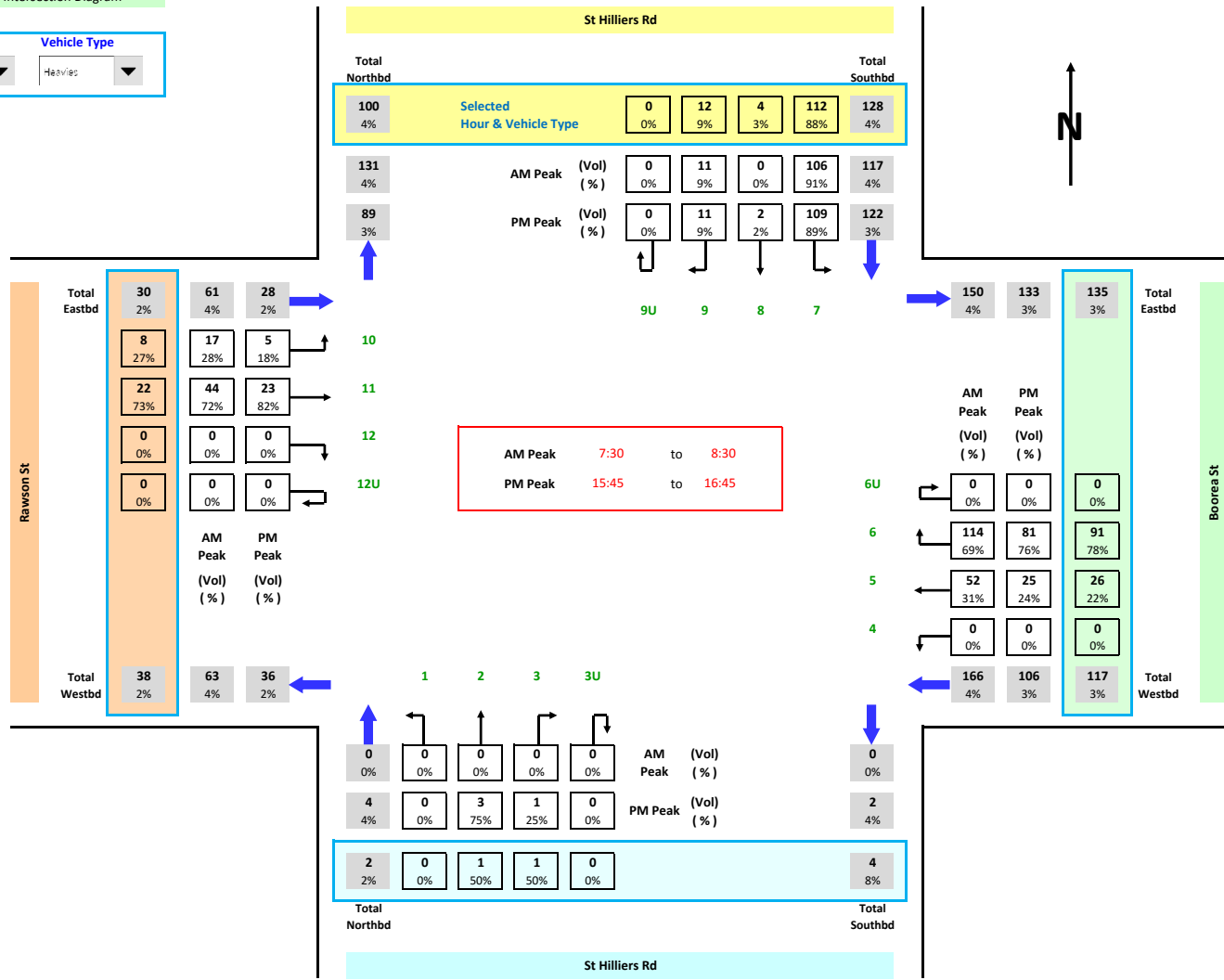


Job No. : N3188
Client : GTA
Suburb : Boorea Street
Location : 1. St Hilliers Rd / Boorea St / Rawson St

Day/Date : Tuesday, 2nd May 2017
Weather : Fine
Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting : 15:00
Vehicle Type : Heavies

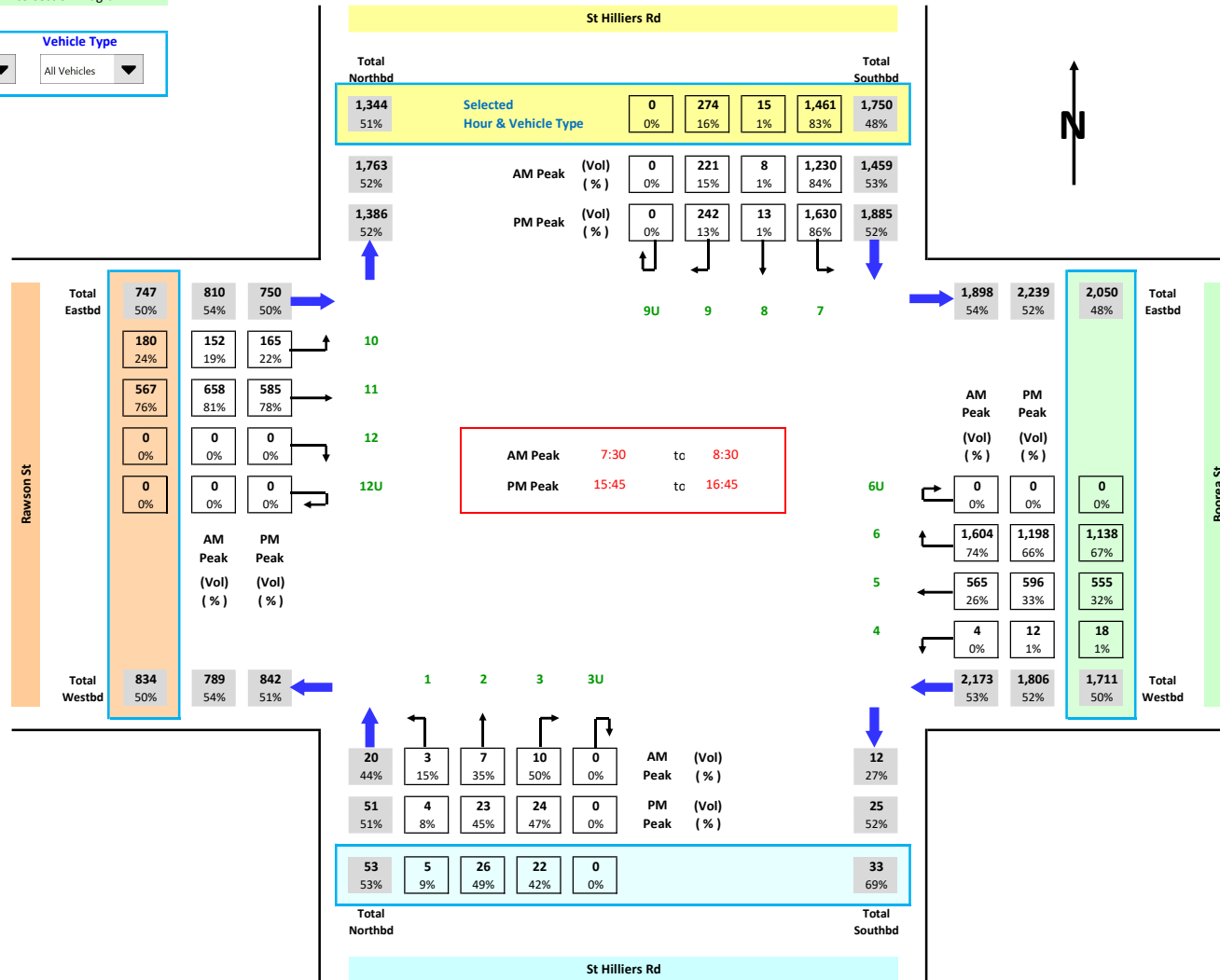


Job No. : N3188
Client : GTA
Suburb : Boorea Street
Location : 1. St Hilliers Rd / Boorea St / Rawson St

Day/Date : Tuesday, 2nd May 2017
Weather : Fine
Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting : 15:00
Vehicle Type : All Vehicles

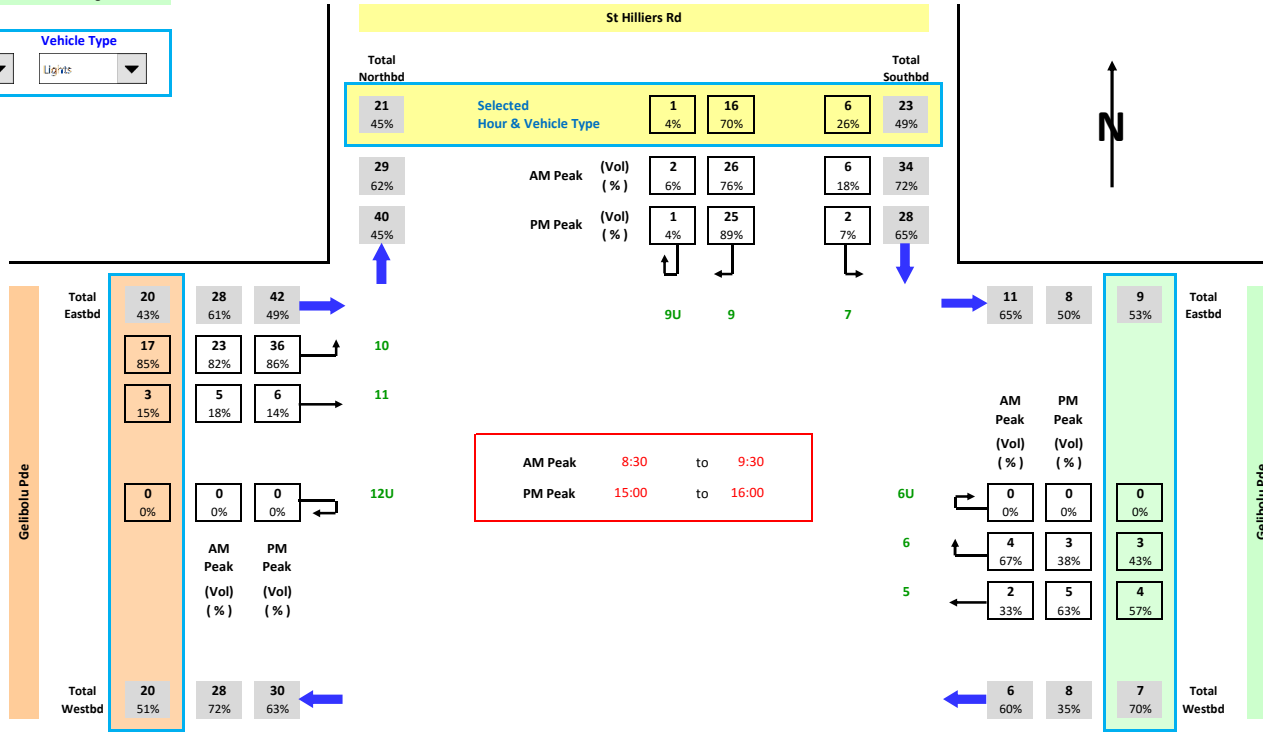


Job No. : N3188
Client : GTA
Suburb : Boorea Street
Location : 3. Gelibolu Pde / St Hilliers Rd

Day/Date : Tuesday, 2nd May 2017
Weather : Fine
Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting : 8:00
Vehicle Type : Lights

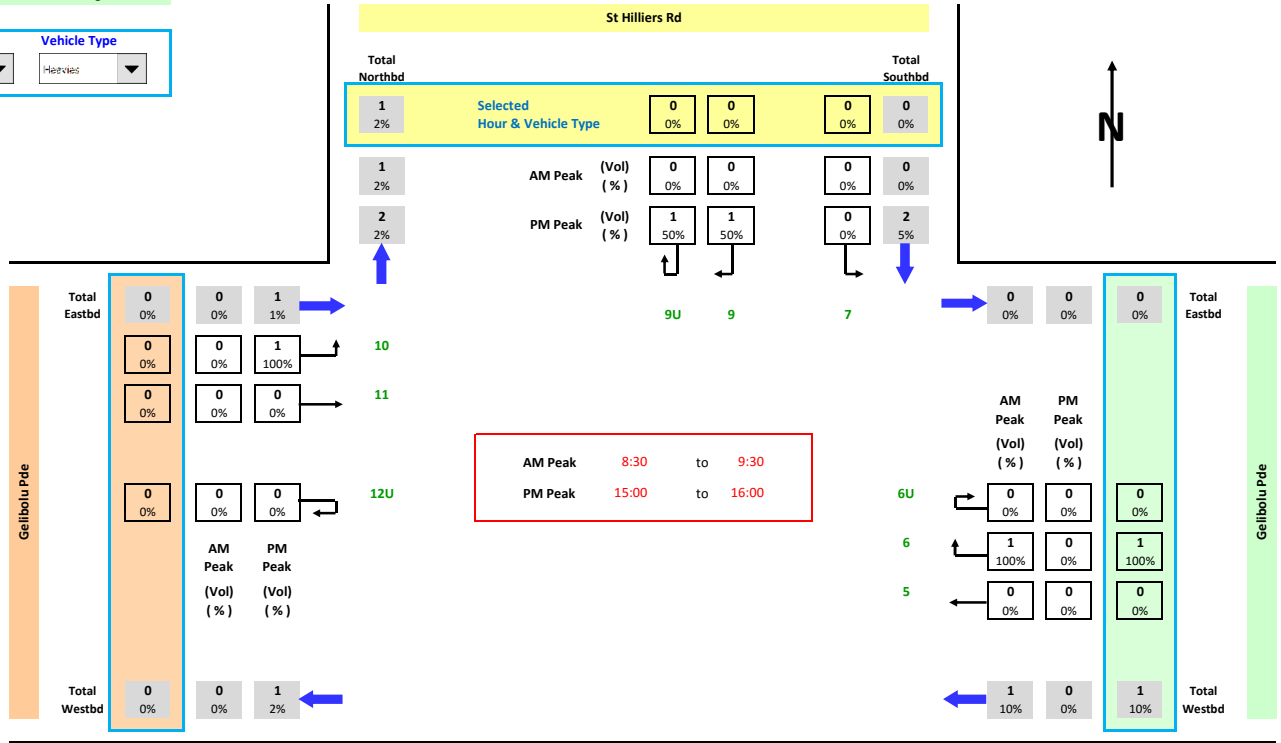


Job No. : N3188
Client : GTA
Suburb : Boorea Street
Location : 3. Gelibolu Pde / St Hilliers Rd

Day/Date : Tuesday, 2nd May 2017
Weather : Fine
Description : Classified Intersection Count
: Intersection Diagram



Hour Starting : 8:00
Vehicle Type : Heavies

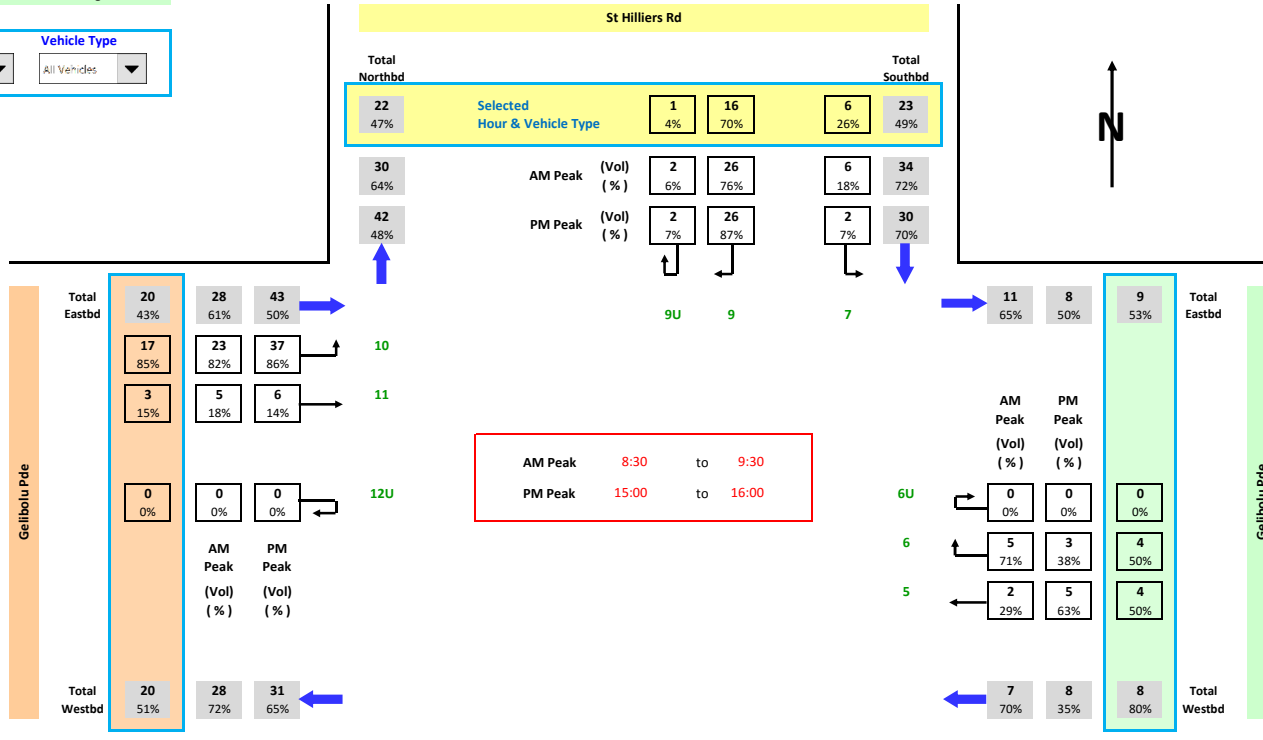


Job No. : N3188
Client : GTA
Suburb : Boorea Street
Location : 3. Gelibolu Pde / St Hilliers Rd

Day/Date : Tuesday, 2nd May 2017
Weather : Fine
Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting : 8:00
Vehicle Type : All Vehicles

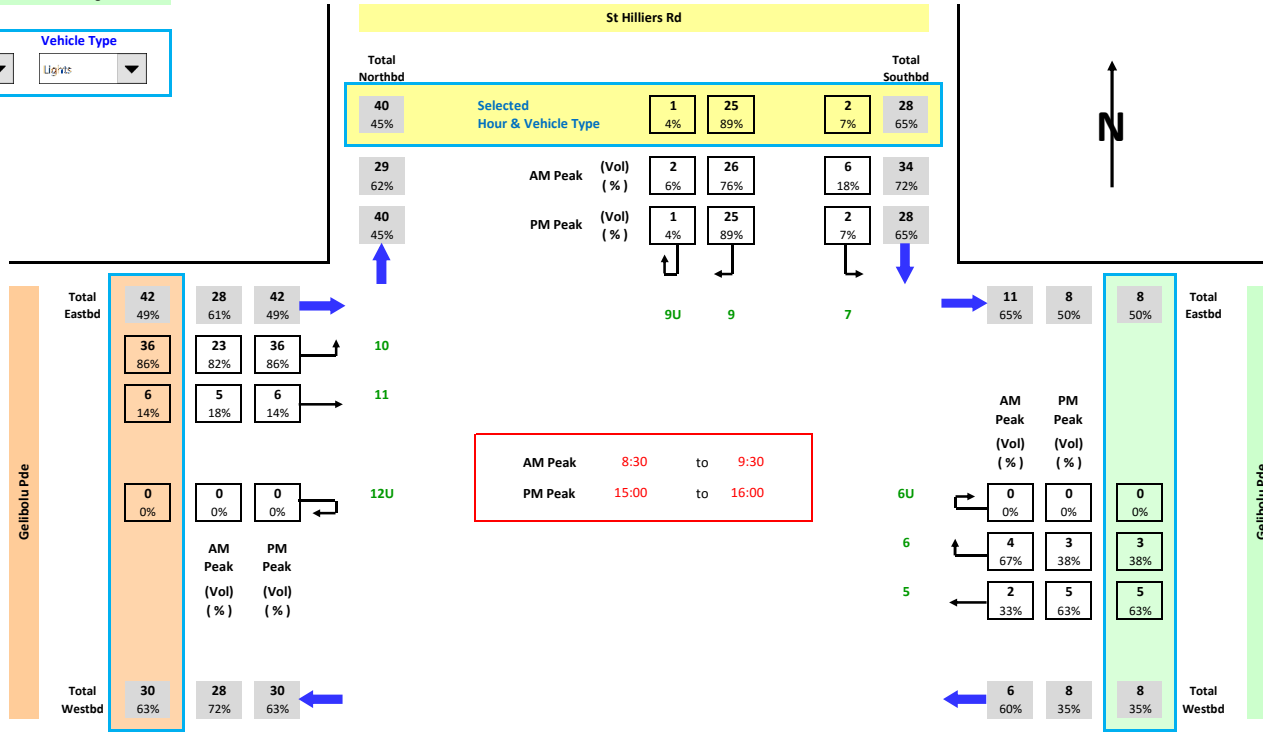


Job No. : N3188
Client : GTA
Suburb : Boorea Street
Location : 3. Gelibolu Pde / St Hilliers Rd

Day/Date : Tuesday, 2nd May 2017
Weather : Fine
Description : Classified Intersection Count
: Intersection Diagram



Hour Starting : 15:00
Vehicle Type : Lights

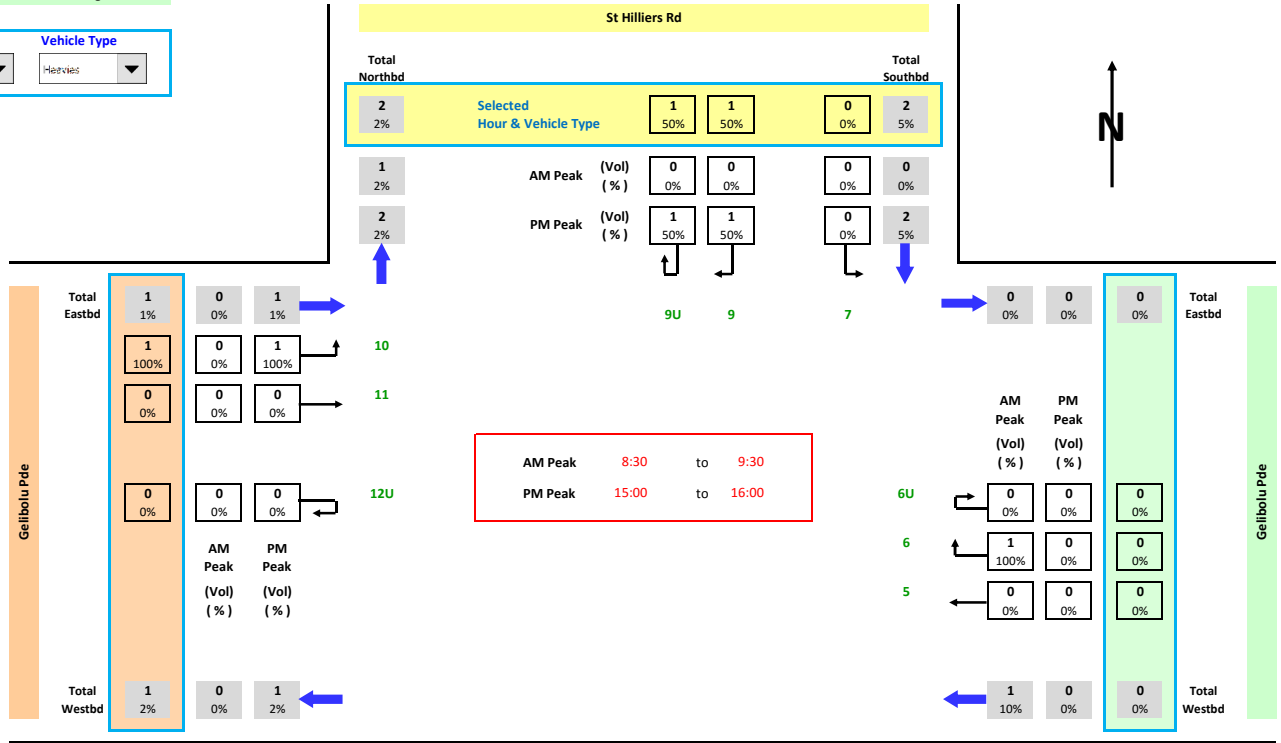


Job No. : N3188
Client : GTA
Suburb : Boorea Street
Location : 3. Gelibolu Pde / St Hilliers Rd

Day/Date : Tuesday, 2nd May 2017
Weather : Fine
Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting : 15:00
Vehicle Type : Heavies

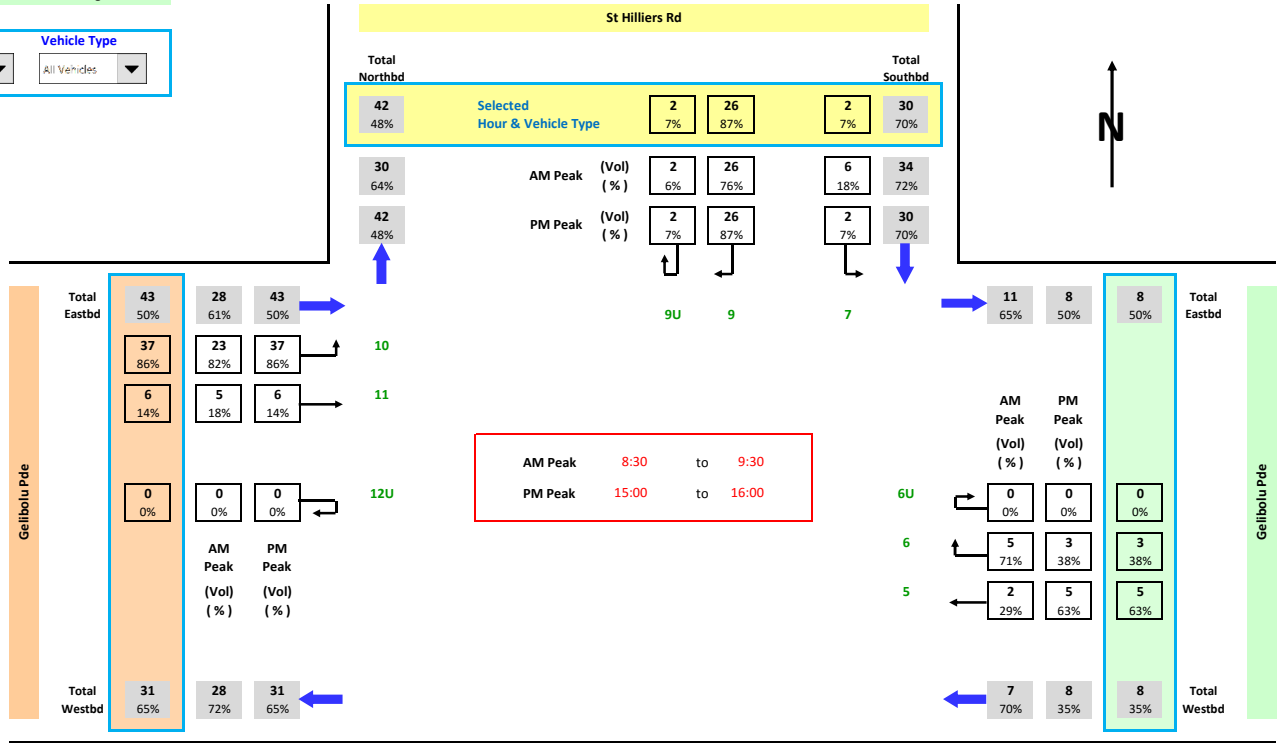


Job No. : N3188
Client : GTA
Suburb : Boorea Street
Location : 3. Gelibolu Pde / St Hilliers Rd

Day/Date : Tuesday, 2nd May 2017
Weather : Fine
Description : Classified Intersection Count
 : Intersection Diagram



Hour Starting : 15:00
Vehicle Type : All Vehicles



Appendix B

SIDRA INTERSECTION Results

MOVEMENT SUMMARY

Site: 1 [1 Church/ Olympic AM]

Network: N101 [AM Peak]

Church Street/ Olympic Drive

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (User-Given Phase Times)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total	Flows HV %	Arrival Flows Total	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Olympic Drive													
1a	L1	126	0.0	126	0.0	0.964	77.0	LOS F	47.5	349.3	1.00	1.10	21.5
2	T1	2456	7.0	2456	7.0	0.964	70.8	LOS F	47.8	354.6	1.00	1.11	9.7
Approach		2582	6.6	2582	6.6	0.964	71.1	LOS F	47.8	354.6	1.00	1.11	10.5
SouthEast: Church Street													
21b	L3	264	3.6	264	3.6	0.950	83.4	LOS F	16.2	117.9	1.00	1.19	15.0
22	T1	104	7.1	104	7.1	0.950	78.0	LOS F	16.2	117.9	1.00	1.19	21.1
23a	R1	185	4.5	185	4.5	0.600	66.2	LOS E	7.8	56.6	0.98	0.82	10.7
Approach		554	4.6	554	4.6	0.950	76.6	LOS F	16.2	117.9	0.99	1.06	15.2
North: Olympic Drive													
7a	L1	197	2.1	197	2.1	0.575	29.4	LOS C	18.6	137.9	0.77	0.74	29.7
8	T1	1543	8.8	1543	8.8	0.575	19.4	LOS B	18.6	137.9	0.60	0.56	36.9
9b	R3	81	5.2	81	5.2	0.596	74.6	LOS F	3.5	25.8	0.96	0.84	21.3
Approach		1821	7.9	1821	7.9	0.596	22.9	LOS B	18.6	137.9	0.63	0.59	34.2
NorthWest: Church Street													
27b	L3	18	17.6	18	17.6	0.428	75.1	LOS F	4.3	32.5	0.95	0.86	17.3
28	T1	79	2.7	79	2.7	0.428	69.5	LOS E	4.3	32.5	0.95	0.86	21.7
29a	R1	19	27.8	19	27.8	0.428	72.8	LOS F	4.3	32.5	0.95	0.86	21.3
Approach		116	9.1	116	9.1	0.428	70.9	LOS F	4.3	32.5	0.95	0.86	21.0
All Vehicles		5073	6.9	5073	6.9	0.964	54.4	LOS D	47.8	354.6	0.87	0.91	17.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

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

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.3 %

Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped	
P5	SouthEast Full Crossing	53	18.3	LOS B	0.1	0.1	0.49	0.49	
P3	North Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96	
P7	NorthWest Full Crossing	53	23.0	LOS C	0.1	0.1	0.55	0.55	
All Pedestrians		158	36.9	LOS D			0.67	0.67	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Percy Street, Auburn SSDA.sip7

MOVEMENT SUMMARY

Site: 2 [2 Olympic/ Childs AM]

Network: N101 [AM Peak]

Olympic Drive/ Childs Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total	Flows HV %	Arrival Flows Total	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Olympic Drive													
2	T1	2136	9.2	2136	9.2	0.387	0.0	LOS A	0.0	0.0	0.00	0.00	69.9
3	R2	422	2.5	422	2.5	1.000	30.7	LOS C	3.5	24.9	1.00	1.70	26.7
Approach		2558	8.1	2558	8.1	1.000	5.1	NA	3.5	24.9	0.17	0.28	48.4
East: Childs Street													
4	L2	57	3.7	57	3.7	0.089	7.8	LOS A	0.1	0.9	0.52	0.71	33.4
Approach		57	3.7	57	3.7	0.089	7.8	LOS A	0.1	0.9	0.52	0.71	33.4
North: Olympic Drive													
7	L2	28	7.4	28	7.4	0.352	6.5	LOS A	0.0	0.0	0.00	0.03	63.3
8	T1	1851	8.8	1851	8.8	0.352	0.0	LOS A	0.0	0.0	0.00	0.01	69.6
Approach		1879	8.7	1879	8.7	0.352	0.1	NA	0.0	0.0	0.00	0.01	69.5
All Vehicles		4494	8.3	4494	8.3	1.000	3.1	NA	3.5	24.9	0.10	0.17	58.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.3 %

Number of Iterations: 10 (maximum specified: 10)

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MOVEMENT SUMMARY

Site: 101 [4 Boorea Street/ St Hilliers Road AM]

Network: N101 [AM Peak]

AM Peak: 7:30am-8:30am

Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total	Flows HV %	Arrival Flows Total	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: St Hilliers Street													
1a	L1	3	0.0	3	0.0	0.165	83.5	LOS F	0.6	4.0	0.99	0.68	9.7
3a	R1	9	0.0	9	0.0	0.165	83.0	LOS F	0.6	4.0	0.99	0.68	16.4
3b	R3	11	0.0	11	0.0	0.162	86.3	LOS F	0.5	3.4	0.99	0.68	9.4
Approach		23	0.0	23	0.0	0.165	84.6	LOS F	0.6	4.0	0.99	0.68	12.5
SouthEast: Boorea Street													
21b	L3	8	0.0	8	0.0	0.211	15.1	LOS B	5.3	40.2	0.46	0.42	27.7
22	T1	560	8.8	560	8.8	0.211	8.6	LOS A	5.4	40.4	0.46	0.41	27.9
23	R2	1654	7.8	1654	7.8	0.720	37.7	LOS C	13.4	100.0	0.80	0.83	21.7
Approach		2222	8.1	2222	8.1	0.720	30.3	LOS C	13.4	100.0	0.71	0.72	22.2
NorthEast: St Hilliers Road													
24	L2	1205	10.3	1205	10.3	0.562	23.2	LOS B	15.4	117.6	0.63	0.78	24.9
24a	L1	13	8.3	13	8.3	0.643	75.6	LOS F	5.5	40.1	1.00	0.81	10.5
26	R2	234	5.0	234	5.0	0.643	77.2	LOS F	5.5	40.1	1.00	0.81	10.5
Approach		1452	9.4	1452	9.4	0.643	32.4	LOS C	15.4	117.6	0.69	0.78	20.2
NorthWest: Rawson Street													
27	L2	169	11.2	169	11.2	0.689	42.0	LOS C	9.4	70.5	0.95	0.89	21.4
28	T1	671	5.3	671	5.3	0.689	52.0	LOS D	11.8	86.5	0.96	0.83	8.1
Approach		840	6.5	840	6.5	0.689	50.0	LOS D	11.8	86.5	0.96	0.84	10.9
All Vehicles		4537	8.2	4537	8.2	0.720	34.9	LOS C	15.4	117.6	0.75	0.76	19.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

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

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.3 %

Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped	
P1	South Full Crossing	53	7.4	LOS A	0.1	0.1	0.31	0.31	
P51	SouthEast Stage 1	53	69.3	LOS F	0.2	0.2	0.96	0.96	
P52	SouthEast Stage 2	53	66.4	LOS F	0.2	0.2	0.94	0.94	
P6	NorthEast Full Crossing	53	57.3	LOS E	0.2	0.2	0.88	0.88	
P6S	NorthEast Slip/Bypass Lane Crossing	53	51.4	LOS E	0.2	0.2	0.83	0.83	
All Pedestrians		263	50.4	LOS E			0.78	0.78	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [5 Boorea Street/ Percy Street AM]

Network: N101 [AM Peak]

AM Peak: 7:30am-8:30am
Giveway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Total	Flows HV %	Arrival Total	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Percy Street													
1a	L1	5	0.0	5	0.0	0.012	6.8	LOS A	0.0	0.1	0.47	0.61	45.4
Approach		5	0.0	5	0.0	0.012	6.8	LOS A	0.0	0.1	0.47	0.61	45.4
SouthEast: Boorea Street													
21b	L3	5	0.0	5	0.0	0.003	6.8	LOS A	0.0	0.0	0.00	0.58	51.7
22	T1	2245	7.9	2245	7.9	0.475	0.0	LOS A	7.8	58.0	0.00	0.00	59.8
Approach		2251	7.9	2251	7.9	0.475	0.1	NA	7.8	58.0	0.00	0.00	59.8
NorthWest: Boorea Street													
28	T1	1	0.0	1	0.0	0.000	4.1	LOS A	0.0	0.0	0.00	0.53	36.9
Approach		1	0.0	1	0.0	0.000	4.1	NA	0.0	0.0	0.00	0.53	36.9
All Vehicles		2257	7.9	2257	7.9	0.475	0.1	NA	7.8	58.0	0.00	0.00	59.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.3 %

Number of Iterations: 10 (maximum specified: 10)

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MOVEMENT SUMMARY

 Site: 3 [3 Boorea/ Olympic AM]

 Network: N101 [AM Peak]

Boorea Street/ Olympic Drive
 Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total	Flows HV %	Arrival Flows Total	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Olympic Drive													
1a	L1	1912	9.1	1912	9.1	0.454	6.4	LOS A	2.3	17.5	0.06	0.58	56.6
3	R2	212	5.5	212	5.5	0.567	31.3	LOS C	5.2	38.3	0.59	0.90	37.3
Approach		2123	8.7	2123	8.7	0.567	8.8	LOS A	5.2	38.3	0.11	0.61	52.6
East: Boorea Street													
4	L2	96	4.4	96	4.4	0.156	42.1	LOS C	2.9	21.4	0.73	0.74	17.8
6a	R1	168	0.0	168	0.0	0.629	71.0	LOS F	7.2	50.7	0.99	0.81	11.9
Approach		264	1.6	264	1.6	0.629	60.5	LOS E	7.2	50.7	0.90	0.79	13.5
NorthWest: Boorea Street													
27a	L1	429	2.9	429	2.9	0.695	23.9	LOS B	16.7	122.1	0.77	0.83	33.8
29a	R1	1666	9.3	1666	9.3	0.695	28.1	LOS B	22.4	169.1	0.76	0.83	21.7
Approach		2096	8.0	2096	8.0	0.695	27.3	LOS B	22.4	169.1	0.77	0.83	24.9
All Vehicles		4483	8.0	4483	8.0	0.695	20.5	LOS B	22.4	169.1	0.46	0.73	35.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
 Vehicle movement LOS values are based on average delay per movement.
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
 Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.3 %
 Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian	Queue Distance m	Prop. Queued	Effective Stop Rate per ped	
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96	
P2	East Full Crossing	53	17.3	LOS B	0.1	0.1	0.48	0.48	
All Pedestrians		105	43.3	LOS E			0.72	0.72	

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 [6 Dartbrook Road/ Rawson Street AM]

 Network: N101 [AM Peak]

New Site
Stop (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total	Flows HV %	Arrival Flows Total	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Dartbrook Road													
1a	L1	1	0.0	1	0.0	0.001	8.2	LOS A	0.0	0.0	0.27	0.98	21.0
Approach		1	0.0	1	0.0	0.001	8.2	LOS A	0.0	0.0	0.27	0.98	21.0
SouthEast: Rawson Street													
21b	L3	6	0.0	6	0.0	0.094	5.4	LOS A	0.0	0.0	0.00	0.02	43.3
22	T1	825	4.5	825	4.5	0.468	0.0	LOS A	0.0	0.0	0.00	0.00	49.7
Approach		832	4.4	832	4.4	0.468	0.1	NA	0.0	0.0	0.00	0.00	49.6
NorthEast: Dartbrook Road													
24	L2	78	0.0	78	0.0	0.107	9.8	LOS A	0.2	1.1	0.46	0.90	19.8
Approach		78	0.0	78	0.0	0.107	9.8	LOS A	0.2	1.1	0.46	0.90	19.8
NorthWest: Rawson Street													
27	L2	20	5.3	20	5.3	0.243	4.6	LOS A	0.0	0.0	0.00	0.03	29.1
28	T1	677	7.2	677	7.2	0.243	0.3	LOS A	0.1	1.0	0.05	0.03	46.8
29a	R1	14	7.7	14	7.7	0.243	10.1	LOS A	0.1	1.0	0.11	0.02	42.0
Approach		711	7.1	711	7.1	0.243	0.6	NA	0.1	1.0	0.05	0.03	45.5
All Vehicles		1621	5.4	1621	5.4	0.468	0.8	NA	0.2	1.1	0.04	0.06	45.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.3 %

Number of Iterations: 10 (maximum specified: 10)

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MOVEMENT SUMMARY

 Site: 101 [7 Station Road/ Rawson Street AM]

 Network: N101 [AM Peak]

New Site

Signals - Fixed Time Isolated Cycle Time = 130 seconds (User-Given Cycle Time)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total	Flows HV %	Arrival Flows Total	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Rawson Street													
21	L2	240	4.8	240	4.8	0.174	8.8	LOS A	2.4	17.6	0.28	0.62	26.4
22	T1	534	8.5	534	8.5	0.601	17.9	LOS B	12.3	92.7	0.65	0.58	25.0
Approach		774	7.3	774	7.3	0.601	15.1	LOS B	12.3	92.7	0.54	0.60	25.3
NorthEast: Station Road													
24	L2	54	3.9	54	3.9	0.591	62.5	LOS E	5.8	41.0	0.99	0.80	12.1
25	T1	261	0.0	261	0.0	0.591	59.1	LOS E	5.9	41.6	0.99	0.80	12.2
Approach		315	0.7	315	0.7	0.591	59.7	LOS E	5.9	41.6	0.99	0.80	12.2
NorthWest: Rawson Street													
27	L2	36	5.9	36	5.9	0.321	20.2	LOS B	6.6	51.0	0.56	0.52	30.8
28	T1	401	12.3	401	12.3	0.321	18.3	LOS B	6.6	51.0	0.60	0.55	16.4
29	R2	51	4.2	51	4.2	0.321	30.3	LOS C	4.0	30.4	0.69	0.64	12.7
Approach		487	11.0	487	11.0	0.321	19.7	LOS B	6.6	51.0	0.61	0.56	17.5
SouthWest: Station Road													
30	L2	79	8.0	79	8.0	0.133	35.1	LOS C	2.1	15.7	0.73	0.70	12.6
31	T1	319	6.3	319	6.3	0.569	36.7	LOS C	6.8	50.0	0.85	0.73	19.1
32	R2	219	2.9	219	2.9	0.578	53.9	LOS D	7.0	50.0	0.95	1.00	3.9
Approach		617	5.3	617	5.3	0.578	42.6	LOS D	7.0	50.0	0.87	0.82	12.9
All Vehicles		2193	6.6	2193	6.6	0.601	30.2	LOS C	12.3	92.7	0.71	0.68	16.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

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

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.3 %

Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped	
P5	SouthEast Full Crossing	53	35.5	LOS D	0.1	0.1	0.74	0.74	
P6	NorthEast Full Crossing	53	16.8	LOS B	0.1	0.1	0.51	0.51	
P7	NorthWest Full Crossing	53	35.5	LOS D	0.1	0.1	0.74	0.74	
P8	SouthWest Full Crossing	53	18.4	LOS B	0.1	0.1	0.53	0.53	
All Pedestrians		211	26.5	LOS C			0.63	0.63	

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.

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MOVEMENT SUMMARY

Site: 2 [2 Olympic/ Childs PM]

Network: N101 [PM Peak]

Olympic Drive/ Childs Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Arrival Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Olympic Drive													
2	T1	1776	8.5	1776	8.5	0.320	0.0	LOS A	0.0	0.0	0.00	0.00	69.9
3	R2	265	3.2	265	3.2	1.000	42.9	LOS D	2.6	18.7	1.00	1.62	22.0
Approach		2041	7.8	2041	7.8	1.000	5.6	NA	2.6	18.7	0.13	0.21	47.2
East: Childs Street													
4	L2	47	4.4	47	4.4	0.230	13.0	LOS A	0.2	1.2	0.71	0.88	27.3
Approach		47	4.4	47	4.4	0.230	13.0	LOS A	0.2	1.2	0.71	0.88	27.3
North: Olympic Drive													
7	L2	45	4.7	45	4.7	0.512	6.5	LOS A	5.9	43.7	0.00	0.03	63.8
8	T1	2820	6.8	2820	6.8	0.512	0.1	LOS A	6.7	49.7	0.00	0.01	69.5
Approach		2865	6.8	2865	6.8	0.512	0.2	NA	6.7	49.7	0.00	0.01	69.4
All Vehicles		4954	7.2	4954	7.2	1.000	2.5	NA	6.7	49.7	0.06	0.10	61.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %

Number of Iterations: 10 (maximum specified: 10)

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MOVEMENT SUMMARY

 Site: 1 [1 Church/ Olympic PM]

 Network: N101 [PM Peak]

Church Street/ Olympic Drive

Signals - Fixed Time Isolated Cycle Time = 150 seconds (User-Given Phase Times)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Arrival Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Olympic Drive													
1a	L1	102	2.1	102	2.1	0.672	43.3	LOS D	18.8	138.8	0.87	0.79	29.7
2	T1	1493	7.3	1493	7.3	0.672	36.9	LOS C	19.0	141.3	0.87	0.78	16.4
Approach		1595	6.9	1595	6.9	0.672	37.3	LOS C	19.0	141.3	0.87	0.78	17.9
SouthEast: Church Street													
21b	L3	453	2.6	453	2.6	0.775	37.5	LOS C	15.7	112.0	0.93	0.97	25.0
22	T1	54	0.0	54	0.0	0.775	32.1	LOS C	15.7	112.0	0.93	0.97	32.3
23a	R1	317	2.3	317	2.3	0.683	58.3	LOS E	12.9	91.9	0.97	0.84	11.8
Approach		823	2.3	823	2.3	0.775	45.2	LOS D	15.7	112.0	0.95	0.92	20.2
North: Olympic Drive													
7a	L1	156	2.0	156	2.0	0.882	47.6	LOS D	28.7	210.0	0.97	0.94	22.5
8	T1	2231	6.0	2231	6.0	0.882	41.4	LOS C	28.7	210.0	0.95	0.92	24.3
9b	R3	26	0.0	26	0.0	0.189	57.0	LOS E	1.0	6.9	0.86	0.76	24.9
Approach		2413	5.7	2413	5.7	0.882	42.0	LOS C	28.7	210.0	0.95	0.92	24.2
NorthWest: Church Street													
27b	L3	24	13.0	24	13.0	0.361	58.4	LOS E	3.1	24.0	0.94	0.83	20.3
28	T1	42	5.0	42	5.0	0.361	52.8	LOS D	3.1	24.0	0.94	0.83	24.8
29a	R1	32	16.7	32	16.7	0.361	56.1	LOS D	3.1	24.0	0.94	0.83	24.7
Approach		98	10.8	98	10.8	0.361	55.3	LOS D	3.1	24.0	0.94	0.83	23.8
All Vehicles		4928	5.6	4928	5.6	0.882	41.3	LOS C	28.7	210.0	0.92	0.87	21.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

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

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %

Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped	
P5	SouthEast Full Crossing	53	24.1	LOS C	0.1	0.1	0.57	0.57	
P3	North Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96	
P7	NorthWest Full Crossing	53	27.7	LOS C	0.1	0.1	0.61	0.61	
All Pedestrians		158	40.4	LOS E			0.71	0.71	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 Site: 101 [4 Boorea Street/ St Hilliers Road PM]

 Network: N101 [PM Peak]

PM Peak: 3:45pm-4:45pm

Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Arrival Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: St Hilliers Street													
1a	L1	5	0.0	5	0.0	0.291	56.3	LOS D	1.0	7.2	0.99	0.72	13.4
3a	R1	27	3.8	27	3.8	0.291	55.7	LOS D	1.0	7.2	0.99	0.72	21.5
3b	R3	23	4.5	23	4.5	0.245	58.7	LOS E	0.7	5.2	0.99	0.71	12.9
Approach		56	3.8	56	3.8	0.291	57.0	LOS E	1.0	7.2	0.99	0.72	17.5
SouthEast: Boorea Street													
21b	L3	19	0.0	19	0.0	0.254	13.9	LOS A	3.0	21.6	0.36	0.34	29.5
22	T1	584	4.7	584	4.7	0.254	7.4	LOS A	3.0	21.9	0.36	0.33	30.0
23	R2	1198	8.0	1198	8.0	0.880	54.2	LOS D	13.4	100.0	0.97	0.99	17.1
Approach		1801	6.8	1801	6.8	0.880	38.6	LOS C	13.4	100.0	0.77	0.76	18.2
NorthEast: St Hilliers Road													
24	L2	1538	7.7	1538	7.7	0.840	38.1	LOS C	20.2	150.4	0.95	0.93	18.1
24a	L1	16	26.7	16	26.7	0.840	54.9	LOS D	8.4	62.5	1.00	0.96	13.5
26	R2	288	4.4	288	4.4	0.840	58.4	LOS E	8.4	62.5	1.00	0.95	13.1
Approach		1842	7.3	1842	7.3	0.840	41.4	LOS C	20.2	150.4	0.96	0.94	17.0
NorthWest: Rawson Street													
27	L2	189	4.4	189	4.4	0.427	16.8	LOS B	3.6	26.3	0.72	0.71	35.4
28	T1	597	3.9	597	3.9	0.427	27.0	LOS B	5.7	41.6	0.82	0.71	13.7
Approach		786	4.0	786	4.0	0.427	24.5	LOS B	5.7	41.6	0.80	0.71	19.3
All Vehicles		4485	6.5	4485	6.5	0.880	37.5	LOS C	20.2	150.4	0.85	0.82	17.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

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

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %

Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped	
P1	South Full Crossing	53	9.7	LOS A	0.1	0.1	0.44	0.44	
P51	SouthEast Stage 1	53	44.3	LOS E	0.1	0.1	0.94	0.94	
P52	SouthEast Stage 2	53	44.3	LOS E	0.1	0.1	0.94	0.94	
P6	NorthEast Full Crossing	53	36.2	LOS D	0.1	0.1	0.85	0.85	
P6S	NorthEast Slip/Bypass Lane Crossing	53	30.5	LOS D	0.1	0.1	0.78	0.78	
All Pedestrians		263	33.0	LOS D			0.79	0.79	

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

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MOVEMENT SUMMARY

 Site: 3 [3 Boorea/ Olympic PM]

 Network: N101 [PM Peak]

Boorea Street/ Olympic Drive

Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Arrival Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Olympic Drive													
1a	L1	1507	9.4	1507	9.4	0.424	14.0	LOS A	7.0	52.9	0.51	0.73	45.9
3	R2	141	9.7	141	9.7	0.546	46.3	LOS D	4.0	30.7	0.98	0.90	31.0
Approach		1648	9.4	1648	9.4	0.546	16.8	LOS B	7.0	52.9	0.55	0.75	43.3
East: Boorea Street													
4	L2	272	4.3	272	4.3	0.397	29.9	LOS C	5.9	43.0	0.78	0.79	22.3
6a	R1	376	0.8	376	0.8	0.899	58.7	LOS E	13.2	92.9	1.00	1.02	13.8
Approach		647	2.3	647	2.3	0.899	46.7	LOS D	13.2	92.9	0.91	0.92	16.5
NorthWest: Boorea Street													
27a	L1	300	2.8	300	2.8	0.819	21.9	LOS B	17.9	132.4	0.88	0.89	35.2
29a	R1	2017	8.8	2017	8.8	0.819	28.7	LOS C	19.9	149.7	0.90	0.90	21.4
Approach		2317	8.0	2317	8.0	0.819	27.8	LOS B	19.9	149.7	0.90	0.90	23.6
All Vehicles		4613	7.7	4613	7.7	0.899	26.5	LOS B	19.9	149.7	0.78	0.85	29.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

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

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %

Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped	
P1	South Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94	
P2	East Full Crossing	53	17.4	LOS B	0.1	0.1	0.59	0.59	
All Pedestrians		105	30.9	LOS D			0.77	0.77	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [5 Boorea Street/ Percy Street PM]

Network: N101 [PM Peak]

PM Peak: 3:45pm-4:45pm
Giveway / Yield (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Arrival Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Percy Street													
1a	L1	3	0.0	3	0.0	0.005	6.7	LOS A	0.0	0.0	0.46	0.56	45.7
Approach		3	0.0	3	0.0	0.005	6.7	LOS A	0.0	0.0	0.46	0.56	45.7
SouthEast: Boorea Street													
21b	L3	6	0.0	6	0.0	0.004	6.8	LOS A	0.0	0.0	0.00	0.58	51.7
22	T1	1801	6.8	1801	6.8	0.354	0.0	LOS A	1.5	11.0	0.00	0.00	59.9
Approach		1807	6.8	1807	6.8	0.354	0.0	NA	1.5	11.0	0.00	0.00	59.8
NorthWest: Boorea Street													
28	T1	1	0.0	1	0.0	0.000	4.1	LOS A	0.0	0.0	0.00	0.53	36.9
Approach		1	0.0	1	0.0	0.000	4.1	NA	0.0	0.0	0.00	0.53	36.9
All Vehicles		1812	6.8	1812	6.8	0.354	0.1	NA	1.5	11.0	0.00	0.00	59.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %

Number of Iterations: 10 (maximum specified: 10)

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MOVEMENT SUMMARY

 Site: 101 [7 Station Road/ Rawson Street PM]

 Network: N101 [PM Peak]

New Site

Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Arrival Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Rawson Street													
21	L2	348	1.5	348	1.5	0.345	18.6	LOS B	6.3	44.8	0.66	0.75	17.2
22	T1	452	8.6	452	8.6	0.445	16.2	LOS B	9.2	69.1	0.74	0.65	26.3
Approach		800	5.5	800	5.5	0.445	17.2	LOS B	9.2	69.1	0.70	0.70	22.8
NorthEast: Station Road													
24	L2	49	4.3	49	4.3	0.302	31.4	LOS C	4.1	30.2	0.79	0.72	19.9
25	T1	325	4.9	325	4.9	0.302	28.1	LOS B	4.2	30.6	0.79	0.71	20.1
Approach		375	4.8	375	4.8	0.302	28.6	LOS C	4.2	30.6	0.79	0.71	20.1
NorthWest: Rawson Street													
27	L2	60	1.8	60	1.8	0.409	18.5	LOS B	7.3	52.9	0.62	0.58	32.0
28	T1	446	5.0	446	5.0	0.409	15.6	LOS B	7.3	52.9	0.65	0.60	18.0
29	R2	84	0.0	84	0.0	0.409	27.5	LOS B	3.6	25.8	0.75	0.71	13.4
Approach		591	3.9	591	3.9	0.409	17.6	LOS B	7.3	52.9	0.66	0.61	19.3
SouthWest: Station Road													
30	L2	100	2.1	100	2.1	0.166	28.9	LOS C	2.1	15.1	0.75	0.71	14.5
31	T1	291	1.8	291	1.8	0.496	28.5	LOS C	6.9	48.8	0.84	0.71	22.1
32	R2	261	0.8	261	0.8	0.893	60.6	LOS E	7.1	50.0	1.00	1.10	3.6
Approach		652	1.5	652	1.5	0.893	41.4	LOS C	7.1	50.0	0.89	0.87	12.4
All Vehicles		2417	3.9	2417	3.9	0.893	25.6	LOS B	9.2	69.1	0.76	0.72	17.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

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

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %

Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped	
P5	SouthEast Full Crossing	53	29.7	LOS C	0.1	0.1	0.77	0.77	
P6	NorthEast Full Crossing	53	15.2	LOS B	0.1	0.1	0.55	0.55	
P7	NorthWest Full Crossing	53	29.7	LOS C	0.1	0.1	0.77	0.77	
P8	SouthWest Full Crossing	53	16.9	LOS B	0.1	0.1	0.58	0.58	
All Pedestrians		211	22.9	LOS C			0.67	0.67	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

 Site: 101 [6 Dartbrook Road/ Rawson Street PM]

 Network: N101 [PM Peak]

New Site
Stop (Two-Way)

Movement Performance - Vehicles													
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Arrival Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	50% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Dartbrook Road													
1a	L1	13	0.0	13	0.0	0.016	9.5	LOS A	0.0	0.2	0.42	0.97	19.8
Approach		13	0.0	13	0.0	0.016	9.5	LOS A	0.0	0.2	0.42	0.97	19.8
SouthEast: Rawson Street													
21b	L3	19	0.0	19	0.0	0.208	5.4	LOS A	0.0	0.0	0.00	0.03	43.2
22	T1	771	3.6	771	3.6	0.208	0.0	LOS A	0.0	0.0	0.00	0.01	49.2
Approach		789	3.5	789	3.5	0.208	0.1	NA	0.0	0.0	0.00	0.02	49.0
NorthEast: Dartbrook Road													
24	L2	194	0.5	194	0.5	0.234	9.9	LOS A	0.4	3.0	0.48	0.90	19.8
Approach		194	0.5	194	0.5	0.234	9.9	LOS A	0.4	3.0	0.48	0.90	19.8
NorthWest: Rawson Street													
27	L2	18	0.0	18	0.0	0.203	4.6	LOS A	0.0	0.0	0.00	0.03	29.2
28	T1	704	3.6	704	3.6	0.203	0.3	LOS A	0.1	0.9	0.05	0.03	47.0
29a	R1	18	0.0	18	0.0	0.203	8.5	LOS A	0.1	0.9	0.11	0.03	42.9
Approach		740	3.4	740	3.4	0.203	0.6	NA	0.1	0.9	0.05	0.03	45.9
All Vehicles		1736	3.1	1736	3.1	0.234	1.5	NA	0.4	3.0	0.08	0.13	42.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 3.8 %

Number of Iterations: 10 (maximum specified: 10)

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Appendix C

Proposed School Program



ARCHITECTURE DESIGN STUDIO PTY LTD

ABN:43 159 401 420| 43/8 Avenue Of The Americas, Newington 2127 |P:02 9648 6663|F:02 9648 6664|E: info@ad-s.com.au

09 May 2017

Project School: Educational Establishment

Address: 2 Percy Street, Auburn

Total Number of Students: 650

From Kinder to Year 12

Proposed School Program

1. Kindergarden and Primary School – Total of 350 students

- 1.1. Assembly area
- 1.2. Kindergarden – 2 Classes (25 students each) – Total of 50 students
- 1.3. 1 Year to 6 – 12 classes (25 students each) – Total of 300 students
- 1.4. One large Staff room with Kitchenette + Toilets
- 1.5. Library + Printer room + Admin office
- 1.6. 1 Resource Room
- 1.7. 1 Support Room – For kids with special needs
- 1.8. Small Multi-purpose Room + Storage (For music, dance classes and additional activities)
- 1.9. Computer Lab / Language Room
- 1.10. Art Room + Storage (large space for desks and sitting area) – with access to outdoor area
- 1.11. 2 Kindy Bathrooms (one for girls and one for boys)
- 1.12. Staff Toilets
- 1.13. 2 Primary Students Toilets (one for girls and one for boys)
- 1.14. Cleaner room (with sink)
- 1.15. Coordinator's Office (large office with meeting area)
- 1.16. Drop off and Pick area for Kindergarden

2. Secondary School – Total of 300 students

- 2.1. Assembly area
- 2.2. 7 Year to 12 – 12 classes (25 students each) – Total of 300 students
- 2.3. 2 Toilets (one for girls and one for boys)
- 2.4. Staff Toilets

- 2.5. Library + Computer area + Printer room + Admin Office
- 2.6. 5 Labs + Resource Room/ Storage Area (Science, Physics and Biology, Chemistry, Computer, Technological and Applied Studies)
- 2.7. Lockers (Outside the classes)
- 2.8. Coordinator's Office (large office with meeting area)
- 2.9. 1 Large Staff Room with Kitchenette + Toilets
- 2.10. 8 Teachers Room – One for each Major subject (English; Mathematics; Science; Human society and its environment; personal development, creative arts; technology and Arabic)
- 2.11. Counsellor's office
- 2.12. Cleaner room (with sink)

3. Administration area

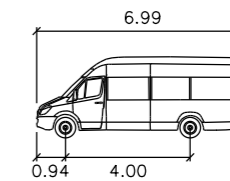
- 3.1. Principal Office
- 3.2. Deputy Principal
- 3.3. Director
- 3.4. Maarif President
- 3.5. 2 Meeting room
- 3.6. 2 Small Interview's room
- 3.7. Accounts Room
- 3.8. IT Room + Server Room
- 3.9. Reception + Printer Room + Storage
- 3.10. Kitchenette + Tea Room
- 3.11. Toilets
- 3.12. Cleaner room (with sink)

4. School Facilities

- 4.1. Multi-Purpose Hall (gymnasium) + Toilets (including showers and changing area)
- 4.2. Toilets
- 4.3. Prayer Mescit + wudu room
- 4.4. Chaplains Room
- 4.5. Canteen + Cafeteria
- 4.6. Outdoor Playground
- 4.7. Gym
- 4.8. Sport's Room (Storage)
- 4.9. Maintenance Room (Storage)
- 4.10. Uniform Shop
- 4.11. 1 First Aid Room (Sick Bay)
- 4.12. Staff Parking
- 4.13. Public Parking
- 4.14. Drop off and Pick up area for School Buses
- 4.15. Drop off and Pick area for small vehicles

Appendix D

Swept Path Assessment



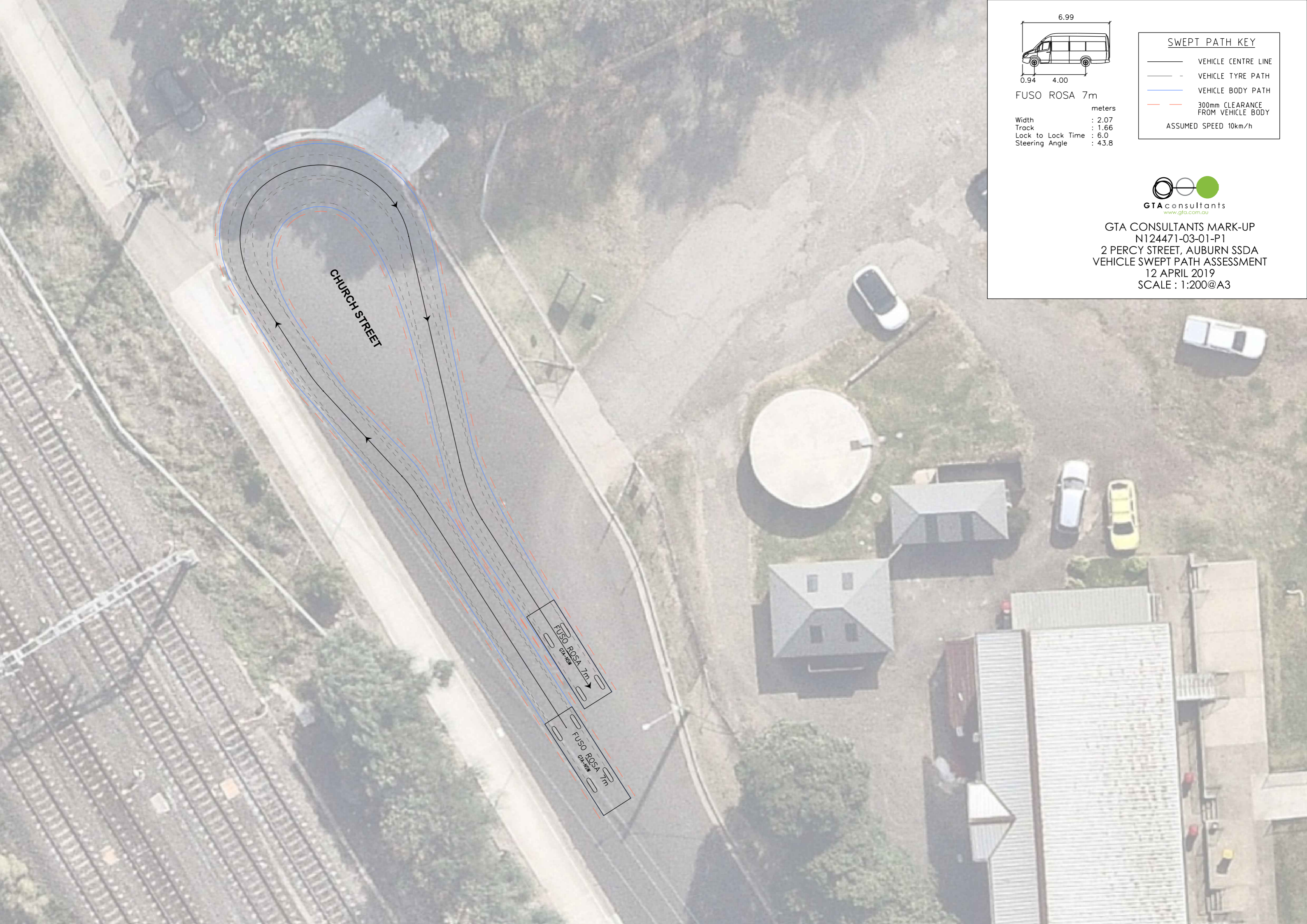
FUSO ROSA 7m

	units
Width	: 2.07 meters
Track	: 1.66
Lock to Lock Time	: 6.0
Steering Angle	: 43.8

SWEEP PATH KEY	
	VEHICLE CENTRE LINE
	VEHICLE TYRE PATH
	VEHICLE BODY PATH
	300mm CLEARANCE FROM VEHICLE BODY
ASSUMED SPEED 10km/h	



GTA CONSULTANTS MARK-UP
 N124471-03-01-P1
 2 PERCY STREET, AUBURN SSDA
 VEHICLE SWEEP PATH ASSESSMENT
 12 APRIL 2019
 SCALE : 1:200@A3



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