MOTT MACDONALD

80 Betty Cuthbert Drive, Lidcombe Master Plan

Traffic and Transport Assessment Report

Planning Proposal

15 March 2022

Confidential

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Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	24.01.20	TL	EM / MS	JW	First Draft
B	20.03.20	EM / MK	MS / JM	JW	Updates following comments
C	16.04.20	EM	JW	JW	Revised Appendix B
D	24.04.20	KA	EM	JW	Updated following DPIE comments
E	05.05.20	EM	EM	JW	Updated following Urbis comments
F	18.06.21	JM	TL	JW	Updated for layout change
G	14.07.21	JM	TL	JW	Updated for PDNSW comments
H	29.07.21	JW	TL	JW	Updated for PDNSW comments
I	02.08.21	JW	TL	JW	Updated for PDNSW comments
J	04.08.21	JW	TL	JW	Updated for PDNSW comments
K	15.09.11	JM	TL	JW	Updated for PDNSW comments
L	15.03.22	JM	TL	JW	Include 2036 assessment and address TfNSW comments

Document reference: 405675 | L | MMD-405675-PP-RP-01

Information class: Standard

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1 Introduction

Mott MacDonald has been engaged to prepare a Traffic and Transport Study to assist Property and Development NSW (PDNSW) in finalising a master plan and obtaining the necessary planning proposal approvals for the government owned site at 80 Betty Cuthbert Drive, Lidcombe. This report will assess the current traffic and transport operation of the Site and its surroundings. It will provide parking requirements and assess the future traffic conditions and intersection performance following development of the proposed master plan.

1.1 Purpose of Report

The purpose of this report is to review existing traffic and transport infrastructure at and surrounding 80 Betty Cuthbert Drive, Lidcombe (the Site) and assess future traffic and transport operations and parking requirements.

To assist in preparation of the master plan, Mott MacDonald has undertaken the following tasks:

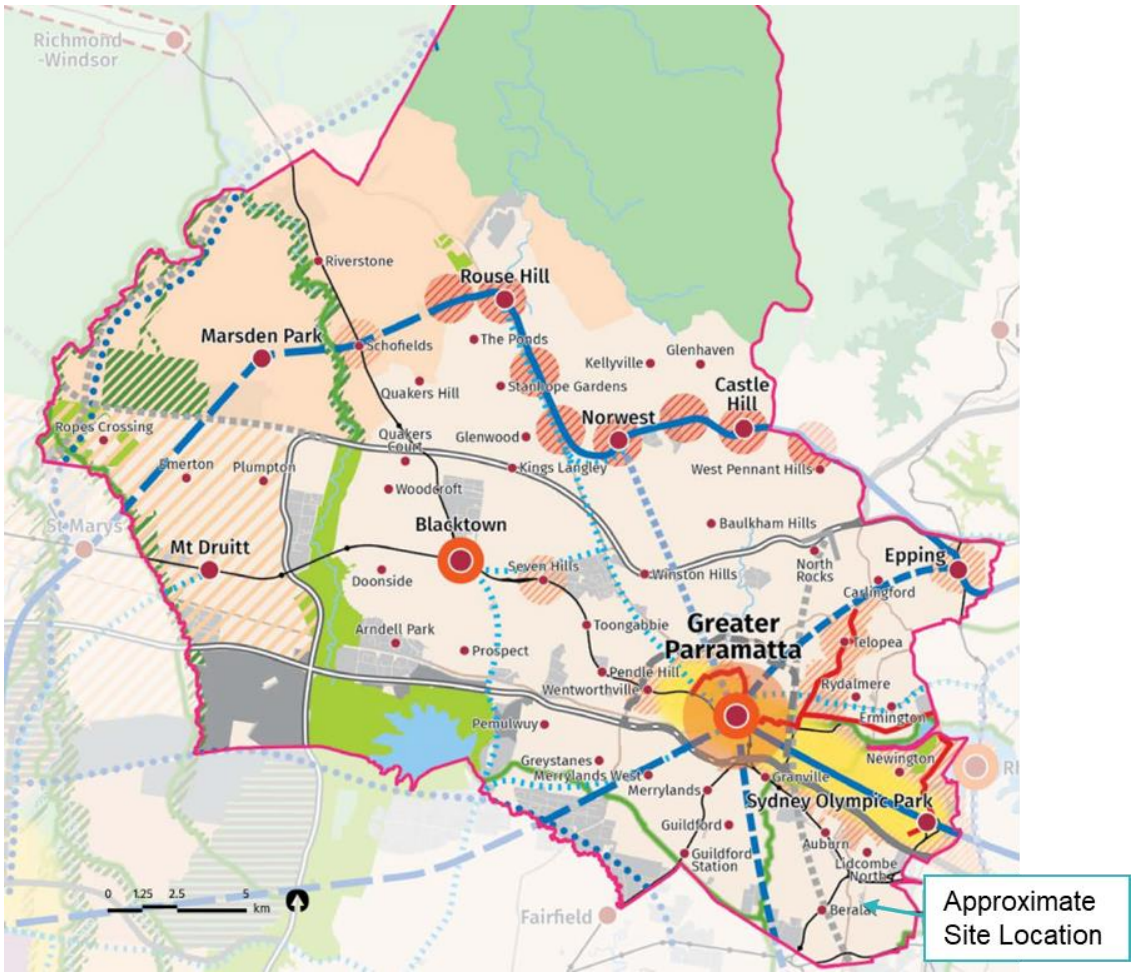
- Review of existing site access and surrounding road network;
- Identification of current parking availability and restrictions;
- Study of existing bus and rail services and facilities and walking and cycling facilities;
- Analysis of travel behaviours including a review of current journey to work mode shares, origins and destinations;
- Assessment of crash data in the vicinity of the Site;
- Determining recommended on-site parking and traffic generation numbers for the preferred master plan option;
- Provision of mode shift/travel demand management strategies for the development; and
- Modelling using SIDRA to assess intersection and road performance and confirm impact of upgrades.

1.2 Regional Context

The site is located within the suburb of Lidcombe, approximately 15 km west of Sydney CBD and within the Cumberland local government area. The closest major interchange station is Lidcombe Station, 1.5 km north of the site, and Berala Station is the nearest station, 1.2 km west of the site. The site is surrounded by a mixture of land uses and facilities, with residential land to the north, east and south, an educational site to the south east and the Carnarvon Golf Course to the west.

In March 2018 the NSW Government released the Greater Sydney Region Plan which outlined a vision of three cities; a Western Parkland City, a Central River City and an Eastern Harbour City. The study area lies within the Central City District as shown in Figure 1.1 below. It is within close proximity to Lidcombe North and Berala Local Centres, which have been identified for urban renewal.

Figure 1.1: Central City Plan



Source: Central City District Plan, Greater Sydney Commission

1.3 Local Context

The site is located at 80 Betty Cuthbert Drive, Lidcombe. It has a primary frontage to Joseph Street between Georges Avenue to the north and Botanica Drive to the south. The site is approximately 5.98 ha in size and is currently occupied by Multiple Sclerosis Limited (MSL). The site includes a 1970's circa 4,300 m^2 brick building that provides office space, treatment facilities and respite care facilities to support the operations of MSL. The existing MSL facilities cover approximately 12 percent of the site and the remainder of the site is underutilised.

The site is surrounded by a mixture of land uses and facilities, with residential land to the north, east and south, an educational site to the south east and the Carnarvon Golf Course to the west. Existing vehicle access to the site is via the intersection of Joseph Street and Botanica Drive. An access road extends from Betty Cuthbert Drive, through the existing residential subdivision located to the south of the site.

The site is heavily vegetated, with several trees located around the site boundary and bordering the existing MSL building. The existing MSL building is located within a high point on the site and the surrounding landscape slopes primarily towards the south-west and eastern sides of the site. An overview of the site location is provided in Figure 1.2.

Figure 1.2: Site Overview

Source: Google Earth

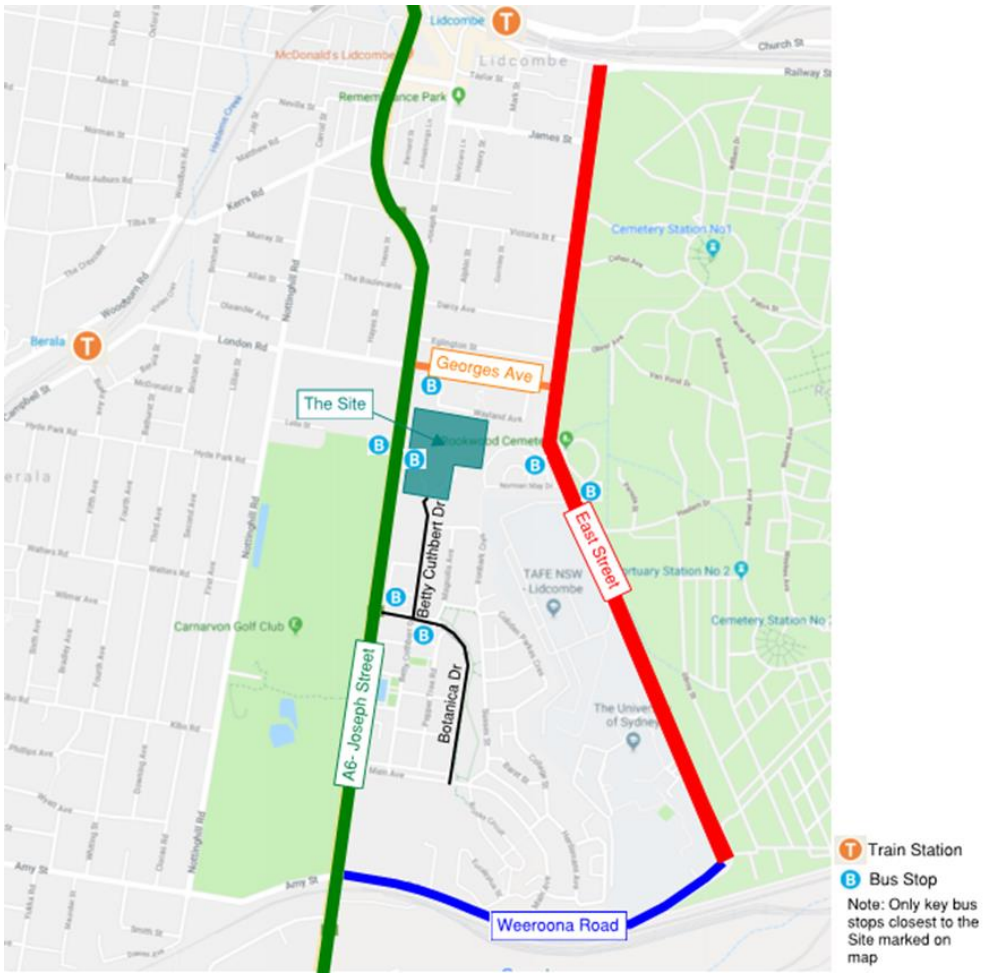
2 Existing Conditions

This section presents the existing traffic and transport conditions of the Site and surrounding areas, including analysis of current travel behaviour, identification of existing transport networks and a review of the crash and casualty statistics.

2.1 Existing Road Network

The existing road network in the vicinity of the Site is illustrated in Figure 2.1 and described in further detail below.

Figure 2.1: Existing Road Network Surrounding the Site



Source: Google Maps (2018) combined with Mott MacDonald notations (2019)

- Joseph Street: a major TfNSW classified State Road directly to the west of the site, with three lanes in each direction, and a speed limit of 80 km/hr, slowing to 70 km/hr at the northern end prior to the Georges Avenue intersection. The road links to the A22 Hume Highway in the south and the A44 Great Western Highway and M4 Western Motorway in the north.
- East Street and Weeroona Road: TfNSW classified Regional Roads to the east and far south of the site, with one lane in each direction, parking and on-road cycle lanes on both sides of the road and a 60 km/hr speed limit.
- Georges Avenue: a local road to the north of the site, with one lane in each direction, parking on both sides of the road and a 50 km/hr speed limit.

- A network of local roads, generally low-speed and serving residences, including Botanica Drive and Betty Cuthbert Drive, which also provide vehicular access to the current Site.

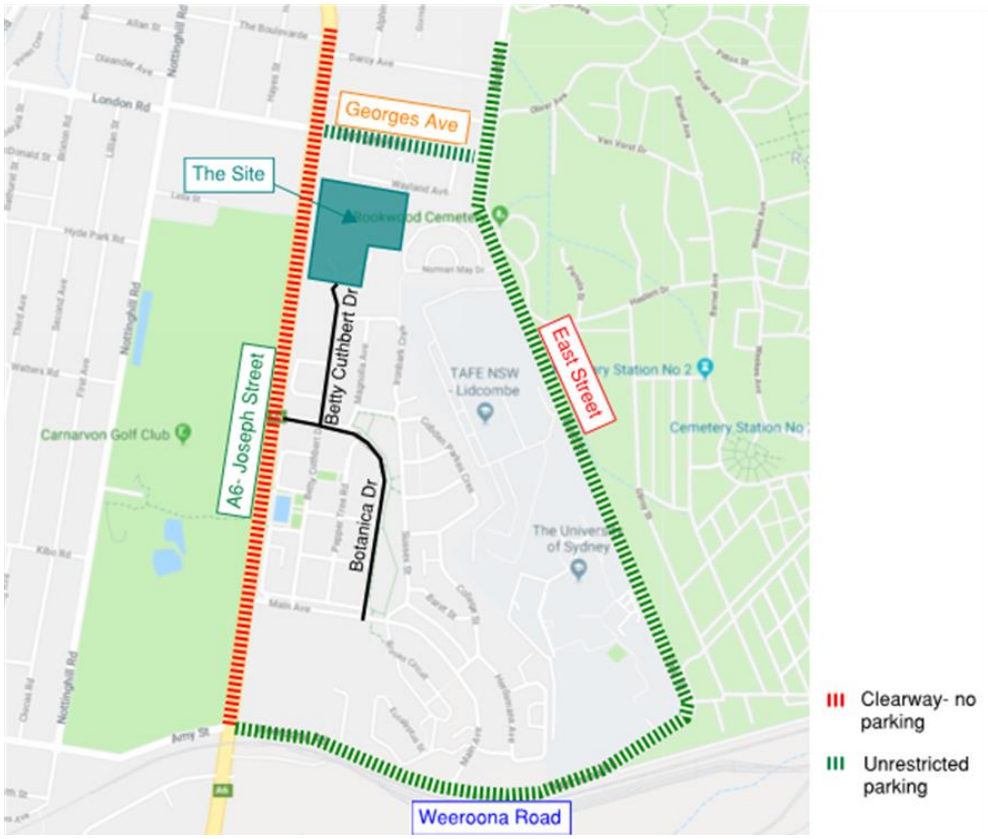
2.2 Site Access

Existing vehicle access to the Site is via the intersection of Joseph Street and Botanica Drive. The access route then enters the Site on the southern side via Betty Cuthbert Drive, with an existing internal road continuing to the centre of the site where the MSL facility currently lies. There is also currently pedestrian access from Joseph Street.

2.3 Parking

There are currently significant opportunities for parking on and surrounding the Site. The MSL Facility has its own at-grade parking and there is also unrestricted on-street parking on the local roads in residential areas surrounding the site including Betty Cuthbert Drive and Botanica Drive. Joseph Street has a clearway with no parking permitted, while other major roads surrounding the Site, East Street, Weeroona Road and Georges Avenue, have unrestricted parking on both sides of the road, as shown in Figure 2.2. The popularity and availability of these parking facilities is not known.

Figure 2.2: Existing Parking on Major Roads Surrounding the Site



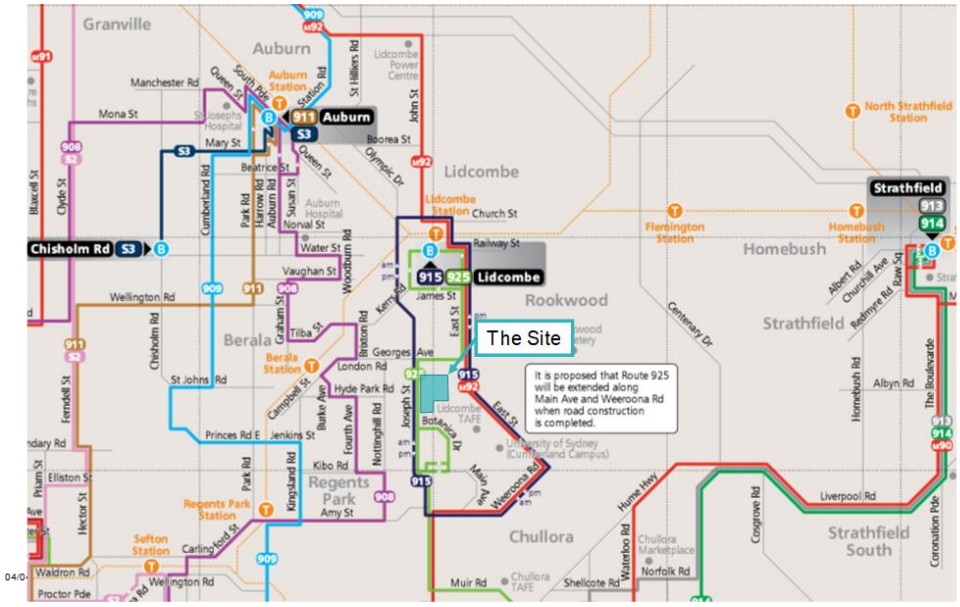
Source: Google Maps (2018) combined with Mott MacDonald notations (2019)

2.4 Bus Services and Facilities

There are three bus routes located within the vicinity of the site. The 925 bus service, which runs between East Hills and Lidcombe via Bankstown, operates on Joseph Street and Botanica Drive, so is currently the most accessible from the Site. It has a frequency of two buses an hour during the AM and PM commuter peak periods, and one bus per hour in the middle of the day. The 915 bus route is primarily targeted at University of Sydney staff and students, operating Mondays to Thursdays during University semesters between the University and Lidcombe Station. The M92 bus operates along East Street and Weeroona Road and provides

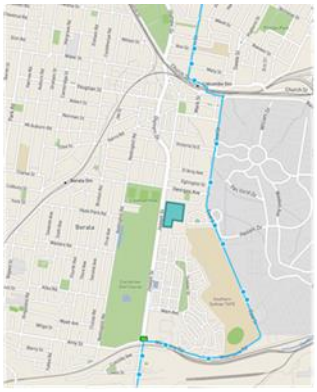
a service between Sutherland and Parramatta operating four to six buses per hour. The bus routes are illustrated in Figure 2.3 and Figure 2.4.

Figure 2.3: Broader Bus Network

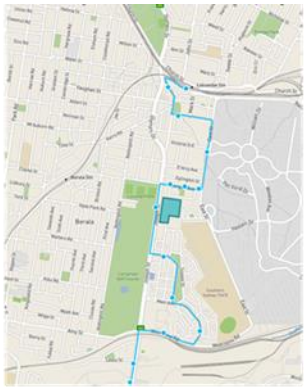


Source: www.transdevnsw.com.au

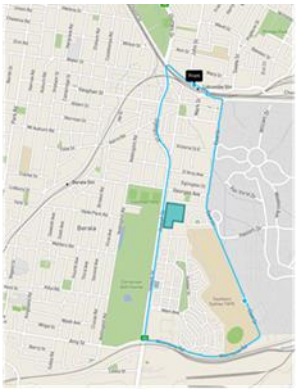
Figure 2.4: Bus Services Within Proximity of the Site



M92: Sutherland to Parramatta



925: East Hills to Lidcombe via Bankstown

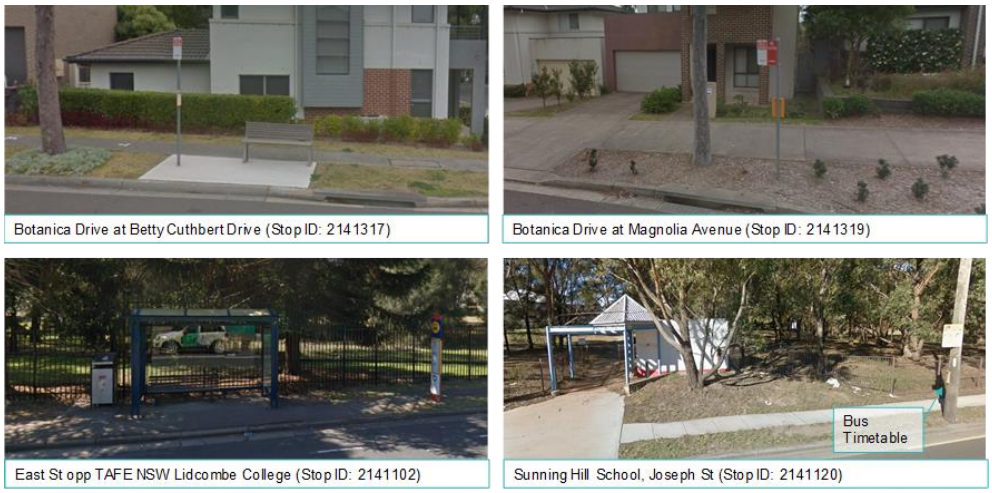


915: Lidcombe to U Sydney Lidcombe Campus (Loop Service)

Source: https://transportnsw.info/routes/bus

As shown in Figure 2.5, the infrastructure at bus stops in this area varies from posts only, to a bench and post to high quality shelters.

Figure 2.5: Bus Stop Infrastructure



Source: Google Maps (2018)

The two bus stops geographically closest to the Site, on Joseph Street, provide the most basic infrastructure of just a post. The Sunning Hill School stop, servicing southbound traffic, is located directly in front of the Site. The equivalent northbound stop is opposite the Site, but as there is no crossing at this point, to access it, bus users must walk an additional 400 m and cross at Joseph Street/Georges Avenue or an additional 900 m and cross at Joseph Street/Botanica Drive. When travelling northbound, the preceding stop in Botanica Drive, or proceeding stop in Georges Avenue may present more attractive options for walking, despite being geographically further from the Site.

2.5 Rail Services and Facilities

The two closest stations to the Site are Berala Station at 1.2 km to the west and Lidcombe Station at 1.5 km to the north, both a reasonably significant walking distance from the Site (15-20 minute walk).

Lidcombe Station is the more major interchange, with the T1, T2, T3 and T7 lines servicing the station. The T1, T2 and T3 lines provide a combined service of approximately 20 trains to the city during the AM peak hour and the T7 line operates an express service between Lidcombe and the Olympic Park.

Berala Station is serviced by the T3 line, with four trains an hour in the AM and PM commuter peaks.

The facilities available at each station are presented in Table 2.1. Both stations are wheelchair accessible and encourage arrivals and departures from the station by other public transport modes, with no general parking available. Both provide bike racks, and bike lockers are provided at Lidcombe Station, which should assist the attractiveness of cycling.

Table 2.1: Station Facilities

Element	Lidcombe Station	Berala Station
Mobility		
Stairs	✓	✓
Lift	✓	✓
Accessibility		
Hearing loop	✗	✗
PA system for announcements	✓	✓
Platform tactile tiles	✓	✓
Portable boarding ramp	✓	✗
Wheelchair accessible toilet	✓	✗
Wheelchair accessible car space/s	✓	✗
General Facilities		
Opal top up machine	✓	✓
Opal single trip ticket machine	✓	✓
Toilet	✓	✓
Payphone	✓	✓
Help point	✓	✓
Transport Interchanges		
Bus stop	✓	✓
Taxi rank	✓	✓
Bike racks or bike lockers	✓	✓
Kiss and ride	✓	✓
Car park	✗	✗

Source: https://transportnsw.info

2.6 Walking and Cycling

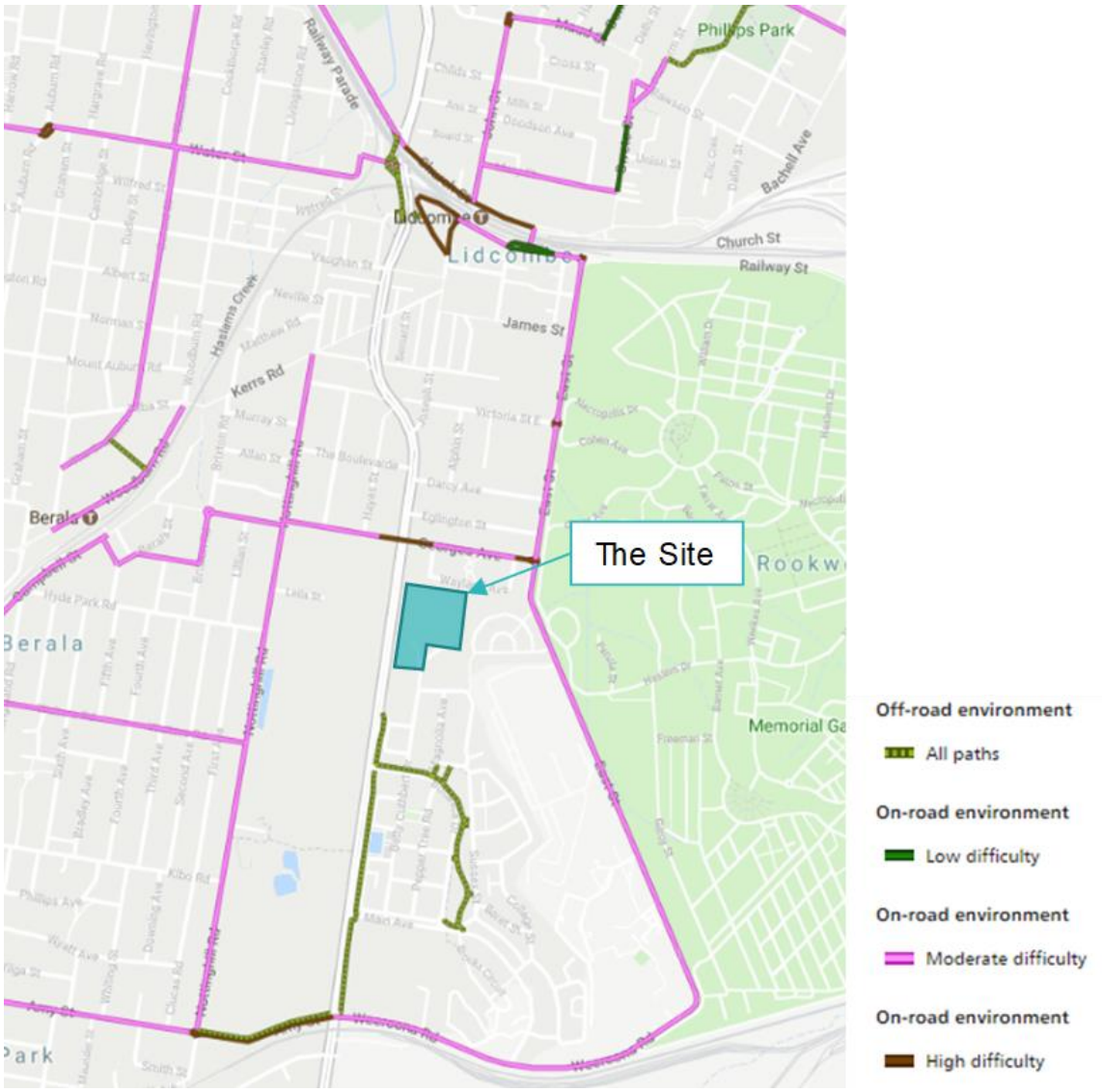
The current pedestrian point of access to the MSL Facility is from Joseph Street. A footpath is provided on the eastern side of the street, but walking conditions are not considered to be very attractive given that:

- The footpath is adjacent to a six-lane, 80 km/hr road so is likely to suffer from high air and noise pollution;
- There is no pavement on the eastern side; and
- Crossing points are limited and fairly far from the Site, at Georges Avenue (250 m) and Botanica Drive (400 m).

The local residential streets in the vicinity of the Site include an extensive network of footpaths on both sides of the street including on Georges Avenue. A pedestrian link from Ironbark Crescent to Norman May Drive provides access to East Street, which has a footpath on the western side of the street only. The ability to use these streets by people going to and from the MSL Facility are limited, however, as access to the Facility from Betty Cuthbert Drive does not include pedestrian footpaths.

The existing cycling network in the area is presented in Figure 2.6.

Figure 2.6: Cycleway Map



Source: https://www.rms.nsw.gov.au/maps/cycleway_finder

The local roads to the south of the site are likely to be accessible to cyclists even without specific infrastructure as they mostly serve residential purposes with low speed limits and traffic volumes.

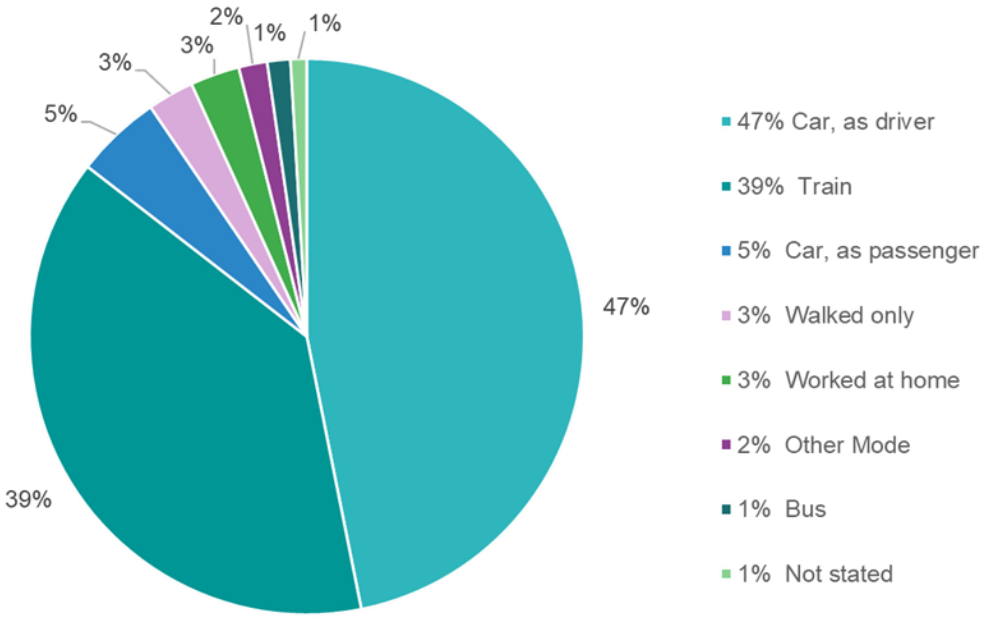
East Street and Weeroona Road have dedicated cycle lanes, but these run between the fast-moving traffic and parked cars, increasing the risk of 'dooring' incidents. It is unlikely that Joseph Street would be utilised by cyclists aside from on the shared eastern pavement with pedestrians.

2.7 Travel Behaviours

2.7.1 Commuter Mode Share

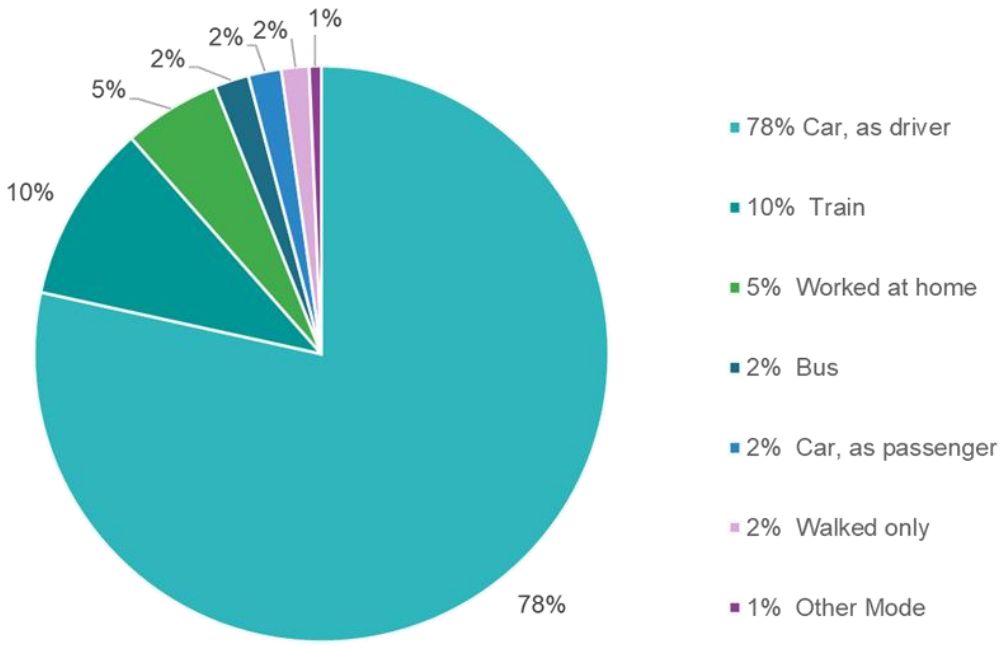
The Australian Bureau of Statistics (ABS) 2016 census data has been extracted to inform the current modes of travel used by commuters in the area. Figure 2.7 illustrates the modes of travel used by residents of Lidcombe (Statistical Area 2, 125011586) to commute to work. Figure 2.8 illustrates the modes of travel used by people to travel to work within the Site area (Destination Zone 115860007).

Figure 2.7: 2016 Journey to Work Outbound (How Residents Living in Lidcombe Commute)



Source: Australian Bureau of Statistics 2016 Census Data (http://www.abs.gov.au/)

Figure 2.8: 2016 Journey to Work Inbound (How Workers Employed in the Area Commute)



Source: Australian Bureau of Statistics 2016 Census Data (http://www.abs.gov.au/)

The data indicates that travel by private car is the dominant travel mode for journeys made in Lidcombe and the Site area, with 47 percent of outbound commuter journey's and 78 percent of inbound journey's being made by car drivers. A large proportion of outbound travel is made by train (39 percent), with a lower proportion of inbound travel made by train (10 percent). The proportion of active transport use (walking and cycling) is very low, although it is acknowledged that public transport trips generally have a walking component.

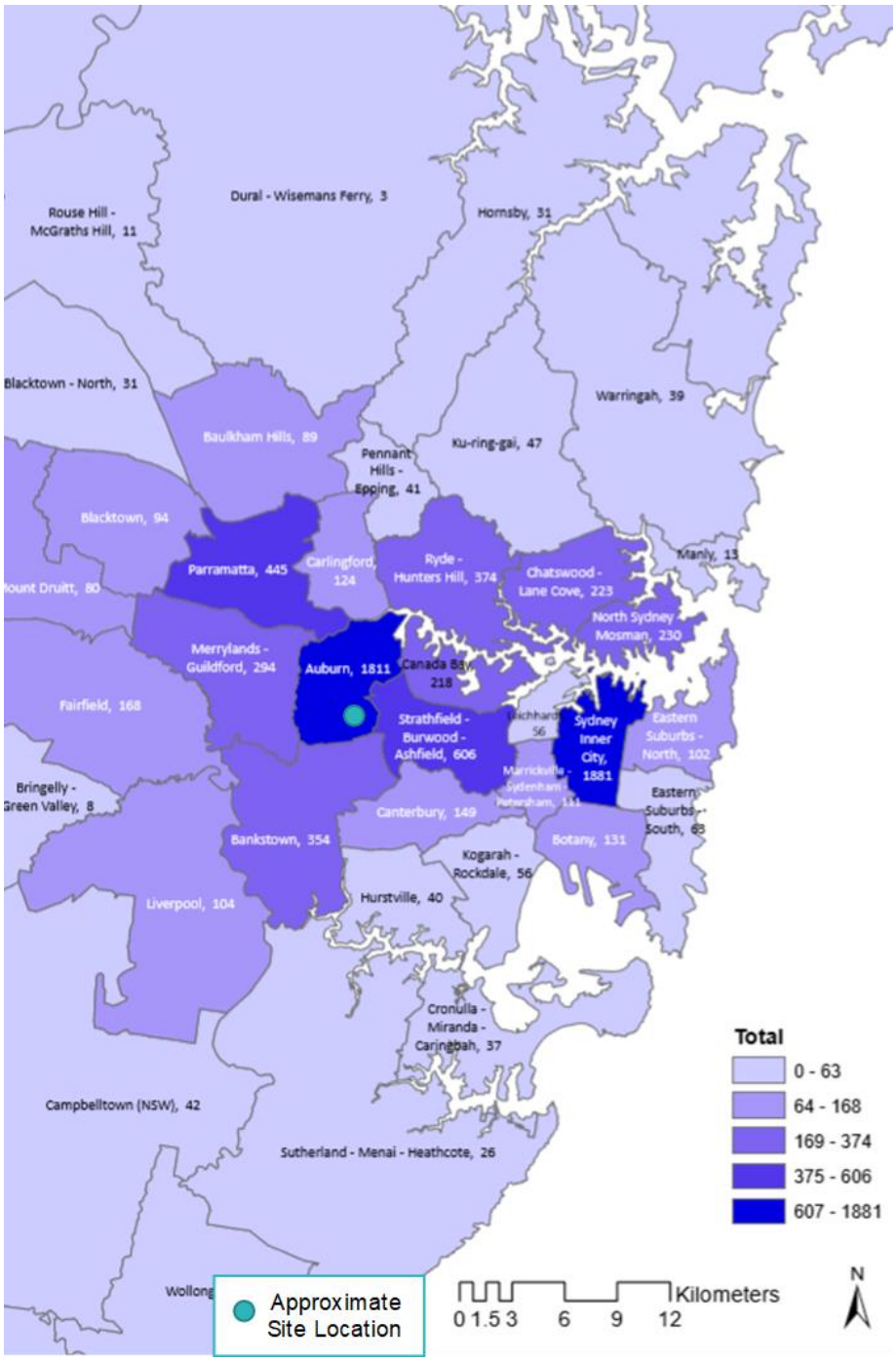
TAFE and The University of Sydney are major employers in the Site area and are likely to skew the lower proportion of train travel for inbound journeys. Although both facilities encourage the use of public transport on their websites, they are a 20-30-minute walk from the nearest Lidcombe station and there is substantial

unrestricted parking along East Street adjacent to the campus'. Additionally, both institutions offer casual or permit parking on campus.

2.7.2 Commuter Origins and Destinations

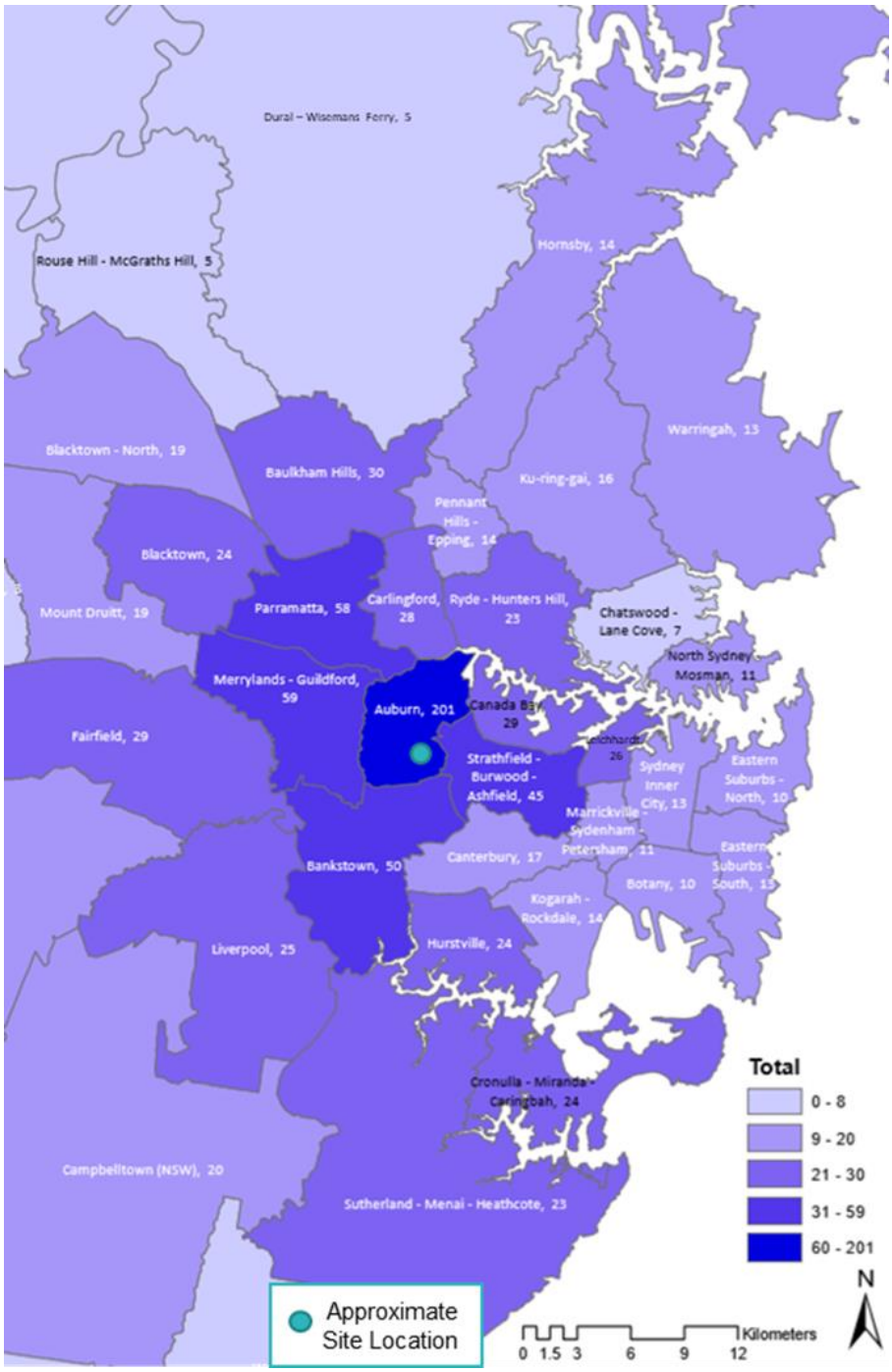
The ABS data was also analysed to determine the geographical travel patterns for residents and workers in the area surrounding the Site (by Statistical Area 3). Figure 2.9 and Figure 2.10 illustrate the destinations and origins of outbound and inbound workers, respectively.

Figure 2.9: 2016 Journey to Work Outbound (Where Residents Living in Lidcombe Commute)



Source: Australian Bureau of Statistics 2016 Census Data (http://www.abs.gov.au/)

Figure 2.10: 2016 Journey to Work Inbound (Where Workers Employed in the Area Commute)



Source: Australian Bureau of Statistics 2016 Census Data (http://www.abs.gov.au/)

Figure 2.9 shows that most residents commuting from Lidcombe work in Sydney Inner City and Auburn, which contains Lidcombe itself. Nearby areas of Strathfield, Parramatta and Ryde are other key destinations, with the remaining proportion of workers dispersing across multiple suburbs with less than five percent of demand to each.

Figure 2.10 shows that most workers commuting to the Site zone travel from the Auburn area (which contains Lidcombe). All other trips are made from various geographical destinations around Sydney and further afield in New South Wales.

2.8 Crash Data Analysis

Crash data was obtained for a five-year period from 1 October 2013 to 30 September 2018 to understand the crash history in the area surrounding the site. The data sourced from TfNSW included Joseph Street, Georges Avenue, East Street, Weeroona Road and local roads around the site, including Botanica Drive and Betty Cuthbert Drive. A summary is presented in Appendix A and the data sets used in the analysis are as follows:

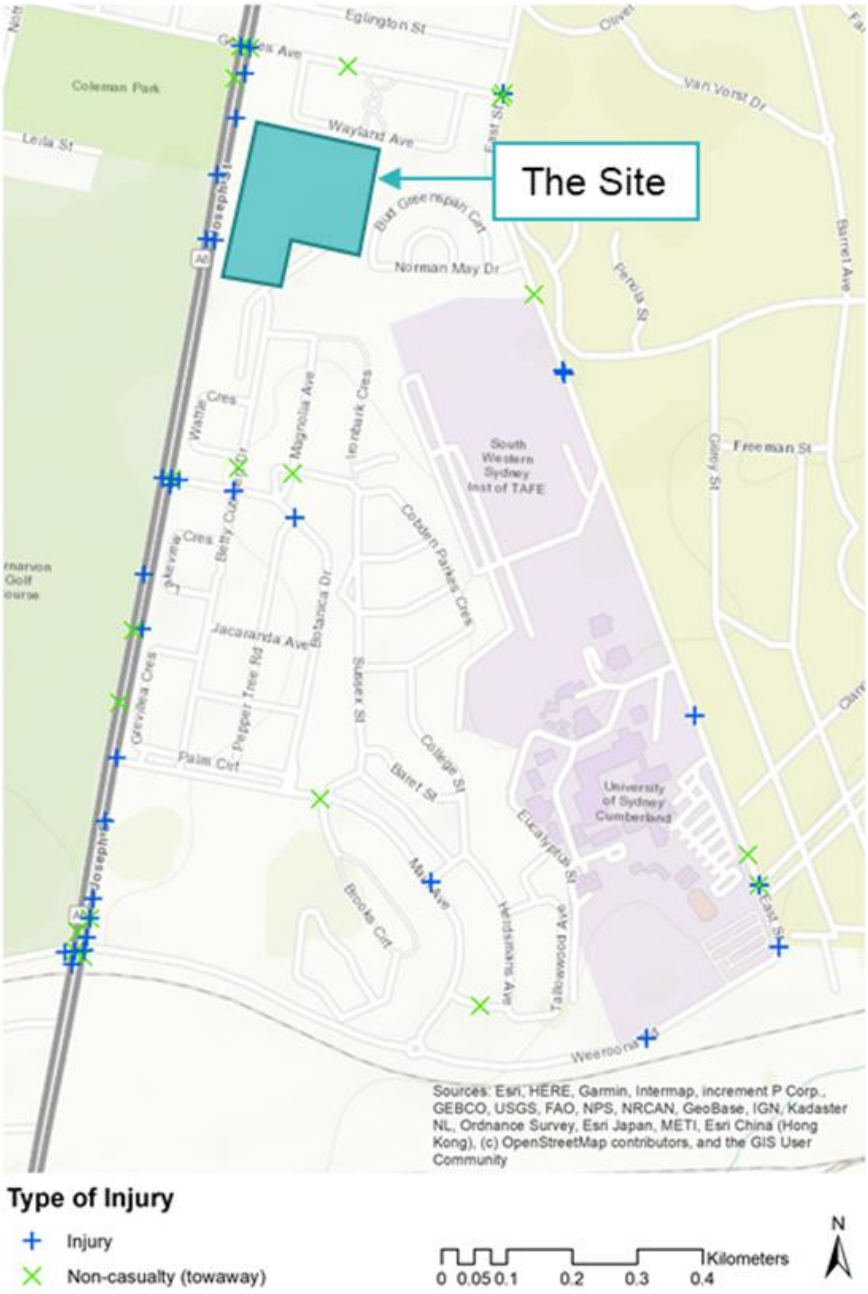
- Crash dataset 9172 - Joseph Street, between Georges Avenue and Weeroona Road;
- Crash dataset 9172 - Georges Avenue, between Joseph Street and East Street;
- Crash dataset 9172 - East Street and Weeroona Road, south of Georges Avenue; and
- Crash dataset 9172 - Internal local roads, including Botanica Drive and Betty Cuthbert Drive.

The key findings of the analysis are:

- A total of 73 crashes were recorded in the time period, of which 49 (67 percent) occurred on Joseph Street;
- The rate of crashes did not notably increase during any particular time of day, with 40 percent of crashes occurred in the morning, and 60 percent after midday;
- Most crashes, 38 percent, happened at intersections, with the highest rate at the Joseph Street/Georges Avenue intersection;
- Weather and visibility conditions did not appear to affect crash rates, with most crashes occurring in daylight during fine weather with dry conditions;
- Cars were the key vehicle in 59 percent of crashes, while light trucks were the key vehicle in 10% of crashes; and
- No fatal injuries occurred in the five-year period. Moderate and minor injuries accounted for 77 percent of all injuries. The average number of casualties was 0.78 per crash.

Figure 2.11 displays the location of the crashes and level of injury for all recorded crashes in the five-year period.

Figure 2.11: Crash Location and Type of Injury



Source: Data provided by Roads and Maritime Services

3 Future Traffic Conditions

3.1 Future Development

In 2017, PDNSW prepared a master plan for the site which allocated land for an educational establishment, health facility and for residential use. The masterplan has been developed with key stakeholders, Department of Education (DE) and Multiple Sclerosis Limited (MSL). The educational establishment will be developed by the DE and the health facility by MSL.

The future educational establishment will be located on a 1.85 ha parcel in the central western portion of the site. The education facility, for the purpose of this assessment, has been assumed as a 1,000-student primary school, to accommodate a maximum capacity scenario for development of that land. It should be noted that this is an assumption made for this assessment and the establishment may be a different type of school.

A 0.95 ha site adjacent Joseph Street will be used for a new health facility, and the surplus land (approx. 1.78 ha) will be rezoned to medium density residential land (excluding road and drainage areas) and divested. The concept indicative layout plan (ILP) is shown in Figure 3.1 below.

Figure 3.1: Concept ILP

Source: 80 Betty Cuthbert Drive, Lidcombe – Indicative Layout Plan (02 August 2021)

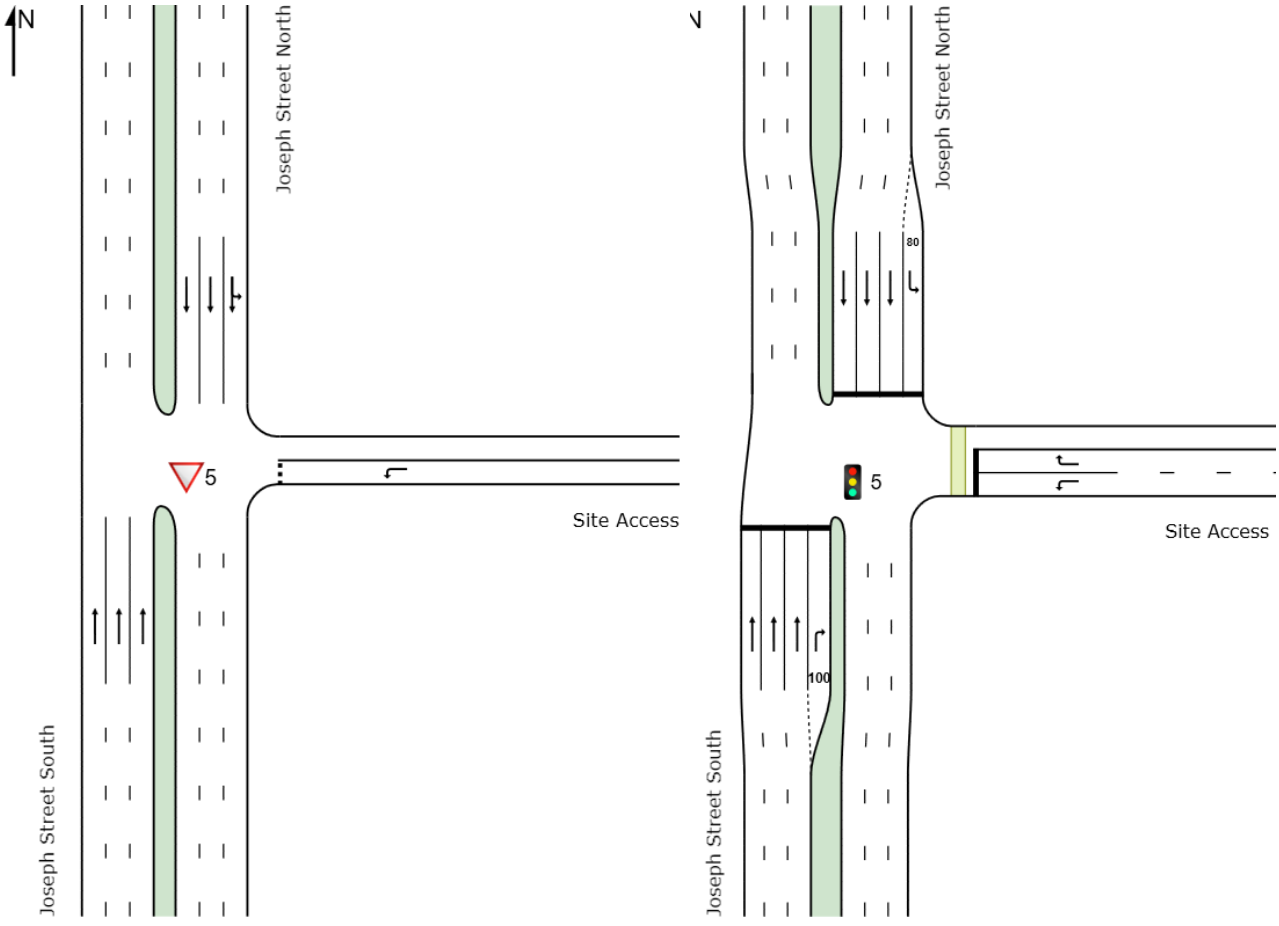
Traffic generated by the proposed development is described in Section 0.

3.2 Future Road Network

The Concept ILP provided in Figure 3.1 identifies several new intersections and an internal road network that is required to accommodate future growth in the Site. These include:

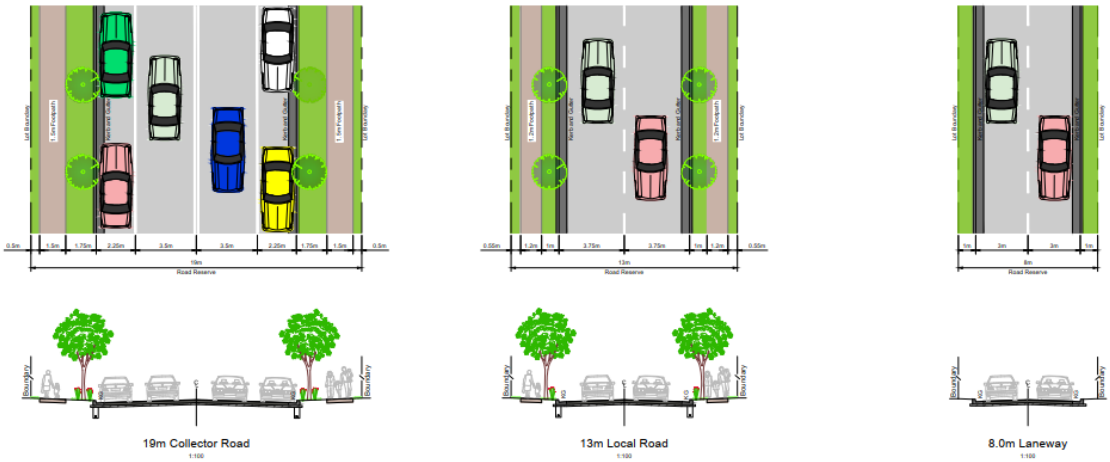
- Introduction of a priority-controlled intersection off Betty Cuthbert Drive to provide vehicular access to the southern-most residential development and the MSL land;
- Prior to development of the future educational establishment, which generates most of the traffic from the site, construction of an interim left-in left-out intersection connecting the Site to Joseph Street via the southbound lanes only (refer to Figure 3.2).
- Upon development of the future education establishment, the construction of a new signalised intersection, replacing the left-in left-out intersection, connecting to Joseph Street allowing access to the Site from both the northbound and southbound travel lanes (refer Figure 3.2). The turn bay facilities will require road widening and property acquisition on both approaches to this access, with the lane length requirements being governed by Austroads deceleration and lateral shift requirements;
- Access driveways and circulation roadways shall be designed to comply with sight distance requirements specified in 'AS 2890 – Parking Facilities';
- An internal road network consisting of three different sized road reserves are proposed for the Site. These proposed cross sections are illustrated in Figure 3.3; and
- A pedestrian bridge across Joseph Street is proposed for the future educational establishment, following advice from TfNSW. A schematic drawing of this bridge is provided in Appendix B.

Figure 3.2: Proposed Joseph Street Site Access Intersection (Interim [left] and Ultimate [right] layouts)



Source: SIDRA 9

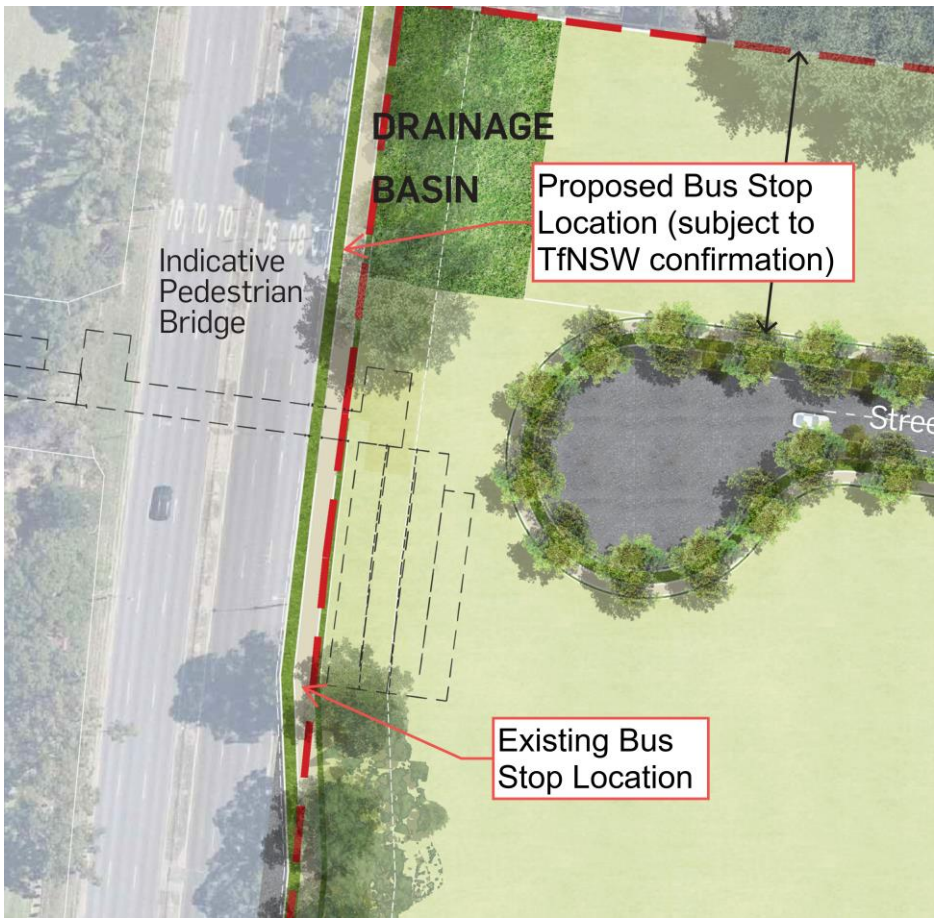
Figure 3.3: Proposed Road Reserves



3.3 Proposed Relocation of Bus Stop

The southbound bus stop (Sunning Hill School) on Joseph St (ID: 2141120) is required to be relocated due to the construction of the turning lane proposed as part of the signalised intersection upgrade into the site. The bus stop is proposed to be located just north of the bridge as shown in Figure 3.4.

Figure 3.4: Bus Stop Relocation



4 Parking Requirements

Proposed parking rates are based on the Cumberland Development Control Plan (DCP) 2021 that came into effect on 5 November 2021. The rates are provided in Table 4.1 below. No parking is proposed as part of early works and while the overall design has considered parking requirements, car spaces will form part of a future application.

Table 4.1: Proposed Parking Rates

Land Use	Minimum Requirement
Dwelling houses/dual occupancy	1 covered space per dwelling
Educational Establishment (Primary School)	1 space per 1 staff + 1 visitor parking space per 100 students.
MSL Centre	Based on site requirements

Source: Cumberland Development Control Plan (DCP) 2021

5 Traffic Assessment

This section presents the traffic assessment undertaken to evaluate the impact of the proposed development on the surrounding road network. It should be noted that the future educational establishment, for the purpose of this assessment, has been assumed as a 1,000-student primary school, to accommodate a maximum capacity scenario for the site. The future education establishment could be a different type of school.

5.1 Model Study Area and Scenarios

A SIDRA[1] model has been developed to provide a traffic assessment for the following scenarios:

Existing Conditions

- **Scenario 1:** This scenario represents the existing road network with **2017** traffic volumes (obtained from traffic surveys carried out in August 2017). Traffic generated by future developments are **not** included in this scenario.

Year 2023

A growth rate of 1.5 percent per annum was applied to the 2017 background traffic data to generate 2023 (assumed MSL / residential completion date) background volumes – resulting in a total growth of 9.34%.

- **Scenario 2:** This scenario represents the **2023** road network conditions with the proposed minimum interventions plus traffic generated by the MSL and residential land uses assuming the school has not been developed. The network does not include the proposed Site access point off Joseph Street.

Year 2026

A growth rate of 1.5 percent per annum was applied to the 2017 traffic data to generate 2026 (assumed school completion date) background volumes - resulting in a total growth of 14.34%.

The Site access point is provided off Joseph Street as an interim left-in left-out intersection and a pedestrian bridge over Joseph Street.

- **Scenario 3.1:** This scenario represents the **2026** road network conditions with the proposed minimum interventions plus traffic generated by the MSL and residential land uses assuming the school has not been developed.
- **Scenario 3.2:** As per Scenario 3.1 but assuming the school has been developed by **2026**.

Year 2036 (No upgrade of Joseph Street)

A growth rate of 1.5 percent per annum was applied to the 2017 traffic data to generate 2036 background volumes – resulting in a total growth of 32.7%.

The Site access point off Joseph Street is converted from the interim left-in left-out arrangement to a signalised intersection.

- **Scenario 4.0 (Base Case):** This scenario represents the **2036** road network base case conditions without the minimum interventions and development traffic.
- **Scenario 4.1:** This scenario represents the **2036** road network conditions with the proposed minimum interventions plus traffic generated by the MSL and residential land uses but assuming the school has not been developed.
- **Scenario 4.2:** As per Scenario 4.1 but assuming the school has been developed by **2036**.
- **Scenario 4.3:** As per Scenario 4.2 including the proposed mitigation measures.
- **Scenario 4.4:** As per Scenario 4.3 but assuming the PM school peak falls within the network peak.

[1] SIDRA is a modelling software with the capability to undertake detailed assessment of intersections.

Year 2036 (Upgrade of Joseph Street to four lanes in each direction)

- **Scenario 5.1:** As per Scenario 4.1 and with Joseph Street upgrade
- **Scenario 5.2:** As per Scenario 4.2 and with Joseph Street upgrade
- **Scenario 5.3:** As per Scenario 5.2 including the proposed mitigation measures.
- **Scenario 5.4:** As per Scenario 5.3 but assuming the PM school peak falls within the network peak.

5.2 Minimum Interventions

The following minimum network interventions have been proposed and adopted for the purpose of the SIDRA modelling:

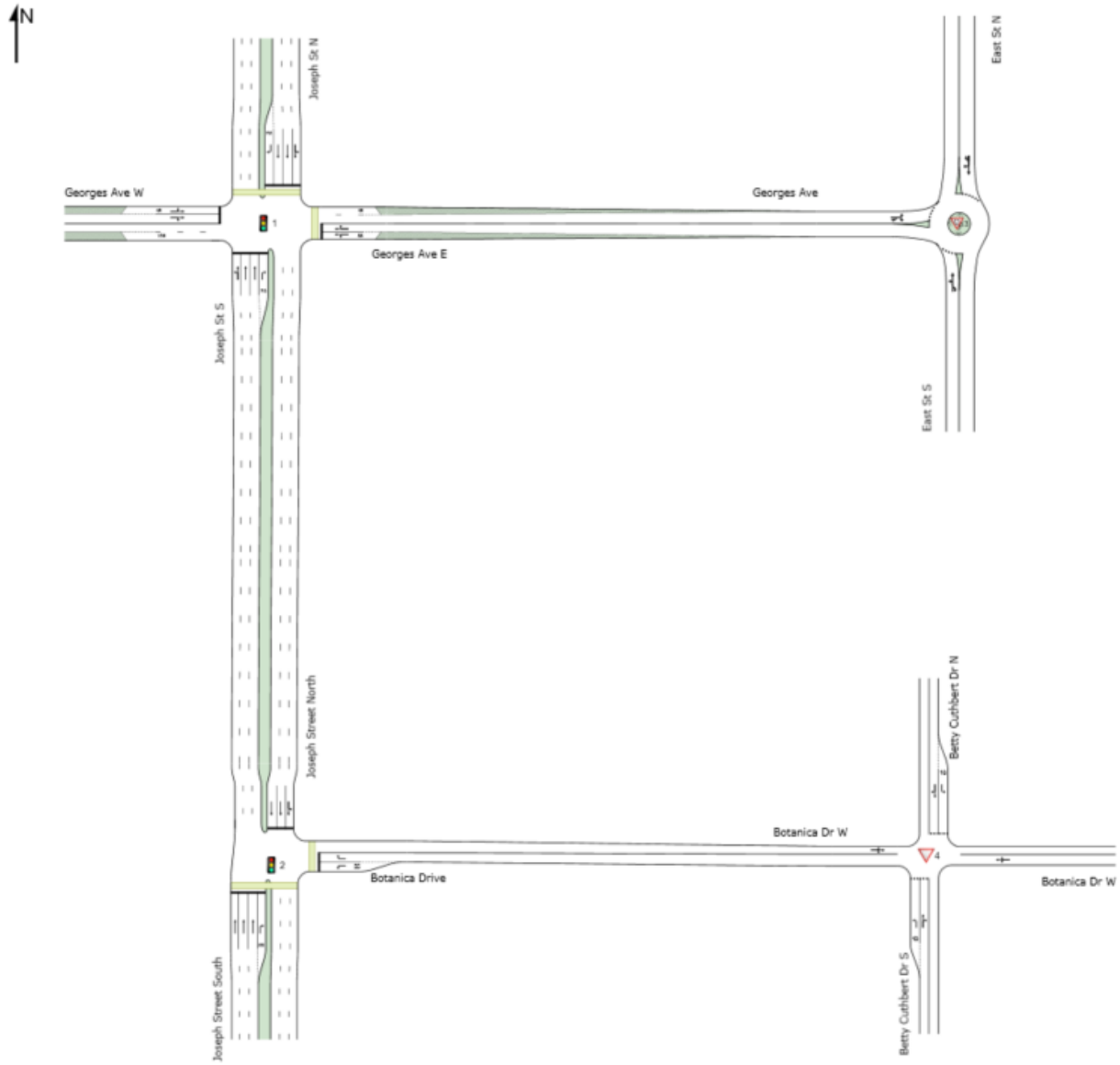
- Prohibit on-street parking along Georges Avenue between Nottinghill Road and Wayland Avenue during peak hours. Currently, on-street parking is permitted on George Street. Therefore, only one lane in each direction is provided at the mid-block sections. On-street parking is prohibited near the intersection of Joseph St with Georges Avenue resulting in two approach lanes approximately 45m (west approach) and 88 (east approach) ahead of the intersection.
- Banning on-street parking along Georges Avenue will extend the length of the two-lane intersection approaches on Georges Avenue to approximately 300 m on each side.

5.3 Modelling Methodology and Assumptions

The following modelling assumptions have been made:

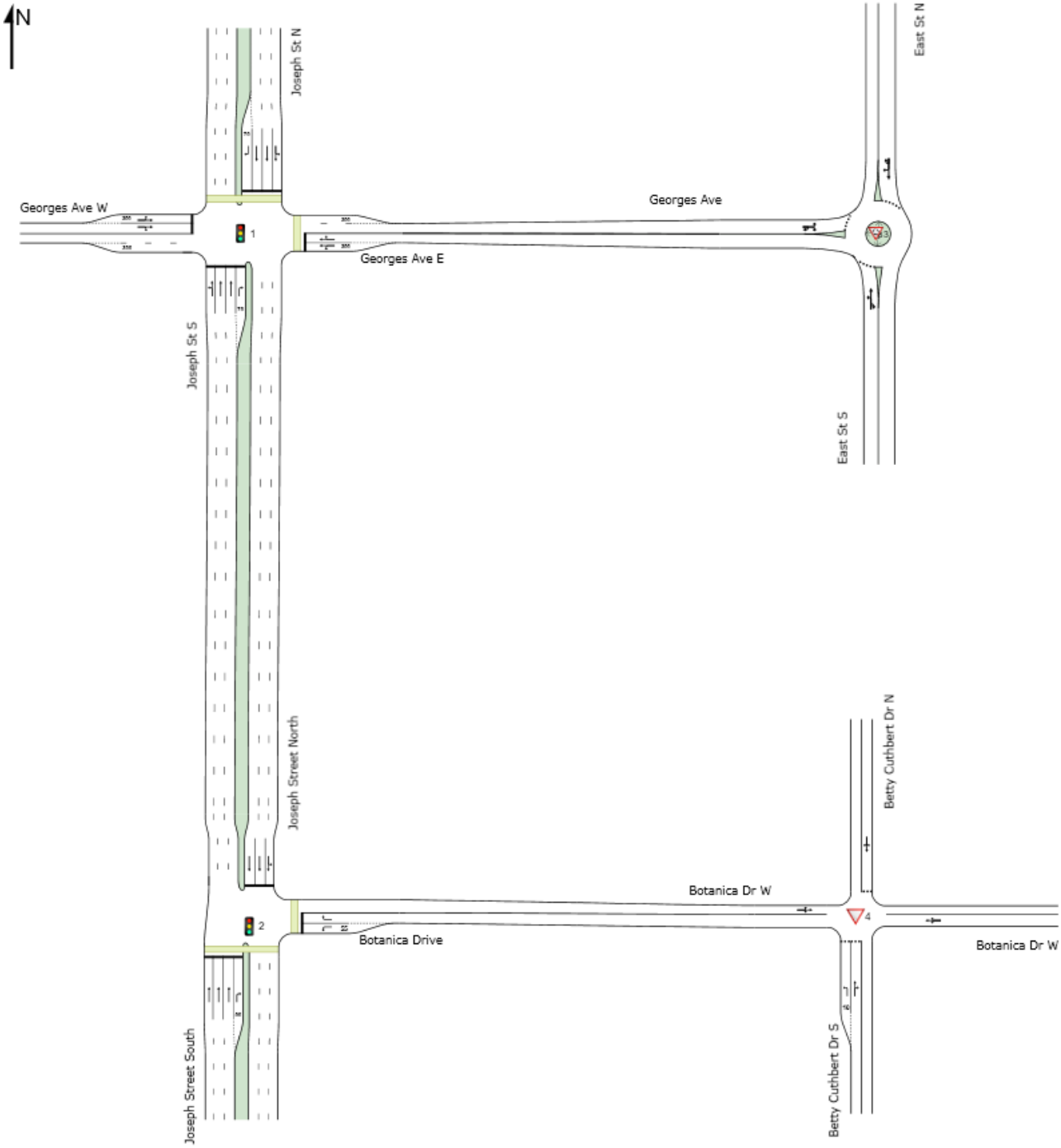
- The AM and PM peak modelled time periods are 08:00-09:00 and 17:00-18:00. These were identified as the network peak hours from intersection surveys.
- The proportion of heavy vehicles used in the SIDRA models has been derived from the 2017 surveys at each intersection.
- The MSL peak operating periods are 09:30-15:30, which lie outside the network peak periods and therefore the vehicular traffic generated by this development has been excluded from the assessment. Similarly, the afternoon peak period for the school is assumed to be 15:30-16:30 and therefore, no PM vehicular volumes have been included in this assessment. However, a sensitivity test has been carried out (Section 5.8.4) analysing the Site access off Joseph Street assuming the school afternoon peak falls into the PM network peak (17:00-18:00).
- The TfNSW guidelines do not contain any information regarding school trip rates, so a rate has been derived from four other significant school developments in Sydney.
- The intersections modelled in SIDRA for Scenarios 1 to 5 are illustrated in Figure 5.1 to Figure 5.5Figure 5.3.

Figure 5.1: Modelled Intersections, Scenario 1



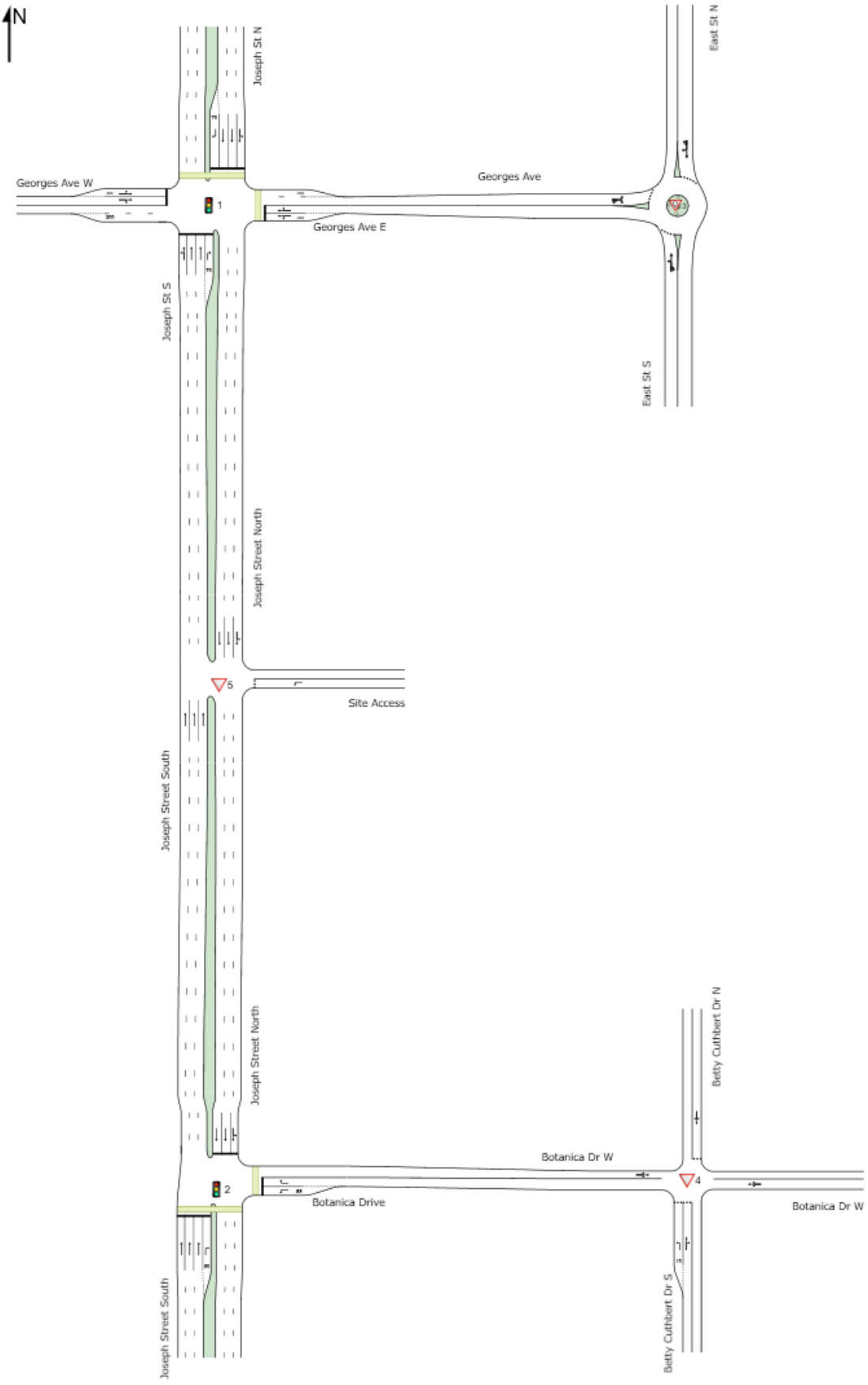
Source: SIDRA 9

Figure 5.2: Modelled Intersections, Scenario 2



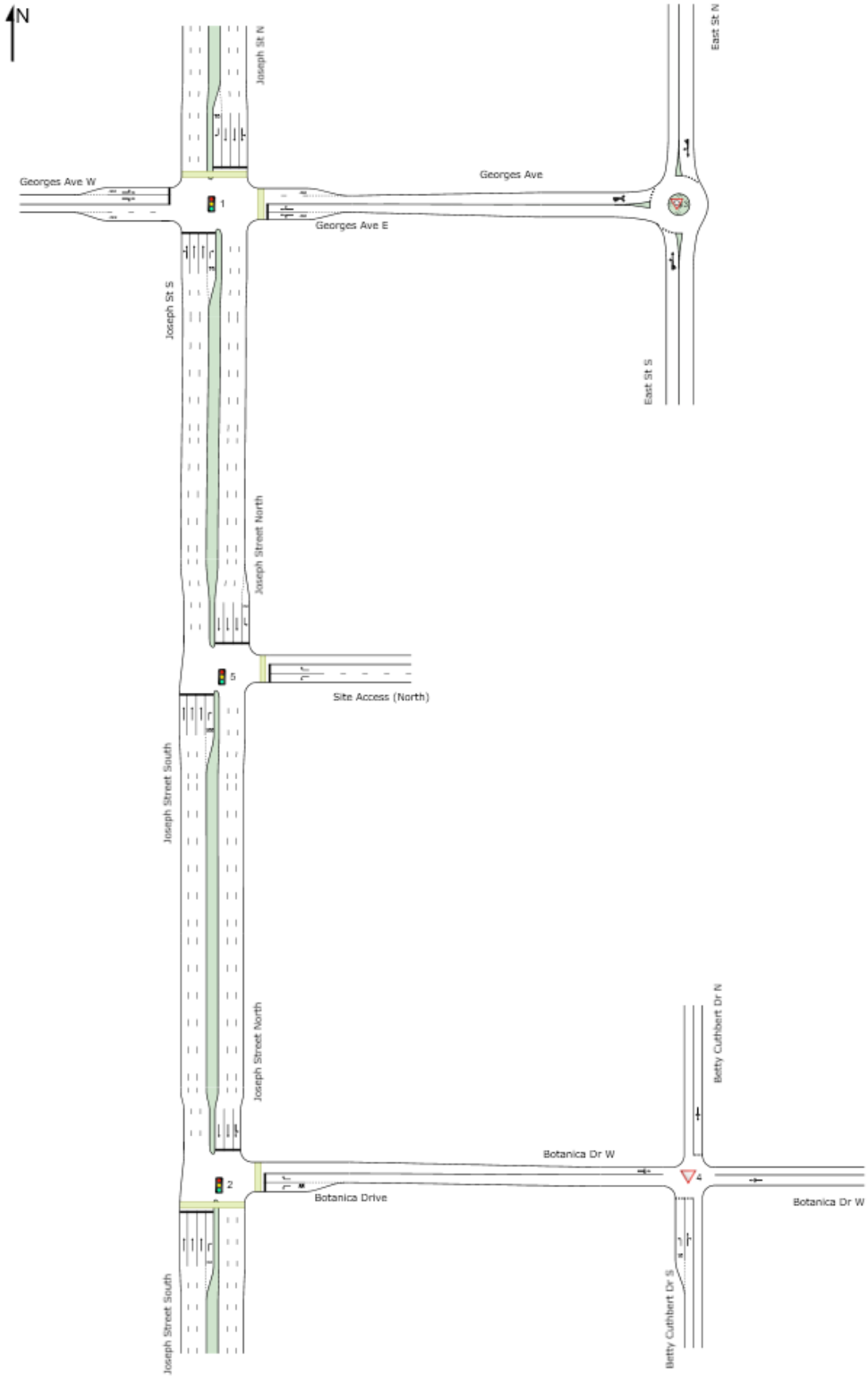
Source: SIDRA 9

Figure 5.3: Modelled Intersections, Scenario 3 (Site access: left-in left-out)



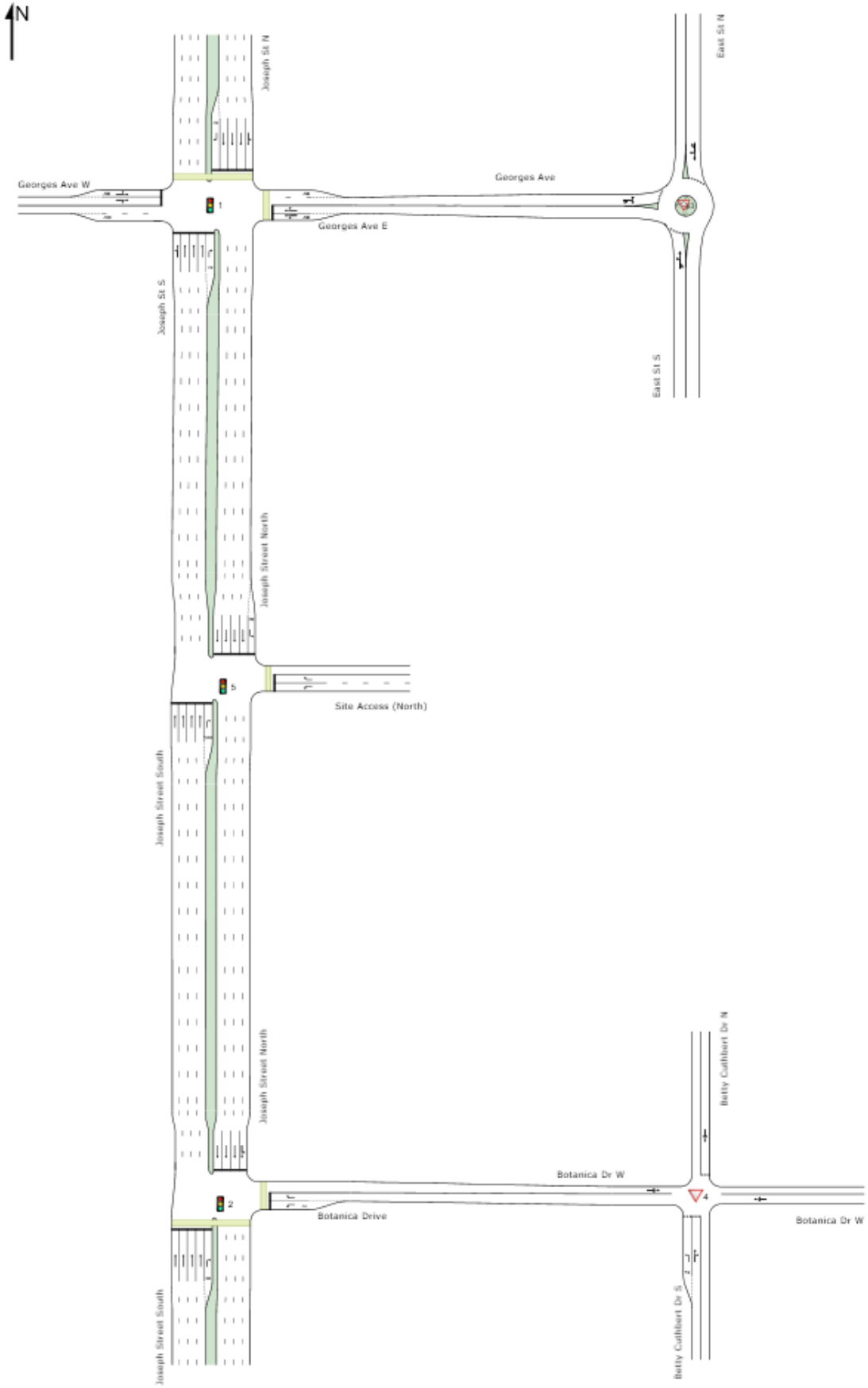
Source: SIDRA 9

Figure 5.4: Modelled Intersections, Scenario 4 (Site access: signalised)



Source: SIDRA 9

Figure 5.5: Modelled Intersections, Scenario 5 (Joseph St upgrade and Site Access Signalised)



Source: SIDRA 9

5.4 Traffic Generation

The trip rates and directional splits assumed for this traffic and transport assessment are provided in Table 5.1 and Table 5.2.

As the TfNSW guidelines do not provide a trip rate for schools, this has been derived by Urbis from four other significant school developments in Sydney:

- Penshurst (upgrade)
- Kyeemagh (upgrade)
- Kellyville North (new)
- Wentworthville (upgrade)

Table 5.1: Proposed Trip Rates

Land Use	Unit	Proposed Peak Hour Trip Rates		Source
		AM	PM	
Dwelling Houses	per dwelling	0.84	0.85	TfNSW Technical Direction, Guide to Traffic Generating Developments, TDT 2013/04a
Schools	per student	0.75	0.00	Based on four other significant school developments in Sydney

Notes:
1. A dwelling house commuter trip is defined as a 1-way trip (in or out).
2. A school trip is defined as a 2-way trip (in and out) in the same peak.

Table 5.2: Proposed Directional Splits

Land Use	AM Proposed In/Out Splits		PM Proposed In/Out Splits	
	AM	PM	AM	PM
Dwelling Houses	20 %	80 %	80 %	20 %
Schools	50 %	50 %	0 %	0 %

5.5 The Proposed Development

The application of the trip rates above to the proposed development, results in the traffic generation shown in Table 5.3.

Table 5.3: Traffic Generated by the Proposed Development

Location	AM			PM		
	Inbound	Outbound	Total	Inbound	Outbound	Total
The Site	422	391	**813**	16	47	**63**

NOTE: Inbound and outbound trips have been rounded up.

5.6 Traffic Distribution

The traffic distribution used in the SIDRA analysis is provided in section 5.6.1 and 5.6.2. Refer to Appendix C for traffic volume maps used in the modelling.

5.6.1 Commuter Distribution

Assumptions for the traffic distribution to and from the proposed development will be based on ABS commuter travel data as shown in Table 5.4 and Table 5.5.

Table 5.4: Outbound Traffic Distribution

Journey to Work Destination	No. Trips	% of Total	Driver Mode Share	Vehicle Trips	Vehicle Distribution Factoring of Total Vehicle Trips %	Travel Direction from Proposed Site
Sydney Inner City	1,881	23	12%	232	6	East
Auburn	1,811	22	53%	963	25	North
Strathfield - Burwood - Ashfield	606	7	59%	360	9	East
Parramatta	445	5	47%	211	5	North
Ryde - Hunters Hill	374	5	64%	238	6	North
Bankstown	354	4	73%	257	7	South
Merrylands - Guildford	294	4	74%	219	6	North
Chatswood - Lane Cove	223	3	33%	74	2	North
Canada Bay	218	3	66%	144	4	East
North Sydney - Mosman	230	3	11%	25	1	East
Other N	698	8	72%	501	13	North
Other E	167	2	52%	87	2	East
Other S	937	11	58%	546	14	South
Other W	12	0	67%	8	0	West

Source: Australian Bureau of Statistics 2016 Census Data (http://www.abs.gov.au/)

Table 5.5: Inbound Traffic Distribution

Journey to Work Destination	No. Trips	% of Total	Driver Mode Share	Vehicle Trips	Vehicle Distribution Factoring of Total Vehicle Trips %	Travel Direction from Proposed Site
Auburn	201	20	53%	107	16	North
Merrylands - Guildford	59	6	88%	52	8	North
Parramatta	58	6	71%	41	6	North
Bankstown	50	5	94%	47	7	South
Strathfield - Burwood - Ashfield	45	4	87%	39	6	East
Other N	276	27	59%	162	24	North
Other E	90	9	40%	36	5	East
Other S	232	23	77%	179	26	South
Other W	14	1	100%	14	2	West

Source: Australian Bureau of Statistics 2016 Census Data (http://www.abs.gov.au/)

For journeys east and west, it is assumed that half the demand will travel north on Joseph Street and half the demand will travel south on Joseph Street. The corresponding traffic distribution is summarised graphically in Figure 5.6.

Figure 5.6: Commuter Traffic Distribution

Source: Google Maps (2018) combined with Mott MacDonald notations (2019)

5.6.2 School Distribution

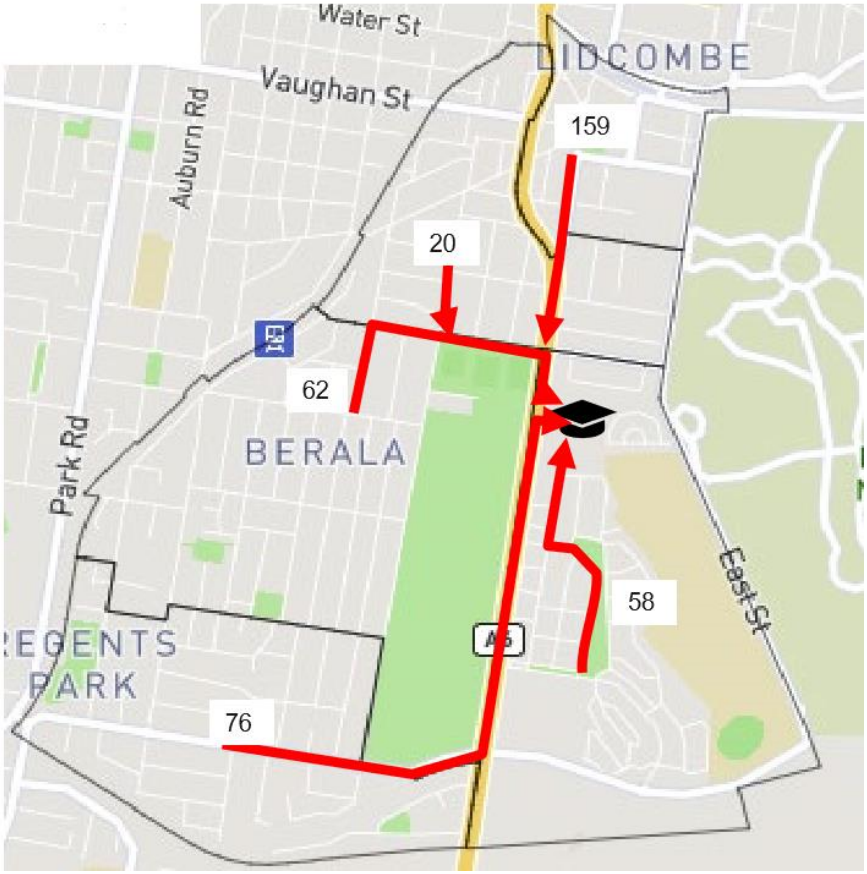
An approximate school catchment area was provided by DE and used by Urbis, alongside PDNSW aged based forecasts, to derive origins and destinations of school trips, as illustrated in Figure 5.7.

Figure 5.7: Assumed School Catchment

Source: Google Maps (2019) combined with Urbis notations (2019)

Based on the trip rates in Table 5.1 and the catchment area in Figure 5.7, the traffic distribution illustrated in Figure 5.8 was derived for the AM peak period.

Figure 5.8: School Traffic Distribution - AM peak period



Source: Google Maps (2019) combined with Urbis notations (2019)

5.7 Peak Period Intersection Performance

Intersection performance for Scenarios 1 to 3 is presented in Table 5.6 for the AM peak (08:00-09:00) and Table 5.7 for the PM peak (17:00-1800).

The results presented for all intersections are 'network' results rather than 'isolated' intersection results. The effect of any queues blocking back from an upstream intersection to one downstream are therefore modelled and accounted for in the results.

For signalised intersections, the average intersection Degree of Saturation (DoS) and Level of Service (LoS) has been reported (as per TfNSW Guidelines[2]). For roundabouts and priority control intersections, the reported DoS and LoS are for the movements with the highest delay.

The SIDRA modelling outputs are provided in Appendix D.

5.7.1 AM Peak Performance

The AM peak modelling results in Table 5.6 indicate the following:

- In **Scenario 1** (existing conditions), the DoS of the Joseph Street / Georges Avenue intersection is 1.00 and the Level of Service is F. This indicates that the intersection operates at capacity based on existing conditions during the morning peak period. All other intersections operate at LoS B or better.
- In **Scenario 2**, the DoS of the Joseph Street / Georges Avenue intersection improves to DOS 0.92 and LoS C due to the proposed minimum interventions. All other intersections operate at LoS B or better.

[2] RTA Guide to Traffic Generating Developments, 2002. Available online at: https://www.rms.nsw.gov.au/business-industry/partners-suppliers/documents/guides-manuals/guide-to-generating-traffic-developments.pdf

- In **Scenario 3.1**, the DoS of the Joseph Street / Georges Avenue intersection deteriorates to 0.96 and LoS is D. All other intersections operate at LoS B or better.
- In **Scenario 3.2**, the DoS of the Joseph Street / Georges Avenue intersection deteriorates to 1.00 and LoS is F. All other intersections operate at LoS C or better.
- In **Scenario 4.0 (Base Case)**, the DoS of the Joseph Street / Georges Avenue is 1.22, the LoS is F.
- In **Scenario 4.1**, the DoS of the Joseph Street / Georges Avenue intersection is 1.05, the LoS is F. The DoS of the signalised intersection of Joseph St / Botanica Dr is 0.97 and the LoS is D. The remaining intersections operate at LoS A.
- In **Scenario 4.2**, the DoS of the Joseph Street / Georges Avenue is 1.06, the LoS is F. The DoS of the signalised intersection of Joseph St / Botanica Dr deteriorates to 1.05 and the LoS is F. The remaining intersections operate at LoS A or B.
- In **Scenario 5.1**, widening Joseph St to four lanes results in an improved DoS of 0.91 at the Joseph Street / Georges Avenue intersection, the LoS is C. The remaining intersections operate at LoS A or B.
- In **Scenario 5.2**, the DoS of the Joseph Street / Georges Avenue is 1.05, the LoS is F. The remaining intersections operate at LoS C or better.

5.7.2 PM Peak Performance

The PM peak modelling results in Table 5.7 indicate the following:

- In **Scenario 1** (existing conditions), the DoS of the Joseph Street / Georges Avenue intersection is 0.91 and the Level of Service is D. This indicates that the intersection operates close to capacity based on existing conditions during the afternoon peak period. All other intersections operate at LoS A.
- In **Scenario 2**, the DoS of the Joseph Street / Georges Avenue intersection is 0.96 and the Level of Service is E. All other intersections operate at LoS A.
- In **Scenario 3.1**, the DoS of the Joseph Street / Georges Avenue intersection deteriorates to 0.98 and the LoS is E. The remaining intersections operate at LoS D or better.
- In **Scenario 3.2**, the DoS of the Joseph Street / Georges Avenue intersection deteriorates to 0.99 and the LoS is E. The remaining intersections operate at LoS B or better.
- In **Scenario 4.0 (Base Case)**, the DoS of the Joseph Street / Georges Avenue is 1.23, the LoS is F.
- In **Scenario 4.1**, the DoS of the Joseph Street / Georges Avenue intersection is 1.06, the LoS is F. The George Av / East St roundabout operates at LOS F, and the remaining intersections operate at LoS C or better.
- In **Scenario 4.2**, the DoS of the Joseph Street / Georges Avenue is 1.05, the LoS is F. The George Av / East St roundabout operates at LOS F, and the remaining intersections operate at LoS A.
- In **Scenario 5.1**, widening Joseph St to four lanes results in an improved DoS of 0.99 at the Joseph Street / Georges Avenue intersection, the LoS is F. The remaining intersections operate at LoS A.
- In **Scenario 5.2**, the DoS of the Joseph Street / Georges Avenue is 0.98, the LoS is F. The remaining intersections operate at LoS A.

Table 5.6: Intersection Performance, AM Peak

Intersection	Governance	Scenario 1					Scenario 2					Scenario 3.1					Scenario 3.2				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	5564	1.00	82	F	774 South	6136	0.92	36.9	C	400 South	6406	0.96	51.6	D	555 South	6647	1.00	78.1	F	555 South
2-Joseph St / Botanica Dr	Signalised	4672	0.75	15.6	B	309 South	5180	0.80	24.7	B	374 South	5382	0.82	24.8	B	387 South	5775	0.96	34.7	C	495 South
3-Georges Ave / East St	Roundabout	1412	0.67	6.7	A	42 West	1561	0.76	7.7	A	61 West	1629	0.80	8.4	A	73 West	1787 N1	0.81	8.6	A	76 West
4-Botanica Dr / Betty Cuthb Dr	Priority	271	0.07	1.8	A	1 South	376	0.08	2.4	A	1 North	345	0.09	2.1	A	1 South	537	0.11	3.2	A	4 East
5-Joseph St / Site Access	Signalised	Intersection not modelled in this Scenario					Intersection not modelled in this Scenario					5370	0.71	0.3	A	22	6004	0.69	1.2	A	313

Intersection	Governance	Scenario 4.0					Scenario 4.1					Scenario 4.2				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	6229 N1	1.22	296.4	F	1311 North	6276 N1	1.05	99.6	F	674 North	6537 N1	1.06	120.6	F	875 North
2-Joseph St / Botanica Dr	Signalised	5855 N1	1.20	284.6	F	2396 South	6077 N1	0.97	44.9	D	655 South	6229 N1	1.05	103.1	F	1350 South
3-Georges Ave / East St	Roundabout	1634 N1	0.72	7.7	A	52 West	1752 N1	0.84	9.3	A	86 West	1982 N1	0.92	12.3	A	140 West
4-Botanica Dr / Betty Cuthb Dr	Priority	362 N1	0.19	2	A	1 South	369 N1	0.11	2	A	1 South	486 N1	0.21	2.7	A	3 East
5-Joseph St / Site Access	Signalised	Intersection not modelled in this Scenario					4967 N1	0.58	3.5	A	93 South	5339 N1	0.69	19.5	B	282 North

Intersection	Governance	Scenario 5.1					Scenario 5.2				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	7436	0.91	42.4	C	346 North	7242 N1	1.05	101.9	F	591 North
2-Joseph St / Botanica Dr	Signalised	6228	0.73	25.2	B	307 South	6286 N1	0.83	24.8	B	369 South
3-Georges Ave / East St	Roundabout	1888	0.98	20.6	B	253 West	2083 N1	1.03	41.5	C	474 West
4-Botanica Dr / Betty Cuthb Dr	Priority	373	0.11	2	A	1 South	486 N1	0.19	2.7	A	3 East
5-Joseph St / Site Access	Signalised	6222	0.59	1.8	A	74 North	6387 N1	0.66	17.7	B	248 South

Table 5.7: Intersection Performance, PM Peak

Intersection	Governance	Scenario 1					Scenario 2					Scenario 3.1					Scenario 3.2				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	5469	0.91	49.7	D	495 North	6033	0.96	62	E	633 North	6275	0.98	66.3	E	657 North	6275	0.99	66.7	E	662 North
2-Joseph St / Botanica Dr	Signalised	4577	0.78	8.3	A	192 North	5074	0.86	10.3	A	275 North	5103 N1	0.99	49.3	D	506 North	4754 N1	0.90	20.9	B	346 North
3-Georges Ave / East St	Roundabout	1510	0.64	6.4	A	43 North	1668	0.72	7	A	56 North	1740	0.75	7.2	A	65 North	1736 N1	0.98	9.5	A	103 North
4-Botanica Dr / Betty Cuthb Dr	Priority	231	0.07	1.9	A	1 West	332	0.09	2.6	A	1 North	281 N1	0.08	2.1	A	1 West	269 N1	0.07	2.1	A	1 West
5-Joseph St / Site Access	Signalised	Intersection not modelled in this Scenario					Intersection not modelled in this Scenario					5259	0.58	0.3	A	160	4802 N1	0.58	0.3	A	3

Intersection	Governance	Scenario 4.0					Scenario 4.1					Scenario 4.2				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	7175 N1	1.23	298.7	F	1960 North	7061 N1	1.06	127.3	F	1186 North	7040 N1	1.05	111.9	F	1149 North
2-Joseph St / Botanica Dr	Signalised	5302 N1	0.90	14.3	A	306 North	4744 N1	0.76	11.7	A	179 North	5124 N1	0.85	12.7	A	265 North
3-Georges Ave / East St	Roundabout	1985 N1	1.09	123.9	F	1642 North	1995 N1	1.47	552	F	4341 North	1993 N1	1.39	461.6	F	3895 North
4-Botanica Dr / Betty Cuthb Dr	Priority	293 N1	0.08	2	A	1 West	276 N1	0.07	2.1	A	1 West	280 N1	0.07	2.1	A	1 West
5-Joseph St / Site Access	Signalised	Intersection not modelled in this Scenario					4830 N1	0.95	29.9	C	429 South	5211 N1	0.73	5	A	133 South

Intersection	Governance	Scenario 5.1					Scenario 5.2				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	7311	0.99	79.1	F	648 North	7311	0.98	77.1	F	627 North
2-Joseph St / Botanica Dr	Signalised	6101	0.86	8.2	A	260 North	6101	0.86	7.9	A	254 North
3-Georges Ave / East St	Roundabout	2018	0.91	9.3	A	128 North	2018	0.93	9.4	A	128 North
4-Botanica Dr / Betty Cuthb Dr	Priority	319	0.09	2	A	1 West	319	0.09	2	A	1 West
5-Joseph St / Site Access	Signalised	6094	0.69	4.2	A	173 North	6094	0.69	4.3	A	178 North

5.8 Proposed Mitigation Measures

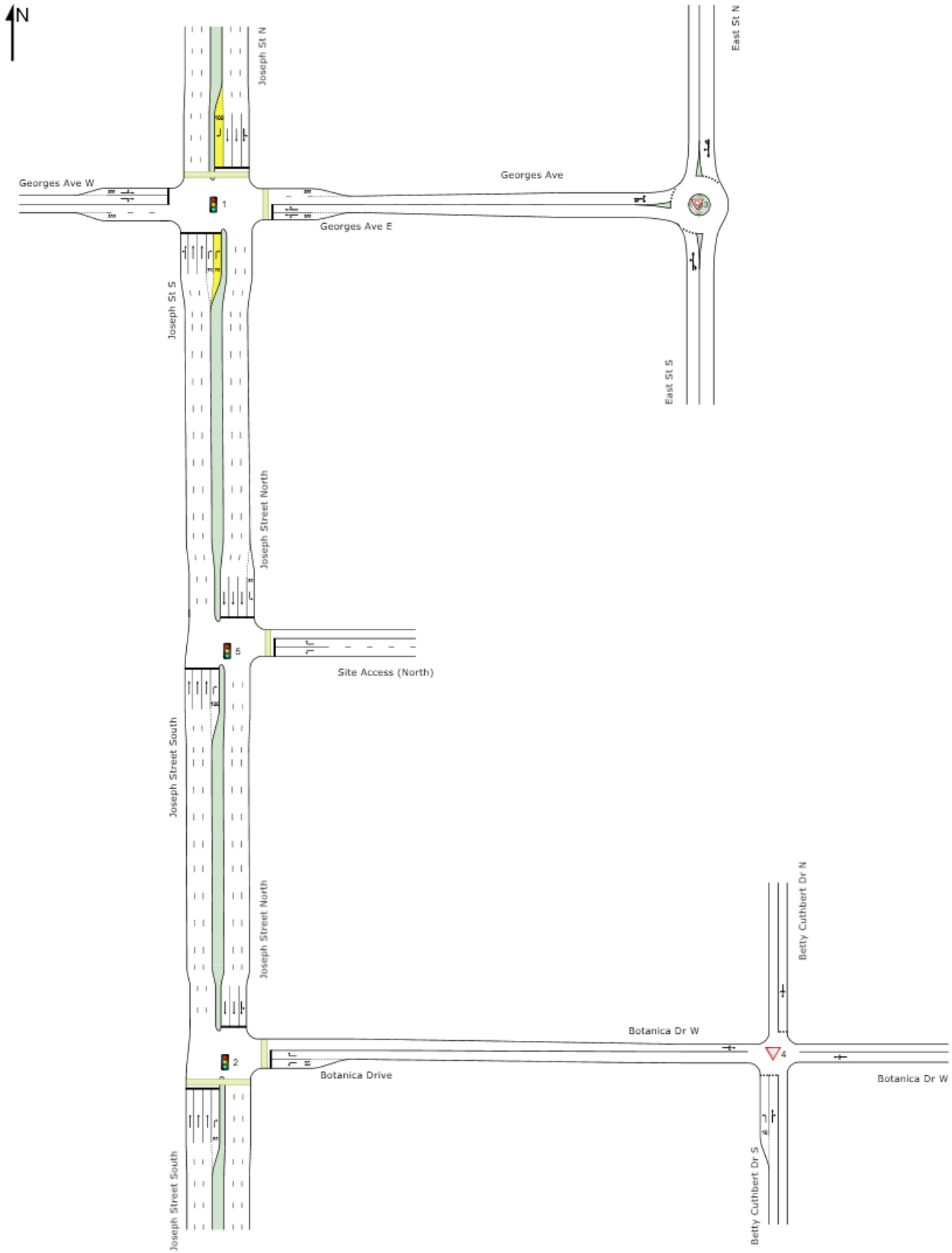
The modelling results indicate that the intersection of Joseph Street with Georges Avenue performs slightly over capacity in Scenario 4.2 during the morning and evening peak periods and in Scenario 5.2 during the morning peak.

Therefore, physical mitigation measures are proposed at the intersection of Joseph Street with Georges Avenue to increase capacity and reduce queue lengths. The measures include:

- the provision of an additional short right-turn lane (same storage length as the existing right-turn lane) on the south approach (Joseph Street South to Georges Avenue East).
- lengthening the short right-turn lane on the north approach (Joseph Street North to Georges Avenue West) to 100m.

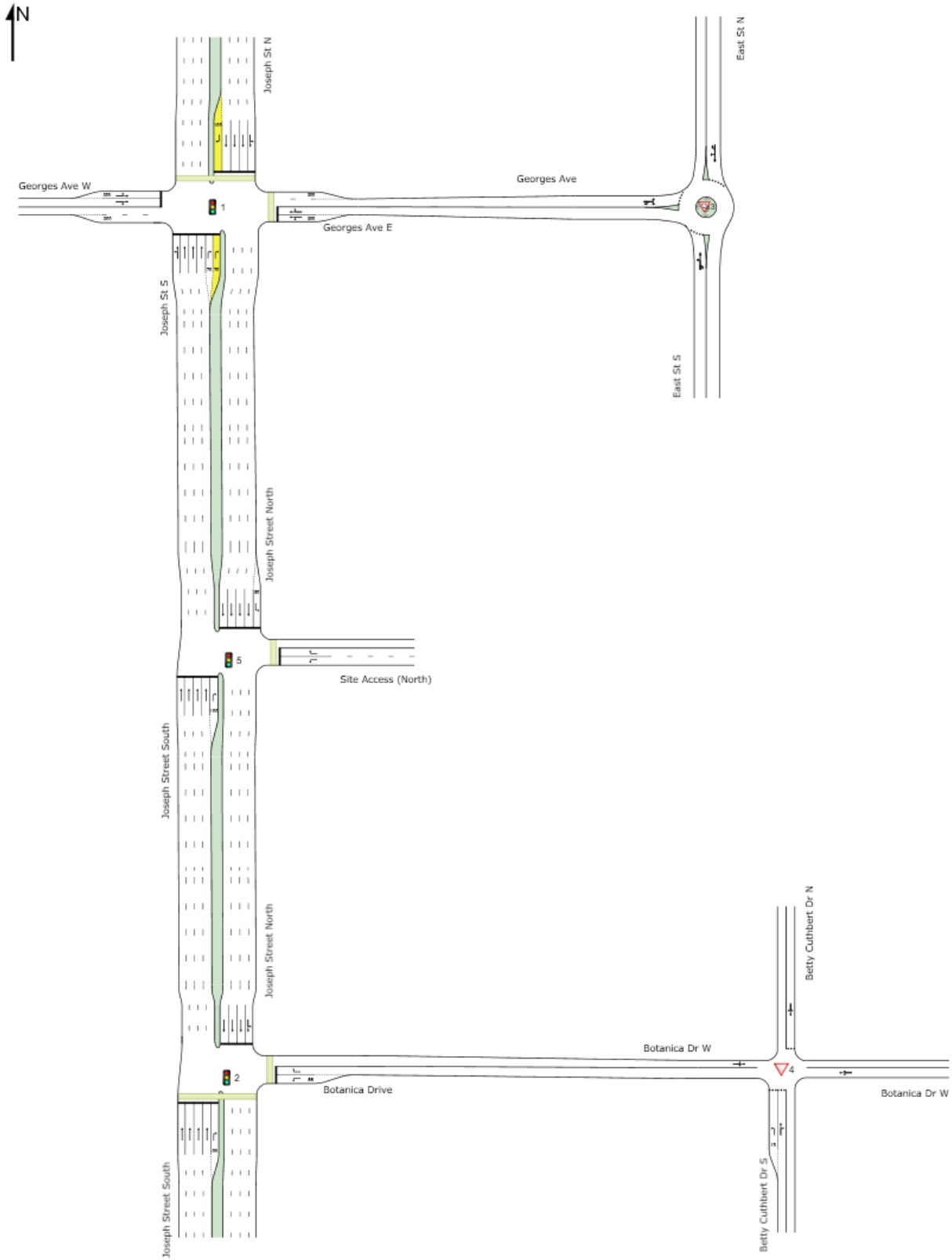
The layouts with the proposed measures (highlighted in yellow), as modelled in SIDRA, are illustrated in Figure 5.9 (Scenario 4.3) and Figure 5.10 (Scenario 5.3).

Figure 5.9: Modelled Intersections, Scenario 4.3 with Mitigation Measures



Source: SIDRA 9

Figure 5.10: Modelled Intersections, Scenario 5.3 with Mitigation Measures



Source: SIDRA 9

5.8.1 Peak Period Intersection Performance with Mitigation Measures

Intersection performance based on the proposed mitigation measures under Scenario 4.3 and 5.3 is presented in Table 5.8 for the AM peak (08:00-09:00) and Table 5.9 for the PM peak (17:00-18:00).

The SIDRA modelling outputs are provided in Appendix D.

5.8.2 AM Peak Performance with Mitigation Measures

The AM peak modelling results in Table 5.8 indicate the following:

- In **Scenario 4.3**, the DoS of the Joseph Street / Georges Avenue is 0.96, the LoS is E, and the remaining intersections operate at LoS C or better.
- In **Scenario 5.3**, the DoS of the Joseph Street / Georges Avenue is 0.92, the LoS is E, and the remaining intersections operate at LoS C apart from the roundabout at George Av with East St.

5.8.3 PM Peak Performance with Mitigation Measures

The PM peak modelling results in Table 5.9 indicate the following:

- In **Scenario 4.3**, the DoS of the Joseph Street / Georges Avenue is 1.02, the LoS is F, and the remaining intersections operate at LoS A apart from the roundabout at George Av with East St.
- In **Scenario 5.3**, the DoS of the Joseph Street / Georges Avenue is 0.96, the LoS is E, and the remaining intersections operate at LoS A.

Table 5.8: Intersection Performance with Mitigation Measures, AM Peak

Intersection	Governance	Scenario 4.0 (Base Case)					Scenario 4.2 (without Mitigation Measures)					Scenario 4.3 (with Mitigation Measures)				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	6229 N1	1.22	296.4	F	1311 North	6537 N1	1.06	120.6	F	875 North	6548 N1	0.96	57.7	E	554 North
2-Joseph St / Botanica Dr	Signalised	5855 N1	1.20	284.6	F	2396 South	6229 N1	1.05	103.1	F	1350 South	6380	0.96	40.8	C	803 South
3-Georges Ave / East St	Roundabout	1634 N1	0.72	7.7	A	52 West	1982 N1	0.92	12.3	A	140 West	2030 N1	0.97	18.1	B	228 West
4-Botanica Dr / Betty Cuthb Dr	Priority	362 N1	0.19	2	A	1 South	486 N1	0.21	2.7	A	3 East	489	0.21	2.7	A	3 East
5-Joseph St / Site Access	Signalised	Intersection not modelled in this Scenario					5339 N1	0.69	19.5	B	282 North	5614 N1	0.71	15.5	B	245 South

Intersection	Governance	Scenario 5.2 (without Mitigation Measures)					Scenario 5.3 (with Mitigation Measures)				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	7242 N1	1.05	101.9	F	591 North	7337 N1	0.92	59.8	E	451 South
2-Joseph St / Botanica Dr	Signalised	6286 N1	0.83	24.8	B	369 South	6380	0.84	24.1	B	391 South
3-Georges Ave / East St	Roundabout	2083 N1	1.03	41.5	C	474 West	2142 N1	1.09	87.3	F	900 West
4-Botanica Dr / Betty Cuthb Dr	Priority	486 N1	0.19	2.7	A	3 East	489	0.21	2.7	A	3 East
5-Joseph St / Site Access	Signalised	6387 N1	0.66	17.7	B	248 South	6185 N1	0.75	13.8	A	321 South

Table 5.9: Intersection Performance with Mitigation Measures, PM Peak

Intersection	Governance	Scenario 4.0 (Base Case)					Scenario 4.2 (without Mitigation Measures)					Scenario 4.3 (with Mitigation Measures)				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	7175 N1	1.23	298.7	F	1960 North	7040 N1	1.05	111.9	F	1149 North	7063 N1	1.02	95.5	F	1017 North
2-Joseph St / Botanica Dr	Signalised	5302 N1	0.90	14.3	A	306 North	5124 N1	0.85	12.7	A	265 North	4881 N1	0.76	11.3	A	214 North
3-Georges Ave / East St	Roundabout	1985 N1	1.09	123.9	F	1642 North	1993 N1	1.39	461.6	F	3895 North	2009 N1	1.47	554.3	F	4344 North
4-Botanica Dr / Betty Cuthb Dr	Priority	293 N1	0.08	2	A	1 West	280 N1	0.07	2.1	A	1 West	281 N1	0.07	2.1	A	1 West
5-Joseph St / Site Access	Signalised	Intersection not modelled in this Scenario					5211 N1	0.73	5	A	133 South	5011 N1	0.75	4	A	128 South

Intersection	Governance	Scenario 5.2 (without Mitigation Measures)					Scenario 5.3 (with Mitigation Measures)				
		Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)	Traffic Volume	DoS	Delay (s)	LoS	95% Q Length (m)
1-Joseph St / Georges Ave	Signalised	7311	0.98	77.1	F	627 North	7311	0.96	66	E	561 North
2-Joseph St / Botanica Dr	Signalised	6101	0.86	7.9	A	254 North	6101	0.87	9	A	285 North
3-Georges Ave / East St	Roundabout	2018	0.93	9.4	A	128 North	2018	0.87	9.2	A	128 North
4-Botanica Dr / Betty Cuthb Dr	Priority	319	0.09	2	A	1 West	319	0.09	2	A	1 West
5-Joseph St / Site Access	Signalised	6094	0.69	4.3	A	178 North	6094	0.66	3.5	A	147 North

5.8.4 PM Peak Performance with Mitigation Measures (PM School Peak)

The intersection providing the site access (Site 5 - Joseph St / Site Access) has also been tested under a worst-case scenario assuming the unlikely event that school peak operation in the afternoon (15:30-16:30) occurs at the same time as the network peak (17:00-1800).

The DoS (Scenario 4.4) of Site 5 is 1.17 and the LoS is F indicating that the intersection would operate over capacity. This is because of insufficient capacity along Joseph Street.

Scenario 5.4 shows that Site 5 would operate well in case of upgrading Joseph Street to eight lanes. The DoS would be 0.96 and the LoS D in this scenario.

6 Summary and Conclusions

6.1 Summary

This Traffic Impact Assessment has been prepared in close consultation with TfNSW to assist PDNSW in finalising a master plan for the government owned site at 80 Betty Cuthbert Drive (the Site). The key features of this study are as follows:

- The Site is in Lidcombe approximately 15 km west of Sydney CBD within the Cumberland local government area. Currently the Site is occupied by Multiple Sclerosis Limited (MSL) whose facility occupies approximately 12 percent of the Site and the remainder is undeveloped.
- The Site is bounded on its western side by a major TfNSW classified State Road (Joseph Street). Public and active transport options are limited at the Site with the closest stations, Berala and Lidcombe, over 1 km away. Three bus routes operate in the vicinity of the Site but accessibility to bus stops is limited.
- The proposed master plan facilitates the development of a future educational establishment and a privately built and owned health facility, with the remainder of the land for residential use – 69 dwellings are assumed in the assessment. A 1,000-student primary school has been assumed for the purposes of this assessment, to accommodate a maximum capacity scenario for the site. The future education establishment could be a different type of school.
- The estimated traffic generation for the development is 813 trips in the AM peak (08:00-09:00) and 63 trips in the PM peak (17:00-18:00).
- The concept layout for the master plan includes the introduction of an interim left-in left-out connection to Joseph Street by 2023. This connection is to be converted to a signalised intersection at a later stage. It also includes modifications to the internal road network to provide access to the various uses on the Site.

A network model using SIDRA was developed for the intersections surrounding the proposed Site. The modelling demonstrates that:

- **Existing conditions (2017):** The worst performing intersection assessed is Joseph Street / Georges Avenue with no or very little capacity. The Degree of Saturation (DoS) is 1.00 and 0.91 in the AM and PM peak, respectively. The Level of Service (LoS) is F and D.
- **Year 2023:** The capacity of the intersection of Joseph Street / Georges Avenue is exceeded. Therefore, it is recommended to ban on-street parking on George Avenue (minimum interventions) to provide additional capacity on the approaches. This measure would result in some spare intersection capacity.
- **Year 2026:** The intersection still has spare capacity assuming the school has not been developed yet. The intersection would operate at-capacity if the school operation commences. To prevent further deterioration in traffic performance in this case, it is recommended to introduce mitigation measures that can accommodate future traffic growth.
- **Year 2036:** The intersection (with the mitigation measures) operates slightly over-capacity (Degree of Saturation is 102%) in the PM peak and with some spare capacity in the AM peak.
  The surrounding traffic network becomes saturated due to the increase in background traffic. Volumes along Joseph Street are significant and might make it necessary to widen Joseph Street to eight lanes. This assessment has been included in the report.

As mentioned, TfNSW were consulted on several occasions throughout the development of this assessment. Several meetings were held to discuss the project as well as a formal review of the Traffic and Transport Report and SIDRA modelling files. Reference should be made to Appendix E for TfNSW letter of advice.

6.2 Conclusions

Although the proposed master plan development at the Site results in an increase of traffic volumes and a reduced intersection performance, the SIDRA modelling indicates that the critical intersection of Joseph Street / Georges Avenue is already at capacity under existing conditions. An upgrade of this intersection and other measures are therefore recommended to improve the operational performance.

In addition, the requirement for converting the site access off Joseph Street to a signalised intersection will not be triggered until such time that the future education establishment becomes operational, due to most trips generated from the site originating from this source. As such, it is anticipated that an interim intersection treatment via a left-in left-out arrangement would be appropriate in the initial phase of the development to service the residential component of the site.

6.3 Recommendations

Physical interventions and intersection widening of the Joseph Street / George Avenue intersection are recommended to increase capacity and reduce the queue length forecast. These proposed interventions include:

- Provision of an additional short right-turn lane (same storage length as the existing right-turn lane) on the south approach (Joseph Street South to Georges Avenue East).
- Lengthening the short right-turn lane on the north approach (Joseph Street North to Georges Avenue West) to 100m.
- Prohibit on-street parking along Georges Avenue between Nottinghill Road and Wayland Avenue during peak hours

To minimise the impact of the development on the road network, it would also be recommended to encourage a greater mode share of public and active transport. Where new residents or students will be brought to the area, it is important to make these modes of transport immediately attractive to instil a culture of its use before people become accustomed to using private vehicles. The proposed provision of a pedestrian bridge across Joseph Street will improve pedestrian connections to bus services on Joseph Street by shortening travel distances and improving safety.

Other opportunities for the promotion of active and public transport include:

- Improved amenities and infrastructure at bus stops to make the mode more attractive (e.g. covered seating areas)
- Provision of Disability Discrimination Act (DDA) compliant footpaths to access the Site and nearby public transport facilities
- Dedicated cycle lanes or shared cycling paths linking to existing infrastructure (e.g. East Street) around the Site in addition to east-west linkages to Berala Station
- Delivering high-standard cycle parking and end-of-trip facilities compliant with AS2890.3 - Bicycle Parking Facilities at the educational and health facility
- Promoting use of public transport with new users of the area through use of campaigns
- Provision of Kiss-and-ride facilities for the proposed educational and health facility

Appendices

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A. Crash Data Analysis (Oct 2013-Sep 2018)

Detailed Crash Report

NOTES: 9172 - Joseph St between Georges Ave and Weerona Rd Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors	S	F
Sydney Region																											
Cumberland LGA																											
Lidcombe																											
Amy St																											
1061444	P	07/03/2015	Sat	19:10	15 m	W	JOSEPH DR	2WY	CRV	Fine	Dry	50	3	CAR	F45	E in AMY ST	50	Incorrect side	MC	0	0	1	1	0			
E57225412								RUM	20	Head on				CAR	F58	W in AMY ST	45	Proceeding in lane									
														CAR	M59	W in AMY ST	40	Proceeding in lane									
1054923	S	01/11/2014	Sat	14:00		at	JOSEPH ST	XJN	STR	Fine	Dry	50	3	CAR	M37	E in AMY ST	Unk	Proceeding in lane	NC	0	0	0	0	0			
E58975586								RUM	30	Rear end				CAR	F22	E in AMY ST	Unk	Proceeding in lane									
														CAR	F40	E in AMY ST	Unk	Proceeding in lane									
Botanica Dr																											
1083755	S	28/10/2015	Wed	08:10	12 m	E	JOSEPH ST	2WY	STR	Fine	Dry	50	2	CAR	M19	W in BOTANICA DR	Unk	Proceeding in lane	OC	0	0	0	2	0			
E59101724								RUM	30	Rear end				4WD	F46	W in BOTANICA DR	0	Stationary									
Joseph St																											
1071945	P	14/05/2015	Thu	10:00		at	AMY ST	XJN	STR	Fine	Dry	80	1	CAR	F50	E in AMY ST	Unk	Other reversing	MC	0	0	1	0	0			
E198538898								RUM	90	Fell in/from vehicle																	
1105584	P	11/05/2016	Wed	12:40		at	AMY ST	XJN	STR	Fine	Dry	80	2	CAR	M55	E in AMY ST	10	Turning left	MC	0	0	1	1	0			
E63025487								RUM	16	Left near				CAR	M83	N in JOSEPH ST	70	Proceeding in lane									
1130302	P	13/11/2016	Sun	00:10		at	AMY ST	XJN	STR	Fine	Dry	80	2	CAR	M74	S in JOSEPH ST	20	Turning right	OC	0	0	0	1	0			
E63127566								RUM	21	Right through				CAR	M43	N in JOSEPH ST	40	Proceeding in lane									
1123184	S	20/12/2016	Tue	18:30		at	AMY ST	XJN	STR	Raining	Wet	80	2	4WD	M52	E in AMY ST	Unk	Proceeding in lane	OC	0	0	0	1	0			
E63460164								RUM	30	Rear end				CAR	F34	E in AMY ST	0	Stationary									
1167889	P	26/03/2018	Mon	13:00		at	AMY ST	XJN	STR	Fine	Dry	80	2	TRK	M51	N in JOSEPH ST	Unk	Proceeding in lane	MC	0	0	1	0	0			
E69908388								RUM	30	Rear end				CAR	M36	N in JOSEPH ST	0	Stationary									
1116314	P	05/10/2016	Wed	14:45	20 m	N	AMY ST	DIV	STR	Fine	Dry	80	2	LOR	M35	S in JOSEPH ST	40	Veering left	OC	0	0	0	1	0			
E62533057								RUM	35	Lane change left				CAR	F53	S in JOSEPH ST	40	Proceeding in lane									
1041899	P	17/08/2014	Sun	23:40	30 m	N	AMY ST	DIV	STR	Raining	Wet	80	1	CAR	M31	N in JOSEPH ST	80	Proceeding in lane	NC	0	0	0	0	0			
E55802931								RUM	71	Off rd left => obj				Other fixed object													
1174510	S	22/06/2018	Fri	11:40	50 m	N	AMY ST	DIV	STR	Fine	Dry	80	3	TRK	M51	S in JOSEPH ST	Unk	Proceeding in lane	NC	0	0	0	0	0			
E71037067								RUM	71	Off rd left => obj				TRK	F38	S in JOSEPH ST	0	Parked									
														CAR		S in JOSEPH ST	Unk	Proceeding in lane									
1076497	S	05/08/2015	Wed	07:50	500 m	N	AMY ST	DIV	STR	Fine	Dry	80	2	CAR	M23	N in JOSEPH ST	Unk	Proceeding in lane	NC	0	0	0	0	0			
E59234171								RUM	30	Rear end				TRK	M63	N in JOSEPH ST	0	Stationary									

Detailed Crash Report

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type		Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors
																										S F
1040393	P	17/03/2014	Mon	07:15	10 m	S	AMY ST	XJN		STR	Fine	Dry	80	3	CAR	F28	S in JOSEPH ST	50	Proceeding in lane	NC	0	0	0	0	0	
E54442838								RUM	30	Rear end					CAR	M35	S in JOSEPH ST	0	Stationary							
															TRK	M19	S in JOSEPH ST	0	Parked							
1013572	P	22/02/2014	Sat	10:20		at	BOTANICA DR	TJN		STR	Fine	Dry	80	3	BUS	M49	S in JOSEPH ST	25	Turning left	OC	0	0	0	2	0	
E54863039								RUM	37	Left turn sideswipe					CAR	M35	S in JOSEPH ST	80	Proceeding in lane							
															CAR	F26	E in BOTANICA DR	0	Waiting turn left							
1057128	P	28/12/2014	Sun	11:00		at	BOTANICA DR	TJN		STR	Fine	Dry	80	2	CAR	M30	W in BOTANICA DR	30	Turning right	NC	0	0	0	0	0	
E243645794								RUM	13	Right near					CAR	M38	S in JOSEPH ST	70	Proceeding in lane							
1103255	S	01/06/2016	Wed	22:30		at	BOTANICA DR	TJN		STR	Overcast	Wet	80	2	CAR	F41	N in JOSEPH ST	Unk	Turning right	NC	0	0	0	0	0	
E64014381								RUM	21	Right through					CAR	M U	S in JOSEPH ST	Unk	Proceeding in lane							
1121205	P	28/09/2016	Wed	00:45		at	BOTANICA DR	TJN		STR	Fine	Dry	80	2	CAR	M19	S in JOSEPH ST	30	Veering right	SC	0	1	0	0	0	
E62198036								RUM	34	Lane change right					CAR	F19	S in JOSEPH ST	30	Proceeding in lane							
1123951	P	28/09/2016	Wed	00:45		at	BOTANICA DR	TJN		STR	Fine	Dry	80	1	CAR	F23	S in JOSEPH ST	60	Proceeding in lane	MC	0	0	1	0	0	
E62198036								RUM	73	Off rd rght => obj					Signal pole											
1139517	S	03/06/2017	Sat	11:00		at	BOTANICA DR	TJN		STR	Fine	Dry	80	2	SEM	M35	N in JOSEPH ST	Unk	Other forward	OC	0	0	0	1	0	
E64632826								RUM	39	Other same direction					4WD	F U	N in JOSEPH ST	0	Stationary							
1072593	P	19/06/2015	Fri	18:10	10 m	S	BOTANICA DR	TJN		STR	Fine	Dry	80	3	CAR	M28	S in JOSEPH ST	50	Proceeding in lane	OC	0	0	0	1	0	
E57818125								RUM	62	Accident					4WD	M51	S in JOSEPH ST	0	Broken down							
															OMV	M U	S in JOSEPH ST	0	Stationary							
1109468	S	28/07/2016	Thu	15:20	150 m	S	BOTANICA DR	DIV		STR	Fine	Dry	80	2	WAG	M67	N in JOSEPH ST	Unk	Proceeding in lane	OC	0	0	0	1	0	
E945658790								RUM	30	Rear end					WAG	F35	N in JOSEPH ST	0	Stationary							
1056235	S	27/01/2015	Tue	18:20	350 m	S	BOTANICA DR	DIV		STR	Raining	Wet	80	2	CAR	M54	N in JOSEPH ST	Unk	Proceeding in lane	NC	0	0	0	0	0	
E57335058								RUM	30	Rear end					4WD	M46	N in JOSEPH ST	Unk	Proceeding in lane							
1012591	P	01/02/2014	Sat	11:25		at	GEORGES AVE	XJN		STR	Fine	Dry	50	5	CAR	M52	W in GEORGES AVE	40	Proceeding in lane	OC	0	0	0	2	0	S
E54297429								RUM	10	Cross traffic					WAG	F40	N in JOSEPH ST	60	Proceeding in lane							
															TRK	M52	S in GEORGES AVE	0	Stationary							
															CAR	M22	S in JOSEPH ST	0	Stationary							
															WAG	F50	S in GEORGES AVE	0	Stationary							
1031510	P	29/04/2014	Tue	13:45		at	GEORGES AVE	XJN		STR	Fine	Dry	50	3	CAR	M22	S in JOSEPH ST	70	Proceeding in lane	MC	0	0	1	0	0	S
E55458008								RUM	10	Cross traffic					CAR	F28	E in GEORGES AVE	20	Proceeding in lane							
															TRK	M55	W in GEORGES AVE	0	Stationary							
1027803	P	08/05/2014	Thu	17:40		at	GEORGES AVE	XJN		STR	Fine	Dry	70	2	CAR	F21	N in JOSEPH ST	50	Proceeding in lane	NC	0	0	0	0	0	
E54462732								RUM	30	Rear end					SEM	M33	N in JOSEPH ST	15	Proceeding in lane							
1027390	P	06/06/2014	Fri	18:02		at	GEORGES AVE	XJN		STR	Fine	Dry	50	2	TRK	M67	N in JOSEPH ST	65	Proceeding in lane	NC	0	0	0	0	0	S
E55784965								RUM	32	Right rear					CAR	F35	N in JOSEPH ST	0	Wait turn right							

Detailed Crash Report

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors
																									S F
1033212	P	01/07/2014	Tue	17:55		at	GEORGES AVE	XJN	STR	Fine	Dry	50	2	CAR	M24	W in GEORGES AVE	25	Turning right	MC	0	0	1	0	0	
E57028487								RUM	21	Right through				CAR	M60	E in GEORGES AVE	40	Proceeding in lane							
1038717	P	14/08/2014	Thu	16:22		at	GEORGES AVE	XJN	STR	Fine	Dry	50	2	CAR	F39	W in GEORGES AVE	20	Turning right	NC	0	0	0	0	0	
E57317882								RUM	21	Right through				CAR	F37	E in GEORGES AVE	30	Proceeding in lane							
1056741	P	03/12/2014	Wed	11:30		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	LOR	M42	S in JOSEPH ST	70	Proceeding in lane	MC	0	0	1	0	0	
E340159092								RUM	30	Rear end				CAR	F38	S in JOSEPH ST	0	Stationary							
1069797	P	13/03/2015	Fri	05:48		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	CAR	F57	W in GEORGES AVE	40	Proceeding in lane	SC	0	1	0	0	0	
E59958283								RUM	0	Ped nearside				PED	M20	N in JOSEPH ST		Walk across carriageway							
1065264	P	09/04/2015	Thu	22:35		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	CAR	M29	W in GEORGES AVE	Unk	Turning right	NC	0	0	0	0	0	
E112037702								RUM	21	Right through				CAR	M25	E in GEORGES AVE	Unk	Proceeding in lane							
1092036	S	30/01/2016	Sat	17:00		at	GEORGES AVE	XJN	STR	Raining	Wet	70	2	4WD	F30	S in JOSEPH ST	Unk	Proceeding in lane	OC	0	0	0	1	0	
E62811983								RUM	30	Rear end				CAR	M28	S in JOSEPH ST	Unk	Proceeding in lane							
1099267	P	21/03/2016	Mon	06:30		at	GEORGES AVE	XJN	STR	Raining	Wet	50	2	OMV	U U	W in GEORGES AVE	Unk	Turning right	OC	0	0	0	1	0	
E60383514								RUM	21	Right through				VAN	M38	E in GEORGES AVE	20	Proceeding in lane							
1120298	P	17/08/2016	Wed	18:07		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	CAR	F31	W in GEORGES AVE	20	Turning right	SC	0	1	0	0	0	
E61877112								RUM	2	Ped far side				PED	F62	W in JOSEPH ST		Walk across carriageway							
1113766	S	06/09/2016	Tue	03:00		at	GEORGES AVE	XJN	STR	Fine	Dry	70	1	CAR	M73	S in JOSEPH ST	Unk	Proceeding in lane	NC	0	0	0	0	0	
E64421389								RUM	73	Off rd rght => obj				S/Barrier - Wrope/brifen											
1129023	S	24/02/2017	Fri	07:40		at	GEORGES AVE	XJN	STR	Fine	Dry	70	3	CAR	F30	W in GEORGES AVE	Unk	Turning right	OC	0	0	0	1	0	
E63495917								RUM	21	Right through				CAR	M31	E in GEORGES AVE	Unk	Proceeding in lane							
														CAR	M39	W in GEORGES AVE	Unk	Proceeding in lane							
1143349	S	01/07/2017	Sat	09:25		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	TRK	M73	S in JOSEPH ST	Unk	Proceeding in lane	OC	0	0	0	1	0	
E66893885								RUM	30	Rear end				CAR	M28	S in JOSEPH ST	0	Stationary							
1147600	S	03/09/2017	Sun	13:00		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	CAR	F32	S in JOSEPH ST	Unk	Turning right	MC	0	0	1	0	0	
E64569309								RUM	21	Right through				WAG	F54	N in JOSEPH ST	Unk	Proceeding in lane							
1157587	P	29/10/2017	Sun	19:00		at	GEORGES AVE	XJN	STR	Fine	Dry	70	2	CAR	M35	N in JOSEPH ST	60	Turning right	SC	0	1	0	0	0	
E66414743								RUM	23	Right/left				CAR	M19	S in JOSEPH ST	60	Turning left							
1101226	P	01/04/2016	Fri	19:00	40 m	S	GEORGES AVE	DIV	STR	Fine	Dry	70	2	M/C	M27	S in JOSEPH ST	50	Proceeding in lane	SC	0	1	0	0	0	
E118411102								RUM	30	Rear end				CAR	F23	S in JOSEPH ST	50	Proceeding in lane							
1001932	P	03/11/2013	Sun	16:40	50 m	S	GEORGES AVE	DIV	STR	Fine	Dry	70	1	CAR	M20	S in JOSEPH ST	70	Proceeding in lane	NC	0	0	0	0	0	F
E52885213								RUM	71	Off rd left => obj				S/Barrier - Guardrail											

Detailed Crash Report

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors
																									S F
1100117	P	01/04/2016	Fri	19:15	110 m	S	GEORGES AVE	DIV	STR	Fine	Dry	80	4	CAR	M41	S in JOSEPH ST	40	Veering right	SC	0	1	0	0	0	
E302653993								RUM	34	Lane change right				ATKR	M64	S in JOSEPH ST	50	Proceeding in lane							
														TRK	M33	S in JOSEPH ST	0	Parked							
														PED		JOSEPH ST		Stand on carriageway							
1002397	P	17/10/2013	Thu	21:23	200 m	S	GEORGES AVE	DIV	STR	Fine	Dry	80	2	VAN	M25	N in JOSEPH ST	35	Proceeding in lane	OC	0	0	0	1	0	
E55577786								RUM	30	Rear end				CAR	M22	N in JOSEPH ST	0	Stationary							
1135725	P	05/04/2017	Wed	16:59	300 m	S	GEORGES AVE	DIV	STR	Fine	Dry	80	2	MSC	M22	S in JOSEPH ST	60	Proceeding in lane	MC	0	0	1	0	0	
E64162946								RUM	30	Rear end				TRK	M40	S in JOSEPH ST	20	Proceeding in lane							
1152521	S	09/10/2017	Mon	08:00	300 m	S	GEORGES AVE	DIV	STR	Fine	Dry	80	2	CAR	F U	N in JOSEPH ST	Unk	Other forward	OC	0	0	0	1	0	
E66049538								RUM	39	Other same direction				CAR	F26	N in JOSEPH ST	Unk	Proceeding in lane							
1183322	P	10/09/2018	Mon	12:35		at	MAIN AVE	TJN	STR	Fine	Dry	80	2	CAR	M27	W in MAIN AVE	7	Turning left	MC	0	0	1	0	0	
E69570708								RUM	16	Left near				CAR	M20	S in JOSEPH ST	80	Veering left							
1084665	S	23/08/2015	Sun	14:40		at	WEEROONA RD	XJN	STR	Fine	Dry	50	2	BDBL	M33	S in JOSEPH ST	Unk	Other forward	MC	0	0	1	0	0	
E203579798								RUM	39	Other same direction				CAR	M24	S in JOSEPH ST	Unk	Other forward							
1095280	S	09/03/2016	Wed	08:20		at	WEEROONA RD	XJN	STR	Fine	Dry	80	2	CAR	F U	N in JOSEPH ST	Unk	Proceeding in lane	NC	0	0	0	0	0	
E59865909								RUM	30	Rear end				UTE	M54	N in JOSEPH ST	0	Stationary							
1009024	P	17/12/2013	Tue	08:45	50 m	N	WEEROONA RD	DIV	STR	Fine	Wet	80	3	CAR	F25	S in JOSEPH ST	60	Proceeding in lane	SC	0	1	0	0	0	
E53490948								RUM	30	Rear end				CAR	F26	S in JOSEPH ST	5	Proceeding in lane							
														CAR	M51	S in JOSEPH ST	0	Stationary							
1025125	P	04/05/2014	Sun	15:40	80 m	N	WEEROONA RD	DIV	STR	Fine	Dry	80	2	OMV	U U	S in JOSEPH ST	Unk	Veering left	SC	0	1	0	1	0	
E55156871								RUM	35	Lane change left				CAR	M37	S in JOSEPH ST	60	Proceeding in lane							
1146955	S	30/08/2017	Wed	08:30	200 m	N	WEEROONA RD	DIV	STR	Fine	Dry	80	3	4WD	M43	S in JOSEPH ST	Unk	Proceeding in lane	OC	0	0	0	1	0	
E65671633								RUM	30	Rear end				4WD	M57	S in JOSEPH ST	0	Stationary							
														CAR	F61	S in JOSEPH ST	0	Stationary							
1027016	P	18/03/2014	Tue	14:45	500 m	N	WEEROONA RD	DIV	STR	Fine	Dry	80	2	OMV	U U	S in JOSEPH ST	Unk	Proceeding in lane	SC	0	1	0	0	0	
E54688328								RUM	33	Lane sideswipe				4WD	M56	S in JOSEPH ST	80	Proceeding in lane							
Regents Park																									
Rookwood Rd																									
1084261	S	24/10/2015	Sat	14:30	20 m	S	AMY ST	DIV	STR	Fine	Dry	80	2	TRK	M54	N in ROOKWOOD RD	Unk	Veering right	MC	0	0	1	0	0	
E59572148								RUM	34	Lane change right				CAR	M26	N in ROOKWOOD RD	Unk	Proceeding in lane							

Report Totals: Crashes: 53 Fatal Crashes(FC): 0 Serious Injury Crashes(SC): 9 Moderate Injury Crashes(MC): 13 Minor/Other Injury Crashes(OC): 16 Uncategorised Injury Crashes(UC): 0 Non-Casualty Crashes(NC): 15

Killed(K): 0 Seriously Injured(S): 9 Moderately Injured(M): 13 Minor/Other Injured(O): 22 Uncategorised Injured(U): 0

Detailed Crash Report

Crash No.	Data Source	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors	S	F

Crashid dataset 9172 - Joseph St between Georges Ave and Weerona Rd Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Note: *Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.*

Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data. Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Summary Crash Report

# Crash Type		
Car Crash	52	98.1%
Light Truck Crash	11	20.8%
Rigid Truck Crash	2	3.8%
Articulated Truck Crash	4	7.5%
'Heavy Truck Crash	*(6)*	*(11.3%)*
Bus Crash	1	1.9%
"Heavy Vehicle Crash	*(7)*	*(13.2%)*
Emergency Vehicle Crash	1	1.9%
Motorcycle Crash	2	3.8%
Pedal Cycle Crash	0	0.0%
Pedestrian Crash	3	5.7%

' Rigid or Artic. Truck " Heavy Truck or Heavy Bus
These categories are NOT mutually exclusive

Location Type		
*Intersection	34	64.2%
Non intersection	19	35.8%

* Up to 10 metres from an intersection

Collision Type		
Single Vehicle	5	9.4%
Multi Vehicle	48	90.6%

Road Classification		
Freeway/Motorway	0	0.0%
State Highway	0	0.0%
Other Classified Road	51	96.2%
Unclassified Road	2	3.8%

Contributing Factors		
Speeding	3	5.7%
Fatigue	1	1.9%

Weather		
Fine	47	88.7%
Rain	5	9.4%
Overcast	1	1.9%
Fog or mist	0	0.0%
Other	0	0.0%

Road Surface Condition		
Wet	7	13.2%
Dry	46	86.8%
Snow or ice	0	0.0%

Natural Lighting		
Dawn	1	1.9%
Daylight	32	60.4%
Dusk	5	9.4%
Darkness	15	28.3%

Crash Movement		
Intersection, adjacent approaches	5	9.4%
Head-on (not overtaking)	1	1.9%
Opposing vehicles; turning	9	17.0%
U-turn	0	0.0%
Rear-end	19	35.8%
Lane change	6	11.3%
Parallel lanes; turning	1	1.9%
Vehicle leaving driveway	0	0.0%
Overtaking; same direction	0	0.0%
Hit parked vehicle	0	0.0%
Hit railway train	0	0.0%
Hit pedestrian	2	3.8%
Permanent obstruction on road	0	0.0%
Hit animal	0	0.0%
Off road, on straight	0	0.0%
Off road on straight, hit object	5	9.4%
Out of control on straight	0	0.0%
Off road, on curve	0	0.0%
Off road on curve, hit object	0	0.0%
Out of control on curve	0	0.0%
Other crash type	5	9.4%

Speed Limit				
40 km/h or less	0	0.0%	80 km/h zone	30	56.6%
50 km/h zone	10	18.9%	90 km/h zone	0	0.0%
60 km/h zone	0	0.0%	100 km/h zone	0	0.0%
70 km/h zone	13	24.5%	110 km/h zone	0	0.0%

~ 07:30-09:30 or 14:30-17:00 on school days	~ 40km/h or less		~ School Travel Time Involvement	
	0	0.0%	11	20.8%

Day of the Week												
Monday	5	9.4%	Wednesday	12	22.6%	Friday	7	13.2%	Sunday	8	15.1%	WEEKEND	16	30.2%
Tuesday	7	13.2%	Thursday	6	11.3%	Saturday	8	15.1%	WEEKDAY	37	69.8%			

CRASHES	53	
Fatal	0	0.0%
Serious inj.	9	17.0%
Moderate inj.	13	24.5%
Minor/Other inj.	16	30.2%
Uncategorised inj.	0	0.0%
Non-casualty	15	28.3%

Self Reported Crash	19	35.85%

Time Group		% of Day	
00:01 - 02:59	3	5.7%	12.5%
03:00 - 04:59	1	1.9%	8.3%
05:00 - 05:59	1	1.9%	4.2%
06:00 - 06:59	1	1.9%	4.2%
07:00 - 07:59	3	5.7%	4.2%
08:00 - 08:59	5	9.4%	4.2%
09:00 - 09:59	1	1.9%	4.2%
10:00 - 10:59	2	3.8%	4.2%
11:00 - 11:59	5	9.4%	4.2%
12:00 - 12:59	2	3.8%	4.2%
13:00 - 13:59	3	5.7%	4.2%
14:00 - 14:59	5	9.4%	4.2%
15:00 - 15:59	2	3.8%	4.2%
16:00 - 16:59	3	5.7%	4.2%
17:00 - 17:59	3	5.7%	4.2%
18:00 - 18:59	5	9.4%	4.2%
19:00 - 19:59	4	7.5%	4.2%
20:00 - 21:59	1	1.9%	8.3%
22:00 - 24:00	3	5.7%	8.3%

Street Lighting Off/Nil		% of Dark
0	of 15	in Dark 0.0%

CASUALTIES	44	
Killed	0	0.0%
Seriously inj.	9	20.5%
Moderately inj.	13	29.5%
Minor/Other inj.	22	50.0%
Uncategorised inj.	0	0.0%
^ Unrestrained	1	2.3%

^ Belt fitted but not worn, No restraint fitted to position OR No helmet worn

Crashes		Casualties
3	2018	2
8	2017	8
15	2016	13
10	2015	9
14	2014	10
3	2013	2

McLean Periods		% Week	
A	11	20.8%	17.9%
B	0	0.0%	7.1%
C	9	17.0%	17.9%
D	6	11.3%	3.5%
E	3	5.7%	3.6%
F	5	9.4%	10.7%
G	7	13.2%	7.1%
H	5	9.4%	7.1%
I	4	7.5%	12.5%
J	3	5.7%	10.7%

#Holiday Periods																		
New Year	0	0.0%	Easter	0	0.0%	Queen's BD	1	1.9%	Christmas	1	1.9%	Easter SH	1	1.9%	Sept./Oct. SH	3	5.7%	
Aust. Day	0	0.0%	Anzac Day	0	0.0%	Labour Day	0	0.0%	January SH	0	0.0%	June/July SH	2	3.8%	December SH	1	1.9%	

Crashid dataset 9172 - Joseph St between Georges Ave and Weerona Rd Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Note: *Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.*
Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data.
Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

Detailed Crash Report

NOTES: 9172 - Georges Avenue, between Joseph Street and East Street Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Crash No.	Data Source	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors	S	F
Sydney Region																										
Cumberland LGA																										
Lidcombe																										
Georges Ave																										
1151614	P	11/08/2017	Fri	01:10	at	NUMBER 31 HN	2WY	STR	Fine	Dry	50	4	CAR	U U	E in GEORGES AVE	70	Proceeding in lane	NC	0	0	0	0	0	S		
E64916804							RUM	71	Off rd left => obj				CAR		E in GEORGES AVE	0	Parked									
													TRK		E in GEORGES AVE	0	Parked									
													M/C		E in GEORGES AVE	0	Parked									

Report Totals: Crashes: 1 Fatal Crashes(FC): 0 Serious Injury Crashes(SC): 0 Moderate Injury Crashes(MC): 0 Minor/Other Injury Crashes(OC): 0 Uncategorised Injury Crashes(UC): 0 Non-Casualty Crashes(NC): 1

Killed(K): 0 Seriously Injured(S): 0 Moderately Injured(M): 0 Minor/Other Injured(O): 0 Uncategorised Injured(U): 0

Crashid dataset 9172 - Georges Avenue, between Joseph Street and East Street Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)
Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data.
Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Summary Crash Report

# Crash Type		
Car Crash	1	100.0%
Light Truck Crash	1	100.0%
Rigid Truck Crash	0	0.0%
Articulated Truck Crash	0	0.0%
'Heavy Truck Crash	*(0)*	*(0.0%)*
Bus Crash	0	0.0%
"Heavy Vehicle Crash	*(0)*	*(0.0%)*
Emergency Vehicle Crash	0	0.0%
Motorcycle Crash	1	100.0%
Pedal Cycle Crash	0	0.0%
Pedestrian Crash	0	0.0%

' Rigid or Artic. Truck " Heavy Truck or Heavy Bus
These categories are NOT mutually exclusive

Location Type		
*Intersection	0	0.0%
Non intersection	1	100.0%

* Up to 10 metres from an intersection

Collision Type		
Single Vehicle	0	0.0%
Multi Vehicle	1	100.0%

Road Classification		
Freeway/Motorway	0	0.0%
State Highway	0	0.0%
Other Classified Road	0	0.0%
Unclassified Road	1	100.0%

Contributing Factors		
Speeding	1	100.0%
Fatigue	0	0.0%

Weather		
Fine	1	100.0%
Rain	0	0.0%
Overcast	0	0.0%
Fog or mist	0	0.0%
Other	0	0.0%

Road Surface Condition		
Wet	0	0.0%
Dry	1	100.0%
Snow or ice	0	0.0%

Natural Lighting		
Dawn	0	0.0%
Daylight	0	0.0%
Dusk	0	0.0%
Darkness	1	100.0%

Crash Movement		
Intersection, adjacent approaches	0	0.0%
Head-on (not overtaking)	0	0.0%
Opposing vehicles; turning	0	0.0%
U-turn	0	0.0%
Rear-end	0	0.0%
Lane change	0	0.0%
Parallel lanes; turning	0	0.0%
Vehicle leaving driveway	0	0.0%
Overtaking; same direction	0	0.0%
Hit parked vehicle	0	0.0%
Hit railway train	0	0.0%
Hit pedestrian	0	0.0%
Permanent obstruction on road	0	0.0%
Hit animal	0	0.0%
Off road, on straight	0	0.0%
Off road on straight, hit object	1	100.0%
Out of control on straight	0	0.0%
Off road, on curve	0	0.0%
Off road on curve, hit object	0	0.0%
Out of control on curve	0	0.0%
Other crash type	0	0.0%

Speed Limit				
40 km/h or less	0	0.0%	80 km/h zone	0 0.0%
50 km/h zone	1	100.0%	90 km/h zone	0 0.0%
60 km/h zone	0	0.0%	100 km/h zone	0 0.0%
70 km/h zone	0	0.0%	110 km/h zone	0 0.0%

~ 07:30-09:30 or 14:30-17:00 on school days	~ 40km/h or less	0	0.0%	~ School Travel Time Involvement	0	0.0%

Day of the Week												
Monday	0	0.0%	Wednesday	0	0.0%	Friday	1	**********	Sunday	0	0.0%	WEEKEND	0	0.0%
Tuesday	0	0.0%	Thursday	0	0.0%	Saturday	0	0.0%	WEEKDAY	1	**********			

CRASHES	1	
Fatal	0	0.0%
Serious inj.	0	0.0%
Moderate inj.	0	0.0%
Minor/Other inj.	0	0.0%
Uncategorised inj.	0	0.0%
Non-casualty	1	100.0%

Self Reported Crash	0	0%

Time Group			% of Day
00:01 - 02:59	1	**********	12.5%
03:00 - 04:59	0	0.0%	8.3%
05:00 - 05:59	0	0.0%	4.2%
06:00 - 06:59	0	0.0%	4.2%
07:00 - 07:59	0	0.0%	4.2%
08:00 - 08:59	0	0.0%	4.2%
09:00 - 09:59	0	0.0%	4.2%
10:00 - 10:59	0	0.0%	4.2%
11:00 - 11:59	0	0.0%	4.2%
12:00 - 12:59	0	0.0%	4.2%
13:00 - 13:59	0	0.0%	4.2%
14:00 - 14:59	0	0.0%	4.2%
15:00 - 15:59	0	0.0%	4.2%
16:00 - 16:59	0	0.0%	4.2%
17:00 - 17:59	0	0.0%	4.2%
18:00 - 18:59	0	0.0%	4.2%
19:00 - 19:59	0	0.0%	4.2%
20:00 - 21:59	0	0.0%	8.3%
22:00 - 24:00	0	0.0%	8.3%

Street Lighting	Off/Nil		% of Dark
0	of	1	in Dark 0.0%

CASUALTIES	0	
Killed	0	0.0%
Seriously inj.	0	0.0%
Moderately inj.	0	0.0%
Minor/Other inj.	0	0.0%
Uncategorised inj.	0	0.0%
^ Unrestrained	0	0.0%

^ Belt fitted but not worn, No restraint fitted to position OR No helmet worn

Crashes	Casualties
1	2017 0

McLean Periods			% Week
A	0	0.0%	17.9%
B	0	0.0%	7.1%
C	0	0.0%	17.9%
D	0	0.0%	3.5%
E	0	0.0%	3.6%
F	0	0.0%	10.7%
G	0	0.0%	7.1%
H	0	0.0%	7.1%
I	0	0.0%	12.5%
J	1	100.0%	10.7%

#Holiday Periods																		
New Year	0	0.0%	Easter	0	0.0%	Queen's BD	0	0.0%	Christmas	0	0.0%	Easter SH	0	0.0%	Sept./Oct. SH	0	0.0%	
Aust. Day	0	0.0%	Anzac Day	0	0.0%	Labour Day	0	0.0%	January SH	0	0.0%	June/July SH	0	0.0%	December SH	0	0.0%	

Crashid dataset 9172 - Georges Avenue, between Joseph Street and East Street Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Note: Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data. Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

Detailed Crash Report

NOTES: 9172 - East Street and Weerona Road south of Georges Avenue Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors	S	F
Sydney Region																											
Cumberland LGA																											
Lidcombe																											
East St																											
1000363	P	17/11/2013	Sun	22:00		at	GEORGES AVE	TJN	STR	Raining	Wet	60	2	CAR	F42	W in GEORGES AVE	50	Proceeding in lane	NC	0	0	0	0	0			
E53534077								RUM	30	Rear end				CAR	M34	W in GEORGES AVE	30	Proceeding in lane									
1130786	S	28/12/2016	Wed	06:50		at	GEORGES AVE	RDB	STR	Fine	Dry	60	1	WAG	M54	S in EAST ST	Unk	Proceeding in lane	MC	0	0	1	0	0			
E63693457								RUM	71	Off rd left => obj				Tree/bush													
1177587	S	31/07/2018	Tue	08:40		at	GEORGES AVE	RDB	STR	Fine	Dry	60	2	4WD	M U	S in EAST ST	Unk	Other forward	NC	0	0	0	0	0			
E71089783								RUM	39	Other same direction				CAR	F31	S in EAST ST	Unk	Proceeding in lane									
1033188	P	17/06/2014	Tue	11:50	1 km	S	GEORGES AVE	2WY	STR	Fine	Dry	60	6	TRK	M40	S in EAST ST	50	Veering left	MC	0	0	1	0	0		F	
E55057126								RUM	71	Off rd left => obj				CAR	F24	S in EAST ST	0	Parked									
														CAR		S in EAST ST	0	Parked									
														CAR		S in EAST ST	0	Parked									
														CAR		S in EAST ST	0	Parked									
														CAR		S in EAST ST	0	Parked									
1039587	P	27/08/2014	Wed	16:30	50 m	S	NORMAN MAY DR	2WY	STR	Overcast	Wet	60	1	CAR	M20	N in EAST ST	15	Turning left	NC	0	0	0	0	0	S		
E55794561								RUM	85	Off rt/lft bnd=>obj				Utility pole													
1089020	P	12/12/2015	Sat	22:40	175 m	S	NORMAN MAY DR	2WY	STR	Fine	Dry	60	1	M/C	M29	S in EAST ST	50	Proceeding in lane	SC	0	1	0	0	0			
E61668987								RUM	71	Off rd left => obj				Traffic island etc													
1155363	P	05/09/2017	Tue	06:50		at	TAFE NSW OT	2WY	STR	Fine	Dry	60	2	LOR	M46	S in EAST ST	30	Proceeding in lane	SC	0	1	0	0	0			
E64983905								RUM	30	Rear end				TRK	M52	S in EAST ST	25	Proceeding in lane									
1042266	P	02/09/2014	Tue	16:40	100 m	N	WEEROONA RD	2WY	STR	Fine	Dry	60	3	PAN	F49	S in EAST ST	55	Proceeding in lane	OC	0	0	0	1	0		F	
E56370874								RUM	71	Off rd left => obj				4WD		S in EAST ST	0	Parked									
														CAR		S in EAST ST	0	Parked									
1138125	S	02/06/2017	Fri	13:45	100 m	N	WEEROONA RD	2WY	STR	Fine	Dry	60	2	CAR	F23	N in EAST ST	Unk	Proceeding in lane	NC	0	0	0	0	0			
E67259986								RUM	30	Rear end				TRK	M51	N in EAST ST	Unk	Proceeding in lane									
1035164	P	04/08/2014	Mon	15:18	150 m	N	WEEROONA RD	2WY	STR	Fine	Dry	60	2	WAG	M38	S in EAST ST	60	Proceeding in lane	NC	0	0	0	0	0			
E54998825								RUM	30	Rear end				CAR	M22	S in EAST ST	0	Stationary									
Weeroona Rd																											
1100538	P	09/04/2016	Sat	19:30	250 m	W	EAST ST	2WY	STR	Fine	Dry	60	1	CAR	M71	W in WEEROONA RD	40	Proceeding in lane	MC	0	0	1	0	0			
E60310715								RUM	71	Off rd left => obj				Utility pole													
Rookwood																											
East St																											

Detailed Crash Report

Crash No.	Data Source	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors
																								S F
1086255	P	22/11/2015	Sun	13:25	at	WEEROONA RD	LJN	CRV	Fine	Dry	60	1	CAR	M32	E in WEEROONA RD	100	Proceeding in lane	MC	0	0	1	0	0	S
E59588503							RUM	85	Off rt/lft bnd=>obj				Fence											

Report Totals: Crashes: 12 Fatal Crashes(FC): 0 Serious Injury Crashes(SC): 2 Moderate Injury Crashes(MC): 4 Minor/Other Injury Crashes(OC): 1 Uncategorised Injury Crashes(UC): 0 Non-Casualty Crashes(NC): 5

Killed(K): 0 Seriously Injured(S): 2 Moderately Injured(M): 4 Minor/Other Injured(O): 1 Uncategorised Injured(U): 0

Crashid dataset 9172 - East Street and Weerona Road south of Georges Avenue Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Note: *Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.*

Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data. Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Summary Crash Report

# Crash Type		
Car Crash	10	83.3%
Light Truck Crash	3	25.0%
Rigid Truck Crash	1	8.3%
Articulated Truck Crash	0	0.0%
'Heavy Truck Crash	*(1)*	*(8.3%)*
Bus Crash	0	0.0%
"Heavy Vehicle Crash	*(1)*	*(8.3%)*
Emergency Vehicle Crash	0	0.0%
Motorcycle Crash	1	8.3%
Pedal Cycle Crash	0	0.0%
Pedestrian Crash	0	0.0%

' Rigid or Artic. Truck " Heavy Truck or Heavy Bus
These categories are NOT mutually exclusive

Location Type		
*Intersection	3	25.0%
Non intersection	9	75.0%

* Up to 10 metres from an intersection

Collision Type		
Single Vehicle	5	41.7%
Multi Vehicle	7	58.3%

Road Classification		
Freeway/Motorway	0	0.0%
State Highway	0	0.0%
Other Classified Road	12	100.0%
Unclassified Road	0	0.0%

Contributing Factors		
Speeding	2	16.7%
Fatigue	2	16.7%

Weather		
Fine	10	83.3%
Rain	1	8.3%
Overcast	1	8.3%
Fog or mist	0	0.0%
Other	0	0.0%

Road Surface Condition		
Wet	2	16.7%
Dry	10	83.3%
Snow or ice	0	0.0%

Natural Lighting		
Dawn	1	8.3%
Daylight	7	58.3%
Dusk	1	8.3%
Darkness	3	25.0%

Crash Movement		
Intersection, adjacent approaches	0	0.0%
Head-on (not overtaking)	0	0.0%
Opposing vehicles; turning	0	0.0%
U-turn	0	0.0%
Rear-end	4	33.3%
Lane change	0	0.0%
Parallel lanes; turning	0	0.0%
Vehicle leaving driveway	0	0.0%
Overtaking; same direction	0	0.0%
Hit parked vehicle	0	0.0%
Hit railway train	0	0.0%
Hit pedestrian	0	0.0%
Permanent obstruction on road	0	0.0%
Hit animal	0	0.0%
Off road, on straight	0	0.0%
Off road on straight, hit object	5	41.7%
Out of control on straight	0	0.0%
Off road, on curve	0	0.0%
Off road on curve, hit object	1	8.3%
Out of control on curve	0	0.0%
Other crash type	2	16.7%

Speed Limit				
40 km/h or less	0	0.0%	80 km/h zone	0	0.0%
50 km/h zone	0	0.0%	90 km/h zone	0	0.0%
60 km/h zone	12	100.0%	100 km/h zone	0	0.0%
70 km/h zone	0	0.0%	110 km/h zone	0	0.0%

~ 07:30-09:30 or 14:30-17:00 on school days	~ 40km/h or less			~ School Travel Time Involvement		
	0	0.0%		4	33.3%	

Day of the Week												
Monday	1	8.3%	Wednesday	2	16.7%	Friday	1	8.3%	Sunday	2	16.7%	WEEKEND	4	33.3%
Tuesday	4	33.3%	Thursday	0	0.0%	Saturday	2	16.7%	WEEKDAY	8	66.7%			

CRASHES	12	
Fatal	0	0.0%
Serious inj.	2	16.7%
Moderate inj.	4	33.3%
Minor/Other inj.	1	8.3%
Uncategorised inj.	0	0.0%
Non-casualty	5	41.7%

Self Reported Crash	3	25%

Time Group		% of Day	
00:01 - 02:59	0	0.0%	12.5%
03:00 - 04:59	0	0.0%	8.3%
05:00 - 05:59	0	0.0%	4.2%
06:00 - 06:59	2	16.7%	4.2%
07:00 - 07:59	0	0.0%	4.2%
08:00 - 08:59	1	8.3%	4.2%
09:00 - 09:59	0	0.0%	4.2%
10:00 - 10:59	0	0.0%	4.2%
11:00 - 11:59	1	8.3%	4.2%
12:00 - 12:59	0	0.0%	4.2%
13:00 - 13:59	2	16.7%	4.2%
14:00 - 14:59	0	0.0%	4.2%
15:00 - 15:59	1	8.3%	4.2%
16:00 - 16:59	2	16.7%	4.2%
17:00 - 17:59	0	0.0%	4.2%
18:00 - 18:59	0	0.0%	4.2%
19:00 - 19:59	1	8.3%	4.2%
20:00 - 21:59	0	0.0%	8.3%
22:00 - 24:00	2	16.7%	8.3%

Street Lighting Off/Nil		% of Dark
0 of	3 in Dark	0.0%

CASUALTIES	7	
Killed	0	0.0%
Seriously inj.	2	28.6%
Moderately inj.	4	57.1%
Minor/Other inj.	1	14.3%
Uncategorised inj.	0	0.0%
^ Unrestrained	1	14.3%

^ Belt fitted but not worn, No restraint fitted to position OR No helmet worn

Crashes		Casualties
1	2018	0
2	2017	1
2	2016	2
2	2015	2
4	2014	2
1	2013	0

McLean Periods		% Week	
A	3	25.0%	17.9%
B	0	0.0%	7.1%
C	2	16.7%	17.9%
D	0	0.0%	3.5%
E	1	8.3%	3.6%
F	3	25.0%	10.7%
G	0	0.0%	7.1%
H	1	8.3%	7.1%
I	1	8.3%	12.5%
J	1	8.3%	10.7%

#Holiday Periods																		
New Year	0	0.0%	Easter	0	0.0%	Queen's BD	0	0.0%	Christmas	1	8.3%	Easter SH	1	8.3%	Sept./Oct. SH	0	0.0%	
Aust. Day	0	0.0%	Anzac Day	0	0.0%	Labour Day	0	0.0%	January SH	0	0.0%	June/July SH	0	0.0%	December SH	1	8.3%	

Crashid dataset 9172 - East Street and Weerona Road south of Georges Avenue Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Note: *Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.*
Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data.
Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

Detailed Crash Report

NOTES: 9172 - Internal local roads, including Botanica Drive and Betty Cuthbert Drive Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors	S	F
Sydney Region																											
Cumberland LGA																											
Lidcombe																											
Betty Cuthbert Dr																											
1151670	S	17/08/2017	Thu	11:45		at	BOTANICA DR	XJN	STR	Fine	Dry	50	2	CAR	F23	N in BETTY CUTHBERT DR	Unk	Proceeding in lane	MC	0	0	1	2	0			
E67297385								RUM	10	Cross traffic				CAR	M65	E in BOTANICA DR	Unk	Proceeding in lane									
1024371	P	02/05/2014	Fri	22:20	20 m	S	WATTLE CRES	2WY	STR	Fine	Dry	50	3	CAR	M30	S in BETTY CUTHBERT DR	10	Proceeding in lane	NC	0	0	0	0	0			
E56417882								RUM	71	Off rd left => obj				CAR		S in BETTY CUTHBERT DR	0	Parked									
														CAR		N in BETTY CUTHBERT DR	0	Parked									
Botanica Dr																											
1098956	S	12/04/2015	Sun	12:30		at	PEPPER TREE RD	TJN	STR	Fine	Dry	50	2	4WD	F29	N in PEPPER TREE RD	Unk	Turning right	OC	0	0	0	2	0			
E118728102								RUM	11	Right far				CAR	F32	E in BOTANICA DR	Unk	Proceeding in lane									
Chapel Rd																											
854642	P	11/10/2013	Fri	11:30		at	MAIN AVE	XJN	STR	Overcast	Wet	50	1	CAR	M25	S in CHAPEL RD	50	Turning right	NC	0	0	0	0	0	S		
E54603780								RUM	83	Off rt/rt bnd=>obj				Tree/bush													
College St																											
1026412	P	09/02/2014	Sun	20:40		at	MAIN AVE	RDB	CRV	Fine	Dry	50	1	M/C	M31	S in COLLEGE ST	50	Turning right	OC	0	0	0	1	0			
E53873612								RUM	90	Fell in/from vehicle																	
Herdsmans Ave																											
1053804	S	24/12/2014	Wed	21:00		at	NUMBER 31 HN	2WY	CRV	Fine	Dry	50	2	CAR	M17	E in HERDSMANS AVE	Unk	Proceeding in lane	NC	0	0	0	0	0	S		
E56753456								RUM	87	Off lft/lft bnd=>obj				CAR		HERDSMANS AVE	0	Parked									
Ironbark Cres																											
1041043	P	06/07/2014	Sun	19:40		at	MAGNOLIA AVE	TJN	STR	Fine	Dry	50	3	TRK	M35	N in MAGNOLIA AVE	20	Proceeding in lane	NC	0	0	0	0	0			F
E106902001								RUM	71	Off rd left => obj				4WD		N in MAGNOLIA AVE	0	Parked									
														CAR		S in MAGNOLIA AVE	0	Parked									

Report Totals: Crashes: 7 Fatal Crashes(FC): 0 Serious Injury Crashes(SC): 0 Moderate Injury Crashes(MC): 1 Minor/Other Injury Crashes(OC): 2 Uncategorised Injury Crashes(UC): 0 Non-Casualty Crashes(NC): 4

Killed(K): 0 Seriously Injured(S): 0 Moderately Injured(M): 1 Minor/Other Injured(O): 5 Uncategorised Injured(U): 0

Crashid dataset 9172 - Internal local roads, including Botanica Drive and Betty Cuthbert Drive Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)
Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data.
Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Summary Crash Report

# Crash Type		
Car Crash	6	85.7%
Light Truck Crash	1	14.3%
Rigid Truck Crash	0	0.0%
Articulated Truck Crash	0	0.0%
'Heavy Truck Crash	*(0)*	*(0.0%)*
Bus Crash	0	0.0%
"Heavy Vehicle Crash	*(0)*	*(0.0%)*
Emergency Vehicle Crash	0	0.0%
Motorcycle Crash	1	14.3%
Pedal Cycle Crash	0	0.0%
Pedestrian Crash	0	0.0%

' Rigid or Artic. Truck " Heavy Truck or Heavy Bus
These categories are NOT mutually exclusive

Location Type		
*Intersection	5	71.4%
Non intersection	2	28.6%

* Up to 10 metres from an intersection

Collision Type		
Single Vehicle	2	28.6%
Multi Vehicle	5	71.4%

Road Classification		
Freeway/Motorway	0	0.0%
State Highway	0	0.0%
Other Classified Road	0	0.0%
Unclassified Road	7	100.0%

Contributing Factors		
Speeding	2	28.6%
Fatigue	1	14.3%

Weather		
Fine	6	85.7%
Rain	0	0.0%
Overcast	1	14.3%
Fog or mist	0	0.0%
Other	0	0.0%

Road Surface Condition		
Wet	1	14.3%
Dry	6	85.7%
Snow or ice	0	0.0%

Natural Lighting		
Dawn	0	0.0%
Daylight	3	42.9%
Dusk	1	14.3%
Darkness	3	42.9%

Crash Movement		
Intersection, adjacent approaches	2	28.6%
Head-on (not overtaking)	0	0.0%
Opposing vehicles; turning	0	0.0%
U-turn	0	0.0%
Rear-end	0	0.0%
Lane change	0	0.0%
Parallel lanes; turning	0	0.0%
Vehicle leaving driveway	0	0.0%
Overtaking; same direction	0	0.0%
Hit parked vehicle	0	0.0%
Hit railway train	0	0.0%
Hit pedestrian	0	0.0%
Permanent obstruction on road	0	0.0%
Hit animal	0	0.0%
Off road, on straight	0	0.0%
Off road on straight, hit object	2	28.6%
Out of control on straight	0	0.0%
Off road, on curve	0	0.0%
Off road on curve, hit object	1	14.3%
Out of control on curve	0	0.0%
Other crash type	2	28.6%

Speed Limit				
40 km/h or less	0	0.0%	80 km/h zone	0 0.0%
50 km/h zone	7	100.0%	90 km/h zone	0 0.0%
60 km/h zone	0	0.0%	100 km/h zone	0 0.0%
70 km/h zone	0	0.0%	110 km/h zone	0 0.0%

~ 07:30-09:30 or 14:30-17:00 on school days	~ 40km/h or less	0	0.0%	~ School Travel Time Involvement	0	0.0%

Day of the Week												
Monday	0	0.0%	Wednesday	1	14.3%	Friday	2	28.6%	Sunday	3	42.9%	WEEKEND 3 42.9%
Tuesday	0	0.0%	Thursday	1	14.3%	Saturday	0	0.0%	WEEKDAY	4	57.1%	

CRASHES	7	
Fatal	0	0.0%
Serious inj.	0	0.0%
Moderate inj.	1	14.3%
Minor/Other inj.	2	28.6%
Uncategorised inj.	0	0.0%
Non-casualty	4	57.1%

CASUALTIES	6	
Killed	0	0.0%
Seriously inj.	0	0.0%
Moderately inj.	1	16.7%
Minor/Other inj.	5	83.3%
Uncategorised inj.	0	0.0%
^ Unrestrained	0	0.0%

^ Belt fitted but not worn, No restraint fitted to position OR No helmet worn

Self Reported Crash	3	42.86%

Time Group		% of Day	
00:01 - 02:59	0	0.0%	12.5%
03:00 - 04:59	0	0.0%	8.3%
05:00 - 05:59	0	0.0%	4.2%
06:00 - 06:59	0	0.0%	4.2%
07:00 - 07:59	0	0.0%	4.2%
08:00 - 08:59	0	0.0%	4.2%
09:00 - 09:59	0	0.0%	4.2%
10:00 - 10:59	0	0.0%	4.2%
11:00 - 11:59	2	28.6%	4.2%
12:00 - 12:59	1	14.3%	4.2%
13:00 - 13:59	0	0.0%	4.2%
14:00 - 14:59	0	0.0%	4.2%
15:00 - 15:59	0	0.0%	4.2%
16:00 - 16:59	0	0.0%	4.2%
17:00 - 17:59	0	0.0%	4.2%
18:00 - 18:59	0	0.0%	4.2%
19:00 - 19:59	1	14.3%	4.2%
20:00 - 21:59	2	28.6%	8.3%
22:00 - 24:00	1	14.3%	8.3%

Street Lighting Off/Nil	% of Dark
0 of 3	in Dark 0.0%

Crashes		Casualties
1	2017	3
1	2015	2
4	2014	1
1	2013	0

McLean Periods		% Week	
A	0	0.0%	17.9%
B	0	0.0%	7.1%
C	2	28.6%	17.9%
D	0	0.0%	3.5%
E	1	14.3%	3.6%
F	0	0.0%	10.7%
G	0	0.0%	7.1%
H	2	28.6%	7.1%
I	1	14.3%	12.5%
J	1	14.3%	10.7%

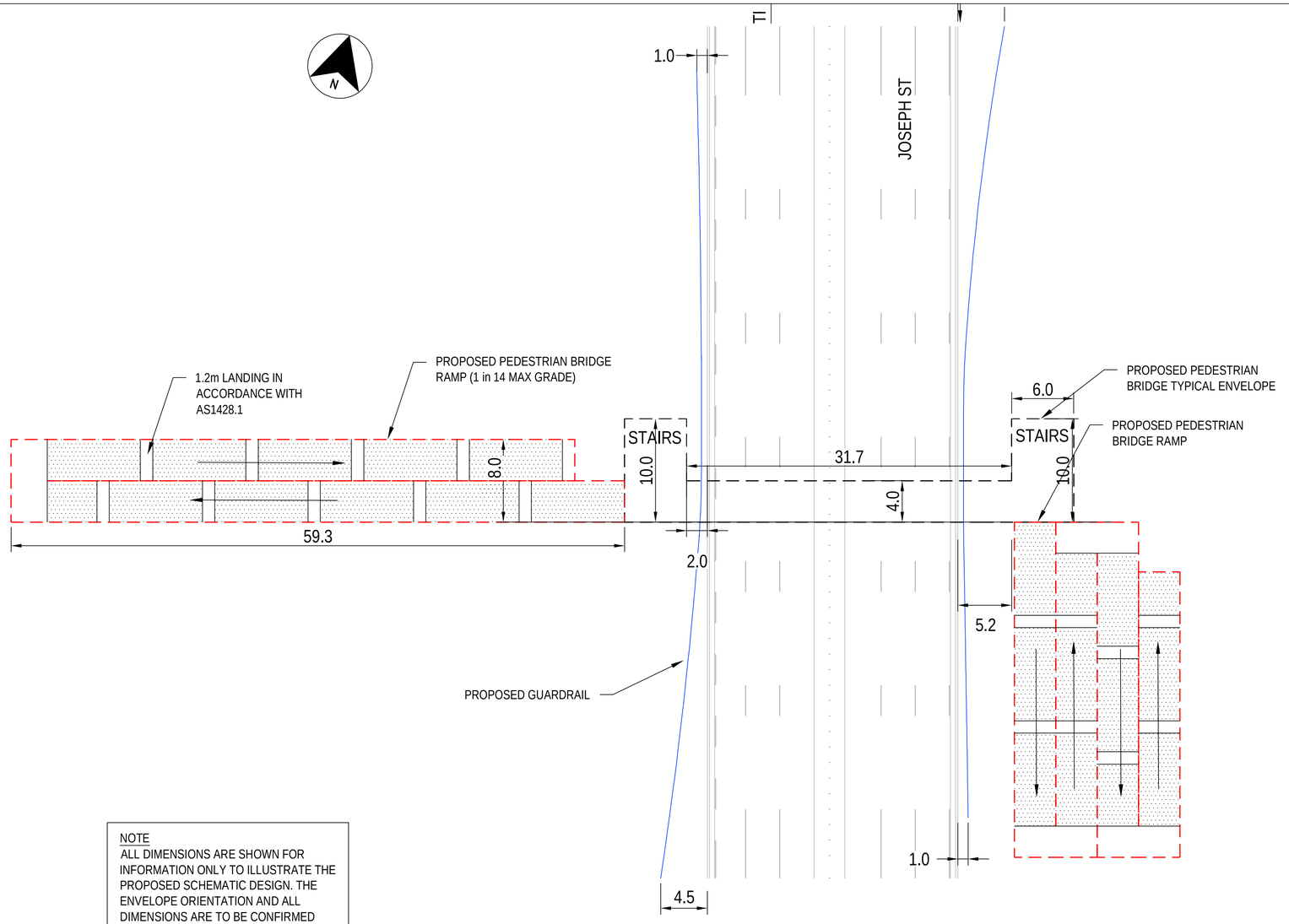
#Holiday Periods																		
New Year	0	0.0%	Easter	0	0.0%	Queen's BD	0	0.0%	Christmas	1	14.3%	Easter SH	1	14.3%	Sept./Oct. SH	0	0.0%	
Aust. Day	0	0.0%	Anzac Day	0	0.0%	Labour Day	0	0.0%	January SH	0	0.0%	June/July SH	1	14.3%	December SH	1	14.3%	

Crashid dataset 9172 - Internal local roads, including Botanica Drive and Betty Cuthbert Drive Crash Data - All reported crashes 1 Oct 2013 to 30 Sep 2018 (2018p)

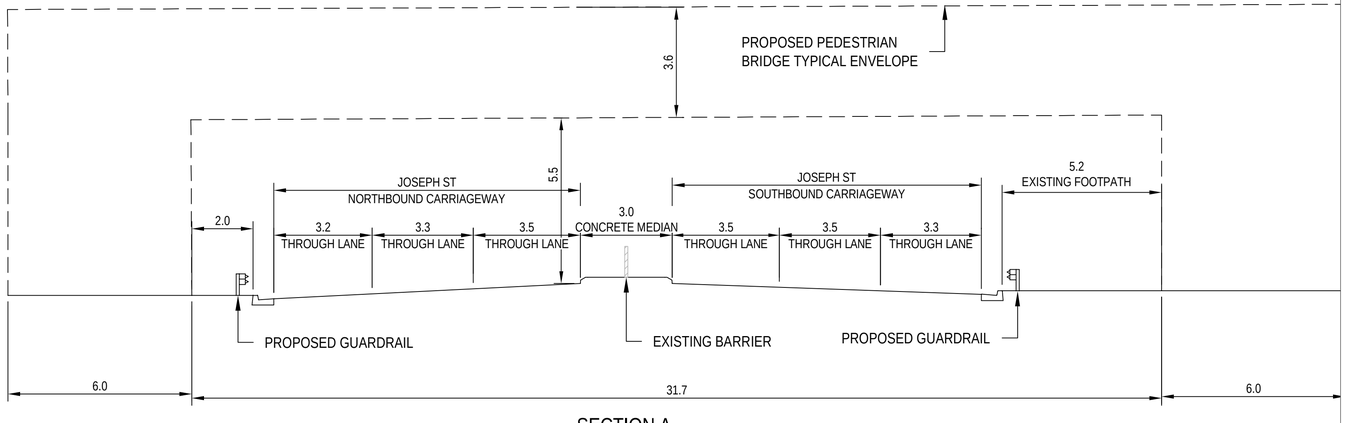
Note: Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data. Reporting yrs 1996-2004 & 2018 Q4 onwards contain uncategorised inj crashes.

Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

B. Proposed Pedestrian Bridge Schematic Drawing- Joseph Street, Lidcombe



NOTE
ALL DIMENSIONS ARE SHOWN FOR INFORMATION ONLY TO ILLUSTRATE THE PROPOSED SCHEMATIC DESIGN. THE ENVELOPE ORIENTATION AND ALL DIMENSIONS ARE TO BE CONFIRMED ONCE GEOTECHNICAL CONDITIONS CAN INFORM THE STRUCTURAL DESIGN.



SECTION A
PROPOSED PEDESTRIAN BRIDGE AT JOSEPH STREET, LIDCOMBE
SCALE 1 : 200

Notes

LEGEND
- EXISTING KERB
- GUARDRAIL
- PROPOSED PEDESTRIAN BRIDGE
- PROPOSED PEDESTRIAN BRIDGE RAMP

PRELIMINARY

NOT FOR CONSTRUCTION

Rev	Date	Drawn	Description	Ch'k'd	App'd
P2	12/02/21	JW	ISSUED FOR INFORMATION	VS	N/A

Status Stamp

MOTT MACDONALD
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Client
NSW GOVERNMENT Transport Roads & Maritime Services

Title
JOSEPH ST, LIDCOMBE
PROPOSED PEDESTRIAN BRIDGE
TYPICAL ENVELOPE SCHEMATIC
(RAMP OPTION)
Sheet 1 of 1

Designed	J.WUKOWIC		Eng check	V.SOFREVSKI	
Drawn	D.KUMAR		Coordination		
Dwg check			Approved		

MMD Project Number	Scale at A3	Security
405675	1:500	STD

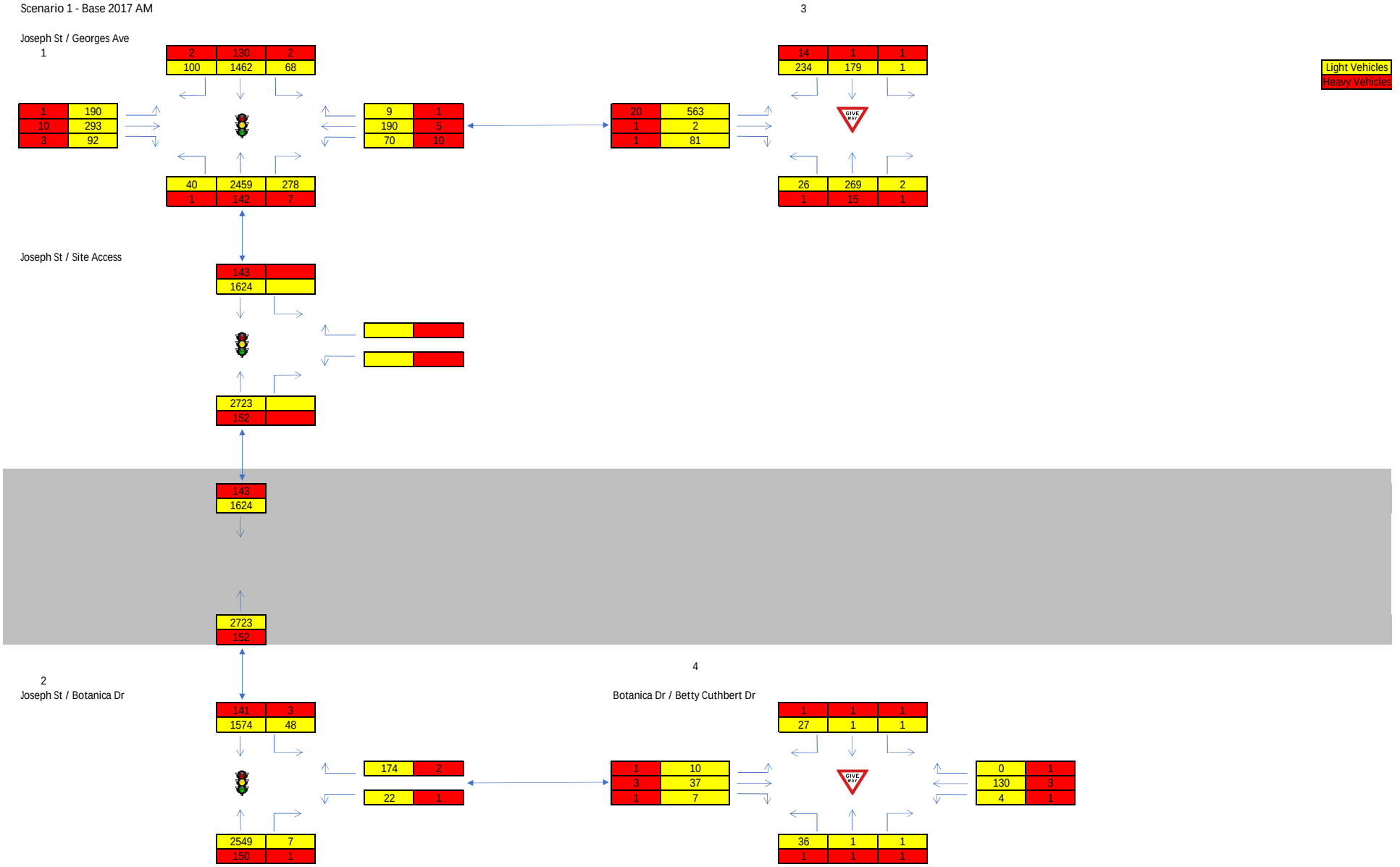
Suitability Description	Suit. Code
For Information	S0

Drawing Number	Revision
405675-00-00-SK-RD-0001	P2

C. Traffic Volume Maps

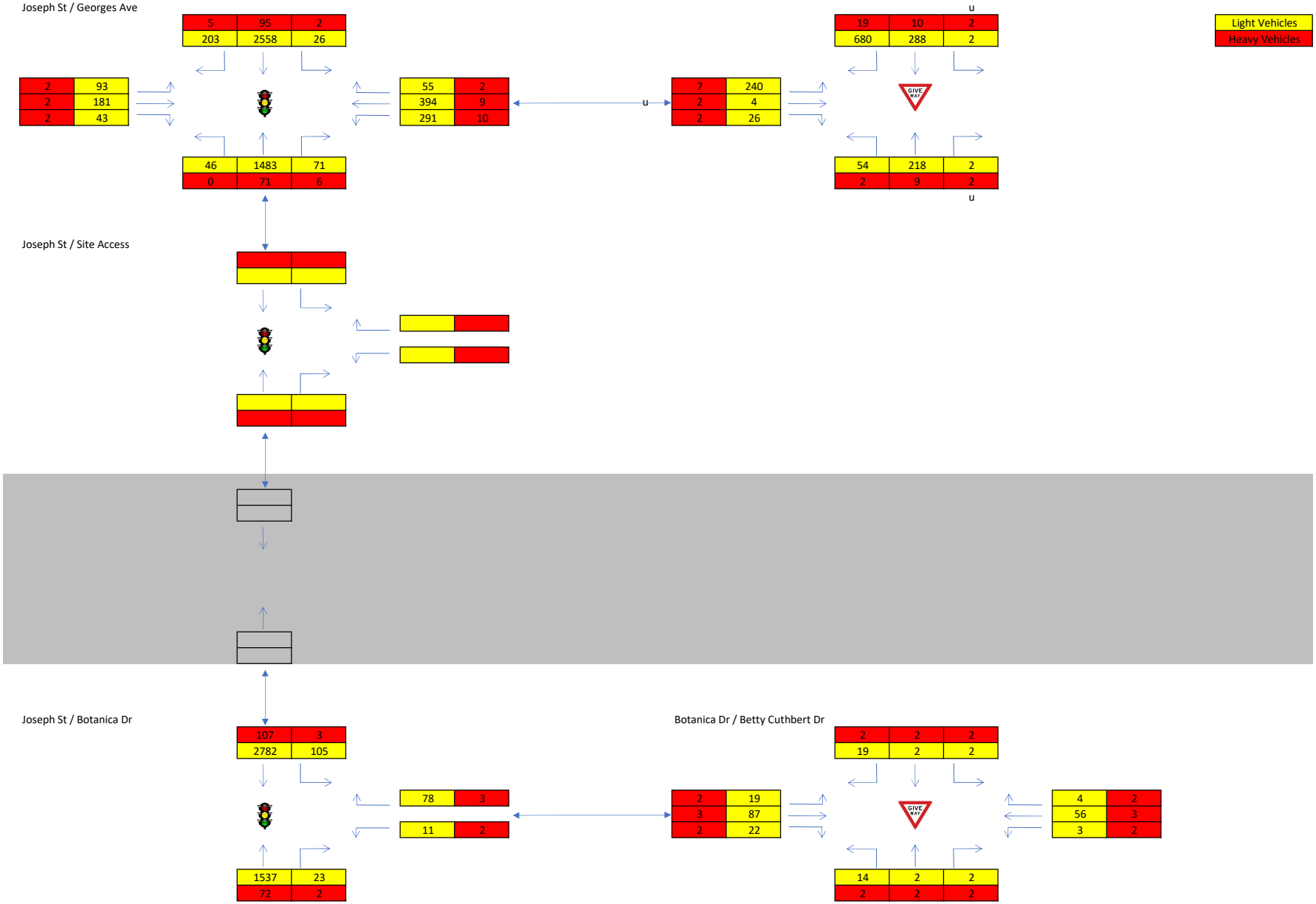
Traffic Volumes

Scenario 1 - Base 2017 AM



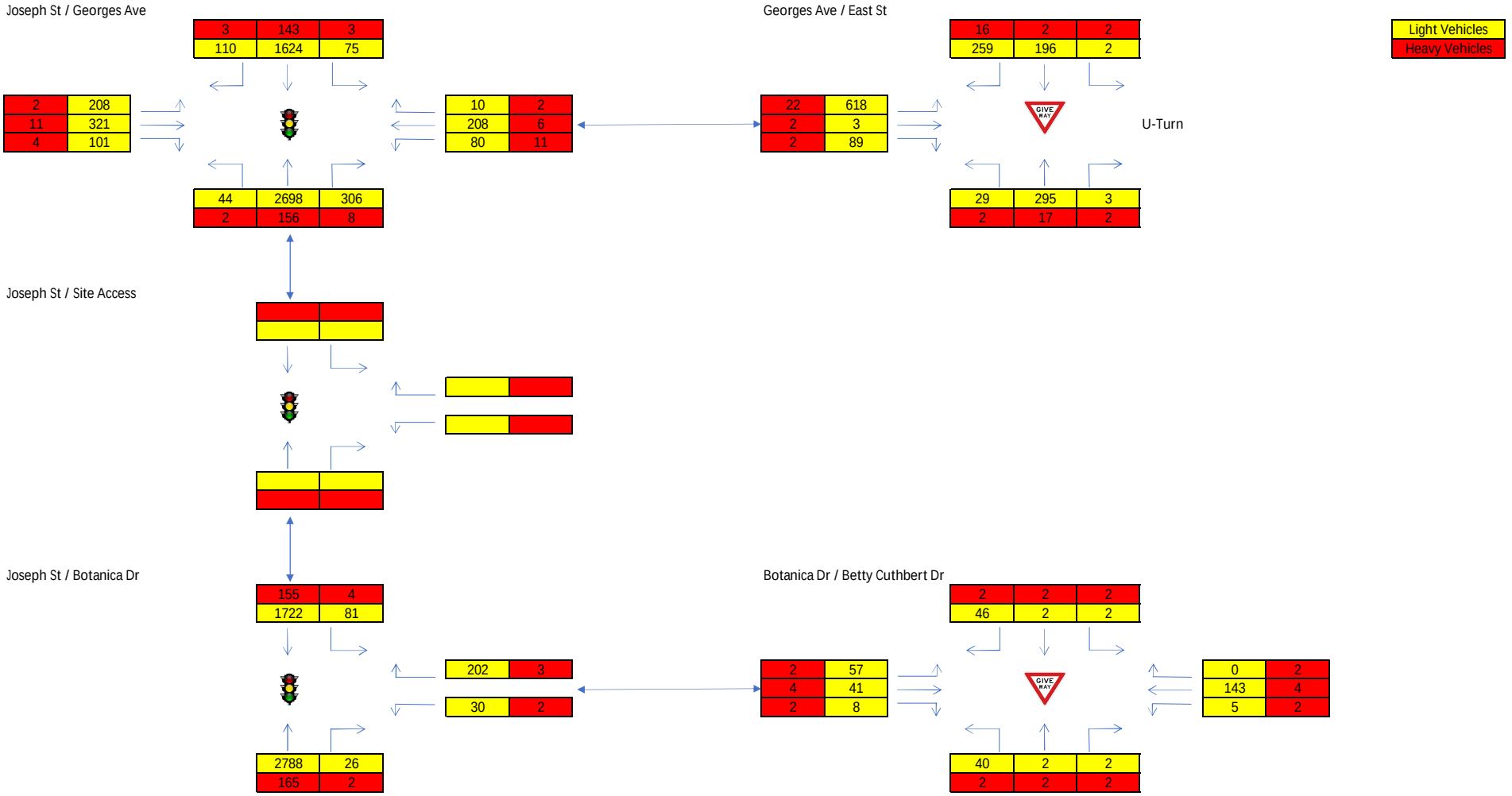
Traffic Volumes

Scenario 1 - Existing 2019 PM



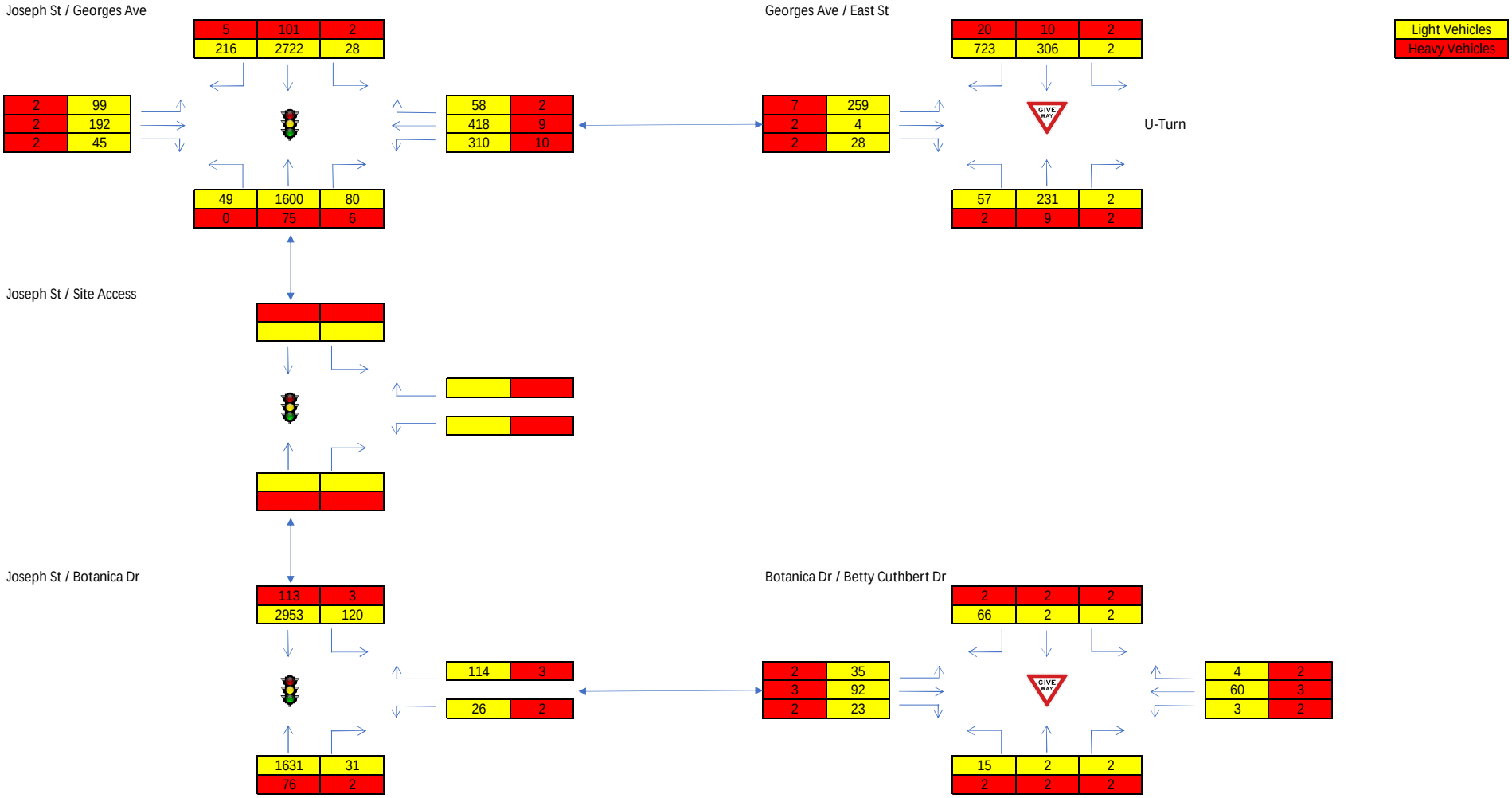
Traffic Volumes

Scenario 2 - 2023 AM with MSL and Residential impact



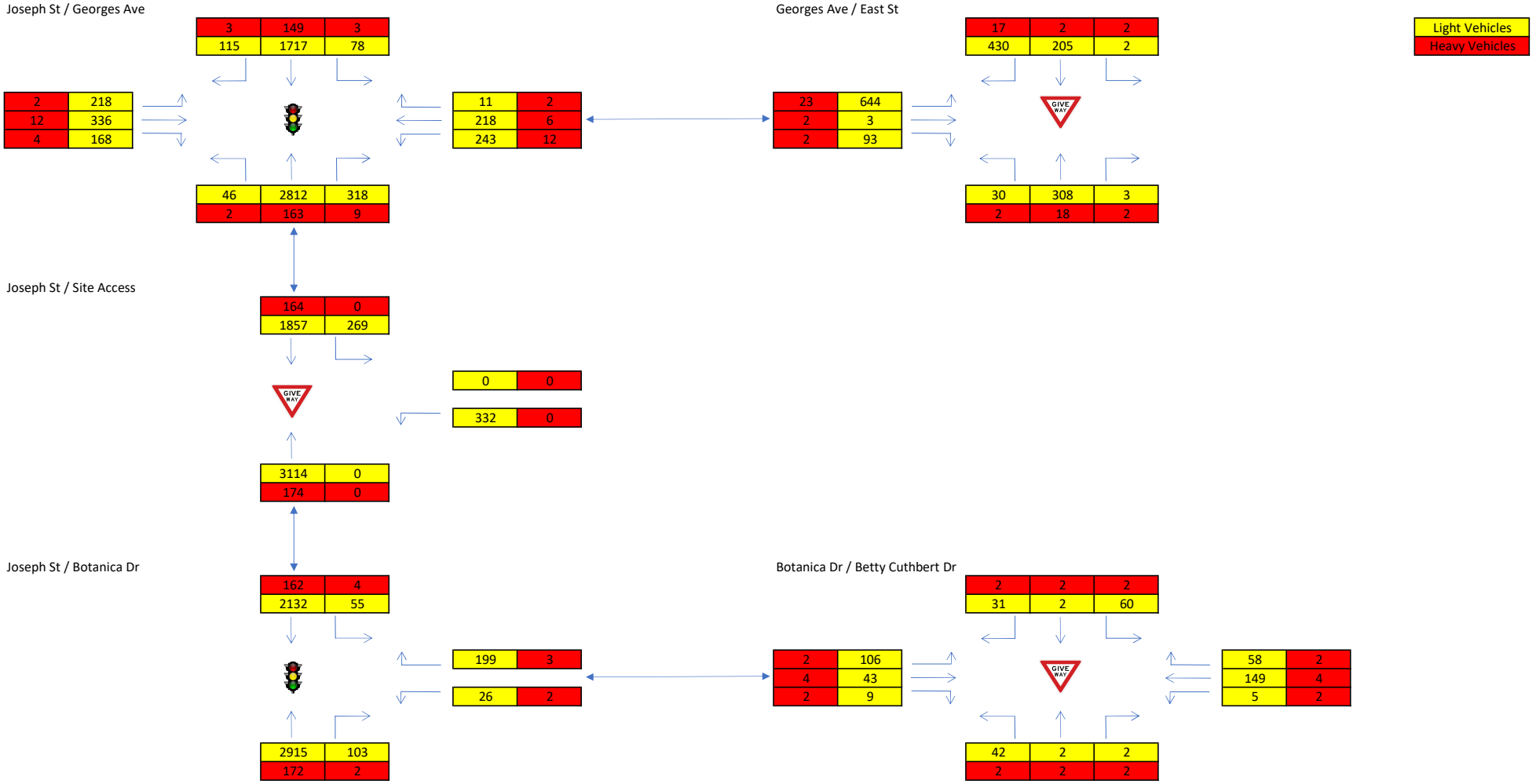
Traffic Volumes

Scenario 2 - 2023 PM with MSL and Residential impact

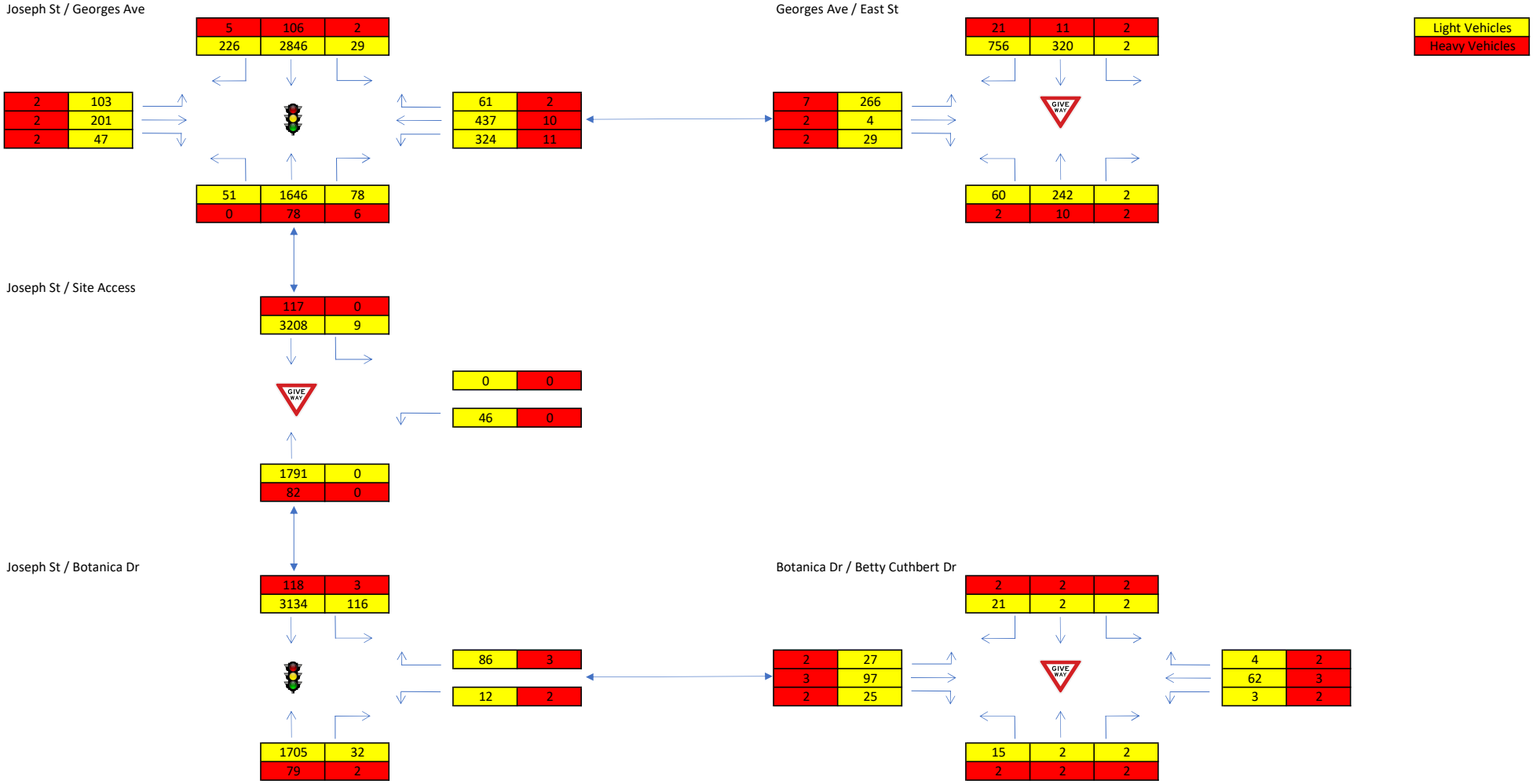


Traffic Volumes

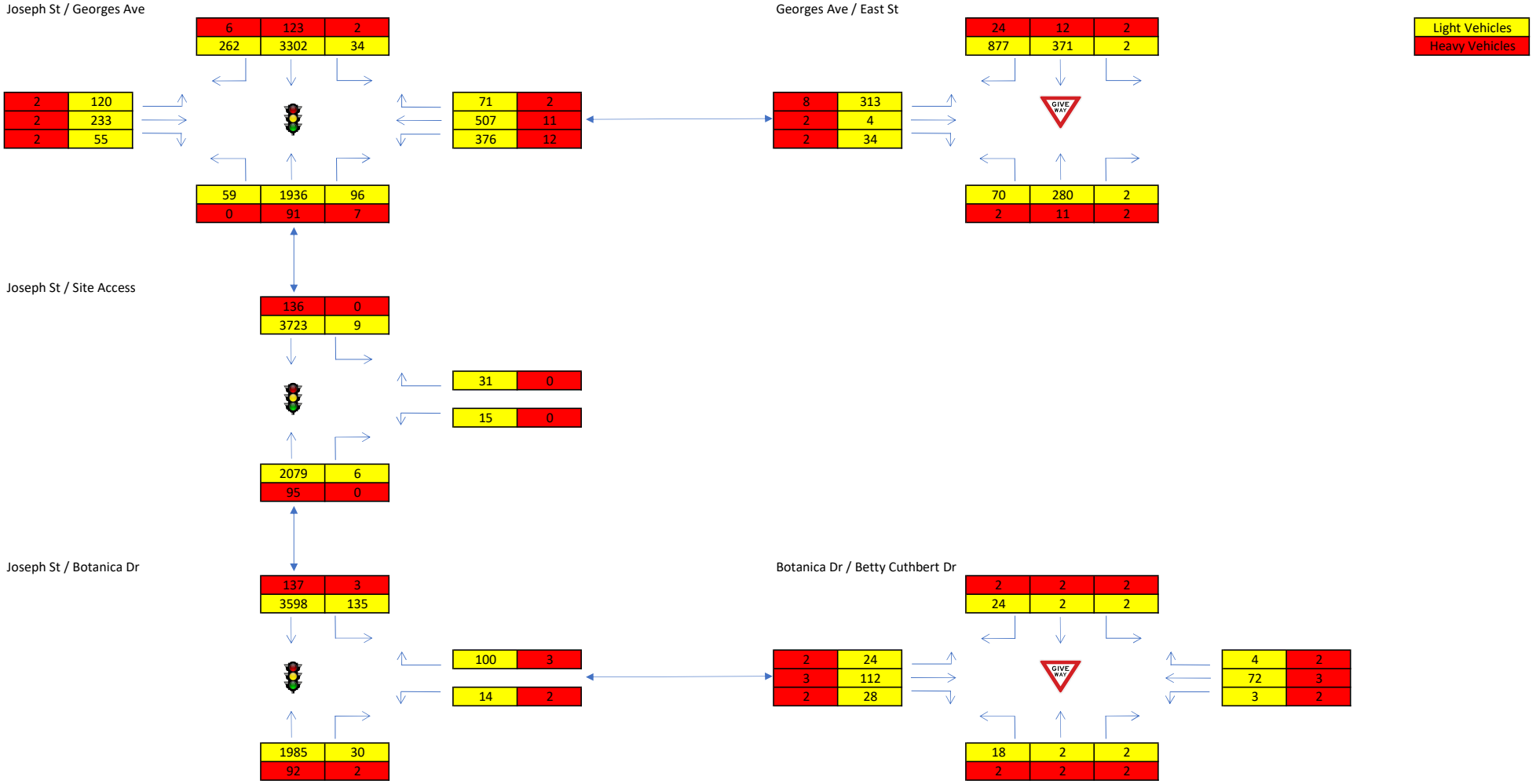
Scenario 3.2 - 2026 AM



Traffic Volumes
Scenario 3.2 - 2026 PM

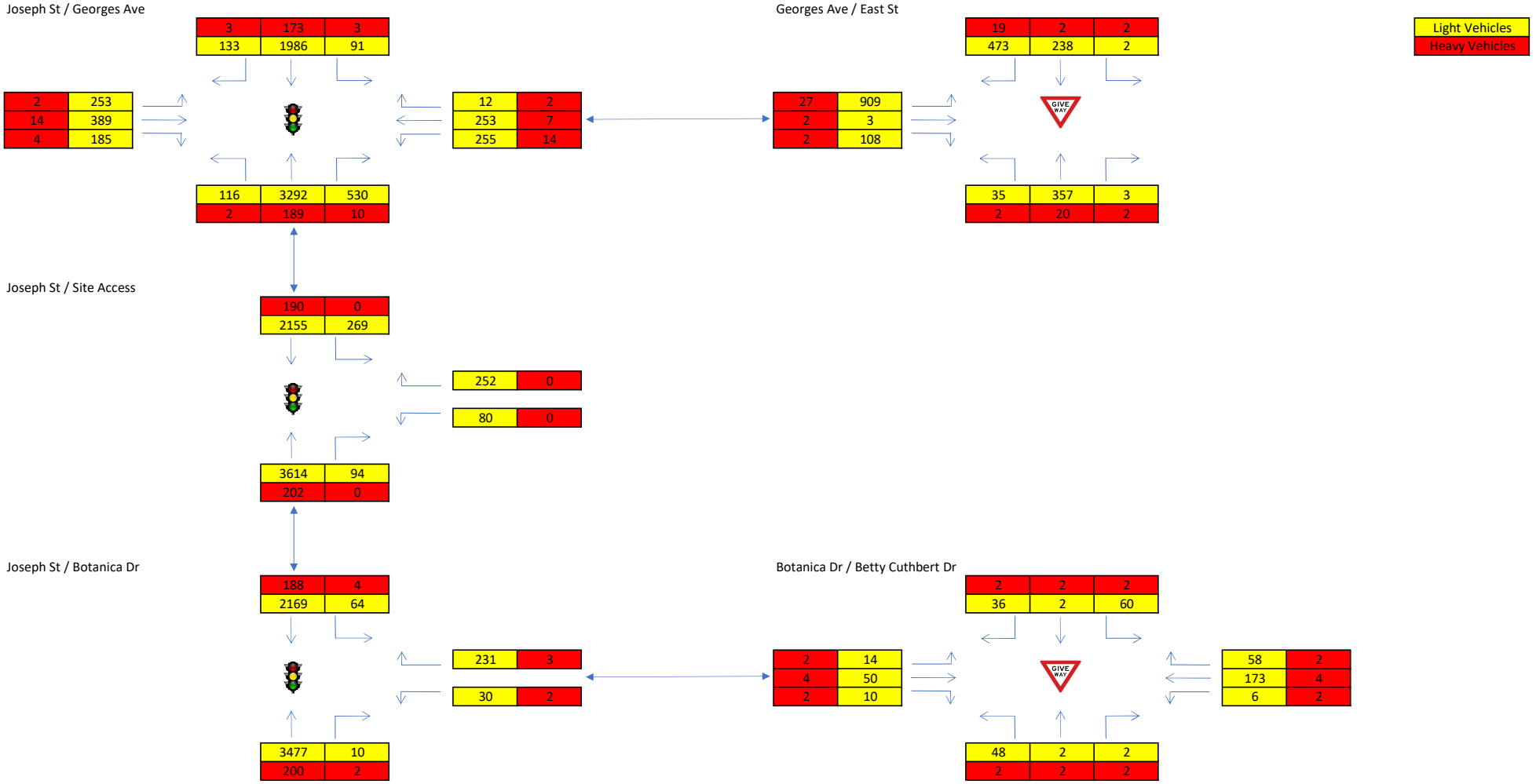


Traffic Volumes
Scenario 4.2 - 2036 PM



Traffic Volumes

Scenario 4.2 - 2036 AM



D. SIDRA Modelling Outputs

MOTT MACDONALD

80 Betty Cuthbert Drive, Lidcombe Master Plan

Traffic and Transport Assessment Report (Appendix D: SIDRA OUTPUTS)

11/03/2022

Confidential

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2 Joseph Street / Botanica Drive **Error! Bookmark not defined.**

2.1 AM – Existing **Error! Bookmark not defined.**
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2.3 AM – Scenario 2 **Error! Bookmark not defined.**
2.4 PM - Scenario 2 **Error! Bookmark not defined.**
2.5 AM – Scenario 3 **Error! Bookmark not defined.**
2.6 PM - Scenario 3 **Error! Bookmark not defined.**
2.7 AM - Scenario 3 with Improvements **Error! Bookmark not defined.**
2.8 PM - Scenario 3 with Improvements **Error! Bookmark not defined.**

3 Georges Avenue / East Street **Error! Bookmark not defined.**

3.1 AM – Existing **Error! Bookmark not defined.**
3.2 PM – Existing **Error! Bookmark not defined.**
3.3 AM – Scenario 2 **Error! Bookmark not defined.**
3.4 PM - Scenario 2 **Error! Bookmark not defined.**
3.5 AM – Scenario 3 **Error! Bookmark not defined.**
3.6 PM - Scenario 3 **Error! Bookmark not defined.**

4 Botanica Drive / Betty Cuthbert Drive **Error! Bookmark not defined.**

4.1 AM – Existing **Error! Bookmark not defined.**
4.2 PM – Existing **Error! Bookmark not defined.**
4.3 AM – Scenario 2 **Error! Bookmark not defined.**
4.4 PM - Scenario 2 **Error! Bookmark not defined.**
4.5 AM – Scenario 3 **Error! Bookmark not defined.**
4.6 PM - Scenario 3 **Error! Bookmark not defined.**

5 Joseph Street / Site Access **Error! Bookmark not defined.**

5.1 AM – Scenario 3 **Error! Bookmark not defined.**
5.2 PM - Scenario 3 **Error! Bookmark not defined.**

5.3 AM - Scenario 3 with Improvements **Error! Bookmark not defined.**
5.4 PM - Scenario 3 with Improvements **Error! Bookmark not defined.**

1 SIDRA Outputs

1.1 AM – Existing

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 1 (Site Folder: General)] Network: 1 [Scenario 1 - AM - Existing (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 1 - Existing
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	41	2.4	41	2.4	1.004	96.4	LOS F	103.3	756.3	1.00	1.29	1.46	26.0
2	T1	2601	5.5	2601	5.5	* 1.004	94.2	LOS F	105.6	774.1	0.97	1.27	1.44	27.2
3	R2	285	2.5	285	2.5	0.872	48.4	LOS D	12.8	91.6	1.00	0.90	1.18	29.0
Approach		2927	5.1	2927	5.1	1.004	89.8	LOS F	105.6	774.1	0.98	1.24	1.42	27.3
East: Georges Ave E														
4	L2	80	12.5	80	12.5	0.222	39.5	LOS C	6.8	50.8	0.73	0.69	0.73	22.1
5	T1	195	2.6	195	2.6	0.355	47.7	LOS D	9.2	66.1	0.85	0.72	0.85	28.8
6	R2	10	10.0	10	10.0	0.355	57.3	LOS E	9.2	66.1	0.89	0.74	0.89	29.0
Approach		285	5.6	285	5.6	0.355	45.7	LOS D	9.2	66.1	0.81	0.71	0.81	27.5
North: Joseph St N														
7	L2	69	1.4	69	1.4	0.908	73.0	LOS F	45.7	340.0	1.00	1.04	1.19	19.8
8	T1	1592	8.2	1592	8.2	0.908	65.6	LOS E	47.3	354.6	0.99	1.04	1.19	20.1
9	R2	102	2.0	102	2.0	* 0.933	102.8	LOS F	8.9	63.1	1.00	1.02	1.65	22.1
Approach		1763	7.5	1763	7.5	0.933	68.0	LOS E	47.3	354.6	0.99	1.04	1.21	20.3
West: Georges Ave W														
10	L2	191	0.5	191	0.5	0.343	40.2	LOS C	11.3	79.5	0.76	0.75	0.76	34.8
11	T1	303	3.3	303	3.3	* 1.000	129.7	LOS F	43.9	315.6	0.98	1.36	1.67	11.2
12	R2	95	3.2	95	3.2	1.000	143.7	LOS F	43.9	315.6	1.00	1.42	1.76	10.6
Approach		589	2.4	589	2.4	1.000	103.0	LOS F	43.9	315.6	0.91	1.17	1.39	16.4
All Vehicles		5564	5.6	5564	5.6	1.004	82.0	LOS F	105.6	774.1	0.97	1.14	1.32	24.3

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 1 (Site Folder: General)] Network: 1 [Scenario 1 - AM - Existing (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 1 - Existing
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2699	5.6	2699	5.6	* 0.746	11.4	LOS A	42.1	308.5	0.62	0.58	0.62	59.5
3	R2	8	12.5	8	12.5	0.119	86.5	LOS F	0.6	4.6	0.99	0.67	0.99	22.2
Approach		2707	5.6	2707	5.6	0.746	11.6	LOS A	42.1	308.5	0.62	0.58	0.62	59.2
East: Botanica Drive														
4	L2	23	4.3	23	4.3	0.068	53.6	LOS D	1.4	9.9	0.85	0.68	0.85	30.1
6	R2	176	1.1	176	1.1	0.607	67.1	LOS E	12.1	85.3	0.98	0.82	0.98	5.1
Approach		199	1.5	199	1.5	0.607	65.6	LOS E	12.1	85.3	0.96	0.80	0.96	8.8
North: Joseph Street North														
7	L2	51	5.9	51	5.9	* 0.485	25.1	LOS B	24.6	184.0	0.66	0.63	0.66	49.2
8	T1	1715	8.2	1715	8.2	0.485	15.7	LOS B	25.5	191.0	0.63	0.58	0.63	63.7
Approach		1766	8.2	1766	8.2	0.485	16.0	LOS B	25.5	191.0	0.63	0.58	0.63	63.5
All Vehicles		4672	6.4	4672	6.4	0.746	15.6	LOS B	42.1	308.5	0.64	0.59	0.64	58.5

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 1 (Site Folder: General)] Network: 1 [Scenario 1 - AM - Existing (Network Folder: General)]

Georges Avenue / East Street
Scenario 1 - Existing
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	27	3.7	27	3.7	0.312	5.6	LOS A	1.7	12.3	0.46	0.58	0.46	43.1
2	T1	284	5.3	284	5.3	0.312	5.3	LOS A	1.7	12.3	0.46	0.58	0.46	46.2
3u	U	3	33.3	3	33.3	0.312	10.3	LOS A	1.7	12.3	0.46	0.58	0.46	45.9

Approach		314	5.4	314	5.4	0.312	5.4	LOS A	1.7	12.3	0.46	0.58	0.46	46.0
North: East St N														
8	T1	180	0.6	180	0.6	0.334	4.1	LOS A	1.9	13.6	0.25	0.56	0.25	46.0
9	R2	248	5.6	248	5.6	0.334	7.1	LOS A	1.9	13.6	0.25	0.56	0.25	42.8
9u	U	2	50.0	2	50.0	0.334	9.0	LOS A	1.9	13.6	0.25	0.56	0.25	45.4
Approach		430	3.7	430	3.7	0.334	5.8	LOS A	1.9	13.6	0.25	0.56	0.25	44.6
West: Georges Ave														
10	L2	583	3.4	583	3.4	0.665	7.6	LOS A	5.9	42.2	0.54	0.72	0.61	43.8
12	R2	82	1.2	82	1.2	0.665	10.2	LOS A	5.9	42.2	0.54	0.72	0.61	44.3
12u	U	3	33.3	3	33.3	0.665	12.7	LOS A	5.9	42.2	0.54	0.72	0.61	39.2
Approach		668	3.3	668	3.3	0.665	8.0	LOS A	5.9	42.2	0.54	0.72	0.61	43.8
All Vehicles		1412	3.9	1412	3.9	0.665	6.7	LOS A	5.9	42.2	0.44	0.64	0.47	44.6

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 1 (Site Folder: General)]

Network: 1 [Scenario 1 - AM - Existing (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 1 - Existing
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	37	2.7	37	2.7	0.026	5.0	LOS A	0.1	0.7	0.22	0.50	0.22	43.6
2	T1	2	50.0	2	50.0	0.003	4.0	LOS A	0.0	0.1	0.21	0.49	0.21	46.1
3	R2	2	50.0	2	50.0	0.003	5.5	LOS A	0.0	0.1	0.21	0.49	0.21	45.3
Approach		41	7.3	41	7.3	0.026	5.0	LOS A	0.1	0.7	0.22	0.50	0.22	43.9
East: Botanica Dr W														
4	L2	5	20.0	5	20.0	0.071	4.8	LOS A	0.0	0.1	0.00	0.02	0.00	49.1
5	T1	133	2.3	133	2.3	0.071	0.0	LOS A	0.0	0.1	0.00	0.02	0.00	49.7
6	R2	1	100.0	1	100.0	0.071	5.8	LOS A	0.0	0.1	0.00	0.02	0.00	47.0
Approach		139	3.6	139	3.6	0.071	0.2	NA	0.0	0.1	0.00	0.02	0.00	49.6
North: Betty Cuthbert Dr N														
7	L2	2	50.0	2	50.0	0.023	5.2	LOS A	0.1	0.5	0.17	0.54	0.17	45.6
8	T1	2	50.0	2	50.0	0.023	4.1	LOS A	0.1	0.5	0.17	0.54	0.17	45.8
9	R2	28	3.6	28	3.6	0.023	5.0	LOS A	0.1	0.5	0.17	0.54	0.17	43.9
Approach		32	9.4	32	9.4	0.023	4.9	LOS A	0.1	0.5	0.17	0.54	0.17	44.3
West: Botanica Dr W														
10	L2	11	9.1	11	9.1	0.033	4.8	LOS A	0.0	0.4	0.07	0.17	0.07	47.1
11	T1	40	7.5	40	7.5	0.033	0.1	LOS A	0.0	0.4	0.07	0.17	0.07	48.1
12	R2	8	12.5	8	12.5	0.033	5.0	LOS A	0.0	0.4	0.07	0.17	0.07	46.8
Approach		59	8.5	59	8.5	0.033	1.6	NA	0.0	0.4	0.07	0.17	0.07	47.7

All Vehicles	271	5.9	271	5.9	0.071	1.8	NA	0.1	0.7	0.07	0.19	0.07	47.5

1.2 PM – Existing

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 1 (Site Folder: General)]

Network: 2 [Scenario 1 - PM - Existing (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 1 - Existing
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	44	0.0	44	0.0	0.736	62.6	LOS E	35.9	260.0	1.00	0.89	1.00	32.9
2	T1	1507	4.5	1507	4.5	0.736	51.2	LOS D	36.5	265.7	0.99	0.88	0.99	37.7
3	R2	73	6.8	73	6.8	* 0.888	96.9	LOS F	6.1	45.0	1.00	0.95	1.54	18.3
Approach		1624	4.5	1624	4.5	0.888	53.6	LOS D	36.5	265.7	0.99	0.89	1.02	36.5
East: Georges Ave E														
4	L2	291	3.1	291	3.1	0.564	46.4	LOS D	20.4	146.2	0.86	0.81	0.86	19.6
5	T1	390	2.1	390	2.1	* 0.902	66.4	LOS E	30.9	219.9	0.95	1.01	1.18	24.7
6	R2	54	1.9	54	1.9	0.902	74.9	LOS F	30.9	219.9	0.97	1.04	1.23	25.5
Approach		735	2.4	735	2.4	0.902	59.1	LOS E	30.9	219.9	0.92	0.93	1.06	23.4
North: Joseph St N														
7	L2	26	3.8	26	3.8	0.910	51.4	LOS D	67.4	486.0	0.99	0.99	1.08	25.9
8	T1	2574	3.6	2574	3.6	* 0.910	44.6	LOS D	68.5	494.5	0.95	0.96	1.05	26.1
9	R2	201	2.0	201	2.0	0.720	42.2	LOS C	8.3	58.9	1.00	0.83	1.05	34.8
Approach		2801	3.5	2801	3.5	0.910	44.5	LOS D	68.5	494.5	0.95	0.95	1.05	27.0
West: Georges Ave W														
10	L2	91	1.1	91	1.1	0.230	40.8	LOS C	7.3	51.7	0.75	0.70	0.75	34.9
11	T1	176	0.6	176	0.6	0.672	56.4	LOS D	11.6	82.1	0.92	0.80	0.93	19.7
12	R2	42	2.4	42	2.4	0.672	69.5	LOS E	11.6	82.1	0.99	0.84	1.01	18.2
Approach		309	1.0	309	1.0	0.672	53.6	LOS D	11.6	82.1	0.88	0.77	0.89	24.2
All Vehicles		5469	3.5	5469	3.5	0.910	49.7	LOS D	68.5	494.5	0.95	0.92	1.03	29.7

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 1 (Site Folder: General)] Network: 2 [Scenario 1 - PM - Existing (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 1 - Existing
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	1560	4.4	1560	4.4	0.371	7.0	LOS A	13.1	94.9	0.38	0.34	0.38	66.1
3	R2	23	4.3	23	4.3	* 0.324	87.7	LOS F	1.8	12.7	1.00	0.71	1.00	22.0
Approach		1583	4.4	1583	4.4	0.371	8.1	LOS A	13.1	94.9	0.39	0.35	0.39	64.2
East: Botanica Drive														
4	L2	11	9.1	11	9.1	0.034	53.0	LOS D	0.6	4.8	0.84	0.66	0.84	29.8
6	R2	77	2.6	77	2.6	0.244	62.4	LOS E	4.9	34.9	0.90	0.76	0.90	5.5
Approach		88	3.4	88	3.4	0.244	61.2	LOS E	4.9	34.9	0.90	0.75	0.90	9.6
North: Joseph Street North														
7	L2	103	1.9	103	1.9	* 0.776	14.6	LOS B	23.7	171.1	0.39	0.42	0.39	62.5
8	T1	2803	3.7	2803	3.7	0.776	6.5	LOS A	26.6	191.9	0.36	0.35	0.36	72.2
Approach		2906	3.6	2906	3.6	0.776	6.8	LOS A	26.6	191.9	0.36	0.35	0.36	72.0
All Vehicles		4577	3.9	4577	3.9	0.776	8.3	LOS A	26.6	191.9	0.38	0.36	0.38	68.6

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 1 (Site Folder: General)] Network: 2 [Scenario 1 - PM - Existing (Network Folder: General)]

Georges Avenue / East Street
Scenario 1 - Existing
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	53	1.9	53	1.9	0.370	8.7	LOS A	2.2	15.6	0.72	0.81	0.72	40.7
2	T1	219	3.7	219	3.7	0.370	8.5	LOS A	2.2	15.6	0.72	0.81	0.72	44.7
3u	U	2	50.0	2	50.0	0.370	14.9	LOS B	2.2	15.6	0.72	0.81	0.72	44.2

Approach		274	3.6	274	3.6	0.370	8.6	LOS A	2.2	15.6	0.72	0.81	0.72	44.3
North: East St N														
8	T1	297	6.1	297	6.1	0.642	4.0	LOS A	5.9	42.5	0.21	0.55	0.21	45.8
9	R2	669	1.3	669	1.3	0.642	6.9	LOS A	5.9	42.5	0.21	0.55	0.21	42.6
9u	U	2	50.0	2	50.0	0.642	8.8	LOS A	5.9	42.5	0.21	0.55	0.21	45.3
Approach		968	2.9	968	2.9	0.642	6.0	LOS A	5.9	42.5	0.21	0.55	0.21	44.0
West: Georges Ave														
10	L2	238	2.5	238	2.5	0.266	5.4	LOS A	1.3	9.7	0.36	0.59	0.36	45.2
12	R2	26	3.8	26	3.8	0.266	8.1	LOS A	1.3	9.7	0.36	0.59	0.36	45.6
12u	U	4	25.0	4	25.0	0.266	9.9	LOS A	1.3	9.7	0.36	0.59	0.36	41.8
Approach		268	3.0	268	3.0	0.266	5.7	LOS A	1.3	9.7	0.36	0.59	0.36	45.2
All Vehicles		1510	3.0	1510	3.0	0.642	6.4	LOS A	5.9	42.5	0.33	0.60	0.33	44.3

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 1 (Site Folder: General)]

Network: 2 [Scenario 1 - PM - Existing (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 1 - Existing
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	14	7.1	14	7.1	0.009	4.8	LOS A	0.0	0.3	0.14	0.49	0.14	43.9
2	T1	2	50.0	2	50.0	0.003	4.0	LOS A	0.0	0.1	0.20	0.49	0.20	46.1
3	R2	2	50.0	2	50.0	0.003	5.4	LOS A	0.0	0.1	0.20	0.49	0.20	45.4
Approach		18	16.7	18	16.7	0.009	4.8	LOS A	0.0	0.3	0.15	0.49	0.15	44.6
East: Botanica Dr W														
4	L2	3	33.3	3	33.3	0.033	5.0	LOS A	0.0	0.3	0.04	0.06	0.04	48.6
5	T1	56	3.6	56	3.6	0.033	0.0	LOS A	0.0	0.3	0.04	0.06	0.04	49.2
6	R2	4	25.0	4	25.0	0.033	5.1	LOS A	0.0	0.3	0.04	0.06	0.04	48.1
Approach		63	6.3	63	6.3	0.033	0.6	NA	0.0	0.3	0.04	0.06	0.04	49.1
North: Betty Cuthbert Dr N														
7	L2	2	50.0	2	50.0	0.017	5.4	LOS A	0.0	0.4	0.18	0.53	0.18	45.5
8	T1	2	50.0	2	50.0	0.017	4.0	LOS A	0.0	0.4	0.18	0.53	0.18	45.8
9	R2	19	5.3	19	5.3	0.017	4.9	LOS A	0.0	0.4	0.18	0.53	0.18	43.8
Approach		23	13.0	23	13.0	0.017	4.9	LOS A	0.0	0.4	0.18	0.53	0.18	44.4
West: Botanica Dr W														
10	L2	19	5.3	19	5.3	0.067	4.7	LOS A	0.1	0.9	0.06	0.17	0.06	47.2
11	T1	86	2.3	86	2.3	0.067	0.0	LOS A	0.1	0.9	0.06	0.17	0.06	48.1
12	R2	22	4.5	22	4.5	0.067	4.7	LOS A	0.1	0.9	0.06	0.17	0.06	47.1
Approach		127	3.1	127	3.1	0.067	1.5	NA	0.1	0.9	0.06	0.17	0.06	47.8

All Vehicles	231	6.1	231	6.1	0.067	1.9	NA	0.1	0.9	0.07	0.20	0.07	47.5

1.3 AM – Scenario 2

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 2.3 (Site Folder: General)] **Network: 1 [Scenario 2.3 - AM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]**

Joseph Street / Georges Avenue
Scenario 2 - MSL and Residential
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	46	4.3	46	4.3	0.923	22.0	LOS B	46.7	342.0	0.57	0.61	0.64	48.4
2	T1	2854	5.5	2854	5.5	* 0.923	19.6	LOS B	54.6	400.2	0.57	0.60	0.66	52.7
3	R2	314	2.5	314	2.5	0.854	47.5	LOS D	16.2	115.9	1.00	0.89	1.13	29.3
Approach		3214	5.2	3214	5.2	0.923	22.4	LOS B	54.6	400.2	0.61	0.63	0.70	50.3
East: Georges Ave E														
4	L2	91	12.1	91	12.1	0.562	59.2	LOS E	14.2	104.7	0.94	0.80	0.94	17.2
5	T1	214	2.8	214	2.8	0.562	61.4	LOS E	14.2	104.7	0.96	0.80	0.96	25.7
6	R2	12	16.7	12	16.7	0.562	75.9	LOS F	6.9	50.0	1.00	0.78	1.00	24.5
Approach		317	6.0	317	6.0	0.562	61.3	LOS E	14.2	104.7	0.96	0.80	0.96	23.8
North: Joseph St N														
7	L2	78	3.8	78	3.8	0.811	47.3	LOS D	39.5	294.6	0.95	0.87	0.96	27.4
8	T1	1767	8.1	1767	8.1	0.811	39.4	LOS C	40.7	304.8	0.93	0.85	0.94	28.1
9	R2	113	2.7	113	2.7	* 0.922	98.9	LOS F	9.6	68.5	1.00	1.01	1.59	22.6
Approach		1958	7.6	1958	7.6	0.922	43.1	LOS D	40.7	304.8	0.93	0.86	0.98	27.3
West: Georges Ave W														
10	L2	210	1.0	210	1.0	0.891	78.1	LOS F	28.7	204.6	1.00	1.01	1.24	25.8
11	T1	332	3.3	332	3.3	0.891	76.3	LOS F	28.7	204.6	1.00	1.03	1.26	16.3
12	R2	105	3.8	105	3.8	* 0.891	82.1	LOS F	23.4	169.0	1.00	1.04	1.28	16.1
Approach		647	2.6	647	2.6	0.891	77.8	LOS F	28.7	204.6	1.00	1.03	1.26	19.8
All Vehicles		6136	5.7	6136	5.7	0.923	36.9	LOS C	54.6	400.2	0.77	0.75	0.86	37.4

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 2.3 (Site Folder: General)] Network: 1 [Scenario 2.3 - AM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 2 - MSL and Residential
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2953	5.6	2953	5.6	* 0.803	18.8	LOS B	51.0	374.0	0.78	0.73	0.78	51.0
3	R2	28	7.1	28	7.1	0.397	87.2	LOS F	2.1	15.7	1.00	0.72	1.00	22.1
Approach		2981	5.6	2981	5.6	0.803	19.5	LOS B	51.0	374.0	0.78	0.73	0.78	50.3
East: Botanica Drive														
4	L2	32	6.3	32	6.3	0.067	43.2	LOS D	1.7	12.3	0.77	0.68	0.77	33.4
6	R2	205	1.5	205	1.5	0.434	53.9	LOS D	12.3	87.5	0.89	0.80	0.89	6.2
Approach		237	2.1	237	2.1	0.434	52.5	LOS D	12.3	87.5	0.87	0.79	0.87	11.2
North: Joseph Street North														
7	L2	85	4.7	85	4.7	* 0.620	37.6	LOS C	35.1	261.8	0.86	0.81	0.86	38.9
8	T1	1877	8.3	1877	8.3	0.620	28.8	LOS C	37.5	280.8	0.86	0.79	0.86	54.6
Approach		1962	8.1	1962	8.1	0.620	29.2	LOS C	37.5	280.8	0.86	0.79	0.86	54.1
All Vehicles		5180	6.4	5180	6.4	0.803	24.7	LOS B	51.0	374.0	0.82	0.76	0.82	50.5

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 2.3 (Site Folder: General)] Network: 1 [Scenario 2.3 - AM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Georges Avenue / East Street
Scenario 2 - MSL and Residential
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	31	6.5	31	6.5	0.356	6.0	LOS A	2.0	14.9	0.51	0.61	0.51	42.9
2	T1	312	5.4	312	5.4	0.356	5.6	LOS A	2.0	14.9	0.51	0.61	0.51	46.0
3u	U	5	40.0	5	40.0	0.356	10.9	LOS A	2.0	14.9	0.51	0.61	0.51	45.6
Approach		348	6.0	348	6.0	0.356	5.7	LOS A	2.0	14.9	0.51	0.61	0.51	45.9

North: East St N														
8	T1	198	1.0	198	1.0	0.377	4.2	LOS A	2.2	16.2	0.29	0.56	0.29	45.9
9	R2	275	5.8	275	5.8	0.377	7.2	LOS A	2.2	16.2	0.29	0.56	0.29	42.6
9u	U	4	50.0	4	50.0	0.377	9.2	LOS A	2.2	16.2	0.29	0.56	0.29	45.3
Approach		477	4.2	477	4.2	0.377	5.9	LOS A	2.2	16.2	0.29	0.56	0.29	44.5
West: Georges Ave														
10	L2	640	3.4	640	3.4	0.758	9.5	LOS A	8.5	61.2	0.63	0.80	0.78	42.7
12	R2	91	2.2	91	2.2	0.758	12.1	LOS A	8.5	61.2	0.63	0.80	0.78	43.2
12u	U	5	40.0	5	40.0	0.758	15.1	LOS B	8.5	61.2	0.63	0.80	0.78	37.3
Approach		736	3.5	736	3.5	0.758	9.9	LOS A	8.5	61.2	0.63	0.80	0.78	42.7
All Vehicles		1561	4.3	1561	4.3	0.758	7.7	LOS A	8.5	61.2	0.50	0.69	0.57	43.9

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 2.3 (Site Folder: General)]

Network: 1 [Scenario 2.3 - AM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 2 - MSL and Residential
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	42	4.8	42	4.8	0.031	5.1	LOS A	0.1	0.9	0.24	0.51	0.24	43.5
2	T1	4	50.0	4	50.0	0.007	4.2	LOS A	0.0	0.2	0.24	0.51	0.24	46.0
3	R2	4	50.0	4	50.0	0.007	5.6	LOS A	0.0	0.2	0.24	0.51	0.24	45.3
Approach		50	12.0	50	12.0	0.031	5.0	LOS A	0.1	0.9	0.24	0.51	0.24	44.1
East: Botanica Dr W														
4	L2	7	28.6	7	28.6	0.083	5.0	LOS A	0.0	0.3	0.01	0.03	0.01	48.9
5	T1	147	2.7	147	2.7	0.083	0.0	LOS A	0.0	0.3	0.01	0.03	0.01	49.6
6	R2	2	100.0	2	100.0	0.083	6.1	LOS A	0.0	0.3	0.01	0.03	0.01	47.0
Approach		156	5.1	156	5.1	0.083	0.3	NA	0.0	0.3	0.01	0.03	0.01	49.5
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.043	5.2	LOS A	0.1	1.0	0.18	0.55	0.18	45.5
8	T1	4	50.0	4	50.0	0.043	4.2	LOS A	0.1	1.0	0.18	0.55	0.18	45.8
9	R2	48	4.2	48	4.2	0.043	5.1	LOS A	0.1	1.0	0.18	0.55	0.18	43.8
Approach		56	10.7	56	10.7	0.043	5.0	LOS A	0.1	1.0	0.18	0.55	0.18	44.3
West: Botanica Dr W														
10	L2	59	3.4	59	3.4	0.064	4.7	LOS A	0.1	0.5	0.05	0.31	0.05	46.0
11	T1	45	8.9	45	8.9	0.064	0.1	LOS A	0.1	0.5	0.05	0.31	0.05	46.8
12	R2	10	20.0	10	20.0	0.064	5.2	LOS A	0.1	0.5	0.05	0.31	0.05	45.4
Approach		114	7.0	114	7.0	0.064	2.9	NA	0.1	0.5	0.05	0.31	0.05	46.2

All Vehicles	376	7.4	376	7.4	0.083	2.4		NA	0.1	1.0	0.08	0.26	0.08	46.8

1.4 PM – Scenario 2

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 2.3 (Site Folder: General)]

Network: 2 [Scenario 2.3 - PM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 2 - MSL and Residential
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	49	0.0	49	0.0	0.822	61.2	LOS E	40.9	296.1	1.00	0.92	1.02	33.3
2	T1	1675	4.5	1675	4.5	0.822	51.7	LOS D	41.5	302.0	0.99	0.91	1.02	37.5
3	R2	86	7.0	86	7.0	0.904	97.0	LOS F	7.2	53.0	1.00	0.98	1.57	18.3
Approach		1810	4.5	1810	4.5	0.904	54.1	LOS D	41.5	302.0	0.99	0.91	1.05	36.3
East: Georges Ave E														
4	L2	320	3.1	320	3.1	* 0.955	95.8	LOS F	46.7	334.6	1.00	1.13	1.41	11.9
5	T1	427	2.1	427	2.1	0.955	96.3	LOS F	46.7	334.6	1.00	1.19	1.47	20.1
6	R2	60	3.3	60	3.3	0.955	103.5	LOS F	29.6	211.3	1.00	1.24	1.52	20.8
Approach		807	2.6	807	2.6	0.955	96.6	LOS F	46.7	334.6	1.00	1.17	1.45	17.4
North: Joseph St N														
7	L2	30	6.7	30	6.7	0.951	66.3	LOS E	86.2	622.3	1.00	1.09	1.20	21.5
8	T1	2823	3.6	2823	3.6	* 0.951	59.7	LOS E	87.7	632.9	0.96	1.06	1.17	21.5
9	R2	221	2.3	221	2.3	0.642	38.2	LOS C	8.7	62.0	0.97	0.82	0.97	36.1
Approach		3074	3.5	3074	3.5	0.951	58.2	LOS E	87.7	632.9	0.96	1.04	1.15	22.7
West: Georges Ave W														
10	L2	101	2.0	101	2.0	0.578	52.6	LOS D	18.1	128.2	0.91	0.80	0.91	31.7
11	T1	194	1.0	194	1.0	0.578	48.2	LOS D	18.1	128.2	0.91	0.80	0.91	21.6
12	R2	47	4.3	47	4.3	0.891	94.7	LOS F	3.8	27.9	1.00	0.95	1.61	14.2
Approach		342	1.8	342	1.8	0.891	55.9	LOS D	18.1	128.2	0.92	0.82	1.01	23.7
All Vehicles		6033	3.6	6033	3.6	0.955	62.0	LOS E	87.7	632.9	0.97	1.01	1.15	26.2

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 2.3 (Site Folder: General)]

Network: 2 [Scenario 2.3 - PM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 2 - MSL and Residential
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	1707	4.5	1707	4.5	0.407	7.3	LOS A	14.8	107.9	0.40	0.36	0.40	65.5
3	R2	33	6.1	33	6.1	* 0.464	87.5	LOS F	2.5	18.5	1.00	0.72	1.00	22.0
Approach		1740	4.5	1740	4.5	0.464	8.8	LOS A	14.8	107.9	0.41	0.37	0.41	63.1
East: Botanica Drive														
4	L2	28	7.1	28	7.1	0.084	52.9	LOS D	1.6	12.2	0.85	0.69	0.85	30.0
6	R2	117	2.6	117	2.6	0.365	62.8	LOS E	7.5	53.6	0.93	0.78	0.93	5.4
Approach		145	3.4	145	3.4	0.365	60.9	LOS E	7.5	53.6	0.91	0.77	0.91	11.6
North: Joseph Street North														
7	L2	123	2.4	123	2.4	* 0.858	17.5	LOS B	38.1	274.8	0.58	0.59	0.58	58.0
8	T1	3066	3.7	3066	3.7	0.858	8.5	LOS A	38.1	274.8	0.53	0.51	0.53	70.1
Approach		3189	3.6	3189	3.6	0.858	8.9	LOS A	38.1	274.8	0.53	0.51	0.53	69.9
All Vehicles		5074	3.9	5074	3.9	0.858	10.3	LOS A	38.1	274.8	0.50	0.47	0.50	66.2

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 2.3 (Site Folder: General)]

Network: 2 [Scenario 2.3 - PM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Georges Avenue / East Street
Scenario 2 - MSL and Residential
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	59	3.4	59	3.4	0.451	10.9	LOS A	3.1	22.8	0.80	0.93	0.91	38.9
2	T1	240	3.8	240	3.8	0.451	10.6	LOS A	3.1	22.8	0.80	0.93	0.91	43.6
3u	U	4	50.0	4	50.0	0.451	17.3	LOS B	3.1	22.8	0.80	0.93	0.91	43.1
Approach		303	4.3	303	4.3	0.451	10.7	LOS A	3.1	22.8	0.80	0.93	0.91	43.0

North: East St N														
8	T1	316	3.2	316	3.2	0.716	4.1	LOS A	7.8	56.0	0.29	0.54	0.29	45.7
9	R2	743	2.7	743	2.7	0.716	7.0	LOS A	7.8	56.0	0.29	0.54	0.29	42.3
9u	U	4	50.0	4	50.0	0.716	9.0	LOS A	7.8	56.0	0.29	0.54	0.29	45.1
Approach		1063	3.0	1063	3.0	0.716	6.2	LOS A	7.8	56.0	0.29	0.54	0.29	43.8
West: Georges Ave														
10	L2	266	2.6	266	2.6	0.310	5.6	LOS A	1.7	11.9	0.40	0.61	0.40	45.0
12	R2	30	6.7	30	6.7	0.310	8.3	LOS A	1.7	11.9	0.40	0.61	0.40	45.4
12u	U	6	33.3	6	33.3	0.310	10.4	LOS A	1.7	11.9	0.40	0.61	0.40	41.5
Approach		302	3.6	302	3.6	0.310	6.0	LOS A	1.7	11.9	0.40	0.61	0.40	45.0
All Vehicles		1668	3.4	1668	3.4	0.716	7.0	LOS A	7.8	56.0	0.40	0.62	0.42	43.9

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 2.3 (Site Folder: General)]

Network: 2 [Scenario 2.3 - PM - Do Min w 2023 Growth MSL & Resi (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 2 - MSL and Residential
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	17	11.8	17	11.8	0.012	4.9	LOS A	0.0	0.4	0.15	0.49	0.15	43.9
2	T1	4	50.0	4	50.0	0.007	4.1	LOS A	0.0	0.2	0.22	0.50	0.22	46.1
3	R2	4	50.0	4	50.0	0.007	5.5	LOS A	0.0	0.2	0.22	0.50	0.22	45.3
Approach		25	24.0	25	24.0	0.012	4.8	LOS A	0.0	0.4	0.17	0.50	0.17	44.7
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.040	5.2	LOS A	0.1	0.5	0.06	0.08	0.06	48.4
5	T1	63	4.8	63	4.8	0.040	0.1	LOS A	0.1	0.5	0.06	0.08	0.06	49.0
6	R2	6	33.3	6	33.3	0.040	5.3	LOS A	0.1	0.5	0.06	0.08	0.06	47.9
Approach		74	9.5	74	9.5	0.040	0.8	NA	0.1	0.5	0.06	0.08	0.06	48.8
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.055	5.4	LOS A	0.2	1.2	0.21	0.55	0.21	45.5
8	T1	4	50.0	4	50.0	0.055	4.1	LOS A	0.2	1.2	0.21	0.55	0.21	45.7
9	R2	68	2.9	68	2.9	0.055	5.0	LOS A	0.2	1.2	0.21	0.55	0.21	43.7
Approach		76	7.9	76	7.9	0.055	5.0	LOS A	0.2	1.2	0.21	0.55	0.21	44.1
West: Botanica Dr W														
10	L2	37	5.4	37	5.4	0.085	4.7	LOS A	0.1	1.1	0.06	0.20	0.06	46.9
11	T1	95	3.2	95	3.2	0.085	0.0	LOS A	0.1	1.1	0.06	0.20	0.06	47.8
12	R2	25	8.0	25	8.0	0.085	4.8	LOS A	0.1	1.1	0.06	0.20	0.06	46.7
Approach		157	4.5	157	4.5	0.085	1.9	NA	0.1	1.1	0.06	0.20	0.06	47.4
All Vehicles		332	7.8	332	7.8	0.085	2.6	NA	0.2	1.2	0.10	0.28	0.10	46.7

1.5 AM – Scenario 3.2

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - AM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	48	4.2	48	4.2	1.001	75.2	LOS F	75.7	554.9	1.00	1.25	1.40	24.8
2	T1	2975	5.5	2975	5.5	* 1.001	74.7	LOS F	75.7	554.9	0.90	1.18	1.32	25.9
3	R2	327	2.8	327	2.8	0.840	45.6	LOS D	15.9	114.1	1.00	0.90	1.14	20.1
Approach		3350	5.2	3350	5.2	1.001	71.9	LOS F	75.7	554.9	0.91	1.15	1.30	25.6
East: Georges Ave E														
4	L2	255	4.7	255	4.7	0.641	52.2	LOS D	21.4	155.5	0.92	0.83	0.92	18.3
5	T1	224	2.7	224	2.7	0.641	60.2	LOS E	21.4	155.5	0.97	0.82	0.97	25.8
6	R2	13	15.4	13	15.4	0.641	72.8	LOS F	10.5	76.0	1.00	0.82	1.01	25.2
Approach		492	4.1	492	4.1	0.641	56.4	LOS D	21.4	155.5	0.95	0.83	0.95	22.7
North: Joseph St N														
7	L2	81	3.7	81	3.7	0.932	76.7	LOS F	56.8	422.9	1.00	1.08	1.23	19.1
8	T1	1866	8.0	1866	8.0	0.932	69.1	LOS E	58.8	439.4	0.99	1.08	1.23	19.4
9	R2	118	2.5	118	2.5	0.969	115.9	LOS F	11.1	79.1	1.00	1.09	1.81	20.4
Approach		2065	7.5	2065	7.5	0.969	72.0	LOS F	58.8	439.4	0.99	1.08	1.26	19.5
West: Georges Ave W														
10	L2	220	0.9	220	0.9	* 1.002	137.9	LOS F	50.0	356.8	1.00	1.33	1.71	18.2
11	T1	348	3.4	348	3.4	1.002	135.4	LOS F	50.0	356.8	1.00	1.34	1.75	10.7
12	R2	172	2.3	172	2.3	1.002	141.5	LOS F	33.6	241.2	1.00	1.36	1.80	10.6
Approach		740	2.4	740	2.4	1.002	137.5	LOS F	50.0	356.8	1.00	1.34	1.75	13.2
All Vehicles		6647	5.5	6647	5.5	1.002	78.1	LOS F	75.7	554.9	0.95	1.13	1.31	21.6

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - AM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3087	5.6	3087	5.6	* 0.896	27.9	LOS B	67.5	494.8	0.89	0.87	0.93	43.4
3	R2	105	1.9	105	1.9	0.964	113.9	LOS F	9.7	68.8	1.00	1.06	1.81	18.1
Approach		3192	5.5	3192	5.5	0.964	30.7	LOS C	67.5	494.8	0.90	0.87	0.96	41.4
East: Botanica Drive														
4	L2	28	7.1	28	7.1	0.051	38.2	LOS C	1.4	10.0	0.73	0.67	0.73	35.3
6	R2	202	1.5	202	1.5	0.407	51.8	LOS D	11.9	84.5	0.87	0.80	0.87	6.4
Approach		230	2.2	230	2.2	0.407	50.1	LOS D	11.9	84.5	0.85	0.78	0.85	11.2
North: Joseph Street North														
7	L2	59	6.8	59	6.8	* 0.787	44.2	LOS D	47.2	350.0	0.95	0.89	0.95	22.3
8	T1	2294	7.1	2294	7.1	0.787	38.5	LOS C	51.8	384.9	0.97	0.90	0.97	43.9
Approach		2353	7.1	2353	7.1	0.787	38.7	LOS C	51.8	384.9	0.97	0.90	0.97	43.5
All Vehicles		5775	6.0	5775	6.0	0.964	34.7	LOS C	67.5	494.8	0.92	0.88	0.96	41.4

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - AM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	32	6.3	32	6.3	0.428	7.3	LOS A	2.6	19.2	0.66	0.74	0.66	42.1
2	T1	326	5.5	326	5.5	0.428	7.0	LOS A	2.6	19.2	0.66	0.74	0.66	45.6
3u	U	5	40.0	5	40.0	0.428	12.6	LOS A	2.6	19.2	0.66	0.74	0.66	45.2
Approach		363	6.1	363	6.1	0.428	7.1	LOS A	2.6	19.2	0.66	0.74	0.66	45.4
North: East St N														

8	T1	207	1.0	207	1.0	0.510	4.3	LOS A	3.7	26.4	0.35	0.58	0.35	45.6
9	R2	447	3.8	447	3.8	0.510	7.2	LOS A	3.7	26.4	0.35	0.58	0.35	42.1
9u	U	4	50.0	4	50.0	0.510	9.3	LOS A	3.7	26.4	0.35	0.58	0.35	45.0
Approach		658	3.2	658	3.2	0.510	6.3	LOS A	3.7	26.4	0.35	0.58	0.35	43.7
West: Georges Ave														
10	L2	667	3.4	667	3.4	0.810	10.9	LOS A	10.6	76.2	0.70	0.87	0.93	41.9
12	R2	95	2.1	95	2.1	0.810	13.5	LOS A	10.6	76.2	0.70	0.87	0.93	42.4
12u	U	5	40.0	5	40.0	0.810	16.6	LOS B	10.6	76.2	0.70	0.87	0.93	36.0
Approach		767	3.5	766 N1	3.5	0.810	11.3	LOS A	10.6	76.2	0.70	0.87	0.93	42.0
All Vehicles		1788	3.9	1787 N1	3.9	0.810	8.6	LOS A	10.6	76.2	0.57	0.74	0.66	43.3

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - AM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	44	4.5	44	4.5	0.031	5.1	LOS A	0.1	0.9	0.25	0.51	0.25	43.5
2	T1	4	50.0	4	50.0	0.008	4.6	LOS A	0.0	0.2	0.30	0.53	0.30	45.9
3	R2	4	50.0	4	50.0	0.008	5.9	LOS A	0.0	0.2	0.30	0.53	0.30	45.2
Approach		52	11.5	52	11.5	0.031	5.1	LOS A	0.1	0.9	0.25	0.51	0.25	44.0
East: Botanica Dr W														
4	L2	7	28.6	7	28.6	0.112	5.3	LOS A	0.5	3.5	0.19	0.16	0.19	47.7
5	T1	153	2.6	153	2.6	0.112	0.2	LOS A	0.5	3.5	0.19	0.16	0.19	47.3
6	R2	60	3.3	60	3.3	0.112	5.1	LOS A	0.5	3.5	0.19	0.16	0.19	47.5
Approach		220	3.6	220	3.6	0.112	1.7	NA	0.5	3.5	0.19	0.16	0.19	47.4
North: Betty Cuthbert Dr N														
7	L2	62	3.2	62	3.2	0.070	4.7	LOS A	0.3	2.2	0.09	0.52	0.09	46.4
8	T1	4	50.0	4	50.0	0.070	4.5	LOS A	0.3	2.2	0.09	0.52	0.09	45.9
9	R2	33	6.1	33	6.1	0.070	5.3	LOS A	0.3	2.2	0.09	0.52	0.09	44.1
Approach		99	6.1	99	6.1	0.070	4.9	LOS A	0.3	2.2	0.09	0.52	0.09	45.9
West: Botanica Dr W														
10	L2	108	1.9	108	1.9	0.093	4.6	LOS A	0.1	0.6	0.04	0.37	0.04	45.6
11	T1	47	8.5	47	8.5	0.093	0.1	LOS A	0.1	0.6	0.04	0.37	0.04	46.3
12	R2	11	18.2	11	18.2	0.093	5.2	LOS A	0.1	0.6	0.04	0.37	0.04	45.0
Approach		166	4.8	166	4.8	0.093	3.4	NA	0.1	0.6	0.04	0.37	0.04	45.7

All Vehicles	537	5.2	537	5.2	0.112	3.2	NA	0.5	3.5	0.13	0.33	0.13	46.3

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - AM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph Street South														
2	T1	3288	5.3	3288	5.3	0.686	0.3	LOS A	42.8	313.0	0.00	0.00	0.00	68.8
Approach		3288	5.3	3288	5.3	0.686	0.3	NA	42.8	313.0	0.00	0.00	0.00	68.8
East: Site Access														
4	L2	332	0.0	332	0.0	0.496	9.8	LOS A	3.0	20.8	0.62	0.92	0.89	38.7
Approach		332	0.0	332	0.0	0.496	9.8	LOS A	3.0	20.8	0.62	0.92	0.89	38.7
North: Joseph Street North														
7	L2	363	0.0	363	0.0	0.532	6.5	LOS A	0.0	0.0	0.00	0.26	0.00	61.6
8	T1	2021	8.1	2021	8.1	0.532	0.2	LOS A	0.0	0.0	0.00	0.07	0.00	66.7
Approach		2384	6.9	2384	6.9	0.532	1.1	NA	0.0	0.0	0.00	0.10	0.00	65.1
All Vehicles		6004	5.6	6004	5.6	0.686	1.2	NA	42.8	313.0	0.03	0.09	0.05	63.7

1.6 PM – Scenario 3.2

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - PM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 107 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS	ARRIVAL FLOWS	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE	Prop. Que	Effective Stop Rate	Aver. Speed

		[Total	HV]	[Total	HV]				[Veh.	Dist]			Aver. No. Cycles	
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	51	0.0	51	0.0	0.788	38.6	LOS C	28.8	209.0	0.96	0.89	1.00	35.3
2	T1	1724	4.5	1724	4.5	0.788	31.5	LOS C	29.5	214.7	0.95	0.88	0.99	40.7
3	R2	84	7.1	84	7.1	0.852	70.3	LOS E	5.0	37.2	1.00	0.93	1.51	14.5
Approach		1859	4.5	1859	4.5	0.852	33.4	LOS C	29.5	214.7	0.96	0.88	1.01	39.2
East: Georges Ave E														
4	L2	335	3.3	335	3.3	* 0.980	97.0	LOS F	37.3	267.7	1.00	1.30	1.76	11.7
5	T1	447	2.2	447	2.2	0.980	92.9	LOS F	37.3	267.7	1.00	1.42	1.79	20.6
6	R2	63	3.2	63	3.2	0.980	97.1	LOS F	31.3	223.8	1.00	1.46	1.80	21.7
Approach		845	2.7	845	2.7	0.980	94.9	LOS F	37.3	267.7	1.00	1.38	1.78	17.6
North: Joseph St N														
7	L2	31	6.5	31	6.5	0.988	90.6	LOS F	89.9	649.1	1.00	1.38	1.58	16.7
8	T1	2952	3.6	2952	3.6	* 0.988	84.0	LOS F	91.8	662.4	0.97	1.37	1.56	16.8
9	R2	231	2.2	231	2.2	0.849	40.3	LOS C	8.8	63.1	1.00	0.92	1.30	35.4
Approach		3214	3.5	3214	3.5	0.988	80.9	LOS F	91.8	662.4	0.97	1.33	1.54	18.0
West: Georges Ave W														
10	L2	105	1.9	105	1.9	0.710	45.3	LOS D	15.0	106.4	0.97	0.86	1.00	33.8
11	T1	203	1.0	203	1.0	0.710	41.1	LOS C	15.0	106.4	0.97	0.86	1.00	23.5
12	R2	49	4.1	49	4.1	0.710	66.3	LOS E	3.0	21.4	1.00	0.83	1.25	18.1
Approach		357	1.7	357	1.7	0.710	45.8	LOS D	15.0	106.4	0.97	0.85	1.04	26.2
All Vehicles		6275	3.6	6275	3.6	0.988	66.7	LOS E	91.8	662.4	0.97	1.18	1.39	23.0

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - PM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 107 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph Street South														
2	T1	1784	4.4	1784	4.4	0.470	8.9	LOS A	14.7	107.0	0.52	0.47	0.52	63.1
3	R2	34	5.9	34	5.9	* 0.346	63.4	LOS E	1.8	13.5	1.00	0.73	1.00	27.5
Approach		1818	4.5	1818	4.5	0.470	9.9	LOS A	14.7	107.0	0.53	0.47	0.53	61.6
East: Botanica Drive														

4	L2	14	14.3	14	14.3	0.036	33.2	LOS C	0.5	4.2	0.80	0.66	0.80	36.2
6	R2	89	3.4	89	3.4	0.228	42.3	LOS C	3.9	27.9	0.87	0.75	0.87	7.7
Approach		103	4.9	103	4.9	0.228	41.0	LOS C	3.9	27.9	0.86	0.74	0.86	13.5
North: Joseph Street North														
7	L2	119	2.5	100	2.5	* 0.904	37.0	LOS C	45.8	329.9	0.89	0.94	1.01	25.7
8	T1	3252	3.6	2733	3.6	* 0.904	26.9	LOS B	47.9	346.0	0.87	0.90	0.99	50.7
Approach		3371	3.6	2833 N1	3.6	0.904	27.2	LOS B	47.9	346.0	0.87	0.90	0.99	50.2
All Vehicles		5292	3.9	4754 N1	4.4	0.904	20.9	LOS B	47.9	346.0	0.74	0.73	0.81	52.5

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - PM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	62	3.2	62	3.2	0.536	12.8	LOS A	3.9	28.2	0.84	1.02	1.07	37.3
2	T1	252	4.0	252	4.0	0.536	12.5	LOS A	3.9	28.2	0.84	1.02	1.07	42.6
3u	U	4	50.0	4	50.0	0.536	19.4	LOS B	3.9	28.2	0.84	1.02	1.07	42.1
Approach		318	4.4	318	4.4	0.536	12.7	LOS A	3.9	28.2	0.84	1.02	1.07	41.9
North: East St N														
8	T1	331	3.3	331	3.3	0.983	7.5	LOS A	14.3	102.8	0.32	0.55	0.35	44.2
9	R2	777	2.7	777	2.7	0.983	10.4	LOS A	14.3	102.8	0.32	0.55	0.35	39.9
9u	U	4	50.0	4	50.0	0.983	12.4	LOS A	14.3	102.8	0.32	0.55	0.35	43.7
Approach		1112	3.1	1112	3.1	0.983	9.5	LOS A	14.3	102.8	0.32	0.55	0.35	41.8
West: Georges Ave														
10	L2	273	2.6	269	2.5	0.321	5.7	LOS A	1.7	12.4	0.41	0.62	0.41	45.0
12	R2	31	6.5	31	6.4	0.321	8.4	LOS A	1.7	12.4	0.41	0.62	0.41	45.4
12u	U	6	33.3	6	33.0	0.321	10.5	LOS A	1.7	12.4	0.41	0.62	0.41	41.4
Approach		310	3.5	306 N1	3.5	0.321	6.1	LOS A	1.7	12.4	0.41	0.62	0.41	45.0
All Vehicles		1740	3.4	1736 N1	3.4	0.983	9.5	LOS A	14.3	102.8	0.43	0.65	0.49	42.4

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - PM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	17	11.8	17	11.8	0.012	4.9	LOS A	0.0	0.4	0.15	0.49	0.15	43.9
2	T1	4	50.0	4	50.0	0.007	4.1	LOS A	0.0	0.2	0.21	0.50	0.21	46.1
3	R2	4	50.0	4	50.0	0.007	5.5	LOS A	0.0	0.2	0.21	0.50	0.21	45.3
Approach		25	24.0	25	24.0	0.012	4.8	LOS A	0.0	0.4	0.17	0.49	0.17	44.7
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.041	5.1	LOS A	0.1	0.5	0.06	0.08	0.06	48.4
5	T1	65	4.6	65	4.6	0.041	0.1	LOS A	0.1	0.5	0.06	0.08	0.06	49.0
6	R2	6	33.3	6	33.3	0.041	5.3	LOS A	0.1	0.5	0.06	0.08	0.06	47.9
Approach		76	9.2	76	9.2	0.041	0.8	NA	0.1	0.5	0.06	0.08	0.06	48.8
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.023	5.4	LOS A	0.1	0.6	0.19	0.53	0.19	45.6
8	T1	4	50.0	4	50.0	0.023	4.1	LOS A	0.1	0.6	0.19	0.53	0.19	45.8
9	R2	23	8.7	23	8.7	0.023	5.0	LOS A	0.1	0.6	0.19	0.53	0.19	43.9
Approach		31	19.4	31	19.4	0.023	4.9	LOS A	0.1	0.6	0.19	0.53	0.19	44.6
West: Botanica Dr W														
10	L2	29	6.9	25	7.3	0.073	4.7	LOS A	0.1	1.0	0.06	0.19	0.06	47.0
11	T1	100	3.0	88	3.2	0.073	0.0	LOS A	0.1	1.0	0.06	0.19	0.06	48.0
12	R2	27	7.4	24	7.9	0.073	4.8	LOS A	0.1	1.0	0.06	0.19	0.06	46.9
Approach		156	4.5	137 N1	4.8	0.073	1.7	NA	0.1	1.0	0.06	0.19	0.06	47.6
All Vehicles		288	9.0	269 N1	9.7	0.073	2.1	NA	0.1	1.0	0.08	0.22	0.08	47.2

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access PM - Scenario 3.2 (Site Folder: General)]

Network: 1 [Scenario 3.2 - PM - All Development w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed

		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph Street South														
2	T1	1873	4.4	1873	4.4	0.329	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.8
Approach		1873	4.4	1873	4.4	0.329	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.8
East: Site Access														
4	L2	46	0.0	46	0.0	0.117	12.4	LOS A	0.4	2.8	0.69	0.86	0.69	36.5
Approach		46	0.0	46	0.0	0.117	12.4	LOS A	0.4	2.8	0.69	0.86	0.69	36.5
North: Joseph Street North														
7	L2	15	0.0	13	0.0	0.578	6.5	LOS A	0.0	0.0	0.00	0.01	0.00	65.1
8	T1	3325	3.5	2870	3.5	0.578	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	69.2
Approach		3340	3.5	2883 N1	3.5	0.578	0.2	NA	0.0	0.0	0.00	0.00	0.00	69.1
All Vehicles		5259	3.8	4802 N1	4.1	0.578	0.3	NA	0.4	2.8	0.01	0.01	0.01	68.6

1.7 AM – Scenario 3.3

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - AM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	48	4.2	48	4.2	0.972	48.8	LOS D	75.7	554.9	0.89	1.02	1.12	31.6
2	T1	2975	5.5	2975	5.5	* 0.972	46.4	LOS D	75.7	554.9	0.83	0.96	1.07	34.0
3	R2	327	2.8	327	2.8	0.658	44.3	LOS D	7.7	55.3	1.00	0.81	1.01	20.6
Approach		3350	5.2	3350	5.2	0.972	46.2	LOS D	75.7	554.9	0.85	0.95	1.06	33.1
East: Georges Ave E														
4	L2	255	4.7	255	4.7	0.638	52.0	LOS D	21.5	155.8	0.92	0.83	0.92	18.4
5	T1	224	2.7	224	2.7	0.638	60.4	LOS E	21.5	155.8	0.97	0.82	0.97	25.8
6	R2	13	15.4	13	15.4	0.638	73.2	LOS F	10.6	76.4	1.00	0.81	1.01	25.1
Approach		492	4.1	492	4.1	0.638	56.4	LOS D	21.5	155.8	0.94	0.83	0.94	22.8
North: Joseph St N														
7	L2	81	3.7	81	3.7	0.793	43.2	LOS D	40.5	301.6	0.92	0.84	0.92	29.1
8	T1	1866	8.0	1866	8.0	0.793	35.3	LOS C	41.9	313.1	0.90	0.82	0.90	29.9
9	R2	118	2.5	118	2.5	0.975	120.4	LOS F	11.3	81.1	1.00	1.10	1.84	19.9

Approach		2065	7.5	2065	7.5	0.975	40.5	LOS C	41.9	313.1	0.90	0.83	0.95	28.4
West: Georges Ave W														
10	L2	220	0.9	220	0.9	* 0.974	112.5	LOS F	44.8	319.1	1.00	1.22	1.54	20.8
11	T1	348	3.4	348	3.4	0.974	110.3	LOS F	44.8	319.1	1.00	1.23	1.57	12.6
12	R2	172	2.3	172	2.3	0.974	117.2	LOS F	30.7	220.3	1.00	1.26	1.63	12.3
Approach		740	2.4	740	2.4	0.974	112.5	LOS F	44.8	319.1	1.00	1.23	1.57	15.3
All Vehicles		6647	5.5	6647	5.5	0.975	52.6	LOS D	75.7	554.9	0.89	0.94	1.08	27.6

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - AM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3087	5.6	3087	5.6	* 0.894	28.0	LOS B	67.6	495.6	0.90	0.87	0.93	43.3
3	R2	105	1.9	105	1.9	0.970	117.8	LOS F	9.9	70.4	1.00	1.07	1.84	17.6
Approach		3192	5.5	3192	5.5	0.970	31.0	LOS C	67.6	495.6	0.90	0.87	0.96	41.3
East: Botanica Drive														
4	L2	28	7.1	28	7.1	0.050	37.3	LOS C	1.3	9.9	0.72	0.67	0.72	35.7
6	R2	202	1.5	202	1.5	0.383	50.4	LOS D	11.8	83.4	0.85	0.79	0.85	6.6
Approach		230	2.2	230	2.2	0.383	48.8	LOS D	11.8	83.4	0.83	0.78	0.83	11.4
North: Joseph Street North														
7	L2	59	6.8	59	6.8	* 0.802	45.3	LOS D	48.0	356.0	0.96	0.89	0.96	21.9
8	T1	2294	7.1	2294	7.1	0.802	39.6	LOS C	52.5	389.5	0.98	0.91	0.98	43.3
Approach		2353	7.1	2353	7.1	0.802	39.7	LOS C	52.5	389.5	0.98	0.90	0.98	43.0
All Vehicles		5775	6.0	5775	6.0	0.970	35.2	LOS C	67.6	495.6	0.93	0.88	0.96	41.1

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - AM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	32	6.3	32	6.3	0.428	7.3	LOS A	2.6	19.2	0.66	0.74	0.66	42.1
2	T1	326	5.5	326	5.5	0.428	7.0	LOS A	2.6	19.2	0.66	0.74	0.66	45.6
3u	U	5	40.0	5	40.0	0.428	12.6	LOS A	2.6	19.2	0.66	0.74	0.66	45.2
Approach		363	6.1	363	6.1	0.428	7.1	LOS A	2.6	19.2	0.66	0.74	0.66	45.4
North: East St N														
8	T1	207	1.0	207	1.0	0.510	4.3	LOS A	3.7	26.3	0.35	0.58	0.35	45.6
9	R2	447	3.8	447	3.8	0.510	7.2	LOS A	3.7	26.3	0.35	0.58	0.35	42.1
9u	U	4	50.0	4	50.0	0.510	9.3	LOS A	3.7	26.3	0.35	0.58	0.35	45.0
Approach		658	3.2	658	3.2	0.510	6.3	LOS A	3.7	26.3	0.35	0.58	0.35	43.7
West: Georges Ave														
10	L2	667	3.4	667	3.4	0.810	11.0	LOS A	10.6	76.5	0.70	0.87	0.93	41.9
12	R2	95	2.1	95	2.1	0.810	13.5	LOS A	10.6	76.5	0.70	0.87	0.93	42.3
12u	U	5	40.0	5	40.0	0.810	16.6	LOS B	10.6	76.5	0.70	0.87	0.93	36.0
Approach		767	3.5	767	3.5	0.810	11.3	LOS A	10.6	76.5	0.70	0.87	0.93	41.9
All Vehicles		1788	3.9	1788	3.9	0.810	8.6	LOS A	10.6	76.5	0.57	0.74	0.66	43.3

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - AM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	44	4.5	44	4.5	0.031	5.1	LOS A	0.1	0.9	0.25	0.51	0.25	43.5
2	T1	4	50.0	4	50.0	0.008	4.6	LOS A	0.0	0.2	0.30	0.53	0.30	45.9
3	R2	4	50.0	4	50.0	0.008	5.9	LOS A	0.0	0.2	0.30	0.53	0.30	45.2
Approach		52	11.5	52	11.5	0.031	5.1	LOS A	0.1	0.9	0.25	0.51	0.25	44.0
East: Botanica Dr W														
4	L2	7	28.6	7	28.6	0.112	5.3	LOS A	0.5	3.5	0.19	0.16	0.19	47.7
5	T1	153	2.6	153	2.6	0.112	0.2	LOS A	0.5	3.5	0.19	0.16	0.19	47.3

6	R2	60	3.3	60	3.3	0.112	5.1	LOS A	0.5	3.5	0.19	0.16	0.19	47.5
Approach		220	3.6	220	3.6	0.112	1.7	NA	0.5	3.5	0.19	0.16	0.19	47.4
North: Betty Cuthbert Dr N														
7	L2	62	3.2	62	3.2	0.070	4.7	LOS A	0.3	2.2	0.09	0.52	0.09	46.4
8	T1	4	50.0	4	50.0	0.070	4.5	LOS A	0.3	2.2	0.09	0.52	0.09	45.9
9	R2	33	6.1	33	6.1	0.070	5.3	LOS A	0.3	2.2	0.09	0.52	0.09	44.1
Approach		99	6.1	99	6.1	0.070	4.9	LOS A	0.3	2.2	0.09	0.52	0.09	45.9
West: Botanica Dr W														
10	L2	108	1.9	108	1.9	0.093	4.6	LOS A	0.1	0.6	0.04	0.37	0.04	45.6
11	T1	47	8.5	47	8.5	0.093	0.1	LOS A	0.1	0.6	0.04	0.37	0.04	46.3
12	R2	11	18.2	11	18.2	0.093	5.2	LOS A	0.1	0.6	0.04	0.37	0.04	45.0
Approach		166	4.8	166	4.8	0.093	3.4	NA	0.1	0.6	0.04	0.37	0.04	45.7
All Vehicles		537	5.2	537	5.2	0.112	3.2	NA	0.5	3.5	0.13	0.33	0.13	46.3

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - AM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3288	5.3	3288	5.3	0.657	0.2	LOS A	13.6	99.4	0.00	0.00	0.00	69.0
Approach		3288	5.3	3288	5.3	0.657	0.2	NA	13.6	99.4	0.00	0.00	0.00	69.0
East: Site Access														
4	L2	332	0.0	332	0.0	0.511	10.0	LOS A	3.0	20.9	0.62	0.93	0.92	38.5
Approach		332	0.0	332	0.0	0.511	10.0	LOS A	3.0	20.9	0.62	0.93	0.92	38.5
North: Joseph Street North														
7	L2	363	0.0	363	0.0	0.540	6.5	LOS A	0.0	0.0	0.00	0.26	0.00	61.6
8	T1	2021	8.1	2021	8.1	0.540	0.2	LOS A	0.0	0.0	0.00	0.07	0.00	66.7
Approach		2384	6.9	2384	6.9	0.540	1.1	NA	0.0	0.0	0.00	0.10	0.00	65.1
All Vehicles		6004	5.6	6004	5.6	0.657	1.1	NA	13.6	99.4	0.03	0.09	0.05	63.7

1.8 PM – Scenario 3.3

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - PM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	51	0.0	51	0.0	0.859	65.3	LOS E	43.6	315.9	1.00	0.94	1.06	27.0
2	T1	1724	4.5	1724	4.5	0.859	56.6	LOS E	44.5	323.3	1.00	0.94	1.06	30.6
3	R2	84	7.1	84	7.1	0.610	89.4	LOS F	3.3	24.4	1.00	0.77	1.09	11.9
Approach		1859	4.5	1859	4.5	0.859	58.3	LOS E	44.5	323.3	1.00	0.93	1.06	29.6
East: Georges Ave E														
4	L2	335	3.3	335	3.3	* 0.974	109.0	LOS F	53.2	381.5	1.00	1.18	1.49	10.8
5	T1	447	2.2	447	2.2	0.974	109.2	LOS F	53.2	381.5	1.00	1.25	1.56	18.7
6	R2	63	3.2	63	3.2	0.974	116.2	LOS F	33.3	237.8	1.00	1.31	1.60	19.2
Approach		845	2.7	845	2.7	0.974	109.6	LOS F	53.2	381.5	1.00	1.23	1.54	16.0
North: Joseph St N														
7	L2	31	6.5	31	6.5	0.985	93.2	LOS F	108.3	782.0	1.00	1.22	1.36	16.4
8	T1	2952	3.6	2952	3.6	* 0.985	86.7	LOS F	110.4	796.3	0.96	1.19	1.33	16.4
9	R2	231	2.2	231	2.2	0.657	38.2	LOS C	9.0	64.3	0.98	0.82	0.98	36.1
Approach		3214	3.5	3214	3.5	0.985	83.3	LOS F	110.4	796.3	0.97	1.17	1.31	17.7
West: Georges Ave W														
10	L2	105	1.9	105	1.9	0.583	52.3	LOS D	19.0	134.8	0.91	0.80	0.91	31.8
11	T1	203	1.0	203	1.0	0.583	47.9	LOS D	19.0	134.8	0.91	0.80	0.91	21.7
12	R2	49	4.1	49	4.1	0.941	100.9	LOS F	4.2	30.3	1.00	1.03	1.82	13.6
Approach		357	1.7	357	1.7	0.941	56.4	LOS D	19.0	134.8	0.92	0.83	1.03	23.5
All Vehicles		6275	3.6	6275	3.6	0.985	77.9	LOS F	110.4	796.3	0.98	1.09	1.25	20.8

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - PM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	1784	4.4	1784	4.4	0.424	7.4	LOS A	15.8	114.9	0.40	0.37	0.40	65.4
3	R2	34	5.9	34	5.9	* 0.484	88.8	LOS F	2.6	19.3	1.00	0.73	1.00	21.8
Approach		1818	4.5	1818	4.5	0.484	8.9	LOS A	15.8	114.9	0.41	0.37	0.41	63.0
East: Botanica Drive														
4	L2	14	14.3	14	14.3	0.044	53.4	LOS D	0.8	6.5	0.84	0.67	0.84	29.1
6	R2	89	3.4	89	3.4	0.283	62.9	LOS E	5.7	41.0	0.91	0.77	0.91	5.4
Approach		103	4.9	103	4.9	0.283	61.6	LOS E	5.7	41.0	0.90	0.75	0.90	9.8
North: Joseph Street North														
7	L2	119	2.5	119	2.5	* 0.900	23.5	LOS B	54.1	390.2	0.72	0.73	0.74	36.6
8	T1	3252	3.6	3252	3.6	* 0.900	13.0	LOS A	54.1	390.2	0.66	0.65	0.68	62.4
Approach		3371	3.6	3371	3.6	0.900	13.4	LOS A	54.1	390.2	0.67	0.65	0.68	61.9
All Vehicles		5292	3.9	5292	3.9	0.900	12.8	LOS A	54.1	390.2	0.58	0.56	0.59	60.8

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - PM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	62	3.2	62	3.2	0.496	12.2	LOS A	3.7	27.1	0.84	0.99	1.02	37.8
2	T1	252	4.0	252	4.0	0.496	11.9	LOS A	3.7	27.1	0.84	0.99	1.02	42.9
3u	U	4	50.0	4	50.0	0.496	18.7	LOS B	3.7	27.1	0.84	0.99	1.02	42.4

Approach		318	4.4	318	4.4	0.496	12.0	LOS A	3.7	27.1	0.84	0.99	1.02	42.3
North: East St N														
8	T1	331	3.3	331	3.3	0.765	4.1	LOS A	9.0	64.5	0.32	0.53	0.32	45.6
9	R2	777	2.7	777	2.7	0.765	7.1	LOS A	9.0	64.5	0.32	0.53	0.32	42.2
9u	U	4	50.0	4	50.0	0.765	9.1	LOS A	9.0	64.5	0.32	0.53	0.32	45.1
Approach		1112	3.1	1112	3.1	0.765	6.2	LOS A	9.0	64.5	0.32	0.53	0.32	43.7
West: Georges Ave														
10	L2	273	2.6	273	2.6	0.322	5.7	LOS A	1.7	12.6	0.41	0.62	0.41	45.0
12	R2	31	6.5	31	6.5	0.322	8.4	LOS A	1.7	12.6	0.41	0.62	0.41	45.4
12u	U	6	33.3	6	33.3	0.322	10.5	LOS A	1.7	12.6	0.41	0.62	0.41	41.4
Approach		310	3.5	310	3.5	0.322	6.1	LOS A	1.7	12.6	0.41	0.62	0.41	45.0
All Vehicles		1740	3.4	1740	3.4	0.765	7.2	LOS A	9.0	64.5	0.43	0.63	0.46	43.6

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - PM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	17	11.8	17	11.8	0.012	4.9	LOS A	0.0	0.4	0.15	0.49	0.15	43.9
2	T1	4	50.0	4	50.0	0.007	4.1	LOS A	0.0	0.2	0.22	0.50	0.22	46.1
3	R2	4	50.0	4	50.0	0.007	5.5	LOS A	0.0	0.2	0.22	0.50	0.22	45.3
Approach		25	24.0	25	24.0	0.012	4.9	LOS A	0.0	0.4	0.17	0.49	0.17	44.7
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.041	5.2	LOS A	0.1	0.5	0.06	0.08	0.06	48.4
5	T1	65	4.6	65	4.6	0.041	0.1	LOS A	0.1	0.5	0.06	0.08	0.06	49.0
6	R2	6	33.3	6	33.3	0.041	5.3	LOS A	0.1	0.5	0.06	0.08	0.06	47.9
Approach		76	9.2	76	9.2	0.041	0.8	NA	0.1	0.5	0.06	0.08	0.06	48.8
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.024	5.4	LOS A	0.1	0.6	0.20	0.53	0.20	45.5
8	T1	4	50.0	4	50.0	0.024	4.1	LOS A	0.1	0.6	0.20	0.53	0.20	45.8
9	R2	23	8.7	23	8.7	0.024	5.1	LOS A	0.1	0.6	0.20	0.53	0.20	43.8
Approach		31	19.4	31	19.4	0.024	5.0	LOS A	0.1	0.6	0.20	0.53	0.20	44.5
West: Botanica Dr W														
10	L2	29	6.9	29	6.9	0.084	4.7	LOS A	0.2	1.1	0.06	0.19	0.06	47.0
11	T1	100	3.0	100	3.0	0.084	0.0	LOS A	0.2	1.1	0.06	0.19	0.06	48.0
12	R2	27	7.4	27	7.4	0.084	4.8	LOS A	0.2	1.1	0.06	0.19	0.06	46.9

Approach	156	4.5	156	4.5	0.084	1.7	NA	0.2	1.1	0.06	0.19	0.06	47.6
All Vehicles	288	9.0	288	9.0	0.084	2.1	NA	0.2	1.1	0.09	0.22	0.09	47.2

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access PM - Scenario 3.3 (Site Folder: General)]

Network: 1 [Scenario 3.3 - PM - All Development & Mitigation w 2026 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	1873	4.4	1873	4.4	0.330	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.8
Approach		1873	4.4	1873	4.4	0.330	0.1	NA	0.0	0.0	0.00	0.00	0.00	69.8
East: Site Access														
4	L2	46	0.0	46	0.0	0.159	13.7	LOS A	0.4	3.1	0.73	0.87	0.73	35.5
Approach		46	0.0	46	0.0	0.159	13.7	LOS A	0.4	3.1	0.73	0.87	0.73	35.5
North: Joseph Street North														
7	L2	15	0.0	15	0.0	0.742	6.7	LOS A	0.0	0.0	0.00	0.01	0.00	64.3
8	T1	3325	3.5	3325	3.5	0.742	0.4	LOS A	0.0	0.0	0.00	0.00	0.00	68.2
Approach		3340	3.5	3340	3.5	0.742	0.5	NA	0.0	0.0	0.00	0.00	0.00	68.2
All Vehicles		5259	3.8	5259	3.8	0.742	0.4	NA	0.4	3.1	0.01	0.01	0.01	68.0

1.9 AM – Scenario 4.2

MOVEMENT SUMMARY

Network: 1 [Scenario 4.2 - AM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 4.2 (Site Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	118	1.7	79	1.6	0.871	30.1	LOS C	47.7	348.1	0.80	0.77	0.82	38.9
2	T1	3481	5.4	2320	5.2	0.871	23.8	LOS B	50.0	365.4	0.73	0.70	0.76	45.3
3	R2	540	1.9	360	1.8	* 1.051	161.5	LOS F	36.4	258.5	1.00	1.22	2.03	5.9
Approach		4139	4.9	2759 N1	4.7	1.051	42.0	LOS C	50.0	365.4	0.77	0.77	0.93	32.3
East: Georges Ave E														
4	L2	269	5.2	269	5.1	0.679	51.6	LOS D	23.6	171.4	0.93	0.84	0.93	18.5
5	T1	260	2.7	260	2.7	0.679	59.6	LOS E	23.6	171.4	0.97	0.84	0.99	25.9
6	R2	14	14.3	14	14.1	0.679	72.7	LOS F	11.9	85.6	1.00	0.84	1.03	25.2
Approach		543	4.2	542 N1	4.2	0.679	56.0	LOS D	23.6	171.4	0.95	0.84	0.96	23.1
North: Joseph St N														
7	L2	94	3.2	94	3.2	1.061	208.3	LOS F	112.5	837.7	1.00	1.70	2.06	8.0
8	T1	2159	8.0	2159	8.0	* 1.061	201.8	LOS F	116.9	874.7	1.00	1.74	2.06	8.0
9	R2	136	2.2	136	2.2	0.857	88.7	LOS F	10.8	77.2	1.00	0.92	1.32	24.1
Approach		2389	7.5	2389	7.5	1.061	195.6	LOS F	116.9	874.7	1.00	1.69	2.02	8.6
West: Georges Ave W														
10	L2	255	0.8	255	0.8	1.056	206.6	LOS F	72.1	513.7	1.00	1.59	2.10	13.4
11	T1	403	3.5	403	3.5	* 1.056	204.1	LOS F	72.1	513.7	1.00	1.60	2.13	7.6
12	R2	189	2.1	189	2.1	1.056	209.8	LOS F	48.5	347.6	1.00	1.62	2.18	7.6
Approach		847	2.4	847	2.4	1.056	206.1	LOS F	72.1	513.7	1.00	1.60	2.14	9.5
All Vehicles		7918	5.3	6537 N1	6.5	1.061	120.6	LOS F	116.9	874.7	0.90	1.22	1.49	15.0

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - AM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
AM Peak Hour Volumes

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3677	5.4	3677	5.4	* 1.046	158.2	LOS F	184.2	1349.5	1.00	1.61	1.82	13.7
3	R2	12	16.7	12	16.7	0.182	86.7	LOS F	0.9	7.2	0.99	0.68	0.99	22.2
Approach		3689	5.5	3689	5.5	1.046	158.0	LOS F	184.2	1349.5	1.00	1.60	1.81	13.8
East: Botanica Drive														
4	L2	32	6.3	32	6.3	0.081	49.4	LOS D	1.8	13.3	0.82	0.69	0.82	31.3
6	R2	234	1.3	234	1.3	0.747	66.8	LOS E	16.6	117.1	0.99	0.87	1.05	5.1
Approach		266	1.9	266	1.9	0.747	64.7	LOS E	16.6	117.1	0.97	0.85	1.03	9.0
North: Joseph Street North														
7	L2	68	5.9	64	5.8	* 0.658	27.3	LOS B	30.9	230.5	0.65	0.62	0.65	32.9
8	T1	2357	8.0	2211	7.9	0.658	18.4	LOS B	33.2	247.9	0.65	0.61	0.65	57.3
Approach		2425	7.9	2274 N1	7.9	0.658	18.7	LOS B	33.2	247.9	0.65	0.61	0.65	56.9
All Vehicles		6380	6.3	6229 N1	6.4	1.046	103.1	LOS F	184.2	1349.5	0.87	1.21	1.36	20.9

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - AM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	37	5.4	37	5.4	0.512	8.7	LOS A	3.8	27.6	0.73	0.84	0.82	40.8
2	T1	377	5.3	377	5.3	0.512	8.4	LOS A	3.8	27.6	0.73	0.84	0.82	44.8
3u	U	5	40.0	5	40.0	0.512	14.1	LOS A	3.8	27.6	0.73	0.84	0.82	44.4
Approach		419	5.7	419	5.7	0.512	8.5	LOS A	3.8	27.6	0.73	0.84	0.82	44.6
North: East St N														
8	T1	240	0.8	240	0.8	0.561	4.2	LOS A	4.4	31.9	0.37	0.57	0.37	45.6
9	R2	492	3.9	492	3.9	0.561	7.2	LOS A	4.4	31.9	0.37	0.57	0.37	42.1
9u	U	4	50.0	4	50.0	0.561	9.3	LOS A	4.4	31.9	0.37	0.57	0.37	45.0

Approach		736	3.1	736	3.1	0.561	6.3	LOS A	4.4	31.9	0.37	0.57	0.37	43.8
West: Georges Ave														
10	L2	936	2.9	736	3.1	0.924	19.4	LOS B	19.5	140.1	0.88	1.19	1.60	37.8
12	R2	110	1.8	86	2.0	0.924	21.9	LOS B	19.5	140.1	0.88	1.19	1.60	38.2
12u	U	5	40.0	4	41.8	0.924	25.5	LOS B	19.5	140.1	0.88	1.19	1.60	29.8
Approach		1051	2.9	827 N1	3.2	0.924	19.7	LOS B	19.5	140.1	0.88	1.19	1.60	37.8
All Vehicles		2206	3.5	1982 N1	3.9	0.924	12.3	LOS A	19.5	140.1	0.66	0.89	0.98	41.1

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - AM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	50	4.0	50	4.0	0.073	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.4
2	T1	4	50.0	4	50.0	0.008	4.4	LOS A	0.0	0.2	0.29	0.53	0.29	45.9
3	R2	4	50.0	4	50.0	0.008	6.0	LOS A	0.0	0.2	0.29	0.53	0.29	45.2
Approach		58	10.3	58	10.3	0.073	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.9
East: Botanica Dr W														
4	L2	8	25.0	8	25.0	0.211	5.0	LOS A	0.4	3.0	0.10	0.15	0.10	48.0
5	T1	177	2.3	177	2.3	0.211	0.1	LOS A	0.4	3.0	0.10	0.15	0.10	47.8
6	R2	60	3.3	60	3.3	0.211	4.8	LOS A	0.4	3.0	0.10	0.15	0.10	47.8
Approach		245	3.3	245	3.3	0.211	1.4	NA	0.4	3.0	0.10	0.15	0.10	47.9
North: Betty Cuthbert Dr N														
7	L2	62	3.2	62	3.2	0.100	4.8	LOS A	0.3	2.1	0.11	0.53	0.11	46.3
8	T1	4	50.0	4	50.0	0.100	4.5	LOS A	0.3	2.1	0.11	0.53	0.11	45.9
9	R2	38	5.3	38	5.3	0.100	5.3	LOS A	0.3	2.1	0.11	0.53	0.11	44.1
Approach		104	5.8	104	5.8	0.100	5.0	LOS A	0.3	2.1	0.11	0.53	0.11	45.8
West: Botanica Dr W														
10	L2	16	12.5	15	12.7	0.045	4.9	LOS A	0.1	0.6	0.10	0.17	0.10	46.8
11	T1	54	7.4	52	7.5	0.045	0.1	LOS A	0.1	0.6	0.10	0.17	0.10	47.9
12	R2	12	16.7	12	16.9	0.045	5.2	LOS A	0.1	0.6	0.10	0.17	0.10	46.6
Approach		82	9.8	79 N1	9.9	0.045	1.8	NA	0.1	0.6	0.10	0.17	0.10	47.5
All Vehicles		489	5.7	486 N1	5.8	0.211	2.7	NA	0.4	3.0	0.12	0.28	0.12	46.8

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - AM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3816	5.3	2466	5.3	0.678	13.1	LOS A	36.1	264.2	0.62	0.58	0.62	39.1
3	R2	94	0.0	61	0.0	* 0.612	85.5	LOS F	4.6	32.3	1.00	0.78	1.06	20.7
Approach		3910	5.2	2527 N1	5.2	0.678	14.9	LOS B	36.1	264.2	0.63	0.59	0.63	37.2
East: Site Access (North)														
4	L2	80	0.0	80	0.0	0.140	44.0	LOS D	4.1	29.0	0.76	0.73	0.76	21.6
6	R2	252	0.0	252	0.0	* 0.679	62.9	LOS E	17.0	118.8	0.98	0.84	0.98	17.5
Approach		332	0.0	332	0.0	0.679	58.3	LOS E	17.0	118.8	0.92	0.81	0.92	18.3
North: Joseph Street North														
7	L2	269	0.0	255	0.0	0.193	10.6	LOS A	4.6	31.9	0.41	0.71	0.41	46.8
8	T1	2345	8.1	2224	8.1	* 0.692	20.0	LOS B	37.6	281.5	0.72	0.66	0.72	33.3
Approach		2614	7.3	2479 N1	7.2	0.692	19.1	LOS B	37.6	281.5	0.69	0.67	0.69	35.4
All Vehicles		6856	5.7	5339 N1	7.3	0.692	19.5	LOS B	37.6	281.5	0.68	0.64	0.68	33.7

1.10 PM – Scenario 4.2

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - PM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development

PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	59	0.0	59	0.0	0.840	45.1	LOS D	41.1	297.8	0.99	0.93	1.03	32.8
2	T1	2027	4.5	2027	4.5	0.840	37.2	LOS C	41.9	304.5	0.98	0.92	1.02	37.8
3	R2	103	6.8	103	6.8	* 1.044	177.8	LOS F	11.7	86.6	1.00	1.32	2.55	6.5
Approach		2189	4.5	2189	4.5	1.044	44.0	LOS D	41.9	304.5	0.98	0.94	1.09	34.3
East: Georges Ave E														
4	L2	388	3.1	280	3.1	0.974	102.7	LOS F	34.4	246.4	1.00	1.24	1.67	11.2
5	T1	518	2.1	374	2.1	* 0.974	99.2	LOS F	34.4	246.4	1.00	1.35	1.70	19.8
6	R2	73	2.7	53	2.8	0.974	103.7	LOS F	28.1	200.7	1.00	1.39	1.72	20.8
Approach		979	2.6	708 N1	2.6	0.974	100.9	LOS F	34.4	246.4	1.00	1.31	1.69	16.9
North: Joseph St N														
7	L2	36	5.6	36	5.6	1.049	168.5	LOS F	155.8	1124.4	1.00	1.74	2.02	9.8
8	T1	3425	3.6	3425	3.6	* 1.049	163.3	LOS F	159.2	1148.9	1.00	1.76	2.03	9.7
9	R2	268	2.2	268	2.2	0.877	62.3	LOS E	13.1	93.1	1.00	1.03	1.30	29.2
Approach		3729	3.5	3729	3.5	1.049	156.1	LOS F	159.2	1148.9	1.00	1.70	1.98	10.7
West: Georges Ave W														
10	L2	122	1.6	122	1.6	0.961	94.7	LOS F	30.0	211.7	1.00	1.28	1.61	23.3
11	T1	235	0.9	235	0.9	0.961	90.3	LOS F	30.0	211.7	1.00	1.28	1.61	14.5
12	R2	57	3.5	57	3.5	0.961	94.2	LOS F	4.5	32.7	1.00	1.13	2.04	14.2
Approach		414	1.4	414	1.4	0.961	92.1	LOS F	30.0	211.7	1.00	1.26	1.67	17.4
All Vehicles		7311	3.6	7040 N1	3.7	1.049	111.9	LOS F	159.2	1148.9	0.99	1.40	1.65	16.0

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - PM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS	ARRIVAL FLOWS	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE	Prop. Que	Effective Stop Rate	Aver. Speed

		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m			Aver. No. Cycles	km/h
South: Joseph Street South														
2	T1	2077	4.4	2077	4.4	0.523	9.1	LOS A	19.5	141.9	0.51	0.46	0.51	62.7
3	R2	32	6.3	32	6.3	* 0.381	73.9	LOS F	2.0	15.0	1.00	0.72	1.00	24.8
Approach		2109	4.5	2109	4.5	0.523	10.1	LOS A	19.5	141.9	0.52	0.47	0.52	61.2
East: Botanica Drive														
4	L2	16	12.5	16	12.5	0.043	41.0	LOS C	0.7	5.7	0.82	0.66	0.82	33.3
6	R2	103	2.9	103	2.9	0.283	50.6	LOS D	5.4	38.5	0.89	0.77	0.89	6.6
Approach		119	4.2	119	4.2	0.283	49.3	LOS D	5.4	38.5	0.88	0.75	0.88	11.7
North: Joseph Street North														
7	L2	138	2.2	103	2.2	* 0.850	22.8	LOS B	36.7	264.9	0.69	0.69	0.71	37.5
8	T1	3735	3.7	2792	3.7	0.850	12.8	LOS A	36.7	264.9	0.65	0.62	0.66	62.6
Approach		3873	3.6	2896 N1	3.7	0.850	13.1	LOS A	36.7	264.9	0.65	0.63	0.66	62.2
All Vehicles		6101	3.9	5124 N1	4.7	0.850	12.7	LOS A	36.7	264.9	0.60	0.56	0.61	60.5

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - PM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	72	2.8	72	2.8	0.700	14.3	LOS A	6.0	43.5	0.93	1.12	1.28	36.2
2	T1	291	3.8	291	3.8	0.700	14.0	LOS A	6.0	43.5	0.93	1.12	1.28	41.9
3u	U	4	50.0	4	50.0	0.700	20.6	LOS B	6.0	43.5	0.93	1.12	1.28	41.4
Approach		367	4.1	367	4.1	0.700	14.2	LOS A	6.0	43.5	0.93	1.12	1.28	41.2
North: East St N														
8	T1	383	3.1	383	3.1	1.388	706.4	LOS F	542.7	3894.7	1.00	2.75	6.13	4.7
9	R2	901	2.7	901	2.7	1.388	709.3	LOS F	542.7	3894.7	1.00	2.75	6.13	2.5
9u	U	4	50.0	4	50.0	1.388	712.1	LOS F	542.7	3894.7	1.00	2.75	6.13	4.7
Approach		1288	3.0	1288	3.0	1.388	708.4	LOS F	542.7	3894.7	1.00	2.75	6.13	3.2
West: Georges Ave														
10	L2	321	2.5	299	2.3	0.371	6.0	LOS A	2.1	15.0	0.45	0.64	0.45	44.8
12	R2	36	5.6	33	5.1	0.371	8.7	LOS A	2.1	15.0	0.45	0.64	0.45	45.2
12u	U	6	33.3	5	31.6	0.371	10.9	LOS A	2.1	15.0	0.45	0.64	0.45	41.0

Approach	363	3.3	338 N1	3.1	0.371	6.4	LOS A	2.1	15.0	0.45	0.64	0.45	44.8
All Vehicles	2018	3.2	1993 N1	3.3	1.388	461.6	LOS F	542.7	3894.7	0.89	2.09	4.28	5.3

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.2 - PM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	20	10.0	20	10.0	0.014	4.9	LOS A	0.1	0.4	0.16	0.49	0.16	43.8
2	T1	4	50.0	4	50.0	0.007	4.1	LOS A	0.0	0.2	0.22	0.50	0.22	46.1
3	R2	4	50.0	4	50.0	0.007	5.5	LOS A	0.0	0.2	0.22	0.50	0.22	45.3
Approach		28	21.4	28	21.4	0.014	4.9	LOS A	0.1	0.4	0.18	0.50	0.18	44.6
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.046	5.1	LOS A	0.1	0.5	0.05	0.07	0.05	48.5
5	T1	75	4.0	75	4.0	0.046	0.0	LOS A	0.1	0.5	0.05	0.07	0.05	49.2
6	R2	6	33.3	6	33.3	0.046	5.3	LOS A	0.1	0.5	0.05	0.07	0.05	48.0
Approach		86	8.1	86	8.1	0.046	0.7	NA	0.1	0.5	0.05	0.07	0.05	48.9
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.026	5.4	LOS A	0.1	0.6	0.20	0.53	0.20	45.5
8	T1	4	50.0	4	50.0	0.026	4.1	LOS A	0.1	0.6	0.20	0.53	0.20	45.8
9	R2	26	7.7	26	7.7	0.026	5.0	LOS A	0.1	0.6	0.20	0.53	0.20	43.8
Approach		34	17.6	34	17.6	0.026	5.0	LOS A	0.1	0.6	0.20	0.53	0.20	44.5
West: Botanica Dr W														
10	L2	26	7.7	20	8.7	0.071	4.8	LOS A	0.1	1.0	0.07	0.17	0.07	47.1
11	T1	115	2.6	89	3.0	0.071	0.1	LOS A	0.1	1.0	0.07	0.17	0.07	48.1
12	R2	30	6.7	23	7.6	0.071	4.8	LOS A	0.1	1.0	0.07	0.17	0.07	47.0
Approach		171	4.1	132 N1	4.7	0.071	1.6	NA	0.1	1.0	0.07	0.17	0.07	47.7
All Vehicles		319	8.2	280 N1	9.3	0.071	2.1	NA	0.1	1.0	0.09	0.22	0.09	47.3

MOVEMENT SUMMARY

Network: 1 [Scenario 4.2 - PM - All Development w 2036 Growth MSL Resi & School (Network Folder: General)]

Site: 5 [5 Joseph St / Site Access PM - Scenario 4.2 (Site Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 125 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2174	4.4	2174	4.4	0.724	4.6	LOS A	18.4	133.3	0.43	0.40	0.43	54.9
3	R2	6	0.0	6	0.0	* 0.068	70.6	LOS F	0.4	2.6	0.98	0.65	0.98	23.3
Approach		2180	4.4	2180	4.4	0.724	4.7	LOS A	18.4	133.3	0.43	0.40	0.43	54.4
East: Site Access (North)														
4	L2	15	0.0	15	0.0	0.044	49.5	LOS D	0.7	5.2	0.85	0.68	0.85	20.2
6	R2	31	0.0	31	0.0	0.294	65.6	LOS E	1.9	13.2	0.97	0.74	0.97	17.0
Approach		46	0.0	46	0.0	0.294	60.4	LOS E	1.9	13.2	0.93	0.72	0.93	17.9
North: Joseph Street North														
7	L2	9	0.0	7	0.0	* 0.006	8.7	LOS A	0.1	0.4	0.19	0.62	0.19	48.3
8	T1	3859	3.5	2978	3.5	* 0.725	4.3	LOS A	17.2	123.9	0.31	0.29	0.31	56.6
Approach		3868	3.5	2985 N1	3.5	0.725	4.3	LOS A	17.2	123.9	0.30	0.29	0.30	56.6
All Vehicles		6094	3.8	5211 N1	4.4	0.725	5.0	LOS A	18.4	133.3	0.36	0.34	0.36	54.3

1.11 AM – Scenario 4.3

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 4.3 (Site Folder: General)]

Network: 1 [Scenario 4.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	118	1.7	79	1.6	0.857	26.2	LOS B	41.1	300.0	0.73	0.70	0.74	41.1
2	T1	3481	5.4	2329	5.2	0.857	22.7	LOS B	42.7	312.4	0.74	0.70	0.76	46.0
3	R2	540	1.9	362	1.8	* 0.794	55.5	LOS D	8.7	61.8	1.00	0.90	1.15	17.5
Approach		4139	4.9	2769 N1	4.7	0.857	27.1	LOS B	42.7	312.4	0.77	0.73	0.81	41.9
East: Georges Ave E														
4	L2	269	5.2	269	5.2	0.653	49.7	LOS D	23.4	169.8	0.91	0.83	0.91	19.0
5	T1	260	2.7	260	2.7	0.653	58.0	LOS E	23.4	169.8	0.96	0.83	0.97	26.3
6	R2	14	14.3	14	14.2	0.653	72.0	LOS F	11.4	82.6	1.00	0.82	1.01	25.4
Approach		543	4.2	542 N1	4.2	0.653	54.3	LOS D	23.4	169.8	0.94	0.83	0.94	23.5
North: Joseph St N														
7	L2	94	3.2	94	3.2	0.959	86.9	LOS F	71.7	533.9	1.00	1.15	1.31	17.4
8	T1	2159	8.0	2159	8.0	* 0.959	78.7	LOS F	74.0	553.9	0.99	1.15	1.30	17.6
9	R2	136	2.2	136	2.2	0.928	100.1	LOS F	11.7	83.6	1.00	1.01	1.57	22.4
Approach		2389	7.5	2389	7.5	0.959	80.2	LOS F	74.0	553.9	0.99	1.14	1.32	18.0
West: Georges Ave W														
10	L2	255	0.8	255	0.8	* 0.955	96.1	LOS F	46.7	332.5	1.00	1.14	1.41	23.0
11	T1	403	3.5	403	3.5	0.955	94.6	LOS F	46.7	332.5	1.00	1.16	1.44	14.0
12	R2	189	2.1	189	2.1	0.955	102.2	LOS F	33.9	242.6	1.00	1.18	1.49	13.7
Approach		847	2.4	847	2.4	0.955	96.8	LOS F	46.7	332.5	1.00	1.16	1.44	17.0
All Vehicles		7918	5.3	6548 N1	6.5	0.959	57.7	LOS E	74.0	553.9	0.90	0.94	1.09	25.5

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3677	5.4	3677	5.4	* 0.963	50.4	LOS D	109.6	802.8	0.99	1.09	1.18	31.7
3	R2	12	16.7	12	16.7	0.182	86.7	LOS F	0.9	7.2	0.99	0.68	0.99	22.2
Approach		3689	5.5	3689	5.5	0.963	50.5	LOS D	109.6	802.8	0.99	1.09	1.17	31.6
East: Botanica Drive														
4	L2	32	6.3	32	6.3	0.087	51.0	LOS D	1.8	13.6	0.84	0.69	0.84	30.7
6	R2	234	1.3	234	1.3	0.730	67.0	LOS E	16.4	116.0	0.99	0.86	1.04	5.1
Approach		266	1.9	266	1.9	0.730	65.1	LOS E	16.4	116.0	0.97	0.84	1.01	9.0
North: Joseph Street North														
7	L2	68	5.9	68	5.9	* 0.687	29.2	LOS C	39.4	294.6	0.77	0.74	0.77	31.3
8	T1	2357	8.0	2357	8.0	0.687	23.1	LOS B	46.6	348.8	0.81	0.76	0.81	53.5
Approach		2425	7.9	2425	7.9	0.687	23.3	LOS B	46.6	348.8	0.81	0.76	0.81	53.2
All Vehicles		6380	6.3	6380	6.3	0.963	40.8	LOS C	109.6	802.8	0.92	0.95	1.03	38.0

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 4.3 (Site Folder: General)]

Network: 1 [Scenario 4.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	37	5.4	37	5.4	0.514	8.7	LOS A	3.8	27.8	0.74	0.84	0.83	40.8
2	T1	377	5.3	377	5.3	0.514	8.4	LOS A	3.8	27.8	0.74	0.84	0.83	44.8
3u	U	5	40.0	5	40.0	0.514	14.1	LOS A	3.8	27.8	0.74	0.84	0.83	44.4
Approach		419	5.7	419	5.7	0.514	8.5	LOS A	3.8	27.8	0.74	0.84	0.83	44.6
North: East St N														

8	T1	240	0.8	240	0.8	0.567	4.3	LOS A	4.5	32.5	0.39	0.58	0.39	45.6
9	R2	492	3.9	492	3.9	0.567	7.2	LOS A	4.5	32.5	0.39	0.58	0.39	42.0
9u	U	4	50.0	4	50.0	0.567	9.3	LOS A	4.5	32.5	0.39	0.58	0.39	45.0
Approach		736	3.1	736	3.1	0.567	6.3	LOS A	4.5	32.5	0.39	0.58	0.39	43.7
West: Georges Ave														
10	L2	936	2.9	779	3.1	0.973	32.4	LOS C	31.7	227.6	0.96	1.57	2.43	32.8
12	R2	110	1.8	91	1.9	0.973	34.9	LOS C	31.7	227.6	0.96	1.57	2.43	33.1
12u	U	5	40.0	4	41.6	0.973	38.7	LOS C	31.7	227.6	0.96	1.57	2.43	23.5
Approach		1051	2.9	875 N1	3.1	0.973	32.7	LOS C	31.7	227.6	0.96	1.57	2.43	32.8
All Vehicles		2206	3.5	2030 N1	3.8	0.973	18.1	LOS B	31.7	227.6	0.71	1.06	1.36	38.1

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	50	4.0	50	4.0	0.073	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.4
2	T1	4	50.0	4	50.0	0.008	4.4	LOS A	0.0	0.2	0.30	0.53	0.30	45.9
3	R2	4	50.0	4	50.0	0.008	6.0	LOS A	0.0	0.2	0.30	0.53	0.30	45.2
Approach		58	10.3	58	10.3	0.073	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.9
East: Botanica Dr W														
4	L2	8	25.0	8	25.0	0.211	5.0	LOS A	0.4	3.1	0.11	0.15	0.11	48.0
5	T1	177	2.3	177	2.3	0.211	0.1	LOS A	0.4	3.1	0.11	0.15	0.11	47.8
6	R2	60	3.3	60	3.3	0.211	4.8	LOS A	0.4	3.1	0.11	0.15	0.11	47.8
Approach		245	3.3	245	3.3	0.211	1.4	NA	0.4	3.1	0.11	0.15	0.11	47.8
North: Betty Cuthbert Dr N														
7	L2	62	3.2	62	3.2	0.101	4.8	LOS A	0.3	2.1	0.11	0.53	0.11	46.3
8	T1	4	50.0	4	50.0	0.101	4.5	LOS A	0.3	2.1	0.11	0.53	0.11	45.9
9	R2	38	5.3	38	5.3	0.101	5.3	LOS A	0.3	2.1	0.11	0.53	0.11	44.1
Approach		104	5.8	104	5.8	0.101	5.0	LOS A	0.3	2.1	0.11	0.53	0.11	45.8
West: Botanica Dr W														
10	L2	16	12.5	16	12.5	0.046	4.9	LOS A	0.1	0.6	0.10	0.17	0.10	46.9
11	T1	54	7.4	54	7.4	0.046	0.1	LOS A	0.1	0.6	0.10	0.17	0.10	47.9
12	R2	12	16.7	12	16.7	0.046	5.2	LOS A	0.1	0.6	0.10	0.17	0.10	46.6
Approach		82	9.8	82	9.8	0.046	1.8	NA	0.1	0.6	0.10	0.17	0.10	47.5

All Vehicles	489	5.7	489	5.7	0.211	2.7	NA	0.4	3.1	0.13	0.28	0.13	46.8

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 4.3 (Site Folder: General)]

Network: 1 [Scenario 4.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 149 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3816	5.3	2605	5.3	0.653	11.4	LOS A	33.5	245.0	0.58	0.54	0.58	41.6
3	R2	94	0.0	64	0.0	* 0.647	86.0	LOS F	4.9	34.2	1.00	0.79	1.09	20.6
Approach		3910	5.2	2669 N1	5.2	0.653	13.1	LOS A	33.5	245.0	0.59	0.55	0.59	39.4
East: Site Access (North)														
4	L2	80	0.0	80	0.0	0.151	46.5	LOS D	4.3	29.9	0.78	0.74	0.78	21.0
6	R2	252	0.0	252	0.0	* 0.697	65.4	LOS E	17.2	120.7	0.99	0.84	1.00	17.0
Approach		332	0.0	332	0.0	0.697	60.8	LOS E	17.2	120.7	0.94	0.82	0.94	17.8
North: Joseph Street North														
7	L2	269	0.0	269	0.0	0.185	8.3	LOS A	2.2	15.3	0.12	0.64	0.12	48.6
8	T1	2345	8.1	2345	8.1	* 0.714	12.5	LOS A	31.5	235.7	0.49	0.45	0.49	41.5
Approach		2614	7.3	2614	7.3	0.714	12.1	LOS A	31.5	235.7	0.45	0.47	0.45	42.8
All Vehicles		6856	5.7	5614 N1	7.0	0.714	15.5	LOS B	33.5	245.0	0.54	0.53	0.55	37.5

1.12 PM – Scenario 4.3

MOVEMENT SUMMARY

Network: 1 [Scenario 4.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 4.3 (Site Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 129 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	59	0.0	59	0.0	0.884	55.6	LOS D	45.5	330.0	1.00	0.98	1.09	29.7
2	T1	2027	4.5	2027	4.5	0.884	46.1	LOS D	46.5	337.8	0.99	0.98	1.09	34.1
3	R2	103	6.8	103	6.8	0.642	77.6	LOS F	3.5	25.8	1.00	0.78	1.12	13.4
Approach		2189	4.5	2189	4.5	0.884	47.8	LOS D	46.5	337.8	1.00	0.97	1.09	33.0
East: Georges Ave E														
4	L2	388	3.1	290	3.1	* 1.001	128.8	LOS F	40.5	290.8	1.00	1.34	1.84	9.4
5	T1	518	2.1	387	2.2	1.001	124.9	LOS F	40.5	290.8	1.00	1.46	1.87	17.2
6	R2	73	2.7	54	2.8	1.001	129.2	LOS F	33.7	240.2	1.00	1.51	1.88	17.9
Approach		979	2.6	731 N1	2.6	1.001	126.8	LOS F	40.5	290.8	1.00	1.42	1.86	14.5
North: Joseph St N														
7	L2	36	5.6	36	5.6	1.022	129.2	LOS F	138.0	996.5	1.00	1.50	1.71	12.4
8	T1	3425	3.6	3425	3.6	* 1.022	123.9	LOS F	140.9	1016.8	1.00	1.51	1.72	12.3
9	R2	268	2.2	268	2.2	0.731	37.2	LOS C	10.9	77.8	0.99	0.85	1.04	36.5
Approach		3729	3.5	3729	3.5	1.022	117.8	LOS F	140.9	1016.8	1.00	1.46	1.67	13.5
West: Georges Ave W														
10	L2	122	1.6	122	1.6	0.958	94.7	LOS F	30.5	215.7	1.00	1.25	1.57	23.3
11	T1	235	0.9	235	0.9	0.958	90.3	LOS F	30.5	215.7	1.00	1.25	1.57	14.6
12	R2	57	3.5	57	3.5	0.958	95.5	LOS F	4.5	32.6	1.00	1.11	2.00	14.1
Approach		414	1.4	414	1.4	0.958	92.3	LOS F	30.5	215.7	1.00	1.23	1.63	17.4
All Vehicles		7311	3.6	7063 N1	3.7	1.022	95.5	LOS F	140.9	1016.8	1.00	1.29	1.51	18.0

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 129 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2077	4.4	2077	4.4	0.517	8.8	LOS A	19.5	141.8	0.49	0.45	0.49	63.1
3	R2	32	6.3	32	6.3	* 0.393	76.3	LOS F	2.1	15.5	1.00	0.72	1.00	24.3
Approach		2109	4.5	2109	4.5	0.517	9.9	LOS A	19.5	141.8	0.50	0.46	0.50	61.6
East: Botanica Drive														
4	L2	16	12.5	16	12.5	0.045	43.1	LOS D	0.8	6.0	0.82	0.67	0.82	32.6
6	R2	103	2.9	103	2.9	0.292	52.8	LOS D	5.6	40.0	0.90	0.77	0.90	6.3
Approach		119	4.2	119	4.2	0.292	51.5	LOS D	5.6	40.0	0.89	0.76	0.89	11.3
North: Joseph Street North														
7	L2	138	2.2	95	2.2	* 0.763	21.8	LOS B	29.6	213.8	0.62	0.61	0.62	38.6
8	T1	3735	3.7	2558	3.7	0.763	10.2	LOS A	29.6	213.8	0.50	0.48	0.50	65.4
Approach		3873	3.6	2653 N1	3.7	0.763	10.7	LOS A	29.6	213.8	0.51	0.48	0.51	64.9
All Vehicles		6101	3.9	4881 N1	4.9	0.763	11.3	LOS A	29.6	213.8	0.51	0.48	0.51	62.0

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 4.3 (Site Folder: General)]

Network: 1 [Scenario 4.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	72	2.8	72	2.8	0.680	13.0	LOS A	5.5	39.9	0.90	1.08	1.21	37.2
2	T1	291	3.8	291	3.8	0.680	12.7	LOS A	5.5	39.9	0.90	1.08	1.21	42.5
3u	U	4	50.0	4	50.0	0.680	19.2	LOS B	5.5	39.9	0.90	1.08	1.21	42.0
Approach		367	4.1	367	4.1	0.680	12.9	LOS A	5.5	39.9	0.90	1.08	1.21	41.9

North: East St N														
8	T1	383	3.1	383	3.1	1.472	856.9	LOS F	605.2	4343.5	1.00	3.22	7.14	3.9
9	R2	901	2.7	901	2.7	1.472	859.8	LOS F	605.2	4343.5	1.00	3.22	7.14	2.1
9u	U	4	50.0	4	50.0	1.472	862.6	LOS F	605.2	4343.5	1.00	3.22	7.14	3.9
Approach		1288	3.0	1288	3.0	1.472	859.0	LOS F	605.2	4343.5	1.00	3.22	7.14	2.7
West: Georges Ave														
10	L2	321	2.5	313	2.4	0.389	6.1	LOS A	2.2	15.9	0.45	0.65	0.45	44.7
12	R2	36	5.6	35	5.5	0.389	8.8	LOS A	2.2	15.9	0.45	0.65	0.45	45.2
12u	U	6	33.3	6	32.9	0.389	11.0	LOS A	2.2	15.9	0.45	0.65	0.45	41.0
Approach		363	3.3	354 N1	3.2	0.389	6.4	LOS A	2.2	15.9	0.45	0.65	0.45	44.8
All Vehicles		2018	3.2	2009 N1	3.2	1.472	554.3	LOS F	605.2	4343.5	0.88	2.37	4.88	4.5

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 4.2 (Site Folder: General)]

Network: 1 [Scenario 4.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	20	10.0	20	10.0	0.014	4.9	LOS A	0.1	0.4	0.16	0.49	0.16	43.8
2	T1	4	50.0	4	50.0	0.007	4.1	LOS A	0.0	0.2	0.22	0.50	0.22	46.1
3	R2	4	50.0	4	50.0	0.007	5.5	LOS A	0.0	0.2	0.22	0.50	0.22	45.3
Approach		28	21.4	28	21.4	0.014	4.9	LOS A	0.1	0.4	0.18	0.50	0.18	44.6
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.046	5.1	LOS A	0.1	0.5	0.05	0.07	0.05	48.5
5	T1	75	4.0	75	4.0	0.046	0.0	LOS A	0.1	0.5	0.05	0.07	0.05	49.2
6	R2	6	33.3	6	33.3	0.046	5.3	LOS A	0.1	0.5	0.05	0.07	0.05	48.0
Approach		86	8.1	86	8.1	0.046	0.7	NA	0.1	0.5	0.05	0.07	0.05	48.9
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.026	5.4	LOS A	0.1	0.6	0.20	0.53	0.20	45.5
8	T1	4	50.0	4	50.0	0.026	4.1	LOS A	0.1	0.6	0.20	0.53	0.20	45.8
9	R2	26	7.7	26	7.7	0.026	5.0	LOS A	0.1	0.6	0.20	0.53	0.20	43.8
Approach		34	17.6	34	17.6	0.026	5.0	LOS A	0.1	0.6	0.20	0.53	0.20	44.5
West: Botanica Dr W														
10	L2	26	7.7	20	8.7	0.071	4.8	LOS A	0.1	1.0	0.07	0.17	0.07	47.1
11	T1	115	2.6	89	3.0	0.071	0.1	LOS A	0.1	1.0	0.07	0.17	0.07	48.1
12	R2	30	6.7	23	7.6	0.071	4.8	LOS A	0.1	1.0	0.07	0.17	0.07	47.0

Approach	171	4.1	133 N1	4.7	0.071	1.6	NA	0.1	1.0	0.07	0.17	0.07	47.7
All Vehicles	319	8.2	281 N1	9.2	0.071	2.1	NA	0.1	1.0	0.09	0.22	0.09	47.3

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access PM - Scenario 4.3 (Site Folder: General)]

Network: 1 [Scenario 4.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 129 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2174	4.4	2174	4.4	* 0.751	3.6	LOS A	17.6	128.0	0.42	0.39	0.42	57.5
3	R2	6	0.0	6	0.0	0.070	72.8	LOS F	0.4	2.7	0.98	0.65	0.98	22.8
Approach		2180	4.4	2180	4.4	0.751	3.8	LOS A	17.6	128.0	0.42	0.39	0.42	57.0
East: Site Access (North)														
4	L2	15	0.0	15	0.0	0.058	56.6	LOS E	0.8	5.8	0.90	0.69	0.90	18.6
6	R2	31	0.0	31	0.0	* 0.575	77.3	LOS F	2.1	15.0	1.00	0.77	1.11	15.2
Approach		46	0.0	46	0.0	0.575	70.6	LOS F	2.1	15.0	0.97	0.74	1.04	16.2
North: Joseph Street North														
7	L2	9	0.0	6	0.0	0.005	8.7	LOS A	0.1	0.4	0.15	0.62	0.15	48.2
8	T1	3859	3.5	2778	3.5	0.634	3.1	LOS A	17.2	124.3	0.22	0.21	0.22	59.9
Approach		3868	3.5	2785 N1	3.5	0.634	3.1	LOS A	17.2	124.3	0.22	0.21	0.22	59.8
All Vehicles		6094	3.8	5011 N1	4.6	0.751	4.0	LOS A	17.6	128.0	0.31	0.29	0.31	56.7

1.13 AM – Scenario 5.2

MOVEMENT SUMMARY

Network: 1 [Scenario 5.2 - AM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 5.2 (Site Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 141 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	118	1.7	99	1.7	0.848	24.5	LOS B	37.1	270.7	0.71	0.69	0.72	41.8
2	T1	3481	5.4	2913	5.4	0.848	19.8	LOS B	38.4	280.8	0.70	0.66	0.72	48.2
3	R2	540	1.9	452	1.8	* 1.034	148.8	LOS F	43.7	310.8	1.00	1.25	2.00	6.5
Approach		4139	4.9	3464 N1	4.8	1.034	36.7	LOS C	43.7	310.8	0.74	0.74	0.89	34.8
East: Georges Ave E														
4	L2	269	5.2	269	5.2	0.653	47.6	LOS D	21.9	159.1	0.91	0.83	0.91	19.5
5	T1	260	2.7	260	2.7	0.653	55.2	LOS D	21.9	159.1	0.96	0.83	0.97	27.0
6	R2	14	14.3	14	14.2	0.653	67.8	LOS E	11.2	80.6	1.00	0.82	1.01	26.4
Approach		543	4.2	542 N1	4.2	0.653	51.7	LOS D	21.9	159.1	0.94	0.83	0.94	24.1
North: Joseph St N														
7	L2	94	3.2	94	3.2	1.046	189.8	LOS F	73.8	548.5	1.00	1.66	2.06	8.7
8	T1	2159	8.0	2159	8.0	* 1.046	182.4	LOS F	79.0	590.8	1.00	1.68	2.05	8.8
9	R2	136	2.2	136	2.2	0.811	81.2	LOS F	10.0	71.3	1.00	0.89	1.23	25.5
Approach		2389	7.5	2389	7.5	1.046	176.9	LOS F	79.0	590.8	1.00	1.63	2.00	9.4
West: Georges Ave W														
10	L2	255	0.8	255	0.8	1.047	189.0	LOS F	68.4	487.9	1.00	1.57	2.08	14.4
11	T1	403	3.5	403	3.5	* 1.047	187.3	LOS F	68.4	487.9	1.00	1.59	2.11	8.3
12	R2	189	2.1	189	2.1	1.047	193.9	LOS F	44.4	317.7	1.00	1.63	2.18	8.2
Approach		847	2.4	847	2.4	1.047	189.3	LOS F	68.4	487.9	1.00	1.59	2.12	10.2
All Vehicles		7918	5.3	7242 N1	5.8	1.047	101.9	LOS F	79.0	590.8	0.87	1.14	1.40	17.3

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - AM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 141 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3677	5.4	3677	5.4	* 0.828	23.4	LOS B	50.4	369.0	0.86	0.80	0.86	46.8
3	R2	12	16.7	12	16.7	0.173	82.2	LOS F	0.8	6.8	0.99	0.68	0.99	23.1
Approach		3689	5.5	3689	5.5	0.828	23.6	LOS B	50.4	369.0	0.86	0.80	0.86	46.7
East: Botanica Drive														
4	L2	32	6.3	32	6.3	0.055	35.1	LOS C	1.5	10.7	0.71	0.67	0.71	36.8
6	R2	234	1.3	234	1.3	0.429	45.8	LOS D	12.7	90.0	0.84	0.80	0.84	7.3
Approach		266	1.9	266	1.9	0.429	44.5	LOS D	12.7	90.0	0.83	0.78	0.83	12.4
North: Joseph Street North														
7	L2	68	5.9	65	5.9	* 0.616	31.4	LOS C	22.8	169.8	0.66	0.63	0.66	29.3
8	T1	2357	8.0	2266	8.0	0.616	24.2	LOS B	28.3	212.0	0.71	0.65	0.71	52.7
Approach		2425	7.9	2331 N1	7.9	0.616	24.4	LOS B	28.3	212.0	0.71	0.65	0.71	52.3
All Vehicles		6380	6.3	6286 N1	6.3	0.828	24.8	LOS B	50.4	369.0	0.80	0.74	0.80	47.7

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - AM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	37	5.4	37	5.4	0.515	8.7	LOS A	3.8	28.0	0.74	0.85	0.83	40.8
2	T1	377	5.3	377	5.3	0.515	8.4	LOS A	3.8	28.0	0.74	0.85	0.83	44.8
3u	U	5	40.0	5	40.0	0.515	14.2	LOS A	3.8	28.0	0.74	0.85	0.83	44.4
Approach		419	5.7	419	5.7	0.515	8.5	LOS A	3.8	28.0	0.74	0.85	0.83	44.6
North: East St N														
8	T1	240	0.8	240	0.8	0.572	4.3	LOS A	4.6	32.8	0.41	0.58	0.41	45.5
9	R2	492	3.9	492	3.9	0.572	7.3	LOS A	4.6	32.8	0.41	0.58	0.41	42.0

9u	U	4	50.0	4	50.0	0.572	9.4	LOS A	4.6	32.8	0.41	0.58	0.41	44.9
Approach		736	3.1	736	3.1	0.572	6.3	LOS A	4.6	32.8	0.41	0.58	0.41	43.7
West: Georges Ave														
10	L2	936	2.9	827	3.0	1.029	84.1	LOS F	65.9	473.6	1.00	2.73	4.99	21.5
12	R2	110	1.8	97	1.9	1.029	86.7	LOS F	65.9	473.6	1.00	2.73	4.99	21.7
12u	U	5	40.0	4	40.8	1.029	90.4	LOS F	65.9	473.6	1.00	2.73	4.99	12.7
Approach		1051	2.9	928 N1	3.0	1.029	84.4	LOS F	65.9	473.6	1.00	2.73	4.99	21.5
All Vehicles		2206	3.5	2083 N1	3.7	1.029	41.5	LOS C	65.9	473.6	0.74	1.59	2.53	29.4

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - AM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	50	4.0	50	4.0	0.064	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.4
2	T1	4	50.0	4	50.0	0.008	4.4	LOS A	0.0	0.2	0.29	0.53	0.29	45.9
3	R2	4	50.0	4	50.0	0.008	6.0	LOS A	0.0	0.2	0.29	0.53	0.29	45.2
Approach		58	10.3	58	10.3	0.064	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.9
East: Botanica Dr W														
4	L2	8	25.0	8	25.0	0.189	5.0	LOS A	0.4	3.0	0.10	0.15	0.10	48.0
5	T1	177	2.3	177	2.3	0.189	0.1	LOS A	0.4	3.0	0.10	0.15	0.10	47.8
6	R2	60	3.3	60	3.3	0.189	4.8	LOS A	0.4	3.0	0.10	0.15	0.10	47.8
Approach		245	3.3	245	3.3	0.189	1.4	NA	0.4	3.0	0.10	0.15	0.10	47.9
North: Betty Cuthbert Dr N														
7	L2	62	3.2	62	3.2	0.094	4.8	LOS A	0.3	2.1	0.11	0.53	0.11	46.3
8	T1	4	50.0	4	50.0	0.094	4.5	LOS A	0.3	2.1	0.11	0.53	0.11	45.9
9	R2	38	5.3	38	5.3	0.094	5.3	LOS A	0.3	2.1	0.11	0.53	0.11	44.1
Approach		104	5.8	104	5.8	0.094	5.0	LOS A	0.3	2.1	0.11	0.53	0.11	45.8
West: Botanica Dr W														
10	L2	16	12.5	15	12.7	0.045	4.9	LOS A	0.1	0.6	0.10	0.17	0.10	46.8
11	T1	54	7.4	52	7.5	0.045	0.1	LOS A	0.1	0.6	0.10	0.17	0.10	47.9
12	R2	12	16.7	12	16.9	0.045	5.2	LOS A	0.1	0.6	0.10	0.17	0.10	46.6
Approach		82	9.8	79 N1	9.9	0.045	1.8	NA	0.1	0.6	0.10	0.17	0.10	47.5
All Vehicles		489	5.7	486 N1	5.8	0.189	2.7	NA	0.4	3.0	0.12	0.28	0.12	46.8

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - AM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 141 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3816	5.3	3460	5.3	* 0.663	11.6	LOS A	33.9	247.9	0.56	0.52	0.56	41.2
3	R2	94	0.0	85	0.0	0.542	75.7	LOS F	5.9	41.1	1.00	0.78	1.00	22.4
Approach		3910	5.2	3545 N1	5.2	0.663	13.2	LOS A	33.9	247.9	0.57	0.52	0.57	39.3
East: Site Access (North)														
4	L2	80	0.0	80	0.0	0.129	39.2	LOS C	3.8	26.4	0.73	0.72	0.73	23.0
6	R2	252	0.0	252	0.0	* 0.660	60.3	LOS E	16.1	112.4	0.98	0.83	0.98	18.0
Approach		332	0.0	332	0.0	0.660	55.3	LOS D	16.1	112.4	0.92	0.81	0.92	19.0
North: Joseph Street North														
7	L2	269	0.0	258	0.0	0.208	12.0	LOS A	5.4	37.7	0.48	0.72	0.48	45.7
8	T1	2345	8.1	2251	8.1	0.541	19.8	LOS B	25.2	189.0	0.69	0.63	0.69	33.5
Approach		2614	7.3	2510 N1	7.3	0.541	19.0	LOS B	25.2	189.0	0.67	0.64	0.67	35.4
All Vehicles		6856	5.7	6387 N1	6.1	0.663	17.7	LOS B	33.9	247.9	0.63	0.58	0.63	35.2

1.14 PM – Scenario 5.2

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - PM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 134 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	59	0.0	59	0.0	0.908	69.9	LOS E	38.5	278.4	1.00	1.02	1.18	25.9
2	T1	2027	4.5	2027	4.5	0.908	61.7	LOS E	39.4	286.5	1.00	1.02	1.18	29.1
3	R2	103	6.8	103	6.8	0.979	107.5	LOS F	8.8	64.9	1.00	1.09	1.84	10.3
Approach		2189	4.5	2189	4.5	0.979	64.0	LOS E	39.4	286.5	1.00	1.03	1.22	28.0
East: Georges Ave E														
4	L2	388	3.1	388	3.1	* 0.976	101.1	LOS F	57.2	410.0	1.00	1.20	1.52	11.5
5	T1	518	2.1	518	2.1	0.976	101.6	LOS F	57.2	410.0	1.00	1.29	1.59	19.6
6	R2	73	2.7	73	2.7	0.976	108.5	LOS F	36.0	256.7	1.00	1.35	1.64	20.3
Approach		979	2.6	979	2.6	0.976	101.9	LOS F	57.2	410.0	1.00	1.26	1.57	16.9
North: Joseph St N														
7	L2	36	5.6	36	5.6	0.978	91.5	LOS F	85.0	613.5	1.00	1.25	1.42	16.6
8	T1	3425	3.6	3425	3.6	* 0.978	84.8	LOS F	86.9	626.7	0.98	1.24	1.40	16.7
9	R2	268	2.2	268	2.2	0.760	37.5	LOS C	9.3	66.2	1.00	0.86	1.07	36.6
Approach		3729	3.5	3729	3.5	0.978	81.5	LOS F	86.9	626.7	0.98	1.21	1.38	18.0
West: Georges Ave W														
10	L2	122	1.6	122	1.6	0.589	43.4	LOS D	19.1	135.2	0.88	0.79	0.88	34.5
11	T1	235	0.9	235	0.9	0.589	39.1	LOS C	19.1	135.2	0.88	0.79	0.88	24.2
12	R2	57	3.5	57	3.5	0.976	101.6	LOS F	4.7	33.6	1.00	1.12	2.06	13.5
Approach		414	1.4	414	1.4	0.976	49.0	LOS D	19.1	135.2	0.90	0.83	1.04	25.5
All Vehicles		7311	3.6	7311	3.6	0.979	77.1	LOS F	86.9	626.7	0.98	1.14	1.34	20.9

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - PM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 134 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														

2	T1	2077	4.4	2077	4.4	0.397	9.1	LOS A	14.1	102.3	0.46	0.41	0.46	62.7
3	R2	32	6.3	32	6.3	* 0.408	79.4	LOS F	2.2	16.1	1.00	0.72	1.00	23.7
Approach		2109	4.5	2109	4.5	0.408	10.2	LOS A	14.1	102.3	0.46	0.42	0.46	61.2
East: Botanica Drive														
4	L2	16	12.5	16	12.5	0.041	42.5	LOS D	0.8	6.1	0.80	0.66	0.80	32.8
6	R2	103	2.9	103	2.9	0.262	51.6	LOS D	5.6	40.2	0.87	0.76	0.87	6.6
Approach		119	4.2	119	4.2	0.262	50.4	LOS D	5.6	40.2	0.86	0.75	0.86	11.6
North: Joseph Street North														
7	L2	138	2.2	138	2.2	* 0.855	20.3	LOS B	35.2	253.8	0.64	0.65	0.65	40.3
8	T1	3735	3.7	3735	3.7	0.855	4.8	LOS A	35.2	253.8	0.31	0.31	0.32	72.3
Approach		3873	3.6	3873	3.6	0.855	5.4	LOS A	35.2	253.8	0.32	0.32	0.33	71.6
All Vehicles		6101	3.9	6101	3.9	0.855	7.9	LOS A	35.2	253.8	0.38	0.36	0.39	66.9

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - PM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	72	2.8	72	2.8	0.720	22.4	LOS B	7.8	56.8	1.00	1.27	1.62	31.3
2	T1	291	3.8	291	3.8	0.720	22.1	LOS B	7.8	56.8	1.00	1.27	1.62	38.3
3u	U	4	50.0	4	50.0	0.720	29.5	LOS C	7.8	56.8	1.00	1.27	1.62	37.9
Approach		367	4.1	367	4.1	0.720	22.2	LOS B	7.8	56.8	1.00	1.27	1.62	37.4
North: East St N														
8	T1	383	3.1	383	3.1	0.932	4.5	LOS A	17.8	128.0	0.54	0.50	0.54	45.2
9	R2	901	2.7	901	2.7	0.932	7.4	LOS A	17.8	128.0	0.54	0.50	0.54	41.5
9u	U	4	50.0	4	50.0	0.932	9.5	LOS A	17.8	128.0	0.54	0.50	0.54	44.6
Approach		1288	3.0	1288	3.0	0.932	6.5	LOS A	17.8	128.0	0.54	0.50	0.54	43.1
West: Georges Ave														
10	L2	321	2.5	321	2.5	0.396	6.1	LOS A	2.4	16.9	0.48	0.66	0.48	44.7
12	R2	36	5.6	36	5.6	0.396	8.8	LOS A	2.4	16.9	0.48	0.66	0.48	45.2
12u	U	6	33.3	6	33.3	0.396	11.0	LOS A	2.4	16.9	0.48	0.66	0.48	40.9
Approach		363	3.3	363	3.3	0.396	6.5	LOS A	2.4	16.9	0.48	0.66	0.48	44.7
All Vehicles		2018	3.2	2018	3.2	0.932	9.4	LOS A	17.8	128.0	0.61	0.67	0.73	42.0

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - PM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	20	10.0	20	10.0	0.014	4.9	LOS A	0.1	0.4	0.16	0.49	0.16	43.8
2	T1	4	50.0	4	50.0	0.007	4.2	LOS A	0.0	0.2	0.24	0.51	0.24	46.0
3	R2	4	50.0	4	50.0	0.007	5.6	LOS A	0.0	0.2	0.24	0.51	0.24	45.3
Approach		28	21.4	28	21.4	0.014	4.9	LOS A	0.1	0.4	0.18	0.50	0.18	44.6
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.046	5.2	LOS A	0.1	0.5	0.06	0.07	0.06	48.4
5	T1	75	4.0	75	4.0	0.046	0.1	LOS A	0.1	0.5	0.06	0.07	0.06	49.1
6	R2	6	33.3	6	33.3	0.046	5.4	LOS A	0.1	0.5	0.06	0.07	0.06	47.9
Approach		86	8.1	86	8.1	0.046	0.7	NA	0.1	0.5	0.06	0.07	0.06	48.9
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.026	5.5	LOS A	0.1	0.6	0.22	0.54	0.22	45.5
8	T1	4	50.0	4	50.0	0.026	4.2	LOS A	0.1	0.6	0.22	0.54	0.22	45.7
9	R2	26	7.7	26	7.7	0.026	5.1	LOS A	0.1	0.6	0.22	0.54	0.22	43.7
Approach		34	17.6	34	17.6	0.026	5.0	LOS A	0.1	0.6	0.22	0.54	0.22	44.4
West: Botanica Dr W														
10	L2	26	7.7	26	7.7	0.091	4.7	LOS A	0.2	1.2	0.07	0.17	0.07	47.1
11	T1	115	2.6	115	2.6	0.091	0.1	LOS A	0.2	1.2	0.07	0.17	0.07	48.1
12	R2	30	6.7	30	6.7	0.091	4.8	LOS A	0.2	1.2	0.07	0.17	0.07	47.0
Approach		171	4.1	171	4.1	0.091	1.6	NA	0.2	1.2	0.07	0.17	0.07	47.7
All Vehicles		319	8.2	319	8.2	0.091	2.0	NA	0.2	1.2	0.09	0.21	0.09	47.3

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access PM - Scenario 5.2 (Site Folder: General)]

Network: 1 [Scenario 5.2 - PM - All Development w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development

PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 134 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2174	4.4	2174	4.4	0.348	2.4	LOS A	7.9	57.4	0.20	0.18	0.20	61.0
3	R2	6	0.0	6	0.0	* 0.073	75.7	LOS F	0.4	2.8	0.99	0.65	0.99	22.4
Approach		2180	4.4	2180	4.4	0.348	2.7	LOS A	7.9	57.4	0.21	0.19	0.21	60.3
East: Site Access (North)														
4	L2	15	0.0	15	0.0	0.047	54.2	LOS D	0.8	5.7	0.86	0.68	0.86	19.1
6	R2	31	0.0	31	0.0	0.203	68.3	LOS E	2.0	13.7	0.97	0.72	0.97	16.6
Approach		46	0.0	46	0.0	0.203	63.7	LOS E	2.0	13.7	0.93	0.71	0.93	17.3
North: Joseph Street North														
7	L2	9	0.0	9	0.0	* 0.007	9.3	LOS A	0.1	0.6	0.24	0.63	0.24	47.8
8	T1	3859	3.5	3859	3.5	* 0.686	4.4	LOS A	24.6	177.5	0.29	0.27	0.29	56.2
Approach		3868	3.5	3868	3.5	0.686	4.5	LOS A	24.6	177.5	0.28	0.27	0.28	56.2
All Vehicles		6094	3.8	6094	3.8	0.686	4.3	LOS A	24.6	177.5	0.26	0.24	0.26	56.2

1.15 AM – Scenario 5.3

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave AM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph St S														
1	L2	118	1.7	101	1.7	0.919	53.9	LOS D	59.6	434.5	0.97	0.98	1.08	30.0
2	T1	3481	5.4	2993	5.4	* 0.919	47.6	LOS D	61.5	450.8	0.95	0.96	1.06	33.5
3	R2	540	1.9	464	1.8	0.905	74.4	LOS F	18.5	131.4	1.00	1.04	1.38	14.0
Approach		4139	4.9	3558 N1	4.8	0.919	51.3	LOS D	61.5	450.8	0.95	0.97	1.11	30.9
East: Georges Ave E														
4	L2	269	5.2	269	5.2	0.581	43.7	LOS D	21.8	158.1	0.85	0.80	0.85	20.6
5	T1	260	2.7	260	2.7	0.581	53.1	LOS D	21.8	158.1	0.92	0.80	0.92	27.4
6	R2	14	14.3	14	14.2	0.581	68.1	LOS E	10.9	78.9	0.98	0.80	0.98	26.4
Approach		543	4.2	542 N1	4.2	0.581	48.8	LOS D	21.8	158.1	0.89	0.80	0.89	24.9
North: Joseph St N														
7	L2	94	3.2	94	3.2	0.917	76.6	LOS F	46.2	343.7	1.00	1.06	1.22	19.2
8	T1	2159	8.0	2159	8.0	0.917	68.0	LOS E	48.3	361.4	1.00	1.06	1.22	19.6
9	R2	136	2.2	136	2.2	0.851	87.8	LOS F	10.7	76.4	1.00	0.92	1.31	24.4
Approach		2389	7.5	2389	7.5	0.917	69.5	LOS E	48.3	361.4	1.00	1.05	1.22	20.0
West: Georges Ave W														
10	L2	255	0.8	255	0.8	* 0.909	72.6	LOS F	43.6	311.2	1.00	1.03	1.21	27.0
11	T1	403	3.5	403	3.5	0.909	72.4	LOS F	43.6	311.2	1.00	1.05	1.25	16.9
12	R2	189	2.1	189	2.1	0.909	84.6	LOS F	27.1	194.3	1.00	1.09	1.34	15.7
Approach		847	2.4	847	2.4	0.909	75.2	LOS F	43.6	311.2	1.00	1.05	1.26	20.1
All Vehicles		7918	5.3	7337 N1	5.8	0.919	59.8	LOS E	61.5	450.8	0.97	0.99	1.15	25.3

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr AM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3677	5.4	3677	5.4	* 0.842	19.7	LOS B	53.3	390.5	0.82	0.77	0.82	50.1
3	R2	12	16.7	12	16.7	0.181	86.3	LOS F	0.9	7.1	0.99	0.68	0.99	22.4

Approach		3689	5.5	3689	5.5	0.842	19.9	LOS B	53.3	390.5	0.82	0.77	0.83	49.9
East: Botanica Drive														
4	L2	32	6.3	32	6.3	0.070	44.7	LOS D	1.7	12.6	0.78	0.68	0.78	32.9
6	R2	234	1.3	234	1.3	0.795	67.5	LOS E	17.2	121.4	1.00	0.92	1.12	5.2
Approach		266	1.9	266	1.9	0.795	64.7	LOS E	17.2	121.4	0.97	0.89	1.08	9.1
North: Joseph Street North														
7	L2	68	5.9	68	5.9	* 0.558	28.6	LOS C	25.2	187.8	0.67	0.64	0.67	31.6
8	T1	2357	8.0	2357	8.0	0.558	26.0	LOS B	35.5	265.4	0.81	0.74	0.81	51.4
Approach		2425	7.9	2425	7.9	0.558	26.1	LOS B	35.5	265.4	0.81	0.74	0.81	51.1
All Vehicles		6380	6.3	6380	6.3	0.842	24.1	LOS B	53.3	390.5	0.82	0.77	0.83	48.3

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St AM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	37	5.4	37	5.4	0.516	8.7	LOS A	3.8	28.2	0.74	0.85	0.83	40.8
2	T1	377	5.3	377	5.3	0.516	8.4	LOS A	3.8	28.2	0.74	0.85	0.83	44.8
3u	U	5	40.0	5	40.0	0.516	14.2	LOS A	3.8	28.2	0.74	0.85	0.83	44.4
Approach		419	5.7	419	5.7	0.516	8.5	LOS A	3.8	28.2	0.74	0.85	0.83	44.6
North: East St N														
8	T1	240	0.8	240	0.8	0.575	4.3	LOS A	4.6	32.9	0.41	0.58	0.41	45.5
9	R2	492	3.9	492	3.9	0.575	7.3	LOS A	4.6	32.9	0.41	0.58	0.41	42.0
9u	U	4	50.0	4	50.0	0.575	9.4	LOS A	4.6	32.9	0.41	0.58	0.41	44.9
Approach		736	3.1	736	3.1	0.575	6.3	LOS A	4.6	32.9	0.41	0.58	0.41	43.7
West: Georges Ave														
10	L2	936	2.9	879	3.0	1.089	180.7	LOS F	125.3	899.9	1.00	4.67	9.23	13.1
12	R2	110	1.8	103	1.9	1.089	183.3	LOS F	125.3	899.9	1.00	4.67	9.23	13.2
12u	U	5	40.0	5	40.6	1.089	186.9	LOS F	125.3	899.9	1.00	4.67	9.23	6.9
Approach		1051	2.9	987 N1	3.0	1.089	181.0	LOS F	125.3	899.9	1.00	4.67	9.23	13.1
All Vehicles		2206	3.5	2142 N1	3.6	1.089	87.3	LOS F	125.3	899.9	0.75	2.52	4.56	20.3

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr AM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
AM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	50	4.0	50	4.0	0.073	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.4
2	T1	4	50.0	4	50.0	0.008	4.4	LOS A	0.0	0.2	0.30	0.53	0.30	45.9
3	R2	4	50.0	4	50.0	0.008	6.0	LOS A	0.0	0.2	0.30	0.53	0.30	45.2
Approach		58	10.3	58	10.3	0.073	5.2	LOS A	0.1	1.0	0.27	0.53	0.27	43.9
East: Botanica Dr W														
4	L2	8	25.0	8	25.0	0.211	5.0	LOS A	0.4	3.0	0.10	0.15	0.10	48.0
5	T1	177	2.3	177	2.3	0.211	0.1	LOS A	0.4	3.0	0.10	0.15	0.10	47.8
6	R2	60	3.3	60	3.3	0.211	4.8	LOS A	0.4	3.0	0.10	0.15	0.10	47.8
Approach		245	3.3	245	3.3	0.211	1.4	NA	0.4	3.0	0.10	0.15	0.10	47.8
North: Betty Cuthbert Dr N														
7	L2	62	3.2	62	3.2	0.101	4.8	LOS A	0.3	2.1	0.11	0.53	0.11	46.3
8	T1	4	50.0	4	50.0	0.101	4.5	LOS A	0.3	2.1	0.11	0.53	0.11	45.9
9	R2	38	5.3	38	5.3	0.101	5.3	LOS A	0.3	2.1	0.11	0.53	0.11	44.1
Approach		104	5.8	104	5.8	0.101	5.0	LOS A	0.3	2.1	0.11	0.53	0.11	45.8
West: Botanica Dr W														
10	L2	16	12.5	16	12.5	0.046	4.9	LOS A	0.1	0.6	0.10	0.17	0.10	46.8
11	T1	54	7.4	54	7.4	0.046	0.1	LOS A	0.1	0.6	0.10	0.17	0.10	47.9
12	R2	12	16.7	12	16.7	0.046	5.2	LOS A	0.1	0.6	0.10	0.17	0.10	46.6
Approach		82	9.8	82	9.8	0.046	1.8	NA	0.1	0.6	0.10	0.17	0.10	47.5
All Vehicles		489	5.7	489	5.7	0.211	2.7	NA	0.4	3.0	0.13	0.28	0.13	46.8

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access AM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - AM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
AM Peak Hour Volumes

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 148 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	3816	5.3	3162	5.3	* 0.754	11.8	LOS A	43.8	320.7	0.60	0.57	0.60	40.9
3	R2	94	0.0	78	0.0	0.520	79.4	LOS F	5.6	39.4	1.00	0.77	1.00	21.8
Approach		3910	5.2	3240 N1	5.2	0.754	13.5	LOS A	43.8	320.7	0.61	0.57	0.61	39.0
East: Site Access (North)														
4	L2	80	0.0	80	0.0	0.142	44.3	LOS D	4.1	29.0	0.76	0.73	0.76	21.5
6	R2	252	0.0	252	0.0	* 0.744	68.2	LOS E	17.7	124.1	1.00	0.87	1.05	16.6
Approach		332	0.0	332	0.0	0.744	62.5	LOS E	17.7	124.1	0.94	0.83	0.98	17.6
North: Joseph Street North														
7	L2	269	0.0	269	0.0	0.191	7.9	LOS A	1.5	10.5	0.09	0.63	0.09	48.9
8	T1	2345	8.1	2345	8.1	0.520	8.0	LOS A	19.3	144.4	0.28	0.26	0.28	48.6
Approach		2614	7.3	2614	7.3	0.520	8.0	LOS A	19.3	144.4	0.26	0.30	0.26	48.6
All Vehicles		6856	5.7	6185 N1	6.3	0.754	13.8	LOS A	43.8	320.7	0.48	0.47	0.49	39.3

1.16 PM – Scenario 5.3

MOVEMENT SUMMARY

Site: 1 [1 Joseph St / Georges Ave PM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Georges Avenue
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 131 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total	HV]	ARRIVAL FLOWS [Total	HV]	Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh.	Dist]	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed

		veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Joseph St S														
1	L2	59	0.0	59	0.0	0.898	68.4	LOS E	36.6	264.7	1.00	1.01	1.17	26.5
2	T1	2027	4.5	2027	4.5	0.898	58.9	LOS E	37.5	272.4	1.00	1.01	1.17	29.9
3	R2	103	6.8	103	6.8	0.652	78.9	LOS F	3.5	26.2	1.00	0.78	1.10	13.3
Approach		2189	4.5	2189	4.5	0.898	60.1	LOS E	37.5	272.4	1.00	1.00	1.16	29.0
East: Georges Ave E														
4	L2	388	3.1	388	3.1	* 0.944	78.7	LOS F	48.7	349.0	1.00	1.11	1.36	13.9
5	T1	518	2.1	518	2.1	0.944	79.9	LOS F	48.7	349.0	1.00	1.17	1.42	22.5
6	R2	73	2.7	73	2.7	0.944	87.1	LOS F	32.3	230.6	1.00	1.21	1.46	23.3
Approach		979	2.6	979	2.6	0.944	80.0	LOS F	48.7	349.0	1.00	1.15	1.40	19.8
North: Joseph St N														
7	L2	36	5.6	36	5.6	0.961	77.1	LOS F	76.0	548.9	1.00	1.18	1.33	19.1
8	T1	3425	3.6	3425	3.6	* 0.961	70.1	LOS E	77.7	560.5	0.98	1.17	1.31	19.2
9	R2	268	2.2	268	2.2	0.804	39.8	LOS C	9.7	69.1	1.00	0.88	1.13	35.7
Approach		3729	3.5	3729	3.5	0.961	68.0	LOS E	77.7	560.5	0.98	1.15	1.30	20.4
West: Georges Ave W														
10	L2	122	1.6	122	1.6	0.576	41.6	LOS C	18.5	130.6	0.87	0.78	0.87	35.1
11	T1	235	0.9	235	0.9	0.576	37.2	LOS C	18.5	130.6	0.87	0.78	0.87	24.8
12	R2	57	3.5	57	3.5	0.954	92.4	LOS F	4.4	31.5	1.00	1.08	1.94	14.5
Approach		414	1.4	414	1.4	0.954	46.1	LOS D	18.5	130.6	0.89	0.82	1.02	26.3
All Vehicles		7311	3.6	7311	3.6	0.961	66.0	LOS E	77.7	560.5	0.98	1.08	1.26	23.2

MOVEMENT SUMMARY

Site: 2 [2 Joseph St / Botanica Dr PM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Botanica Drive
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 131 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2077	4.4	2077	4.4	0.401	9.3	LOS A	14.1	102.4	0.47	0.42	0.47	62.4
3	R2	32	6.3	32	6.3	* 0.399	77.6	LOS F	2.1	15.8	1.00	0.72	1.00	24.1
Approach		2109	4.5	2109	4.5	0.401	10.3	LOS A	14.1	102.4	0.47	0.42	0.47	60.9
East: Botanica Drive														
4	L2	16	12.5	16	12.5	0.040	40.9	LOS C	0.8	5.9	0.79	0.66	0.79	33.4

6	R2	103	2.9	103	2.9	0.256	50.0	LOS D	5.4	39.1	0.87	0.76	0.87	6.8
Approach		119	4.2	119	4.2	0.256	48.7	LOS D	5.4	39.1	0.86	0.75	0.86	11.9
North: Joseph Street North														
7	L2	138	2.2	138	2.2	* 0.868	23.8	LOS B	39.6	285.4	0.71	0.72	0.74	35.9
8	T1	3735	3.7	3735	3.7	0.868	6.5	LOS A	39.6	285.4	0.35	0.34	0.36	70.0
Approach		3873	3.6	3873	3.6	0.868	7.1	LOS A	39.6	285.4	0.36	0.36	0.38	69.3
All Vehicles		6101	3.9	6101	3.9	0.868	9.0	LOS A	39.6	285.4	0.41	0.39	0.42	65.4

MOVEMENT SUMMARY

Site: 3 [3 Georges Ave / East St PM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Georges Avenue / East Street
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: East St S														
1	L2	72	2.8	72	2.8	0.705	21.6	LOS B	7.7	55.6	1.00	1.25	1.58	31.8
2	T1	291	3.8	291	3.8	0.705	21.3	LOS B	7.7	55.6	1.00	1.25	1.58	38.7
3u	U	4	50.0	4	50.0	0.705	28.7	LOS C	7.7	55.6	1.00	1.25	1.58	38.3
Approach		367	4.1	367	4.1	0.705	21.4	LOS B	7.7	55.6	1.00	1.25	1.58	37.8
North: East St N														
8	T1	383	3.1	383	3.1	0.869	4.5	LOS A	17.8	127.8	0.54	0.50	0.54	45.2
9	R2	901	2.7	901	2.7	0.869	7.4	LOS A	17.8	127.8	0.54	0.50	0.54	41.5
9u	U	4	50.0	4	50.0	0.869	9.5	LOS A	17.8	127.8	0.54	0.50	0.54	44.6
Approach		1288	3.0	1288	3.0	0.869	6.5	LOS A	17.8	127.8	0.54	0.50	0.54	43.1
West: Georges Ave														
10	L2	321	2.5	321	2.5	0.396	6.1	LOS A	2.4	16.9	0.48	0.66	0.48	44.7
12	R2	36	5.6	36	5.6	0.396	8.8	LOS A	2.4	16.9	0.48	0.66	0.48	45.2
12u	U	6	33.3	6	33.3	0.396	11.0	LOS A	2.4	16.9	0.48	0.66	0.48	40.9
Approach		363	3.3	363	3.3	0.396	6.5	LOS A	2.4	16.9	0.48	0.66	0.48	44.7
All Vehicles		2018	3.2	2018	3.2	0.869	9.2	LOS A	17.8	127.8	0.61	0.66	0.72	42.1

MOVEMENT SUMMARY

Site: 4 [4 Botanica Dr / Betty Cuthbert Dr PM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Botanica Dr / Betty Cuthbert Dr
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Betty Cuthbert Dr S														
1	L2	20	10.0	20	10.0	0.014	4.9	LOS A	0.1	0.4	0.16	0.49	0.16	43.8
2	T1	4	50.0	4	50.0	0.007	4.2	LOS A	0.0	0.2	0.24	0.51	0.24	46.0
3	R2	4	50.0	4	50.0	0.007	5.6	LOS A	0.0	0.2	0.24	0.51	0.24	45.3
Approach		28	21.4	28	21.4	0.014	4.9	LOS A	0.1	0.4	0.18	0.50	0.18	44.6
East: Botanica Dr W														
4	L2	5	40.0	5	40.0	0.046	5.2	LOS A	0.1	0.5	0.06	0.07	0.06	48.4
5	T1	75	4.0	75	4.0	0.046	0.1	LOS A	0.1	0.5	0.06	0.07	0.06	49.1
6	R2	6	33.3	6	33.3	0.046	5.4	LOS A	0.1	0.5	0.06	0.07	0.06	47.9
Approach		86	8.1	86	8.1	0.046	0.7	NA	0.1	0.5	0.06	0.07	0.06	48.9
North: Betty Cuthbert Dr N														
7	L2	4	50.0	4	50.0	0.026	5.5	LOS A	0.1	0.7	0.22	0.54	0.22	45.5
8	T1	4	50.0	4	50.0	0.026	4.2	LOS A	0.1	0.7	0.22	0.54	0.22	45.7
9	R2	26	7.7	26	7.7	0.026	5.1	LOS A	0.1	0.7	0.22	0.54	0.22	43.7
Approach		34	17.6	34	17.6	0.026	5.0	LOS A	0.1	0.7	0.22	0.54	0.22	44.4
West: Botanica Dr W														
10	L2	26	7.7	26	7.7	0.091	4.7	LOS A	0.2	1.2	0.07	0.17	0.07	47.1
11	T1	115	2.6	115	2.6	0.091	0.1	LOS A	0.2	1.2	0.07	0.17	0.07	48.1
12	R2	30	6.7	30	6.7	0.091	4.8	LOS A	0.2	1.2	0.07	0.17	0.07	47.0
Approach		171	4.1	171	4.1	0.091	1.6	NA	0.2	1.2	0.07	0.17	0.07	47.8
All Vehicles		319	8.2	319	8.2	0.091	2.0	NA	0.2	1.2	0.09	0.21	0.09	47.3

MOVEMENT SUMMARY

Site: 5 [5 Joseph St / Site Access PM - Scenario 5.3 (Site Folder: General)]

Network: 1 [Scenario 5.3 - PM - All Development & Mitigation w 2036 Growth MSL Resi & School - 4L (Network Folder: General)]

Joseph Street / Site Access (North)
Scenario 3 - All Development
PM Peak Hour Volumes
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 131 seconds (Network Optimum Cycle Time - Minimum Degree of Saturation)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Joseph Street South														
2	T1	2174	4.4	2174	4.4	0.334	1.7	LOS A	6.6	47.6	0.20	0.18	0.20	63.4
3	R2	6	0.0	6	0.0	* 0.071	74.0	LOS F	0.4	2.7	0.99	0.65	0.99	22.7
Approach		2180	4.4	2180	4.4	0.334	1.9	LOS A	6.6	47.6	0.20	0.18	0.20	62.7
East: Site Access (North)														
4	L2	15	0.0	15	0.0	0.059	57.7	LOS E	0.8	5.9	0.90	0.69	0.90	18.4
6	R2	31	0.0	31	0.0	* 0.364	74.3	LOS F	2.1	14.4	1.00	0.72	1.00	15.7
Approach		46	0.0	46	0.0	0.364	68.9	LOS E	2.1	14.4	0.97	0.71	0.97	16.5
North: Joseph Street North														
7	L2	9	0.0	9	0.0	0.006	8.9	LOS A	0.1	0.6	0.17	0.63	0.17	48.1
8	T1	3859	3.5	3859	3.5	* 0.657	3.6	LOS A	20.4	146.8	0.25	0.24	0.25	58.5
Approach		3868	3.5	3868	3.5	0.657	3.6	LOS A	20.4	146.8	0.25	0.24	0.25	58.5
All Vehicles		6094	3.8	6094	3.8	0.657	3.5	LOS A	20.4	146.8	0.24	0.22	0.24	58.3

E. TfNSW Advice

TfNSW Operational Traffic Modelling Team Review and Comments

80 Betty Cuthbert Drive

Review of models for 2019, 2023 and 2026 design years with interim and final stages of development and mitigation options.

17/12/2020

The following sections comprise a summary of TfNSW operational traffic modelling team's review of 80 Betty Cuthbert Drive SIDRA models prepared by Mott MacDonald (Australia) PTY LTD.

The specific documents and traffic model(s) provided for the review are outlined in Table 1.

Table 1: Reviewed material

Material	File name	File description	Received date
SIDRA models	MM_BettyCuthbert_201113_V2.sip8	SIDRA Modelling	27/11/2020
Reports	MMD-405675-PP-RP-01-Traffic Engineering Report-RevE 200505.pdf	Traffic & Transport Assessment	27/11/2020
	R02595-LT01-80-Betty-Cuthbert-Dr-SIDRA-Modelling-Outcomes-of-Proposed-Option-C1-(201118-signed).pdf	Traffic Modelling Results	27/11/2020

Table 2 provides a summary of review comments for the Traffic and Parking Impact Assessment Report and Traffic Modelling Results Report.

Table 2: Summary of review comments

Item	Section	Comment	Priority
Traffic and Parking Impact Assessment Report			
1.	5.2	The TIAR details that the peak periods assessed are 8:00 - 9:00 and 17:00 – 18:00. Given that a 1,000 student school is proposed, with an afternoon peak of 15:30 – 16:30 and the MSL peak operating periods are 9:30 – 15:30, the assumption to model only the PM road network peak period may not reflect the 'worst case' operating conditions for the proposed site access point (north) in Scenario 3.	Medium

		It is recommended that an additional modelling period be considered to ensure that the site access point is able to accommodate the peak egress demand.	
2.	5.6	It is noted that the results presented in the report have been superseded by the ones presented in the “Traffic Modelling Results” report and should not be referred to. It is expected that the report will be updated in due course.	Note
3.	Table 5.8	It is noted that Table 5.8 presents results for 6 intersections, yet there are only 5 intersections modelled in the supplied SIDRA files and discussed in the “Traffic Modelling Results” report. Although the reviewer is not aware of the project history, it would typically be expected that all proposed site access points are modelled to ensure that the adopted layout is adequate.	Note
Traffic Modelling Results			
No comments for ‘Traffic Modelling Results’ report			

Table 3 provides a summary of general model review comments.

Table 3: Summary of review comments – General

Item	Section	Comment	Priority
4.	Geometry – Lane Widths	Many intersections have a default lane width of 3.3m. However, a review of aerial photography shows that in many cases the existing conditions models should have lanes which are either much narrower or wider then specified.	Note
5.	Pedestrian Priorities	Pedestrian priorities have not been applied. Failure to include this can have a major impact on model throughput. All models should be assessed for appropriate pedestrian priorities and updated accordingly.	Medium
6.	Signal Phasing – Undetected Movements	No movements have been defined as ‘Undetected’ movements. Failure to define undetected movements can mean that movements can push for additional green time and therefore changing queue lengths. This is particularly important for left turn overlap phases. It is recommended that this is reviewed and corrected where applicable.	Minor
7.	Signal Phasing – Phase Transitions	Phase transitions have not been used for all signalised sites. Failure to set this up correctly increases the amount of green time being provided for the left turn movement and therefore can overestimate the operation of the movement. It is recommended that this is reviewed and corrected where applicable.	Minor

8.	Signal Timing Data	The “Traffic Modelling Results” report states that “Extensive calibration has been done on the existing model since submission of the May 2020 reports. This was done to improve the likeness of the model to the actual performance of the intersection and queue lengths.” The existing conditions models have been processed using the Optimal Cycle Time, with an upper limit of 140 seconds. From this, it is unclear whether the operational cycle time has been matched to existing signal timing data obtained from TfNSW. Furthermore, in the AM peak the Joseph St / Georges Ave intersection has a DOS greater than 1, which does not meet the modelling guidelines (refer to Item 18) and indicates that the phase splits or model calibration is not totally correct. This may mean that the “existing conditions” results are not representative and therefore a net comparison of the differences inaccurate.	Major
9.	Signal Coordination – Arrival Type	A signal coordination arrival type of 5 has been used for northbound and southbound movements along Joseph Street in the models, in addition to allowing Signal Offsets to be calculated by SIDRA. Using signal coordination in a network can overstate the impact of linking and present better results than in reality. It is recommended that the signal coordination arrival time is set to program for the movements internal to the network at minimum. If queue lengths on the outer extremities of the network were calibrated then applying signal coordination to these approaches may be appropriate, however it is generally recommended that these remain as program.	Major
10.	Green Split Priority	The Green Split Priority has been set to ‘Coordinated Movements’ in the phasing options for all signalised sites in the AM peak models only. Models for TfNSW typically adopt the Optimal Cycle Time feature in order to balance delays within the network. However, the Green Split priority feature results in unequal degrees of saturation to critical movements as it assigns spare green time to the “coordinated movements”. This can mean that minor roads or non-critical movements experience longer delays, and presents worse results, which is unlikely to occur under SCATS control. If the adopted phase splits are accurate with SCATS data then the models may be fit for purpose, however generally it is recommended that Green Split Priority is set to “None” for all models and movements. Calibration of phase splits should be undertaken by either adopting User Given Phase Times, or by limiting maximum and minimum green times within the vehicle movement data tab to match the phase times.	Medium

11.	Signal Offsets	Within the AM existing conditions model, the Network Signal Offsets are set to be determined by the Program, yet in all other models it is set as User. It is recommended that this is updated for consistency.	Medium

Table 4 provides a summary of the site specific review comments.

Table 4: Summary of review comments – Site Specific

Item	Section	Comment	Priority
Site 1 – Joseph Street / Georges Avenue			
12.	Gap Acceptance – Critical Gap and Follow-up Headway	The Critical Gap and Follow-up Headway settings have been changed significantly for the right turn movements in all models. In particular the east and west approach right turn movements have been changed from the SIDRA default of 4.5 and 2.6 to 2.0 and 1.0, which suggests that drivers are having to undertake very risky turning movements. Furthermore, it is noted that changes have been made to the Critical Gap and Follow-up Headway settings for the north and south approach right turns, yet these movements are fully controlled in the adopted phasing and this change should have no effect. It is therefore recommended that these changes are reviewed and/or removed and any changes to the default settings detailed and justified in the final report.	Major
13.	Gap Acceptance – End Departures	The ‘End Departure’ Gap Acceptance setting is increased from 2.2veh (default) to 3.5veh for all right turn movements in the AM peak models for Scenarios 3.2 and 3.3. It is poor practice to apply an increase in “End Departures” to a future conditions model as this is effectively suggesting that drivers would need to run the intergreen to operate “satisfactorily” rather than addressing any capacity limitations through traffic signal phasing changes or geometric changes. As such the default SIDRA value of 2.2veh should be used in all models.	Major
14.	Phase Naming	The phase names adopted in the AM and PM models are different for the Georges Avenue phase and the Joseph Street right turn phase. It is recommended that a consistent naming convention is used and that it matches the TCS plan.	Note
15.	Signal Phasing – Diamond Phasing	The phasing arrangement should include the variable sub-phases for the north / south approach diamond right turn movement (E phase AM, D phase PM) for all models. This is particularly important for the future models where the traffic	Minor

		patterns and demands may change and alter the phasing sequence.	
16.	Lane Movements	The east approach left turn is directed to exit to lane 2 and 3 with a 50/50 split. As a result, the curb side exit lane, lane 1, is underutilised and increases the number of midblock lane changes. It is recommended that the turn distribution is re-assessed to reduce the number of lane changes.	Minor
17.	Results – Existing Conditions	A DOS of greater than 1 and LOS D is produced for the Existing Conditions AM model. In accordance with the RMS Traffic Modelling Guidelines (Feb 2013), existing conditions models must have a DOS less than 1.0. It is possible that the DOS may be improved if the recommendations above are considered and implemented. However, it is recommended that the existing conditions model is reassessed and recalibrated.	Major
18.	Results – Future Conditions	A DOS of greater than 1 is shown on at least one approach in the Scenario 3.1 and 3.2 models, with exception to the Scenario 3.1 AM model. It is possible that the DOS may be improved if the recommendations above are considered and implemented. However, consideration could also be given to proposing alternative phasing to address the demands of the east and west approaches.	Note
Site 2 – Joseph Street / Botanica Drive			
19.	Vehicle Movement Data	The east approach exit speeds onto Joseph Street from Botanica Drive are 70km/h yet the exit speeds for vehicles on Joseph Street are 80km/h. It is recommended this is updated for consistency.	Minor
20.	Phasing	A phase contains the south approach right turn filtered movement. A review of Google street view indicates that at some points in the day, a red arrow is applied during the A phase and therefore not allowing the filtered movement. A review of SCATS also shows that this right turn movement does not operate at the same time with through opposing movements. It is recommended to review the phasing of this intersection to ensure that the correct phasing is coded for the adopted time periods.	Medium
Site 3 – Georges Avenue / East Street			
21.	Vehicle Movement Data	The speed limit along Georges Avenue is 50km/h yet the SIDRA default speed limit of 60km/h remains in the models. It is recommended that this is updated for accuracy.	Note

Site 4 – Botanica Drive / Betty Cuthbert Drive			
22.	Lane Geometry	For Scenario 3.2, different approach lengths are used for the north and south approaches, compared to all other models. Although queue lengths are nowhere near reaching the end of the model extents, it is recommended the approach lengths are reviewed and updated accordingly for consistency.	Note
23.	Gap acceptance – Critical Gap and Follow-up Headway	The Critical Gap and Follow-up Headway settings have been changed in all models, in addition to leaving the "Apply TWSC Calibration" boxes checked. Although the Critical Gap and Follow-up Headway values may seem higher that older SIDRA tables and Austroads, SIDRA has since either SIDRA 6.1 or SIDRA 7 used these values and then deducts from these based on the intersection geometry and method of control as shown in the Two-Way Sign Control Tab. The applied parameters can be seen in the Detailed Output Gap Acceptance Parameters Table. There is no mention of gap surveys having been conducted in the report and therefore it is expected that the default parameters should be used and the "Apply TWSC Calibration" boxes checked. However, if gap surveys were undertaken the Critical Gap and Follow-up Headway values can be changed but the "Apply TWSC Calibration" boxes should be un-checked to ensure that there is not a further reduction to the applied parameters.	Medium
Site 5 – Joseph Street / Site Access			
24.	Lane Movements	The east approach right turn movement is distributed across the three exit lanes. This distribution has not been applied to the left turn, unlike at the Joseph Street / Botanica Drive intersection, and is only applied in the AM models. It is recommended that a consistent distribution is used across all models and sites for consistency.	Note
25.	Signal Phase Sequence	The adopted traffic signal phasing at this site has a leading right turn phase from the south approach, whereas the intersection of Joseph Street / Botanica Drive has a lagging right turn phase. It is recommended that the same phase sequence is adopted as the Joseph Street / Botanica Drive intersection to allow for linking and platooning to be reflected in the models.	Medium

Item	Section	Comment Date	TfNSW Comment	Priority	DPIE PDNSW Comment Response	TfNSW Comment (26 Oct 2021)	Status
1	5.2	15/06/2021	The initial TIAR details on page 28 that Scenarioo 3 considers all development of the site, including the MSL and school sites, yet the report does not quanitfy the development yeilds of the residetial land uses or the floor area of MSL. The initial peer review recommended that a PM school peak period should be modelled to determine the ultimate impact on the site access. Mott MacDonald have since responded that analysis of the MSL TIA report supporting their development application. However, the imcomplete information makes it difficult for the reviewer to be confident that the AM peak site generated demands for ingress and gress movements are representative of the worst case demands for the PM peak, and subsequently that the proposed turning lanes are sufficient to accommodate anticipated queue lengths. It is recommended that either a school PM peak period model scenario is completes for Site 5 only to demonstrate suitability, or a peak traffic generation graph produced for the sitre accross time of day along with two-way volumes on Joseph Drive to demonstrate that the AM peak period is the worst peak.	Medium	An additional scenario has been included in the report testing Site 5 (Scenario 4) assuming that the school afternoon peak falls into network PM peak period summarised. The results are summarised in Section 5.7.4. The test demonstrates that the intersection would operate well (LOS A) in this scenario.	Scenario 4 provided	Closed
2	Geometry	15/06/2021	The intersection pof Betty Cuthbert Drive / Botanica Drive has been modelled with one full length shared through and right turn lanes plus a 10 m long left turn late on the north and south approachs. Based on aerial photography, the width of Betty Cuthbert Drive is only 7.5 m at a distance 10 m from the give way line and therefore there is not enough space to store two cars next to each other. It is recommended that the model geometry is updated, however, it should be noted that this intersection is not demonstrated to be experiencing capacity constraints under any of the scenarios and therefore will not change the overall acceptance of the intersection.	Noted	As per the recommendations, the intersection geometry has been updated and any minor changes to results have been documented in the report.	Geometry updated. However incorrect movement at Betty Cuthbert Drive south approach in Scenario 1 PM model. (See figure 1)	Addressed in current revision
3	Geometry	15/06/2021	The Georges Ave / East St roundabout North Exit Lane 1 has different lane widths in the AM and PM Scenario 1 models. It is recommended that the AM Scenario 1 lane width is updated to 3.9 m to reflect the current lay-out and ensure consistency.	Noted	As per the recommendations, the intersection geometry has been updated and any minor changes to results have been documented in the report.	Geometry updated.	Closed
4	Signal Phasing - Phase Tra	15/06/2021	Mott MacDonald have updated phase transitions since the initial peer review, but they still have not been used correctly for all signalised sites. In particular, phase transition should be applied in the following intersections: Site 1 Joseph / Georges - apply to the east and west approach left turns in D phase Site 2 Joseph / Botanica - apply to east approach left turn in B phase and north approach left turn in C phase. Site 5 Joseph / Site Access - apply to east approach left tunr in B phase and north approach left turn in C Phase.	Minor	Site 1 Joseph / Georges - our understanding is that this is not appropriate for a diamond overlap. Site 2 Joseph / Botanica - phase transitions have been updated as per the comments. Site 5 Joseph / Site Access - phase transition have been updated for north approach only. The east approach has not been updated as there is no conflicting pedestrian crossing.	Partly addressed. However it is expected to have minimal impact on results and model analysis and wonn't impact the model outcome.	Closed
5	Signal Timing Data	15/06/2021	Intersection 1 & 2 have adopted a Site User-Given Cycle Time of 150 seconds in response to the initial peer review. However, in the proposed scenarios Intersection 5 has a Site Practical Cycle Time of 90 seconds. For the future scenario network, it is recommended that Site 5 is included as a connected site in the network modelling and therefore run with a 150 seconds User-Given Cycle Time as well, or, a Site User Given Cycle Time of 75 seconds to allow it to operate with a half cycle time and enable TfNSW to implement linking in the future.	Medium	Site 5 is a connected site and the cycle time is coordinated with Site 1 and 2. Unfortuntately, a User-Given Cycle Time of 150 seconds is unworkable. Therefore, an optimal cycle length has been adopted.	Network cycle time applied to all coordinated sites. Optimal cycle time had been used for all Secnarios 3 and 4	Closed
6	Signal Coordination	15/06/2021	The initial peer review recommended that all signal coordination types for movements internal to the network were reset to Program to allow SIDRA to calculate the benefits of offsets and linking. Mott MacDonald states that this has been updated, however, a review of the models shows that this has been applied inconsistently. Specifically: The North and South approach of Intersection 1 (Joseph St/Georges Ave) still have a signal coordination arrival types of 5 for all AM scenarios, with AM Scenario 1 only the North Approach haveing a signal coordination arrival type of 5. The PM scenarios for this intersection have been set to 'Program' for all movements. Both North and South APproach of Intersection 2 (Joseph St/Botanica Dr) still have a signal coordination arrival types of 5 for all AM scenarios. The PM scenarios for this intersection have been set to 'Program'. Both North and South Approach of Intersection 5 (Joseph St/Site Access) still have a signal coordination arrival types of 5 for all AM and PM scenarios.	Major	Coordination arrival type of 5 has been removed at all sites and scenarios.	Coordination updated	Closed

7	Gap Acceptance	15/06/2021	The initial peer review recommended that all gap acceptance and follow-up headway parameters were reset to default and that SIDRA be allowed to calculate changes via the "TWSC" tickbox. Mott MacDonald states that this has been updated, however a review of the models shows that this has been applied inconsistently. Specifically For Intersection 1, all scenarios except scenario 1, North and South Approach Right Turns still have a gap acceptance of 3.00 and 1.50, well below the default setting. East & West Approach right-turn is still set at 2.00 and 1.00. For intersection 2, all turns on all approaches have a gap acceptance set at 3.50 and 2.00. For Intersection 4, the right-turn East and West Approach gap acceptance has been set to 4.00 and 2.00. Futhermore, all other movements have been set to 5.00 and 3.00 with the Apply TWSC Calibration box checked which further reduces the gaps and is incorrect. For intersection 5, the right-turn South Approach gap acceptance has been set to default, North approach left-turn gap acceptance has been set to 4.00 and 2.40. It is recommended that all models and all sites are reset to defaults.	Major	All gap acceptance and follow-up headway parameters have been set to default values.	Reset to default values	Closed
8	Speed Limits	15/06/2021	The speed limit along Georges Avenue is 50km/h yet the SIDRA default speed of 60km/hr remains in the models. The initial peer review recommended that speed limit alomg Georges Avenue was corrected. The speeds on Georges Avenue have only been updated for Scenario 1. All other scenarios still have 60km/hr for St Georges Rd, as well as other inconsistencies regarding to speed compared to Scenario 1. It is therefore recommended that this is further reviewed.	Note	All model speeds have been reviewed and updated.	Speed updated	Closed
9	Lane Geometry	15/06/2021	In all network models there is a network configuaration issue where there is a difference in midblock lengths between Sites 2 and Site 4. The east approach to Site 2 has a 90m length, yet the west approach to Site 4 has a 500m length. It is recommended that this is updated in all models.	Moderate	All midblock lengths have been reviewed and updated to align with correct conditions.	Midblock length updated	Closed
10	Results - Existing Condition	15/06/2021	A DOS of 1.004 is produced for the Existing Conditions AM model. In accordance with the RMS Traffic Modelling Guidelines (Feb 2013), existing conditions models must have a DOS less than 1.0. The proponent has responded that models were updated to provide DOS less than 1.0 so it is possible that a minor difference has occured between update versions of SIDRA. As such, it is noted that the current intersection configuration is at capacity and therefore mitigation measures would be required to accommodate additional demands.	Medium	Changes requested in these comments have resulted in the DOS service reducing to 0.97, below the maximum 1.0 provided in the comment below. No further changes or mitigation measures have been proposed.	The DOS still at 1.004 (see figure 2) in the model (filename:MM_BettyCuthbert_210910). As the DOS only slightly higher than 1 which will not impact on project outcome and decision process. However correction should be undertaken.	Closed
11	General	15/06/2021	From an overall review perspective, the proposed mitigation measures provide an improvement for the area and mitigate the 2026 post development scenario (Scenario 3.3) to a DOS of 0.98 which is slightly less than the existing conditions DOS of 1.0. Please provide justification on why the design year is only 2026 and not 10 years post development?	Note	Unfortunately, timing of school opening is not available.	Response not quite address the concern. 2026 post development scenario (with proposed mitigation) shown that the network will be close to / at capacity. Mitigation measure should consider longer time in horizon (ie 2036)	Addressed in current revision
12	General	15/06/2021	SCATS data has provided (Tab 1 attached) of the intersection of Joseph St/ Botanic Drive with the data to suggest that during AM peak, although the northbound direction of Joseph St has a higher peak than PM hours, the southbound direction has lower traffic volume than that observed during 3-4 PM. A further assessment of the site access during the 'worst case' operating conditions as per item/comment - 1 is recommended	Note	An additional scenario has been included in the report testing Site 5 (Scenario 4) assuming that the school afternoon peak falls into network PM peak period summarised. The results are summarised in Section 5.7.4. The test demonstrates that the intersection would operate well (LOS A) in this scenario.	Additional scenario provided. Although the intersection would operate at LoS A, long queue (approx 250m) is expecting at northern approach	Closed
13	General	15/06/2021	The TCS plan will show, the proposed signal phasing and geometry as required. The concept plan to-scale on aerial overlay, will also show the amount of land to be dedicated as public road.	Note	This level of detail should be asessed as part of later stage of design. Land take requirements have been provided as part of the civil design pack and concept signal phasing provided within SIDRA analysis.	Agreed.	Closed

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