Stantec

Technical Note

To:	Department of Transport and Planning	Attention:	Patricia Ocampo
Project Name	Bannockburn South East PSP	Project/File:	300305980
From:	Renuka Janga Reece Humphreys	Date:	17 April 2026

Reference: Bannockburn South East PSP Transport Infrastructure DCP items

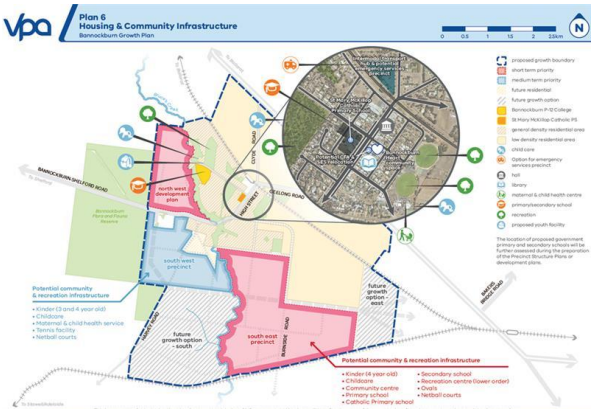
1 Background

The Department of Transport and Planning (DTP) is currently in the planning process of the Bannockburn South East Precinct Structure Plan (PSP) and is developing a list of DCP Transport Infrastructure Items. Following the workshop held on 12th February 2026, it was agreed that further analysis should identify the package of transport works required to support the development scenario without the East–West Link Road. As part of this analysis, the proposed treatments at key intersections along High Street have been assessed. This technical note documents the SIDRA Intersection network modelling undertaken to determine the configuration of the ultimate road network capable of accommodating the forecast traffic demand associated with the ultimate development of the Bannockburn South East PSP.

2 Methodology

The strategic modelling has been undertaken in VITM by using version (VITM22v2_04_RC22v1_09) which was obtained from DTP. The model version used as a reference case for this project was the latest available at the time to assess the various options land use and network impact associated with the PSP on to the surrounding network. Based on the discussion with DTP, the adopted Scenario 2 incorporates the short and medium-term priority precincts identified in the Bannockburn Growth Plan namely the North West, South West, and South East growth areas. This scenario does not include the proposed east-west link road. The location of PSP is shown Figure 2.1

Figure 2.1 PSP Location



3 Traffic Assessment

The traffic assessment undertaken considers 100 per cent of the traffic generated by the Bannockburn South East Precinct Structure Plan (PSP), with no allowance for the other two PSP's. Accordingly, the 2051 Scenario 2 with the South East PSP Development - AM and PM peak-hour traffic volumes were extracted from the VITM strategic model for the study intersections as shown in Figure 3.1. The heavy vehicles represent between 4% to 5% of the total traffic in the strategic model outputs. For conservatism, 5% heavy vehicles has been adopted in the SIDRA modelling.

Figure 3.1 – Intersections modelled in SIDRA

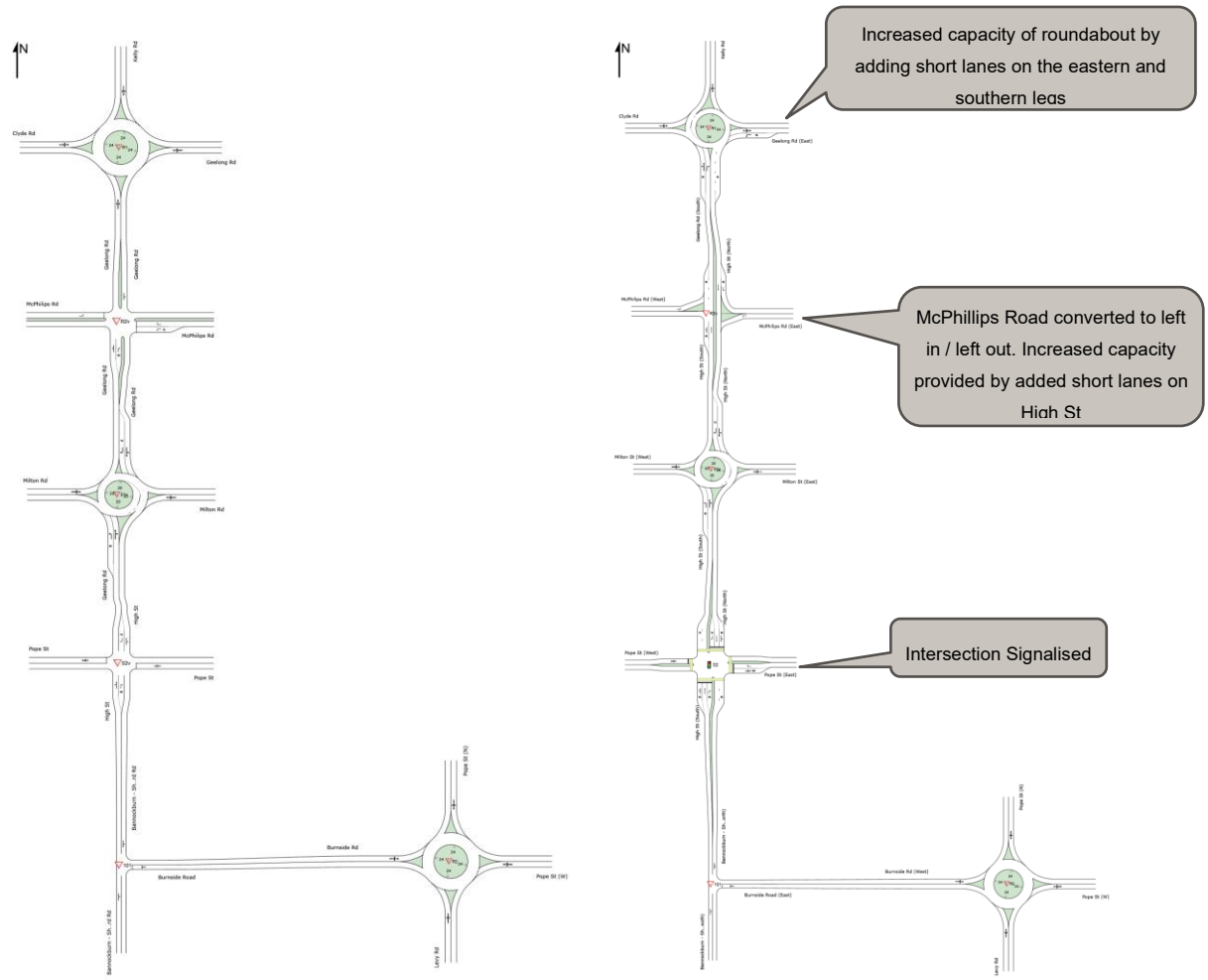


Table 3.1 summarises the existing and proposed intersection configurations that have been assessed as part of the SIDRA modelling. The proposed network layout is illustrated in Figure 3.2.

Table 3.1 – Intersection and proposed Geometry

No	Intersection	Type
1	Kelly Rd / Geelong Rd	Existing roundabout with updated geometry
2	McPhillips Rd / Geelong Rd	LILO with updated geometry
3	Milton Rd / High St	Existing Roundabout
4	Pope St / High St	Proposed Signal
5	Burnside Rd / High St	Existing Give-way
6	Burnside Rd / Levy Rd	Existing Roundabout

Figure 3.2 – SIDRA Network Layout - Existing and Proposed



Existing Network Layout

Proposed Network Layout

4 Modelling Results

The performance of the all study intersections has been assessed using SIDRA INTERSECTION 9.1, a computer-based modelling package as a network model which calculates intersection performance for the future year 2051.

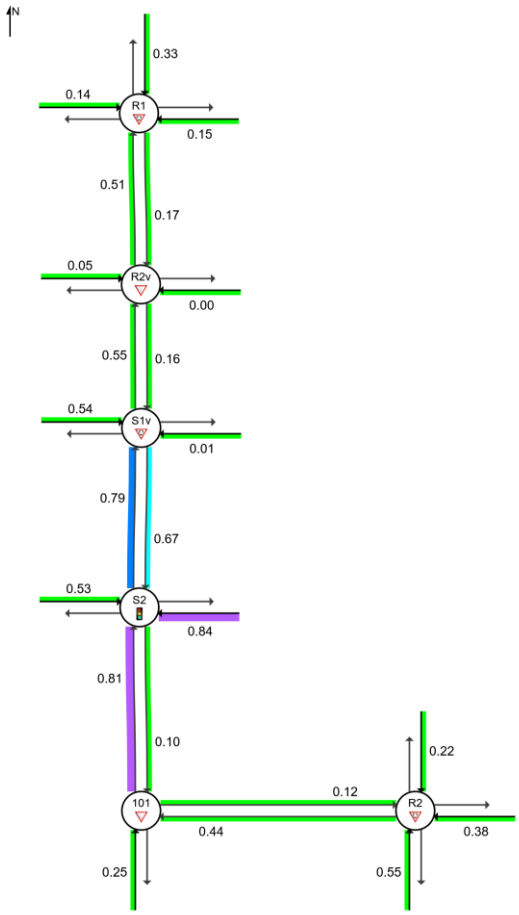
The commonly used measures of intersection performance are referred to as the Degree of Saturation (DOS) and Level of Service (LOS). The DOS represents the flow-to-capacity ratio for the most critical movement on each leg of the intersection. For unsignalised intersections, the DTP Intersection Modelling guidelines details intersection utilisation targets with a desirable DOS of 0.8 and a maximum DOS of 0.85. Beyond these limits, queues and delays increase disproportionately. Figure 4.1 provides a summary of SIDRA modelling results for the Y2051 future demands with the proposed network layout. The DoS for both AM and PM peak is presented in Figure 4.1

Table 4.1 – 2051 SIDRA Results: Proposed Layout with Future 2051 demand

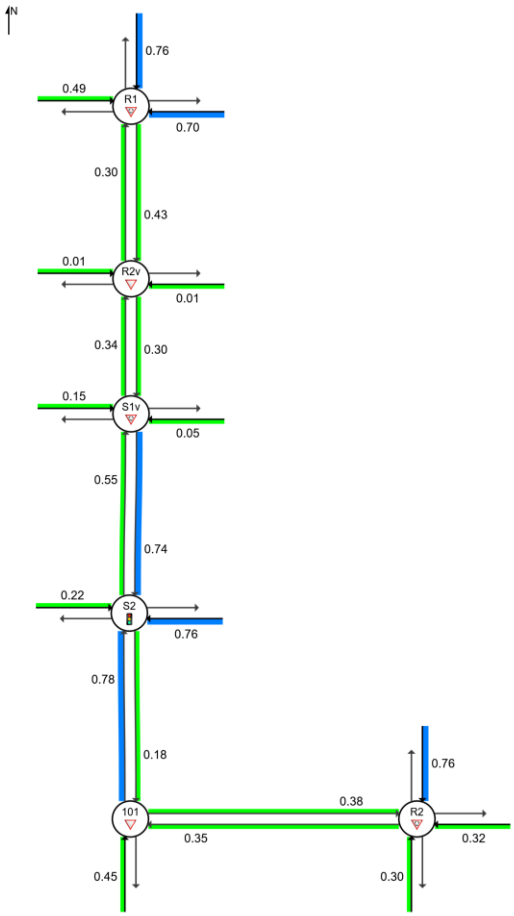
Intersection	Approach	AM			PM		
		DOS	Average Delay	95th %ile Queue	DOS	Average Delay	95th %ile Queue
Kelly Rd / Geelong Rd / Clyde Rd	Geelong Rd (South)	0.51	5 sec	32m	0.3	5 sec	17m
	Geelong Rd (East)	0.15	6 sec	6m	0.7	20 sec	70m
	Kelly Rd (North)	0.33	9 sec	15m	0.76	25 sec	75m
	Clyde Rd (West)	0.14	12 sec	4m	0.49	13 sec	19m
	Intersection	0.51	6 sec	32m	0.76	15 sec	75m
High St / McPhilips Rd	High St (South)	0.55	2 sec	0m	0.34	1 sec	0m
	McPhilips Rd (East)	0	7 sec	0m	0.01	9 sec	0m
	High St (North)	0.17	2 sec	0m	0.43	3 sec	0m
	McPhilips Rd (West)	0.05	15 sec	1m	0.01	8 sec	0m
	Intersection	0.55	3 sec	1m	0.43	2 sec	0m
High St / Milton St	High St (South)	0.79	5 sec	84m	0.55	6 sec	29m
	Milton St (East)	0.01	7 sec	0m	0.05	8 sec	1m
	High St (North)	0.16	5 sec	8m	0.3	6 sec	17m
	Milton St (West)	0.54	42 sec	49m	0.15	13 sec	12m
	Intersection	0.79	9 sec	84m	0.55	6 sec	29m
High St / Pope St	High St (South)	0.81	45 sec	105m	0.78	42 sec	74m
	Pope St (East)	0.84	41 sec	186m	0.76	39 sec	110m
	High St (North)	0.67	41 sec	51m	0.74	38 sec	76m
	Pope St (West)	0.53	33 sec	46m	0.22	19 sec	17m
	Intersection	0.84	41 sec	186m	0.78	38 sec	110m
High St / Burnside Rd	Bannockburn - Shelford Rd (South)	0.25	2 sec	7m	0.45	5 sec	27m
	Burnside Road (East)	0.44	10 sec	19m	0.35	13 sec	11m
	Bannockburn - Shelford Rd (North)	0.1	1 sec	0m	0.18	1 sec	0m
	Intersection	0.44	4 sec	19m	0.45	5 sec	27m
Pope St / Levy Rd / Burnside Rd	Levy Rd (South)	0.55	8 sec	34m	0.3	5 sec	15m
	Pope St (East)	0.38	9 sec	18m	0.32	12 sec	16m
	Pope St (North)	0.22	4 sec	10m	0.76	10 sec	78m
	Burnside Rd (West)	0.12	12 sec	6m	0.38	9 sec	18m
	Intersection	0.55	8 sec	34m	0.76	9 sec	78m

Reference: **Bannockburn South East PSP**

Figure 4.1 – Network DoS AM and PM peak



Degree of Saturation AM Peak



Degree of Saturation PM Peak

The modelling results indicate that the proposed intersection layouts perform satisfactorily under the forecast 2051 traffic demands. All study intersections operate within acceptable capacity limits, with Degrees of Saturation remaining below 0.85 during both the AM and PM peak periods. This demonstrates that the proposed layouts provide adequate capacity and deliver acceptable operational performance in the design year, accommodating the full traffic demand generated by the Bannockburn South East PSP.

5 Summary

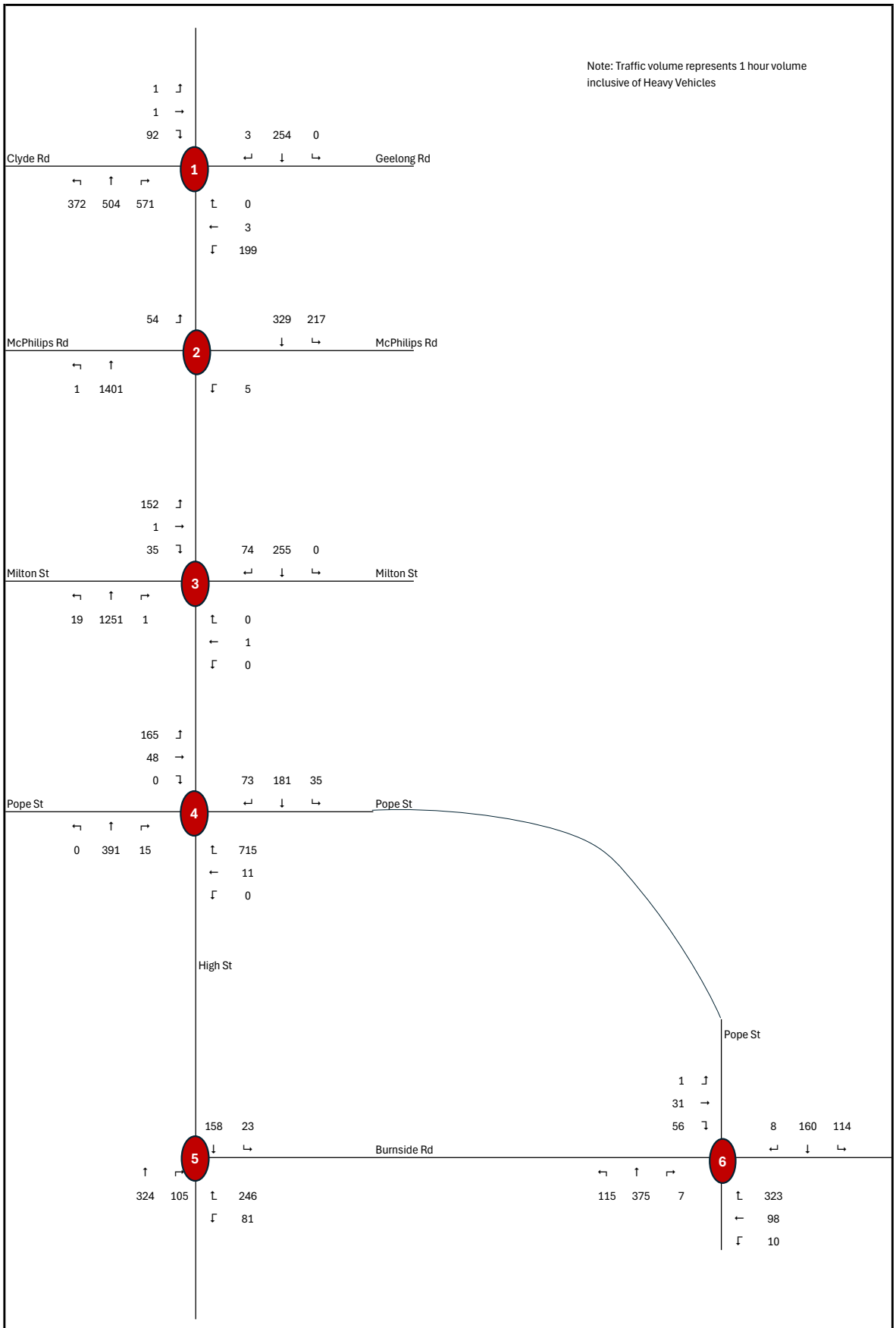
SIDRA Intersection network modelling has been undertaken to assess the performance of key intersections along High Street and adjoining roads under the ultimate 2051 traffic demand associated with full development of the Bannockburn South East Precinct Structure Plan (PSP), excluding the East–West Link Road.

The results indicate that the proposed ultimate intersection layouts operate satisfactorily under the forecast 2051 traffic conditions. All study intersections achieve acceptable performance in both peak periods, with Degrees of Saturation generally below the desirable DTP threshold of 0.85. Average delays remain moderate across the network, and 95th percentile queue lengths are generally contained within available storage, indicating stable intersection operation and minimal risk of blocking back to adjacent intersections.

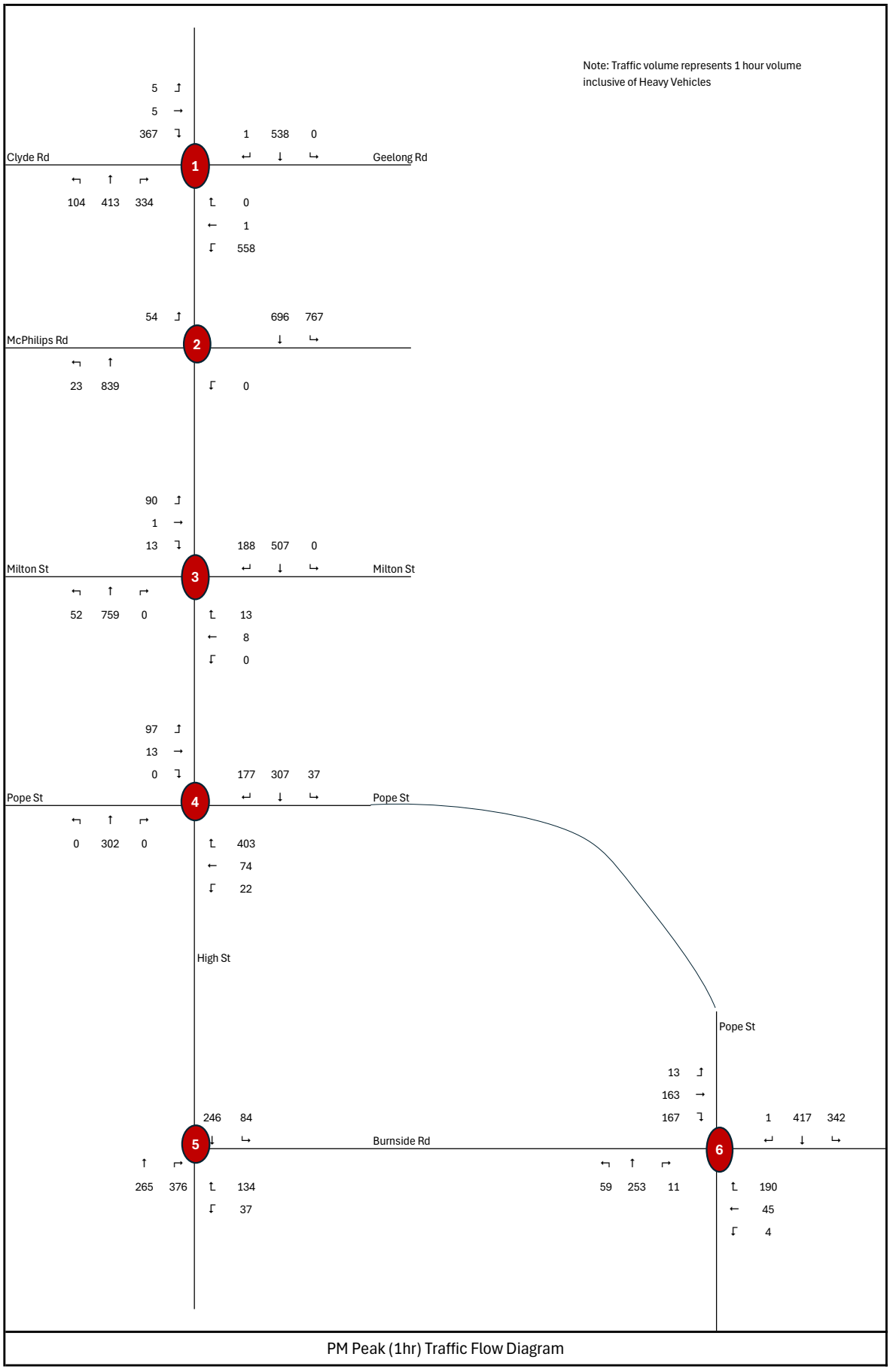
Overall, the SIDRA modelling confirms that the proposed layout of intersection treatments is capable of supporting the ultimate development of the Bannockburn South East PSP without the need for the East–West Link Road in the 2051 design year.

Reference: **Bannockburn South East PSP**

Appendix



AM Peak (1hr) Traffic Flow Diagram



PM Peak (1hr) Traffic Flow Diagram

USER REPORT FOR NETWORK

Project: sidra_network_model_v3_1

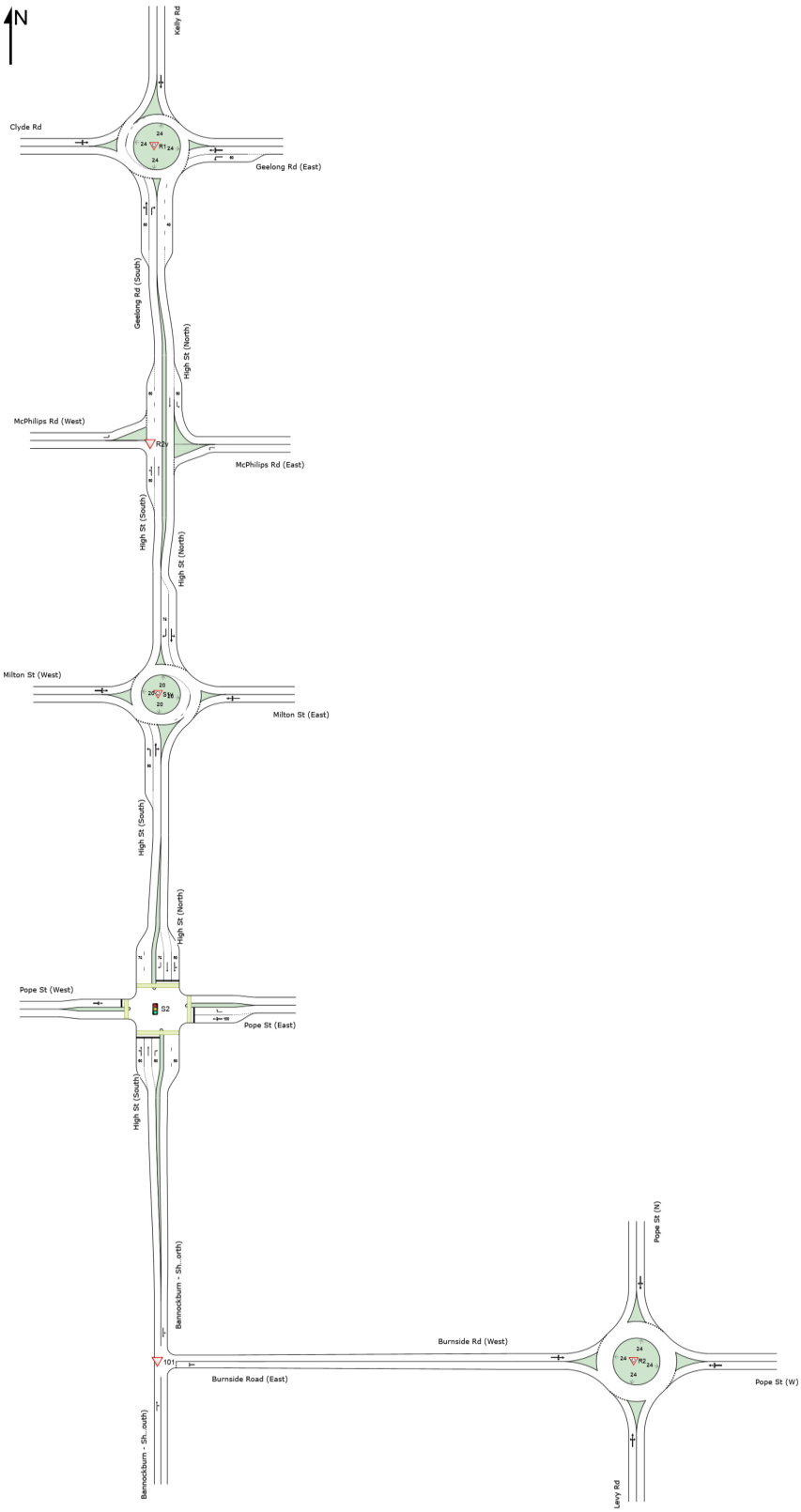
Output produced by SIDRA INTERSECTION Version: 9.1.1.200 **Template: Network Graphics**

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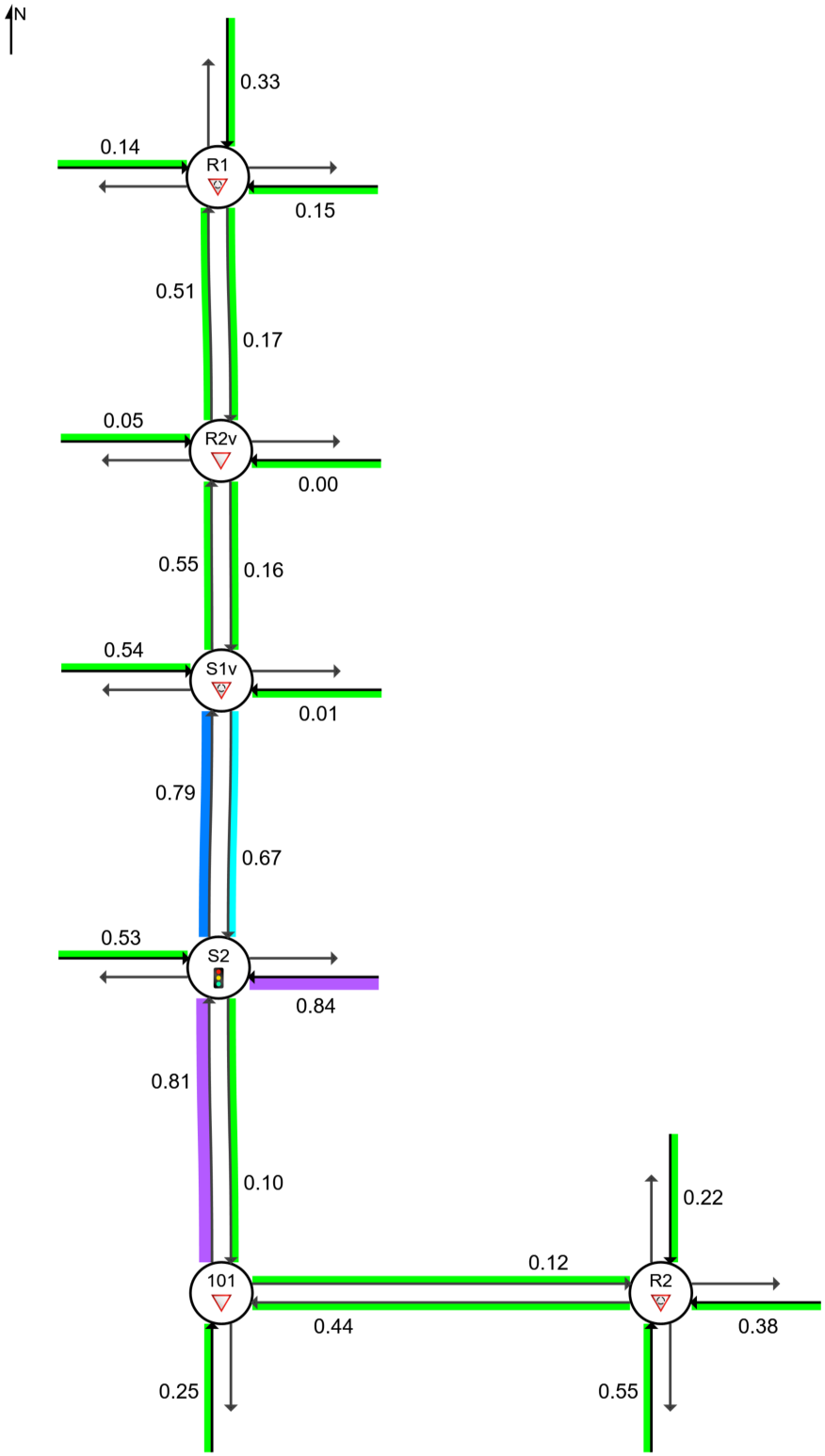
New Network
Network Category: (None)

Network Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


N
Kelly Rd
Clyde Rd
Geelong Rd (East)
Geelong Rd (South)
High St (North)
McPhilips Rd (West)
McPhilips Rd (East)
High St (South)
High St (North)
Milton St (West)
Milton St (East)
High St (South)
High St (North)
Pope St (West)
Pope St (East)
High St (South)
Bannockburn - Sh...orth)
Burnside Rd (West)
Pope St (N)
Pope St (W)
Burnside Road (East)
Bannockburn - Sh...outh)
Levy Rd

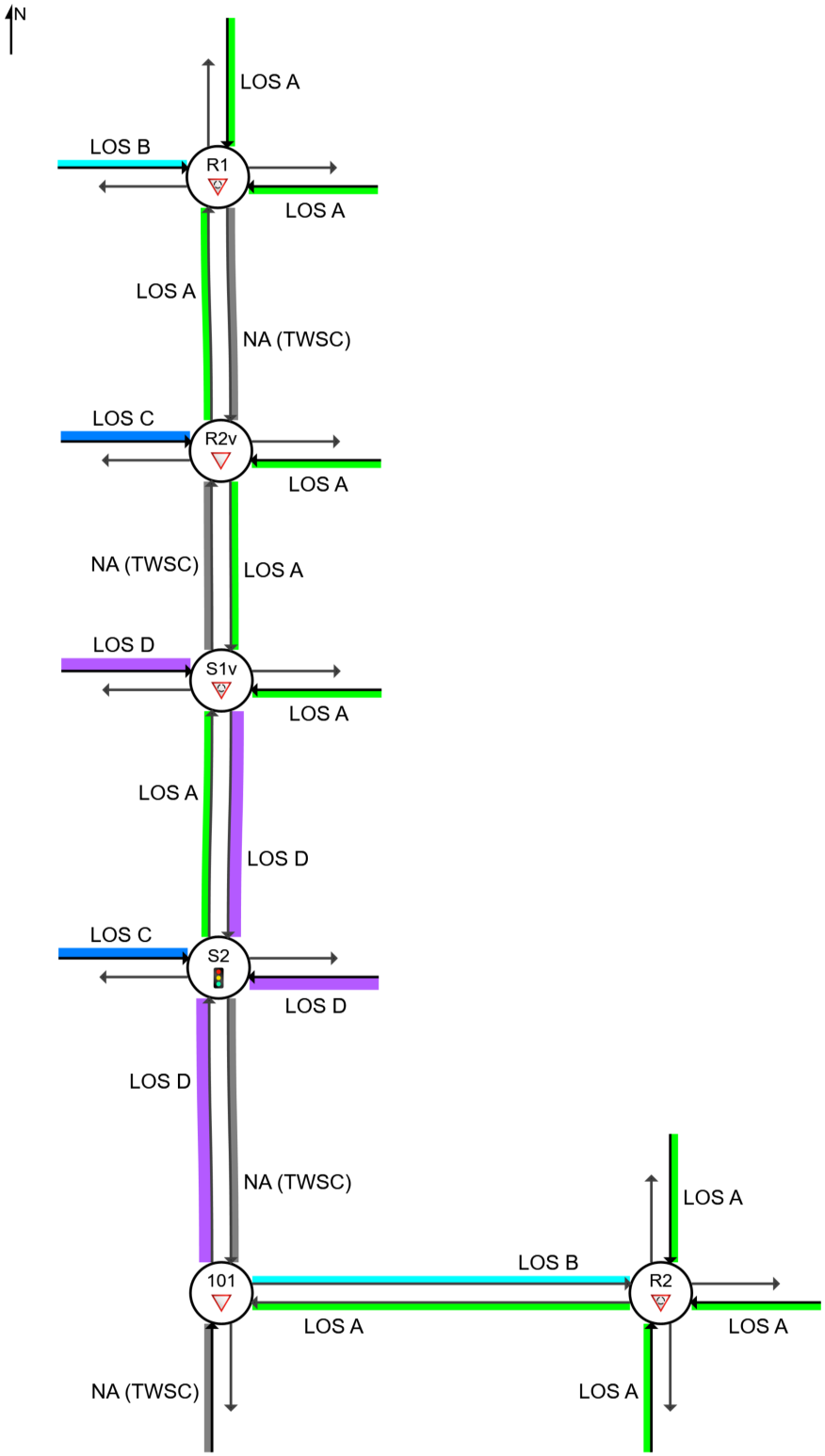
Degree of Saturation



Colour code based on Degree of Saturation

[< 0.6] [0.6 – 0.7] [0.7 – 0.8] [0.8 – 0.9] [0.9 – 1.0] [> 1.0]

Approach Level of Service

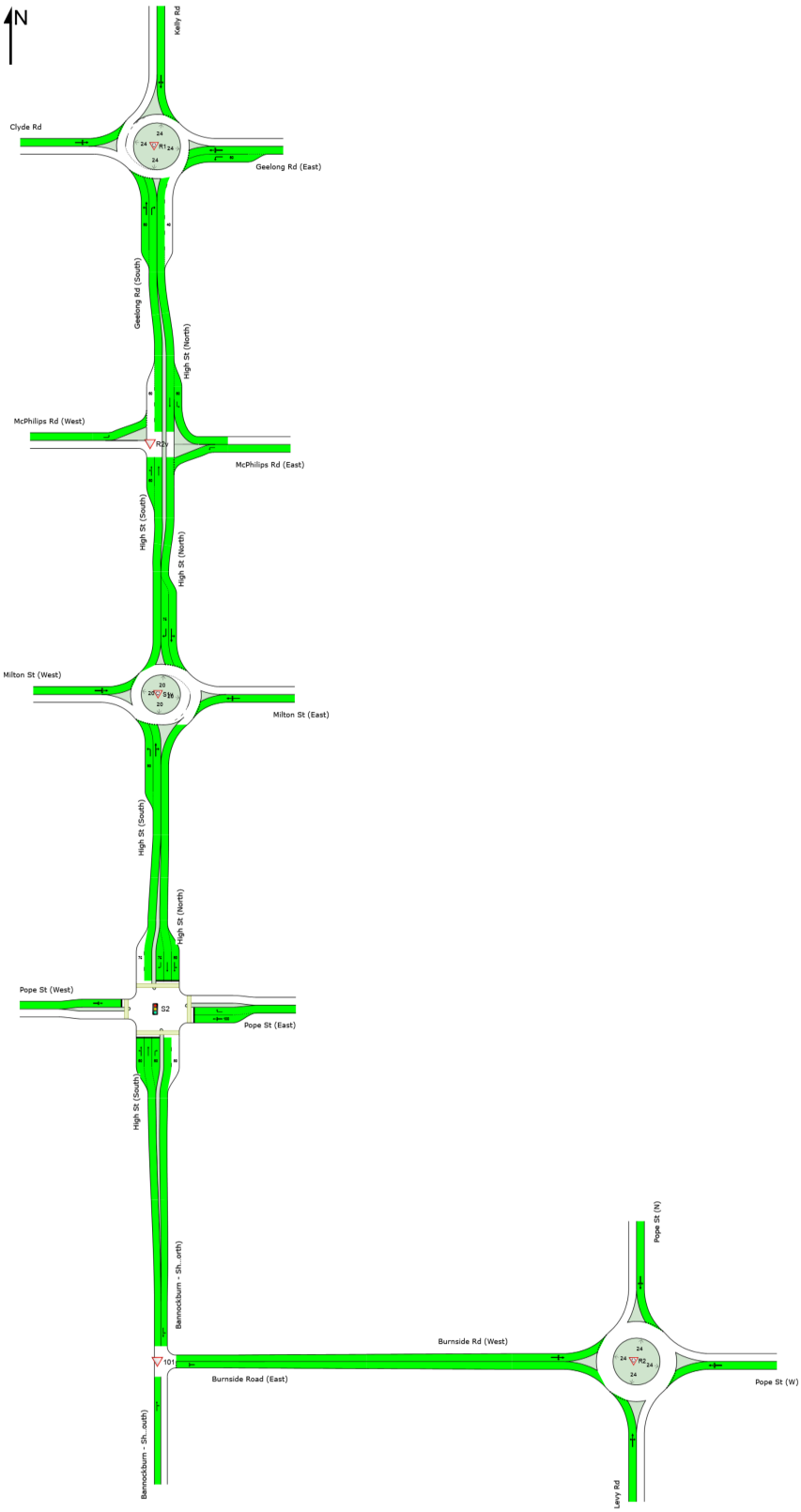


Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Lane Blockage Probability



Colour code based on Lane Blockage Probability

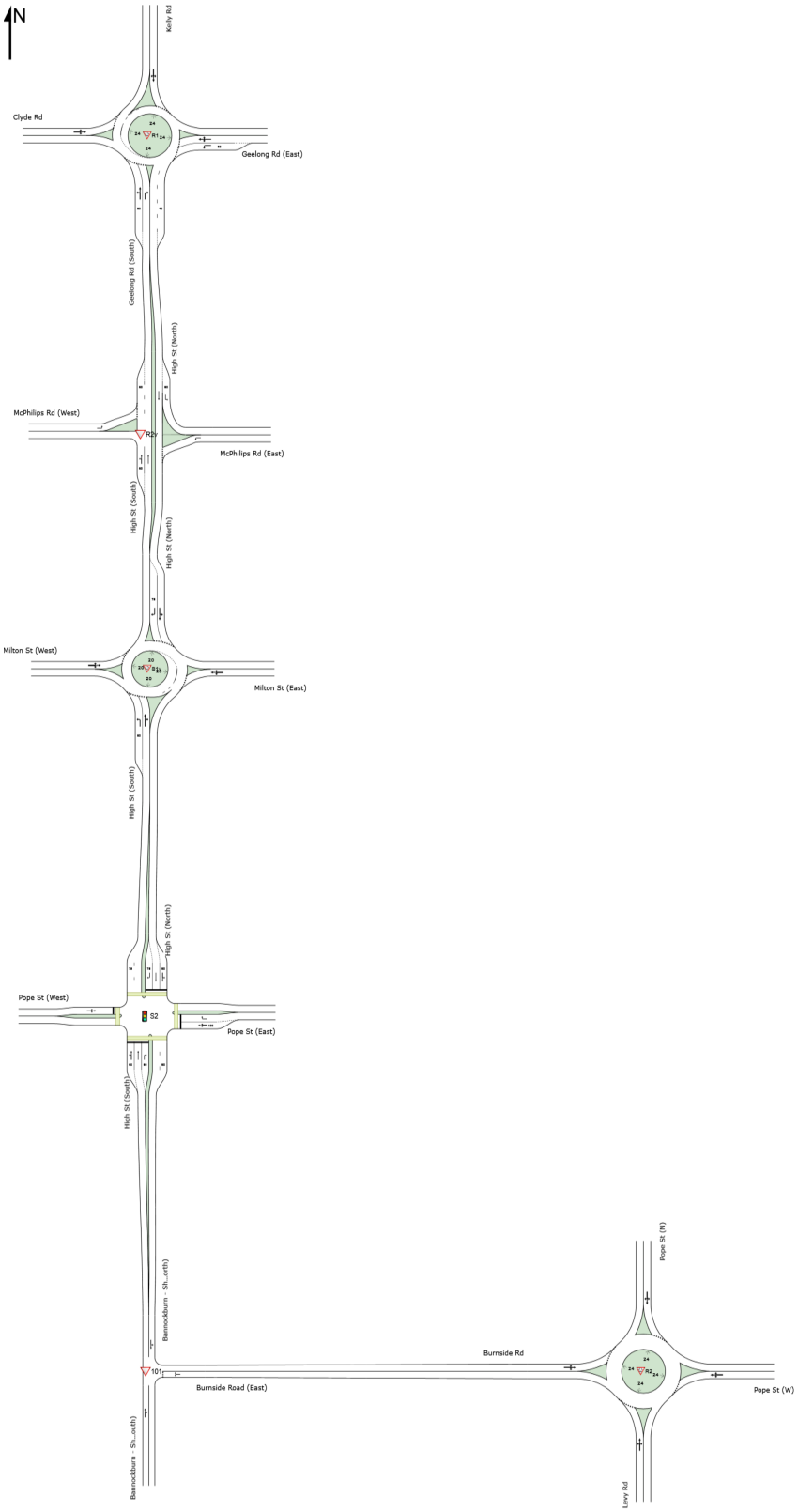
[= 0%] [0 – 10%] [10 – 30%] [> 30%]

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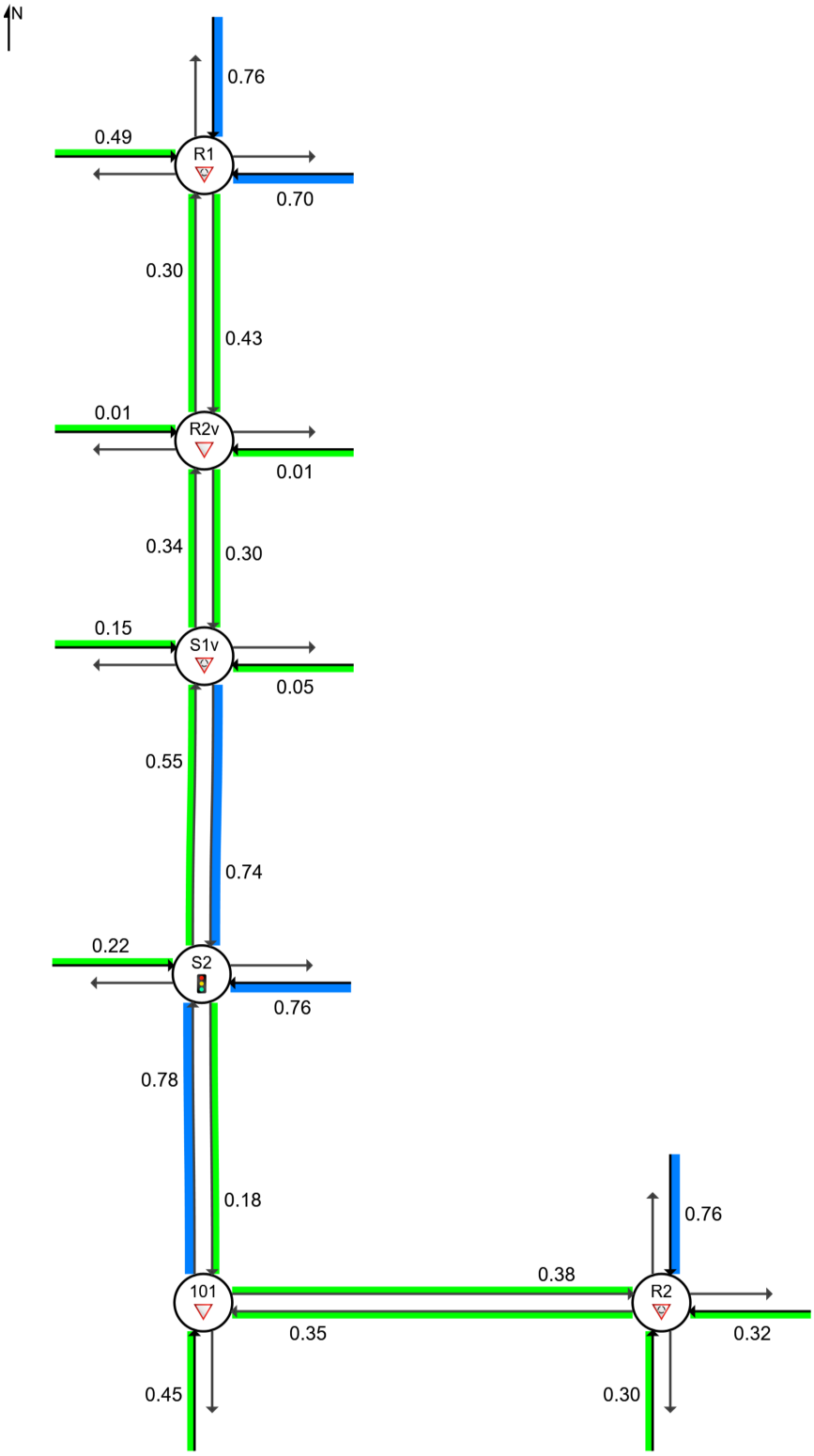
New Network
Network Category: (None)

Network Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



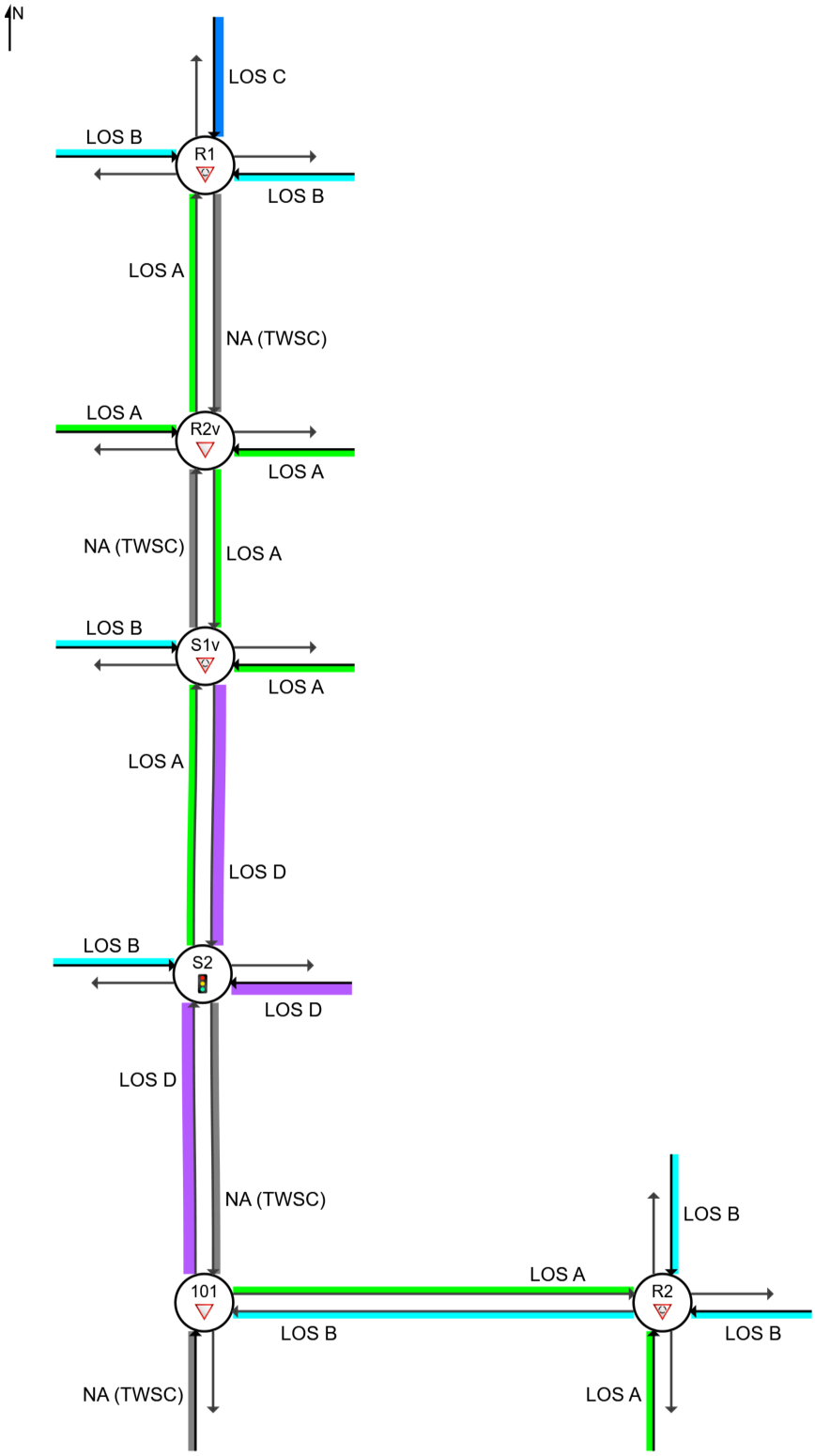
Degree of Saturation



Colour code based on Degree of Saturation

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Approach Level of Service

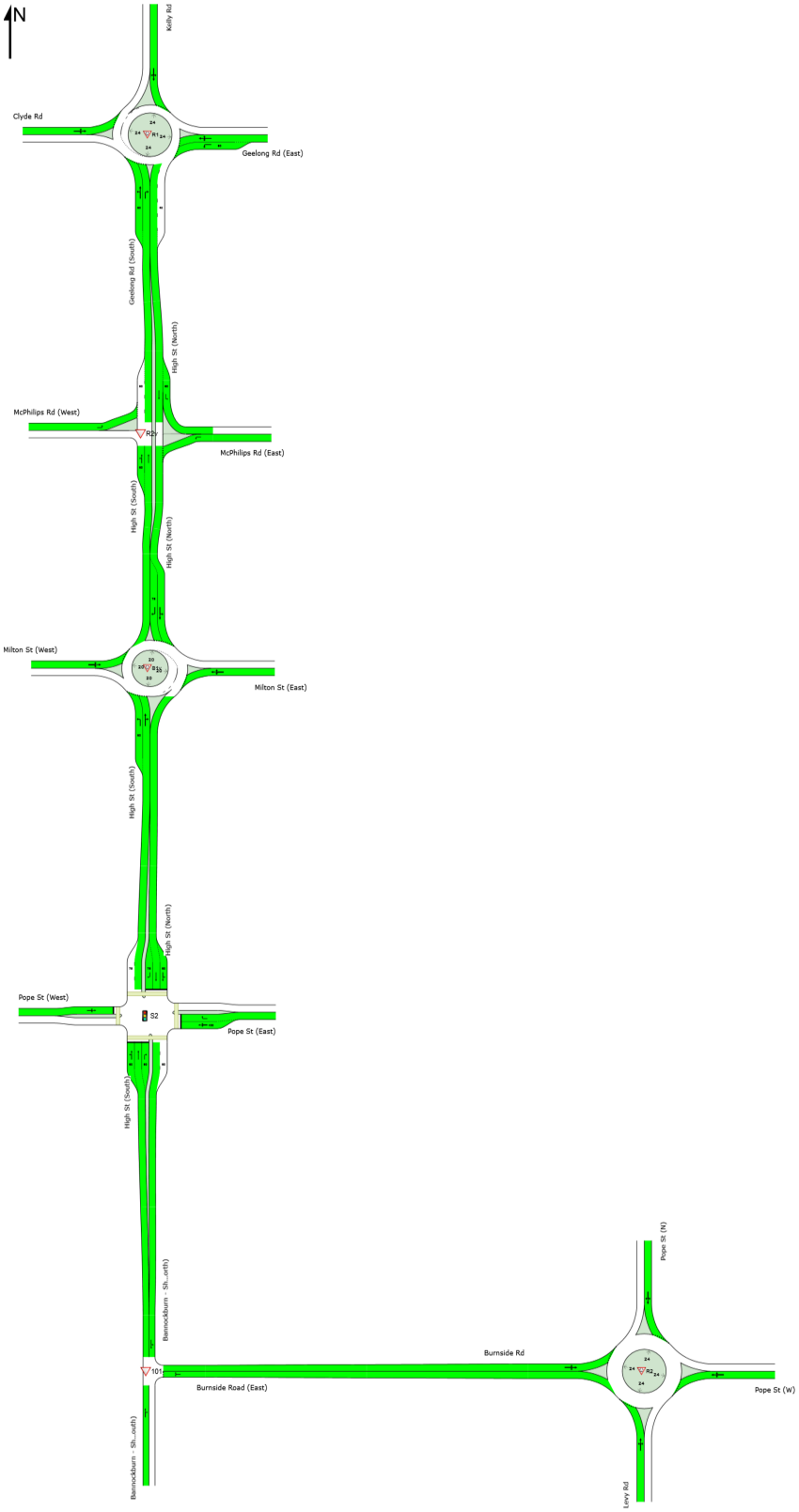


Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Lane Blockage Probability



Colour code based on Lane Blockage Probability

[= 0%] [0 – 10%] [10 – 30%] [> 30%]

USER REPORT FOR NETWORK SITE

Project: sidra_network_model_v3_1

Output produced by SIDRA INTERSECTION Version: 9.1.1.200 **Template: Site User Report**

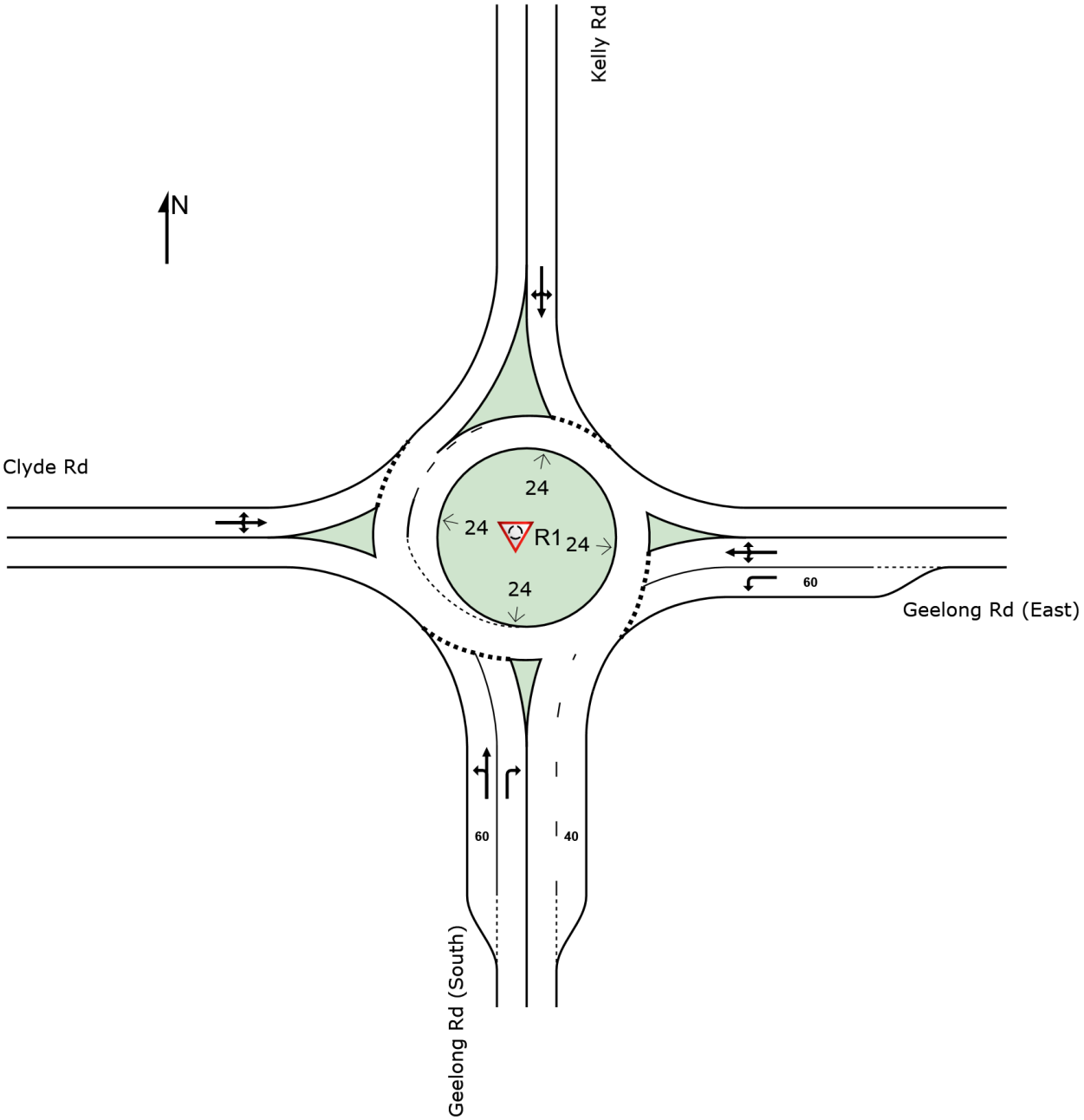
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Network: 33 [2051 AM Peak_Op3a _v1 (100,0,0) (Network Folder: Future Year 2051 - with pope roundabout)]

Kelly Rd/Geelong Rd/ Clyde Rd
Site Category: (None)
Roundabout

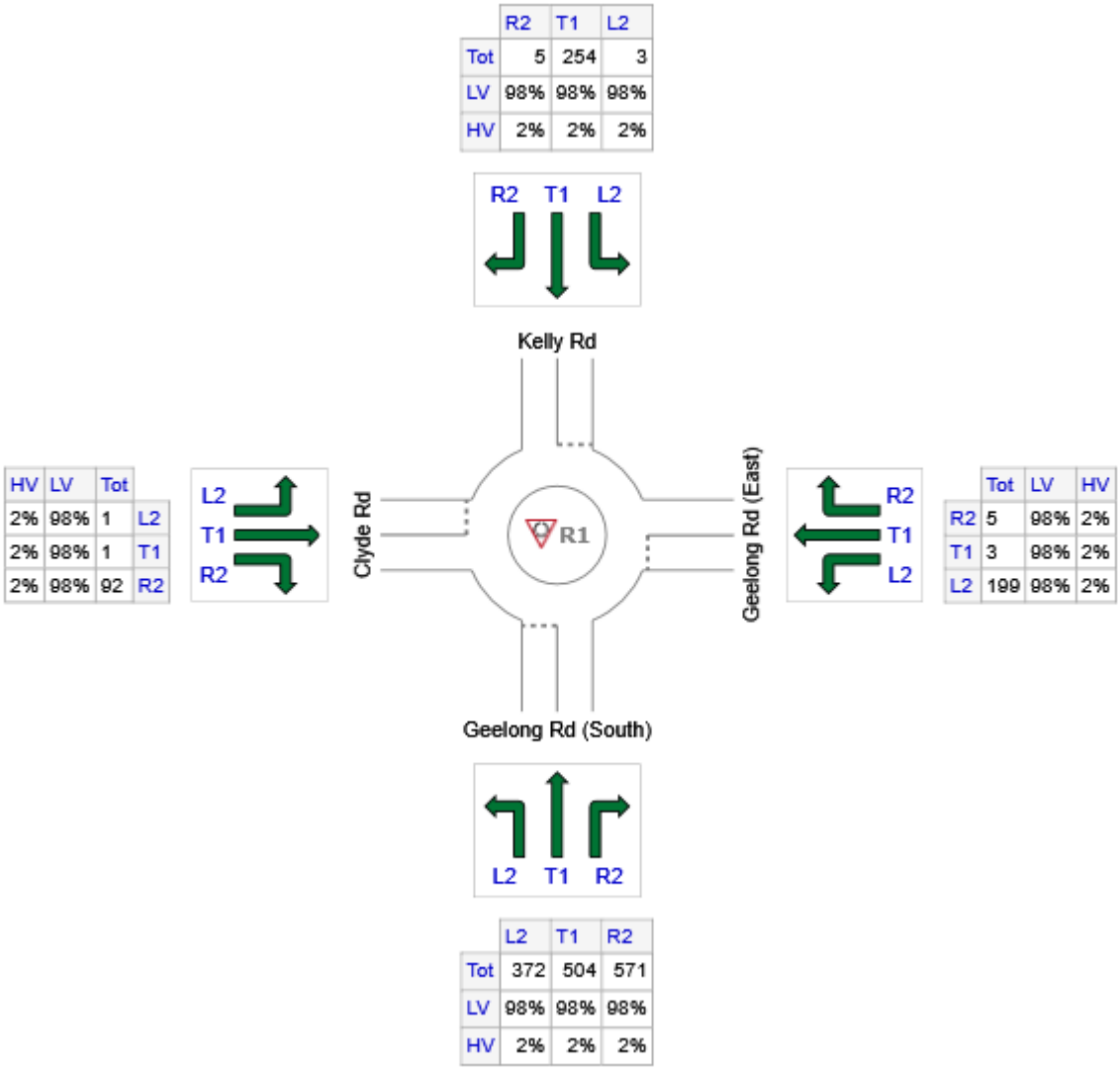
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Volumes

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Geelong Rd (South)	1447	1418	29
E: Geelong Rd (East)	207	203	4
N: Kelly Rd	262	257	5
W: Clyde Rd	94	92	2
Total	2010	1970	40

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Geelong Rd (South)															
Lane 1[d]	922	2.0	922	2.0	1815	0.508	100	3.5	LOS A	4.5	32.1	Short	60	0.0	NA
Lane 2	601	2.0	601	2.0	1496	0.402	100	8.5	LOS A	3.1	21.7	Full	80	0.0	0.0
Approach	1523	2.0	1523	2.0		0.508		5.5	LOS A	4.5	32.1				
East: Geelong Rd (East)															
Lane 1	34	2.0	34	2.0	836	0.041	28[6]	6.7	LOS A	0.2	1.5	Short	60	0.0	NA
Lane 2[d]	184	2.0	184	2.0	1264	0.145	100	5.5	LOS A	0.9	6.4	Full	500	0.0	0.0
Approach	218	2.0	218	2.0		0.145		5.7	LOS A	0.9	6.4				
North: Kelly Rd															
Lane 1[d]	276	2.0	276	2.0	835	0.330	100	9.3	LOS A	2.1	14.9	Full	500	0.0	0.0
Approach	276	2.0	276	2.0		0.330		9.3	LOS A	2.1	14.9				
West: Clyde Rd															
Lane 1[d]	99	2.0	99	2.0	708	0.140	100	12.4	LOS B	0.5	3.7	Full	500	0.0	0.0
Approach	99	2.0	99	2.0		0.140		12.4	LOS B	0.5	3.7				
All Vehicles	2116	2.0	2116	2.0		0.508		6.3	LOS A	4.5	32.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

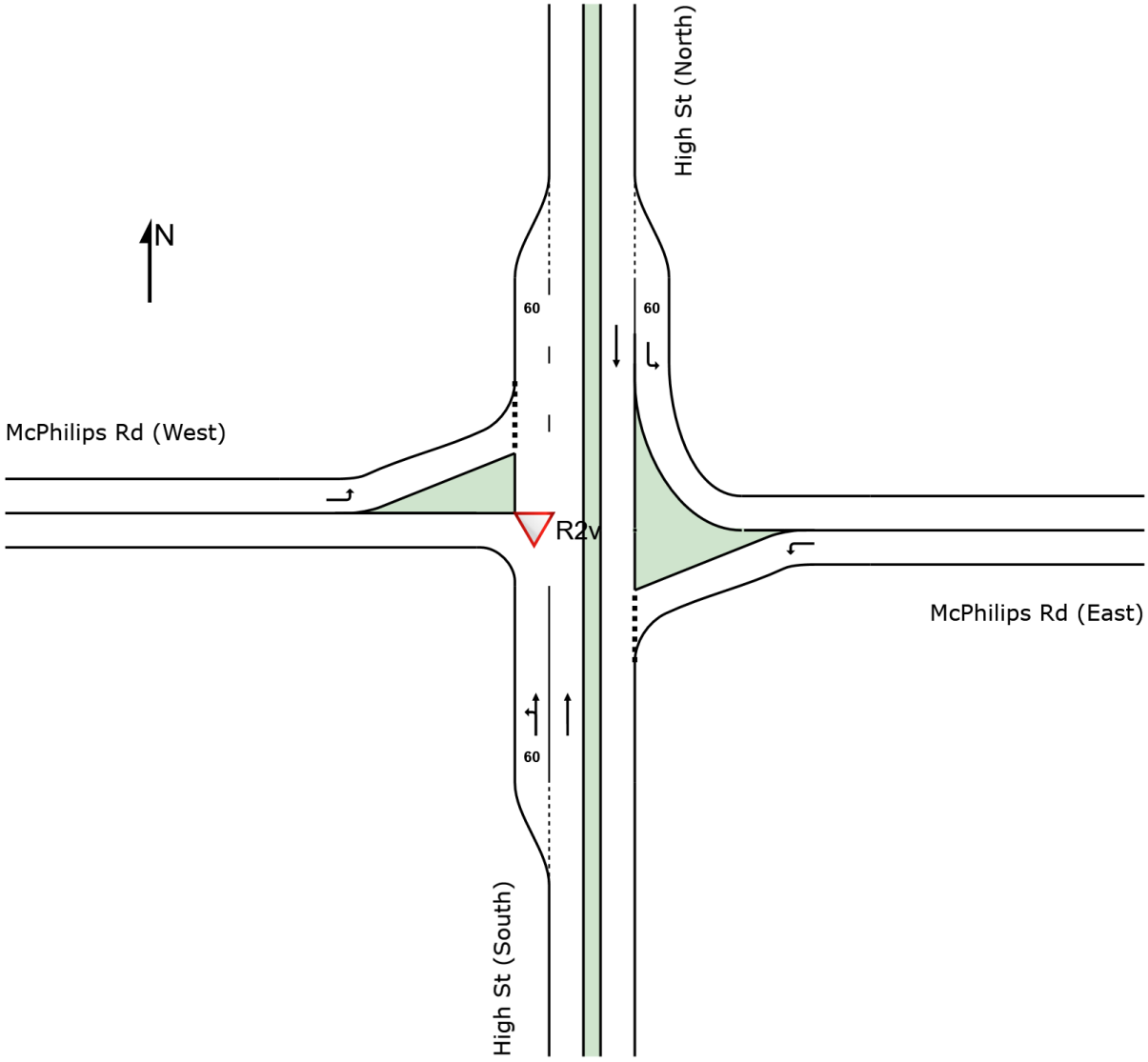
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Network: 33 [2051 AM Peak_Op3a _v1 (100,0,0) (Network Folder: Future Year 2051 - with pope roundabout)]

Geelond Rd / McPhilips Rd
Site Category: (None)
Give-Way (Two-Way)

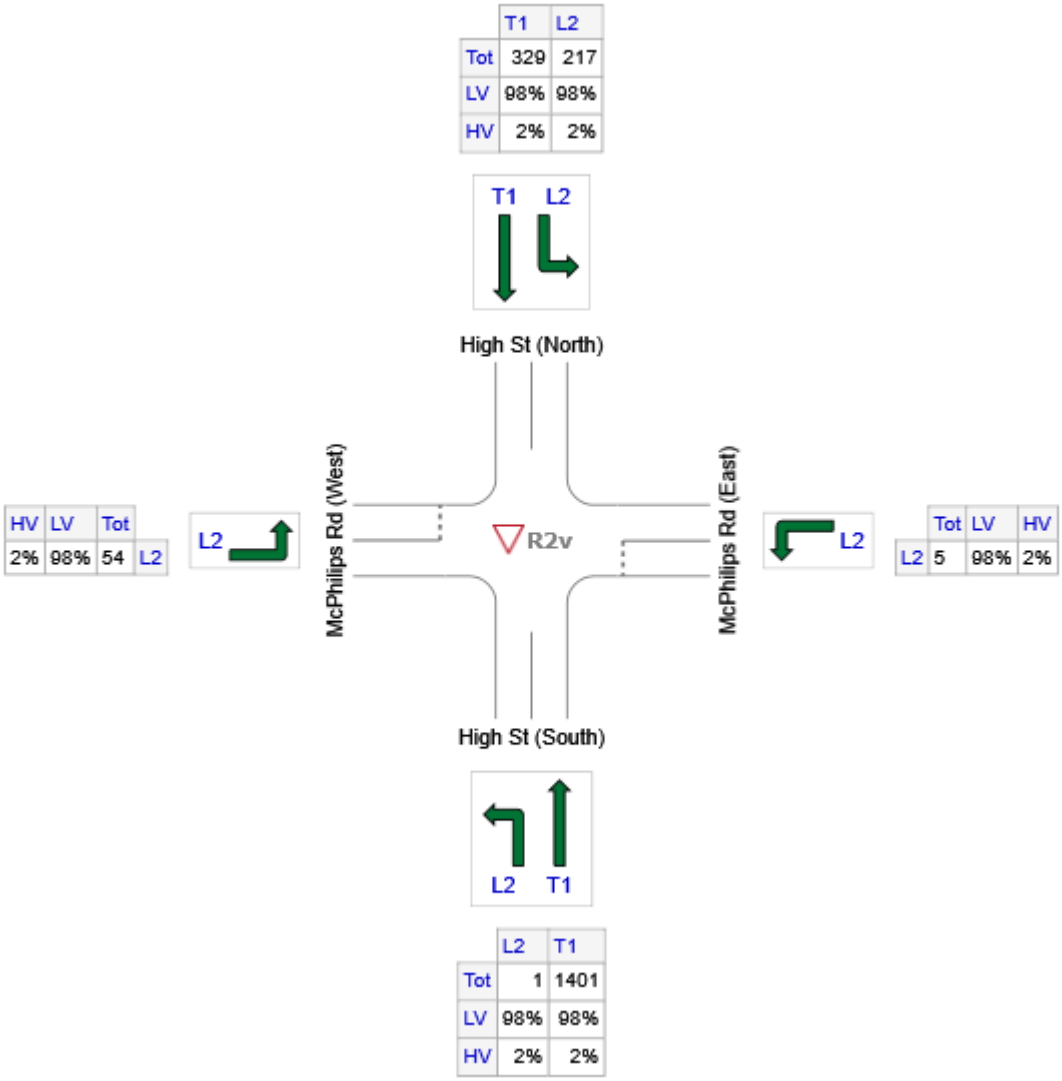
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Volumes

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: High St (South)	1402	1374	28
E: McPhilips Rd (East)	5	5	0
N: High St (North)	546	535	11
W: McPhilips Rd (West)	54	53	1
Total	2007	1967	40

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: High St (South)															
Lane 1	380	2.0	380	2.0	1995	0.190	35[6]	8.3	LOS A	0.0	0.0	Short	60	0.0	NA
Lane 2	1096	2.0	1096	2.0	1995	0.549	100	0.1	LOS A	0.0	0.0	Full	215	0.0	0.0
Approach	1476	2.0	1476	2.0		0.549		2.2	NA	0.0	0.0				
East: McPhilips Rd (East)															
Lane 1	5	2.0	5	2.0	1166	0.005	100	6.8	LOS A	0.0	0.1	Full	500	0.0	0.0
Approach	5	2.0	5	2.0		0.005		6.8	LOS A	0.0	0.1				
North: High St (North)															
Lane 1	228	2.0	228	2.0	1898	0.120	100	5.2	LOS A	0.0	0.0	Short	60	0.0	NA
Lane 2	346	2.0	346	2.0	1995	0.174	100	0.0	LOS A	0.0	0.0	Full	80	0.0	0.0
Approach	575	2.0	575	2.0		0.174		2.1	NA	0.0	0.0				
West: McPhilips Rd (West)															
Lane 1	57	2.0	57	2.0	1129	0.050	100	15.2	LOS C	0.2	1.4	Full	500	0.0	0.0
Approach	57	2.0	57	2.0		0.050		15.2	LOS C	0.2	1.4				
All Vehicles	2113	2.0	2113	2.0		0.549		2.5	NA	0.2	1.4				

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

Lane LOS values are based on average delay per lane.

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

6 Lane under-utilisation due to downstream effects

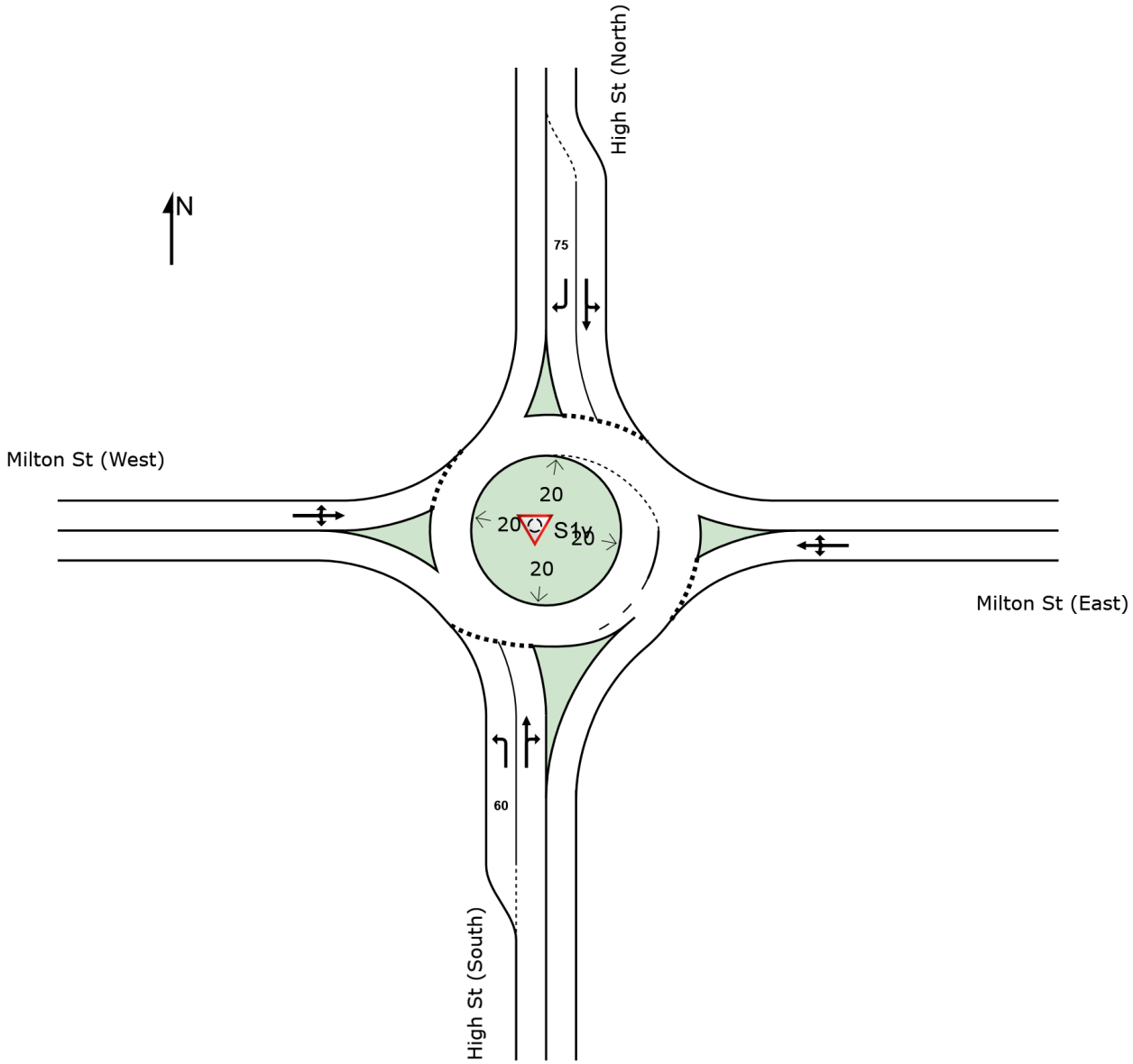
Site: S1v [High St / Milton St_AM_Op3a_v1 (100,0,0) (Site Folder: General)]

Network: 33 [2051 AM Peak_Op3a _v1 (100,0,0) (Network Folder: Future Year 2051 - with pope roundabout)]

High St / Milton St
Site Category: (None)
Roundabout

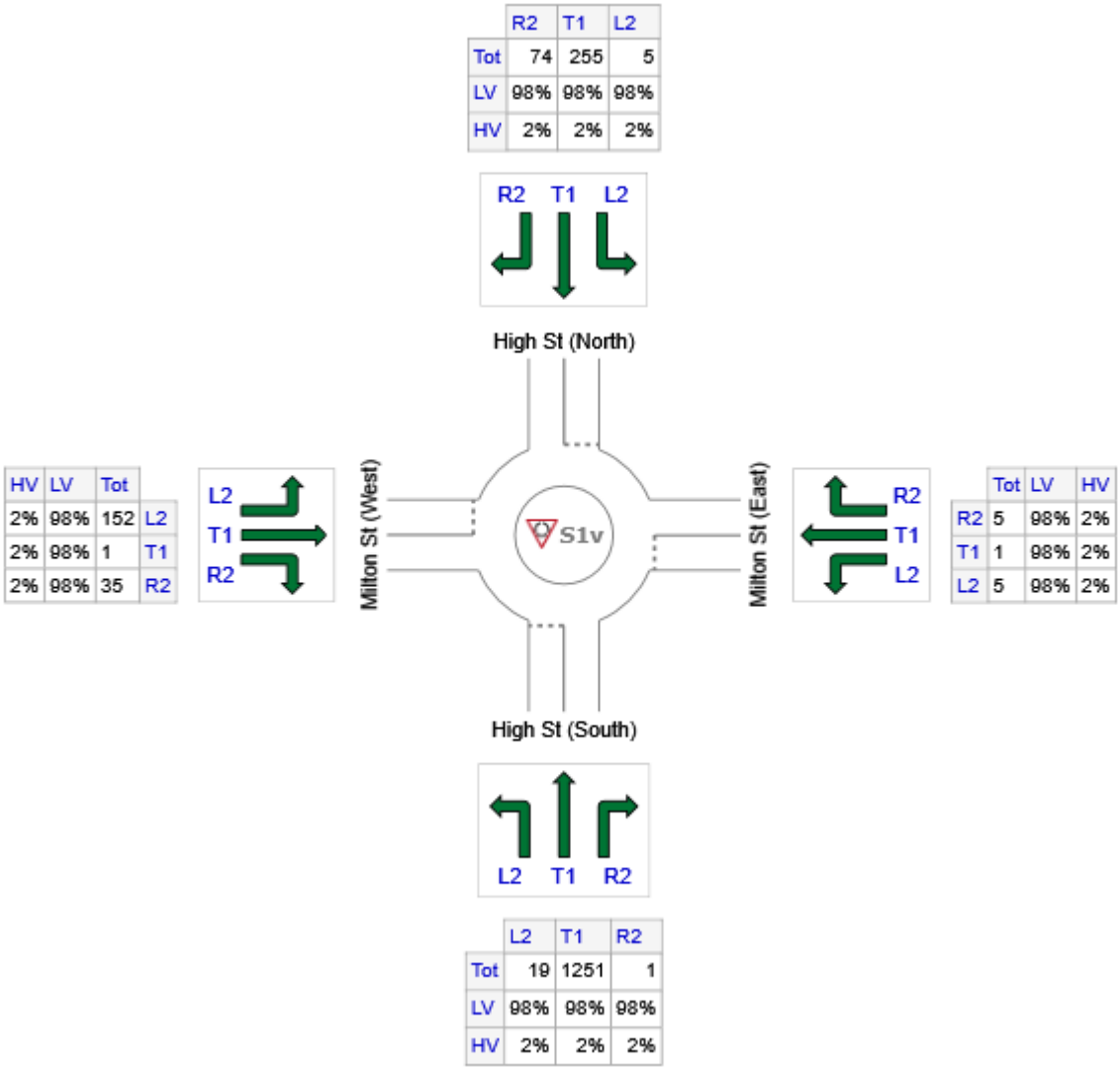
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Volumes

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: High St (South)	1271	1246	25
E: Milton St (East)	11	11	0
N: High St (North)	334	327	7
W: Milton St (West)	188	184	4
Total	1804	1768	36

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: High St (South)															
Lane 1	20	2.0	20	2.0	1071	0.019	100	4.7	LOS A	0.1	0.5	Short	60	0.0	NA
Lane 2[d]	1318	2.0	1318	2.0	1667	0.790	100	5.1	LOS A	11.8	84.3	Full	215	0.0	0.0
Approach	1338	2.0	1338	2.0		0.790		5.1	LOS A	11.8	84.3				
East: Milton St (East)															
Lane 1[d]	12	2.0	12	2.0	950	0.012	100	7.5	LOS A	0.0	0.3	Full	500	0.0	0.0
Approach	12	2.0	12	2.0		0.012		7.5	LOS A	0.0	0.3				
North: High St (North)															
Lane 1[d]	274	2.0	274	2.0	1675	0.163	100	4.3	LOS A	1.2	8.3	Full	215	0.0	0.0
Lane 2	78	2.0	78	2.0	1172	0.066	100	9.0	LOS A	0.4	2.8	Short	75	0.0	NA
Approach	352	2.0	352	2.0		0.163		5.4	LOS A	1.2	8.3				
West: Milton St (West)															
Lane 1[d]	198	2.0	198	2.0	366	0.540	100	42.3	LOS D	6.9	49.4	Full	500	0.0	0.0
Approach	198	2.0	198	2.0		0.540		42.3	LOS D	6.9	49.4				
All Vehicles	1899	2.0	1899	2.0		0.790		9.1	LOS A	11.8	84.3				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

Site: S2 [High St / Pope St_AM_Op3a_v1 (100,0,0) (Site Folder: General)]

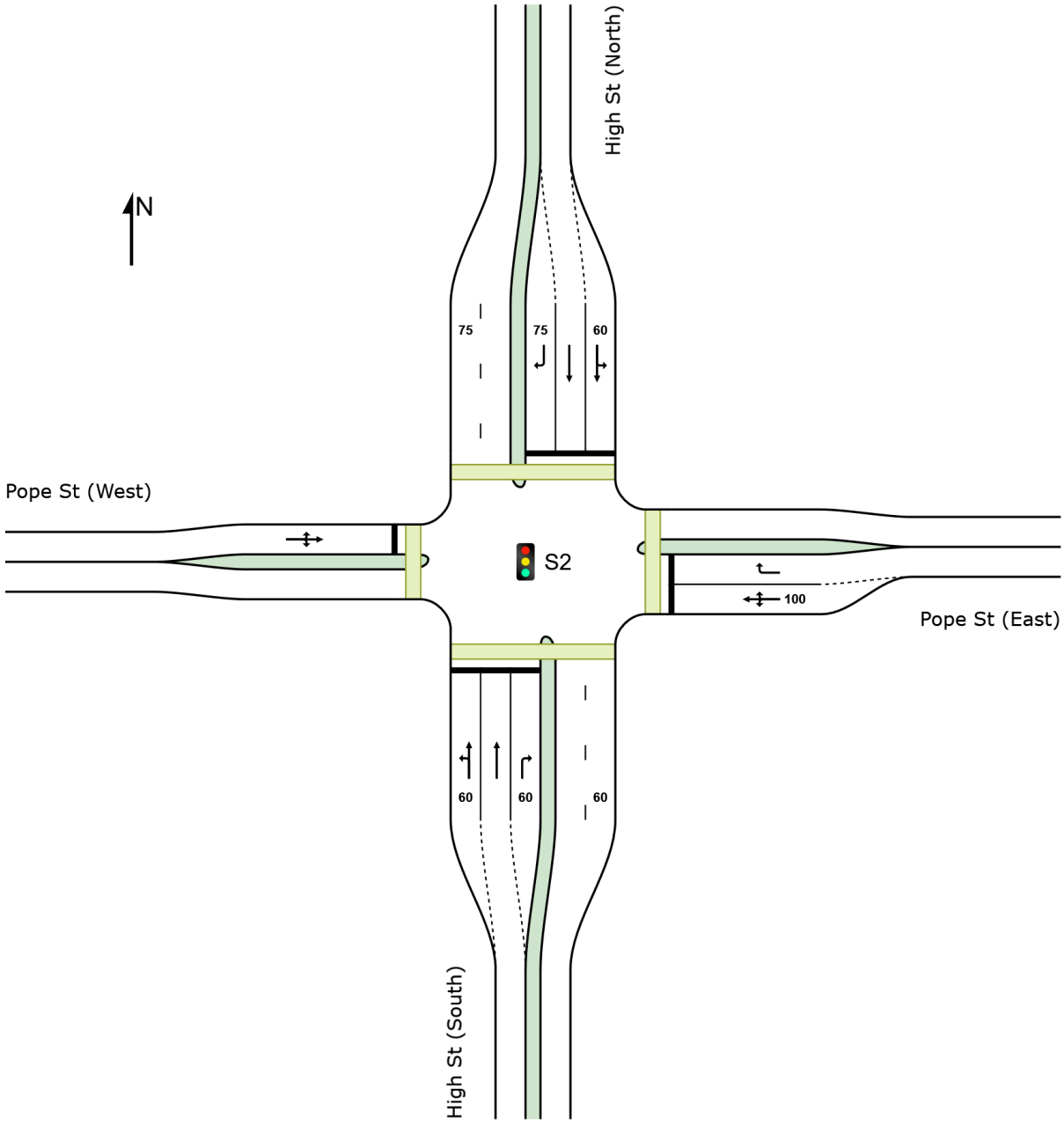
Network: 33 [2051 AM Peak_Op3a _v1 (100,0,0) (Network Folder: Future Year 2051 - with pope roundabout)]

High St / Pope St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split phase signle diamond - Import
Input Phase Sequence: A, B, C, D, D1*, D2*
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A
Offset: NA
(* Variable Phase)

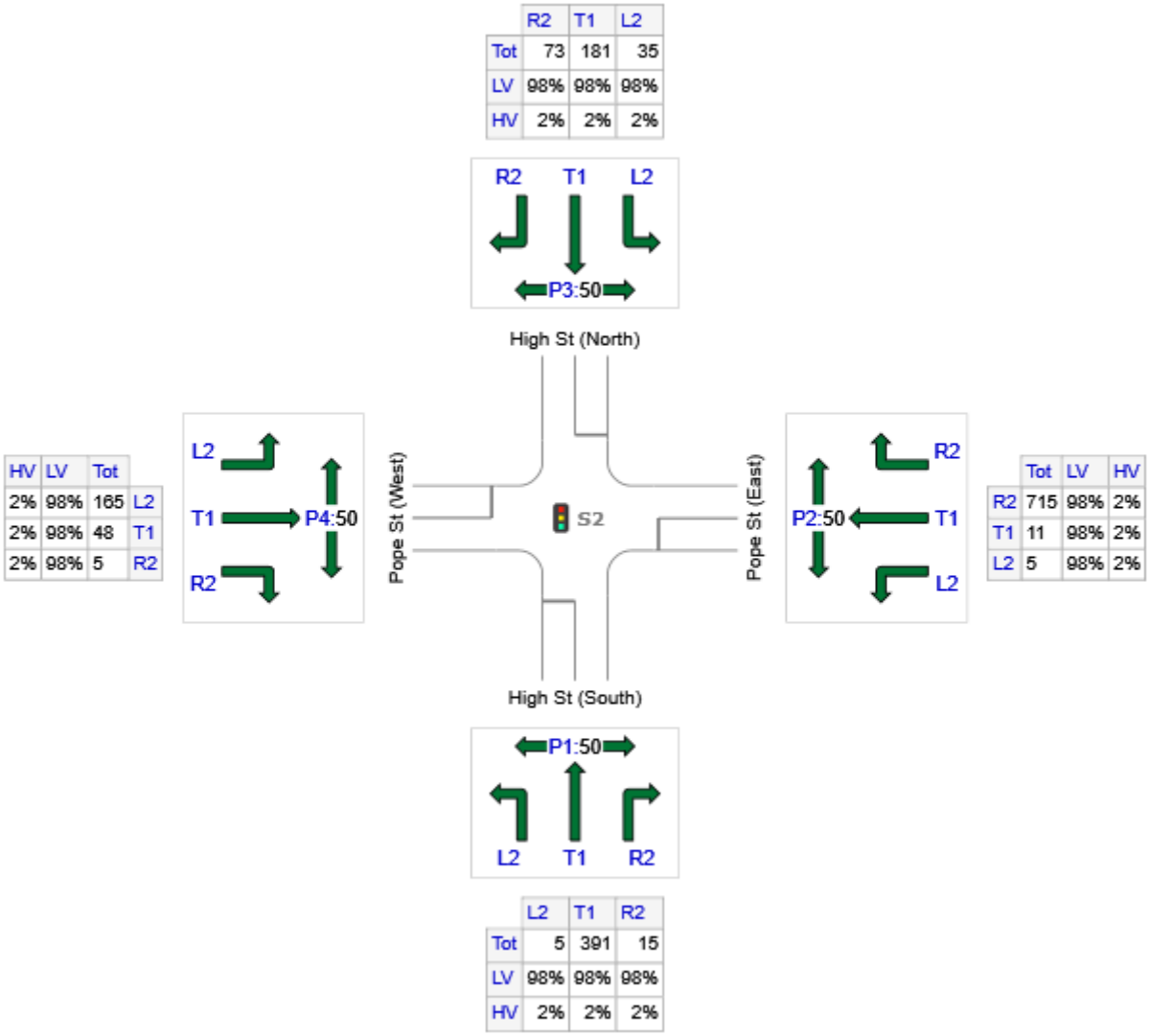
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Volumes

Volume Display Method: Total and %



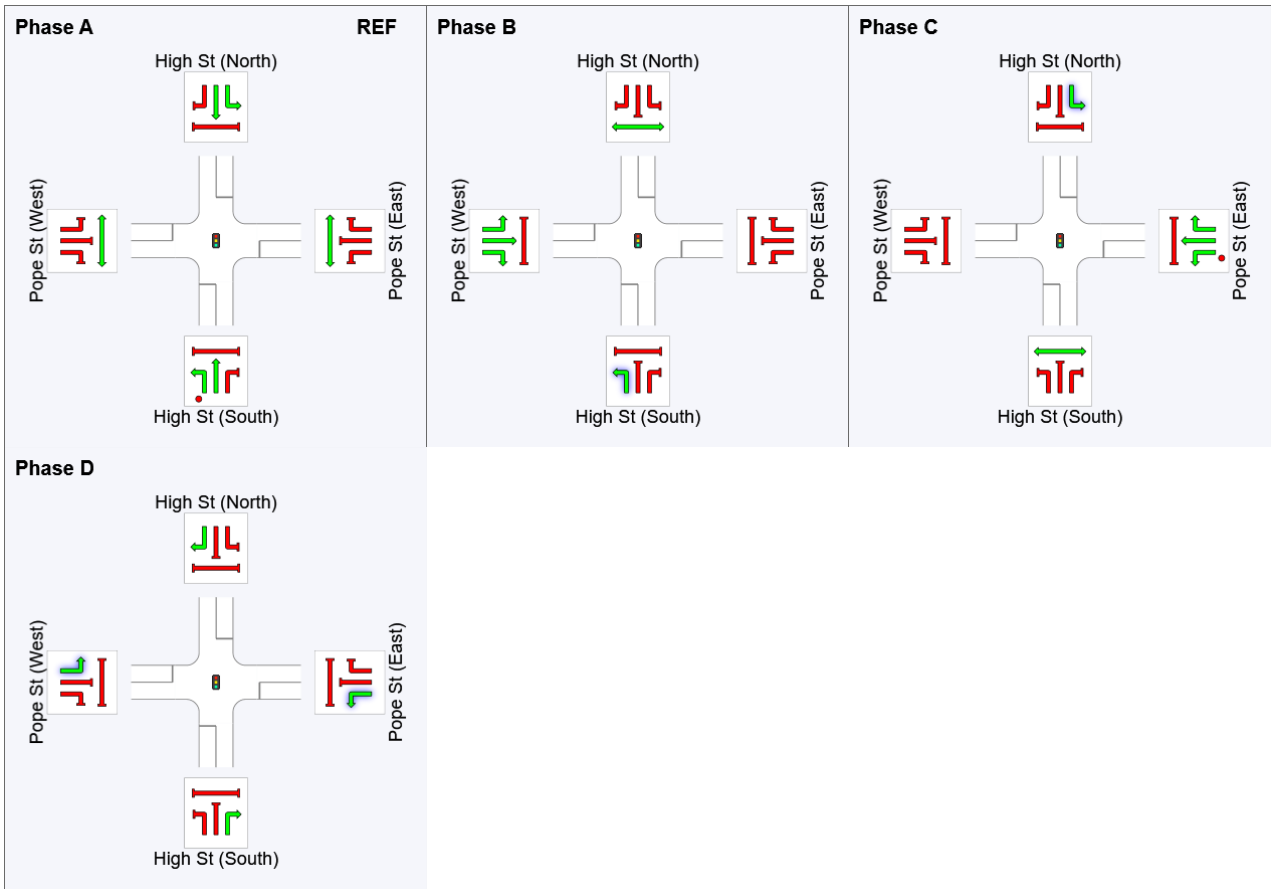
	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: High St (South)	411	403	8
E: Pope St (East)	731	716	15
N: High St (North)	289	283	6
W: Pope St (West)	218	214	4
Total	1649	1616	33

Phase Timing Summary

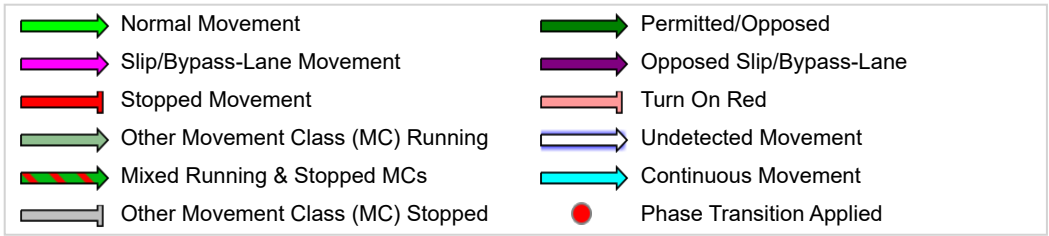
Phase	A	B	C	D
Phase Change Time (sec)	0	24	49	88
Green Time (sec)	18	19	33	6
Phase Time (sec)	24	25	39	12
Phase Split	24%	25%	39%	12%
Phase Frequency (%)	100.0	100.0	100.0	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: High St (South)															
Lane 1	128	2.0	128	2.0	360	0.354	44[6]	39.5	LOS D	5.5	39.0	Short	60	0.0	NA
Lane 2	289	2.0	289	2.0	359	0.806	100	47.5	LOS D	14.7	105.0	Full	350	0.0	0.0
Lane 3	16	2.0	16	2.0	114	0.139	100	56.4	LOS E	0.8	5.5	Short	60	0.0	NA
Approach	433	2.0	433	2.0		0.806		45.5	LOS D	14.7	105.0				
East: Pope St (East)															
Lane 1	245	2.0	245	2.0	628	0.390	47[6]	33.8	LOS C	9.2	65.3	Short	100	0.0	NA
Lane 2	524	2.0	524	2.0	626	0.837	100	44.9	LOS D	26.1	186.1	Full	500	0.0	0.0
Approach	769	2.0	769	2.0		0.837		41.4	LOS D	26.1	186.1				
North: High St (North)															
Lane 1	66	2.0	66	2.0	395	0.167	37[6]	22.5	LOS C	1.6	11.6	Short	60	0.0	NA
Lane 2	161	2.0	161	2.0	359	0.449	100	40.2	LOS D	7.2	51.0	Full	215	0.0	0.0
Lane 3	77	2.0	77	2.0	114	0.675	100	60.0	LOS E	4.0	28.6	Short	75	0.0	NA
Approach	304	2.0	304	2.0		0.675		41.4	LOS D	7.2	51.0				
West: Pope St (West)															
Lane 1	229	2.0	229	2.0	436	0.526	100	32.6	LOS C	6.5	46.0	Full	500	0.0	0.0
Approach	229	2.0	229	2.0		0.526		32.6	LOS C	6.5	46.0				
All Vehicles	1736	2.0	1736	2.0		0.837		41.2	LOS D	26.1	186.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

6 Lane under-utilisation due to downstream effects

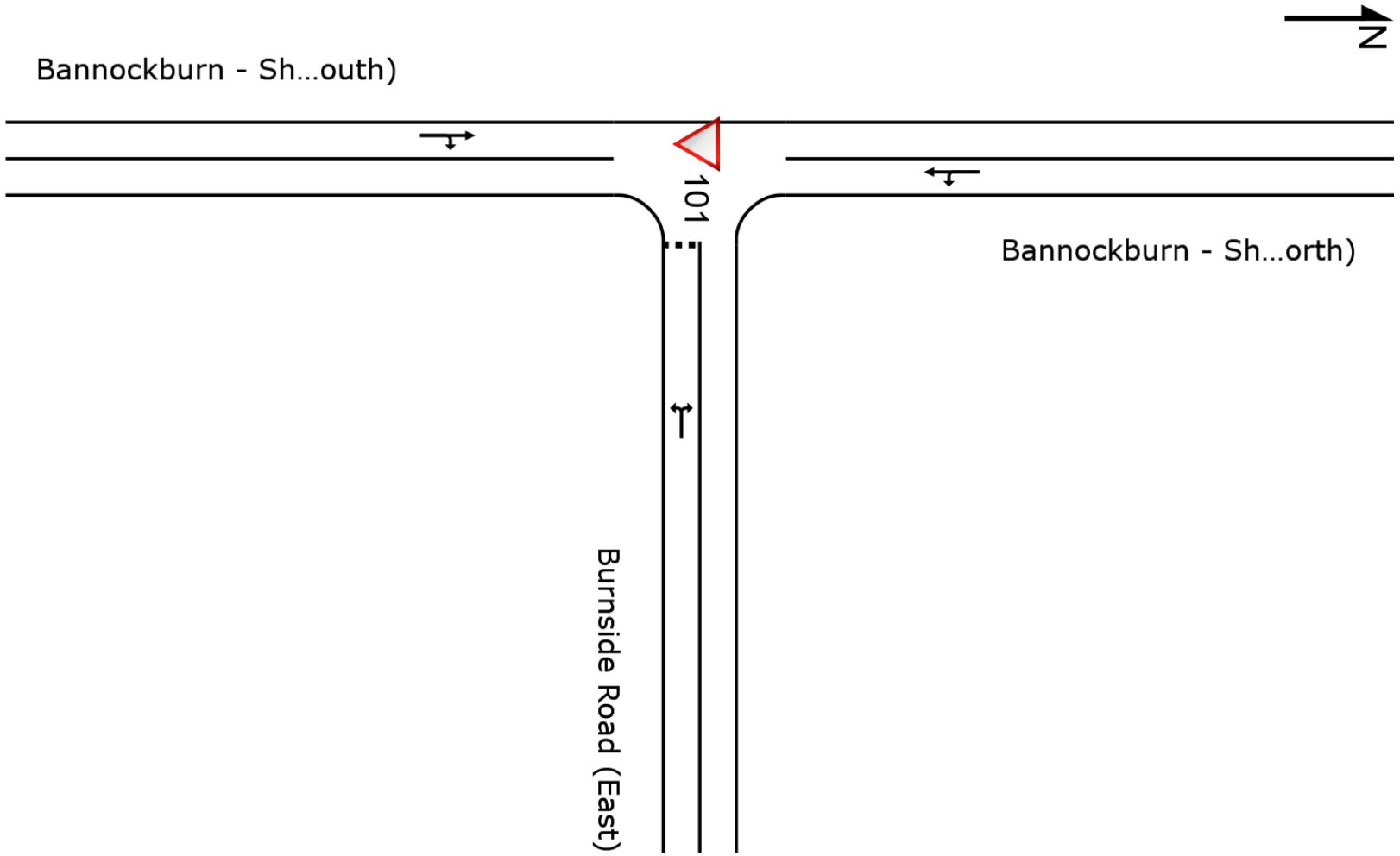
Site: 101 [High St / Burnside Rd AM_Op3a_v1(100,0,0) (Site Folder: General)]

Network: 33 [2051 AM Peak_Op3a _v1 (100,0,0) (Network Folder: Future Year 2051 - with pope roundabout)]

New Site
Site Category: (None)
Give-Way (Two-Way)

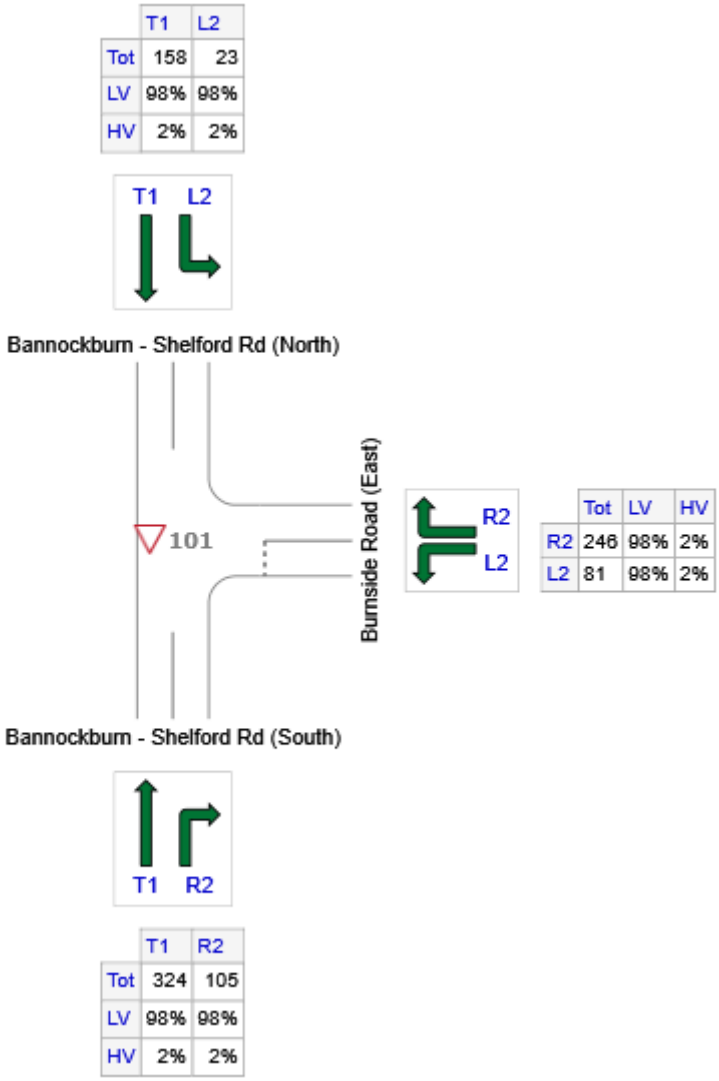
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


N
Bannockburn - Sh...outh)
101
Bannockburn - Sh...orth)
Burnside Road (East)

Input Volumes

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Bannockburn - Shelford Rd (South)	429	420	9
E: Burnside Road (East)	327	320	7
N: Bannockburn - Shelford Rd (North)	181	177	4
Total	937	918	19

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Bannockburn - Shelford Rd (South)															
Lane 1	452	2.0	452	2.0	1792	0.252	100	1.8	LOS A	1.0	7.2	Full	350	0.0	0.0
Approach	452	2.0	452	2.0		0.252		1.8	NA	1.0	7.2				
East: Burnside Road (East)															
Lane 1	344	2.0	344	2.0	788	0.437	100	10.0	LOS A	2.7	19.4	Full	500	0.0	0.0
Approach	344	2.0	344	2.0		0.437		10.0	LOS A	2.7	19.4				
North: Bannockburn - Shelford Rd (North)															
Lane 1	191	2.0	191	2.0	1913	0.100	100	0.7	LOS A	0.0	0.0	Full	350	0.0	0.0
Approach	191	2.0	191	2.0		0.100		0.7	NA	0.0	0.0				
All Vehicles	986	2.0	986	2.0		0.437		4.4	NA	2.7	19.4				

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

Lane LOS values are based on average delay per lane.

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

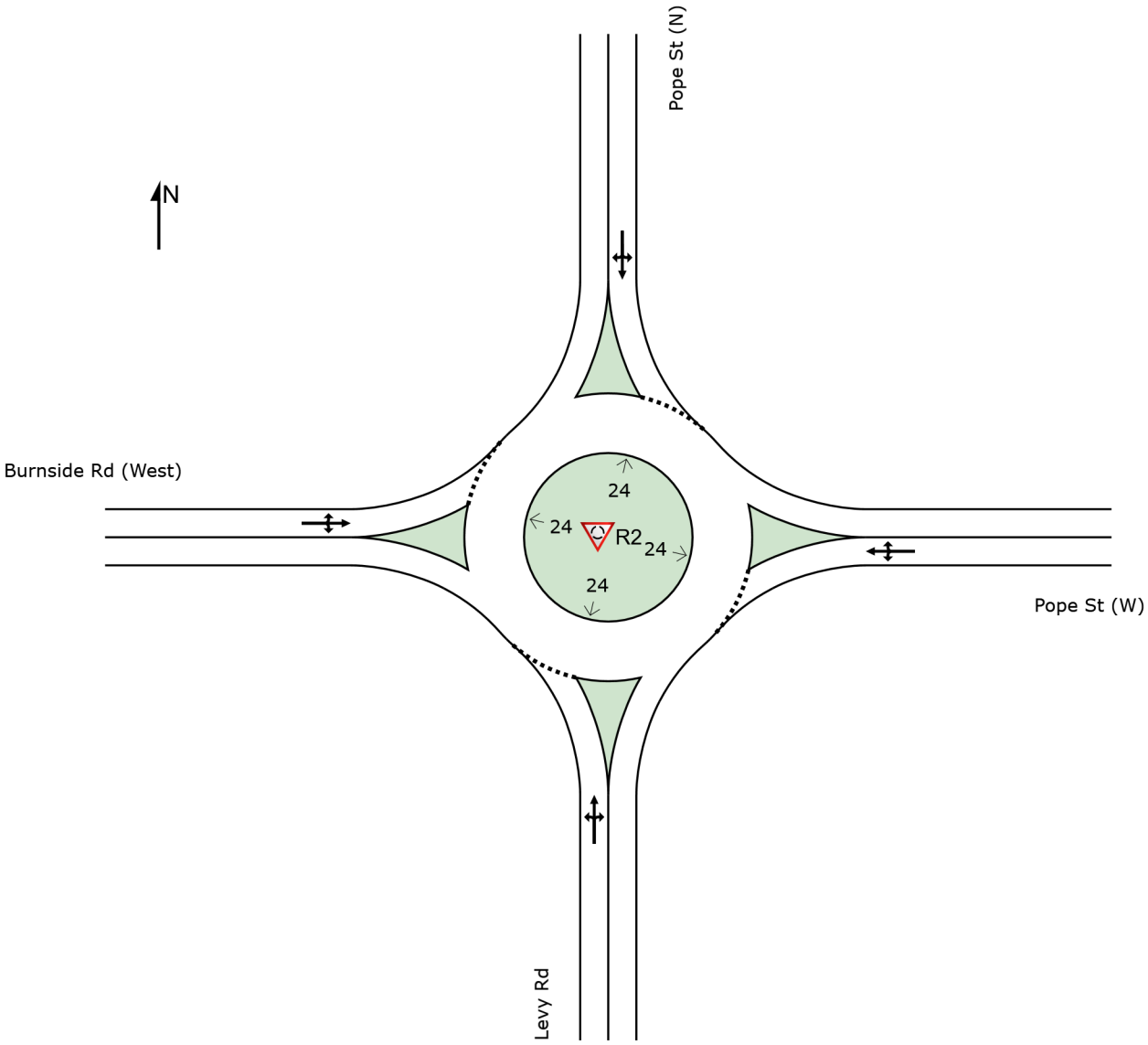
Site: R2 [Pope St / Levy Rd / Burnside Rd AM_Op3a_v1(100,0,0) (Site Folder: General)]

Network: 33 [2051 AM Peak_Op3a _v1 (100,0,0) (Network Folder: Future Year 2051 - with pope roundabout)]

Kelly Rd/Geelong Rd/ Clyde Rd
Site Category: (None)
Roundabout

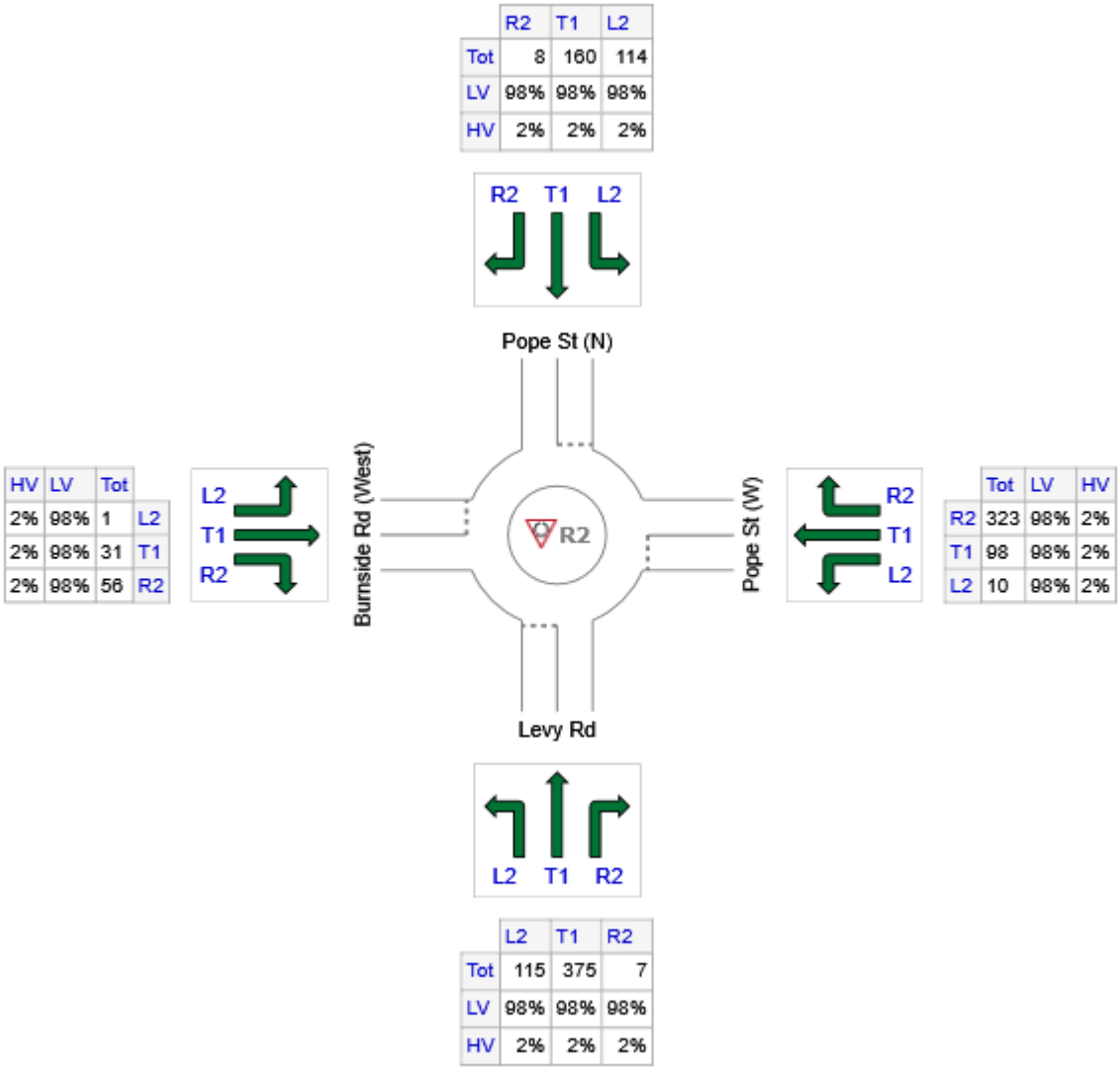
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Volumes

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Levy Rd	497	487	10
E: Pope St (W)	431	422	9
N: Pope St (N)	282	276	6
W: Burnside Rd (West)	88	86	2
Total	1298	1272	26

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Levy Rd															
Lane 1[d]	523	2.0	523	2.0	957	0.547	100	7.5	LOS A	4.7	33.6	Full	80	0.0	0.0
Approach	523	2.0	523	2.0		0.547		7.5	LOS A	4.7	33.6				
East: Pope St (W)															
Lane 1[d]	454	2.0	454	2.0	1189	0.382	100	9.1	LOS A	2.5	18.0	Full	500	0.0	0.0
Approach	454	2.0	454	2.0		0.382		9.1	LOS A	2.5	18.0				
North: Pope St (N)															
Lane 1[d]	297	2.0	297	2.0	1341	0.221	100	4.4	LOS A	1.4	10.3	Full	350	0.0	0.0
Approach	297	2.0	297	2.0		0.221		4.4	LOS A	1.4	10.3				
West: Burnside Rd (West)															
Lane 1[d]	93	2.0	93	2.0	744	0.125	100	11.5	LOS B	0.8	5.6	Full	500	0.0	0.0
Approach	93	2.0	93	2.0		0.125		11.5	LOS B	0.8	5.6				
All Vehicles	1366	2.0	1366	2.0		0.547		7.6	LOS A	4.7	33.6				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

USER REPORT FOR NETWORK SITE

Project: sidra_network_model_v3_1

Output produced by SIDRA INTERSECTION Version: 9.1.1.200 **Template: Site User Report**

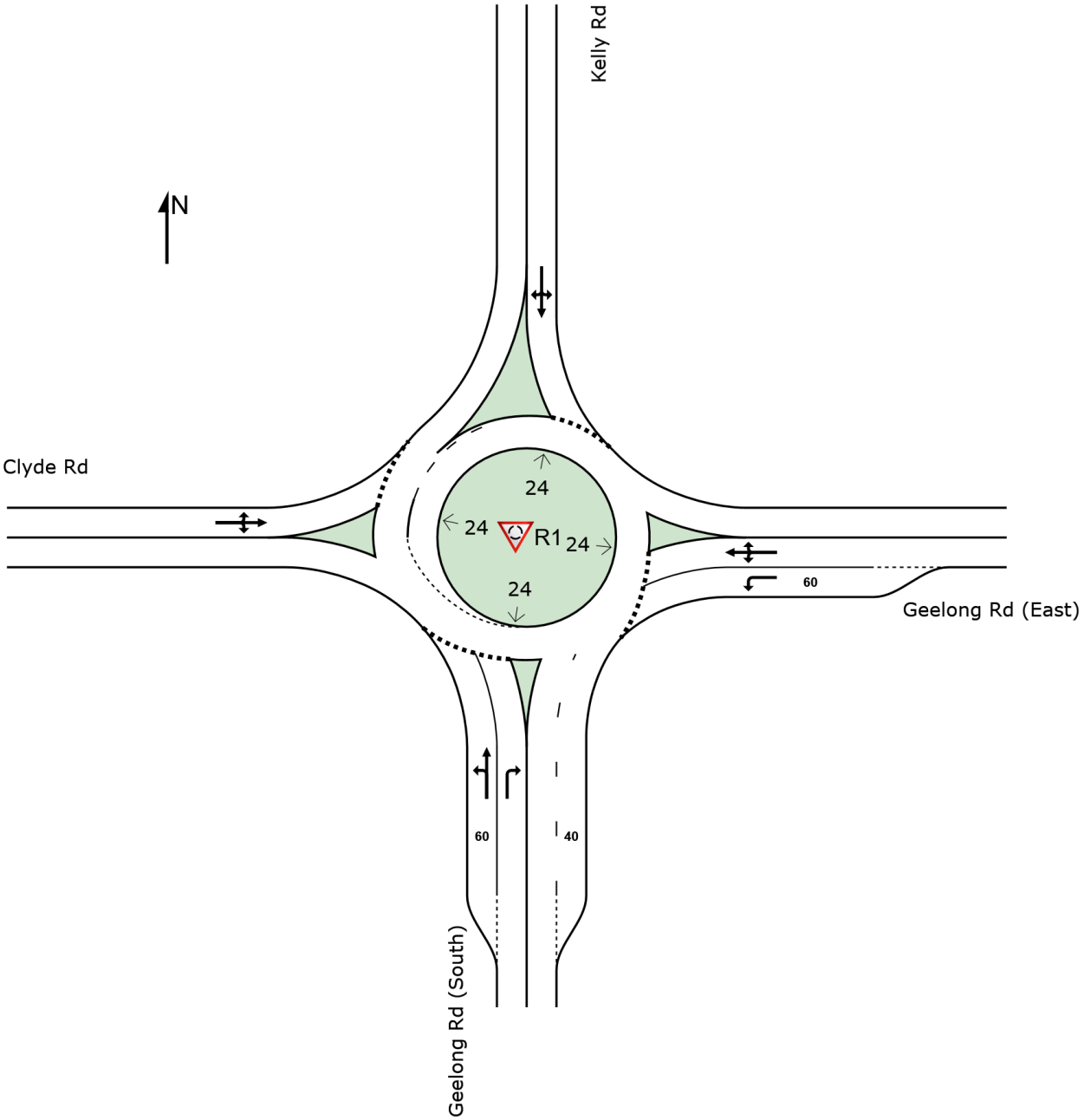
Site: R1 [Kelly Rd / Geelong Rd / Clyde Rd_PM_Op3a_v1(100,0,0) (Site Folder: General)]

Network: 34 [2051 PM Peak_Op3a_v1 (100,0,0) (Network Folder: Future Year 2051 - with pope roundabout)]

Kelly Rd/Geelong Rd/ Clyde Rd
Site Category: (None)
Roundabout

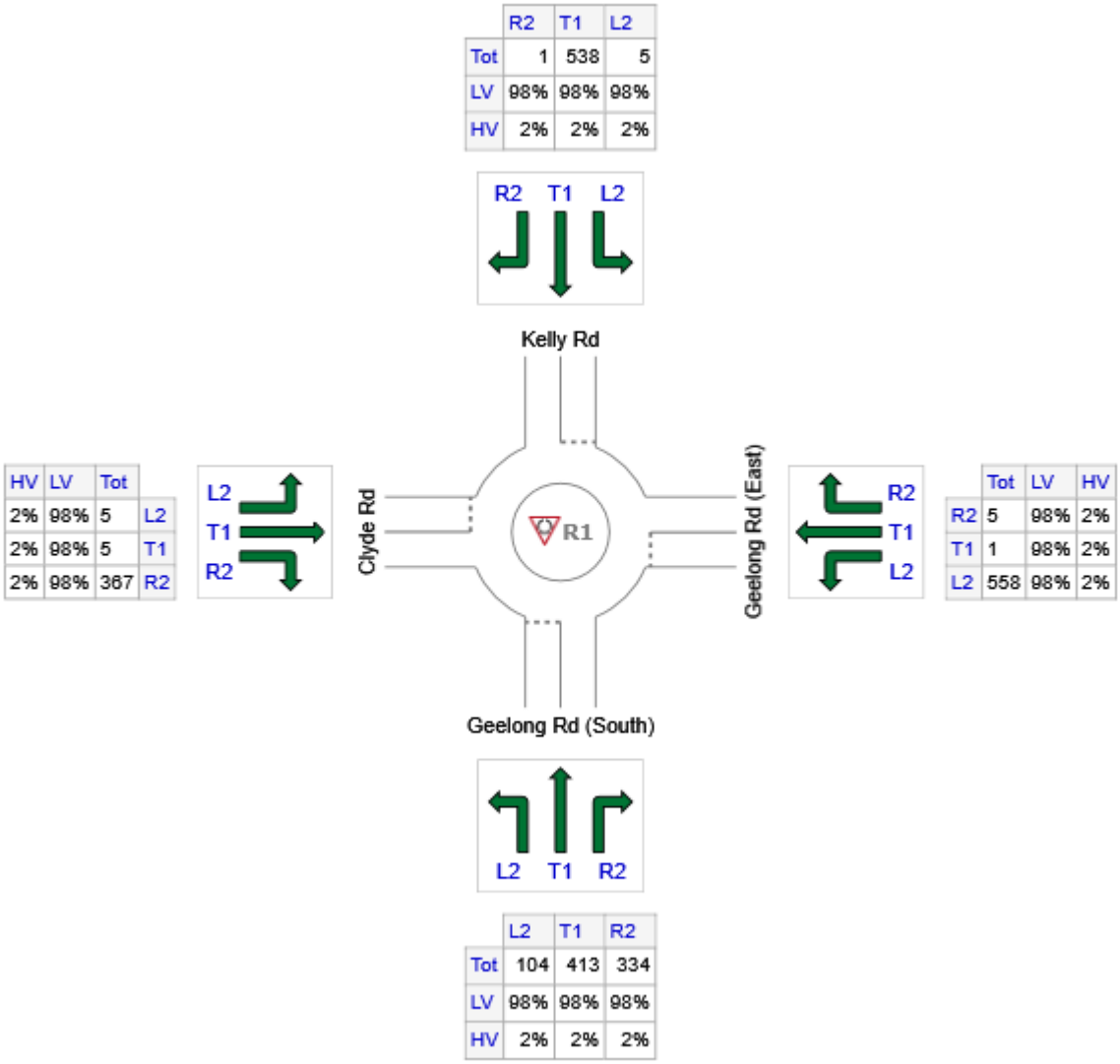
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Volumes

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Geelong Rd (South)	851	834	17
E: Geelong Rd (East)	564	553	11
N: Kelly Rd	544	533	11
W: Clyde Rd	377	369	8
Total	2336	2289	47

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Geelong Rd (South)															
Lane 1[d]	544	2.0	544	2.0	1824	0.298	100	3.4	LOS A	1.0	7.0	Short	60	0.0	NA
Lane 2	352	2.0	352	2.0	1504	0.234	100	8.5	LOS A	0.7	4.9	Full	80	0.0	0.0
Approach	896	2.0	896	2.0		0.298		5.4	LOS A	1.0	7.0				
East: Geelong Rd (East)															
Lane 1	96	2.0	96	2.0	486	0.198	28[6]	18.7	LOS B	0.5	3.8	Short	60	0.0	NA
Lane 2[d]	497	2.0	497	2.0	707	0.703	100	20.0	LOS B	4.0	28.2	Full	500	0.0	0.0
Approach	594	2.0	594	2.0		0.703		19.8	LOS B	4.0	28.2				
North: Kelly Rd															
Lane 1[d]	573	2.0	573	2.0	753	0.760	100	25.5	LOS C	4.2	30.3	Full	500	0.0	0.0
Approach	573	2.0	573	2.0		0.760		25.5	LOS C	4.2	30.3				
West: Clyde Rd															
Lane 1[d]	397	2.0	397	2.0	803	0.494	100	13.2	LOS B	1.1	7.6	Full	500	0.0	0.0
Approach	397	2.0	397	2.0		0.494		13.2	LOS B	1.1	7.6				
All Vehicles	2459	2.0	2459	2.0		0.760		14.8	LOS B	4.2	30.3				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

6 Lane under-utilisation due to downstream effects
d Dominant lane on roundabout approach

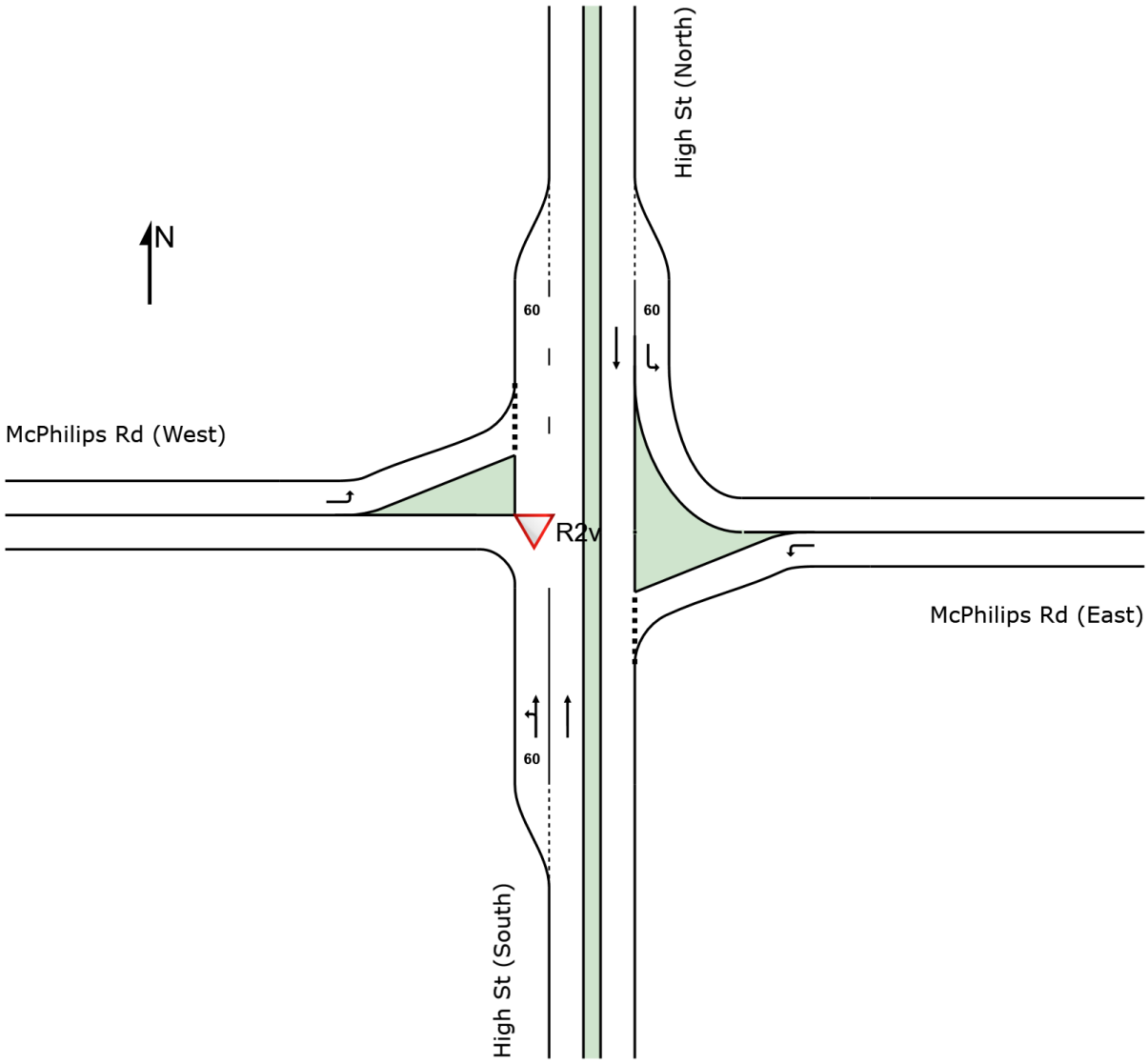
Site: R2v [High St/ McPhilips Rd_PM_Op3a_v1(100,0,0) (Site Folder: General)]

Network: 34 [2051 PM Peak_Op3a_v1 (100,0,0) (Network Folder: Future Year 2051 - with pope roundabout)]

Geelond Rd / McPhilips Rd
Site Category: (None)
Give-Way (Two-Way)

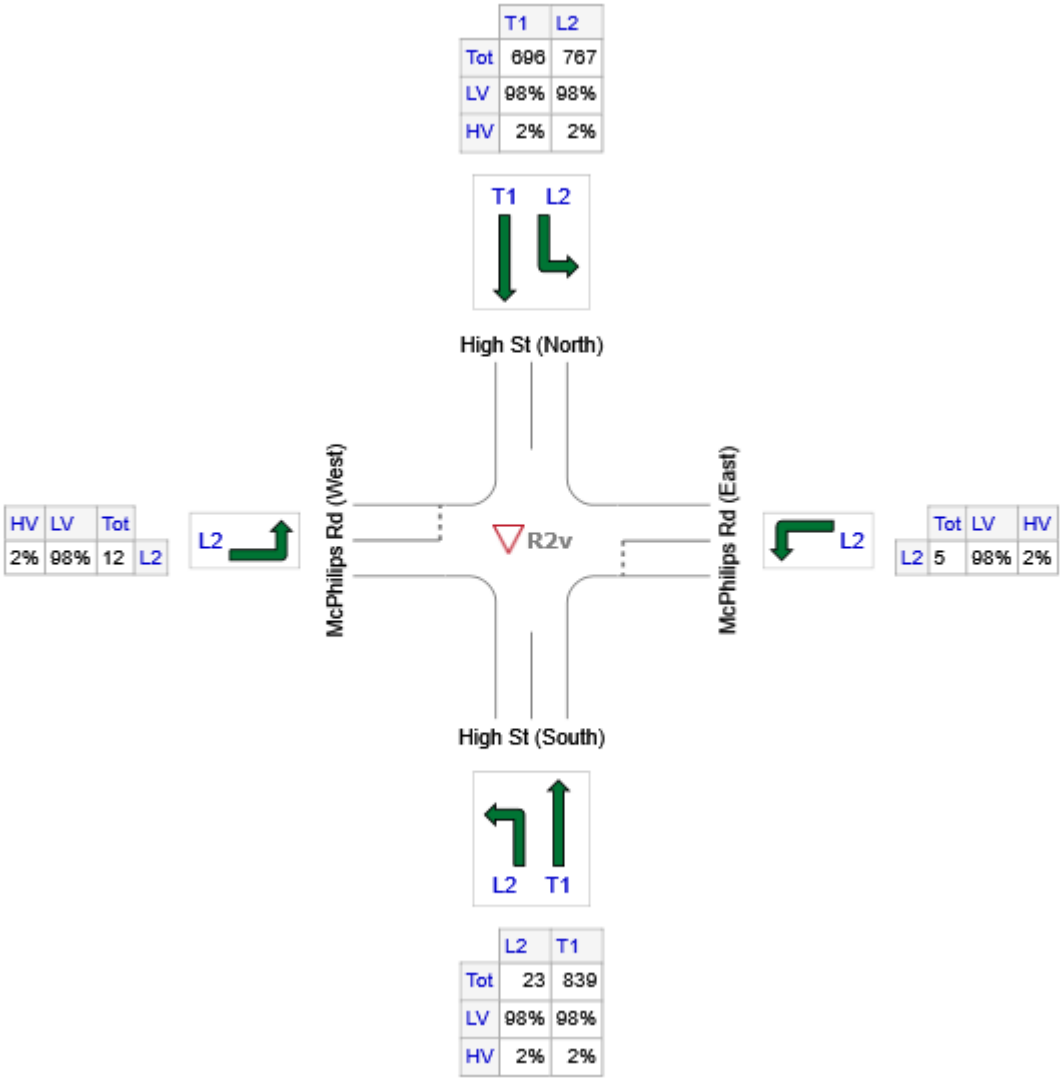
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Volumes

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: High St (South)	862	845	17
E: McPhilips Rd (East)	5	5	0
N: High St (North)	1463	1434	29
W: McPhilips Rd (West)	12	12	0
Total	2342	2295	47

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: High St (South)															
Lane 1	233	2.0	233	2.0	1984	0.117	35[6]	2.2	LOS A	0.0	0.0	Short	60	0.0	NA
Lane 2	675	2.0	675	2.0	1995	0.338	100	0.0	LOS A	0.0	0.0	Full	215	0.0	0.0
Approach	907	2.0	907	2.0		0.338		0.6	NA	0.0	0.0				
East: McPhilips Rd (East)															
Lane 1	5	2.0	5	2.0	697	0.008	100	9.2	LOS A	0.0	0.1	Full	500	0.0	0.0
Approach	5	2.0	5	2.0		0.008		9.2	LOS A	0.0	0.1				
North: High St (North)															
Lane 1	807	2.0	807	2.0	1898	0.425	100	5.2	LOS A	0.0	0.0	Short	60	0.0	NA
Lane 2	733	2.0	733	2.0	1995	0.367	100	0.0	LOS A	0.0	0.0	Full	80	0.0	0.0
Approach	1540	2.0	1540	2.0		0.425		2.7	NA	0.0	0.0				
West: McPhilips Rd (West)															
Lane 1	13	2.0	13	2.0	1345	0.009	100	8.1	LOS A	0.0	0.1	Full	500	0.0	0.0
Approach	13	2.0	13	2.0		0.009		8.1	LOS A	0.0	0.1				
All Vehicles	2465	2.0	2465	2.0		0.425		2.0	NA	0.0	0.1				

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

Lane LOS values are based on average delay per lane.

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

6 Lane under-utilisation due to downstream effects

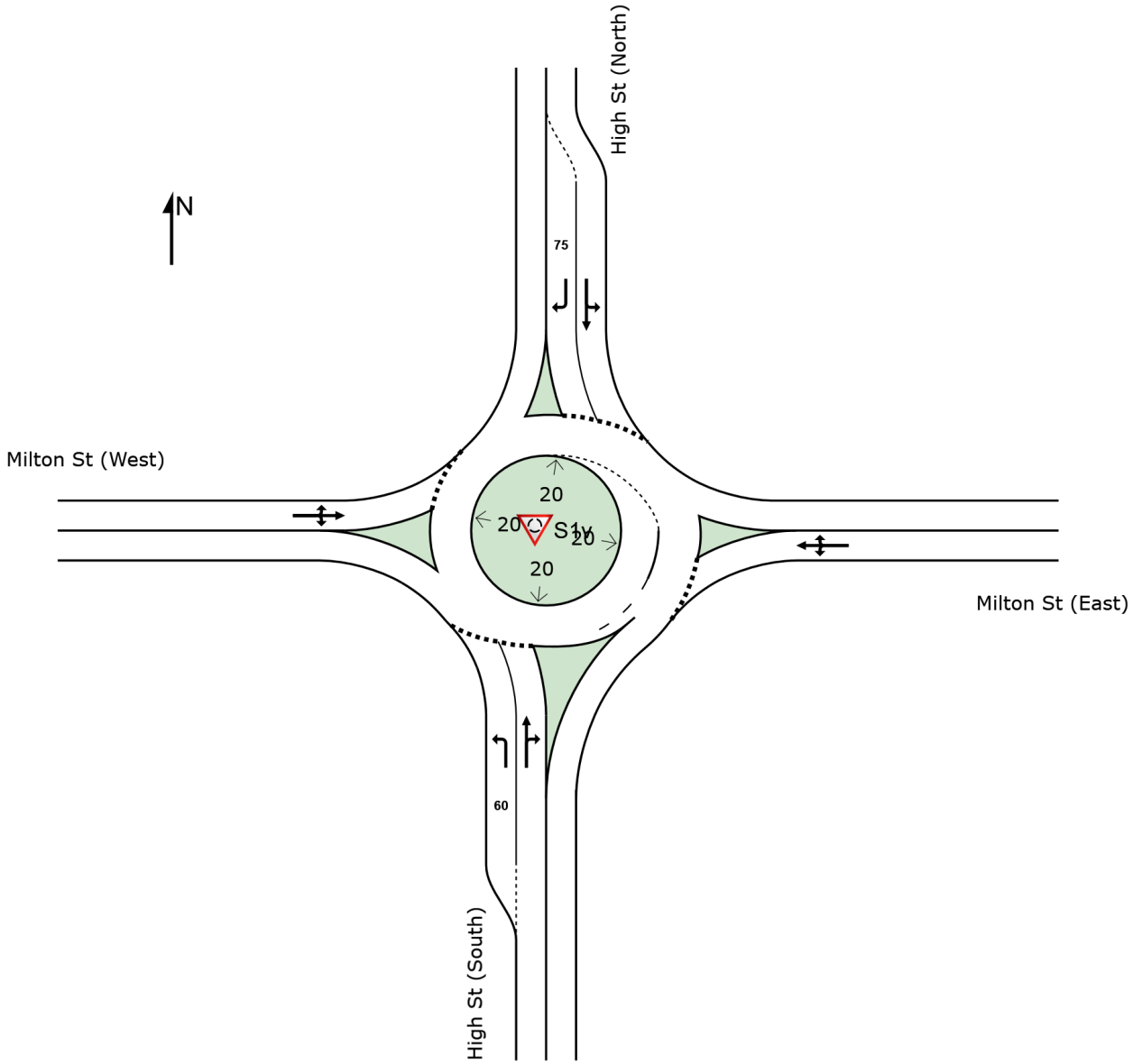
Site: S1v [High St / Milton St_PM_Op3a_v1 (100,0,0) (Site Folder: General)]

Network: 34 [2051 PM Peak_Op3a_v1 (100,0,0) (Network Folder: Future Year 2051 - with pope roundabout)]

High St / Milton St
Site Category: (None)
Roundabout

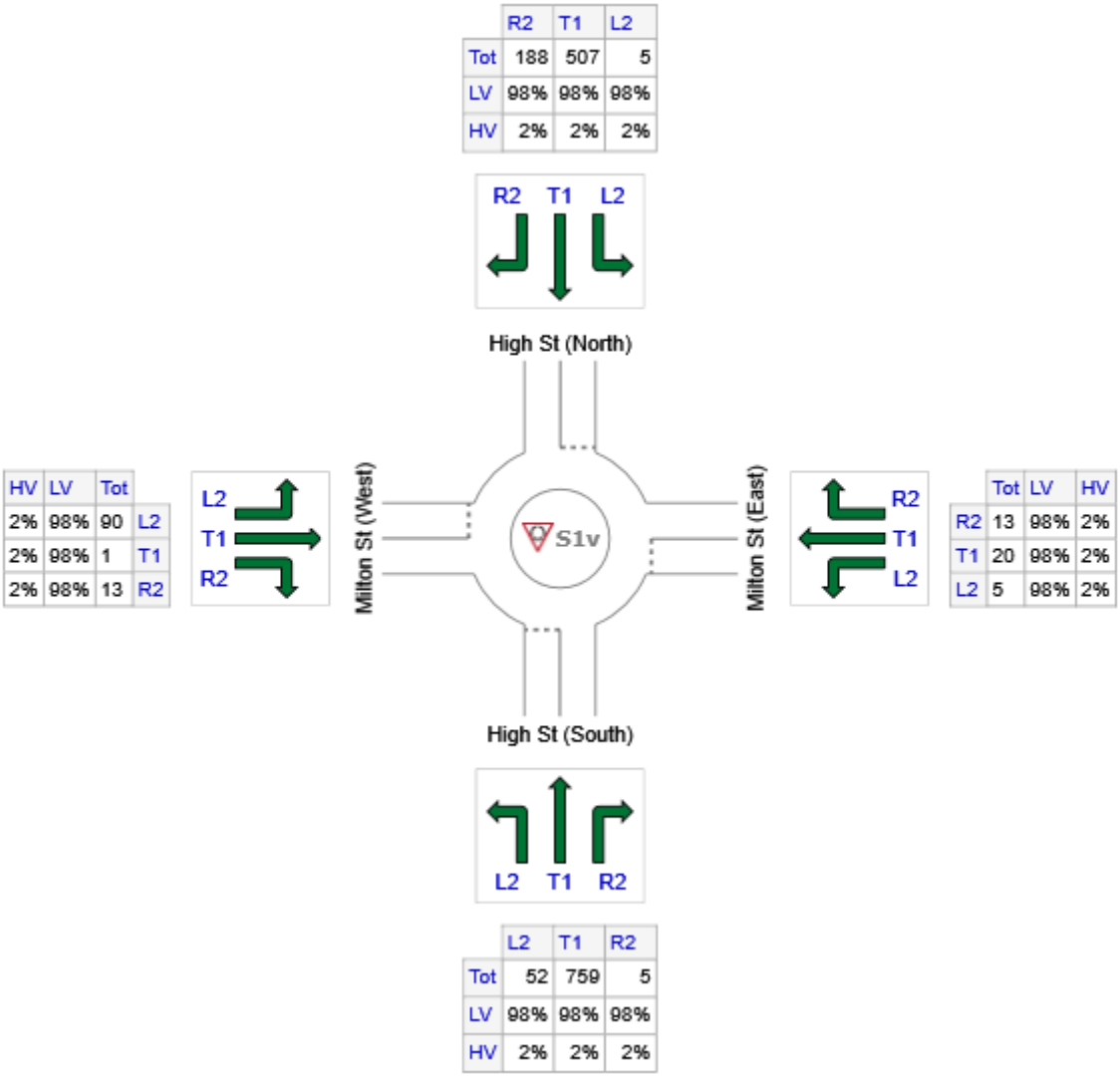
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Volumes

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: High St (South)	816	800	16
E: Milton St (East)	38	37	1
N: High St (North)	700	686	14
W: Milton St (West)	104	102	2
Total	1658	1625	33

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: High St (South)															
Lane 1	55	2.0	55	2.0	951	0.058	100	5.6	LOS A	0.1	0.7	Short	60	0.0	NA
Lane 2[d]	804	2.0	804	2.0	1455	0.553	100	5.6	LOS A	1.6	11.7	Full	215	0.0	0.0
Approach	859	2.0	859	2.0		0.553		5.6	LOS A	1.6	11.7				
East: Milton St (East)															
Lane 1[d]	40	2.0	40	2.0	796	0.050	100	8.3	LOS A	0.1	0.5	Full	500	0.0	0.0
Approach	40	2.0	40	2.0		0.050		8.3	LOS A	0.1	0.5				
North: High St (North)															
Lane 1[d]	539	2.0	539	2.0	1771	0.304	100	4.3	LOS A	1.0	7.0	Full	215	0.0	0.0
Lane 2	198	2.0	198	2.0	1339	0.148	100	8.9	LOS A	0.4	2.7	Short	75	0.0	NA
Approach	737	2.0	737	2.0		0.304		5.5	LOS A	1.0	7.0				
West: Milton St (West)															
Lane 1[d]	109	2.0	109	2.0	745	0.147	100	12.7	LOS B	0.7	4.7	Full	500	0.0	0.0
Approach	109	2.0	109	2.0		0.147		12.7	LOS B	0.7	4.7				
All Vehicles	1745	2.0	1745	2.0		0.553		6.1	LOS A	1.6	11.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

Site: S2 [High St / Pope St_PM_Op3a_v1 (100,0,0) (Site Folder: General)]

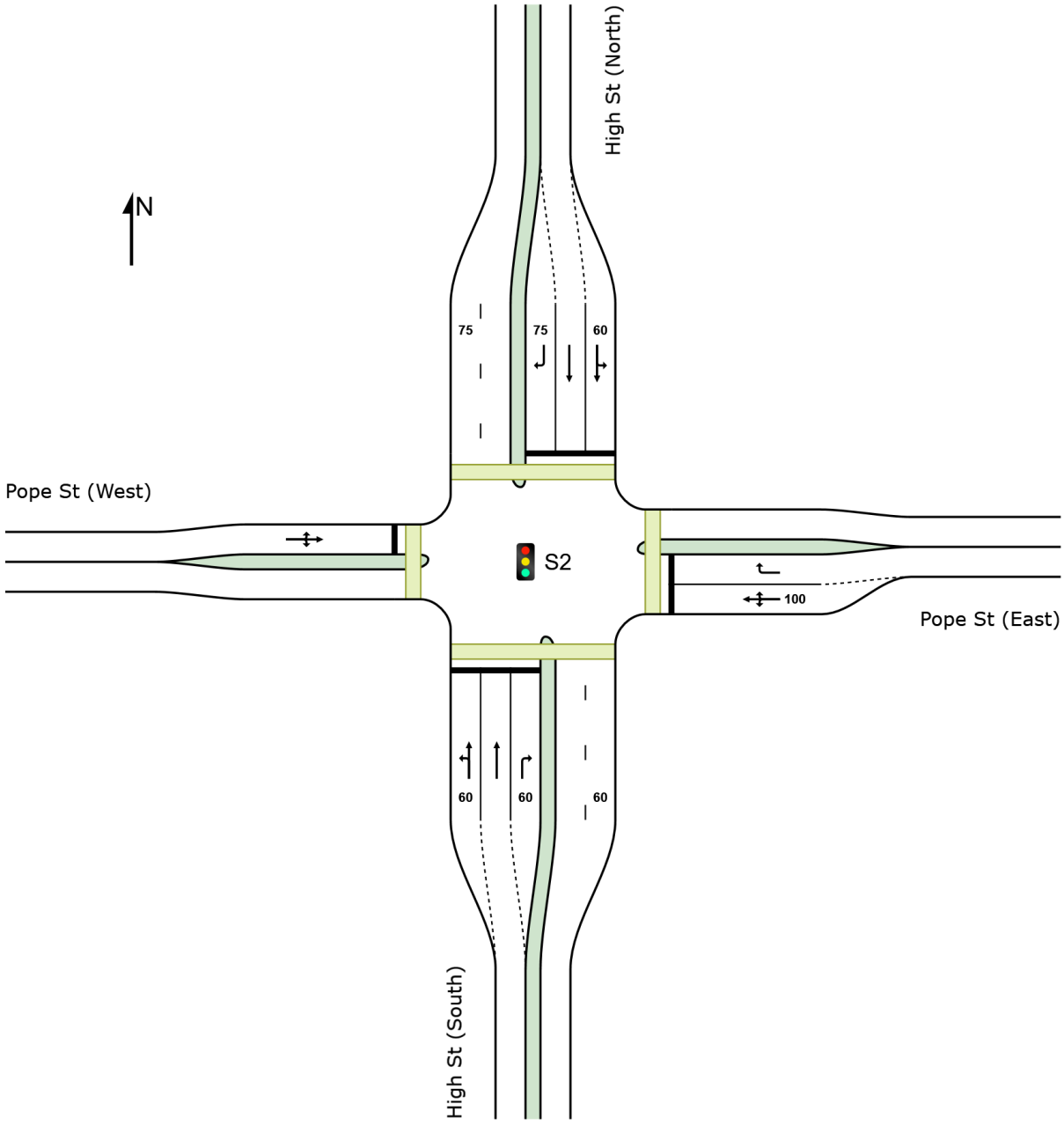
Network: 34 [2051 PM Peak_Op3a_v1 (100,0,0) (Network Folder: Future Year 2051 - with pope roundabout)]

High St / Pope St
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Split phase signle diamond - Import
Input Phase Sequence: A, B, C, D, D1*, D2*
Output Phase Sequence: A, B, C, D, D1*
Reference Phase: Phase A
Offset: NA
(* Variable Phase)

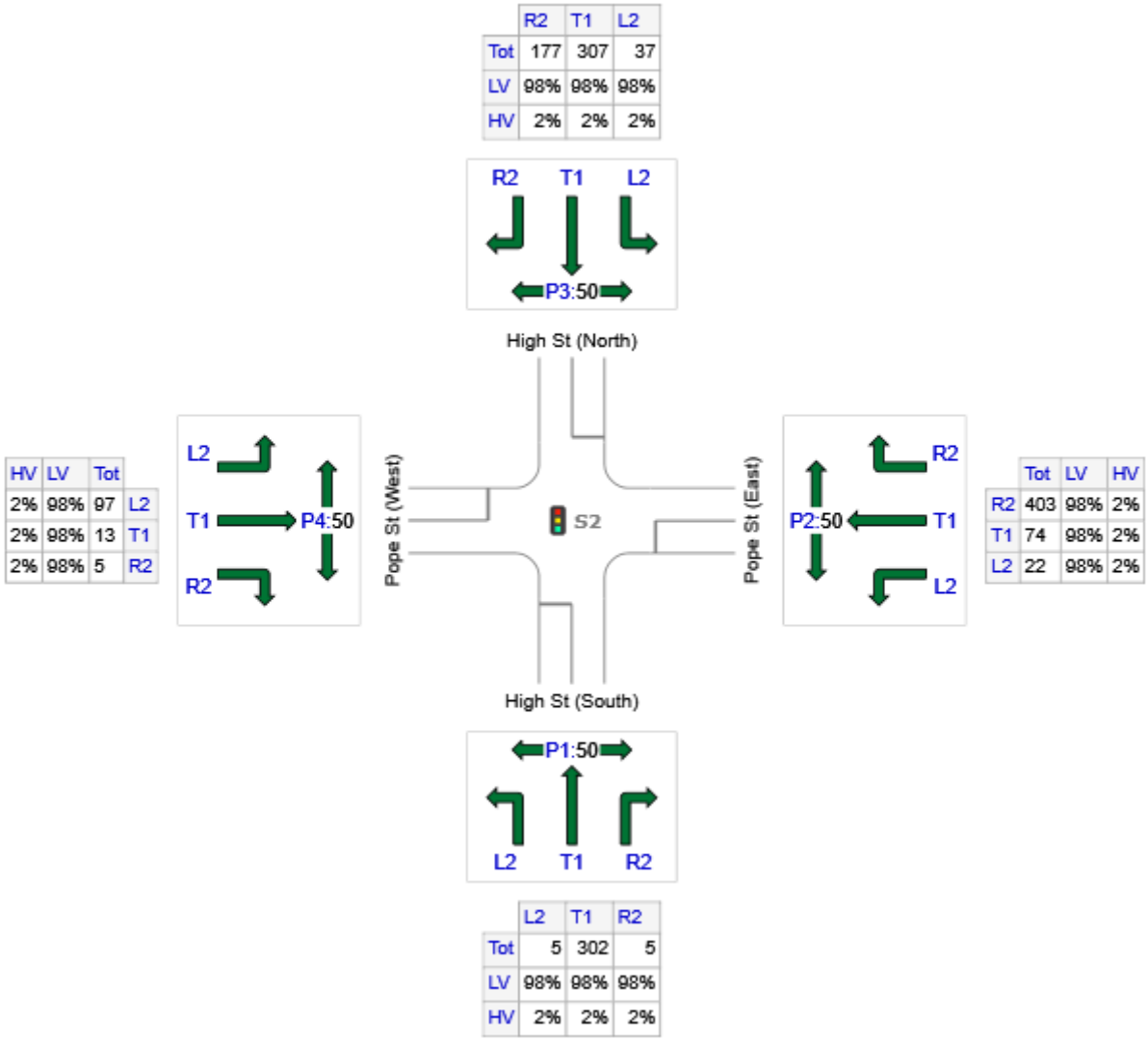
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Volumes

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: High St (South)	312	306	6
E: Pope St (East)	499	489	10
N: High St (North)	521	511	10
W: Pope St (West)	115	113	2
Total	1447	1418	29

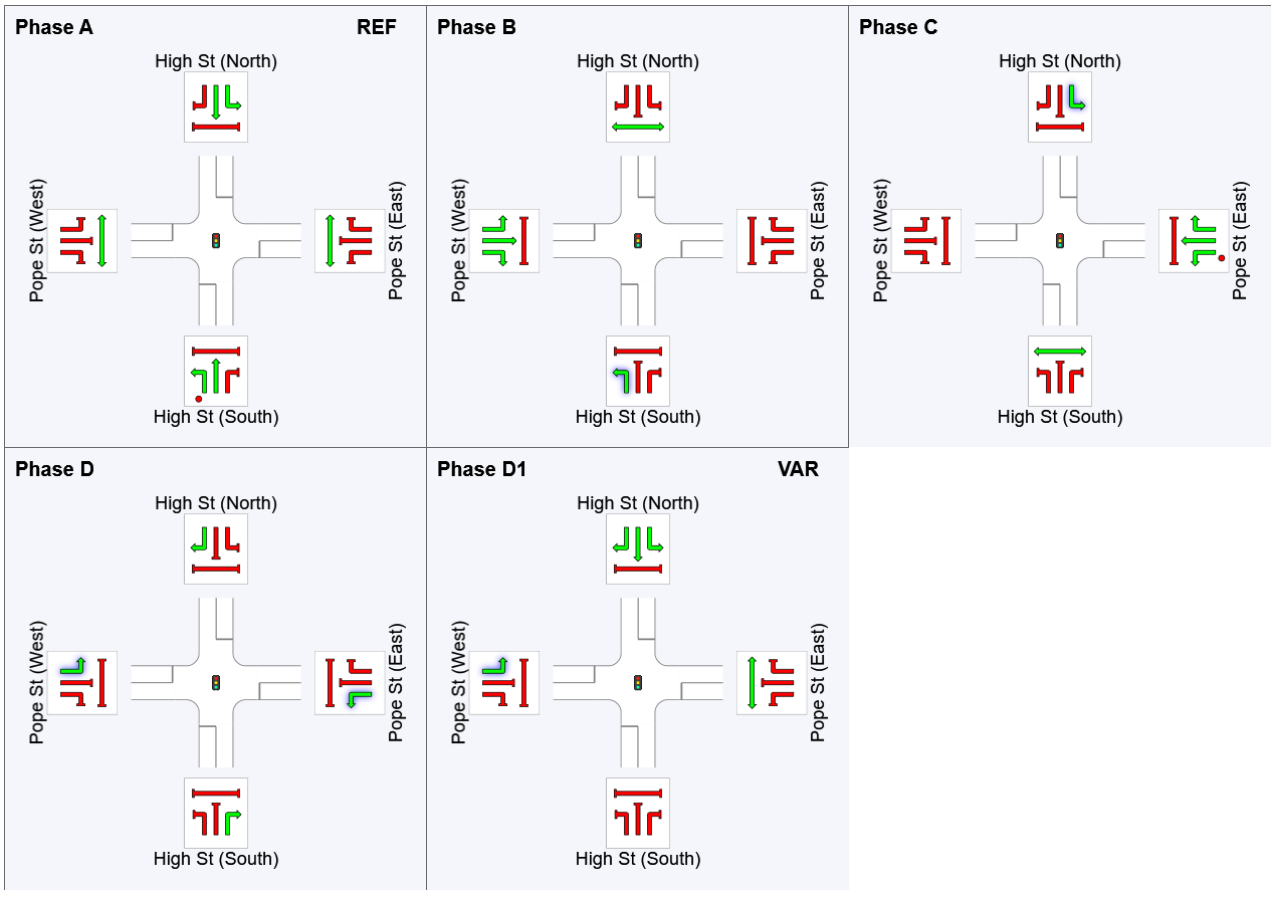
Phase Timing Summary

Phase	A	B	C	D	D1
Phase Change Time (sec)	0	19	44	72	84
Green Time (sec)	13	19	22	6	***
Phase Time (sec)	19	25	28	12	6
Phase Split	21%	28%	31%	13%	7%
Phase Frequency (%)	100.0	100.0	100.0	100.0	100.0

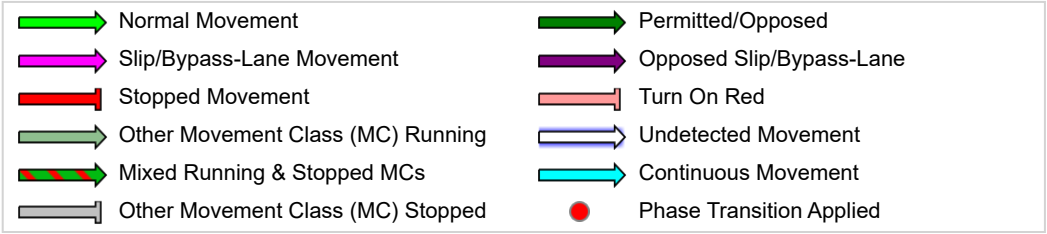
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

*** No green time has been calculated for this phase because the next phase starts during its intergreen time. This occurs with overlap phasing where there is no single movement connecting this phase to the next, or where the only such movement is a dummy movement with zero minimum green time specified. If a green time is required for this phase, specify a dummy movement with a non-zero minimum green time.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: High St (South)															
Lane 1	99	2.0	99	2.0	290	0.342	44[6]	37.3	LOS D	2.4	17.2	Short	60	0.0	NA
Lane 2	224	2.0	224	2.0	288	0.778	100	44.4	LOS D	6.3	45.1	Full	350	0.0	0.0
Lane 3	5	2.0	5	2.0	127	0.042	100	49.8	LOS D	0.1	1.0	Short	60	0.0	NA
Approach	328	2.0	328	2.0		0.778		42.3	LOS D	6.3	45.1				
East: Pope St (East)															
Lane 1	171	2.0	171	2.0	481	0.356	47[6]	31.3	LOS C	3.7	26.2	Short	100	0.0	NA
Lane 2	354	2.0	354	2.0	464	0.764	100	42.7	LOS D	9.5	67.4	Full	500	0.0	0.0
Approach	525	2.0	525	2.0		0.764		39.0	LOS D	9.5	67.4				
North: High St (North)															
Lane 1	101	2.0	101	2.0	438	0.231	37[6]	24.8	LOS C	1.6	11.2	Short	60	0.0	NA
Lane 2	261	2.0	261	2.0	421	0.620	100	35.5	LOS D	6.5	46.4	Full	215	0.0	0.0
Lane 3	186	2.0	186	2.0	253	0.736	100	49.6	LOS D	5.2	37.1	Short	75	0.0	NA
Approach	548	2.0	548	2.0		0.736		38.3	LOS D	6.5	46.4				
West: Pope St (West)															
Lane 1	121	2.0	121	2.0	551	0.220	100	18.6	LOS B	1.4	10.2	Full	500	0.0	0.0
Approach	121	2.0	121	2.0		0.220		18.6	LOS B	1.4	10.2				
All Vehicles	1523	2.0	1523	2.0		0.778		37.8	LOS D	9.5	67.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

6 Lane under-utilisation due to downstream effects

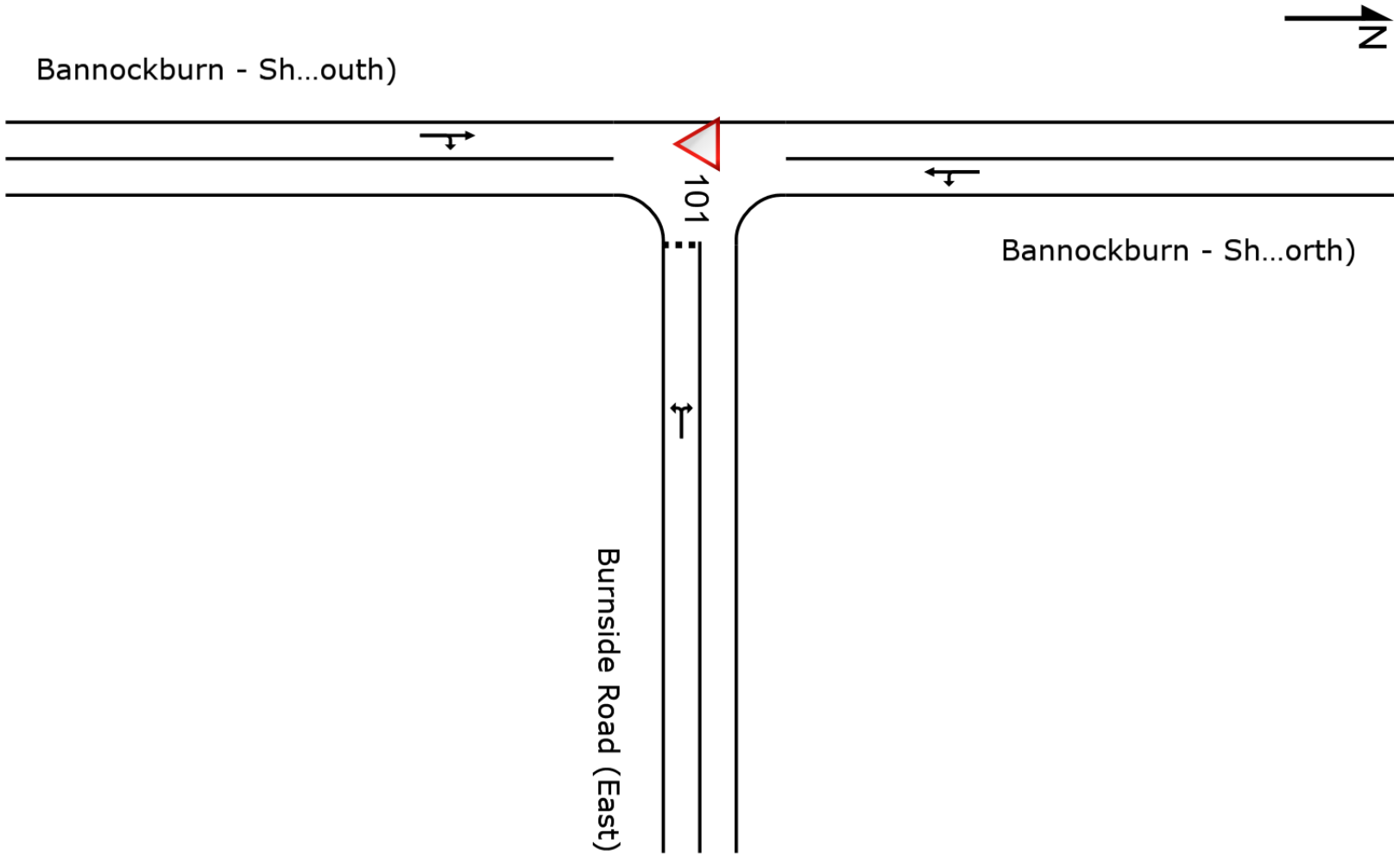
Site: 101 [High St / Burnside Rd PM_Op3a_v1(100,0,0) (Site Folder: General)]

Network: 34 [2051 PM Peak_Op3a_v1 (100,0,0) (Network Folder: Future Year 2051 - with pope roundabout)]

New Site
Site Category: (None)
Give-Way (Two-Way)

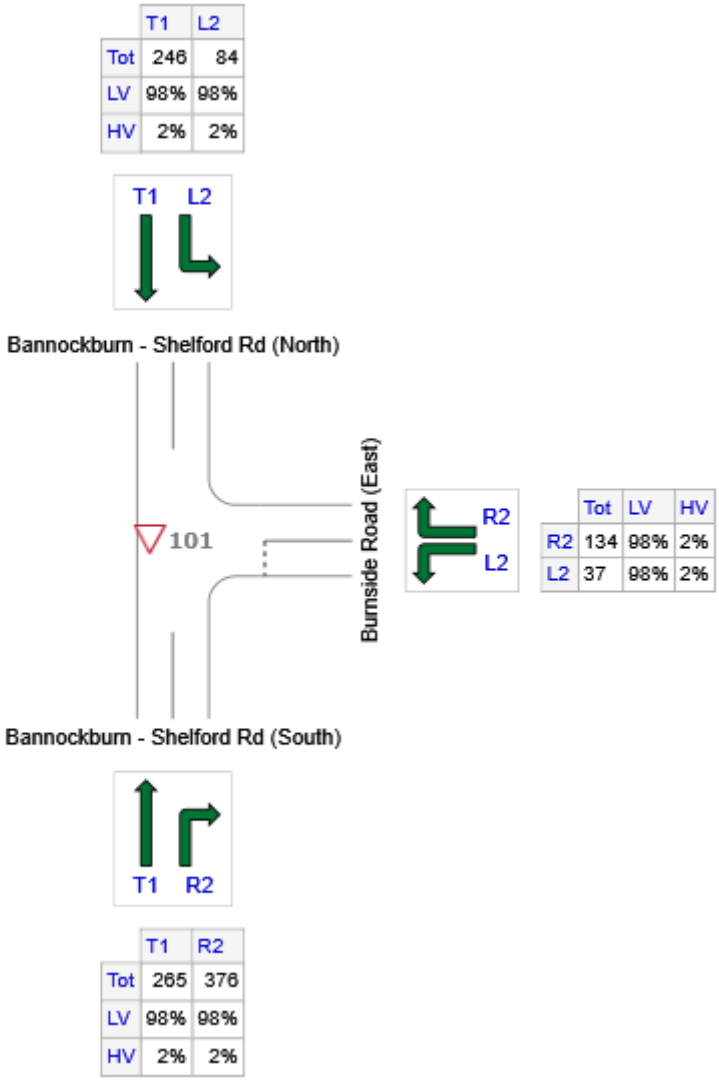
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


N
Bannockburn - Sh...outh)
101
Bannockburn - Sh...orth)
Burnside Road (East)

Input Volumes

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Bannockburn - Shelford Rd (South)	641	628	13
E: Burnside Road (East)	171	168	3
N: Bannockburn - Shelford Rd (North)	330	323	7
Total	1142	1119	23

Lane Use and Performance															
	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Bannockburn - Shelford Rd (South)															
Lane 1	675	2.0	675	2.0	1501	0.450	100	5.3	LOS A	1.5	10.9	Full	350	0.0	0.0
Approach	675	2.0	675	2.0		0.450		5.3	NA	1.5	10.9				
East: Burnside Road (East)															
Lane 1	180	2.0	180	2.0	508	0.355	100	12.9	LOS B	0.6	4.5	Full	500	0.0	0.0
Approach	180	2.0	180	2.0		0.355		12.9	LOS B	0.6	4.5				
North: Bannockburn - Shelford Rd (North)															
Lane 1	347	2.0	347	2.0	1900	0.183	100	1.4	LOS A	0.0	0.0	Full	350	0.0	0.0
Approach	347	2.0	347	2.0		0.183		1.4	NA	0.0	0.0				
All Vehicles	1202	2.0	1202	2.0		0.450		5.3	NA	1.5	10.9				

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

Lane LOS values are based on average delay per lane.

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

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

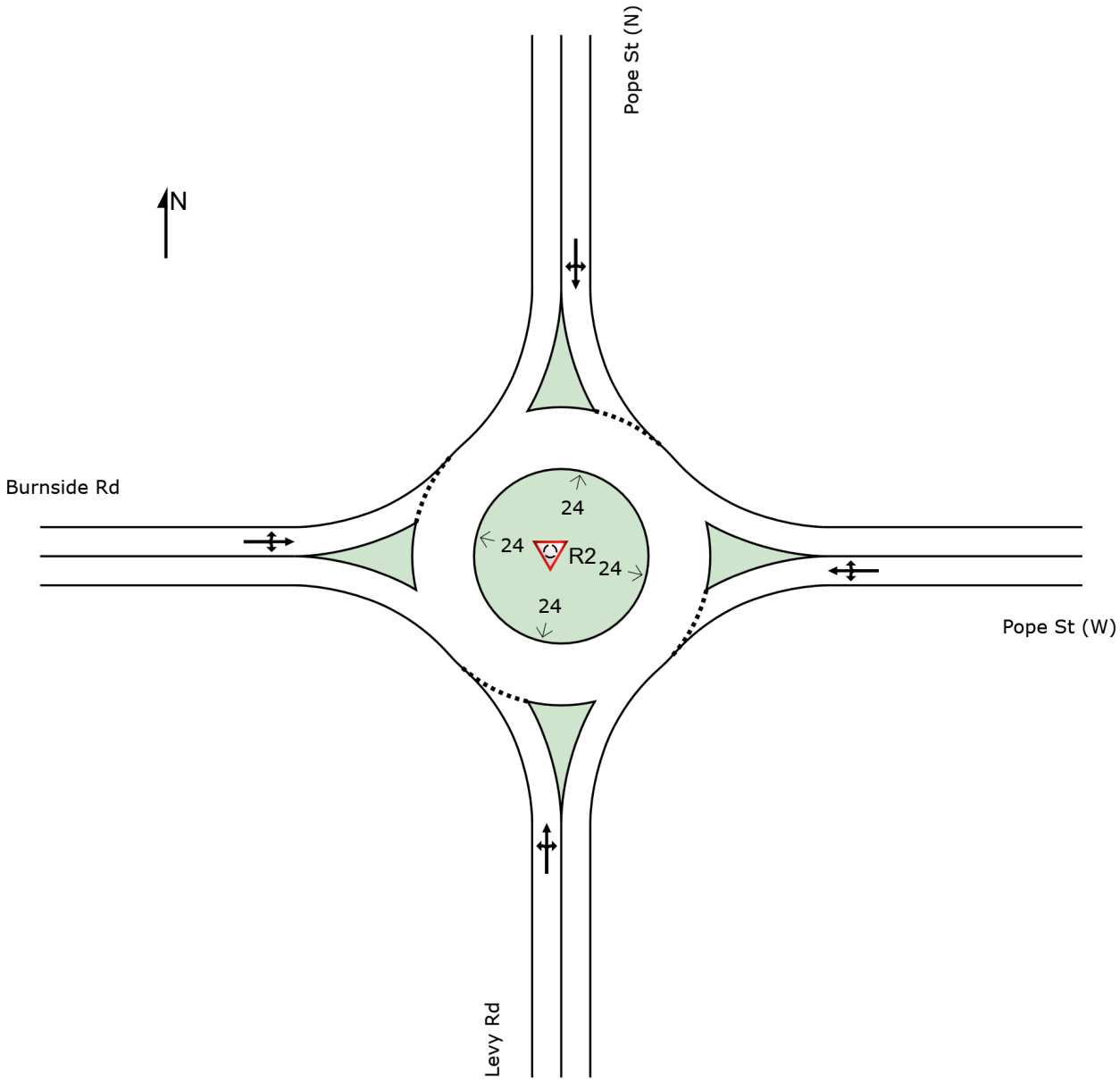
Site: R2 [Pope St / Levy Rd / Burnside Rd PM_Op3a_v1(100,0,0) (Site Folder: General)]

Network: 34 [2051 PM Peak_Op3a_v1 (100,0,0) (Network Folder: Future Year 2051 - with pope roundabout)]

Kelly Rd/Geelong Rd/ Clyde Rd
Site Category: (None)
Roundabout

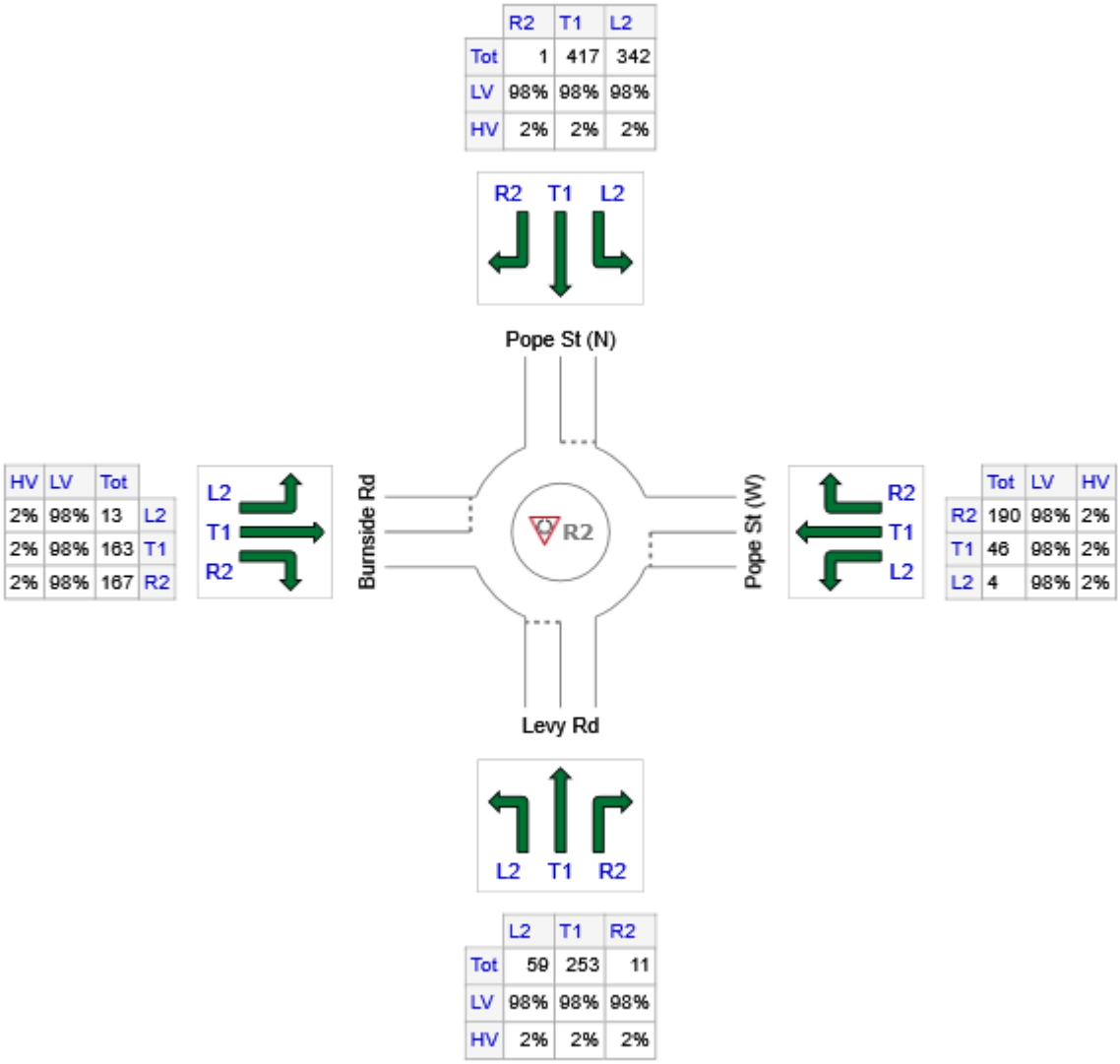
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Volumes

Volume Display Method: Total and %



	All MCs	Light Vehicles (LV)	Heavy Vehicles (HV)
S: Levy Rd	323	317	6
E: Pope St (W)	240	235	5
N: Pope St (N)	760	745	15
W: Burnside Rd	343	336	7
Total	1666	1633	33

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Levy Rd															
Lane 1[d]	340	2.0	340	2.0	1116	0.305	100	5.0	LOS A	0.8	6.0	Full	80	0.0	0.0
Approach	340	2.0	340	2.0		0.305		5.0	LOS A	0.8	6.0				
East: Pope St (W)															
Lane 1[d]	253	2.0	253	2.0	798	0.317	100	11.7	LOS B	0.9	6.3	Full	500	0.0	0.0
Approach	253	2.0	253	2.0		0.317		11.7	LOS B	0.9	6.3				
North: Pope St (N)															
Lane 1[d]	800	2.0	800	2.0	1047	0.764	100	10.2	LOS B	4.4	31.2	Full	350	0.0	0.0
Approach	800	2.0	800	2.0		0.764		10.2	LOS B	4.4	31.2				
West: Burnside Rd															
Lane 1[d]	361	2.0	361	2.0	954	0.378	100	9.4	LOS A	1.0	7.2	Full	500	0.0	0.0
Approach	361	2.0	361	2.0		0.378		9.4	LOS A	1.0	7.2				
All Vehicles	1754	2.0	1754	2.0		0.764		9.2	LOS A	4.4	31.2				

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

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

d Dominant lane on roundabout approach

Stantec

Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

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