Addendum to Planning Proposal – Additional Traffic Modelling

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BRIEF ON SIDRA MODELLING METHODS AND RESULTS FOR THE PROPOSED MIXED-USE DEVELOPMENT AT PARRAMATTA ROAD/COWPER STREET/GOOD STREET, GRANVILLE

Reference is made to your request to provide a brief regarding the methodology and results associated with the SIDRA Intersection traffic modelling undertaken in relation to the proposed mixed-use development at Parramatta Road/Cowper Street/Good Street, Granville. The SIDRA modelling was undertaken utilising information provided by the Roads and Maritime Services (RMS) for both the existing and future (2036) AM and PM peak commuter traffic volume cases. A similar set of SIDRA intersection modelling was completed and has been updated in response to comments and revised traffic volumes provided by the Roads and Maritime Services. Details regarding the modelling process and results are outlined below.

1 Traffic Volumes and Route Assignment

The package provided by the RMS included existing and future (2036) intersection turning movement volumes for the two intersections with Parramatta Road only, with midblock approach/exit volumes provided for the other two intersections. As a result, assumptions were required to assign turning movement volumes for these two intersections. The assumed turning volumes for each scenario are provided in the "17 06 29 SIDRA Volumes – Traffic Distribution.xlsx" spreadsheet file.

2 Traffic Network Configuration

Meetings and consultation with the RMS have been undertaken and in response to their comments and feedback, a single alternative traffic network configuration has been developed and modelled to demonstrate the impact of various changes to the geometric design of the existing road network. This alternative configuration includes the following changes to the existing intersections:

- An additional right turn lane on the western approach of the Parramatta Road/Bold Street intersection;
- Three lanes on the southern approach to the Parramatta Road/Good Street intersection (Left/Through/Through);
- Two southern approach lanes and two northern exit lanes on the Good Street/Cowper Street roundabout.

The two network layouts tested are shown diagrammatically in **Annexure As**.

3 Modelling Results

The results of each model are summarised in **Table 1** to **Table 4** on the following pages. The significant conclusions associated with the results are as follows:

- The intersections of Bold Street/Parramatta Road and Good Street/Parramatta Road are currently at saturation point in the PM peak hour under the existing traffic flow volumes, with existing degrees of saturation of 1.13 and 1.30 respectively. The addition of the estimated traffic generation of the development increases the degrees of saturation to 1.43 and 1.31 respectively based on the existing geometry of the intersections and road network. Both intersections are saturated in both the AM and PM peak under the 2036 traffic volumes.
- The intersection of Good Street/Parramatta Road is constrained by westbound capacity along Parramatta Road.
- The largest impact of the estimated traffic generation of the site is on the Cowper Street/Bold Street intersection, where right turns from Cowper Street (east) will be difficult to achieve due to queues extending south from the Bold Street/Parramatta Road junction.
- The alternative road network configuration tested will significantly reduce delays for traffic on all approaches to the Parramatta Road/Bold Street intersection;
- The addition of a lane to the southern approach to the Good Street/Parramatta Road intersection reduces delays for vehicles approaching the intersection from the south.
- The 2036 traffic volumes exceed the capacity of the existing traffic network along Parramatta Road, as reflected by the level of service of "F" found for both intersections in the future cases. Further consideration of upgrades to Parramatta Road are the responsibility of the Roads and Maritime Services, however it is suggested that additional continuous lanes along significant lengths of Parramatta Road are required to serve the future 2036 traffic volumes adequately.

Please contact Mr Craig M^{C}Laren or the undersigned on 8355 2440 should you require further information or assistance.

Yours faithfully
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TABLE 1: EXISTING INTERSECTIONS – EXISTING BASE VOLUMES

Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/vehicle)	Level of Service[3]	Control Type	Worst Movement	95th Percentile Queue
EXISTING PERFORMANCE							
Bold Street / Parramatta Rd	AM	0.80	19.1	**B**	Signals	RT from Bold Street (S)	25 veh (187.4m) Parramatta Rd (E)
	PM	1.13	129.8	**F**		LT from Bold Street (S)	30.1 veh (220.3m) Parramatta Rd (E)
Good St / Parramatta Rd	AM	0.73	16.5	**B**	Signals	LT from Good St (N)	20.8 veh (155.9m) Parramatta Rd (W)
	PM	1.30	554.2	**F**		LT from Parramatta Rd (E)	430.2 veh (3173.2m) Parramatta Rd (E)
Bold St / Cowper St	AM	0.21	1.3 (Worst: 60)	**N/A** (Worst: E)	Give Way	RT from Cowper St (E)	8.1 veh (59.2m) Bold St (S)
	PM	0.40	1.9 (Worst: >70)	**N/A** (Worst: F)		RT from Cowper St (E)	176.7 veh (1290.8m) Bold St (S)
Good St / Cowper St	AM	0.30	4.7 (Worst: 10)	**A** (Worst: A)	Roundabout	RT from Cowper St (W)	2 veh (14.2m) Good St (S)
	PM	0.27	5.3 (Worst: 10.5)	**A** (Worst: A)		RT from Cowper (E)	1.5 veh (10.5m) Good St (N)
EXISTING + DEVELOPMENT							
Bold Street / Parramatta Rd	AM	0.84	19.9	**B**	Signals	RT from Bold Street (S)	26.6 veh (198.9m) Parramatta Rd (E)
	PM	1.43	379.4	**F**		LT from Bold Street (S)	30.1 veh (220.3m) Parramatta Rd (E)
Good St / Parramatta Rd	AM	0.81	18.2	**B**	Signals	LT from Good St (N)	23.3 veh (174.2m) Parramatta Rd (W)
	PM	1.31	568.5	**F**		LT from Parramatta Rd (E)	443.6 veh (3268.5m) Parramatta Rd (E)
Bold St / Cowper St	AM	0.24	1.7 (Worst: 68.7)	**N/A** (Worst: E)	Give Way	RT from Cowper St (E)	8.5 veh (62.3m) Bold St (S)
	PM	0.95	4.8 (Worst: >70)	**N/A** (Worst: F)		RT from Cowper St (E)	392.9 veh (2869.1m) Bold St (S)
Good St / Cowper St	AM	0.31	5 (Worst: 10.1)	**A** (Worst: A)	Roundabout	RT from Cowper St (W)	2.1 veh (15.2m) Good St (S)
	PM	0.28	5.4 (Worst: 10.6)	**A** (Worst: A)		RT from Cowper (E)	1.5 veh (11.1m) Good St (N)

NOTES:
(1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) Average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
(3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.
(4) No overall Level of Service is provided for Give Way and Stop controlled intersections as the low delays associated with the dominant movements skew the average delay of the intersection. The Level of Service of the worst approach is an indicator of the operation of the intersection, with a worse Level of Service corresponding to long delays and reduced safety outcomes for that approach.

TABLE 2: EXISTING INTERSECTIONS – 2036 BASE VOLUMES

Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/vehicle)	Level of Service[3]	Control Type	Worst Movement	95th Percentile Queue
2036 PERFORMANCE							
Bold Street / Parramatta Rd	AM	1.68	625.4	**F**	Signals	LT from Bold Street (S)	30.3 veh (220.3m) Parramatta Rd (E)
	PM	2.91	1706.9	**F**		LT from Bold Street (S)	35.9 veh (253.3m) Parramatta Rd (W)
Good St / Parramatta Rd	AM	1.19	354.1	**F**	Signals	LT from Parramatta Rd (E)	297.4 veh (2191.4m) Parramatta Rd (E)
	PM	1.55	1016.7	**F**		LT from Parramatta Rd (E)	763 veh (5612.6m) Parramatta Rd (E)
Bold St / Cowper St	AM	0.51	2.2 (Worst: >70)	**N/A** (Worst: F)	Give Way	RT from Cowper St (E)	593.7 veh (4335.5m) Bold St (S)
	PM	0.98	4.2 (Worst: >70)	**N/A** (Worst: F)		RT from Cowper St (E)	949.1 veh (6931.6m) Bold St (S)
Good St / Cowper St	AM	0.44	5.7 (Worst: 11)	**A** (Worst: A)	Roundabout	RT from Cowper St (W)	3.1 veh (22.3m) Good St (S)
	PM	0.44	6.1 (Worst: 12.9)	**A** (Worst: A)		RT from Cowper (E)	2.7 veh (19.3m) Good St (S)
2036 + DEVELOPMENT PERFORMANCE							
Bold Street / Parramatta Rd	AM	1.90	808.8	**F**	Signals	LT from Bold Street (S)	30.3 veh (220.3m) Parramatta Rd (E)
	PM	2.92	1703.8	**F**		LT from Bold Street (S)	44.6 veh (315.1m) Parramatta Rd (W)
Good St / Parramatta Rd	AM	1.20	415.4	**F**	Signals	LT from Parramatta Rd (E)	309.8 veh (2280.1m) Parramatta Rd (E)
	PM	1.56	1027.4	**F**		LT from Parramatta Rd (E)	778.4 veh (5721m) Parramatta Rd (E)
Bold St / Cowper St	AM	1.20	8.1 (Worst: >70)	**N/A** (Worst: F)	Give Way	RT from Cowper St (E)	691.3 veh (5048.5m) Bold St (S)
	PM	1.75	17.5 (Worst: >70)	**N/A** (Worst: F)		RT from Cowper St (E)	949.9 veh (6937.5m) Bold St (S)
Good St / Cowper St	AM	0.45	5.9 (Worst: 11.2)	**A** (Worst: A)	Roundabout	RT from Cowper St (W)	3.2 veh (23.1m) Good St (S)
	PM	0.44	6.3 (Worst: 13.1)	**A** (Worst: A)		RT from Cowper (E)	2.7 veh (19.8m) Good St (S)

TABLE 5: ALTERNATIVE INTERSECTION CONFIGURATION – EXISTING BASE VOLUMES

Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/vehicle)	Level of Service[3]	Control Type	Worst Movement	95th Percentile Queue
EXISTING PERFORMANCE							
Bold Street / Parramatta Rd	AM	0.72	18	**B**	Signals	RT from Bold Street (S)	21.1 veh (158.1m) Parramatta Rd (E)
	PM	0.83	27.2	**B**		RT from Bold Street (S)	30 veh (220.3m) Parramatta Rd (E)
Good St / Parramatta Rd	AM	0.57	15.6	**B**	Signals	LT from Good St (N)	21.5 veh (160.7m) Parramatta Rd (W)
	PM	1.30	547.1	**F**		LT from Parramatta Rd (E)	427.7 veh (3154.5m) Parramatta Rd (E)
Bold St / Cowper St	AM	0.21	1.3 (Worst: 65.5)	**N/A** (Worst: E)	Give Way	RT from Cowper St (E)	11.1 veh (81m) Bold St (S)
	PM	0.41	1.9 (Worst: >70)	**N/A** (Worst: F)		RT from Cowper St (E)	20.5 veh (149.9m) Bold St (S)
Good St / Cowper St	AM	0.18	4.7 (Worst: 9.6)	**A** (Worst: A)	Roundabout	RT from Cowper St (W)	1.1 veh (7.8m) Good St (S)
	PM	0.27	5.2 (Worst: 10.5)	**A** (Worst: A)		RT from Cowper (E)	1.4 veh (10.4m) Good St (N)
EXISTING + DEVELOPMENT PERFORMANCE							
Bold Street / Parramatta Rd	AM	0.74	18.4	**B**	Signals	RT from Bold Street (S)	22 veh (164.1m) Parramatta Rd (E)
	PM	0.85	27.8	**B**		RT from Bold Street (S)	30.1 veh (220.3m) Parramatta Rd (E)
Good St / Parramatta Rd	AM	0.64	16.4	**B**	Signals	LT from Good St (N)	22.1 veh (165.5m) Parramatta Rd (W)
	PM	1.31	562.9	**F**		LT from Parramatta Rd (E)	443.6 veh (3268.5m) Parramatta Rd (E)
Bold St / Cowper St	AM	0.26	1.7 (Worst: >70)	**N/A** (Worst: F)	Give Way	RT from Cowper St (E)	10.9 veh (79.5m) Bold St (S)
	PM	0.56	3.6 (Worst: >70)	**N/A** (Worst: F)		RT from Cowper St (E)	20.8 veh (151.7m) Bold St (S)
Good St / Cowper St	AM	0.19	4.9 (Worst: 9.7)	**A** (Worst: A)	Roundabout	RT from Cowper St (W)	1.2 veh (8.5m) Good St (S)
	PM	0.28	5.3 (Worst: 10.6)	**A** (Worst: A)		RT from Cowper (E)	1.5 veh (11m) Good St (N)

TABLE 6: ALTERNATIVE INTERSECTION CONFIGURATION – 2036 BASE VOLUMES

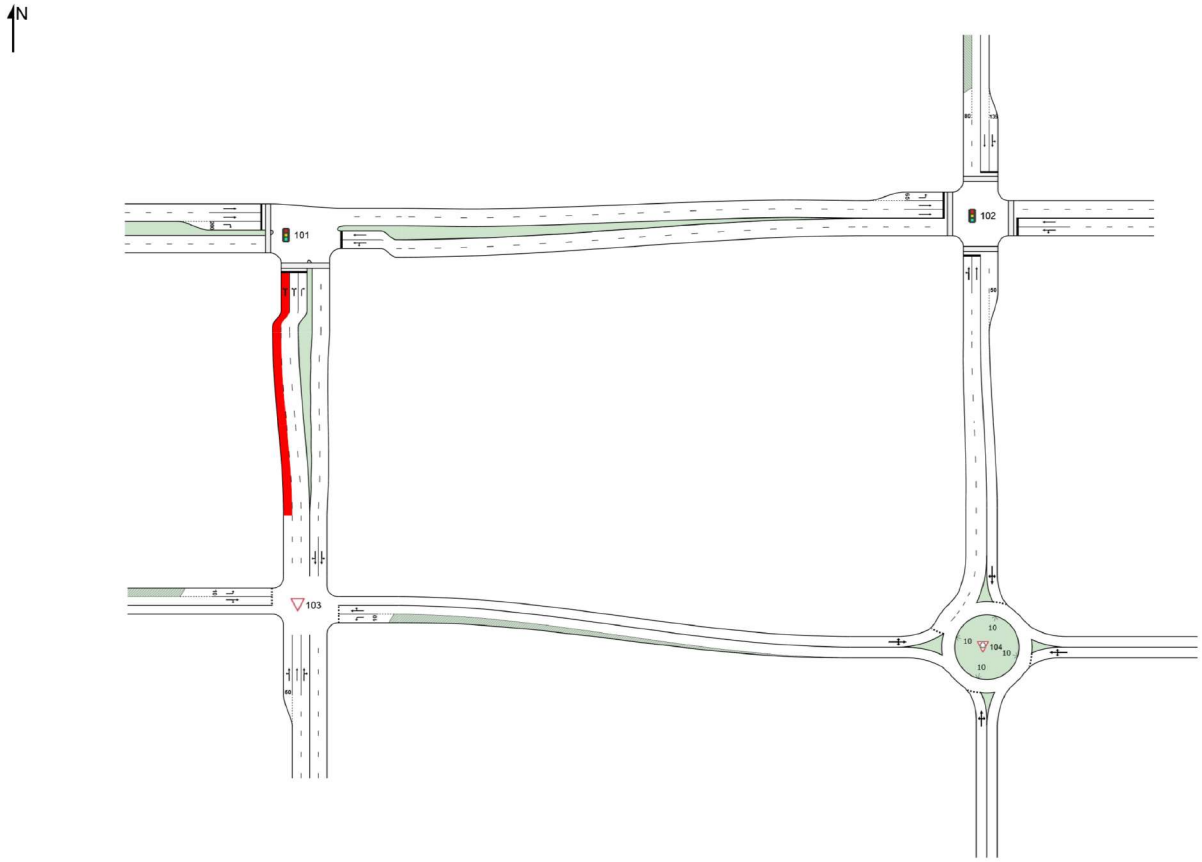
Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/vehicle)	Level of Service[3]	Control Type	Worst Movement	95th Percentile Queue
2036 PERFORMANCE							
Bold Street / Parramatta Rd	AM	0.89	28	**B**	Signals	RT from Bold Street (S)	30.3 veh (220.3m) Parramatta Rd (E)
	PM	0.89	29.3	**C**		RT from Bold Street (S)	30.1 veh (220.3m) Parramatta Rd (E)
Good St / Parramatta Rd	AM	1.19	346.1	**F**	Signals	LT from Parramatta Rd (E)	297.4 veh (2191.4m) Parramatta Rd (E)
	PM	1.55	982.2	**F**		LT from Parramatta Rd (E)	763 veh (5612.6m) Parramatta Rd (E)
Bold St / Cowper St	AM	0.51	2.2 (Worst: >70)	**N/A** (Worst: F)	Give Way	RT from Cowper St (E)	54.4 veh (394m) Bold St (S)
	PM	1.02	4.6 (Worst: >70)	**N/A** (Worst: F)		RT from Cowper St (E)	55.1 veh (399.1m) Bold St (S)
Good St / Cowper St	AM	0.30	5.5 (Worst: 10.3)	**A** (Worst: A)	Roundabout	RT from Cowper (E)	1.6 veh (11.5m) Good St (S)
	PM	0.44	6 (Worst: 12.9)	**A** (Worst: A)		RT from Cowper (E)	2.6 veh (18.6m) Good St (N)
2036 + DEVELOPMENT PERFORMANCE							
Bold Street / Parramatta Rd	AM	0.91	28.5	**C**	Signals	RT from Bold Street (S)	30.3 veh (220.3m) Parramatta Rd (E)
	PM	0.93	30.6	**C**		RT from Bold Street (S)	30.1 veh (220.3m) Parramatta Rd (E)
Good St / Parramatta Rd	AM	1.20	363.4	**F**	Signals	LT from Parramatta Rd (E)	309.8 veh (2280.1m) Parramatta Rd (E)
	PM	1.56	989.2	**F**		LT from Parramatta Rd (E)	778.4 veh (5721m) Parramatta Rd (E)
Bold St / Cowper St	AM	1.19	8 (Worst: >70)	**N/A** (Worst: F)	Give Way	RT from Cowper St (E)	56 veh (405.2m) Bold St (S)
	PM	1.89	20.1 (Worst: >70)	**N/A** (Worst: F)		RT from Cowper St (E)	56.4 veh (408.4m) Bold St (S)
Good St / Cowper St	AM	0.31	5.6 (Worst: 10.4)	**A** (Worst: A)	Roundabout	RT from Cowper (E)	1.6 veh (11.6m) Good St (S)
	PM	0.44	6 (Worst: 13.1)	**A** (Worst: A)		RT from Cowper (E)	2.6 veh (19m) Good St (N)

ANNEXURE A: SIDRA INTERSECTION LAYOUTS

NETWORK LAYOUT

Network: N101 [AM]

Granville - Existing Layout



SITES IN NETWORK	
Site ID	**Site Name**
101	Parramatta / Bold
102	Parramatta / Good
103	Bold / Cowper
104	Good / Cowper

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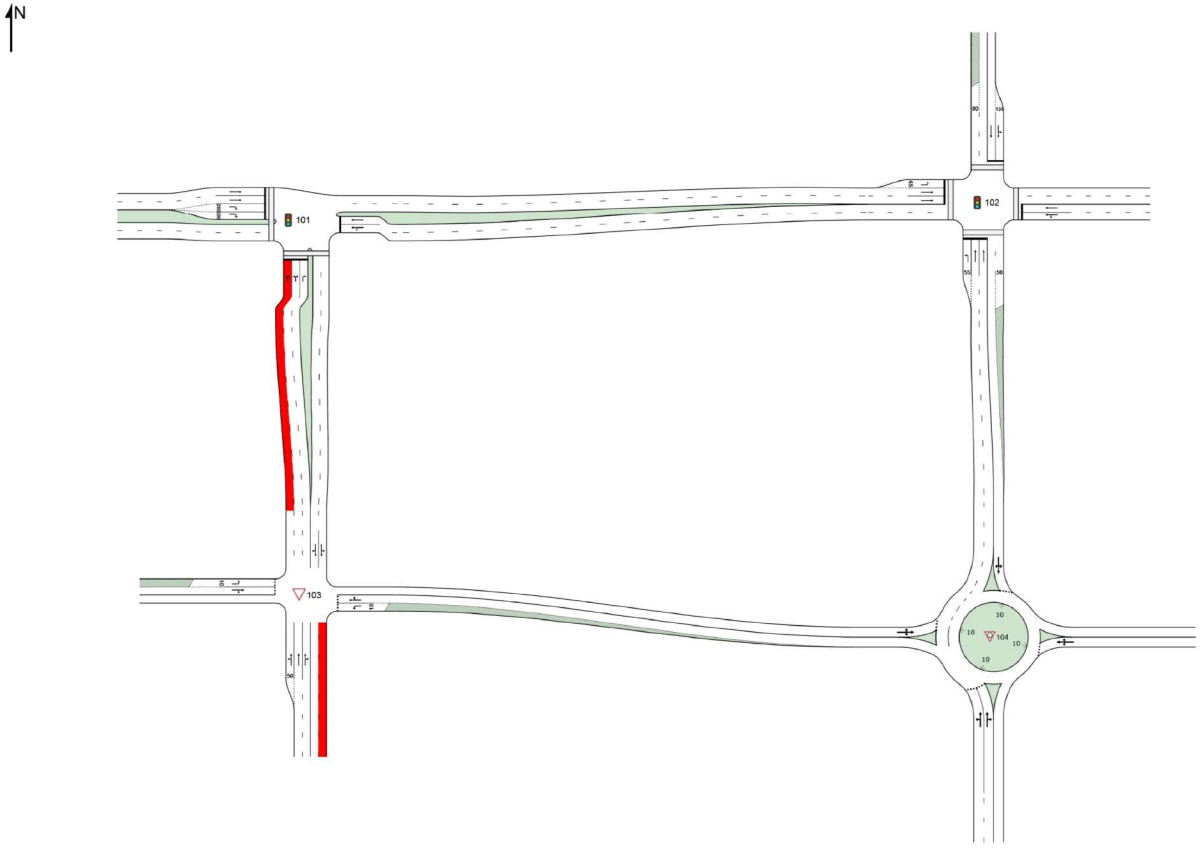
NETWORK LAYOUT

Network: N101 [AM]

Granville - Alternative Design



SITES IN NETWORK	
Site ID	**Site Name**
101	Parramatta / Bold
102	Parramatta / Good
103	Bold / Cowper
104	Good / Cowper

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LANE SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

Parramatta Road / Bold Street
Existing Intersection
2036 + Development Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	138	0.002	100	53.2	LOS D	0.0	0.2	Full	65	-9.0 N3	0.0
Lane 2	850	1.0	848	1.0	446	1.900	100	3287.6	LOS F	15.0 N4	106.1 N4	Full	65	-1.7 N3	50.0
Lane 3	312	1.0	312	1.0	204	1.530	81 5	1958.1	LOS F	15.0 N4	106.1 N4	Full	65	-11.6 N3	50.0
Approach	1163	1.0	1160 N1	1.0		1.900		2929.7	LOS F	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	746	4.5	631	4.5	709	0.890	100	40.4	LOS C	30.3 N4	220.3 N4	Full	135	0.0	50.0
Lane 2	749	8.0	632	7.9	711	0.890	100	37.7	LOS C	29.5 N4	220.3 N4	Full	135	0.0	50.0
Approach	1495	6.3	1263 N1	6.2		0.890		39.0	LOS C	30.3	220.3				
West: Parramatta Rd (W)															
Lane 1	628	8.0	628	8.0	1247	0.504	100	0.6	LOS A	1.4	10.7	Full	500	-13.2 N3	0.0
Lane 2	640	8.0	640	8.0	1270	0.504	100	0.6	LOS A	1.5	10.9	Full	500	-11.6 N3	0.0
Lane 3	598	1.0	598	1.0	737	0.811	100	33.1	LOS C	22.8	160.9	Short	200	0.0	NA
Approach	1865	5.8	1865	5.8		0.811		11.0	LOS A	22.8	160.9				
Intersection	4523	4.7	4288 N1	5.0		1.900		808.8	LOS F	30.3	220.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 23 (maximum specified: 30)

5 Lane under-utilisation found by the program
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

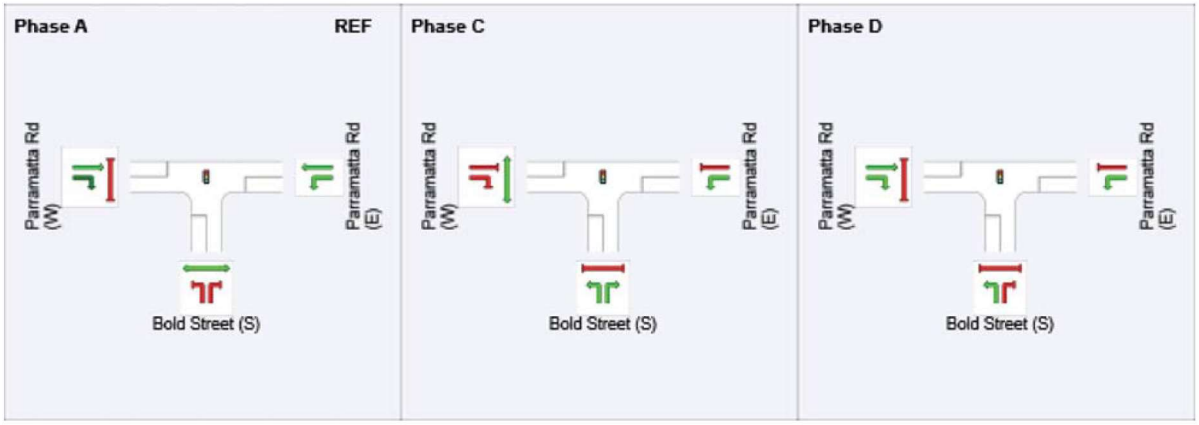
Parramatta Road / Bold Street
Existing Intersection
2036 + Development Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	52	73
Green Time (sec)	46	15	41
Phase Time (sec)	52	21	47
Phase Split	43%	18%	39%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [AM Bold / Cowper]

Network: N101 [AM]

Bold Street / Cowper Street
Existing Intersection
2036 + Development Conditions
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	448	7.3	448	7.3	1859	0.241	100	0.2	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	455	5.1	455	5.1	1888	0.241	100	0.0	LOS A	691.3 N5	5048.5 N5	Full	500	0.0	100.0 N5
Lane 3	324	4.0	324	4.0	1343	0.241	100	4.4	LOS A	265.0	1918.8	Full	500	0.0	100.0
Approach	1227	5.6	1227	5.6		0.241		1.2	NA	691.3	5048.5				
East: Cowper St (E)															
Lane 1	52	0.0	48	0.0	1011	0.048	100	5.9	LOS A	0.2	1.4	Short (P)	10	0.0	NA
Lane 2	12	0.0	11	0.0	9	1.195	100	1279.2	LOS F	6.4	45.1	Full	145	-48.9 N3	0.0
Approach	64	0.0	60 N1	0.0		1.195		246.6	LOS F	6.4	45.1				
North: Bold St (N)															
Lane 1	505	3.3	476	3.5	1876	0.254	100	1.5	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	466	4.9	439	5.2	1729	0.254	100	1.5	LOS A	0.5	3.5	Full	65	0.0	0.0
Approach	971	4.1	916 N1	4.3		0.254		1.5	NA	0.5	3.5				
West: Cowper St (W)															
Lane 1	4	0.0	4	0.0	829	0.004	100	6.6	LOS A	0.0	0.1	Short (P)	10	0.0	NA
Lane 2	2	0.0	2	0.0	20	0.076	100	165.9	LOS F	0.2	1.3	Full	80	0.0	0.0
Approach	5	0.0	5	0.0		0.076		54.4	LOS D	0.2	1.3				
Intersection	2267	4.8	2207 N1	4.9		1.195		8.1	NA	691.3	5048.5				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 23 (maximum specified: 30)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [AM Good / Cowper]

Network: N101 [AM]

Good Street / Cooper Street
Existing Intersection
2036 + Development Conditions
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	439	4.2	439	4.2	985	0.445	100	5.2	LOS A	3.2	23.1	Full	500	-10.5[N3]	0.0
Approach	439	4.2	439	4.2		0.445		5.2	LOS A	3.2	23.1				
East: Cowper (E)															
Lane 1[d]	50	0.0	50	0.0	615	0.081	100	8.8	LOS A	0.4	2.6	Full	500	-33.3[N3]	0.0
Approach	50	0.0	50	0.0		0.081		8.8	LOS A	0.4	2.6				
North: Good St (N)															
Lane 1[d]	408	2.9	372	3.1	1186	0.314	100	5.2	LOS A	1.6	11.5	Full	60	-8.7[N3]	0.0
Approach	408	2.9	372[N1]	3.1		0.314		5.2	LOS A	1.6	11.5				
West: Cowper St (W)															
Lane 1[d]	205	0.0	196	0.0	705	0.278	100	8.3	LOS A	1.5	10.4	Full	145	-10.5[N3]	0.0
Approach	205	0.0	196[N1]	0.0		0.278		8.3	LOS A	1.5	10.4				
Intersection	1101	2.7	1057[N1]	2.9		0.445		5.9	LOS A	3.2	23.1				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 23 (maximum specified: 30)

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

Parramatta Road / Good Street
Existing Intersection
2036 + Development Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	173	0.8	170	0.8	310	0.549	47[6]	50.8	LOS D	9.2	64.8	Full	60	-15.8[N3]	12.0
Lane 2	437	1.0	429	1.0	371	1.156	100	615.7	LOS F	13.9[N]4	97.9[N4]	Full	60	0.0	50.0
Approach	610	0.9	599[N1]	1.0		1.156		455.2	LOS F	13.9	97.9				
East: Parramatta Rd (E)															
Lane 1	902	6.0	902	6.0	752	1.200	100	742.0	LOS F	309.8	2280.1	Full	500	-42.8[N3]	100.0
Lane 2	788	8.0	788	8.0	656	1.200	100	741.2	LOS F	271.0	2027.1	Full	500	-50.0[N3]	100.0
Approach	1690	6.9	1690	6.9		1.200		741.7	LOS F	309.8	2280.1				
North: Good St (N)															
Lane 1	412	0.0	412	0.0	356	1.156	100	621.3	LOS F	117.3	820.9	Short	135	0.0	NA
Lane 2	181	0.0	181	0.0	374	0.483	42[5]	48.8	LOS D	9.5	66.7	Full	500	0.0	50.6[8]
Approach	592	0.0	592	0.0		1.156		446.7	LOS F	117.3	820.9				
West: Parramatta Rd (W)															
Lane 1	20	0.0	19	0.0	1315	0.014	100	11.0	LOS A	0.3	2.2	Short	65	0.0	NA
Lane 2	770	8.0	719	8.5	1300[1]	0.553	100	9.2	LOS A	19.7	147.8	Full	135	0.0	13.2
Lane 3	776	8.0	723	8.5	1309	0.553	100	8.9	LOS A	19.3	145.2	Full	135	0.0	11.6
Approach	1566	7.9	1461[N1]	8.4		0.553		9.0	LOS A	19.7	147.8				
Intersection	4458	5.5	4341[N1]	5.7		1.200		415.4	LOS F	309.8	2280.1				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 23 (maximum specified: 30)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

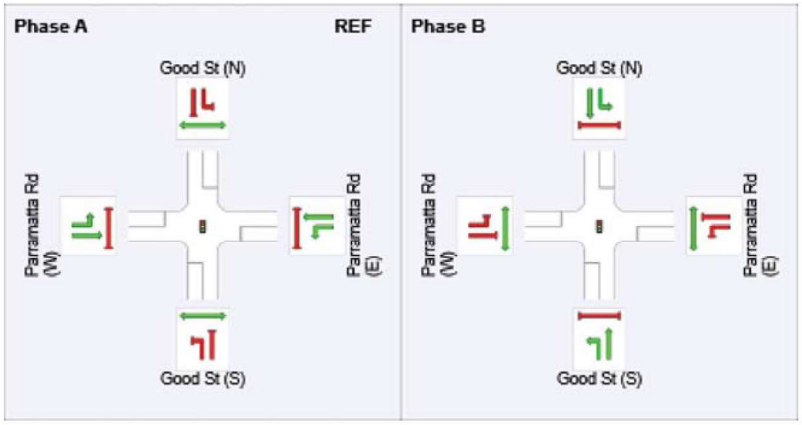
Parramatta Road / Good Street
Existing Intersection
2036 + Development Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	110	81
Green Time (sec)	85	23
Phase Time (sec)	91	29
Phase Split	76%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

Parramatta Road / Bold Street
Existing Intersection
2036 + Development Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	98	0.002	100	59.6	LOS E	0.0	0.2	Full	65	0.0	0.0
Lane 2	848	1.0	843	1.0	288	2.924	100	6986.9	LOS F	15.0 N4	106.1 N4	Full	65	0.0	50.0
Lane 3	309	1.0	308	1.0	138	2.224	76 5	4443.9	LOS F	15.0 N4	106.1 N4	Full	65	0.0	50.0
Approach	1158	1.0	1151 N1	1.0		2.924		6306.1	LOS F	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	962	5.2	631	5.1	663	0.952	100	48.1	LOS D	30.1 N4	220.3 N4	Full	135	0.0	50.0
Lane 2	965	8.0	633	7.9	665	0.952	100	46.8	LOS D	29.5 N4	220.3 N4	Full	135	0.0	50.0
Approach	1927	6.6	1264 N1	6.5		0.952		47.4	LOS D	30.1	220.3				
West: Parramatta Rd (W)															
Lane 1	550	8.0	550	8.0	1529	0.360	100	0.4	LOS A	1.0	7.3	Full	500	0.0	0.0
Lane 2	550	8.0	550	8.0	1529	0.360	100	0.4	LOS A	1.0	7.3	Full	500	0.0	0.0
Lane 3	800	1.0	800	1.0	838	0.954	100	41.2	LOS C	44.6	315.1	Short	200	0.0	NA
Approach	1900	5.1	1900	5.1		0.954		17.6	LOS B	44.6	315.1				
Intersection	4985	4.7	4315 N1	5.5		2.924		1703.8	LOS F	44.6	315.1				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 23 (maximum specified: 30)

5 Lane under-utilisation found by the program
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

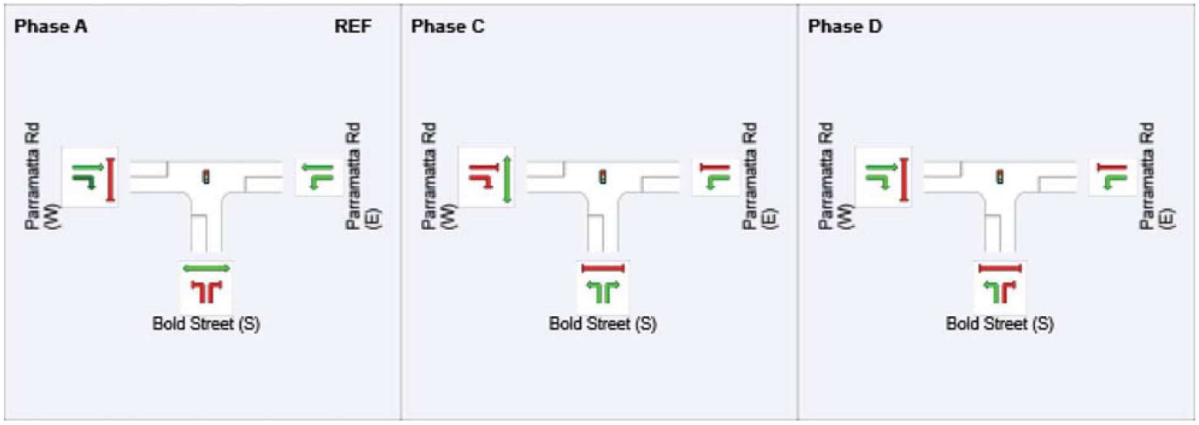
Parramatta Road / Bold Street
Existing Intersection
2036 + Development Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	49	64
Green Time (sec)	43	9	50
Phase Time (sec)	49	15	56
Phase Split	41%	13%	47%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [PM Bold / Cowper]

Network: N101 [PM]

Bold Street / Cowper Street
Existing Intersection
2036 + Development Conditions
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	446	7.5	446	7.5	1860	0.240	100	0.0	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	453	5.1	453	5.1	1888	0.240	100	0.0	LOS A	949.9 N5	6937.5 N5	Full	500	0.0	100.0 N5
Lane 3	301	4.0	301	4.0	1255	0.240	100	5.5	LOS A	467.6	3384.0	Full	500	0.0	100.0
Approach	1201	5.7	1201	5.7		0.240		1.4	NA	949.9	6937.5				
East: Cowper St (E)															
Lane 1	74	0.0	63	0.0	906	0.070	100	6.7	LOS A	0.3	2.2	Short (P)	10	0.0	NA
Lane 2	14	0.0	12	0.0	7	1.749	100	3143.8	LOS F	15.1	105.4	Full	145	-49.1 N3	0.0
Approach	88	0.0	75 N1	0.0		1.749		505.8	LOS F	15.1	105.4				
North: Bold St (N)															
Lane 1	593	4.1	530	4.5	1878	0.282	100	0.8	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	587	5.0	524	5.4	1858	0.282	100	0.2	LOS A	0.1	0.7	Full	65	0.0	0.0
Approach	1180	4.5	1054 N1	4.9		0.282		0.5	NA	0.1	0.7				
West: Cowper St (W)															
Lane 1	9	0.0	9	0.0	819	0.010	100	6.7	LOS A	0.0	0.2	Short (P)	10	0.0	NA
Lane 2	3	0.0	3	0.0	13	0.189	100	265.2	LOS F	0.5	3.3	Full	80	0.0	0.0
Approach	11	0.0	11	0.0		0.189		65.4	LOS E	0.5	3.3				
Intersection	2480	4.9	2342 N1	5.2		1.749		17.5	NA	949.9	6937.5				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 23 (maximum specified: 30)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [PM Good / Cowper]

Network: N101 [PM]

Good Street / Cooper Street
Existing Intersection
2036 + Development Conditions
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	357	4.3	357	4.3	1004	0.356	100	5.8	LOS A	2.7	19.8	Full	500	0.0	0.0
Approach	357	4.3	357	4.3		0.356		5.8	LOS A	2.7	19.8				
East: Cowper (E)															
Lane 1[d]	87	0.0	87	0.0	542	0.160	100	11.5	LOS A	1.0	6.8	Full	500	-33.2[N3]	0.0
Approach	87	0.0	87	0.0		0.160		11.5	LOS A	1.0	6.8				
North: Good St (N)															
Lane 1[d]	647	3.1	536	3.8	1207	0.444	100	5.2	LOS A	2.7	19.4	Full	60	-8.8[N3]	0.0
Approach	647	3.1	536[N1]	3.8		0.444		5.2	LOS A	2.7	19.4				
West: Cowper St (W)															
Lane 1[d]	159	0.0	148	0.0	820	0.180	100	8.2	LOS A	1.0	7.3	Full	145	0.0	0.0
Approach	159	0.0	148[N1]	0.0		0.180		8.2	LOS A	1.0	7.3				
Intersection	1249	2.8	1127[N1]	3.1		0.444		6.3	LOS A	2.7	19.8				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 23 (maximum specified: 30)

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

Parramatta Road / Good Street
Existing Intersection
2036 + Development Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	142	0.7	137	0.7	287	0.477	47[6]	50.5	LOS D	7.3	51.5	Full	60	-21.7[N3]	0.0
Lane 2	387	1.0	373	1.0	371	1.005	100	98.4	LOS F	13.9[N]4	97.9[N4]	Full	60	0.0	50.0
Approach	530	0.9	510[N1]	1.0		1.005		85.5	LOS F	13.9	97.9				
East: Parramatta Rd (E)															
Lane 1	1186	5.8	1186	5.8	760	1.560	100	2041.4	LOS F	778.4	5721.0	Full	500	-42.1[N3]	100.0
Lane 2	1024	8.0	1024	8.0	656	1.560	100	2040.7	LOS F	672.7	5032.1	Full	500	-50.0[N3]	100.0
Approach	2211	6.8	2211	6.8		1.560		2041.1	LOS F	778.4	5721.0				
North: Good St (N)															
Lane 1	408	0.0	408	0.0	356	1.146	100	586.4	LOS F	111.4	779.5	Short	135	0.0	NA
Lane 2	325	0.0	325	0.0	374	0.868	76[5]	53.5	LOS D	18.7	131.2	Full	500	0.0	45.7[8]
Approach	733	0.0	733	0.0		1.146		350.3	LOS F	111.4	779.5				
West: Parramatta Rd (W)															
Lane 1	53	0.0	46	0.0	1315	0.035	100	11.7	LOS A	0.9	6.4	Short	65	0.0	NA
Lane 2	676	8.0	595	8.9	1294[1]	0.460	100	9.0	LOS A	16.7	125.7	Full	135	0.0	0.0
Lane 3	681	8.0	600	8.9	1305	0.460	100	8.1	LOS A	14.6	110.3	Full	135	0.0	0.0
Approach	1410	7.7	1241[N1]	8.6		0.460		8.7	LOS A	16.7	125.7				
Intersection	4883	5.4	4694[N1]	5.6		1.560		1027.4	LOS F	778.4	5721.0				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 23 (maximum specified: 30)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

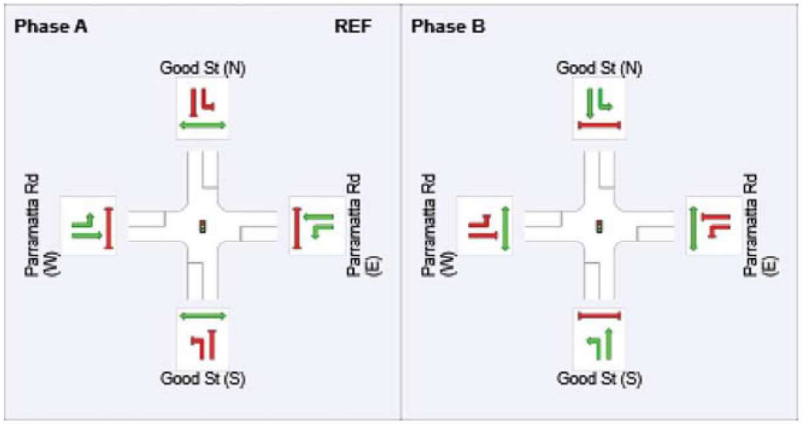
Parramatta Road / Good Street
Existing Intersection
2036 + Development Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	109	80
Green Time (sec)	85	23
Phase Time (sec)	91	29
Phase Split	76%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

Parramatta Road / Bold Street
Existing Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	153	0.002	100	51.2	LOS D	0.0	0.2	Full	65	-9.9 [N3]	0.0
Lane 2	847	1.0	847	1.0	504	1.681	100	2499.7	LOS F	15.0 [N4]	106.1 [N4]	Full	65	-1.6 [N3]	50.0
Lane 3	309	1.0	309	1.0	220	1.403	83 [5]	1502.9	LOS F	15.0 [N4]	106.1 [N4]	Full	65	-15.7 [N3]	50.0
Approach	1156	1.0	1156	1.0		1.681		2232.9	LOS F	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	731	4.4	619	4.4	709	0.874	100	39.2	LOS C	30.3 [N4]	220.3 [N4]	Full	135	0.0	50.0
Lane 2	733	8.0	621	8.0	711	0.874	100	37.3	LOS C	29.5 [N4]	220.3 [N4]	Full	135	0.0	50.0
Approach	1464	6.2	1240 [N1]	6.2		0.874		38.3	LOS C	30.3	220.3				
West: Parramatta Rd (W)															
Lane 1	638	8.0	638	8.0	1202	0.531	100	0.6	LOS A	1.5	11.5	Full	500	-14.5 [N3]	0.0
Lane 2	629	8.0	629	8.0	1185	0.531	100	0.6	LOS A	1.5	11.3	Full	500	-15.7 [N3]	0.0
Lane 3	570	1.0	570	1.0	716	0.796	100	32.7	LOS C	20.9	147.7	Short	200	0.0	NA
Approach	1838	5.8	1838	5.8		0.796		10.6	LOS A	20.9	147.7				
Intersection	4457	4.7	4233 [N1]	5.0		1.681		625.4	LOS F	30.3	220.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 23 (maximum specified: 30)

5 Lane under-utilisation found by the program
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

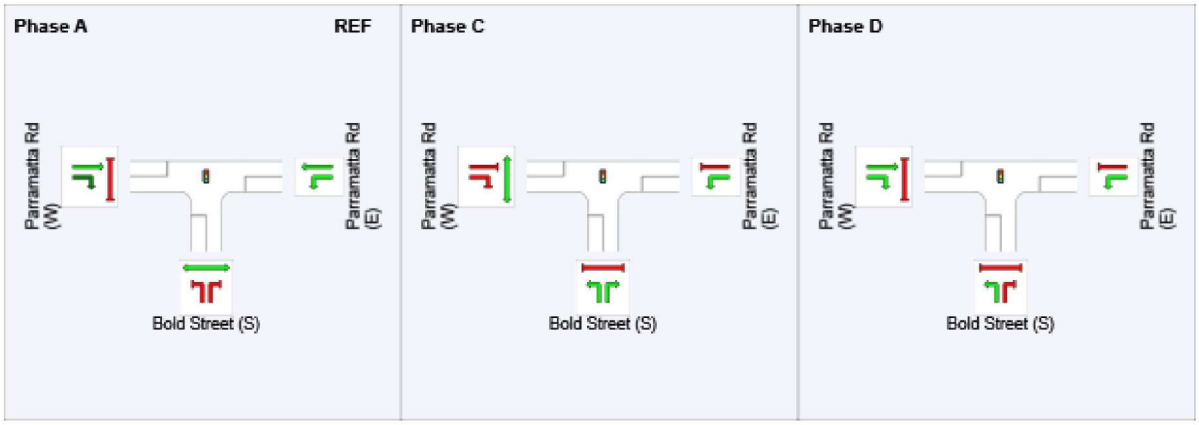
Parramatta Road / Bold Street
Existing Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	52	75
Green Time (sec)	46	17	39
Phase Time (sec)	52	23	45
Phase Split	43%	19%	38%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class Running	Other Movement Class Stopped
Mixed Running & Stopped Movement Classes	
Undetected Movement	Phase Transition Applied

LANE SUMMARY

Site: 103 [AM Bold / Cowper]

Network: N101 [AM]

Bold Street / Cowper Street
Existing Intersection
2036 Conditons
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	441	7.4	441	7.4	1858	0.237	100	0.2	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	448	5.1	448	5.1	1888	0.237	100	0.0	LOS A	593.7 N5	4335.5 N5	Full	500	0.0	100.0 N5
Lane 3	333	4.1	333	4.1	1402	0.237	100	3.9	LOS A	222.0	1609.1	Full	500	0.0	100.0
Approach	1222	5.6	1222	5.6		0.237		1.1	NA	593.7	4335.5				
East: Cowper St (E)															
Lane 1	45	0.0	43	0.0	998	0.043	100	6.0	LOS A	0.2	1.3	Short (P)	10	0.0	NA
Lane 2	6	0.0	5	0.0	10	0.513	100	293.6	LOS F	0.7	5.0	Full	145	-47.6 N3	0.0
Approach	51	0.0	48 N1	0.0		0.513		37.3	LOS C	0.7	5.0				
North: Bold St (N)															
Lane 1	492	3.6	463	3.7	1878	0.247	100	1.3	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	452	4.9	426	5.2	1726	0.247	100	1.5	LOS A	0.5	3.5	Full	65	0.0	0.0
Approach	944	4.2	889 N1	4.4		0.247		1.4	NA	0.5	3.5				
West: Cowper St (W)															
Lane 1	4	0.0	4	0.0	838	0.004	100	6.5	LOS A	0.0	0.1	Short (P)	10	0.0	NA
Lane 2	2	0.0	2	0.0	20	0.073	100	160.8	LOS F	0.2	1.3	Full	80	0.0	0.0
Approach	5	0.0	5	0.0		0.073		52.8	LOS D	0.2	1.3				
Intersection	2221	4.9	2163 N1	5.0		0.513		2.2	NA	593.7	4335.5				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 23 (maximum specified: 30)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [AM Good / Cowper]

Network: N101 [AM]

Good Street / Cooper Street
Existing Intersection
2036 Conditons
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	439	4.2	439	4.2	994	0.441	100	5.0	LOS A	3.1	22.3	Full	500	-11.4[N3]	0.0
Approach	439	4.2	439	4.2		0.441		5.0	LOS A	3.1	22.3				
East: Cowper (E)															
Lane 1[d]	50	0.0	50	0.0	621	0.081	100	8.6	LOS A	0.4	2.5	Full	500	-33.3[N3]	0.0
Approach	50	0.0	50	0.0		0.081		8.6	LOS A	0.4	2.5				
North: Good St (N)															
Lane 1[d]	389	3.0	357	3.3	1177	0.303	100	5.1	LOS A	1.5	10.9	Full	60	-9.1[N3]	0.0
Approach	389	3.0	357[N1]	3.3		0.303		5.1	LOS A	1.5	10.9				
West: Cowper St (W)															
Lane 1[d]	152	0.0	146	0.0	705	0.207	100	8.3	LOS A	1.0	7.3	Full	145	-10.8[N3]	0.0
Approach	152	0.0	146[N1]	0.0		0.207		8.3	LOS A	1.0	7.3				
Intersection	1029	2.9	991[N1]	3.1		0.441		5.7	LOS A	3.1	22.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 23 (maximum specified: 30)

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

Parramatta Road / Good Street
Existing Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	179	1.0	176	1.0	369	0.478	47[6]	48.8	LOS D	9.3	65.7	Full	60	-0.6[N3]	13.2
Lane 2	379	1.0	374	1.0	371	1.006	100	100.8	LOS F	13.9[N4]	97.9[N4]	Full	60	0.0	50.0
Approach	558	1.0	550[N1]	1.0		1.006		84.1	LOS F	13.9	97.9				
East: Parramatta Rd (E)															
Lane 1	887	6.1	887	6.1	744	1.192	100	715.4	LOS F	297.4	2191.4	Full	500	-43.4[N3]	100.0
Lane 2	783	8.0	783	8.0	656	1.192	100	714.6	LOS F	262.8	1965.7	Full	500	-50.0[N3]	100.0
Approach	1670	7.0	1670	7.0		1.192		715.0	LOS F	297.4	2191.4				
North: Good St (N)															
Lane 1	412	0.0	412	0.0	356	1.156	100	621.3	LOS F	117.3	820.9	Short	135	0.0	NA
Lane 2	181	0.0	181	0.0	374	0.483	42[5]	48.8	LOS D	9.5	66.7	Full	500	0.0	50.6[8]
Approach	592	0.0	592	0.0		1.156		446.7	LOS F	117.3	820.9				
West: Parramatta Rd (W)															
Lane 1	20	0.0	19	0.0	1315	0.014	100	11.0	LOS A	0.3	2.2	Short	65	0.0	NA
Lane 2	769	8.0	727	8.4	1301[1]	0.558	100	9.2	LOS A	20.0	149.9	Full	135	0.0	14.5
Lane 3	774	8.0	731	8.4	1310	0.558	100	9.3	LOS A	20.3	152.0	Full	135	0.0	15.7
Approach	1563	7.9	1477[N1]	8.3		0.558		9.3	LOS A	20.3	152.0				
Intersection	4383	5.6	4288[N1]	5.7		1.192		354.1	LOS F	297.4	2191.4				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 23 (maximum specified: 30)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

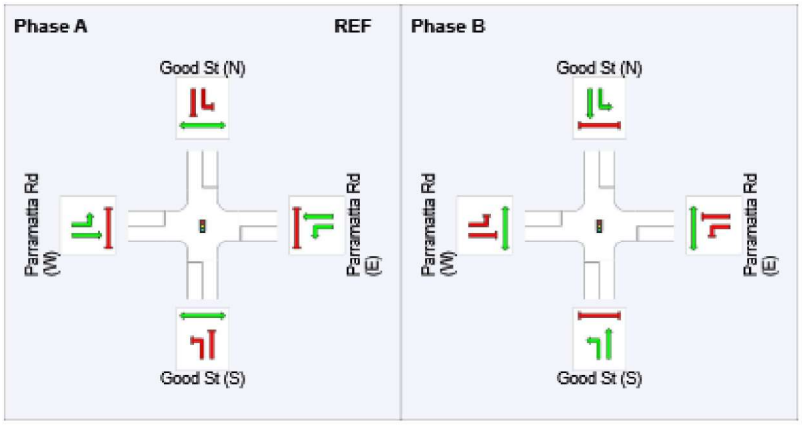
Parramatta Road / Good Street
Existing Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	110	81
Green Time (sec)	85	23
Phase Time (sec)	91	29
Phase Split	76%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class Running	Other Movement Class Stopped
Mixed Running & Stopped Movement Classes	
Undetected Movement	Phase Transition Applied

LANE SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

Parramatta Road / Bold Street
Existing Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	98	0.002	100	59.6	LOS E	0.0	0.2	Full	65	0.0	0.0
Lane 2	845	1.0	845	1.0	290	2.909	100	6934.8	LOS F	15.0 N4	106.1 N4	Full	65	0.0	50.0
Lane 3	306	1.0	306	1.0	138	2.210	76 5	4393.4	LOS F	15.0 N4	106.1 N4	Full	65	0.0	50.0
Approach	1152	1.0	1150 N1	1.0		2.909		6258.4	LOS F	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	947	5.2	621	5.1	663	0.936	100	45.4	LOS D	30.1 N4	220.3 N4	Full	135	0.0	50.0
Lane 2	949	8.0	622	7.9	665	0.936	100	44.0	LOS D	29.5 N4	220.3 N4	Full	135	0.0	50.0
Approach	1896	6.6	1243 N1	6.5		0.936		44.7	LOS D	30.1	220.3				
West: Parramatta Rd (W)															
Lane 1	550	8.0	550	8.0	1529	0.360	100	0.4	LOS A	1.0	7.3	Full	500	0.0	0.0
Lane 2	550	8.0	550	8.0	1529	0.360	100	0.4	LOS A	1.0	7.3	Full	500	0.0	0.0
Lane 3	772	1.0	772	1.0	846	0.913	100	33.4	LOS C	35.9	253.3	Short	200	0.0	NA
Approach	1873	5.1	1873	5.1		0.913		14.0	LOS A	35.9	253.3				
Intersection	4920	4.7	4266 N1	5.5		2.909		1706.9	LOS F	35.9	253.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 22 (maximum specified: 30)

5 Lane under-utilisation found by the program
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

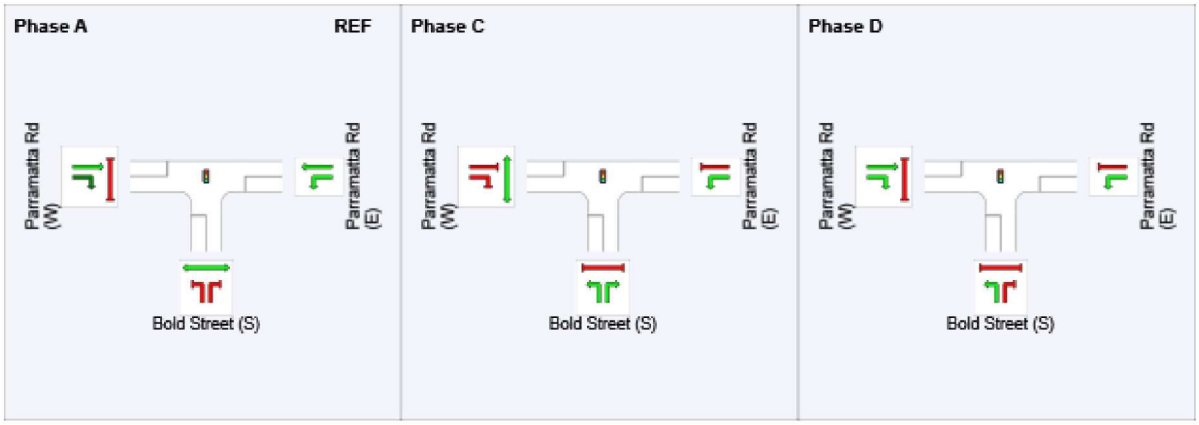
Parramatta Road / Bold Street
Existing Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	49	64
Green Time (sec)	43	9	50
Phase Time (sec)	49	15	56
Phase Split	41%	13%	47%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [PM Bold / Cowper]

Network: N101 [PM]

Bold Street / Cowper Street
Existing Intersection
2036 Conditons
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	440	7.5	440	7.5	1859	0.237	100	0.0	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	447	5.1	447	5.1	1888	0.237	100	0.0	LOS A	949.1 N5	6931.6 N5	Full	500	0.0	100.0 N5
Lane 3	309	4.1	309	4.1	1305	0.237	100	4.9	LOS A	463.6	3358.1	Full	500	0.0	100.0
Approach	1196	5.7	1196	5.7		0.237		1.3	NA	949.1	6931.6				
East: Cowper St (E)															
Lane 1	68	0.0	58	0.0	892	0.065	100	6.7	LOS A	0.3	2.0	Short (P)	10	0.0	NA
Lane 2	8	0.0	7	0.0	7	0.975	100	961.3	LOS F	1.9	13.3	Full	145	-48.4 N3	0.0
Approach	76	0.0	65 N1	0.0		0.975		107.9	LOS F	1.9	13.3				
North: Bold St (N)															
Lane 1	579	4.3	516	4.7	1879	0.275	100	0.6	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	573	5.0	510	5.5	1857	0.275	100	0.2	LOS A	0.1	0.7	Full	65	0.0	0.0
Approach	1152	4.6	1026 N1	5.1		0.275		0.4	NA	0.1	0.7				
West: Cowper St (W)															
Lane 1	9	0.0	9	0.0	825	0.010	100	6.6	LOS A	0.0	0.2	Short (P)	10	0.0	NA
Lane 2	3	0.0	3	0.0	13	0.187	100	263.0	LOS F	0.5	3.2	Full	80	0.0	0.0
Approach	11	0.0	11	0.0		0.187		64.9	LOS E	0.5	3.2				
Intersection	2435	5.0	2299 N1	5.3		0.975		4.2	NA	949.1	6931.6				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 22 (maximum specified: 30)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [PM Good / Cowper]

Network: N101 [PM]

Good Street / Cooper Street
Existing Intersection
2036 Conditons
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	357	4.3	357	4.3	1019	0.350	100	5.6	LOS A	2.7	19.3	Full	500	0.0	0.0
Approach	357	4.3	357	4.3		0.350		5.6	LOS A	2.7	19.3				
East: Cowper (E)															
Lane 1[d]	87	0.0	87	0.0	546	0.158	100	11.3	LOS A	0.9	6.6	Full	500	-33.2[N3]	0.0
Approach	87	0.0	87	0.0		0.158		11.3	LOS A	0.9	6.6				
North: Good St (N)															
Lane 1[d]	628	3.2	525	3.9	1203	0.436	100	5.1	LOS A	2.6	18.7	Full	60	-9.1[N3]	0.0
Approach	628	3.2	525[N1]	3.9		0.436		5.1	LOS A	2.6	18.7				
West: Cowper St (W)															
Lane 1[d]	106	0.0	99	0.0	821	0.120	100	8.5	LOS A	0.7	4.7	Full	145	0.0	0.0
Approach	106	0.0	99[N1]	0.0		0.120		8.5	LOS A	0.7	4.7				
Intersection	1177	3.0	1067[N1]	3.3		0.436		6.1	LOS A	2.7	19.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 22 (maximum specified: 30)

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

Parramatta Road / Good Street
Existing Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	148	0.9	143	1.0	351	0.408	47[6]	48.3	LOS D	7.5	52.7	Full	60	-5.1[N3]	0.0
Lane 2	329	1.0	319	1.0	371	0.859	100	53.4	LOS D	13.9[N4]	97.9[N4]	Full	60	0.0	50.0
Approach	478	1.0	463[N1]	1.0		0.859		51.9	LOS D	13.9	97.9				
East: Parramatta Rd (E)															
Lane 1	1172	5.9	1172	5.9	754	1.553	100	2014.7	LOS F	763.0	5612.6	Full	500	-42.6[N3]	100.0
Lane 2	1020	8.0	1020	8.0	656	1.553	100	2014.0	LOS F	664.5	4970.3	Full	500	-50.0[N3]	100.0
Approach	2191	6.9	2191	6.9		1.553		2014.3	LOS F	763.0	5612.6				
North: Good St (N)															
Lane 1	408	0.0	408	0.0	356	1.146	100	586.4	LOS F	111.4	779.5	Short	135	0.0	NA
Lane 2	325	0.0	325	0.0	374	0.868	76[5]	53.5	LOS D	18.7	131.2	Full	500	0.0	45.7[8]
Approach	733	0.0	733	0.0		1.146		350.3	LOS F	111.4	779.5				
West: Parramatta Rd (W)															
Lane 1	53	0.0	46	0.0	1315	0.035	100	11.7	LOS A	0.9	6.4	Short	65	0.0	NA
Lane 2	674	8.0	595	8.9	1294[1]	0.460	100	9.0	LOS A	16.7	125.7	Full	135	0.0	0.0
Lane 3	680	8.0	600	8.9	1306	0.460	100	8.1	LOS A	14.6	110.3	Full	135	0.0	0.0
Approach	1407	7.7	1241[N1]	8.6		0.460		8.7	LOS A	16.7	125.7				
Intersection	4808	5.5	4627[N1]	5.7		1.553		1016.7	LOS F	763.0	5612.6				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 22 (maximum specified: 30)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

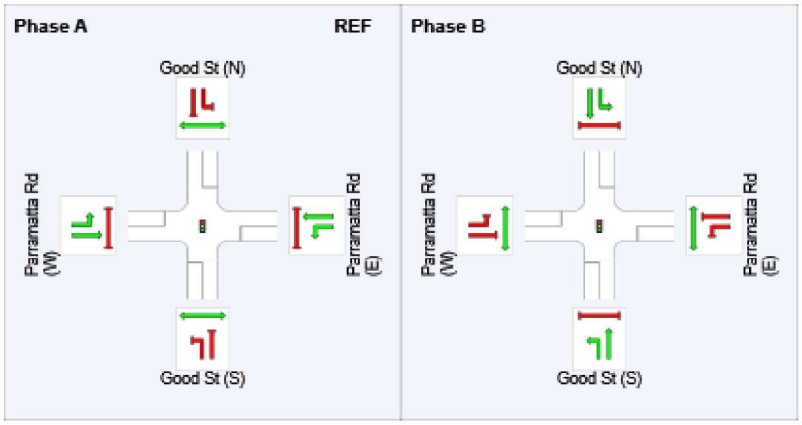
Parramatta Road / Good Street
Existing Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	109	80
Green Time (sec)	85	23
Phase Time (sec)	91	29
Phase Split	76%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

Parramatta Road / Bold Street
Existing Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	243	0.001	100	40.9	LOS C	0.0	0.1	Full	65	-10.4 N3	0.0
Lane 2	589	1.0	589	1.0	909	0.648	100	25.9	LOS B	15.0 N4	106.1 N4	Full	65	-0.3 N3	50.0
Lane 3	196	1.0	196	1.0	309	0.636	98 5	52.0	LOS D	10.6	74.9	Full	65	-28.2 N3	17.8
Approach	786	1.0	786	1.0		0.648		32.4	LOS C	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	570	3.2	570	3.2	677	0.842	100	28.7	LOS C	25.9	186.2	Full	135	0.0	34.3
Lane 2	573	8.0	573	8.0	680	0.842	100	23.3	LOS B	26.6	198.9	Full	135	0.0	40.4
Approach	1143	5.6	1143	5.6		0.842		26.0	LOS B	26.6	198.9				
West: Parramatta Rd (W)															
Lane 1	657	8.0	657	8.0	1042	0.631	100	4.9	LOS A	9.6	72.0	Full	500	-15.7 N3	0.0
Lane 2	560	8.0	560	8.0	887	0.631	100	4.9	LOS A	8.2	61.7	Full	500	-28.2 N3	0.0
Lane 3	406	1.0	406	1.0	625	0.649	100	23.2	LOS B	9.5	67.3	Short	200	0.0	NA
Approach	1624	6.2	1624	6.2		0.649		9.5	LOS A	9.6	72.0				
Intersection	3552	4.9	3552	4.9		0.842		19.9	LOS B	26.6	198.9				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.7 %
Number of Iterations: 19 (maximum specified: 30)

5 Lane under-utilisation found by the program
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

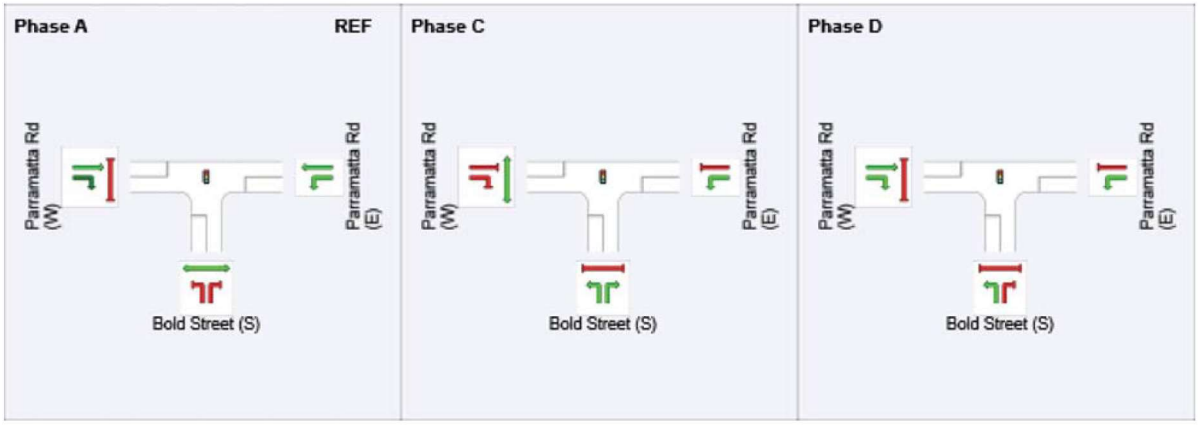
Parramatta Road / Bold Street
Existing Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	50	84
Green Time (sec)	44	28	30
Phase Time (sec)	50	34	36
Phase Split	42%	28%	30%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [AM Bold / Cowper]

Network: N101 [AM]

Bold Street / Cowper Street
Existing Intersection
Existing + Development Conditons
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	311	7.3	311	7.3	1860	0.167	100	0.1	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	316	5.1	316	5.1	1888	0.167	100	0.0	LOS A	8.5[N5]	62.3[N5]	Full	500	0.0	0.0
Lane 3	195	3.9	195	3.9	1165	0.167	100	3.9	LOS A	0.7	5.2	Full	500	-14.1[N3]	0.0
Approach	822	5.6	822	5.6		0.167		1.0	NA	8.5	62.3				
East: Cowper St (E)															
Lane 1	55	0.0	55	0.0	1062	0.051	100	5.7	LOS A	0.2	1.5	Short (P)	10	0.0	NA
Lane 2	12	0.0	12	0.0	50	0.238	100	68.1	LOS E	0.6	4.0	Full	145	-17.1[N3]	0.0
Approach	67	0.0	67	0.0		0.238		16.9	LOS B	0.6	4.0				
North: Bold St (N)															
Lane 1	405	3.2	405	3.2	1877	0.216	100	1.6	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	392	4.9	392	4.9	1814	0.216	100	0.5	LOS A	0.1	1.1	Full	65	0.0	0.0
Approach	797	4.1	797	4.1		0.216		1.0	NA	0.1	1.1				
West: Cowper St (W)															
Lane 1	2	0.0	2	0.0	973	0.002	100	5.8	LOS A	0.0	0.0	Short (P)	10	0.0	NA
Lane 2	1	0.0	1	0.0	65	0.015	100	55.2	LOS D	0.0	0.3	Full	80	0.0	0.0
Approach	3	0.0	3	0.0		0.015		22.3	LOS B	0.0	0.3				
Intersection	1689	4.7	1689	4.7		0.238		1.7	NA	8.5	62.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.7 %
Number of Iterations: 19 (maximum specified: 30)

N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [AM Good / Cowper]

Network: N101 [AM]

Good Street / Cooper Street
Existing Intersection
Existing + Development Conditons
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	375	4.3	375	4.3	1222	0.306	100	4.3	LOS A	2.1	15.2	Full	500	0.0	0.0
Approach	375	4.3	375	4.3		0.306		4.3	LOS A	2.1	15.2				
East: Cowper (E)															
Lane 1[d]	10	0.0	10	0.0	703	0.014	100	7.3	LOS A	0.1	0.4	Full	500	-28.6[N3]	0.0
Approach	10	0.0	10	0.0		0.014		7.3	LOS A	0.1	0.4				
North: Good St (N)															
Lane 1[d]	248	3.2	248	3.2	1279	0.193	100	4.8	LOS A	0.9	6.8	Full	60	0.0	0.0
Approach	248	3.2	248	3.2		0.193		4.8	LOS A	0.9	6.8				
West: Cowper St (W)															
Lane 1[d]	131	0.0	131	0.0	879	0.149	100	7.4	LOS A	0.8	5.5	Full	145	0.0	0.0
Approach	131	0.0	131	0.0		0.149		7.4	LOS A	0.8	5.5				
Intersection	763	3.1	763	3.1		0.306		5.0	LOS A	2.1	15.2				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.7 %
Number of Iterations: 19 (maximum specified: 30)

d Dominant lane on roundabout approach
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

Parramatta Road / Good Street
Existing Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	124	0.7	124	0.7	435	0.285	47[6]	41.1	LOS C	5.8	41.2	Full	60	-12.0[N3]	0.0
Lane 2	301	1.0	301	1.0	500	0.601	100	43.9	LOS D	13.9[N4]	97.9[N4]	Full	60	0.0	50.0
Approach	425	0.9	425	0.9		0.601		43.1	LOS D	13.9	97.9				
East: Parramatta Rd (E)															
Lane 1	684	6.3	684	6.3	844	0.810	100	9.5	LOS A	18.8	138.6	Full	500	-29.0[N3]	0.0
Lane 2	574	8.0	574	8.0	709	0.810	100	8.4	LOS A	15.9	118.7	Full	500	-40.4[N3]	0.0
Approach	1259	7.1	1259	7.1		0.810		9.0	LOS A	18.8	138.6				
North: Good St (N)															
Lane 1	210	0.0	210	0.0	480	0.438	100	46.3	LOS D	10.3	72.2	Short	135	0.0	NA
Lane 2	97	0.0	97	0.0	504	0.192	44[5]	38.6	LOS C	4.4	30.7	Full	500	0.0	0.0
Approach	307	0.0	307	0.0		0.438		43.9	LOS D	10.3	72.2				
West: Parramatta Rd (W)															
Lane 1	14	0.0	14	0.0	1192	0.012	100	13.4	LOS A	0.2	1.7	Short	65	0.0	NA
Lane 2	698	8.0	698	8.0	1183[1]	0.590	100	13.0	LOS A	20.3	151.9	Full	135	0.0	15.7
Lane 3	702	8.0	702	8.0	1189	0.590	100	13.6	LOS A	23.3	174.2	Full	135	0.0	28.2
Approach	1414	7.9	1414	7.9		0.590		13.3	LOS A	23.3	174.2				
Intersection	3404	6.0	3404	6.0		0.810		18.2	LOS B	23.3	174.2				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.7 %
Number of Iterations: 19 (maximum specified: 30)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

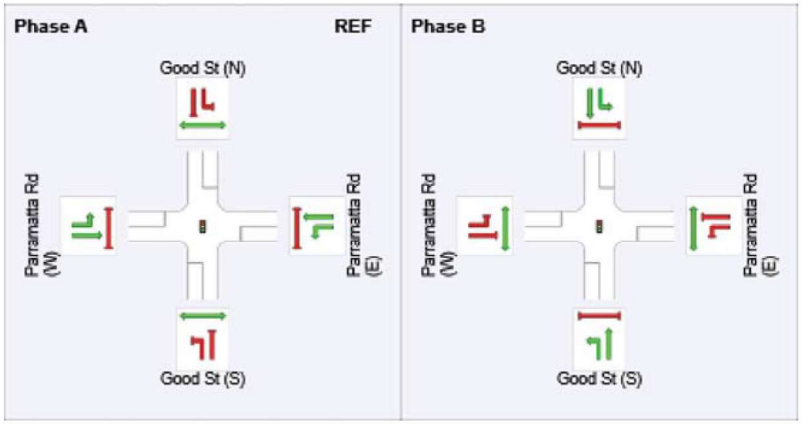
Parramatta Road / Good Street
Existing Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	110	73
Green Time (sec)	77	31
Phase Time (sec)	83	37
Phase Split	69%	31%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

Parramatta Road / Bold Street
Existing Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	160	0.001	100	52.0	LOS D	0.0	0.1	Full	65	0.0	0.0
Lane 2	732	1.0	732	1.0	513	1.426	100	1581.6	LOS F	15.0[N4]	106.1[N4]	Full	65	0.0	50.0
Lane 3	284	1.0	284	1.0	246	1.155	81[5]	621.1	LOS F	15.0[N4]	106.1[N4]	Full	65	0.0	50.0
Approach	1017	1.0	1016[N1]	1.0		1.426		1312.7	LOS F	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	821	5.5	639	5.4	725	0.882	100	38.8	LOS C	30.1[N4]	220.3[N4]	Full	135	0.0	50.0
Lane 2	823	8.0	640	7.9	726	0.882	100	36.6	LOS C	29.5[N4]	220.3[N4]	Full	135	0.0	50.0
Approach	1644	6.7	1280[N1]	6.7		0.882		37.7	LOS C	30.1	220.3				
West: Parramatta Rd (W)															
Lane 1	411	8.0	411	8.0	1421	0.289	100	0.5	LOS A	0.7	4.9	Full	500	0.0	0.0
Lane 2	411	8.0	411	8.0	1421	0.289	100	0.5	LOS A	0.7	4.9	Full	500	0.0	0.0
Lane 3	577	1.0	577	1.0	709	0.813	100	34.0	LOS C	22.1	155.7	Short	200	0.0	NA
Approach	1399	5.1	1399	5.1		0.813		14.3	LOS A	22.1	155.7				
Intersection	4060	4.7	3694[N1]	5.2		1.426		379.4	LOS F	30.1	220.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.8 %
Number of Iterations: 22 (maximum specified: 30)

5 Lane under-utilisation found by the program
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

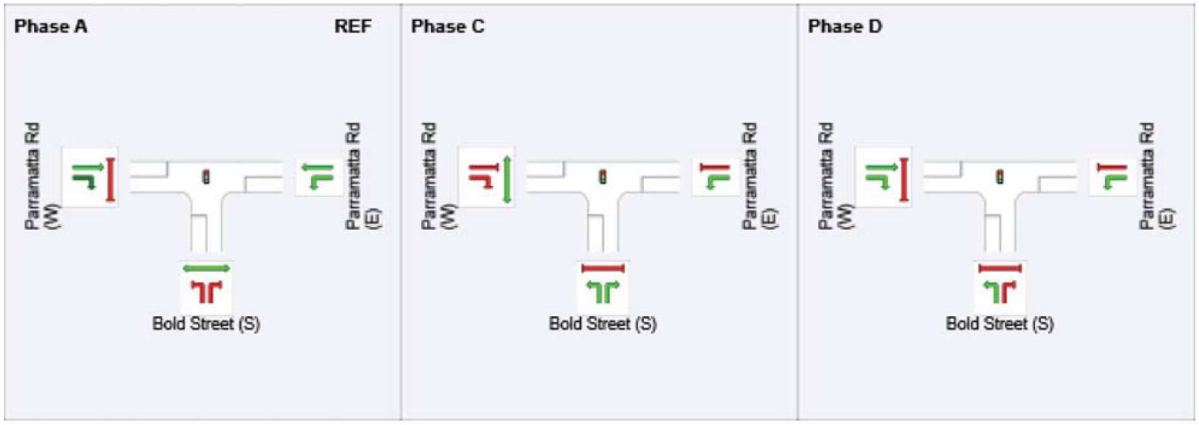
Parramatta Road / Bold Street
Existing Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	53	75
Green Time (sec)	47	16	39
Phase Time (sec)	53	22	45
Phase Split	44%	18%	38%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [PM Bold / Cowper]

Network: N101 [PM]

Bold Street / Cowper Street
Existing Intersection
Existing + Development Conditons
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	488	7.0	488	7.0	1865	0.261	100	0.0	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	494	5.1	494	5.1	1888	0.261	100	0.0	LOS A	392.9 N5	2869.1 N5	Full	500	0.0	100.0 N5
Lane 3	200	0.5	200	0.5	765	0.261	100	9.5	LOS A	64.1	450.7	Full	500	0.0	12.2
Approach	1181	5.1	1181	5.1		0.261		1.6	NA	392.9	2869.1				
East: Cowper St (E)															
Lane 1	52	0.0	46	0.0	1001	0.046	100	6.0	LOS A	0.2	1.4	Short (P)	10	0.0	NA
Lane 2	12	0.0	11	0.0	11	0.950	100	639.3	LOS F	1.9	13.6	Full	145	-48.9 N3	0.0
Approach	64	0.0	57 N1	0.0		0.950		125.7	LOS F	1.9	13.6				
North: Bold St (N)															
Lane 1	439	4.0	407	4.3	1880	0.217	100	0.9	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	433	5.0	402	5.3	1857	0.217	100	0.2	LOS A	0.1	0.5	Full	65	0.0	0.0
Approach	872	4.5	809 N1	4.8		0.217		0.6	NA	0.1	0.5				
West: Cowper St (W)															
Lane 1	8	0.0	8	0.0	778	0.010	100	7.0	LOS A	0.0	0.2	Short (P)	10	0.0	NA
Lane 2	3	0.0	3	0.0	23	0.111	100	148.2	LOS F	0.3	2.0	Full	80	0.0	0.0
Approach	10	0.0	10	0.0		0.111		42.3	LOS C	0.3	2.0				
Intersection	2127	4.7	2057 N1	4.8		0.950		4.8	NA	392.9	2869.1				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.8 %
Number of Iterations: 22 (maximum specified: 30)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [PM Good / Cowper]

Network: N101 [PM]

Good Street / Cooper Street
Existing Intersection
Existing + Development Conditons
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	206	4.3	206	4.3	1100	0.187	100	4.6	LOS A	1.2	8.5	Full	500	0.0	0.0
Approach	206	4.3	206	4.3		0.187		4.6	LOS A	1.2	8.5				
East: Cowper (E)															
Lane 1[d]	52	0.0	52	0.0	617	0.083	100	9.0	LOS A	0.4	2.7	Full	500	-31.8[N3]	0.0
Approach	52	0.0	52	0.0		0.083		9.0	LOS A	0.4	2.7				
North: Good St (N)															
Lane 1[d]	413	3.6	362	4.0	1294	0.280	100	4.7	LOS A	1.5	11.1	Full	60	0.0	0.0
Approach	413	3.6	362[N1]	4.0		0.280		4.7	LOS A	1.5	11.1				
West: Cowper St (W)															
Lane 1[d]	171	0.0	166	0.0	989	0.168	100	6.8	LOS A	0.9	6.3	Full	145	0.0	0.0
Approach	171	0.0	166[N1]	0.0		0.168		6.8	LOS A	0.9	6.3				
Intersection	840	2.8	786[N1]	3.0		0.280		5.4	LOS A	1.5	11.1				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.8 %
Number of Iterations: 22 (maximum specified: 30)

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

Parramatta Road / Good Street
Existing Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	78	0.5	77	0.5	242	0.318	47[6]	50.0	LOS D	4.0	28.0	Full	60	-33.4[N3]	0.0
Lane 2	251	1.0	249	1.0	371	0.669	100	51.0	LOS D	13.7	96.7	Full	60	0.0	48.9
Approach	329	0.9	325[N1]	0.9		0.669		50.8	LOS D	13.7	96.7				
East: Parramatta Rd (E)															
Lane 1	973	6.1	973	6.1	744	1.309	100	1133.2	LOS F	443.6	3268.5	Full	500	-43.4[N3]	100.0
Lane 2	859	8.0	859	8.0	656	1.309	100	1132.5	LOS F	391.9	2931.2	Full	500	-50.0[N3]	100.0
Approach	1833	7.0	1833	7.0		1.309		1132.9	LOS F	443.6	3268.5				
North: Good St (N)															
Lane 1	336	0.0	336	0.0	356	0.943	100	59.9	LOS E	20.0	139.9	Short	135	0.0	NA
Lane 2	185	0.0	185	0.0	374	0.494	52[5]	49.0	LOS D	9.8	68.3	Full	500	0.0	0.0
Approach	520	0.0	520	0.0		0.943		56.0	LOS D	20.0	139.9				
West: Parramatta Rd (W)															
Lane 1	11	0.0	10	0.0	1315	0.008	100	11.0	LOS A	0.2	1.2	Short	65	0.0	NA
Lane 2	548	8.0	529	8.2	1311	0.404	100	7.8	LOS A	12.3	92.2	Full	135	0.0	0.0
Lane 3	548	8.0	529	8.2	1311	0.404	100	7.8	LOS A	12.4	92.9	Full	135	0.0	0.0
Approach	1107	7.9	1069[N1]	8.2		0.404		7.8	LOS A	12.4	92.9				
Intersection	3788	5.8	3747[N1]	5.8		1.309		568.5	LOS F	443.6	3268.5				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.8 %
Number of Iterations: 22 (maximum specified: 30)

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

PHASING SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

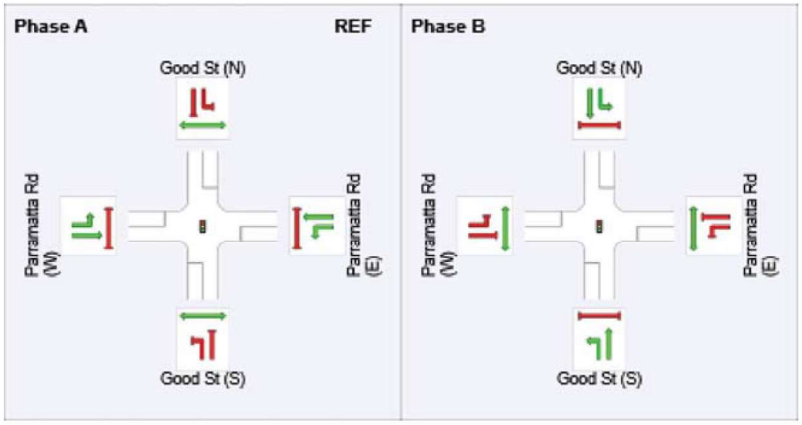
Parramatta Road / Good Street
Existing Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	110	81
Green Time (sec)	85	23
Phase Time (sec)	91	29
Phase Split	76%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

Parramatta Road / Bold Street
Existing Intersection
Existing Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	242	0.001	100	41.8	LOS C	0.0	0.1	Full	65	-7.8 N3	0.0
Lane 2	585	1.0	585	1.0	968	0.605	100	26.5	LOS B	15.0 N4	106.1 N4	Full	65	0.0	50.0
Lane 3	193	1.0	193	1.0	340	0.567	94 5	51.6	LOS D	10.2	72.2	Full	65	-18.0 N3	14.5
Approach	778	1.0	778	1.0		0.605		32.7	LOS C	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	555	3.1	555	3.1	693	0.801	100	27.4	LOS B	23.8	170.9	Full	135	0.0	26.4
Lane 2	557	8.0	557	8.0	695	0.801	100	24.0	LOS B	25.0	187.4	Full	135	0.0	34.9
Approach	1112	5.5	1112	5.5		0.801		25.7	LOS B	25.0	187.4				
West: Parramatta Rd (W)															
Lane 1	630	8.0	630	8.0	1101	0.572	100	4.0	LOS A	7.5	56.2	Full	500	-12.0 N3	0.0
Lane 2	587	8.0	587	8.0	1026	0.572	100	4.0	LOS A	7.0	52.4	Full	500	-18.0 N3	0.0
Lane 3	378	1.0	378	1.0	652	0.580	100	20.5	LOS B	7.9	56.0	Short	200	0.0	NA
Approach	1596	6.3	1596	6.3		0.580		7.9	LOS A	7.9	56.2				
Intersection	3486	4.9	3486	4.9		0.801		19.1	LOS B	25.0	187.4				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 18 (maximum specified: 30)

5 Lane under-utilisation found by the program
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

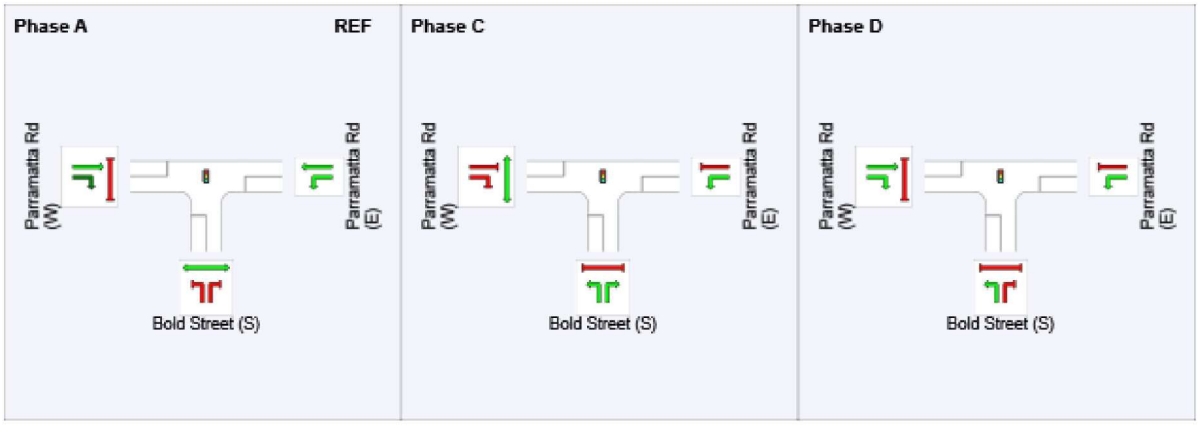
Parramatta Road / Bold Street
Existing Intersection
Existing Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	51	84
Green Time (sec)	45	27	30
Phase Time (sec)	51	33	36
Phase Split	43%	28%	30%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [AM Bold / Cowper]

Network: N101 [AM]

Bold Street / Cowper Street
Existing Intersection
Existing Conditions
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	303	7.4	303	7.4	1859	0.163	100	0.1	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	308	5.1	308	5.1	1888	0.163	100	0.0	LOS A	8.1 N5	59.2 N5	Full	500	0.0	0.0
Lane 3	205	4.0	205	4.0	1258	0.163	100	3.3	LOS A	0.7	4.8	Full	500	-11.9 N3	0.0
Approach	817	5.7	817	5.7		0.163		0.9	NA	8.1	59.2				
East: Cowper St (E)															
Lane 1	48	0.0	48	0.0	1046	0.045	100	5.7	LOS A	0.2	1.3	Short (P)	10	0.0	NA
Lane 2	6	0.0	6	0.0	55	0.101	100	58.7	LOS E	0.2	1.7	Full	145	-13.3 N3	0.0
Approach	53	0.0	53	0.0		0.101		11.2	LOS A	0.2	1.7				
North: Bold St (N)															
Lane 1	392	3.5	392	3.5	1879	0.209	100	1.3	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	378	4.9	378	4.9	1811	0.209	100	0.5	LOS A	0.1	1.1	Full	65	0.0	0.0
Approach	770	4.2	770	4.2		0.209		0.9	NA	0.1	1.1				
West: Cowper St (W)															
Lane 1	2	0.0	2	0.0	981	0.002	100	5.8	LOS A	0.0	0.0	Short (P)	10	0.0	NA
Lane 2	1	0.0	1	0.0	67	0.015	100	53.9	LOS D	0.0	0.3	Full	80	0.0	0.0
Approach	3	0.0	3	0.0		0.015		21.8	LOS B	0.0	0.3				
Intersection	1643	4.8	1643	4.8		0.209		1.3	NA	8.1	59.2				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 18 (maximum specified: 30)

N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [AM Good / Cowper]

Network: N101 [AM]

Good Street / Cooper Street
Existing Intersection
Existing Conditions
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	375	4.3	375	4.3	1271	0.295	100	4.2	LOS A	2.0	14.2	Full	500	0.0	0.0
Approach	375	4.3	375	4.3		0.295		4.2	LOS A	2.0	14.2				
East: Cowper (E)															
Lane 1[d]	10	0.0	10	0.0	752	0.013	100	7.2	LOS A	0.1	0.4	Full	500	-24.7[N3]	0.0
Approach	10	0.0	10	0.0		0.013		7.2	LOS A	0.1	0.4				
North: Good St (N)															
Lane 1[d]	226	3.5	226	3.5	1270	0.178	100	4.6	LOS A	0.9	6.2	Full	60	0.0	0.0
Approach	226	3.5	226	3.5		0.178		4.6	LOS A	0.9	6.2				
West: Cowper St (W)															
Lane 1[d]	78	0.0	78	0.0	882	0.088	100	7.5	LOS A	0.4	3.1	Full	145	0.0	0.0
Approach	78	0.0	78	0.0		0.088		7.5	LOS A	0.4	3.1				
Intersection	689	3.5	689	3.5		0.295		4.7	LOS A	2.0	14.2				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 18 (maximum specified: 30)

d Dominant lane on roundabout approach
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

Parramatta Road / Good Street
Existing Intersection
Existing Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	120	1.0	120	1.0	450	0.266	47[6]	42.0	LOS C	5.7	40.5	Full	60	-0.3[N3]	0.0
Lane 2	253	1.0	253	1.0	452	0.559	100	45.7	LOS D	13.1	92.8	Full	60	0.0	45.0
Approach	373	1.0	373	1.0		0.559		44.5	LOS D	13.1	92.8				
East: Parramatta Rd (E)															
Lane 1	678	6.5	678	6.5	926	0.732	100	6.6	LOS A	12.5	92.5	Full	500	-25.1[N3]	0.0
Lane 2	562	8.0	562	8.0	768	0.732	100	5.6	LOS A	10.4	78.1	Full	500	-37.8[N3]	0.0
Approach	1240	7.2	1240	7.2		0.732		6.2	LOS A	12.5	92.5				
North: Good St (N)															
Lane 1	210	0.0	210	0.0	433	0.485	100	49.3	LOS D	10.7	75.0	Short	135	0.0	NA
Lane 2	97	0.0	97	0.0	455	0.212	44[5]	41.3	LOS C	4.6	31.9	Full	500	0.0	0.0
Approach	307	0.0	307	0.0		0.485		46.8	LOS D	10.7	75.0				
West: Parramatta Rd (W)															
Lane 1	14	0.0	14	0.0	1238	0.011	100	12.7	LOS A	0.2	1.6	Short	65	0.0	NA
Lane 2	697	8.0	697	8.0	1230[1]	0.566	100	11.7	LOS A	19.5	145.8	Full	135	0.0	12.0
Lane 3	700	8.0	700	8.0	1236	0.566	100	11.2	LOS A	20.8	155.9	Full	135	0.0	18.0
Approach	1411	7.9	1411	7.9		0.566		11.5	LOS A	20.8	155.9				
Intersection	3329	6.1	3329	6.1		0.732		16.5	LOS B	20.8	155.9				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 18 (maximum specified: 30)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

PHASING SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

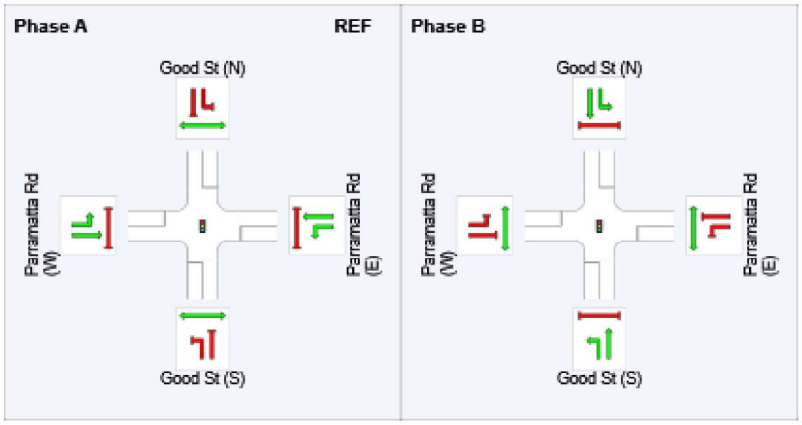
Parramatta Road / Good Street
Existing Intersection
Existing Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	110	76
Green Time (sec)	80	28
Phase Time (sec)	86	34
Phase Split	72%	28%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class Running	Other Movement Class Stopped
Mixed Running & Stopped Movement Classes	
Undetected Movement	Phase Transition Applied

LANE SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

Parramatta Road / Bold Street
Existing Intersection
Existing Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	187	0.001	100	49.0	LOS D	0.0	0.1	Full	65	0.0	0.0
Lane 2	729	1.0	729	1.0	645	1.131	100	525.4	LOS F	15.0[N] 4	106.1[N4]	Full	65	0.0	50.0
Lane 3	281	1.0	281	1.0	292	0.961	85[5]	67.2	LOS E	15.0[N] 4	106.1[N4]	Full	65	0.0	50.0
Approach	1011	1.0	1010	1.0		1.131		398.0	LOS F	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	805	5.4	624	5.4	694	0.900	100	40.1	LOS C	30.1[N] 4	220.3[N4]	Full	135	0.0	50.0
Lane 2	807	8.0	625	8.0	695	0.900	100	38.7	LOS C	29.5[N] 4	220.3[N4]	Full	135	0.0	50.0
Approach	1612	6.7	1250[N1]	6.7		0.900		39.4	LOS C	30.1	220.3				
West: Parramatta Rd (W)															
Lane 1	411	8.0	411	8.0	1375	0.299	100	0.5	LOS A	0.7	5.0	Full	500	0.0	0.0
Lane 2	411	8.0	411	8.0	1375	0.299	100	0.5	LOS A	0.7	5.0	Full	500	0.0	0.0
Lane 3	549	1.0	549	1.0	682	0.805	100	35.7	LOS C	21.6	152.7	Short	200	0.0	NA
Approach	1372	5.2	1372	5.2		0.805		14.6	LOS B	21.6	152.7				
Intersection	3994	4.8	3631[N1]	5.2		1.131		129.8	LOS F	30.1	220.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.4 %
Number of Iterations: 26 (maximum specified: 30)

5 Lane under-utilisation found by the program
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

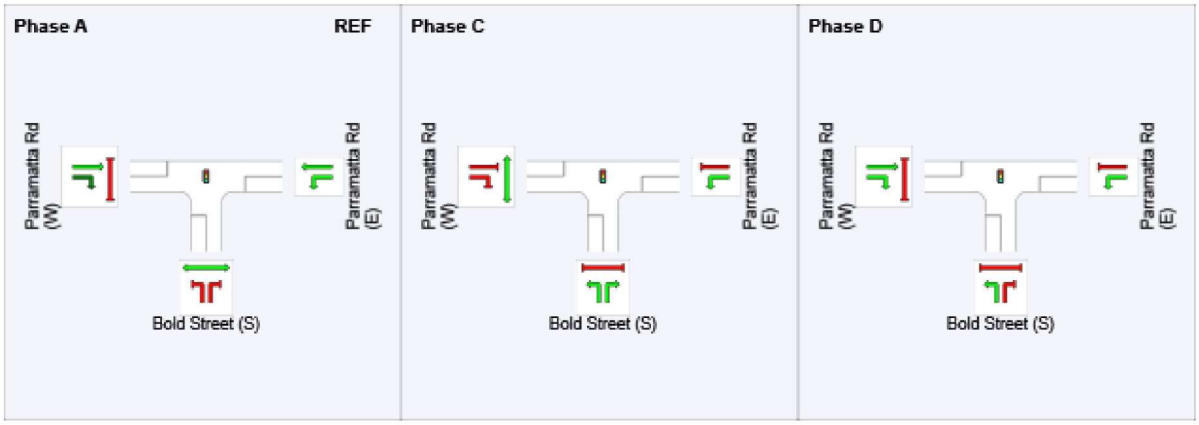
Parramatta Road / Bold Street
Existing Intersection
Existing Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	51	76
Green Time (sec)	45	19	38
Phase Time (sec)	51	25	44
Phase Split	43%	21%	37%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [PM Bold / Cowper]

Network: N101 [PM]

Bold Street / Cowper Street
Existing Intersection
Existing Conditions
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	479	7.0	479	7.0	1865	0.257	100	0.0	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	485	5.1	485	5.1	1888	0.257	100	0.0	LOS A	176.7 N5	1290.8 N5	Full	500	0.0	89.9 N5
Lane 3	212	0.9	212	0.9	827	0.257	100	8.8	LOS A	55.4	390.6	Full	500	0.0	0.0
Approach	1176	5.1	1176	5.1		0.257		1.6	NA	176.7	1290.8				
East: Cowper St (E)															
Lane 1	45	0.0	41	0.0	991	0.041	100	6.0	LOS A	0.2	1.2	Short (P)	10	0.0	NA
Lane 2	6	0.0	5	0.0	12	0.401	100	206.5	LOS F	0.6	3.9	Full	145	-47.6 N3	0.0
Approach	51	0.0	45 N1	0.0		0.401		27.9	LOS B	0.6	3.9				
North: Bold St (N)															
Lane 1	425	4.3	393	4.6	1881	0.209	100	0.6	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	419	5.0	388	5.3	1856	0.209	100	0.2	LOS A	0.1	0.5	Full	65	0.0	0.0
Approach	845	4.6	781 N1	4.9		0.209		0.4	NA	0.1	0.5				
West: Cowper St (W)															
Lane 1	8	0.0	8	0.0	786	0.010	100	6.9	LOS A	0.0	0.2	Short (P)	10	0.0	NA
Lane 2	3	0.0	3	0.0	24	0.106	100	142.6	LOS F	0.3	1.9	Full	80	0.0	0.0
Approach	10	0.0	10	0.0		0.106		40.8	LOS C	0.3	1.9				
Intersection	2081	4.8	2012 N1	4.9		0.401		1.9	NA	176.7	1290.8				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.4 %
Number of Iterations: 26 (maximum specified: 30)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [PM Good / Cowper]

Network: N101 [PM]

Good Street / Cooper Street
Existing Intersection
Existing Conditions
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	206	4.3	206	4.3	1125	0.183	100	4.5	LOS A	1.1	8.2	Full	500	0.0	0.0
Approach	206	4.3	206	4.3		0.183		4.5	LOS A	1.1	8.2				
East: Cowper (E)															
Lane 1[d]	52	0.0	52	0.0	804	0.064	100	8.8	LOS A	0.4	2.7	Full	500	-12.0[N3]	0.0
Approach	52	0.0	52	0.0		0.064		8.8	LOS A	0.4	2.7				
North: Good St (N)															
Lane 1[d]	394	3.7	348	4.2	1289	0.270	100	4.6	LOS A	1.5	10.5	Full	60	0.0	0.0
Approach	394	3.7	348[N1]	4.2		0.270		4.6	LOS A	1.5	10.5				
West: Cowper St (W)															
Lane 1[d]	118	0.0	116	0.0	991	0.117	100	7.1	LOS A	0.6	4.2	Full	145	0.0	0.0
Approach	118	0.0	116[N1]	0.0		0.117		7.1	LOS A	0.6	4.2				
Intersection	769	3.0	720[N1]	3.2		0.270		5.3	LOS A	1.5	10.5				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.4 %
Number of Iterations: 26 (maximum specified: 30)

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

Parramatta Road / Good Street
Existing Intersection
Existing Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	84	0.9	83	0.9	339	0.245	47[6]	46.7	LOS D	4.2	29.5	Full	60	-8.2[N3]	0.0
Lane 2	193	1.0	192	1.0	371	0.516	100	49.2	LOS D	10.2	72.0	Full	60	0.0	21.6
Approach	277	1.0	275[N1]	1.0		0.516		48.5	LOS D	10.2	72.0				
East: Parramatta Rd (E)															
Lane 1	959	6.3	959	6.3	737	1.301	100	1106.5	LOS F	430.2	3173.2	Full	500	-43.9[N3]	100.0
Lane 2	854	8.0	854	8.0	656	1.301	100	1105.8	LOS F	383.6	2869.5	Full	500	-50.0[N3]	100.0
Approach	1813	7.1	1813	7.1		1.301		1106.2	LOS F	430.2	3173.2				
North: Good St (N)															
Lane 1	336	0.0	336	0.0	356	0.943	100	59.9	LOS E	20.0	139.9	Short	135	0.0	NA
Lane 2	185	0.0	185	0.0	374	0.494	52[5]	49.0	LOS D	9.8	68.3	Full	500	0.0	0.0
Approach	520	0.0	520	0.0		0.943		56.0	LOS D	20.0	139.9				
West: Parramatta Rd (W)															
Lane 1	11	0.0	10	0.0	1315	0.008	100	11.0	LOS A	0.2	1.2	Short	65	0.0	NA
Lane 2	547	8.0	546	8.0	1313	0.416	100	7.9	LOS A	12.9	96.8	Full	135	0.0	0.0
Lane 3	547	8.0	546	8.0	1313	0.416	100	7.9	LOS A	13.0	96.9	Full	135	0.0	0.0
Approach	1104	7.9	1103[N1]	7.9		0.416		7.9	LOS A	13.0	96.9				
Intersection	3713	5.9	3711[N1]	5.9		1.301		554.2	LOS F	430.2	3173.2				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.4 %
Number of Iterations: 26 (maximum specified: 30)

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

PHASING SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

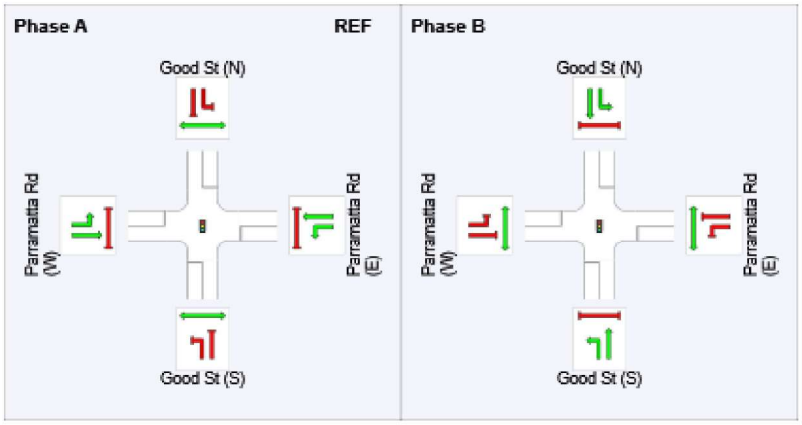
Parramatta Road / Good Street
Existing Intersection
Existing Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	110	81
Green Time (sec)	85	23
Phase Time (sec)	91	29
Phase Split	76%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class Running	Other Movement Class Stopped
Mixed Running & Stopped Movement Classes	
Undetected Movement	Phase Transition Applied

LANE SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

Parramatta Road / Bold Street
Alternate Intersection
2036 + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	314	0.001	100	36.9	LOS C	0.0	0.1	Full	65	0.0	0.0
Lane 2	850	1.0	848	1.0	937	0.905	100	34.5	LOS C	15.0 N4	106.1 N4	Full	65	0.0	50.0
Lane 3	312	1.0	312	1.0	347	0.899	99 5	52.6	LOS D	15.0 N4	106.1 N4	Full	65	-31.6 N3	50.0
Approach	1163	1.0	1160 N1	1.0		0.905		39.4	LOS C	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	746	4.5	630	4.5	724	0.870	100	39.3	LOS C	30.3 N4	220.3 N4	Full	135	0.0	50.0
Lane 2	749	8.0	632	7.9	726	0.870	100	36.4	LOS C	29.5 N4	220.3 N4	Full	135	0.0	50.0
Approach	1495	6.3	1262 N1	6.2		0.870		37.9	LOS C	30.3	220.3				
West: Parramatta Rd (W)															
Lane 1	753	8.0	753	8.0	1159	0.650	100	8.0	LOS A	15.8	117.9	Full	500	0.0	0.0
Lane 2	515	8.0	515	8.0	793	0.650	100	8.1	LOS A	10.9	81.6	Full	500	-31.6 N3	0.0
Lane 3	299	1.0	299	1.0	458	0.652	100	31.1	LOS C	8.3	58.8	Short	200	0.0	NA
Lane 4	299	1.0	299	1.0	458	0.652	100	31.1	LOS C	8.3	58.8	Short	200	0.0	NA
Approach	1865	5.8	1865	5.8		0.652		15.4	LOS B	15.8	117.9				
Intersection	4523	4.7	4287 N1	5.0		0.905		28.5	LOS C	30.3	220.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 24 (maximum specified: 30)

5 Lane under-utilisation found by the program
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

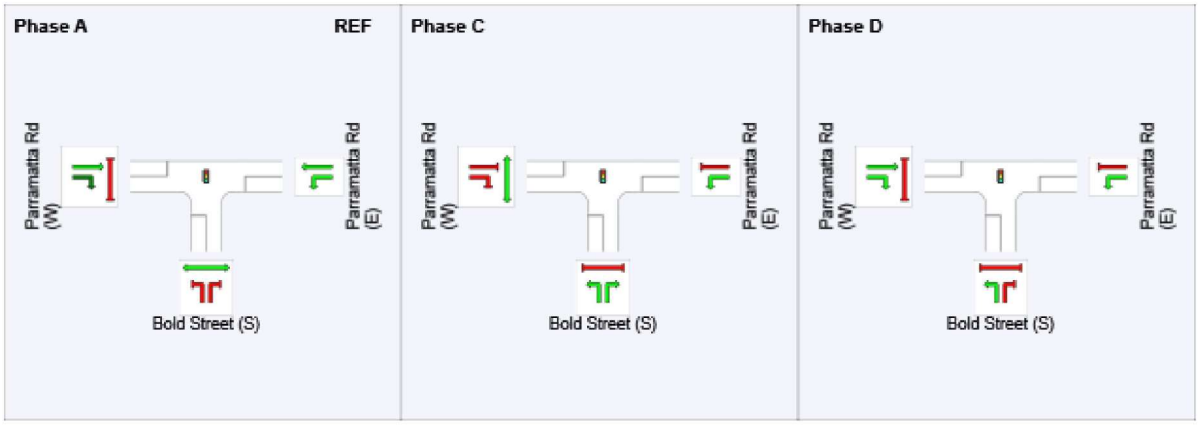
Parramatta Road / Bold Street
Alternate Intersection
2036 + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	53	92
Green Time (sec)	47	33	22
Phase Time (sec)	53	39	28
Phase Split	44%	33%	23%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [AM Bold / Cowper]

Network: N101 [AM]

Bold Street / Cowper Street
Alternate Intersection
2036 + Development Conditons
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	448	7.3	448	7.3	1859	0.241	100	0.2	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	455	5.1	455	5.1	1888	0.241	100	0.0	LOS A	30.3 N5	221.3 N5	Full	500	0.0	0.0
Lane 3	324	4.0	324	4.0	1344	0.241	100	4.4	LOS A	56.0	405.2	Full	500	0.0	0.0
Approach	1227	5.6	1227	5.6		0.241		1.2	NA	56.0	405.2				
East: Cowper St (E)															
Lane 1	52	0.0	48	0.0	1011	0.048	100	5.9	LOS A	0.2	1.4	Short (P)	10	0.0	NA
Lane 2	12	0.0	11	0.0	9	1.189	100	1260.4	LOS F	6.3	44.2	Full	145	-48.9 N3	0.0
Approach	64	0.0	59 N1	0.0		1.189		243.0	LOS F	6.3	44.2				
North: Bold St (N)															
Lane 1	505	3.3	476	3.5	1876	0.254	100	1.5	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	466	4.9	439	5.2	1729	0.254	100	1.5	LOS A	0.5	3.5	Full	65	0.0	0.0
Approach	971	4.1	915 N1	4.3		0.254		1.5	NA	0.5	3.5				
West: Cowper St (W)															
Lane 1	4	0.0	4	0.0	829	0.004	100	6.6	LOS A	0.0	0.1	Short (P)	10	0.0	NA
Lane 2	2	0.0	2	0.0	20	0.075	100	165.2	LOS F	0.2	1.3	Full	80	0.0	0.0
Approach	5	0.0	5	0.0		0.075		54.2	LOS D	0.2	1.3				
Intersection	2267	4.8	2207 N1	4.9		1.189		8.0	NA	56.0	405.2				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 24 (maximum specified: 30)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [AM Good / Cowper]

Network: N101 [AM]

Good Street / Cooper Street
Alternate Intersection
2036 + Development Conditons
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	289	4.2	289	4.2	1065	0.271	100	4.7	LOS A	1.6	11.6	Full	500	-14.5[N3]	0.0
Lane 2	150	4.3	150	4.3	552	0.271	100	5.2	LOS A	0.9	6.5	Full	500	-46.1[N3]	0.0
Approach	439	4.2	439	4.2		0.271		4.9	LOS A	1.6	11.6				
East: Cowper (E)															
Lane 1[d]	50	0.0	50	0.0	615	0.081	100	8.8	LOS A	0.4	2.6	Full	500	-33.3[N3]	0.0
Approach	50	0.0	50	0.0		0.081		8.8	LOS A	0.4	2.6				
North: Good St (N)															
Lane 1[d]	408	2.9	372	3.1	1188	0.313	100	5.2	LOS A	1.6	11.2	Full	60	-8.7[N3]	0.0
Approach	408	2.9	372[N1]	3.1		0.313		5.2	LOS A	1.6	11.2				
West: Cowper St (W)															
Lane 1[d]	205	0.0	196	0.0	646	0.303	100	7.5	LOS A	1.1	7.7	Full	145	-14.5[N3]	0.0
Approach	205	0.0	196[N1]	0.0		0.303		7.5	LOS A	1.1	7.7				
Intersection	1101	2.7	1057[N1]	2.9		0.313		5.6	LOS A	1.6	11.6				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 24 (maximum specified: 30)

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

Parramatta Road / Good Street
Alternate Intersection
2036 + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	33	0.0	32	0.0	178	0.179	100	51.1	LOS D	1.6	11.4	Short	55	-50.0[N3]	NA
Lane 2	186	1.0	183	1.0	371	0.492	47[6]	49.0	LOS D	9.7	68.2	Full	60	0.0	16.7
Lane 3	392	1.0	385	1.0	371	1.036	100	194.4	LOS F	13.9[N4]	97.9[N4]	Full	60	0.0	50.0
Approach	610	0.9	599[N1]	1.0		1.036		142.4	LOS F	13.9	97.9				
East: Parramatta Rd (E)															
Lane 1	902	6.0	902	6.0	752	1.200	100	742.0	LOS F	309.8	2280.1	Full	500	-42.8[N3]	100.0
Lane 2	788	8.0	788	8.0	656	1.200	100	741.2	LOS F	271.0	2027.1	Full	500	-50.0[N3]	100.0
Approach	1690	6.9	1690	6.9		1.200		741.7	LOS F	309.8	2280.1				
North: Good St (N)															
Lane 1	412	0.0	412	0.0	356	1.156	100	621.3	LOS F	117.3	820.9	Short	135	0.0	NA
Lane 2	181	0.0	181	0.0	374	0.483	42[5]	48.8	LOS D	9.5	66.7	Full	500	0.0	50.6[8]
Approach	592	0.0	592	0.0		1.156		446.7	LOS F	117.3	820.9				
West: Parramatta Rd (W)															
Lane 1	20	0.0	20	0.0	1315	0.015	100	9.0	LOS A	0.2	1.3	Short	65	0.0	NA
Lane 2	773	8.0	773	8.0	1313	0.589	100	6.1	LOS A	14.0	105.0	Full	135	0.0	0.0
Lane 3	773	8.0	773	8.0	1313	0.589	100	10.1	LOS A	24.2	180.8	Full	135	0.0	31.6
Approach	1566	7.9	1565[N1]	7.9		0.589		8.1	LOS A	24.2	180.8				
Intersection	4458	5.5	4446[N1]	5.5		1.200		363.4	LOS F	309.8	2280.1				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 24 (maximum specified: 30)

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

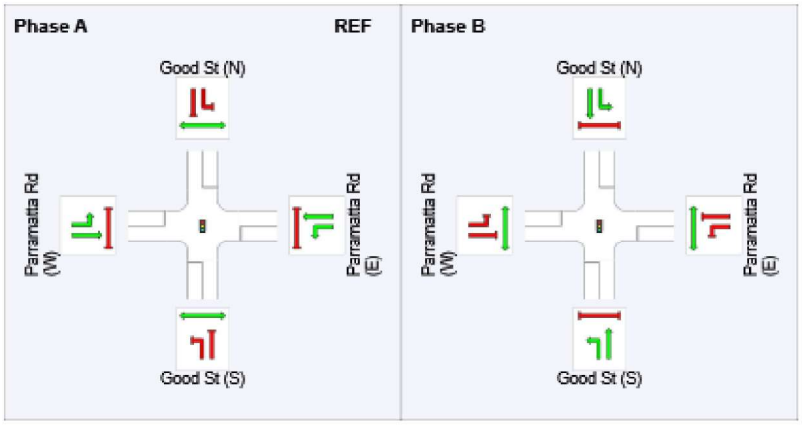
Parramatta Road / Good Street
Alternate Intersection
2036 + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	109	80
Green Time (sec)	85	23
Phase Time (sec)	91	29
Phase Split	76%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

Parramatta Road / Bold Street
Alternate Intersection
2036 + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	269	0.001	100	40.9	LOS C	0.0	0.1	Full	65	0.0	0.0
Lane 2	848	1.0	843	1.0	902	0.934	100	37.6	LOS C	15.0 [N4]	106.1 [N4]	Full	65	0.0	50.0
Lane 3	309	1.0	307	1.0	333	0.923	99 [5]	57.4	LOS E	15.0 [N4]	106.1 [N4]	Full	65	-22.6 [N3]	50.0
Approach	1158	1.0	1151 [N1]	1.0		0.934		42.9	LOS D	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	962	5.2	628	5.1	709	0.885	100	39.8	LOS C	30.1 [N4]	220.3 [N4]	Full	135	0.0	50.0
Lane 2	965	8.0	630	7.9	711	0.885	100	37.6	LOS C	29.5 [N4]	220.3 [N4]	Full	135	0.0	50.0
Approach	1927	6.6	1258 [N1]	6.5		0.885		38.7	LOS C	30.1	220.3				
West: Parramatta Rd (W)															
Lane 1	620	8.0	620	8.0	1236	0.502	100	4.2	LOS A	7.2	53.6	Full	500	0.0	0.0
Lane 2	480	8.0	480	8.0	956	0.502	100	4.3	LOS A	5.6	41.8	Full	500	-22.6 [N3]	0.0
Lane 3	400	1.0	400	1.0	537	0.744	100	36.7	LOS C	14.2	100.5	Short	200	0.0	NA
Lane 4	400	1.0	400	1.0	537	0.744	100	36.7	LOS C	14.2	100.5	Short	200	0.0	NA
Approach	1900	5.1	1900	5.1		0.744		17.9	LOS B	14.2	100.5				
Intersection	4985	4.7	4308 [N1]	5.5		0.934		30.6	LOS C	30.1	220.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.4 %
Number of Iterations: 30 (maximum specified: 30)

5 Lane under-utilisation found by the program
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

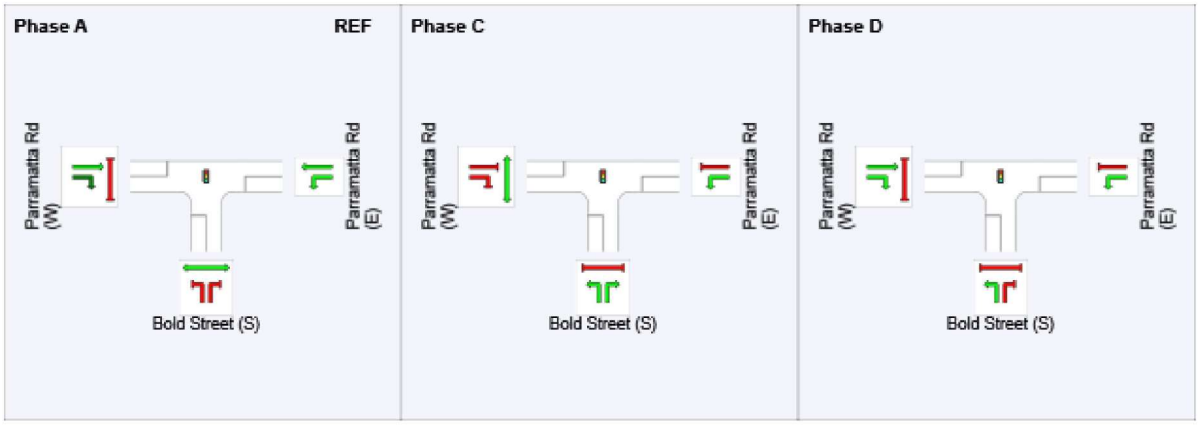
Parramatta Road / Bold Street
Alternate Intersection
2036 + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	52	86
Green Time (sec)	46	28	28
Phase Time (sec)	52	34	34
Phase Split	43%	28%	28%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [PM Bold / Cowper]

Network: N101 [PM]

Bold Street / Cowper Street
Alternate Intersection
2036 + Development Conditons
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	449	7.4	449	7.4	1860	0.241	100	0.0	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	456	5.1	456	5.1	1888	0.241	100	0.0	LOS A	32.2 N5	235.3 N5	Full	500	0.0	0.0
Lane 3	296	3.9	296	3.9	1228	0.241	100	5.7	LOS A	56.4	408.4	Full	500	0.0	0.0
Approach	1201	5.7	1201	5.7		0.241		1.4	NA	56.4	408.4				
East: Cowper St (E)															
Lane 1	74	0.0	63	0.0	900	0.070	100	6.7	LOS A	0.3	2.1	Short (P)	10	0.0	NA
Lane 2	14	0.0	12	0.0	6	1.888	100	3642.4	LOS F	16.4	115.0	Full	145	-49.1 N3	0.0
Approach	88	0.0	75 N1	0.0		1.888		585.1	LOS F	16.4	115.0				
North: Bold St (N)															
Lane 1	593	4.1	529	4.5	1878	0.282	100	0.8	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	587	5.0	523	5.4	1858	0.282	100	0.2	LOS A	0.1	0.7	Full	65	0.0	0.0
Approach	1180	4.5	1053 N1	5.0		0.282		0.5	NA	0.1	0.7				
West: Cowper St (W)															
Lane 1	9	0.0	9	0.0	816	0.010	100	6.7	LOS A	0.0	0.2	Short (P)	10	0.0	NA
Lane 2	3	0.0	3	0.0	12	0.203	100	290.2	LOS F	0.5	3.5	Full	80	0.0	0.0
Approach	11	0.0	11	0.0		0.203		71.1	LOS F	0.5	3.5				
Intersection	2480	4.9	2340 N1	5.2		1.888		20.1	NA	56.4	408.4				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.4 %
Number of Iterations: 30 (maximum specified: 30)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [PM Good / Cowper]

Network: N101 [PM]

Good Street / Cooper Street
Alternate Intersection
2036 + Development Conditons
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	251	4.3	251	4.3	1168	0.215	100	5.1	LOS A	1.5	11.0	Full	500	0.0	0.0
Lane 2	106	4.2	106	4.2	496	0.215	100	5.9	LOS A	0.7	5.1	Full	500	-45.4[N3]	0.0
Approach	357	4.3	357	4.3		0.215		5.3	LOS A	1.5	11.0				
East: Cowper (E)															
Lane 1[d]	87	0.0	87	0.0	543	0.159	100	11.5	LOS A	1.0	6.8	Full	500	-33.2[N3]	0.0
Approach	87	0.0	87	0.0		0.159		11.5	LOS A	1.0	6.8				
North: Good St (N)															
Lane 1[d]	647	3.1	535	3.8	1208	0.443	100	5.2	LOS A	2.6	19.0	Full	60	-8.8[N3]	0.0
Approach	647	3.1	535[N1]	3.8		0.443		5.2	LOS A	2.6	19.0				
West: Cowper St (W)															
Lane 1[d]	159	0.0	147	0.0	777	0.190	100	7.5	LOS A	0.8	5.5	Full	145	0.0	0.0
Approach	159	0.0	147[N1]	0.0		0.190		7.5	LOS A	0.8	5.5				
Intersection	1249	2.8	1126[N1]	3.1		0.443		6.0	LOS A	2.6	19.0				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.4 %
Number of Iterations: 30 (maximum specified: 30)

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

Parramatta Road / Good Street
Alternate Intersection
2036 + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	40	0.0	38	0.0	178	0.214	100	51.5	LOS D	2.0	13.7	Short	55	-50.0[N3]	NA
Lane 2	158	1.0	152	1.0	371	0.409	47[6]	48.0	LOS D	7.9	55.7	Full	60	0.0	0.0
Lane 3	332	1.0	320	1.0	371	0.862	100	53.5	LOS D	13.9[N4]	97.9[N4]	Full	60	0.0	50.0
Approach	530	0.9	510[N1]	1.0		0.862		51.7	LOS D	13.9	97.9				
East: Parramatta Rd (E)															
Lane 1	1186	5.8	1186	5.8	760	1.560	100	2041.4	LOS F	778.4	5721.0	Full	500	-42.1[N3]	100.0
Lane 2	1024	8.0	1024	8.0	656	1.560	100	2040.7	LOS F	672.7	5032.1	Full	500	-50.0[N3]	100.0
Approach	2211	6.8	2211	6.8		1.560		2041.1	LOS F	778.4	5721.0				
North: Good St (N)															
Lane 1	408	0.0	408	0.0	356	1.146	100	586.4	LOS F	111.4	779.5	Short	135	0.0	NA
Lane 2	325	0.0	325	0.0	374	0.868	76[5]	53.5	LOS D	18.7	131.2	Full	500	0.0	45.7[8]
Approach	733	0.0	733	0.0		1.146		350.3	LOS F	111.4	779.5				
West: Parramatta Rd (W)															
Lane 1	53	0.0	53	0.0	1315	0.040	100	10.9	LOS A	0.9	6.0	Short	65	0.0	NA
Lane 2	675	8.0	674	8.0	1300[1]	0.519	100	8.3	LOS A	17.0	127.2	Full	135	0.0	0.0
Lane 3	682	8.0	681	8.0	1313	0.519	100	10.7	LOS A	21.9	163.9	Full	135	0.0	22.6
Approach	1410	7.7	1408[N1]	7.7		0.519		9.6	LOS A	21.9	163.9				
Intersection	4883	5.4	4861[N1]	5.4		1.560		989.2	LOS F	778.4	5721.0				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.4 %
Number of Iterations: 30 (maximum specified: 30)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

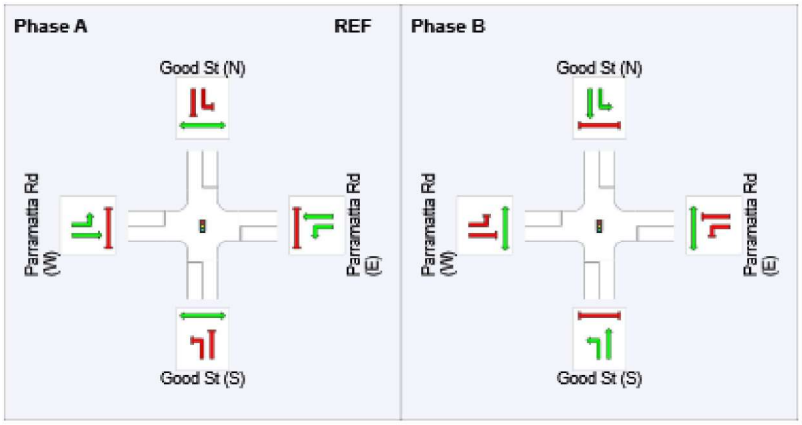
Parramatta Road / Good Street
Alternate Intersection
2036 + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	109	80
Green Time (sec)	85	23
Phase Time (sec)	91	29
Phase Split	76%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

Parramatta Road / Bold Street
Alternate Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	324	0.001	100	36.1	LOS C	0.0	0.1	Full	65	0.0	0.0
Lane 2	847	1.0	847	1.0	953	0.889	100	33.3	LOS C	15.0 [N 4]	106.1 [N4]	Full	65	0.0	50.0
Lane 3	309	1.0	309	1.0	400	0.772	87 [5]	49.4	LOS D	15.0 [N 4]	106.1 [N4]	Full	65	-23.5 [N3]	50.0
Approach	1156	1.0	1156	1.0		0.889		37.6	LOS C	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	731	4.4	618	4.4	709	0.872	100	39.2	LOS C	30.3 [N 4]	220.3 [N4]	Full	135	0.0	50.0
Lane 2	733	8.0	619	8.0	711	0.872	100	37.4	LOS C	29.5 [N 4]	220.3 [N4]	Full	135	0.0	50.0
Approach	1464	6.2	1237 [N1]	6.2		0.872		38.3	LOS C	30.3	220.3				
West: Parramatta Rd (W)															
Lane 1	718	8.0	718	8.0	1143	0.628	100	8.5	LOS A	15.2	113.8	Full	500	0.0	0.0
Lane 2	550	8.0	550	8.0	875	0.628	100	8.5	LOS A	11.7	87.8	Full	500	-23.5 [N3]	0.0
Lane 3	285	1.0	285	1.0	456	0.625	100	29.7	LOS C	7.6	53.9	Short	200	0.0	NA
Lane 4	285	1.0	285	1.0	456	0.625	100	29.7	LOS C	7.6	53.9	Short	200	0.0	NA
Approach	1838	5.8	1838	5.8		0.628		15.1	LOS B	15.2	113.8				
Intersection	4457	4.7	4230 [N1]	5.0		0.889		28.0	LOS B	30.3	220.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 25 (maximum specified: 30)

5 Lane under-utilisation found by the program
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

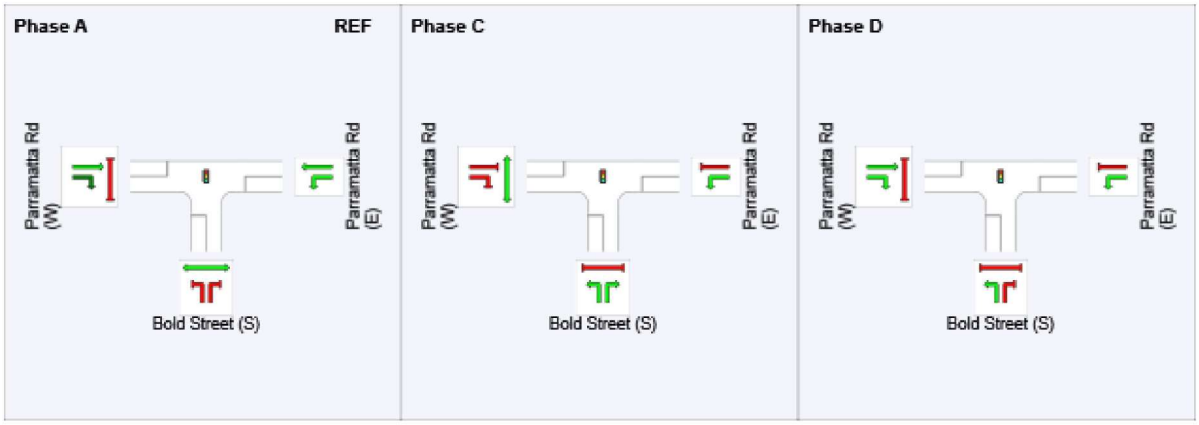
Parramatta Road / Bold Street
Alternate Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	52	92
Green Time (sec)	46	34	22
Phase Time (sec)	52	40	28
Phase Split	43%	33%	23%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [AM Bold / Cowper]

Network: N101 [AM]

Bold Street / Cowper Street
Alternate Intersection
2036 Conditons
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	441	7.4	441	7.4	1858	0.237	100	0.2	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	448	5.1	448	5.1	1888	0.237	100	0.0	LOS A	28.8 N5	210.6 N5	Full	500	0.0	0.0
Lane 3	333	4.1	333	4.1	1403	0.237	100	3.9	LOS A	54.4	394.0	Full	500	0.0	0.0
Approach	1222	5.6	1222	5.6		0.237		1.1	NA	54.4	394.0				
East: Cowper St (E)															
Lane 1	45	0.0	42	0.0	999	0.043	100	6.0	LOS A	0.2	1.3	Short (P)	10	0.0	NA
Lane 2	6	0.0	5	0.0	10	0.510	100	290.3	LOS F	0.7	5.0	Full	145	-47.6 N3	0.0
Approach	51	0.0	48 N1	0.0		0.510		37.0	LOS C	0.7	5.0				
North: Bold St (N)															
Lane 1	492	3.6	463	3.7	1878	0.246	100	1.3	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	452	4.9	425	5.2	1726	0.246	100	1.5	LOS A	0.5	3.5	Full	65	0.0	0.0
Approach	944	4.2	888 N1	4.4		0.246		1.4	NA	0.5	3.5				
West: Cowper St (W)															
Lane 1	4	0.0	4	0.0	838	0.004	100	6.5	LOS A	0.0	0.1	Short (P)	10	0.0	NA
Lane 2	2	0.0	2	0.0	21	0.073	100	159.9	LOS F	0.2	1.3	Full	80	0.0	0.0
Approach	5	0.0	5	0.0		0.073		52.5	LOS D	0.2	1.3				
Intersection	2221	4.9	2162 N1	5.0		0.510		2.2	NA	54.4	394.0				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 25 (maximum specified: 30)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [AM Good / Cowper]

Network: N101 [AM]

Good Street / Cooper Street
Alternate Intersection
2036 Conditons
Roundabout

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. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Good St (S)															
Lane 1[d]	294	4.3	294	4.3	1122	0.262	100	4.6	LOS A	1.6	11.5	Full	500	-11.5[N3]	0.0
Lane 2	145	4.2	145	4.2	553	0.262	100	5.1	LOS A	0.9	6.2	Full	500	-46.0[N3]	0.0
Approach	439	4.2	439	4.2		0.262		4.8	LOS A	1.6	11.5				
East: Cowper (E)															
Lane 1[d]	50	0.0	50	0.0	621	0.080	100	8.6	LOS A	0.4	2.5	Full	500	-33.3[N3]	0.0
Approach	50	0.0	50	0.0		0.080		8.6	LOS A	0.4	2.5				
North: Good St (N)															
Lane 1[d]	389	3.0	357	3.3	1178	0.303	100	5.1	LOS A	1.5	10.6	Full	60	-9.1[N3]	0.0
Approach	389	3.0	357[N1]	3.3		0.303		5.1	LOS A	1.5	10.6				
West: Cowper St (W)															
Lane 1[d]	152	0.0	146	0.0	675	0.216	100	7.5	LOS A	0.8	5.5	Full	145	-10.9[N3]	0.0
Approach	152	0.0	146[N1]	0.0		0.216		7.5	LOS A	0.8	5.5				
Intersection	1029	2.9	991[N1]	3.1		0.303		5.5	LOS A	1.6	11.5				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 25 (maximum specified: 30)

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

Parramatta Road / Good Street
Alternate Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	1	0.0	1	0.0	178	0.006	100	47.8	LOS D	0.0	0.3	Short	55	-50.0 [N3]	NA
Lane 2	179	1.0	177	1.0	371	0.476	47 [6]	48.8	LOS D	9.3	65.8	Full	60	0.0	13.3
Lane 3	378	1.0	372	1.0	371	1.002	100	91.3	LOS F	13.9 [N4]	97.9 [N4]	Full	60	0.0	50.0
Approach	558	1.0	550 [N1]	1.0		1.002		77.5	LOS F	13.9	97.9				
East: Parramatta Rd (E)															
Lane 1	887	6.1	887	6.1	744	1.192	100	715.4	LOS F	297.4	2191.4	Full	500	-43.4 [N3]	100.0
Lane 2	783	8.0	783	8.0	656	1.192	100	714.6	LOS F	262.8	1965.7	Full	500	-50.0 [N3]	100.0
Approach	1670	7.0	1670	7.0		1.192		715.0	LOS F	297.4	2191.4				
North: Good St (N)															
Lane 1	412	0.0	412	0.0	356	1.156	100	621.3	LOS F	117.3	820.9	Short	135	0.0	NA
Lane 2	181	0.0	181	0.0	374	0.483	42 [5]	48.8	LOS D	9.5	66.7	Full	500	0.0	50.6 [8]
Approach	592	0.0	592	0.0		1.156		446.7	LOS F	117.3	820.9				
West: Parramatta Rd (W)															
Lane 1	20	0.0	20	0.0	1315	0.015	100	9.2	LOS A	0.2	1.4	Short	65	0.0	NA
Lane 2	771	8.0	771	8.0	1313	0.587	100	6.4	LOS A	14.7	109.8	Full	135	0.0	0.0
Lane 3	771	8.0	771	8.0	1313	0.587	100	9.6	LOS A	22.1	165.4	Full	135	0.0	23.5
Approach	1563	7.9	1562	7.9		0.587		8.0	LOS A	22.1	165.4				
Intersection	4383	5.6	4374 [N1]	5.6		1.192		346.1	LOS F	297.4	2191.4				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 25 (maximum specified: 30)

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

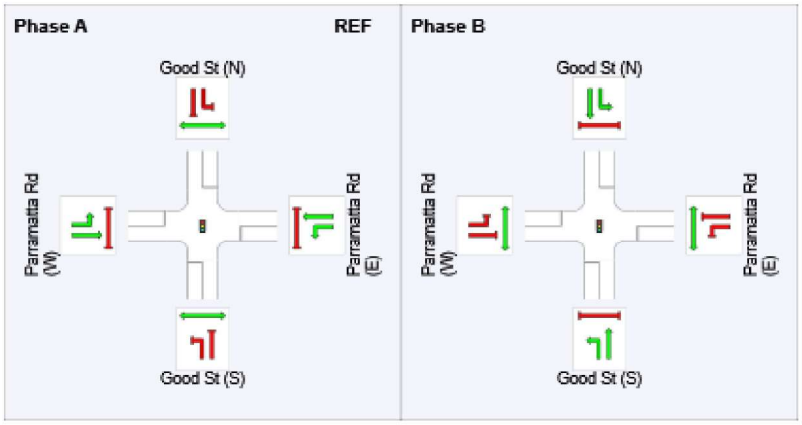
Parramatta Road / Good Street
Alternate Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	109	80
Green Time (sec)	85	23
Phase Time (sec)	91	29
Phase Split	76%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class Running	Other Movement Class Stopped
Mixed Running & Stopped Movement Classes	
Undetected Movement	Phase Transition Applied

LANE SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

Parramatta Road / Bold Street
Alternate Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	279	0.001	100	40.1	LOS C	0.0	0.1	Full	65	0.0	0.0
Lane 2	845	1.0	845	1.0	953	0.887	100	33.2	LOS C	15.0 N4	106.1 N4	Full	65	0.0	50.0
Lane 3	306	1.0	306	1.0	357	0.856	97 5	54.3	LOS D	15.0 N4	106.1 N4	Full	65	-19.9 N3	50.0
Approach	1152	1.0	1150 N1	1.0		0.887		38.8	LOS C	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	947	5.2	621	5.1	709	0.875	100	39.1	LOS C	30.1 N4	220.3 N4	Full	135	0.0	50.0
Lane 2	949	8.0	622	7.9	711	0.875	100	37.4	LOS C	29.5 N4	220.3 N4	Full	135	0.0	50.0
Approach	1896	6.6	1243 N1	6.5		0.875		38.3	LOS C	30.1	220.3				
West: Parramatta Rd (W)															
Lane 1	611	8.0	611	8.0	1220	0.501	100	4.7	LOS A	7.7	57.4	Full	500	0.0	0.0
Lane 2	489	8.0	489	8.0	977	0.501	100	4.8	LOS A	6.2	46.2	Full	500	-19.9 N3	0.0
Lane 3	386	1.0	386	1.0	527	0.732	100	35.7	LOS C	13.2	93.4	Short	200	0.0	NA
Lane 4	386	1.0	386	1.0	527	0.732	100	35.7	LOS C	13.2	93.4	Short	200	0.0	NA
Approach	1873	5.1	1873	5.1		0.732		17.5	LOS B	13.2	93.4				
Intersection	4920	4.7	4266 N1	5.5		0.887		29.3	LOS C	30.1	220.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 22 (maximum specified: 30)

5 Lane under-utilisation found by the program
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

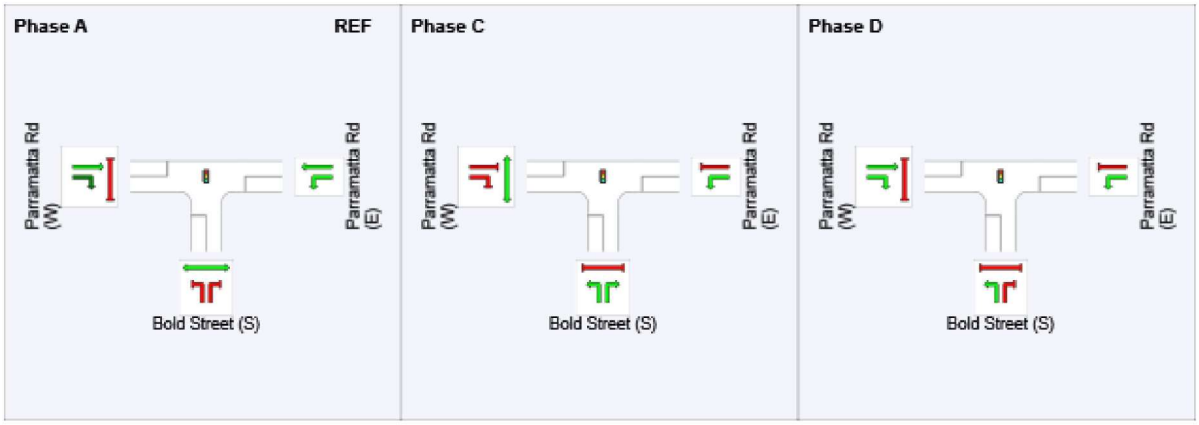
Parramatta Road / Bold Street
Alternate Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	52	87
Green Time (sec)	46	29	27
Phase Time (sec)	52	35	33
Phase Split	43%	29%	28%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [PM Bold / Cowper]

Network: N101 [PM]

Bold Street / Cowper Street
Alternate Intersection
2036 Conditons
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	441	7.5	441	7.5	1859	0.237	100	0.0	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	448	5.1	448	5.1	1888	0.237	100	0.0	LOS A	28.6 N5	209.2 N5	Full	500	0.0	0.0
Lane 3	307	4.1	307	4.1	1291	0.237	100	5.0	LOS A	55.1	399.1	Full	500	0.0	0.0
Approach	1196	5.7	1196	5.7		0.237		1.3	NA	55.1	399.1				
East: Cowper St (E)															
Lane 1	68	0.0	58	0.0	888	0.066	100	6.7	LOS A	0.3	2.0	Short (P)	10	0.0	NA
Lane 2	8	0.0	7	0.0	7	1.017	100	1075.2	LOS F	2.3	16.2	Full	145	-48.4 N3	0.0
Approach	76	0.0	65 N1	0.0		1.017		119.9	LOS F	2.3	16.2				
North: Bold St (N)															
Lane 1	579	4.3	516	4.7	1879	0.275	100	0.6	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	573	5.0	510	5.5	1857	0.275	100	0.2	LOS A	0.1	0.7	Full	65	0.0	0.0
Approach	1152	4.6	1026 N1	5.1		0.275		0.4	NA	0.1	0.7				
West: Cowper St (W)															
Lane 1	9	0.0	9	0.0	824	0.010	100	6.6	LOS A	0.0	0.2	Short (P)	10	0.0	NA
Lane 2	3	0.0	3	0.0	13	0.195	100	276.5	LOS F	0.5	3.4	Full	80	0.0	0.0
Approach	11	0.0	11	0.0		0.195		68.0	LOS E	0.5	3.4				
Intersection	2435	5.0	2299 N1	5.3		1.017		4.6	NA	55.1	399.1				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 22 (maximum specified: 30)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [PM Good / Cowper]

Network: N101 [PM]

Good Street / Cooper Street
Alternate Intersection
2036 Conditons
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	251	4.3	251	4.3	1179	0.213	100	5.0	LOS A	1.5	10.7	Full	500	0.0	0.0
Lane 2	106	4.2	106	4.2	501	0.213	100	5.8	LOS A	0.7	5.0	Full	500	-45.4[N3]	0.0
Approach	357	4.3	357	4.3		0.213		5.2	LOS A	1.5	10.7				
East: Cowper (E)															
Lane 1[d]	87	0.0	87	0.0	544	0.159	100	11.3	LOS A	0.9	6.6	Full	500	-33.2[N3]	0.0
Approach	87	0.0	87	0.0		0.159		11.3	LOS A	0.9	6.6				
North: Good St (N)															
Lane 1[d]	628	3.2	525	3.9	1192	0.440	100	5.2	LOS A	2.6	18.6	Full	60	-9.1[N3]	0.0
Approach	628	3.2	525[N1]	3.9		0.440		5.2	LOS A	2.6	18.6				
West: Cowper St (W)															
Lane 1[d]	118	0.0	110	0.0	778	0.142	100	7.8	LOS A	0.6	3.9	Full	145	0.0	0.0
Approach	118	0.0	110[N1]	0.0		0.142		7.8	LOS A	0.6	3.9				
Intersection	1189	3.0	1079[N1]	3.3		0.440		6.0	LOS A	2.6	18.6				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 22 (maximum specified: 30)

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

Parramatta Road / Good Street
Alternate Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	8	0.0	8	0.0	178	0.043	100	49.1	LOS D	0.4	2.6	Short	55	-50.0 N3	NA
Lane 2	151	1.0	146	1.0	371	0.394	47 6	47.8	LOS D	7.6	53.4	Full	60	0.0	0.0
Lane 3	318	1.0	308	1.0	371	0.830	100	53.0	LOS D	13.9 N4	97.9 N4	Full	60	0.0	50.0
Approach	478	1.0	462 N1	1.0		0.830		51.3	LOS D	13.9	97.9				
East: Parramatta Rd (E)															
Lane 1	1172	5.9	1172	5.9	754	1.553	100	2014.7	LOS F	763.0	5612.6	Full	500	-42.6 N3	100.0
Lane 2	1020	8.0	1020	8.0	656	1.553	100	2014.0	LOS F	664.5	4970.3	Full	500	-50.0 N3	100.0
Approach	2191	6.9	2191	6.9		1.553		2014.3	LOS F	763.0	5612.6				
North: Good St (N)															
Lane 1	408	0.0	408	0.0	356	1.146	100	586.4	LOS F	111.4	779.5	Short	135	0.0	NA
Lane 2	325	0.0	325	0.0	374	0.868	76 5	53.5	LOS D	18.7	131.2	Full	500	0.0	45.7 8
Approach	733	0.0	733	0.0		1.146		350.3	LOS F	111.4	779.5				
West: Parramatta Rd (W)															
Lane 1	53	0.0	53	0.0	1315	0.040	100	10.9	LOS A	0.9	6.0	Short	65	0.0	NA
Lane 2	674	8.0	674	8.0	1300 1	0.518	100	8.3	LOS A	16.9	126.7	Full	135	0.0	0.0
Lane 3	680	8.0	680	8.0	1313	0.518	100	10.3	LOS A	21.3	159.1	Full	135	0.0	19.9
Approach	1407	7.7	1407	7.7		0.518		9.4	LOS A	21.3	159.1				
Intersection	4808	5.5	4792 N1	5.5		1.553		982.2	LOS F	763.0	5612.6				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 22 (maximum specified: 30)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

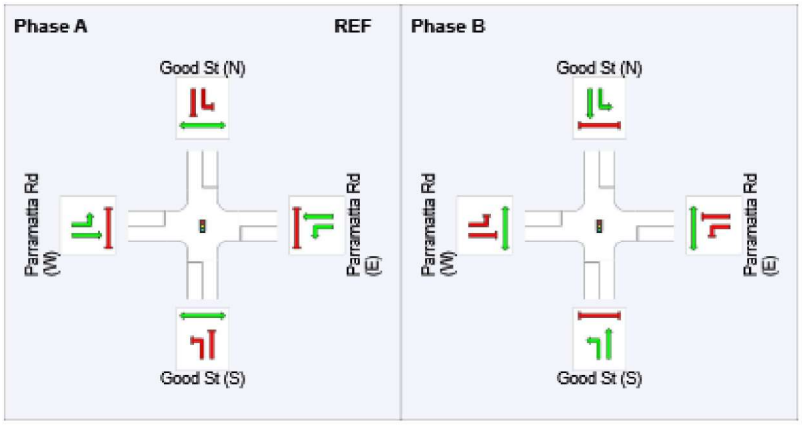
Parramatta Road / Good Street
Alternate Intersection
2036 Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	109	80
Green Time (sec)	85	23
Phase Time (sec)	91	29
Phase Split	76%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class Running	Other Movement Class Stopped
Mixed Running & Stopped Movement Classes	
Undetected Movement	Phase Transition Applied

LANE SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

Parramatta Road / Bold Street
Alternate Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	271	0.001	100	40.8	LOS C	0.0	0.1	Full	65	0.0	0.0
Lane 2	589	1.0	589	1.0	891	0.661	100	30.6	LOS C	15.0 N4	106.1 N4	Full	65	0.0	50.0
Lane 3	196	1.0	196	1.0	329	0.596	90 5	51.3	LOS D	10.5	73.8	Full	65	-23.5 N3	16.5
Approach	786	1.0	786	1.0		0.661		35.8	LOS C	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	570	3.2	570	3.2	770	0.741	100	24.3	LOS B	22.0	158.6	Full	135	0.0	19.6
Lane 2	573	8.0	573	8.0	772	0.741	100	18.8	LOS B	21.9	164.1	Full	135	0.0	22.7
Approach	1143	5.6	1143	5.6		0.741		21.5	LOS B	22.0	164.1				
West: Parramatta Rd (W)															
Lane 1	690	8.0	690	8.0	1236	0.558	100	4.5	LOS A	8.8	65.5	Full	500	0.0	0.0
Lane 2	528	8.0	528	8.0	946	0.558	100	4.5	LOS A	6.8	50.5	Full	500	-23.5 N3	0.0
Lane 3	203	1.0	203	1.0	627	0.324	100	17.6	LOS B	3.6	25.6	Short	200	0.0	NA
Lane 4	203	1.0	203	1.0	627	0.324	100	17.6	LOS B	3.6	25.6	Short	200	0.0	NA
Approach	1624	6.2	1624	6.2		0.558		7.8	LOS A	8.8	65.5				
Intersection	3552	4.9	3552	4.9		0.741		18.4	LOS B	22.0	164.1				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 13 (maximum specified: 30)

5 Lane under-utilisation found by the program
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

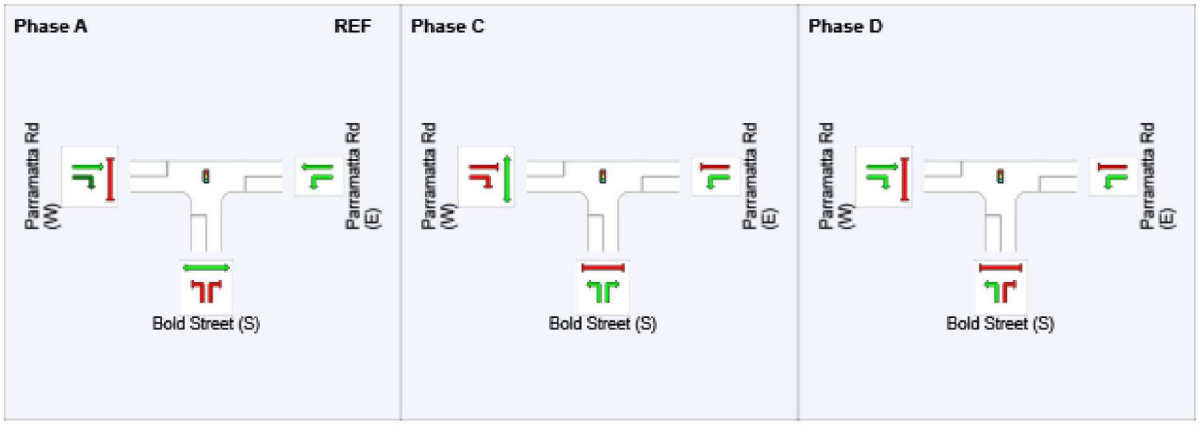
Parramatta Road / Bold Street
Alternate Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	56	90
Green Time (sec)	50	28	24
Phase Time (sec)	56	34	30
Phase Split	47%	28%	25%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [AM Bold / Cowper]

Network: N101 [AM]

Bold Street / Cowper Street
Alternate Intersection
Existing + Development Conditons
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	312	7.3	312	7.3	1860	0.168	100	0.1	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	317	5.1	317	5.1	1888	0.168	100	0.0	LOS A	10.9 N5	79.5 N5	Full	500	0.0	0.0
Lane 3	194	3.9	194	3.9	1155	0.168	100	4.1	LOS A	0.7	5.4	Full	500	-13.0 N3	0.0
Approach	822	5.6	822	5.6		0.168		1.0	NA	10.9	79.5				
East: Cowper St (E)															
Lane 1	55	0.0	55	0.0	1054	0.052	100	5.7	LOS A	0.2	1.5	Short (P)	10	0.0	NA
Lane 2	12	0.0	12	0.0	47	0.257	100	75.5	LOS F	0.6	4.4	Full	145	-15.8 N3	0.0
Approach	67	0.0	67	0.0		0.257		18.3	LOS B	0.6	4.4				
North: Bold St (N)															
Lane 1	405	3.2	405	3.2	1877	0.216	100	1.6	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	392	4.9	392	4.9	1814	0.216	100	0.5	LOS A	0.1	1.1	Full	65	0.0	0.0
Approach	797	4.1	797	4.1		0.216		1.0	NA	0.1	1.1				
West: Cowper St (W)															
Lane 1	2	0.0	2	0.0	972	0.002	100	5.8	LOS A	0.0	0.0	Short (P)	10	0.0	NA
Lane 2	1	0.0	1	0.0	60	0.017	100	59.8	LOS E	0.0	0.3	Full	80	0.0	0.0
Approach	3	0.0	3	0.0		0.017		23.8	LOS B	0.0	0.3				
Intersection	1689	4.7	1689	4.7		0.257		1.7	NA	10.9	79.5				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 13 (maximum specified: 30)

N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [AM Good / Cowper]

Network: N101 [AM]

Good Street / Cooper Street
Alternate Intersection
Existing + Development Conditons
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	265	4.3	265	4.3	1362	0.194	100	4.1	LOS A	1.2	8.5	Full	500	0.0	0.0
Lane 2	110	4.2	110	4.2	566	0.194	100	4.7	LOS A	0.6	4.1	Full	500	-44.9[N3]	0.0
Approach	375	4.3	375	4.3		0.194		4.3	LOS A	1.2	8.5				
East: Cowper (E)															
Lane 1[d]	10	0.0	10	0.0	704	0.014	100	7.3	LOS A	0.1	0.4	Full	500	-28.1[N3]	0.0
Approach	10	0.0	10	0.0		0.014		7.3	LOS A	0.1	0.4				
North: Good St (N)															
Lane 1[d]	248	3.2	248	3.2	1280	0.193	100	4.8	LOS A	1.0	6.8	Full	60	0.0	0.0
Approach	248	3.2	248	3.2		0.193		4.8	LOS A	1.0	6.8				
West: Cowper St (W)															
Lane 1[d]	131	0.0	131	0.0	816	0.160	100	7.0	LOS A	0.6	4.5	Full	145	0.0	0.0
Approach	131	0.0	131	0.0		0.160		7.0	LOS A	0.6	4.5				
Intersection	763	3.1	763	3.1		0.194		4.9	LOS A	1.2	8.5				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 13 (maximum specified: 30)

d Dominant lane on roundabout approach
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

Parramatta Road / Good Street
Alternate Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	33	0.0	33	0.0	361	0.090	100	43.6	LOS D	1.5	10.3	Short	55	-19.6 N3	NA
Lane 2	126	1.0	126	1.0	468	0.270	47 6	41.2	LOS C	6.0	42.4	Full	60	0.0	0.0
Lane 3	266	1.0	266	1.0	468	0.568	100	45.0	LOS D	13.8	97.3	Full	60	0.0	49.4
Approach	425	0.9	425	0.9		0.568		43.8	LOS D	13.8	97.3				
East: Parramatta Rd (E)															
Lane 1	656	6.2	656	6.2	1027	0.639	100	6.8	LOS A	10.6	77.9	Full	500	-15.9 N3	0.0
Lane 2	602	8.0	602	8.0	943	0.639	100	5.5	LOS A	9.7	72.8	Full	500	-22.7 N3	0.0
Approach	1259	7.1	1259	7.1		0.639		6.2	LOS A	10.6	77.9				
North: Good St (N)															
Lane 1	210	0.0	210	0.0	449	0.468	100	48.3	LOS D	10.6	74.1	Short	135	0.0	NA
Lane 2	97	0.0	97	0.0	471	0.205	44 5	40.4	LOS C	4.5	31.5	Full	500	0.0	0.0
Approach	307	0.0	307	0.0		0.468		45.8	LOS D	10.6	74.1				
West: Parramatta Rd (W)															
Lane 1	14	0.0	14	0.0	1223	0.011	100	11.2	LOS A	0.2	1.2	Short	65	0.0	NA
Lane 2	699	8.0	699	8.0	1219 1	0.574	100	9.3	LOS A	16.2	120.8	Full	135	0.0	0.0
Lane 3	701	8.0	701	8.0	1220	0.574	100	12.4	LOS A	22.1	165.5	Full	135	0.0	23.5
Approach	1414	7.9	1414	7.9		0.574		10.8	LOS A	22.1	165.5				
Intersection	3404	6.0	3404	6.0		0.639		16.4	LOS B	22.1	165.5				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 1.0 %
Number of Iterations: 13 (maximum specified: 30)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

PHASING SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

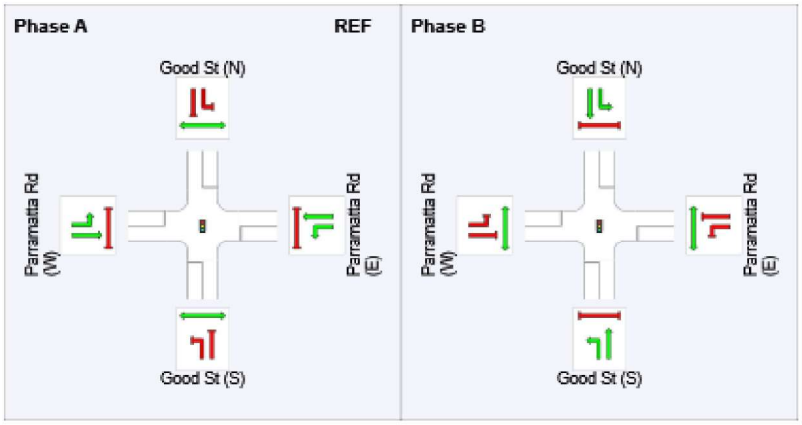
Parramatta Road / Good Street
Alternate Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	110	75
Green Time (sec)	79	29
Phase Time (sec)	85	35
Phase Split	71%	29%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class Running	Other Movement Class Stopped
Mixed Running & Stopped Movement Classes	
Undetected Movement	Phase Transition Applied

LANE SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

Parramatta Road / Bold Street
Alternate Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	287	0.001	100	39.3	LOS C	0.0	0.1	Full	65	0.0	0.0
Lane 2	732	1.0	732	1.0	907	0.807	100	33.1	LOS C	15.0 N4	106.1 N4	Full	65	0.0	50.0
Lane 3	284	1.0	284	1.0	461	0.617	76 5	49.5	LOS D	14.9	105.0	Full	65	0.0	49.0
Approach	1017	1.0	1016 N1	1.0		0.807		37.7	LOS C	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	821	5.5	639	5.4	756	0.846	100	36.8	LOS C	30.1 N4	220.3 N4	Full	135	0.0	50.0
Lane 2	823	8.0	640	7.9	757	0.846	100	34.2	LOS C	29.5 N4	220.3 N4	Full	135	0.0	50.0
Approach	1644	6.7	1280 N1	6.7		0.846		35.5	LOS C	30.1	220.3				
West: Parramatta Rd (W)															
Lane 1	411	8.0	411	8.0	1205	0.341	100	4.5	LOS A	4.5	33.5	Full	500	0.0	0.0
Lane 2	411	8.0	411	8.0	1205	0.341	100	4.5	LOS A	4.5	33.5	Full	500	0.0	0.0
Lane 3	288	1.0	288	1.0	485	0.594	100	26.4	LOS B	7.7	54.5	Short	200	0.0	NA
Lane 4	288	1.0	288	1.0	485	0.594	100	26.4	LOS B	7.7	54.5	Short	200	0.0	NA
Approach	1399	5.1	1399	5.1		0.594		13.6	LOS A	7.7	54.5				
Intersection	4060	4.7	3695 N1	5.2		0.846		27.8	LOS B	30.1	220.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.8 %
Number of Iterations: 22 (maximum specified: 30)

5 Lane under-utilisation found by the program
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

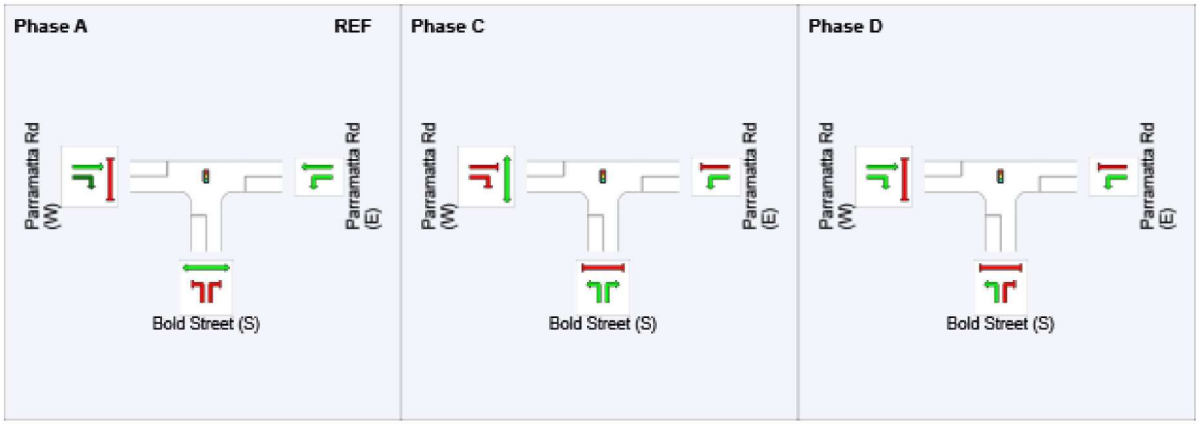
Parramatta Road / Bold Street
Alternate Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	55	91
Green Time (sec)	49	30	23
Phase Time (sec)	55	36	29
Phase Split	46%	30%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class Running	Other Movement Class Stopped
Mixed Running & Stopped Movement Classes	
Undetected Movement	Phase Transition Applied

LANE SUMMARY

Site: 103 [PM Bold / Cowper]

Network: N101 [PM]

Bold Street / Cowper Street
Alternate Intersection
Existing + Development Conditons
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	494	7.0	494	7.0	1865	0.265	100	0.0	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	500	5.1	500	5.1	1888	0.265	100	0.0	LOS A	20.8 N5	151.7 N5	Full	500	0.0	0.0
Lane 3	186	0.1	186	0.1	702	0.265	100	9.9	LOS A	1.2	8.6	Full	500	-1.7 N3	0.0
Approach	1181	5.1	1181	5.1		0.265		1.6	NA	20.8	151.7				
East: Cowper St (E)															
Lane 1	45	0.0	40	0.0	999	0.040	100	6.0	LOS A	0.2	1.2	Short (P)	10	0.0	NA
Lane 2	6	0.0	5	0.0	10	0.476	100	276.3	LOS F	0.7	4.7	Full	145	-46.7 N3	0.0
Approach	51	0.0	45 N1	0.0		0.476		35.4	LOS C	0.7	4.7				
North: Bold St (N)															
Lane 1	439	4.0	407	4.3	1880	0.217	100	0.9	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	433	5.0	402	5.3	1857	0.217	100	0.2	LOS A	0.1	0.5	Full	65	0.0	0.0
Approach	872	4.5	809 N1	4.8		0.217		0.6	NA	0.1	0.5				
West: Cowper St (W)															
Lane 1	52	0.0	52	0.0	767	0.067	100	7.2	LOS A	0.2	1.6	Short (P)	10	0.0	NA
Lane 2	12	0.0	12	0.0	21	0.564	100	262.8	LOS F	1.6	11.0	Full	80	0.0	0.0
Approach	64	0.0	64	0.0		0.564		55.5	LOS D	1.6	11.0				
Intersection	2167	4.6	2099 N1	4.7		0.564		3.6	NA	20.8	151.7				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.8 %
Number of Iterations: 22 (maximum specified: 30)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [PM Good / Cowper]

Network: N101 [PM]

Good Street / Cooper Street
Alternate Intersection
Existing + Development Conditons
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	119	4.1	119	4.1	1260	0.095	100	4.3	LOS A	0.6	4.1	Full	500	0.0	0.0
Lane 2	86	4.4	86	4.4	908	0.095	100	4.7	LOS A	0.4	3.1	Full	500	-20.9[N3]	0.0
Approach	206	4.3	206	4.3		0.095		4.5	LOS A	0.6	4.1				
East: Cowper (E)															
Lane 1[d]	52	0.0	52	0.0	789	0.065	100	9.0	LOS A	0.4	2.7	Full	500	-12.9[N3]	0.0
Approach	52	0.0	52	0.0		0.065		9.0	LOS A	0.4	2.7				
North: Good St (N)															
Lane 1[d]	413	3.6	362	4.0	1295	0.280	100	4.7	LOS A	1.5	11.0	Full	60	0.0	0.0
Approach	413	3.6	362[N1]	4.0		0.280		4.7	LOS A	1.5	11.0				
West: Cowper St (W)															
Lane 1[d]	171	0.0	166	0.0	900	0.185	100	6.6	LOS A	0.8	5.4	Full	145	0.0	0.0
Approach	171	0.0	166[N1]	0.0		0.185		6.6	LOS A	0.8	5.4				
Intersection	840	2.8	786[N1]	3.0		0.280		5.3	LOS A	1.5	11.0				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.8 %
Number of Iterations: 22 (maximum specified: 30)

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

Parramatta Road / Good Street
Alternate Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	39	0.0	39	0.0	178	0.217	100	51.6	LOS D	2.0	13.9	Short	55	-50.0[N3]	NA
Lane 2	93	1.0	92	1.0	371	0.249	47[6]	46.2	LOS D	4.6	32.6	Full	60	0.0	0.0
Lane 3	196	1.0	194	1.0	371	0.524	100	49.3	LOS D	10.4	73.2	Full	60	0.0	23.0
Approach	329	0.9	325[N1]	0.9		0.524		48.7	LOS D	10.4	73.2				
East: Parramatta Rd (E)															
Lane 1	973	6.1	973	6.1	744	1.309	100	1133.2	LOS F	443.6	3268.5	Full	500	-43.4[N3]	100.0
Lane 2	859	8.0	859	8.0	656	1.309	100	1132.5	LOS F	391.9	2931.2	Full	500	-50.0[N3]	100.0
Approach	1833	7.0	1833	7.0		1.309		1132.9	LOS F	443.6	3268.5				
North: Good St (N)															
Lane 1	336	0.0	336	0.0	356	0.943	100	59.9	LOS E	20.0	139.9	Short	135	0.0	NA
Lane 2	185	0.0	185	0.0	374	0.494	52[5]	49.0	LOS D	9.8	68.3	Full	500	0.0	0.0
Approach	520	0.0	520	0.0		0.943		56.0	LOS D	20.0	139.9				
West: Parramatta Rd (W)															
Lane 1	11	0.0	10	0.0	1315	0.008	100	10.5	LOS A	0.2	1.1	Short	65	0.0	NA
Lane 2	548	8.0	548	8.0	1313	0.417	100	7.1	LOS A	11.9	89.0	Full	135	0.0	0.0
Lane 3	548	8.0	548	8.0	1313	0.417	100	9.2	LOS A	15.6	116.4	Full	135	0.0	0.0
Approach	1107	7.9	1106	7.9		0.417		8.2	LOS A	15.6	116.4				
Intersection	3788	5.8	3784[N1]	5.8		1.309		562.9	LOS F	443.6	3268.5				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.8 %
Number of Iterations: 22 (maximum specified: 30)

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

PHASING SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

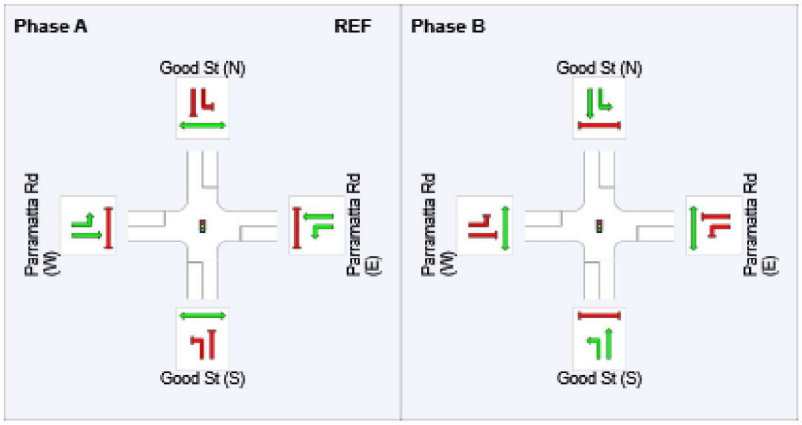
Parramatta Road / Good Street
Alternate Intersection
Existing + Development Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	109	80
Green Time (sec)	85	23
Phase Time (sec)	91	29
Phase Split	76%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

Parramatta Road / Bold Street
Alternate Intersection
Existing Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	271	0.001	100	40.8	LOS C	0.0	0.1	Full	65	0.0	0.0
Lane 2	585	1.0	585	1.0	891	0.657	100	30.6	LOS C	15.0[N4]	106.1[N4]	Full	65	0.0	50.0
Lane 3	193	1.0	193	1.0	341	0.566	86[5]	50.8	LOS D	10.2	71.8	Full	65	-20.8[N3]	14.0
Approach	778	1.0	778	1.0		0.657		35.6	LOS C	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	555	3.1	555	3.1	770	0.721	100	22.7	LOS B	20.1	144.7	Full	135	0.0	11.3
Lane 2	557	8.0	557	8.0	772	0.721	100	19.2	LOS B	21.1	158.1	Full	135	0.0	19.3
Approach	1112	5.5	1112	5.5		0.721		20.9	LOS B	21.1	158.1				
West: Parramatta Rd (W)															
Lane 1	679	8.0	679	8.0	1236	0.550	100	4.4	LOS A	8.5	63.6	Full	500	0.0	0.0
Lane 2	538	8.0	538	8.0	979	0.550	100	4.5	LOS A	6.8	50.7	Full	500	-20.8[N3]	0.0
Lane 3	189	1.0	189	1.0	641	0.295	100	17.0	LOS B	3.3	23.3	Short	200	0.0	NA
Lane 4	189	1.0	189	1.0	641	0.295	100	17.0	LOS B	3.3	23.3	Short	200	0.0	NA
Approach	1596	6.3	1596	6.3		0.550		7.4	LOS A	8.5	63.6				
Intersection	3486	4.9	3486	4.9		0.721		18.0	LOS B	21.1	158.1				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 13 (maximum specified: 30)

5 Lane under-utilisation found by the program
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [AM Parramatta / Bold]

Network: N101 [AM]

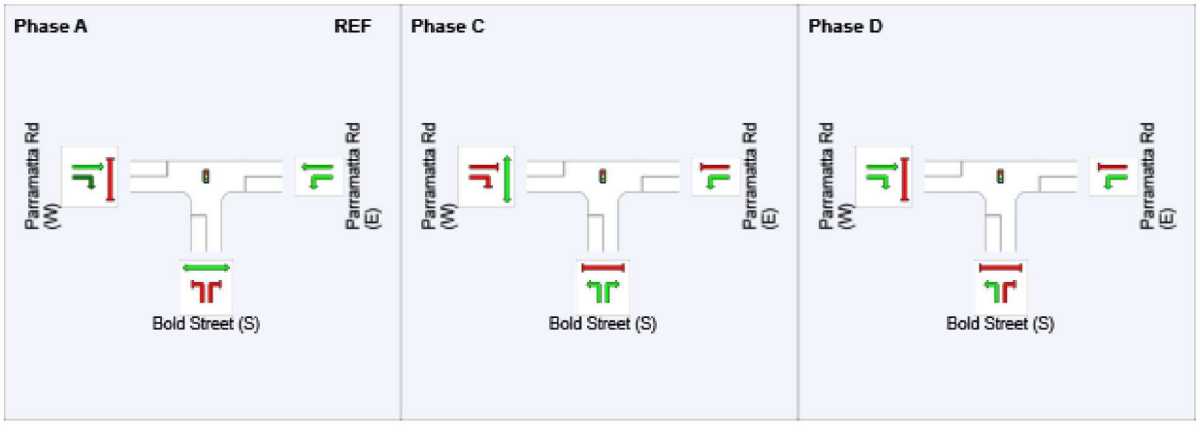
Parramatta Road / Bold Street
Alternate Intersection
Existing Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	56	90
Green Time (sec)	50	28	24
Phase Time (sec)	56	34	30
Phase Split	47%	28%	25%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [AM Bold / Cowper]

Network: N101 [AM]

Bold Street / Cowper Street
Existing Intersection
Alternate Intersection
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	306	7.4	306	7.4	1859	0.164	100	0.1	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	310	5.1	310	5.1	1888	0.164	100	0.0	LOS A	11.1 N5	81.0 N5	Full	500	0.0	0.0
Lane 3	201	4.0	201	4.0	1224	0.164	100	3.5	LOS A	0.7	4.8	Full	500	-12.2 N3	0.0
Approach	817	5.7	817	5.7		0.164		0.9	NA	11.1	81.0				
East: Cowper St (E)															
Lane 1	48	0.0	48	0.0	1036	0.046	100	5.7	LOS A	0.2	1.3	Short (P)	10	0.0	NA
Lane 2	6	0.0	6	0.0	49	0.112	100	64.1	LOS E	0.3	1.9	Full	145	-13.7 N3	0.0
Approach	53	0.0	53	0.0		0.112		11.8	LOS A	0.3	1.9				
North: Bold St (N)															
Lane 1	392	3.5	392	3.5	1879	0.209	100	1.3	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	378	4.9	378	4.9	1811	0.209	100	0.5	LOS A	0.1	1.1	Full	65	0.0	0.0
Approach	770	4.2	770	4.2		0.209		0.9	NA	0.1	1.1				
West: Cowper St (W)															
Lane 1	2	0.0	2	0.0	979	0.002	100	5.8	LOS A	0.0	0.0	Short (P)	10	0.0	NA
Lane 2	1	0.0	1	0.0	61	0.016	100	58.6	LOS E	0.0	0.3	Full	80	0.0	0.0
Approach	3	0.0	3	0.0		0.016		23.4	LOS B	0.0	0.3				
Intersection	1643	4.8	1643	4.8		0.209		1.3	NA	11.1	81.0				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 13 (maximum specified: 30)

N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [AM Good / Cowper]

Network: N101 [AM]

Good Street / Cooper Street
Alternate Intersection
Existing Conditions
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	254	4.3	254	4.3	1404	0.181	100	4.0	LOS A	1.1	7.8	Full	500	0.0	0.0
Lane 2	120	4.2	120	4.2	665	0.181	100	4.5	LOS A	0.6	4.2	Full	500	-40.6[N3]	0.0
Approach	375	4.3	375	4.3		0.181		4.2	LOS A	1.1	7.8				
East: Cowper (E)															
Lane 1[d]	10	0.0	10	0.0	753	0.013	100	7.2	LOS A	0.1	0.4	Full	500	-24.3[N3]	0.0
Approach	10	0.0	10	0.0		0.013		7.2	LOS A	0.1	0.4				
North: Good St (N)															
Lane 1[d]	226	3.5	226	3.5	1271	0.178	100	4.6	LOS A	0.9	6.2	Full	60	0.0	0.0
Approach	226	3.5	226	3.5		0.178		4.6	LOS A	0.9	6.2				
West: Cowper St (W)															
Lane 1[d]	78	0.0	78	0.0	819	0.095	100	7.2	LOS A	0.4	2.5	Full	145	0.0	0.0
Approach	78	0.0	78	0.0		0.095		7.2	LOS A	0.4	2.5				
Intersection	689	3.5	689	3.5		0.181		4.7	LOS A	1.1	7.8				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 13 (maximum specified: 30)

d Dominant lane on roundabout approach
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

Parramatta Road / Good Street
Alternate Intersection
Existing Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	1	0.0	1	0.0	398	0.003	100	42.3	LOS C	0.0	0.3	Short	55	-8.1 N3	NA
Lane 2	120	1.0	120	1.0	452	0.265	47 6	42.0	LOS C	5.7	40.5	Full	60	0.0	0.0
Lane 3	252	1.0	252	1.0	452	0.557	100	45.7	LOS D	13.1	92.4	Full	60	0.0	44.6
Approach	373	1.0	373	1.0		0.557		44.5	LOS D	13.1	92.4				
East: Parramatta Rd (E)															
Lane 1	653	6.4	653	6.4	1155	0.565	100	5.6	LOS A	8.4	62.1	Full	500	-6.6 N3	0.0
Lane 2	587	8.0	587	8.0	1037	0.565	100	4.5	LOS A	7.6	56.7	Full	500	-16.0 N3	0.0
Approach	1240	7.2	1240	7.2		0.565		5.1	LOS A	8.4	62.1				
North: Good St (N)															
Lane 1	210	0.0	210	0.0	433	0.485	100	49.3	LOS D	10.7	75.0	Short	135	0.0	NA
Lane 2	97	0.0	97	0.0	455	0.212	44 5	41.3	LOS C	4.6	31.9	Full	500	0.0	0.0
Approach	307	0.0	307	0.0		0.485		46.8	LOS D	10.7	75.0				
West: Parramatta Rd (W)															
Lane 1	14	0.0	14	0.0	1238	0.011	100	11.0	LOS A	0.2	1.2	Short	65	0.0	NA
Lane 2	698	8.0	698	8.0	1234 1	0.565	100	9.0	LOS A	15.9	118.6	Full	135	0.0	0.0
Lane 3	699	8.0	699	8.0	1236	0.565	100	11.8	LOS A	21.5	160.7	Full	135	0.0	20.8
Approach	1411	7.9	1411	7.9		0.565		10.4	LOS A	21.5	160.7				
Intersection	3329	6.1	3329	6.1		0.565		15.6	LOS B	21.5	160.7				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 13 (maximum specified: 30)

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

PHASING SUMMARY

Site: 102 [AM Parramatta / Good]

Network: N101 [AM]

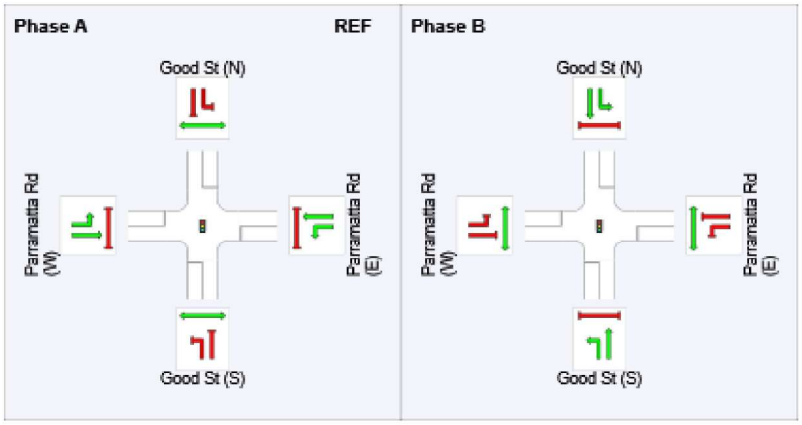
Parramatta Road / Good Street
Alternate Intersection
Existing Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	110	76
Green Time (sec)	80	28
Phase Time (sec)	86	34
Phase Split	72%	28%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class Running	Other Movement Class Stopped
Mixed Running & Stopped Movement Classes	
Undetected Movement	Phase Transition Applied

LANE SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

Parramatta Road / Bold Street
Alternate Intersection
Existing Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold Street (S)															
Lane 1	0	100.0	0	100.0	287	0.001	100	39.2	LOS C	0.0	0.1	Full	65	0.0	0.0
Lane 2	729	1.0	729	1.0	907	0.804	100	33.0	LOS C	15.0 N4	106.1 N4	Full	65	0.0	50.0
Lane 3	281	1.0	281	1.0	461	0.609	76 5	49.4	LOS D	14.7	103.4	Full	65	0.0	47.6
Approach	1011	1.0	1010	1.0		0.804		37.6	LOS C	15.0	106.1				
East: Parramatta Rd (E)															
Lane 1	805	5.4	626	5.4	756	0.829	100	35.3	LOS C	30.0	219.5	Full	135	0.0	49.6
Lane 2	807	8.0	628	8.0	757	0.829	100	33.8	LOS C	29.5 N4	220.3 N4	Full	135	0.0	50.0
Approach	1612	6.7	1254 N1	6.7		0.829		34.6	LOS C	30.0	220.3				
West: Parramatta Rd (W)															
Lane 1	411	8.0	411	8.0	1205	0.341	100	4.5	LOS A	4.5	33.5	Full	500	0.0	0.0
Lane 2	411	8.0	411	8.0	1205	0.341	100	4.5	LOS A	4.5	33.5	Full	500	0.0	0.0
Lane 3	275	1.0	275	1.0	495	0.554	100	25.4	LOS B	6.9	48.9	Short	200	0.0	NA
Lane 4	275	1.0	275	1.0	495	0.554	100	25.4	LOS B	6.9	48.9	Short	200	0.0	NA
Approach	1372	5.2	1372	5.2		0.554		12.9	LOS A	6.9	48.9				
Intersection	3994	4.8	3635 N1	5.2		0.829		27.2	LOS B	30.0	220.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.7 %
Number of Iterations: 23 (maximum specified: 30)

5 Lane under-utilisation found by the program
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N4 Average back of queue has been restricted to the available queue storage space.

PHASING SUMMARY

Site: 101 [PM Parramatta / Bold]

Network: N101 [PM]

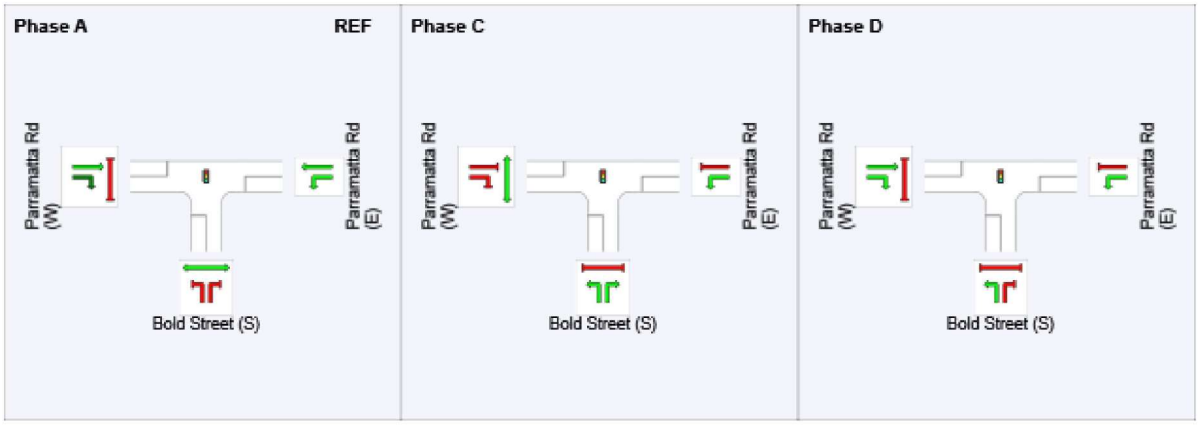
Parramatta Road / Bold Street
Alternate Intersection
Existing Conditions
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: RMS SCATS Active Plan (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, C, D

Phase Timing Results

Phase	A	C	D
Phase Change Time (sec)	0	55	91
Green Time (sec)	49	30	23
Phase Time (sec)	55	36	29
Phase Split	46%	30%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

LANE SUMMARY

Site: 103 [PM Bold / Cowper]

Network: N101 [PM]

Bold Street / Cowper Street
Alternate Intersection
Existing Conditions
Giveway / Yield (Two-Way)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Bold St (S)															
Lane 1	491	7.0	491	7.0	1865	0.263	100	0.0	LOS A	0.0	0.0	Short	50	0.0	NA
Lane 2	497	5.1	497	5.1	1888	0.263	100	0.0	LOS A	20.5 N5	149.9 N5	Full	500	0.0	0.0
Lane 3	187	0.3	187	0.3	711	0.263	100	9.5	LOS A	1.2	8.4	Full	500	-4.5 N3	0.0
Approach	1176	5.1	1176	5.1		0.263		1.5	NA	20.5	149.9				
East: Cowper St (E)															
Lane 1	45	0.0	41	0.0	986	0.041	100	6.0	LOS A	0.2	1.2	Short (P)	10	0.0	NA
Lane 2	6	0.0	5	0.0	12	0.408	100	218.9	LOS F	0.6	4.1	Full	145	-45.3 N3	0.0
Approach	51	0.0	46 N1	0.0		0.408		29.2	LOS C	0.6	4.1				
North: Bold St (N)															
Lane 1	425	4.3	393	4.6	1881	0.209	100	0.6	LOS A	0.0	0.0	Full	65	0.0	0.0
Lane 2	419	5.0	388	5.3	1856	0.209	100	0.2	LOS A	0.1	0.5	Full	65	0.0	0.0
Approach	845	4.6	782 N1	4.9		0.209		0.4	NA	0.1	0.5				
West: Cowper St (W)															
Lane 1	8	0.0	8	0.0	771	0.010	100	7.0	LOS A	0.0	0.2	Short (P)	10	0.0	NA
Lane 2	3	0.0	3	0.0	22	0.112	100	149.9	LOS F	0.3	2.0	Full	80	0.0	0.0
Approach	10	0.0	10	0.0		0.112		42.7	LOS D	0.3	2.0				
Intersection	2081	4.8	2013 N1	4.9		0.408		1.9	NA	20.5	149.9				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.7 %
Number of Iterations: 23 (maximum specified: 30)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Continuous Lane results determined by Back of Queue values of downstream lanes.

LANE SUMMARY

Site: 104 [PM Good / Cowper]

Network: N101 [PM]

Good Street / Cooper Street
Alternate Intersection
Existing Conditions
Roundabout

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1[d]	114	4.1	114	4.1	1274	0.090	100	4.3	LOS A	0.5	3.8	Full	500	0.0	0.0
Lane 2	91	4.5	91	4.5	1016	0.090	100	4.5	LOS A	0.4	3.2	Full	500	-14.5[N3]	0.0
Approach	206	4.3	206	4.3		0.090		4.4	LOS A	0.5	3.8				
East: Cowper (E)															
Lane 1[d]	52	0.0	52	0.0	835	0.062	100	8.8	LOS A	0.4	2.7	Full	500	-8.6[N3]	0.0
Approach	52	0.0	52	0.0		0.062		8.8	LOS A	0.4	2.7				
North: Good St (N)															
Lane 1[d]	394	3.7	348	4.2	1290	0.270	100	4.6	LOS A	1.4	10.4	Full	60	0.0	0.0
Approach	394	3.7	348[N1]	4.2		0.270		4.6	LOS A	1.4	10.4				
West: Cowper St (W)															
Lane 1[d]	118	0.0	116	0.0	901	0.129	100	6.9	LOS A	0.5	3.6	Full	145	0.0	0.0
Approach	118	0.0	116[N1]	0.0		0.129		6.9	LOS A	0.5	3.6				
Intersection	769	3.0	721[N1]	3.2		0.270		5.2	LOS A	1.4	10.4				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.7 %
Number of Iterations: 23 (maximum specified: 30)

d Dominant lane on roundabout approach
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

LANE SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

Parramatta Road / Good Street
Alternate Intersection
Existing Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Lane Use and Performance

	Demand Flows		Arrival Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	Total veh/h	HV %	veh/h	v/c	%	sec		Veh	Dist m		m	%	%
South: Good St (S)															
Lane 1	8	0.0	7	0.0	179	0.042	100	49.0	LOS D	0.4	2.5	Short	55	-49.6 [N3]	NA
Lane 2	87	1.0	86	1.0	371	0.232	47 [6]	46.0	LOS D	4.3	30.3	Full	60	0.0	0.0
Lane 3	182	1.0	181	1.0	371	0.489	100	48.9	LOS D	9.6	67.7	Full	60	0.0	16.0
Approach	277	1.0	275 [N1]	1.0		0.489		48.0	LOS D	9.6	67.7				
East: Parramatta Rd (E)															
Lane 1	961	6.3	961	6.3	741	1.297	100	1092.0	LOS F	427.7	3154.5	Full	500	-43.6 [N3]	100.0
Lane 2	852	8.0	852	8.0	656	1.297	100	1091.4	LOS F	379.2	2836.1	Full	500	-50.0 [N3]	100.0
Approach	1813	7.1	1813	7.1		1.297		1091.7	LOS F	427.7	3154.5				
North: Good St (N)															
Lane 1	336	0.0	336	0.0	356	0.943	100	59.9	LOS E	20.0	139.9	Short	135	0.0	NA
Lane 2	185	0.0	185	0.0	374	0.494	52 [5]	49.0	LOS D	9.8	68.3	Full	500	0.0	0.0
Approach	520	0.0	520	0.0		0.943		56.0	LOS D	20.0	139.9				
West: Parramatta Rd (W)															
Lane 1	11	0.0	10	0.0	1315	0.008	100	10.5	LOS A	0.2	1.1	Short	65	0.0	NA
Lane 2	547	8.0	546	8.0	1313	0.416	100	7.1	LOS A	11.8	88.5	Full	135	0.0	0.0
Lane 3	547	8.0	546	8.0	1313	0.416	100	9.2	LOS A	15.5	115.7	Full	135	0.0	0.0
Approach	1104	7.9	1103 [N1]	7.9		0.416		8.2	LOS A	15.5	115.7				
Intersection	3713	5.9	3711 [N1]	5.9		1.297		547.1	LOS F	427.7	3154.5				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.7 %
Number of Iterations: 23 (maximum specified: 30)

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

PHASING SUMMARY

Site: 102 [PM Parramatta / Good]

Network: N101 [PM]

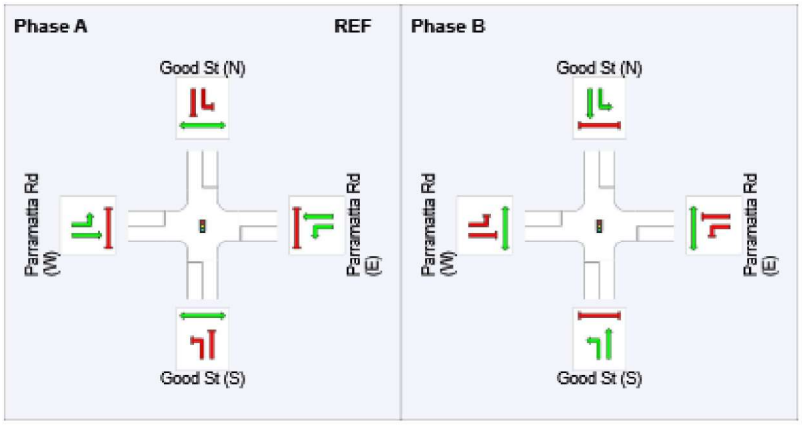
Parramatta Road / Good Street
Alternate Intersection
Existing Conditons
Signals - Actuated Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Phase Times determined by the program
Green Split Priority applies
Phase Sequence: TCS113
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

Phase Timing Results

Phase	A	B
Phase Change Time (sec)	109	80
Green Time (sec)	85	23
Phase Time (sec)	91	29
Phase Split	76%	24%

See the Phase Information section in the Detailed Output 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, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class Running	Other Movement Class Stopped
Mixed Running & Stopped Movement Classes	
Undetected Movement	Phase Transition Applied

				Parramatta Road E			
				U	R	WB	L
			Known	0	0	3031	761
			Approach		3792		
			Exit		2813		
			Future IN Assignment				
			Future OUT Assignment				
			Future Volumes	0	0	3093.736	761

				Parramatta Road E			
				U	R	WB	L IN
T IN	104.3	130.7	Known	0	0	3776	606
T OUT	130.7	104.3	Approach		4382		
			Exit		3524		
			Future IN Assignment				0.37
			Future OUT Assignment				
			Future Volumes	0	0	3776	644.591

			Cowper Street E			
			U	R OUT	WB	L OUT
		Known	0	14.25	0.75	135
		Approach		150		
		Exit		281.16788		
		Distribution		0.095	0.005	0.9
		Resulting	0	14.25	0.75	135
		Resulting Exit		281.16788		
		Difference		0		
		Future IN Assignment				
		Future OUT Assignment		0.1		0.1
		Future Volumes	0	27.32	0.75	148.07

			Cowper Street E			
			U	R	WB	L
		Known	0	86.05876	0	86.05876
		Approach		172.1175182		
		Exit		43.02937955		
		Distribution		0.5		0.5
		Resulting	0	86.05876	0	86.05876
		Resulting Exit		43.02937955		
		Difference		0		
		Future IN Assignment				
		Future OUT Assignment				
		Future Volumes	0	86.05876	0	86.05876

Parramatta Road / Bold Street

	N/A				Parramatta Road W			
U	R	SB	L	U	R IN	EB	L	U
					1544	2201		
	0				3745			
	0				4722			
					0.53			
0	0	0	0	0	1599.279	2201	0	0

Parramatta Road / Good Street

	Good Street N				Parramatta Road W			
U	R	SB	L	U	R	EB	L	U
0	0	649	816	0	0	2708	106	0
	1465				2814			
	1045				3792			
0	0	649	816	0	0	2714.535	106	0

Bold Street / Cowper Street

	Bold Street N				Cowper Street W			
U	R	SB	L IN	U	R	EB	L	U
0	2.305	2141.345	161.35	0	4.13972	0.21788	17.4304	0
	2305				21.788			
	2303				5.447			
0	0.001	0.929	0.07		0.19	0.01	0.8	
0	2.305	2141.345	161.35	0	4.13972	0.21788	17.4304	0
	2301.6884				5.447			
	-1.3116				0			
			0.53					
0	2.305	2141.345	216.629	0	4.13972	0.21788	17.4304	0

Cowper Street / Good Street

	Good Street N				Cowper Street W			
U	R IN	SB	L	U	R	EB	L	U
125.5	313.75	809.475	6.275	0	72.75219	1.05438	137.0693	0
	1255				210.87591			
	955				385.15			
0.1	0.25	0.645	0.005		0.345	0.005	0.65	
125.5	313.75	809.475	6.275	0	72.75219	1.05438	137.0693	0
	955.5281006				385.15			
	0.5281006				0			
	0.37							
							0.8	
125.5	352.341	809.475	6.275	0	72.75219	1.05438	241.6293	0

Bold Street S

R OUT	NB	L OUT
612		1691
2303		
2305		
0.05		0.05
618.535	0	1697.535

Good Street S

R	NB	L
0	939	16
955		
1255		
	0.32	0.48
0	980.824	78.736

Bold Street S

R IN	NB	L	Sum
119.6	2270.008	2.392	4868.788
2392			4868.788
2280.48472			4870.0996
0.05	0.949	0.001	1.3116
119.6	2270.008	2.392	
2280.48472			
0			-1.31
0.1			
130.03	2270.008	2.392	

Good Street S

R	NB	L	Sum
35.7	606.9	71.4	2351.993428
714			2351.993428
968.2859481			2351.465328
0.05	0.85	0.1	-0.5281006
35.7	606.9	71.4	
968.2859481			
0			0.53
35.7	606.9	71.4	