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Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

20 December 2024 Reference: 240047.04FA

Revelop
PO Box 313
Baulkham Hills NSW 1755
Attention: Anthony El-Hazouri

SUPPLEMENTARY TRAFFIC ADVICE
MODIFICATIONS TO FORESTWAY SHOPPING CENTRE
AT FOREST WAY, FRENCHS FOREST

Dear Anthony,

Reference is made to your request to provide supplementary traffic advice for the proposed Modifications to Forestway Shopping Centre at Forest Way, Frenchs Forest. This letter is in response to the matters raised with regard to the right turn movement out of the site raised in the letter dated 20 December 2024 from Transport for NSW:

> • *The southbound vehicle queue on Forest Way extends past the proposed signalised intersection in the morning and afternoon weekday peak periods and as such, concern is raised that there would be minimal storage space in the southbound lanes on Forest Way to accommodate vehicles turning right out of the subject site.*
>
> • *The above constraint is likely to cause delays for right turn movements out of the site and associated driver frustration resulting in some motorists queuing across the northbound through lanes on Forest Way to force their way into the southbound carriageway of Forest Way, which would block northbound through lanes on Forest Way. This would likely result in the northbound queue on Forest Way extending back to the Warringah Road intersection, negating some of the travel time benefits from the recent upgrade of Warringah Road.*
>
> • *Upon review of the Applicant's proposed signal phase timings dated 6 December 2024 and investigation of settings within TfNSW Sydney Coordinated Adaptive Traffic System (SCATS), it is not possible to have phasing arrangements such that sufficient vehicle storage would be created in the southbound lanes of Forest Way to adequately accommodate right turn movements out of the subject site.*

To address these matters, further traffic counts were undertaken on Saturday 14 December and Tuesday 10 December at the intersections previously modelled. The detailed results of these surveys are provided in **Annexure A**.

The 2024 volumes were input into the model and the model was re-run. In addition, traffic volumes for the Saturday peak were developed using the same assumptions as per the MTE Report, using the traffic generation rates provided in the RTA Guide to Traffic Generating Developments 2002. The results of the base model are summarised in **Table 1**, with the result of the base plus development summarised in **Table 2**. Detailed output reports are provided in **Annexure B**.

TABLE 1: 2024 BASE RESULTS

Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/vehicle)	Level of Service[3]	Control Type	Worst Movement	95th Percentile Queue
2024 PERFORMANCE							
Forest Way / Naree Road	AM	0.79	18.1	**B**	Signals	RT from Naree Road (E)	27.2 veh (205.3m) Forest Way (N)
	PM	0.81	19.6	**B**		RT from Naree Road (E)	29.1 veh (209.4m) Forest Way (N)
	WE	0.81	19	**B**		RT from Naree Road (E)	32.2 veh (231m) Forest Way (N)
Warringah Road / Forest Way	AM	0.90	50.0	**D**	Signals	RT from Warringah Road (E)	33.8 veh (245.4m) Warringah Road (W)
	PM	0.77	45	**D**		RT from Forest Way (N)	26.5 veh (191.7m) Warringah Road (E)
	WE	0.78	44.9	**D**		RT from Forest Way (N)	30 veh (211.5m) Warringah Road (S)
Forest Way / Russell Avenue	AM	1.05	8.3 (Worst: >70)	**N/A** (Worst: F)	Give Way	RT from Russell Avenue (W)	10.1 veh (70.8m) Forest Way (N)
	PM	0.52	1.7 (Worst: >70)	**N/A** (Worst: F)		RT from Russell Avenue (W)	1.7 veh (12.2m) Forest Way (N)
	WE	0.97	5.7 (Worst: >70)	**N/A** (Worst: F)		RT from Russell Avenue (W)	4.7 veh (33.3m) Forest Way (N)
Forest Way Pedestrian Crossing	AM	0.59	4.1	**A**	Signals	T from Forest Way (S)	14.4 veh (106.9m) Forest Way (N)
	PM	0.47	3.6	**A**		T from Forest Way (S)	11.7 veh (86.9m) Forest Way (N)
	WE	0.43	3.8	**A**		T from Forest Way (S)	11.3 veh (81.6m) Forest Way (S)

TABLE 2: 2024 BASE + DEVELOPMENT RESULTS

Intersection	Peak Hour	Degree of Saturation[1]	Average Delay[2] (sec/vehicle)	Level of Service[3]	Control Type	Worst Movement	95th Percentile Queue
2024 + DEVELOPMENT PERFORMANCE							
Forest Way / Naree Road	AM	0.79	21.5	**B**	Signals	RT from Naree Road (E)	27.7 veh (205.2m) Forest Way (N)
	PM	0.88	20.2	**B**		RT from Naree Road (E)	35.8 veh (257.2m) Forest Way (N)
	WE	0.81	19	**B**		RT from Naree Road (E)	32.2 veh (231m) Forest Way (N)
Warringah Road / Forest Way	AM	0.92	40.9	**C**	Signals	RT from Warringah Road (E)	33.8 veh (245.4m) Warringah Road (W)
	PM	0.76	45	**D**		RT from Forest Way (N)	27.8 veh (197.5m) Warringah Road (E)
	WE	0.78	44.9	**D**		RT from Forest Way (N)	30 veh (211.5m) Warringah Road (S)
Forest Way / Russell Avenue	AM	1.00	6.2 (Worst: >70)	**N/A** (Worst: F)	Give Way	RT from Russell Avenue (W)	7.6 veh (53.6m) Forest Way (N)
	PM	0.50	1.8 (Worst: >70)	**N/A** (Worst: F)		RT from Russell Avenue (W)	2 veh (14.2m) Russell Avenue (W)
	WE	0.97	5.7 (Worst: >70)	**N/A** (Worst: F)		RT from Russell Avenue (W)	4.7 veh (33.3m) Forest Way (N)
Forest Way Centre Entry	AM	0.61	6.7	**A**	Signals	RT from Centre Entry (W)	15.3 veh (117.6) Forest Way (S)
	PM	0.79	6.7	**A**		RT from Centre Entry (W)	9.1 veh (70.3m) Forest Way (S)
	WE	0.43	3.8	**A**		T from Forest Way (S)	11.3 veh (81.6m) Forest Way (S)

As shown in the results, there is very little change in the expected delay at any of the intersections modelled, with no changes in Level of Service predicted.

The expected lengths of queue through the model are indicated in the output reports provided in **Annexure C**. The timing of the intersections in the PM and Weekend peaks can be set such that the queues between the new centre entry/exit and Warringah Road will clear before vehicles exit the site. This is reflected in the intersection timing reports provided in **Annexure D**. In the AM peak hour, the southbound approach queue is shorter and the number of vehicles exiting the site are reduced, such that no blockage will occur. As such, the model predicts that there will not be traffic queued blocking vehicles exiting the site at any time.

To provide further detail to aid the assessment by Transport and Council, the following details are noted:

- The number of vehicles turning right out of the site at the new intersection per cycle in the AM, PM and Weekend peak hours is summarised in **Table 3**. As shown, an average maximum of five vehicles per cycle are expected to turn right out of the site. Five vehicles require 1 – 2 vehicles per lane of queueing space to be accommodated, which is very insignificant considering the 140m distance between the intersections (length for roughly 20 vehicles per lane).
- The queue lengths at the start of the red period (overflow queue) on the southbound approach to the Warringah Road / Forest Way intersection are summarised in **Table 4**. As shown, the southbound approach is expected to clear every cycle.
- The average and 95th percentile queues at the start of the green period on the southbound approach to the Warringah Road / Forest Way intersection are summarised in **Table 5**.

TABLE 3: VEHICLES EXITING SITE SOUTHBOUND PER CYCLE DURING PEAKS

Peak	Total Right Turning Vehicles	Average Right Turning Vehicles per Cycle (130-second cycle time)
AM	52	2
PM	105	4
Weekend	125	5

TABLE 4: OVERFLOW QUEUES ON SOUTHBOUND APPROACH TO WARRINGAH ROAD

Peak	Overflow Queue (vehicles)	Overflow Queue (m)
AM	0	0
PM	0	0.3
Weekend	0.1	0.6

TABLE 5: AVERAGE AND 95TH PERCENTILE QUEUE LENGTHS ON SOUTHBOUND APPROACH TO WARRINGAH ROAD AT START OF GREEN

Peak	Average Queue (m)	95th Percentile Queue (m)
AM	70.3	114.8
PM	85.7	139.8
Weekend	85.4	139.4

In view of the foregoing, the modelling undertaken using the 2024 volumes reinforces the previous modelling results and demonstrates that the right turn out of the site can be accommodated without any impact on the performance of the Forest Way corridor. The small number of vehicles turning out of the site during peak times require very insignificant distance in the three exit lanes and will be accommodated in peak times, particularly considering the pattern of queue dispersal on that approach.

Whilst not considered in detail in any of the analysis, which is vehicle based, the implementation of a pedestrian over-bridge will significantly improve the connectivity for pedestrians who are presently required to wait 54 seconds on average to cross Forest Way.

Please contact the undersigned on 9521 7199 should you require further information or assistance.

Yours faithfully,
McLaren Traffic Engineering

Tom Steal
Associate
BE Civil MIEAust
TfNSW Accredited Level 3 Road Safety Auditor

ANNEXURE A: 2024 SURVEY RESULTS

(8 SHEETS)

TRANS TRAFFIC SURVEY trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Warringah Rd and Forest Way, Frenchs F

GPS -33.751650, 151.226625

Date:	Tue 10/12/24	*North:*	Forest Way	*Survey*	AM:	6:30 AM-10:00 AM
Weather:	Overcast	*East:*	Warringah Rd	*Period*	PM:	2:00 PM-7:00 PM
Suburban:	Frenchs Forest	*South:*	N/A	*Traffic*	AM:	8:00 AM-9:00 AM
Customer:	N/A	*West:*	Warringah Rd	*Peak*	PM:	5:00 PM-6:00 PM

All Vehicles

Time		North Approach Forest Way			East Approach Warringah Rd			West Approach Warringah Rd			Hourly Total	
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	Hour	Peak
6:30	6:45	0	183	237	0	168	79	0	227	118	4327	
6:45	7:00	0	210	265	0	193	85	0	213	103	4445	
7:00	7:15	0	268	210	0	181	124	0	188	95	4596	
7:15	7:30	0	268	220	0	225	161	0	189	117	4636	
7:30	7:45	0	249	225	0	153	163	0	228	112	4609	
7:45	8:00	0	223	215	0	211	122	0	288	161	4679	
8:00	8:15	0	230	234	0	180	124	0	212	126	4710	Peak
8:15	8:30	0	204	226	0	212	137	0	218	156	4539	
8:30	8:45	0	236	242	0	213	131	0	219	159	4380	
8:45	9:00	0	218	275	0	265	80	0	229	184	4163	
9:00	9:15	0	171	221	0	201	61	0	144	137	3878	
9:15	9:30	0	164	257	0	234	54	0	155	130		
9:30	9:45	0	173	221	0	182	42	0	190	175		
9:45	10:00	0	138	227	0	205	44	0	191	161		
14:00	14:15	0	110	197	0	229	49	0	175	166	4158	
14:15	14:30	0	150	223	0	254	46	0	219	172	4329	
14:30	14:45	0	173	212	0	238	55	0	180	190	4485	
14:45	15:00	0	173	231	0	254	57	0	203	202	4663	
15:00	15:15	0	171	213	0	285	52	0	208	168	4772	
15:15	15:30	0	161	258	0	301	68	0	231	201	4868	
15:30	15:45	0	150	278	0	303	46	0	244	205	4986	
15:45	16:00	0	157	239	0	300	61	0	247	225	5029	
16:00	16:15	0	162	239	0	302	59	0	263	168	5090	
16:15	16:30	0	178	235	0	320	76	0	293	236	5185	
16:30	16:45	0	159	235	0	282	74	0	308	211	5163	
16:45	17:00	0	159	253	0	355	65	0	249	209	5216	
17:00	17:15	0	156	237	0	315	52	0	310	218	5228	Peak
17:15	17:30	0	195	273	0	309	63	0	257	219	5110	
17:30	17:45	0	164	272	1	309	57	0	293	226	4894	
17:45	18:00	0	147	224	0	363	73	0	260	235	4585	
18:00	18:15	0	141	221	0	290	40	0	268	210	4132	
18:15	18:30	0	122	217	0	232	32	0	267	230		
18:30	18:45	0	98	173	0	216	24	0	286	216		
18:45	19:00	0	89	153	0	193	33	0	205	176		

Peak Time		North Approach Forest Way			East Approach Warringah Rd			West Approach Warringah Rd			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
8:00	9:00	0	888	977	0	870	472	0	878	625	4710
17:00	18:00	0	662	1006	1	1296	245	0	1120	898	5228

Pedestrians Crossing

Time		North Approach Forest Way		East Approach Warringah Rd		West Approach Warringah Rd		Hourly Total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Southbound	Northbound	
6:30	6:45	0	0	0	0	0	0	2
6:45	7:00	0	1	0	0	0	0	2
7:00	7:15	0	0	0	0	0	0	3
7:15	7:30	0	1	0	0	0	0	3
7:30	7:45	0	0	0	0	0	0	4
7:45	8:00	1	1	0	0	0	0	4
8:00	8:15	0	0	0	0	0	0	4
8:15	8:30	0	2	0	0	0	0	4
8:30	8:45	0	0	0	0	0	0	2
8:45	9:00	2	0	0	0	0	0	2
9:00	9:15	0	0	0	0	0	0	0
9:15	9:30	0	0	0	0	0	0	
9:30	9:45	0	0	0	0	0	0	
9:45	10:00	0	0	0	0	0	0	
14:00	14:15	0	0	0	0	0	0	0
14:15	14:30	0	0	0	0	0	0	5
14:30	14:45	0	0	0	0	0	0	5
14:45	15:00	0	0	0	0	0	0	5
15:00	15:15	5	0	0	0	0	0	10
15:15	15:30	0	0	0	0	0	0	5
15:30	15:45	0	0	0	0	0	0	7
15:45	16:00	5	0	0	0	0	0	7
16:00	16:15	0	0	0	0	0	0	2
16:15	16:30	2	0	0	0	0	0	2
16:30	16:45	0	0	0	0	0	0	1
16:45	17:00	0	0	0	0	0	0	3
17:00	17:15	0	0	0	0	0	0	4
17:15	17:30	0	1	0	0	0	0	4
17:30	17:45	0	2	0	0	0	0	3
17:45	18:00	0	1	0	0	0	0	1
18:00	18:15	0	0	0	0	0	0	
18:15	18:30	0	0	0	0	0	0	
18:30	18:45	0	0	0	0	0	0	
18:45	19:00	0	0	0	0	0	0	

Peak Time		North Approach Forest Way		East Approach Warringah Rd		West Approach Warringah Rd		Peak total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Southbound	Northbound	
8:00	9:00	2	2	0	0	0	0	4
17:00	18:00	0	4	0	0	0	0	4

Queues Count the number of lanes from the sidewalk to the median.

Time		North					East				West				
Period Start	Period End	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 1	Lane 2	Lane 3	Lane 4	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5
6:30	6:35	0	0	1	10	14	2	7	9	8	2	1	0	8	8
6:35	6:40	0	0	1	13	15	9	6	8	10	2	4	0	10	11
6:40	6:45	0	0	0	13	16	1	8	11	12	4	2	0	14	13
6:45	6:50	0	0	1	15	18	8	12	13	12	2	2	0	11	9
6:50	6:55	2	0	2	14	22	6	6	9	5	2	3	0	6	8
6:55	7:00	0	0	2	18	21	11	9	9	7	4	2	0	6	5
7:00	7:05	0	0	2	12	15	15	9	7	8	1	3	0	7	6
7:05	7:10	0	0	0	16	18	18	7	10	9	3	4	0	8	9
7:10	7:15	0	0	0	15	18	4	7	12	9	3	0	0	9	8
7:15	7:20	0	0	3	11	14	18	13	11	11	4	2	0	7	6
7:20	7:25	0	0	2	15	18	17	5	9	9	4	3	0	9	8
7:25	7:30	0	0	1	16	19	23	8	7	10	3	3	1	11	11
7:30	7:35	0	1	2	16	17	9	9	9	7	3	4	0	10	11
7:35	7:40	0	0	2	10	17	21	10	12	11	1	3	0	9	10
7:40	7:45	11	0	2	15	16	23	6	9	6	3	5	0	9	8
7:45	7:50	0	0	2	11	17	14	6	10	7	5	5	0	9	10
7:50	7:55	0	0	0	16	18	12	12	8	10	3	5	0	11	10
7:55	8:00	0	0	1	16	20	16	13	14	7	4	5	0	10	9
8:00	8:05	0	0	1	13	13	12	9	12	11	3	3	0	11	12
8:05	8:10	0	0	1	14	17	19	7	11	9	3	4	0	13	14
8:10	8:15	0	0	1	16	16	13	10	12	12	5	5	0	9	10
8:15	8:20	0	0	1	11	15	16	12	10	9	4	5	0	7	7
8:20	8:25	0	0	0	13	17	13	10	8	8	3	3	0	9	6
8:25	8:30	0	0	0	15	17	13	7	11	9	5	4	0	9	8
8:30	8:35	0	0	1	13	18	13	10	11	11	4	4	0	8	9
8:35	8:40	0	0	0	10	15	5	7	8	12	5	6	0	9	9
8:40	8:45	0	0	2	10	18	14	11	8	7	4	5	2	11	8
8:45	8:50	0	0	2	15	19	12	14	17	17	5	4	1	8	10
8:50	8:55	0	0	2	13	18	12	16	19	18	6	7	0	8	8
8:55	9:00	0	0	0	12	16	8	16	15	16	2	5	0	10	9
9:00	9:05	0	0	1	12	11	9	12	10	8	6	3	1	8	5
9:05	9:10	0	0	1	5	12	1	8	9	7	6	3	0	7	3
9:10	9:15	0	0	0	6	7	1	10	10	5	3	4	0	8	5
9:15	9:20	0	0	2	7	9	4	10	9	12	2	5	2	10	9
9:20	9:25	0	0	0	12	13	3	11	7	7	6	3	1	8	7
9:25	9:30	0	0	1	7	6	5	8	8	4	5	7	1	5	7
9:30	9:35	0	0	1	8	11	1	11	11	7	7	8	1	7	6
9:35	9:40	0	0	0	11	13	3	6	11	7	5	5	0	9	9
9:40	9:45	0	0	0	13	15	2	8	9	8	6	3	1	7	6
9:45	9:50	0	0	0	9	9	2	9	10	8	5	5	0	10	7
9:50	9:55	0	0	0	5	8	1	11	10	10	5	4	1	7	8
9:55	10:00	0	0	0	11	12	1	7	7	7	6	5	0	9	6
14:00	14:05	0	0	0	4	12	5	4	6	6	5	4	0	7	8
14:05	14:10	0	0	1	6	6	3	10	12	9	4	4	0	7	8
14:10	14:15	0	0	0	5	8	5	10	12	9	4	6	0	5	9
14:15	14:20	0	0	0	8	6	4	9	9	10	7	8	0	9	7
14:20	14:25	0	0	1	7	11	2	14	10	7	4	6	1	11	12
14:25	14:30	0	0	0	11	14	1	12	9	10	8	8	0	7	8
14:30	14:35	0	0	0	9	14	4	10	12	9	4	4	0	10	5
14:35	14:40	0	0	1	12	10	1	7	10	8	7	7	0	8	7
14:40	14:45	0	0	2	11	10	6	10	12	10	6	3	0	11	10
14:45	14:50	0	0	1	9	10	8	9	11	11	5	4	0	7	7
14:50	14:55	0	0	0	8	14	5	12	15	13	5	4	0	9	7
14:55	15:00	0	0	0	13	16	3	13	11	9	6	5	0	9	9
15:00	15:05	3	0	2	7	9	4	11	13	10	5	4	0	10	9
15:05	15:10	0	0	1	10	14	4	10	11	6	7	5	0	11	10
15:10	15:15	0	0	1	12	16	5	17	18	13	7	4	0	7	8
15:15	15:20	0	0	2	12	15	5	8	14	8	8	9	0	9	10
15:20	15:25	0	0	2	12	16	3	12	10	11	4	8	0	10	9
15:25	15:30	0	0	2	7	10	4	13	13	13	6	6	0	12	9
15:30	15:35	0	0	2	10	12	2	13	11	12	8	9	0	9	8
15:35	15:40	0	0	0	5	8	3	14	14	10	7	8	0	12	13
15:40	15:45	0	0	1	13	15	4	12	14	15	7	7	0	10	10
15:45	15:50	2	0	1	9	13	0	21	19	15	8	7	0	11	10
15:50	15:55	0	0	2	12	16	4	22	21	19	7	9	0	11	12
15:55	16:00	3	0	3	4	7	12	21	16	13	8	8	0	9	9
16:00	16:05	0	0	0	14	19	0	13	11	5	8	10	0	10	12
16:05	16:10	0	0	1	17	18	4	18	13	14	6	9	0	10	11
16:10	16:15	0	0	3	9	12	3	14	9	9	7	8	0	12	11
16:15	16:20	0	0	1	12	15	1	20	15	14	2	12	0	11	12
16:20	16:25	0	0	2	10	16	6	23	21	19	2	12	0	12	13
16:25	16:30	2	0	2	11	13	4	19	13	11	7	7	0	11	9
16:30	16:35	0	0	1	12	14	9	22	21	15	9	9	0	10	11
16:35	16:40	0	0	2	9	13	6	11	12	7	5	5	0	13	12
16:40	16:45	0	0	1	12	16	5	23	22	16	9	3	0	13	14
16:45	16:50	0	0	1	13	14	3	25	23	23	6	7	0	11	9
16:50	16:55	0	0	2	11	10	8	19	15	13	7	7	0	11	10
16:55	17:00	0	0	2	8	11	6	12	15	8	8	8	0	11	10
17:00	17:05	0	0	1	9	12	3	21	22	17	6	8	0	12	10
17:05	17:10	0	0	0	14	14	5	15	10	10	6	7	0	14	13
17:10	17:15	0	0	1	11	16	3	22	17	10	6	7	0	10	11
17:15	17:20	0	0	2	10	15	3	10	11	13	6	7	0	11	9
17:20	17:25	0	0	0	14	19	4	12	11	5	6	6	0	9	10
17:25	17:30	0	0	1	14	22	3	17	19	12	7	7	0	11	11
17:30	17:35	0	0	1	10	12	11	12	16	10	8	10	0	12	11
17:35	17:40	0	0	2	13	16	6	21	22	19	9	9	0	11	10
17:40	17:45	0	0	1	10	10	6	11	9	8	4	6	0	12	12
17:45	17:50	0	0	1	11	11	3	18	16	13	7	9	0	12	13
17:50	17:55	13	0	3	5	10	2	24	23	21	8	10	0	12	13
17:55	18:00	0	0	2	14	13	3	20	15	13	10	8	0	12	13
18:00	18:05	0	0	1	6	9	1	20	19	14	9	11	0	13	12
18:05	18:10	0	0	0	10	11	1	17	12	5	6	5	0	12	12
18:10	18:15	0	0	0	9	8	3	8	9	9	9	9	0	8	10
18:15	18:20	0	0	1	8	5	1	6	4	5	4	4	0	11	8
18:20	18:25	0	0	1	9	9	4	10	10	9	9	5	0	11	9
18:25	18:30	0	0	2	8	8	3	11	10	7	6	4	0	7	7
18:30	18:35	0	0	1	4	5	0	10	6	7	6	7	0	11	9
18:35	18:40	0	0	1	5	8	2	8	11	9	6	8	0	10	7
18:40	18:45	0	0	0	5	4	4	12	10	8	6	7	0	9	8
18:45	18:50	0	0	1	5	4	4	6	5	5	8	5	0	10	5
18:50	18:55	0	0	0	7	7	1	9	9	6	4	3	0	8	5
18:55	19:00	0	0	0	6	9	0	10	8	5	3	5	0	7	6

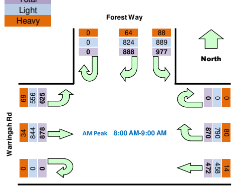
Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

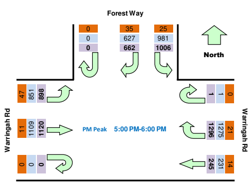
Graphic

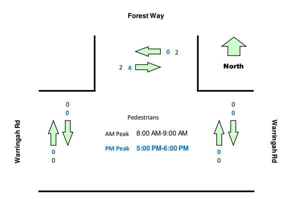
Total

Light

Heavy







Light Vehicles

Time		North Approach Forest Way			East Approach Warringah Rd			West Approach Warringah Rd		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
6:30	6:45	0	158	212	0	157	74	0	219	98
6:45	7:00	0	193	239	0	169	83	0	196	90
7:00	7:15	0	250	198	0	168	123	0	182	85
7:15	7:30	0	249	202	0	212	159	0	183	105
7:30	7:45	0	233	210	0	138	160	0	215	94
7:45	8:00	0	212	186	0	197	118	0	276	132
8:00	8:15	0	212	212	0	162	121	0	205	115
8:15	8:30	0	195	207	0	189	134	0	209	131
8:30	8:45	0	226	218	0	194	126	0	210	140
8:45	9:00	0	191	252	0	245	77	0	220	170
9:00	9:15	0	160	196	0	173	59	0	139	122
9:15	9:30	0	142	231	0	200	53	0	141	116
9:30	9:45	0	159	192	0	168	41	0	172	157
9:45	10:00	0	124	205	0	178	43	0	180	133
14:00	14:15	0	103	177	0	204	47	0	171	152
14:15	14:30	0	136	206	0	224	46	0	210	158
14:30	14:45	0	158	194	0	223	53	0	175	170
14:45	15:00	0	158	212	0	233	54	0	198	180
15:00	15:15	0	149	193	0	269	49	0	198	154
15:15	15:30	0	142	242	0	283	66	0	221	187
15:30	15:45	0	142	263	0	280	45	0	239	191
15:45	16:00	0	141	228	0	282	57	0	241	204
16:00	16:15	0	145	229	0	292	58	0	261	145
16:15	16:30	0	164	226	0	306	73	0	288	222
16:30	16:45	0	149	229	0	268	68	0	303	201
16:45	17:00	0	150	246	0	341	61	0	248	201
17:00	17:15	0	150	223	0	309	48	0	307	206
17:15	17:30	0	181	269	0	302	60	0	253	210
17:30	17:45	0	158	267	1	305	54	0	292	208
17:45	18:00	0	138	222	0	359	69	0	257	227
18:00	18:15	0	133	217	0	283	39	0	262	204
18:15	18:30	0	117	215	0	228	32	0	263	220
18:30	18:45	0	91	170	0	212	23	0	285	207
18:45	19:00	0	84	150	0	188	33	0	202	169

Peak Time		North Approach Forest Way			East Approach Warringah Rd			West Approach Warringah Rd			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
8:00	9:00	0	824	889	0	790	458	0	844	556	4361
17:00	18:00	0	627	981	1	1275	231	0	1109	851	5075

Heavy Vehicles

Time		North Approach Forest Way			East Approach Warringah Rd			West Approach Warringah Rd		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
6:30	6:45	0	25	25	0	11	5	0	8	20
6:45	7:00	0	17	26	0	24	2	0	17	13
7:00	7:15	0	18	12	0	13	1	0	6	10
7:15	7:30	0	19	18	0	13	2	0	6	12
7:30	7:45	0	16	15	0	15	3	0	13	18
7:45	8:00	0	11	29	0	14	4	0	12	29
8:00	8:15	0	18	22	0	18	3	0	7	11
8:15	8:30	0	9	19	0	23	3	0	9	25
8:30	8:45	0	10	24	0	19	5	0	9	19
8:45	9:00	0	27	23	0	20	3	0	9	14
9:00	9:15	0	11	25	0	28	2	0	5	15
9:15	9:30	0	22	26	0	34	1	0	14	14
9:30	9:45	0	14	29	0	14	1	0	18	18
9:45	10:00	0	14	22	0	27	1	0	11	28
14:00	14:15	0	7	20	0	25	2	0	4	14
14:15	14:30	0	14	17	0	30	0	0	9	14
14:30	14:45	0	15	18	0	15	2	0	5	20
14:45	15:00	0	15	19	0	21	3	0	5	22
15:00	15:15	0	22	20	0	16	3	0	10	14
15:15	15:30	0	19	16	0	18	2	0	10	14
15:30	15:45	0	8	15	0	23	1	0	5	14
15:45	16:00	0	16	11	0	18	4	0	6	21
16:00	16:15	0	17	10	0	10	1	0	2	23
16:15	16:30	0	14	9	0	14	3	0	5	14
16:30	16:45	0	10	6	0	14	6	0	5	10
16:45	17:00	0	9	7	0	14	4	0	1	8
17:00	17:15	0	6	14	0	6	4	0	3	12
17:15	17:30	0	14	4	0	7	3	0	4	9
17:30	17:45	0	6	5	0	4	3	0	1	18
17:45	18:00	0	9	2	0	4	4	0	3	8
18:00	18:15	0	8	4	0	7	1	0	6	6
18:15	18:30	0	5	2	0	4	0	0	4	10
18:30	18:45	0	7	3	0	4	1	0	1	9
18:45	19:00	0	5	3	0	5	0	0	3	7

Peak Time		North Approach Forest Way			East Approach Warringah Rd			West Approach Warringah Rd			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
8:00	9:00	0	64	88	0	80	14	0	34	69	349
17:00	18:00	0	35	25	0	21	14	0	11	47	153

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au

Intersection of Naree Rd and Forest Way, Frenchs Forest

GPS -33.748483, 151.224071

Date:	Tue 10/12/24
Weather:	Overcast
Suburban:	Frenchs Forest
Customer:	N/A

North:	Forest Way
East:	Naree Rd
South:	Forest Way
West:	N/A

Survey Period	AM:	6:30 AM-10:00 AM
	PM:	2:00 PM-7:00 PM
Traffic Peak	AM:	8:15 AM-9:15 AM
	PM:	4:45 PM-5:45 PM

All Vehicles

Time		North Approach Forest Way			East Approach Naree Rd			South Approach Forest Way			Hourly Total	
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	Hour	Peak
6:30	6:45	0	414	31	0	40	19	0	19	267	3353	
6:45	7:00	0	479	30	0	27	33	0	26	271	3430	
7:00	7:15	0	466	28	0	37	35	1	19	249	3497	
7:15	7:30	0	423	21	0	43	48	0	27	300	3488	
7:30	7:45	0	463	39	0	44	45	0	32	244	3548	
7:45	8:00	0	438	31	0	62	36	0	39	327	3669	
8:00	8:15	0	389	29	0	60	44	0	47	257	3795	
8:15	8:30	0	432	34	0	56	47	0	43	310	3821	Peak
8:30	8:45	0	450	33	0	65	53	0	37	350	3773	
8:45	9:00	0	453	43	0	66	45	0	42	410	3640	
9:00	9:15	0	398	35	0	66	33	0	26	294	3377	
9:15	9:30	0	404	52	0	52	26	0	40	300		
9:30	9:45	0	393	42	0	49	17	0	32	322		
9:45	10:00	0	350	32	0	49	23	0	40	302		
14:00	14:15	0	302	43	0	60	17	0	29	333	3555	
14:15	14:30	0	356	39	0	49	23	0	38	364	3715	
14:30	14:45	0	362	47	0	84	36	0	44	365	3863	
14:45	15:00	0	366	47	0	71	34	0	46	400	3973	
15:00	15:15	0	396	45	0	64	32	0	28	379	4034	
15:15	15:30	0	399	47	0	61	40	0	50	420	4058	
15:30	15:45	0	398	61	0	77	37	0	60	415	4132	
15:45	16:00	0	387	50	0	57	33	0	42	456	4083	
16:00	16:15	0	384	53	0	64	32	0	43	392	4109	
16:15	16:30	0	427	40	0	82	32	0	52	458	4198	
16:30	16:45	0	369	36	0	76	41	0	47	430	4206	
16:45	17:00	0	388	35	0	80	30	0	52	466	4273	Peak
17:00	17:15	0	392	41	0	70	43	0	51	460	4258	
17:15	17:30	0	439	63	0	80	35	0	52	430	4121	
17:30	17:45	0	428	52	0	70	19	0	50	447	3879	
17:45	18:00	0	355	39	0	66	29	0	41	506	3585	
18:00	18:15	0	332	30	0	58	28	0	41	431	3187	
18:15	18:30	0	320	42	0	39	21	0	47	388		
18:30	18:45	0	264	38	0	43	18	0	52	357		
18:45	19:00	0	213	27	0	52	13	0	37	296		

Peak Time		North Approach Forest Way			East Approach Naree Rd			South Approach Forest Way			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:00	9:00	0	1733	145	0	253	178	0	148	1364	3821
17:00	18:00	0	1647	191	0	300	127	0	205	1803	4273

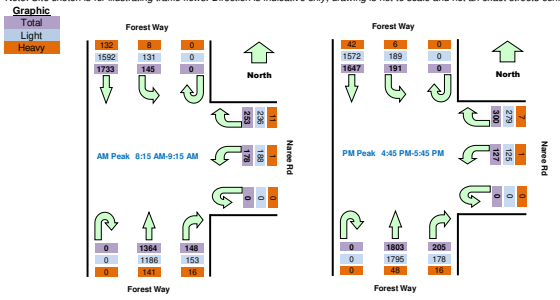
Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total

Light

Heavy



Light Vehicles

Time		North Approach Forest Way			East Approach Naree Rd			South Approach Forest Way		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
6:30	6:45	0	366	31	0	36	17	0	14	243
6:45	7:00	0	441	28	0	27	32	0	23	238
7:00	7:15	0	439	26	0	34	35	1	15	231
7:15	7:30	0	392	21	0	42	48	0	23	280
7:30	7:45	0	436	37	0	42	44	0	27	214
7:45	8:00	0	407	30	0	60	35	0	33	285
8:00	8:15	0	354	28	0	59	43	0	43	231
8:15	8:30	0	411	32	0	54	47	0	38	263
8:30	8:45	0	415	30	0	61	53	0	36	311
8:45	9:00	0	412	41	0	62	45	0	36	381
9:00	9:15	0	362	35	0	63	33	0	23	256
9:15	9:30	0	363	50	0	51	25	0	35	257
9:30	9:45	0	349	41	0	46	16	0	28	295
9:45	10:00	0	319	30	0	49	22	0	36	252
14:00	14:15	0	277	43	0	59	17	0	26	300
14:15	14:30	0	329	36	0	49	23	0	35	320
14:30	14:45	0	332	46	0	80	36	0	39	337
14:45	15:00	0	337	43	0	69	34	0	44	358
15:00	15:15	0	363	43	0	63	32	0	24	350
15:15	15:30	0	371	44	0	59	38	0	45	396
15:30	15:45	0	382	56	0	76	36	0	54	387
15:45	16:00	0	364	49	0	55	31	0	37	423
16:00	16:15	0	363	51	0	62	32	0	39	365
16:15	16:30	0	408	38	0	80	31	0	47	433
16:30	16:45	0	355	33	0	73	41	0	44	408
16:45	17:00	0	374	35	0	80	30	0	49	448
17:00	17:15	0	375	40	0	67	43	0	47	446
17:15	17:30	0	427	60	0	80	35	0	47	414
17:30	17:45	0	421	50	0	68	19	0	46	438
17:45	18:00	0	349	39	0	64	28	0	38	497
18:00	18:15	0	325	30	0	56	28	0	37	422
18:15	18:30	0	316	40	0	39	21	0	43	376
18:30	18:45	0	259	38	0	41	17	0	49	348
18:45	19:00	0	208	26	0	52	13	0	33	288

Peak Time		North Approach Forest Way			East Approach Naree Rd			South Approach Forest Way			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:00	9:00	0	1592	131	0	236	188	0	153	1186	3486
17:00	18:00	0	1572	189	0	279	125	0	178	1795	4138

Heavy Vehicles

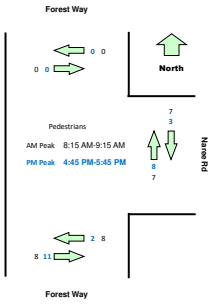
Time		North Approach Forest Way			East Approach Naree Rd			South Approach Forest Way		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
6:30	6:45	0	48	0	0	4	2	0	5	24
6:45	7:00	0	38	2	0	0	1	0	3	33
7:00	7:15	0	27	2	0	3	0	0	4	18
7:15	7:30	0	31	0	0	1	0	0	4	20
7:30	7:45	0	27	2	0	2	1	0	5	30
7:45	8:00	0	31	1	0	2	1	0	6	42
8:00	8:15	0	35	1	0	1	1	0	4	26
8:15	8:30	0	21	2	0	2	0	0	5	47
8:30	8:45	0	35	3	0	4	0	0	1	39
8:45	9:00	0	41	2	0	4	0	0	6	29
9:00	9:15	0	36	0	0	3	0	0	3	38
9:15	9:30	0	41	2	0	1	1	0	5	43
9:30	9:45	0	44	1	0	3	1	0	4	27
9:45	10:00	0	31	2	0	0	1	0	4	50
14:00	14:15	0	25	0	0	1	0	0	3	33
14:15	14:30	0	27	3	0	0	0	0	3	44
14:30	14:45	0	30	1	0	4	0	0	5	28
14:45	15:00	0	29	4	0	2	0	0	2	42
15:00	15:15	0	33	2	0	1	0	0	4	29
15:15	15:30	0	28	3	0	2	2	0	5	24
15:30	15:45	0	16	5	0	1	1	0	6	28
15:45	16:00	0	23	1	0	2	2	0	5	33
16:00	16:15	0	21	2	0	2	0	0	4	27
16:15	16:30	0	19	2	0	2	1	0	5	25
16:30	16:45	0	14	3	0	3	0	0	3	22
16:45	17:00	0	14	0	0	0	0	0	3	18
17:00	17:15	0	17	1	0	3	0	0	4	14
17:15	17:30	0	12	3	0	0	0	0	5	16
17:30	17:45	0	7	2	0	2	0	0	4	9
17:45	18:00	0	6	0	0	2	1	0	3	9
18:00	18:15	0	7	0	0	2	0	0	4	9
18:15	18:30	0	4	2	0	0	0	0	4	12
18:30	18:45	0	5	0	0	2	1	0	3	9
18:45	19:00	0	5	1	0	0	0	0	4	8

Peak Time		North Approach Forest Way			East Approach Naree Rd			South Approach Forest Way			Peak total
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	
8:00	9:00	0	132	8	0	11	1	0	16	141	309
17:00	18:00	0	42	6	0	7	1	0	16	48	120

Pedestrians Crossing

Time		North Approach Forest Way		East Approach Naree Rd		South Approach Forest Way		Hourly Total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	
6:30	6:45	0	0	0	1	1	2	5
6:45	7:00	0	0	0	0	0	0	3
7:00	7:15	0	0	0	0	0	0	9
7:15	7:30	0	0	0	0	1	0	15
7:30	7:45	0	0	0	0	1	1	17
7:45	8:00	0	0	0	0	3	3	28
8:00	8:15	0	0	2	0	2	2	29
8:15	8:30	0	0	1	1	0	1	30
8:30	8:45	0	0	2	4	2	5	31
8:45	9:00	0	0	3	0	4	0	22
9:00	9:15	0	0	1	2	2	2	15
9:15	9:30	0	0	2	0	2	0	
9:30	9:45	0	0	1	0	2	1	
9:45	10:00	0	0	0	0	0	0	
14:00	14:15	0	0	0	1	0	0	7
14:15	14:30	0	0	1	0	1	0	16
14:30	14:45	0	0	1	0	0	2	21
14:45	15:00	0	0	1	0	0	0	23
15:00	15:15	0	0	0	4	2	4	30
15:15	15:30	0	0	5	1	0	1	23
15:30	15:45	0	0	0	3	0	2	20
15:45	16:00	0	0	1	3	1	3	21
16:00	16:15	0	0	1	1	0	1	16
16:15	16:30	0	0	1	0	2	1	18
16:30	16:45	0	0	2	2	2	0	24
16:45	17:00	0	0	0	1	0	2	24
17:00	17:15	0	0	1	1	1	2	25
17:15	17:30	0	0	2	3	1	4	28
17:30	17:45	0	0	0	3	0	3	32
17:45	18:00	0	0	0	1	1	2	33
18:00	18:15	0	0	2	0	2	4	37
18:15	18:30	0	0	3	5	4	2	
18:30	18:45	0	0	0	2	1	4	
18:45	19:00	0	0	0	0	1	7	

Peak Time		North Approach Forest Way		East Approach Naree Rd		South Approach Forest Way		Peak total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	
8:00	9:00	0	0	7	7	8	8	30
17:00	18:00	0	0	3	8	2	11	24



Queues Count the number of lanes from the sidewalk to the median.

Time		North			East		South			
Period Start	Period End	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 4
6:30	6:35	17	14	9	6	3	1	2	4	1
6:35	6:40	21	15	14	2	4	3	4	2	3
6:40	6:45	13	7	19	3	8	0	2	1	1
6:45	6:50	17	8	9	5	8	2	1	2	2
6:50	6:55	21	3	7	5	7	0	2	2	2
6:55	7:00	23	18	16	4	3	0	0	2	5
7:00	7:05	18	10	7	4	9	1	2	0	4
7:05	7:10	28	17	29	6	5	1	1	2	3
7:10	7:15	24	19	14	6	6	0	5	0	4
7:15	7:20	22	11	13	7	8	0	1	0	3
7:20	7:25	25	11	13	7	7	1	1	1	3
7:25	7:30	24	10	13	7	11	2	2	1	3
7:30	7:35	25	9	12	3	7	0	0	2	7
7:35	7:40	21	10	11	6	12	1	2	3	4
7:40	7:45	27	10	7	4	4	0	1	1	7
7:45	7:50	23	12	10	4	19	2	5	4	4
7:50	7:55	22	13	14	5	21	1	9	9	7
7:55	8:00	18	18	21	4	6	2	2	3	8
8:00	8:05	23	5	7	5	15	2	2	1	9
8:05	8:10	16	12	11	6	11	0	6	5	8
8:10	8:15	30	10	6	4	12	0	1	1	7
8:15	8:20	26	18	18	8	18	1	1	0	7
8:20	8:25	25	14	11	4	20	3	7	2	8
8:25	8:30	28	17	16	7	9	0	1	0	8
8:30	8:35	22	14	12	6	9	2	2	1	5
8:35	8:40	24	20	16	7	8	5	4	3	3
8:40	8:45	27	21	22	3	13	0	2	3	7
8:45	8:50	27	24	11	6	15	0	1	1	7
8:50	8:55	29	22	22	5	24	2	9	2	6
8:55	9:00	28	5	7	6	13	2	2	3	5
9:00	9:05	22	10	11	3	20	2	3	2	4
9:05	9:10	8	6	4	6	13	2	2	2	3
9:10	9:15	26	11	13	3	10	0	3	1	4
9:15	9:20	29	20	18	4	7	0	2	3	5
9:20	9:25	30	22	19	3	4	1	2	1	2
9:25	9:30	16	11	5	2	15	1	3	2	6
9:30	9:35	17	12	18	5	6	1	8	2	5
9:35	9:40	22	10	9	2	9	1	1	1	6
9:40	9:45	15	8	5	2	6	1	2	0	4
9:45	9:50	11	3	3	2	10	0	1	0	6
9:50	9:55	8	5	5	3	9	1	1	3	8
9:55	10:00	8	6	10	2	10	0	2	0	5
14:00	14:05	16	4	4	1	9	1	2	0	4
14:05	14:10	21	8	7	2	5	1	2	1	6
14:10	14:15	12	4	7	2	10	3	1	1	4
14:15	14:20	21	12	6	4	6	0	3	3	4
14:20	14:25	22	15	12	3	9	4	4	0	3
14:25	14:30	11	7	8	3	10	0	1	1	6
14:30	14:35	14	12	11	5	8	2	2	3	5
14:35	14:40	25	14	10	1	9	2	3	4	7
14:40	14:45	10	6	7	3	14	3	4	2	6
14:45	14:50	27	16	19	5	9	1	0	2	7
14:50	14:55	26	19	13	6	16	0	0	0	8
14:55	15:00	15	12	11	2	18	2	2	6	4
15:00	15:05	21	9	11	4	9	3	4	4	6
15:05	15:10	29	18	15	1	10	1	3	1	4
15:10	15:15	24	20	20	5	9	0	3	2	3
15:15	15:20	26	17	5	4	11	7	4	0	9
15:20	15:25	21	9	3	5	7	1	1	1	5
15:25	15:30	19	11	9	3	9	1	3	2	5
15:30	15:35	30	15	16	4	13	2	1	1	9
15:35	15:40	30	22	10	2	15	1	2	1	8
15:40	15:45	21	12	5	4	16	0	4	1	8
15:45	15:50	10	7	4	4	13	3	5	2	2
15:50	15:55	13	10	7	4	9	2	3	1	6
15:55	16:00	22	9	6	4	12	0	0	0	9
16:00	16:05	28	15	15	3	9	2	3	3	7
16:05	16:10	29	15	7	7	11	1	2	0	8
16:10	16:15	22	11	13	3	10	2	2	1	3
16:15	16:20	29	21	14	2	12	2	6	3	8
16:20	16:25	21	18	13	4	13	0	0	1	7
16:25	16:30	30	20	13	3	11	1	2	2	6
16:30	16:35	20	10	5	4	11	1	4	0	6
16:35	16:40	26	14	12	2	16	2	5	2	4
16:40	16:45	26	12	5	6	15	2	2	2	5
16:45	16:50	25	6	3	7	22	0	0	1	6
16:50	16:55	18	11	7	5	17	3	6	4	8
16:55	17:00	29	19	12	2	10	2	6	2	7
17:00	17:05	20	14	12	3	10	1	2	1	8
17:05	17:10	21	12	7	6	20	1	2	1	8
17:10	17:15	21	10	7	6	10	1	2	1	8
17:15	17:20	30	21	12	3	11	3	2	1	5
17:20	17:25	31	26	20	4	10	1	3	2	8
17:25	17:30	28	12	14	4	16	1	3	2	7
17:30	17:35	22	14	15	2	14	2	2	1	6
17:35	17:40	19	9	9	2	14	2	2	2	6
17:40	17:45	19	11	5	3	13	2	2	1	9
17:45	17:50	17	3	4	4	11	1	5	1	5
17:50	17:55	13	3	7	2	7	1	2	0	7
17:55	18:00	6	7	5	4	8	1	3	1	3
18:00	18:05	16	6	10	3	7	2	4	5	5
18:05	18:10	14	10	10	2	13	2	3	1	3
18:10	18:15	15	10	7	5	11	3	5	6	9
18:15	18:20	14	11	5	2	8	3	4	1	6
18:20	18:25	22	6	9	2	5	1	1	1	8
18:25	18:30	4	4	6	2	5	6	1	0	5
18:30	18:35	12	3	6	3	5	1	5	2	8
18:35	18:40	21	8	6	4	6	0	1	0	6
18:40	18:45	14	11	5	1	10	2	6	2	7
18:45	18:50	13	5	6	1	7	5	9	8	9
18:50	18:55	12	5	6	2	3	2	5	4	4
18:55	19:00	7	7	5	3	7	1	2	3	3

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Russell Ave and Forest Way, Frenchs For

GPS -33.749374, 151.224753

Date:	Tue 10/12/24
Weather:	Overcast
Suburban:	Frenchs Forest
Customer:	N/A

North:	Forest Way
East:	N/A
South:	Forest Way
West:	Russell Ave

Survey Period	AM:	6:30 AM-10:00 AM
	PM:	2:00 PM-7:00 PM
Traffic Peak	AM:	7:45 AM-8:45 AM
	PM:	4:45 PM-5:45 PM

All Vehicles

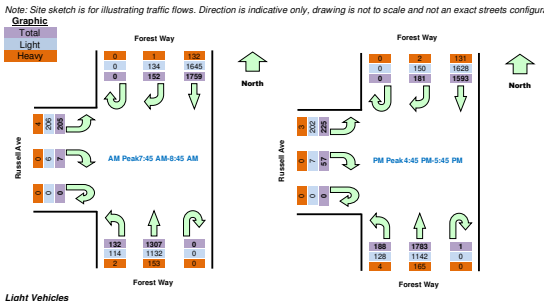
Time		North Approach Forest Way			South Approach Forest Way			West Approach Russell Ave			Hourly Total	
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	Hour	Peak
6:30	6:45	0	14	419	0	265	12	0	2	21	3164	
6:45	7:00	0	21	491	0	267	16	0	3	30	3237	
7:00	7:15	0	19	483	0	245	15	0	5	24	3266	
7:15	7:30	0	23	448	0	296	14	0	0	31	3238	
7:30	7:45	0	29	479	0	240	20	0	2	36	3295	
7:45	8:00	0	17	457	0	318	17	0	0	48	3412	
8:00	8:15	1	23	409	0	253	24	0	3	50	3530	
8:15	8:30	0	26	453	0	305	36	0	1	48	3562	Peak
8:30	8:45	0	34	469	0	331	31	0	2	56	3490	
8:45	9:00	0	52	446	0	396	25	0	0	56	3366	
9:00	9:15	0	40	391	0	275	40	0	4	45	3144	
9:15	9:30	0	27	403	0	295	22	0	5	45		
9:30	9:45	1	23	386	0	320	29	0	7	33		
9:45	10:00	0	31	342	0	301	30	0	8	41		
14:00	14:15	0	34	285	0	322	38	0	23	40	3314	
14:15	14:30	0	36	343	0	356	31	0	14	46	3464	
14:30	14:45	1	38	359	0	357	24	0	11	51	3601	
14:45	15:00	0	46	354	0	391	41	0	18	55	3710	
15:00	15:15	0	49	379	0	373	39	0	18	34	3777	
15:15	15:30	0	46	393	0	420	40	0	14	50	3793	
15:30	15:45	0	53	382	0	420	27	0	13	55	3867	
15:45	16:00	0	38	382	0	445	46	0	8	53	3865	
16:00	16:15	1	47	368	0	373	44	0	14	61	3903	
16:15	16:30	0	45	414	0	459	54	0	14	51	4000	
16:30	16:45	0	51	359	0	418	44	0	17	59	3969	
16:45	17:00	0	40	378	1	455	53	0	20	63	4028	Peak
17:00	17:15	0	48	387	0	452	47	0	12	59	4021	
17:15	17:30	0	48	426	0	431	42	0	8	51	3909	
17:30	17:45	0	45	402	0	445	46	0	17	52	3739	
17:45	18:00	0	53	331	0	487	48	0	24	60	3475	
18:00	18:15	0	39	321	0	414	47	0	14	58	3089	
18:15	18:30	0	35	306	0	374	37	0	23	61		
18:30	18:45	0	36	246	0	353	34	0	18	56		
18:45	19:00	0	28	198	0	286	34	1	23	47		

Peak Time		North Approach Forest Way			South Approach Forest Way			West Approach Russell Ave			Peak
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	total
8:00	9:00	0	152	1759	0	1307	132	0	7	205	3562
17:00	18:00	0	181	1593	1	1783	188	0	57	225	4028

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

Graphic

Total
Light
Heavy



Light Vehicles

Time		North Approach Forest Way			South Approach Forest Way			West Approach Russell Ave		
Period Start	Period End	U	R	SB	U	NB	L	U	R	L
6:30	6:45	0	12	371	0	238	9	0	2	19
6:45	7:00	0	21	452	0	235	12	0	3	26
7:00	7:15	0	19	456	0	223	12	0	4	24
7:15	7:30	0	22	418	0	274	12	0	0	29
7:30	7:45	0	28	452	0	207	17	0	2	34
7:45	8:00	0	17	425	0	272	17	0	0	46
8:00	8:15	1	23	373	0	225	23	0	3	48
8:15	8:30	0	26	432	0	254	35	0	1	47
8:30	8:45	0	34	434	0	292	31	0	2	55
8:45	9:00	0	51	406	0	361	25	0	0	56
9:00	9:15	0	39	356	0	235	37	0	4	44
9:15	9:30	0	26	362	0	249	22	0	5	43
9:30	9:45	1	21	343	0	289	28	0	6	33
9:45	10:00	0	29	312	0	247	29	0	8	41
14:00	14:15	0	34	260	0	287	36	0	22	39
14:15	14:30	0	36	316	0	312	30	0	14	43
14:30	14:45	1	38	329	0	325	24	0	11	50
14:45	15:00	0	45	326	0	349	40	0	18	53
15:00	15:15	0	49	346	0	341	39	0	17	33
15:15	15:30	0	44	365	0	392	38	0	14	49
15:30	15:45	0	52	366	0	386	26	0	13	55
15:45	16:00	0	36	359	0	407	44	0	8	53
16:00	16:15	1	45	349	0	342	41	0	12	61
16:15	16:30	0	45	394	0	430	54	0	13	50
16:30	16:45	0	49	347	0	394	43	0	17	58
16:45	17:00	0	39	365	1	434	52	0	20	63
17:00	17:15	0	48	370	0	434	47	0	12	59
17:15	17:30	0	47	415	0	412	42	0	8	49
17:30	17:45	0	45	395	0	432	46	0	17	52
17:45	18:00	0	52	325	0	475	47	0	24	60
18:00	18:15	0	39	314	0	403	46	0	14	56
18:15	18:30	0	35	302	0	360	37	0	23	59
18:30	18:45	0	35	241	0	341	34	0	17	56
18:45	19:00	0	27	194	0	274	33	1	23	47

Peak Time		North Approach Forest Way			South Approach Forest Way			West Approach Russell Ave			Peak
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	total
8:00	9:00	0	134	1645	0	1132	114	0	6	206	3237
17:00	18:00	0	150	1628	0	1142	128	0	7	202	3257

Heavy Vehicles

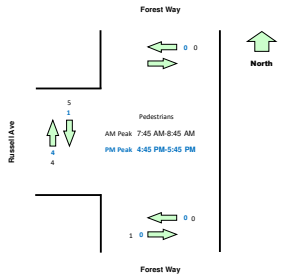
Time		North Approach Forest Way			South Approach Forest Way			West Approach Russell Ave		
Period Start	Period End	U	R	SB	U	NB	L	U	R	L
6:30	6:45	0	2	48	0	27	3	0	0	2
6:45	7:00	0	0	39	0	32	4	0	0	4
7:00	7:15	0	0	27	0	22	3	0	1	0
7:15	7:30	0	1	30	0	22	2	0	0	2
7:30	7:45	0	1	27	0	33	3	0	0	2
7:45	8:00	0	0	32	0	46	0	0	0	2
8:00	8:15	0	0	36	0	28	1	0	0	2
8:15	8:30	0	0	21	0	51	1	0	0	1
8:30	8:45	0	0	35	0	39	0	0	0	1
8:45	9:00	0	1	40	0	35	0	0	0	0
9:00	9:15	0	1	35	0	40	3	0	0	1
9:15	9:30	0	1	41	0	46	0	0	0	2
9:30	9:45	0	2	43	0	31	1	0	1	0
9:45	10:00	0	2	30	0	54	1	0	0	0
14:00	14:15	0	0	25	0	35	2	0	1	1
14:15	14:30	0	0	27	0	44	1	0	0	3
14:30	14:45	0	0	30	0	32	0	0	0	1
14:45	15:00	0	1	28	0	42	1	0	0	2
15:00	15:15	0	0	33	0	32	0	0	1	1
15:15	15:30	0	2	28	0	28	2	0	0	1
15:30	15:45	0	1	16	0	34	1	0	0	0
15:45	16:00	0	2	23	0	38	2	0	0	0
16:00	16:15	0	2	19	0	31	3	0	2	0
16:15	16:30	0	0	20	0	29	0	0	1	1
16:30	16:45	0	2	12	0	24	1	0	0	1
16:45	17:00	0	1	13	0	21	1	0	0	0
17:00	17:15	0	0	17	0	18	0	0	0	0
17:15	17:30	0	1	11	0	19	0	0	0	2
17:30	17:45	0	0	7	0	13	0	0	0	0
17:45	18:00	0	1	6	0	12	1	0	0	0
18:00	18:15	0	0	7	0	11	1	0	0	2
18:15	18:30	0	0	4	0	14	0	0	0	2
18:30	18:45	0	1	5	0	12	0	0	1	0
18:45	19:00	0	1	4	0	12	1	0	0	0

Peak Time		North Approach Forest Way			South Approach Forest Way			West Approach Russell Ave			Peak
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	total
8:00	9:00	0	1	132	0	153	2	0	0	4	292
17:00	18:00	0	2	131	0	165	4	0	0	3	305

Pedestrians Crossing

Time		North Approach Forest Way		South Approach Forest Way		West Approach Russell Ave		Hourly Tota
Period Start	Period End	Westbound	Eastbound	Westbound	Eastbound	Southbound	Northbound	
6:30	6:45	0	0	0	0	1	3	6
6:45	7:00	0	0	0	0	0	0	2
7:00	7:15	0	0	0	0	1	0	8
7:15	7:30	0	0	0	0	1	0	10
7:30	7:45	0	0	0	0	0	0	12
7:45	8:00	0	0	0	0	6	0	17
8:00	8:15	0	0	1	0	0	2	12
8:15	8:30	0	0	0	0	2	1	10
8:30	8:45	0	0	0	1	1	3	11
8:45	9:00	0	0	0	0	1	0	7
9:00	9:15	0	0	0	0	1	0	8
9:15	9:30	0	0	0	0	3	1	
9:30	9:45	0	0	0	0	0	1	
9:45	10:00	0	0	0	0	0	2	
14:00	14:15	0	0	0	0	0	1	10
14:15	14:30	0	0	0	0	2	0	10
14:30	14:45	0	0	0	0	4	1	9
14:45	15:00	0	0	0	0	2	0	7
15:00	15:15	0	1	0	0	0	0	8
15:15	15:30	0	0	0	0	0	1	7
15:30	15:45	0	0	0	0	1	2	10
15:45	16:00	0	0	0	0	0	3	11
16:00	16:15	0	0	0	0	0	0	9
16:15	16:30	0	0	0	0	4	0	10
16:30	16:45	0	0	0	4	0	0	8
16:45	17:00	0	0	0	0	0	1	5
17:00	17:15	0	0	0	0	0	1	6
17:15	17:30	0	0	0	0	1	1	7
17:30	17:45	0	0	0	0	0	1	6
17:45	18:00	0	0	0	0	1	1	9
18:00	18:15	0	0	0	0	1	1	12
18:15	18:30	0	0	0	0	1	0	
18:30	18:45	0	0	0	0	2	2	
18:45	19:00	0	0	0	0	2	3	

Peak Time		North Approach Forest Way		South Approach Forest Way		West Approach Russell Ave		Peak total
Period Start	Period End	Westbound	Eastbound	Westbound	Eastbound	Southbound	Northbound	
8:00	9:00	0	0	0	1	5	4	10
17:00	18:00	0	0	0	0	1	4	5



Queues

Count the number of lanes from the sidewalk to the median.

Time		North				South			West		
Period Start	Period End	Lane 1	Lane 2	Lane 3	Lane 4	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3
6:30	6:35	6	4	0	1	0	0	0	2	0	0
6:35	6:40	6	0	0	1	0	0	0	1	0	0
6:40	6:45	2	0	0	3	0	0	0	4	0	1
6:45	6:50	2	0	0	3	0	0	0	1	0	1
6:50	6:55	15	0	0	1	0	0	0	4	0	0
6:55	7:00	9	0	0	2	0	0	0	0	0	0
7:00	7:05	11	0	0	0	0	0	0	2	0	0
7:05	7:10	0	0	0	2	0	0	0	1	0	1
7:10	7:15	15	0	0	1	0	0	0	1	0	2
7:15	7:20	3	0	0	1	0	0	0	3	0	0
7:20	7:25	6	0	3	3	0	0	0	2	0	0
7:25	7:30	0	0	0	2	0	0	0	1	0	0
7:30	7:35	3	0	0	1	0	0	0	3	0	1
7:35	7:40	0	0	0	1	0	0	0	3	0	0
7:40	7:45	8	0	0	4	0	0	0	2	0	0
7:45	7:50	4	0	0	2	0	0	0	3	1	0
7:50	7:55	3	0	0	1	0	0	0	4	0	1
7:55	8:00	4	0	0	1	0	0	0	3	0	0
8:00	8:05	2	0	0	1	0	0	0	3	0	1
8:05	8:10	6	0	0	3	0	0	0	2	0	1
8:10	8:15	4	0	0	3	0	0	0	2	1	0
8:15	8:20	7	0	0	3	0	0	0	5	1	0
8:20	8:25	4	0	0	4	0	0	0	3	0	1
8:25	8:30	2	0	0	3	0	0	0	2	1	0
8:30	8:35	3	0	0	3	0	0	0	4	0	0
8:35	8:40	5	0	0	2	0	0	0	3	0	2
8:40	8:45	6	0	0	4	0	0	0	4	0	1
8:45	8:50	8	0	0	4	0	0	0	4	0	0
8:50	8:55	7	0	0	3	0	0	0	6	0	0
8:55	9:00	6	0	0	6	0	0	0	5	0	0
9:00	9:05	0	0	0	4	0	0	0	5	1	1
9:05	9:10	0	0	0	4	0	0	0	6	0	1
9:10	9:15	3	0	0	3	0	0	0	3	0	1
9:15	9:20	8	0	0	3	0	0	0	3	0	0
9:20	9:25	14	0	0	2	0	0	0	4	1	0
9:25	9:30	0	0	0	2	0	0	0	2	1	2
9:30	9:35	4	0	0	3	0	1	0	4	1	1
9:35	9:40	7	0	0	1	0	0	0	2	1	1
9:40	9:45	1	0	0	2	0	0	0	3	0	2
9:45	9:50	3	0	0	3	0	0	0	3	1	1
9:50	9:55	0	0	0	4	0	0	0	4	0	1
9:55	10:00	0	0	0	5	0	0	0	2	1	1
14:00	14:05	6	0	0	2	0	0	0	5	0	2
14:05	14:10	0	0	0	4	0	0	0	2	0	2
14:10	14:15	0	0	3	4	0	0	0	3	0	4
14:15	14:20	0	0	0	7	0	0	0	2	0	3
14:20	14:25	0	0	1	3	0	0	0	2	0	3
14:25	14:30	0	0	0	4	0	0	0	7	0	1
14:30	14:35	0	0	0	3	0	0	0	2	0	2
14:35	14:40	0	0	0	6	0	0	0	5	0	3
14:40	14:45	0	0	0	5	0	0	0	6	0	3
14:45	14:50	0	0	0	5	0	0	0	6	0	2
14:50	14:55	0	0	0	6	0	0	0	5	0	3
14:55	15:00	0	0	0	1	0	0	0	3	1	3
15:00	15:05	0	0	0	6	0	0	0	6	0	2
15:05	15:10	0	0	0	6	0	0	0	4	0	3
15:10	15:15	0	0	0	3	0	0	0	4	0	3
15:15	15:20	3	0	0	5	0	0	0	8	0	3
15:20	15:25	4	0	0	3	0	0	0	6	0	3
15:25	15:30	0	0	0	4	0	0	0	4	0	2
15:30	15:35	3	0	0	4	0	0	0	4	0	2
15:35	15:40	8	0	0	3	0	0	0	4	0	1
15:40	15:45	0	0	0	5	0	0	0	6	0	3
15:45	15:50	0	0	0	5	0	0	0	6	0	2
15:50	15:55	4	0	0	5	0	0	0	5	0	1
15:55	16:00	3	0	0	4	0	0	0	4	0	0
16:00	16:05	0	0	0	6	0	0	0	3	1	2
16:05	16:10	8	0	0	6	0	0	0	3	0	2
16:10	16:15	0	0	0	4	0	0	0	9	1	1
16:15	16:20	0	0	0	4	0	0	0	6	0	2
16:20	16:25	1	0	0	6	0	0	0	6	1	3
16:25	16:30	0	0	0	9	0	0	0	4	1	2
16:30	16:35	0	0	0	6	0	0	0	4	1	2
16:35	16:40	0	0	0	6	0	0	0	8	1	4
16:40	16:45	6	0	0	3	0	0	0	2	0	4
16:45	16:50	0	0	0	4	0	0	0	5	1	4
16:50	16:55	0	0	0	8	0	0	0	5	1	3
16:55	17:00	0	0	0	4	0	0	0	6	1	3
17:00	17:05	0	0	0	3	0	0	0	6	0	1
17:05	17:10	0	0	0	7	0	0	0	4	0	2
17:10	17:15	0	0	0	5	0	0	0	4	1	2
17:15	17:20	0	0	0	7	0	0	0	6	0	1
17:20	17:25	5	0	0	3	0	0	0	6	0	2
17:25	17:30	5	0	0	5	0	0	0	4	0	1
17:30	17:35	0	0	0	6	0	0	0	6	0	4
17:35	17:40	0	0	0	5	0	0	0	9	0	3
17:40	17:45	0	0	0	5	0	0	2	6	0	2
17:45	17:50	0	0	0	2	0	0	0	9	1	3
17:50	17:55	0	0	0	8	0	0	0	7	1	2
17:55	18:00	0	0	0	5	0	0	0	7	0	1
18:00	18:05	0	0	0	4	0	0	0	6	0	3
18:05	18:10	0	0	0	3	0	0	0	4	0	2
18:10	18:15	0	0	0	6	0	0	0	3	0	2
18:15	18:20	0	0	0	6	0	0	0	3	0	3
18:20	18:25	0	0	0	2	0	0	0	3	0	3
18:25	18:30	0	0	0	4	0	0	0	5	0	2
18:30	18:35	0	0	0	3	0	0	0	5	0	2
18:35	18:40	0	0	0	2	0	0	0	4	0	3
18:40	18:45	2	0	0	2	0	0	0	10	1	2
18:45	18:50	0	0	0	3	0	0	0	2	0	2
18:50	18:55	0	0	0	2	0	0	0	5	0	1
18:55	19:00	0	0	0	2	0	0	1	2	0	4

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY trafficsurvey.com.au

Signalised pedestrian crossing of Forest Way between Ru

GPS *-33.750316, 151.225572*

Date:	Tue 10/12/24
Weather:	Overcast
Suburban:	Frenchs Forest
Customer:	N/A

North:	Forest Way
East:	N/A
South:	Forest Way
West:	N/A

Survey Period	AM:	6:30 AM-10:00 AM
	PM:	2:00 PM-7:00 PM

All Pedestrians

Time		h Approach Forest	
Period Start	Period End	WB	EB
6:30	6:45	2	4
6:45	7:00	5	7
7:00	7:15	8	19
7:15	7:30	7	36
7:30	7:45	9	44
7:45	8:00	10	53
8:00	8:15	30	46
8:15	8:30	10	21
8:30	8:45	14	17
8:45	9:00	18	10
9:00	9:15	3	12
9:15	9:30	7	8
9:30	9:45	10	6
9:45	10:00	8	5
14:00	14:15	6	10
14:15	14:30	25	2
14:30	14:45	2	7
14:45	15:00	6	11
15:00	15:15	62	14
15:15	15:30	49	22
15:30	15:45	24	19
15:45	16:00	24	19
16:00	16:15	42	24
16:15	16:30	18	13
16:30	16:45	25	12
16:45	17:00	19	14
17:00	17:15	22	16
17:15	17:30	15	15
17:30	17:45	12	10
17:45	18:00	20	27
18:00	18:15	10	17
18:15	18:30	18	15
18:30	18:45	11	15
18:45	19:00	3	11

Queues Count the number of lanes from the sidewalk to the median.

Time		North			South		
Period Sta	Period En	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3
6:30	6:35	14	4	11	1	1	1
6:35	6:40	14	6	9	2	3	3
6:40	6:45	15	2	2	0	0	0
6:45	6:50	14	8	7	1	1	1
6:50	6:55	14	5	4	0	0	0
6:55	7:00	14	7	9	1	1	1
7:00	7:05	15	7	8	1	1	1
7:05	7:10	4	1	3	0	0	0
7:10	7:15	14	11	12	2	2	2
7:15	7:20	14	5	3	0	2	1
7:20	7:25	14	12	10	1	1	1
7:25	7:30	11	5	10	1	4	4
7:30	7:35	15	6	8	1	2	2
7:35	7:40	13	6	6	0	2	3
7:40	7:45	15	11	9	1	2	3
7:45	7:50	15	8	10	2	4	4
7:50	7:55	15	8	9	0	3	2
7:55	8:00	14	11	11	3	3	4
8:00	8:05	15	3	4	1	5	3
8:05	8:10	15	5	4	2	3	3
8:10	8:15	15	3	6	1	2	2
8:15	8:20	15	12	9	1	2	2
8:20	8:25	14	9	6	2	2	4
8:25	8:30	12	9	6	1	3	2
8:30	8:35	15	6	6	3	4	3
8:35	8:40	15	4	10	2	4	4
8:40	8:45	15	7	10	2	3	2
8:45	8:50	15	5	8	3	2	3
8:50	8:55	15	6	6	2	3	3
8:55	9:00	15	1	3	2	3	3
9:00	9:05	14	2	1	2	3	3
9:05	9:10	10	3	2	1	1	1
9:10	9:15	14	5	6	2	2	2
9:15	9:20	15	8	9	1	4	7
9:20	9:25	15	6	5	2	3	2
9:25	9:30	14	4	3	1	3	1
9:30	9:35	11	3	7	3	2	3
9:35	9:40	14	6	6	2	1	1
9:40	9:45	15	3	6	2	1	2
9:45	9:50	15	4	5	2	4	3
9:50	9:55	4	1	1	0	1	1
9:55	10:00	12	8	4	1	4	2
14:00	14:05	14	2	3	1	1	2
14:05	14:10	2	0	0	0	1	1
14:10	14:15	11	3	2	1	3	5
14:15	14:20	1	1	2	0	0	0
14:20	14:25	2	0	1	1	3	2
14:25	14:30	11	4	4	3	1	2
14:30	14:35	12	6	2	2	2	2
14:35	14:40	12	1	2	2	2	2
14:40	14:45	13	3	2	4	3	3
14:45	14:50	13	6	5	2	3	2
14:50	14:55	15	5	2	2	2	3
14:55	15:00	15	4	2	1	3	5
15:00	15:05	7	4	4	2	3	2
15:05	15:10	13	4	6	3	3	2
15:10	15:15	10	1	3	3	5	3
15:15	15:20	15	9	8	0	2	1
15:20	15:25	15	8	5	3	4	3
15:25	15:30	12	6	4	2	3	4
15:30	15:35	15	7	5	2	3	6
15:35	15:40	15	7	2	2	3	4
15:40	15:45	11	7	1	2	4	4
15:45	15:50	7	1	1	2	3	5
15:50	15:55	14	4	2	2	3	4
15:55	16:00	14	2	2	2	3	6
16:00	16:05	1	2	2	4	5	4
16:05	16:10	15	4	7	3	2	2
16:10	16:15	14	3	2	2	5	4
16:15	16:20	4	1	1	4	6	5
16:20	16:25	13	4	5	4	5	6
16:25	16:30	15	5	1	3	2	3
16:30	16:35	8	6	8	0	3	3
16:35	16:40	12	1	3	4	4	5
16:40	16:45	11	3	1	2	5	5
16:45	16:50	11	2	2	2	3	3
16:50	16:55	13	2	2	3	2	5
16:55	17:00	13	1	1	3	3	2
17:00	17:05	7	1	1	2	2	6
17:05	17:10	11	4	4	1	2	3
17:10	17:15	13	8	9	3	3	2
17:15	17:20	9	2	2	4	4	4
17:20	17:25	13	4	3	2	2	3
17:25	17:30	14	2	8	3	3	4
17:30	17:35	0	0	0	5	3	2
17:35	17:40	10	3	4	4	4	5
17:40	17:45	10	2	1	1	1	1
17:45	17:50	12	3	3	3	4	2
17:50	17:55	11	3	2	2	6	6
17:55	18:00	6	1	3	2	3	3
18:00	18:05	8	2	1	0	0	0
18:05	18:10	12	2	2	4	2	1
18:10	18:15	5	3	2	1	1	1
18:15	18:20	9	5	2	2	3	2
18:20	18:25	12	3	3	3	3	6
18:25	18:30	9	7	3	3	3	3
18:30	18:35	2	2	1	3	4	4
18:35	18:40	6	3	3	2	3	2
18:40	18:45	14	4	2	4	2	6
18:45	18:50	8	2	2	3	3	4
18:50	18:55	10	3	5	4	3	3
18:55	19:00	3	3	3	3	2	2

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY trafficsurvey.com.au

Intersection of Warringah Rd and Forest Way, Frenchs F

GPS -33.751650, 151.226625

Date:	Sat 14/12/24
Weather:	Overcast
Suburban:	Frenchs Forest
Customer:	N/A

North:	Forest Way
East:	Warringah Rd
South:	N/A
West:	Warringah Rd

Survey Period	AM:	9:00 AM-12:00 PM
	PM:	12:00 PM-3:00 PM
Traffic Peak	AM:	11:00 AM-12:00 PM
	PM:	12:00 PM-1:00 PM

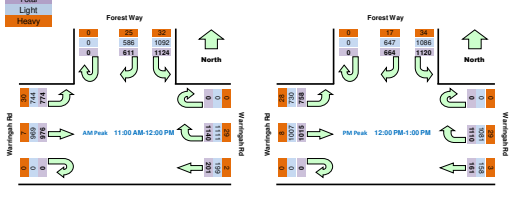
All Vehicles

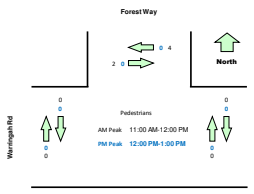
Time		North Approach Forest Way			East Approach Warringah R			West Approach Warringah R			Hourly Total	
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	Hour	Peak
9:00	9:15	0	130	223	0	223	30	0	153	150	3955	
9:15	9:30	0	124	249	0	199	31	0	185	168	4155	
9:30	9:45	0	127	260	0	262	44	0	175	158	4389	
9:45	10:00	0	150	261	0	257	49	0	171	176	4517	
10:00	10:15	0	143	258	0	289	26	0	196	197	4639	
10:15	10:30	0	193	249	0	292	43	0	192	221	4714	
10:30	10:45	0	157	247	0	250	39	0	226	235	4723	
10:45	11:00	0	180	285	0	261	42	0	227	191	4824	
11:00	11:15	0	143	269	0	297	50	0	234	191	4826	Peak
11:15	11:30	0	137	283	0	321	45	0	229	184		
11:30	11:45	0	165	299	0	270	46	0	272	203		
11:45	12:00	0	166	273	0	252	60	0	241	196		
12:00	12:15	0	164	263	0	246	42	0	270	187	4828	Peak
12:15	12:30	0	158	317	0	263	39	0	251	199	4805	
12:30	12:45	0	184	275	0	305	38	0	255	184	4643	
12:45	13:00	0	158	265	0	296	42	0	239	188	4437	
13:00	13:15	0	151	261	0	287	51	0	212	187	4267	
13:15	13:30	0	144	264	0	289	44	0	191	133	4185	
13:30	13:45	0	155	229	0	241	45	0	229	136	4187	
13:45	14:00	0	145	258	0	198	29	0	214	174	4101	
14:00	14:15	0	180	260	0	243	40	0	186	158	4095	
14:15	14:30	0	186	246	0	254	49	0	175	157		
14:30	14:45	0	130	247	0	196	44	0	175	157		
14:45	15:00	0	137	233	0	238	55	0	188	161		

Peak Time		North Approach Forest Way			East Approach Warringah R			West Approach Warringah R			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
11:00	12:00	0	611	1124	0	1140	201	0	976	774	4826
12:00	13:00	0	664	1120	0	1110	161	0	1015	758	4828

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

Graphic: Total / Light / Heavy





Light Vehicles

Time		North Approach Forest Way			East Approach Warringah R			West Approach Warringah R		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
9:00	9:15	0	122	217	0	210	28	0	150	144
9:15	9:30	0	118	238	0	194	29	0	183	155
9:30	9:45	0	118	253	0	255	42	0	175	149
9:45	10:00	0	140	254	0	249	48	0	166	171
10:00	10:15	0	137	245	0	283	26	0	193	190
10:15	10:30	0	187	244	0	283	42	0	189	209
10:30	10:45	0	152	236	0	246	39	0	222	228
10:45	11:00	0	174	278	0	255	41	0	225	185
11:00	11:15	0	136	256	0	287	50	0	233	184
11:15	11:30	0	135	278	0	311	45	0	225	176
11:30	11:45	0	158	291	0	265	45	0	270	197
11:45	12:00	0	157	267	0	248	59	0	241	187
12:00	12:15	0	159	256	0	241	42	0	269	176
12:15	12:30	0	155	308	0	253	38	0	247	194
12:30	12:45	0	179	268	0	300	37	0	254	179
12:45	13:00	0	154	254	0	287	41	0	237	181
13:00	13:15	0	146	254	0	277	50	0	208	180
13:15	13:30	0	136	251	0	280	44	0	188	128
13:30	13:45	0	147	223	0	233	45	0	224	132
13:45	14:00	0	138	249	0	190	29	0	211	168
14:00	14:15	0	174	251	0	234	39	0	181	153
14:15	14:30	0	182	240	0	248	49	0	173	148
14:30	14:45	0	125	239	0	191	42	0	174	150
14:45	15:00	0	134	229	0	232	55	0	185	155

Peak Time		North Approach Forest Way			East Approach Warringah R			West Approach Warringah R			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
11:00	12:00	0	586	1092	0	1111	199	0	969	744	4701
12:00	13:00	0	647	1086	0	1081	158	0	1007	730	4709

Heavy Vehicles

Time		North Approach Forest Way			East Approach Warringah R			West Approach Warringah R		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
9:00	9:15	0	8	6	0	13	2	0	3	6
9:15	9:30	0	6	11	0	5	2	0	2	13
9:30	9:45	0	9	7	0	7	2	0	0	9
9:45	10:00	0	10	7	0	8	1	0	5	5
10:00	10:15	0	6	13	0	6	0	0	3	7
10:15	10:30	0	6	5	0	9	1	0	3	12
10:30	10:45	0	5	11	0	4	0	0	4	7
10:45	11:00	0	6	7	0	6	1	0	2	6
11:00	11:15	0	7	13	0	10	0	0	1	7
11:15	11:30	0	2	5	0	10	0	0	4	8
11:30	11:45	0	7	8	0	5	1	0	2	6
11:45	12:00	0	9	6	0	4	1	0	0	9
12:00	12:15	0	5	7	0	5	0	0	1	11
12:15	12:30	0	3	9	0	10	1	0	4	5
12:30	12:45	0	5	7	0	5	1	0	1	5
12:45	13:00	0	4	11	0	9	1	0	2	7
13:00	13:15	0	5	7	0	10	1	0	4	7
13:15	13:30	0	8	13	0	9	0	0	3	5
13:30	13:45	0	8	6	0	8	0	0	5	4
13:45	14:00	0	7	9	0	8	0	0	3	6
14:00	14:15	0	6	9	0	9	1	0	5	5
14:15	14:30	0	4	6	0	6	0	0	2	9
14:30	14:45	0	5	8	0	5	2	0	1	7
14:45	15:00	0	3	4	0	6	0	0	3	6

Peak Time		North Approach Forest Way			East Approach Warringah R			West Approach Warringah R			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
11:00	12:00	0	25	32	0	29	2	0	7	30	125
12:00	13:00	0	17	34	0	29	3	0	8	28	119

Pedestrians Crossing

Time		North Approach Forest Way		East Approach Warringah Rd		West Approach Warringah Rd		Hourly Tots
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Southbound	Northbound	
9:00	9:15	0	0	0	0	0	0	3
9:15	9:30	0	0	0	0	0	0	3
9:30	9:45	0	3	0	0	0	0	3
9:45	10:00	0	0	0	0	0	0	0
10:00	10:15	0	0	0	0	0	0	1
10:15	10:30	0	0	0	0	0	0	3
10:30	10:45	0	0	0	0	0	0	4
10:45	11:00	0	1	0	0	0	0	7
11:00	11:15	0	2	0	0	0	0	6
11:15	11:30	1	0	0	0	0	0	
11:30	11:45	3	0	0	0	0	0	
11:45	12:00	0	0	0	0	0	0	
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	2
12:30	12:45	0	0	0	0	0	0	6
12:45	13:00	0	0	0	0	0	0	6
13:00	13:15	0	2	0	0	0	0	6
13:15	13:30	4	0	0	0	0	0	4
13:30	13:45	0	0	0	0	0	0	0
13:45	14:00	0	0	0	0	0	0	0
14:00	14:15	0	0	0	0	0	0	0
14:15	14:30	0	0	0	0	0	0	
14:30	14:45	0	0	0	0	0	0	
14:45	15:00	0	0	0	0	0	0	

Peak Time		North Approach Forest Way		East Approach Warringah Rd		West Approach Warringah Rd		Peak total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Southbound	Northbound	
11:00	12:00	4	2	0	0	0	0	6
12:00	13:00	0	0	0	0	0	0	0

Queues

Count the number of lanes from the sidewalk to the median.

Time		North					East					West				
Period Start	Period End	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5	Lane 1	Lane 2	Lane 3	Lane 4	Lane 5
9:00	9:05	1	0	0	5	5	1	10	9	7		3	6	0	5	7
9:05	9:10	0	0	1	4	8	1	11	8	6		6	5	0	7	5
9:10	9:15	0	0	2	4	9	1	10	8	10		6	5	0	10	11
9:15	9:20	0	0	1	2	5	4	5	11	4		6	4	0	9	10
9:20	9:25	0	0	0	4	7	0	8	5	5		8	8	0	7	8
9:25	9:30	0	0	1	10	13	2	8	10	10		6	9	0	14	12
9:30	9:35	0	0	0	6	11	4	10	11	8		8	7	1	5	5
9:35	9:40	0	0	0	3	6	2	13	14	5		3	4	0	11	12
9:40	9:45	0	0	1	9	11	1	12	10	8		8	5	0	10	11
9:45	9:50	0	0	1	5	10	4	14	13	9		9	7	0	11	10
9:50	9:55	0	0	0	8	8	2	15	14	10		8	8	0	10	12
9:55	10:00	0	0	0	10	10	3	14	15	12		6	4	0	10	12
10:00	10:05	0	0	0	7	10	1	10	11	9		6	7	0	7	9
10:05	10:10	0	0	0	8	8	1	13	13	11		11	7	0	11	12
10:10	10:15	0	0	1	8	8	3	19	18	15		8	6	0	9	14
10:15	10:20	0	0	1	9	13	0	17	11	9		6	8	0	12	11
10:20	10:25	0	0	1	13	15	4	16	15	15		6	6	0	10	12
10:25	10:30	0	0	2	6	10	1	8	11	6		10	16	0	10	13
10:30	10:35	0	0	0	9	7	3	12	14	11		11	8	0	15	15
10:35	10:40	0	0	1	6	9	7	9	10	8		11	11	0	10	14
10:40	10:45	0	0	1	11	12	2	16	13	13		7	10	0	13	13
10:45	10:50	0	0	0	10	13	4	14	15	10		9	11	0	14	17
10:50	10:55	0	0	1	13	15	7	13	12	6		6	6	0	15	16
10:55	11:00	0	0	0	11	16	2	15	16	14		11	8	0	12	12
11:00	11:05	0	0	0	10	9	7	15	15	12		10	10	0	13	15
11:05	11:10	0	0	1	6	8	1	14	11	8		5	9	0	6	12
11:10	11:15	0	0	2	13	18	4	10	12	5		8	6	0	16	15
11:15	11:20	0	0	0	8	10	3	19	16	13		9	10	0	9	13
11:20	11:25	0	0	1	7	9	6	21	17	14		8	11	0	17	16
11:25	11:30	0	0	1	10	16	0	10	8	7		7	9	0	11	15
11:30	11:35	0	0	1	14	19	5	15	16	15		8	8	0	16	18
11:35	11:40	0	0	0	7	9	3	7	13	9		6	8	0	23	21
11:40	11:45	0	0	2	7	11	8	10	10	11		7	8	0	21	15
11:45	11:50	0	0	0	9	10	11	6	10	7		5	9	0	12	13
11:50	11:55	0	0	1	7	10	3	17	18	14		7	10	0	12	12
11:55	12:00	0	0	0	12	14	1	17	17	17		6	5	0	12	14
12:00	12:05	0	0	0	9	11	3	11	9	11		8	8	0	15	17
12:05	12:10	0	0	0	12	15	4	9	11	7		6	1	0	11	12
12:10	12:15	0	0	1	6	13	3	13	9	8		8	6	0	15	14
12:15	12:20	0	0	1	6	10	1	16	14	12		4	7	0	12	16
12:20	12:25	0	0	0	6	11	3	15	15	14		10	7	0	9	10
12:25	12:30	0	0	1	11	12	1	13	13	14		9	10	0	16	18
12:30	12:35	0	0	0	11	16	3	12	13	10		7	11	0	15	19
12:35	12:40	0	0	1	11	12	1	20	18	14		7	8	0	18	17
12:40	12:45	0	0	0	7	13	2	14	15	15		6	9	0	19	17
12:45	12:50	0	0	0	7	10	1	15	19	14		8	7	0	13	12
12:50	12:55	0	0	2	8	12	2	13	12	11		5	3	0	12	15
12:55	13:00	0	0	1	7	13	6	18	18	13		9	10	0	13	13
13:00	13:05	0	0	0	8	14	4	24	21	14		5	5	0	13	13
13:05	13:10	0	0	1	5	8	2	9	9	8		9	10	0	16	17
13:10	13:15	0	0	0	6	13	4	18	14	12		5	8	0	10	11
13:15	13:20	0	0	1	11	12	6	8	12	9		7	7	0	14	14
13:20	13:25	0	0	0	6	10	1	12	11	9		5	9	0	13	15
13:25	13:30	9	0	1	8	12	5	14	14	6		5	5	0	6	11
13:30	13:35	0	0	2	8	12	2	5	7	5		4	3	0	10	9
13:35	13:40	0	0	1	8	9	3	16	12	9		8	5	0	13	15
13:40	13:45	0	0	1	9	11	3	6	7	4		6	5	0	15	16
13:45	13:50	0	0	0	5	9	1	12	10	10		5	7	0	15	12
13:50	13:55	0	0	1	8	12	3	9	8	5		6	7	0	16	13
13:55	14:00	0	0	1	10	12	1	15	12	10		9	12	0	9	13
14:00	14:05	0	0	0	5	7	3	11	8	5		5	6	1	14	15
14:05	14:10	0	0	0	9	13	7	12	12	9		4	5	0	12	9
14:10	14:15	0	0	1	9	18	1	10	11	9		5	3	0	13	10
14:15	14:20	0	0	1	5	13	4	16	18	10		8	8	0	15	12
14:20	14:25	0	0	1	8	8	4	12	15	9		10	5	0	15	10
14:25	14:30	0	0	0	4	11	3	11	10	8		6	5	0	10	9
14:30	14:35	0	0	0	5	9	4	9	8	8		6	5	0	11	8
14:35	14:40	0	0	0	3	10	2	9	9	8		5	6	0	10	6
14:40	14:45	0	0	2	4	5	3	9	12	7		7	7	0	8	15
14:45	14:50	0	0	1	9	13	2	11	12	8		6	2	0	11	12
14:50	14:55	0	0	1	9	11	2	10	12	12		4	6	0	7	12
14:55	15:00	0	0	1	9	13	4	7	9	7		7	9	0	9	10

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au

Intersection of Naree Rd and Forest Way, Frenchs Forest

GPS -33.748483, 151.224071

Date:	Sat 14/12/24
Weather:	Overcast
Suburban:	Frenchs Forest
Customer:	N/A

North:	Forest Way
East:	Naree Rd
South:	Forest Way
West:	N/A

Survey Period	AM:	9:00 AM-12:00 PM
	PM:	12:00 PM-3:00 PM
Traffic Peak	AM:	11:00 AM-12:00 PM
	PM:	12:00 PM-1:00 PM

All Vehicles

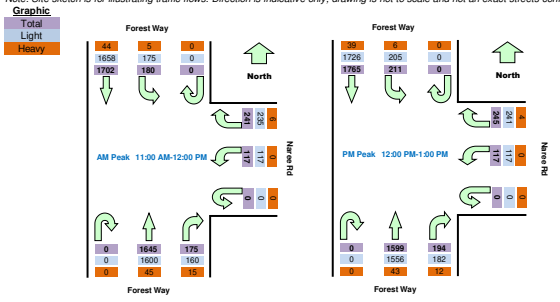
Time		North Approach Forest Way			East Approach Naree Rd			South Approach Forest Way			Hourly Total	
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	Hour	Peak
9:00	9:15	0	315	34	0	60	22	0	27	311	3360	
9:15	9:30	0	385	38	0	49	11	0	24	322	3535	
9:30	9:45	0	362	26	0	63	24	0	28	351	3714	
9:45	10:00	0	369	39	0	50	33	0	32	385	3858	
10:00	10:15	0	395	37	0	54	17	0	42	399	3973	
10:15	10:30	0	400	40	0	70	34	0	36	428	4027	
10:30	10:45	0	399	38	0	61	35	0	39	426	4020	
10:45	11:00	0	458	57	0	59	24	0	47	378	4056	
11:00	11:15	0	397	41	0	67	28	0	56	409	4060	Peak
11:15	11:30	0	429	44	0	67	25	0	39	397		
11:30	11:45	0	439	51	0	51	24	0	33	436		
11:45	12:00	0	437	44	0	56	40	0	47	403		
12:00	12:15	0	418	57	0	53	29	0	51	380	4131	Peak
12:15	12:30	0	470	55	0	71	33	0	52	366	4086	
12:30	12:45	0	438	51	0	66	37	0	47	427	3970	
12:45	13:00	0	439	48	0	55	18	0	44	426	3784	
13:00	13:15	0	393	34	0	53	28	0	43	392	3592	
13:15	13:30	0	393	50	0	55	23	0	47	363	3566	
13:30	13:45	0	383	40	0	61	32	0	30	334	3559	
13:45	14:00	0	386	42	0	42	30	0	39	299	3528	
14:00	14:15	0	423	43	0	61	20	0	36	334	3567	
14:15	14:30	0	415	41	0	62	26	0	42	338		
14:30	14:45	0	368	40	0	60	26	0	38	317		
14:45	15:00	0	358	62	0	64	23	0	57	313		

Peak Time		North Approach Forest Way			East Approach Naree Rd			South Approach Forest Way			Peak
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	total
11:00	12:00	0	1702	180	0	241	117	0	175	1645	4060
12:00	13:00	0	1765	211	0	245	117	0	194	1599	4131

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

Graphic

Total
Light
Heavy



Light Vehicles

Time		North Approach Forest Way			East Approach Naree Rd			South Approach Forest Way		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
9:00	9:15	0	305	33	0	59	22	0	22	298
9:15	9:30	0	374	37	0	49	11	0	21	306
9:30	9:45	0	350	26	0	62	23	0	24	342
9:45	10:00	0	355	37	0	48	33	0	29	373
10:00	10:15	0	381	36	0	54	17	0	40	389
10:15	10:30	0	390	40	0	68	34	0	31	412
10:30	10:45	0	387	38	0	61	35	0	37	417
10:45	11:00	0	447	55	0	57	24	0	44	371
11:00	11:15	0	382	40	0	67	28	0	52	397
11:15	11:30	0	422	44	0	65	25	0	33	386
11:30	11:45	0	427	49	0	49	24	0	31	426
11:45	12:00	0	427	42	0	54	40	0	44	391
12:00	12:15	0	411	56	0	52	29	0	48	370
12:15	12:30	0	460	53	0	70	33	0	50	354
12:30	12:45	0	428	51	0	66	37	0	43	418
12:45	13:00	0	427	45	0	53	18	0	41	414
13:00	13:15	0	383	34	0	52	28	0	40	377
13:15	13:30	0	377	47	0	53	23	0	42	355
13:30	13:45	0	370	39	0	61	32	0	28	325
13:45	14:00	0	375	40	0	40	30	0	36	287
14:00	14:15	0	412	43	0	61	20	0	32	328
14:15	14:30	0	408	40	0	60	26	0	39	324
14:30	14:45	0	357	40	0	60	26	0	35	310
14:45	15:00	0	354	59	0	62	23	0	54	304

Peak Time		North Approach Forest Way			East Approach Naree Rd			South Approach Forest Way			Peak
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	total
11:00	12:00	0	1658	175	0	235	117	0	160	1600	3945
12:00	13:00	0	1726	205	0	241	117	0	182	1556	4027

Heavy Vehicles

Time		North Approach Forest Way			East Approach Naree Rd			South Approach Forest Way		
Period Start	Period End	U	SB	L	U	R	L	U	R	NB
9:00	9:15	0	10	1	0	1	0	0	5	13
9:15	9:30	0	11	1	0	0	0	0	3	16
9:30	9:45	0	12	0	0	1	1	0	4	9
9:45	10:00	0	14	2	0	2	0	0	3	12
10:00	10:15	0	14	1	0	0	0	0	2	10
10:15	10:30	0	10	0	0	2	0	0	5	16
10:30	10:45	0	12	0	0	0	0	0	2	9
10:45	11:00	0	11	2	0	2	0	0	3	7
11:00	11:15	0	15	1	0	0	0	0	4	12
11:15	11:30	0	7	0	0	2	0	0	6	11
11:30	11:45	0	12	2	0	2	0	0	2	10
11:45	12:00	0	10	2	0	2	0	0	3	12
12:00	12:15	0	7	1	0	1	0	0	3	10
12:15	12:30	0	10	2	0	1	0	0	2	12
12:30	12:45	0	10	0	0	0	0	0	4	9
12:45	13:00	0	12	3	0	2	0	0	3	12
13:00	13:15	0	10	0	0	1	0	0	3	15
13:15	13:30	0	16	3	0	2	0	0	5	8
13:30	13:45	0	13	1	0	0	0	0	2	9
13:45	14:00	0	11	2	0	2	0	0	3	12
14:00	14:15	0	11	0	0	0	0	0	4	6
14:15	14:30	0	7	1	0	2	0	0	3	14
14:30	14:45	0	11	0	0	0	0	0	3	7
14:45	15:00	0	4	3	0	2	0	0	3	9

Peak Time		North Approach Forest Way			East Approach Naree Rd			South Approach Forest Way			Peak
Period Start	Period End	U	SB	L	U	R	L	U	R	NB	total
11:00	12:00	0	44	5	0	6	0	0	15	45	115
12:00	13:00	0	39	6	0	4	0	0	12	43	104

Pedestrians Crossing

Time		North Approach Forest Way		East Approach Naree Rd		South Approach Forest Way		Hourly Total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	
9:00	9:15	0	0	0	3	1	2	27
9:15	9:30	0	0	1	1	1	0	24
9:30	9:45	0	0	3	3	2	2	28
9:45	10:00	0	0	3	2	2	1	27
10:00	10:15	0	0	3	0	0	0	34
10:15	10:30	2	0	0	2	3	0	36
10:30	10:45	0	0	4	1	2	2	33
10:45	11:00	0	0	3	2	6	4	30
11:00	11:15	0	0	2	0	1	2	22
11:15	11:30	0	0	0	3	0	1	
11:30	11:45	0	0	2	1	1	2	
11:45	12:00	0	0	4	0	3	0	
12:00	12:15	0	0	4	4	0	2	28
12:15	12:30	0	0	1	1	1	2	21
12:30	12:45	0	0	1	1	1	2	25
12:45	13:00	0	0	4	0	4	0	22
13:00	13:15	0	0	1	1	0	1	16
13:15	13:30	0	0	1	0	1	7	14
13:30	13:45	0	0	0	1	0	1	7
13:45	14:00	0	0	0	0	2	0	13
14:00	14:15	0	0	0	0	0	1	11
14:15	14:30	0	0	1	0	0	1	
14:30	14:45	0	0	1	2	1	4	
14:45	15:00	0	0	0	0	0	0	

Peak Time		North Approach Forest Way		East Approach Naree Rd		South Approach Forest Way		Peak total
Period Start	Period End	Westbound	Eastbound	Southbound	Northbound	Westbound	Eastbound	
11:00	12:00	0	0	8	4	5	5	22
12:00	13:00	0	0	10	6	6	6	28

Queues Count the number of lanes from the sidewalk to the median.

Time		North			East		South			
Period Start	Period End	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	Lane 4
9:00	9:05	7	6	4	5	9	1	4	6	2
9:05	9:10	16	2	2	2	6	1	1	2	2
9:10	9:15	22	8	6	2	11	3	6	4	3
9:15	9:20	13	8	4	1	5	1	2	1	3
9:20	9:25	15	15	10	4	11	1	1	2	3
9:25	9:30	30	7	9	1	7	2	1	1	2
9:30	9:35	10	5	8	6	9	2	3	2	2
9:35	9:40	15	12	6	5	10	3	5	2	3
9:40	9:45	24	14	14	3	9	1	2	3	4
9:45	9:50	16	13	6	3	11	1	3	0	3
9:50	9:55	15	7	6	6	8	3	1	1	3
9:55	10:00	16	5	7	7	11	0	2	1	6
10:00	10:05	11	5	5	1	9	1	4	4	2
10:05	10:10	5	4	2	2	10	1	2	1	4
10:10	10:15	17	6	5	1	5	3	2	2	4
10:15	10:20	13	8	3	5	10	2	6	3	6
10:20	10:25	24	13	10	6	12	2	3	1	4
10:25	10:30	22	16	15	7	8	2	2	1	5
10:30	10:35	17	4	3	6	9	1	3	5	6
10:35	10:40	25	17	14	3	9	2	3	7	6
10:40	10:45	17	19	10	7	10	4	4	1	5
10:45	10:50	28	25	18	1	9	3	3	3	6
10:50	10:55	30	11	7	3	9	1	1	2	5
10:55	11:00	29	10	5	5	11	1	2	1	6
11:00	11:05	23	13	12	3	8	1	1	2	4
11:05	11:10	23	16	12	4	10	2	2	2	6
11:10	11:15	29	13	13	4	9	4	3	5	5
11:15	11:20	29	7	9	2	10	2	1	1	5
11:20	11:25	17	4	5	6	6	3	2	1	4
11:25	11:30	27	15	18	5	9	3	2	1	5
11:30	11:35	29	13	11	3	6	4	1	1	7
11:35	11:40	17	10	11	4	5	3	3	4	5
11:40	11:45	19	5	5	3	14	1	1	2	5
11:45	11:50	28	11	10	6	19	1	2	2	9
11:50	11:55	19	12	6	4	10	1	2	2	4
11:55	12:00	23	11	15	5	8	1	3	1	5
12:00	12:05	27	10	10	4	8	1	1	3	9
12:05	12:10	29	10	5	3	11	1	1	2	5
12:10	12:15	16	27	7	4	13	1	2	2	6
12:15	12:20	14	30	26	4	11	1	5	6	7
12:20	12:25	23	29	19	6	9	2	2	1	5
12:25	12:30	29	22	17	2	12	2	3	4	5
12:30	12:35	32	21	10	4	13	1	3	1	5
12:35	12:40	29	14	7	5	11	1	1	1	6
12:40	12:45	25	17	18	5	12	3	5	6	6
12:45	12:50	24	13	11	5	14	1	1	1	6
12:50	12:55	23	13	15	1	6	2	3	2	5
12:55	13:00	25	17	18	3	11	1	2	0	6
13:00	13:05	21	12	7	5	6	1	2	2	6
13:05	13:10	13	6	7	3	11	1	2	1	3
13:10	13:15	24	12	12	3	7	1	2	3	5
13:15	13:20	15	8	8	3	9	1	2	2	2
13:20	13:25	27	10	12	1	11	1	1	1	4
13:25	13:30	26	16	15	5	8	2	2	1	8
13:30	13:35	13	3	1	4	9	1	1	1	3
13:35	13:40	7	3	4	5	9	1	3	1	5
13:40	13:45	18	8	6	3	13	2	2	3	6
13:45	13:50	24	9	8	4	6	3	2	2	3
13:50	13:55	9	9	5	3	9	1	1	1	5
13:55	14:00	5	4	1	5	9	2	1	1	2
14:00	14:05	26	14	13	2	8	2	2	2	4
14:05	14:10	19	16	14	3	11	2	1	1	2
14:10	14:15	18	14	14	2	5	1	1	0	5
14:15	14:20	19	14	14	2	6	2	3	2	4
14:20	14:25	20	13	14	4	7	1	4	1	4
14:25	14:30	17	12	11	1	9	1	2	1	5
14:30	14:35	20	11	9	1	7	1	3	1	5
14:35	14:40	12	6	6	3	11	1	1	1	4
14:40	14:45	19	10	7	4	15	1	9	8	6
14:45	14:50	22	8	6	3	14	2	4	2	7
14:50	14:55	22	11	13	2	8	1	2	1	5
14:55	15:00	26	15	9	4	16	1	2	1	8

TRANS TRAFFIC SURVEY

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TURNING MOVEMENT SURVEY

Intersection of Russell Ave and Forest Way, Frenchs For

GPS -33.749374, 151.224753

Date:	Sat 14/12/24
Weather:	Overcast
Suburban:	Frenchs Forest
Customer:	N/A

North:	Forest Way
East:	N/A
South:	Forest Way
West:	Russell Ave

Survey	AM:	9:00 AM-12:00 PM
Period	PM:	12:00 PM-3:00 PM
Traffic	AM:	11:00 AM-12:00 PM
Peak	PM:	12:00 PM-1:00 PM

All Vehicles

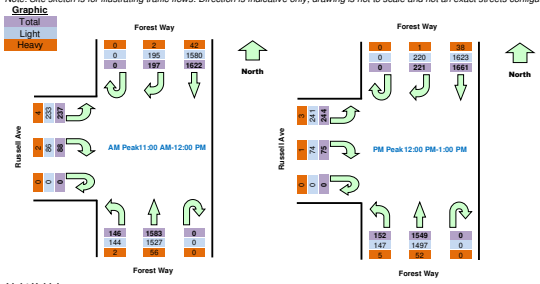
Time		North Approach Forest Way			South Approach Forest Way			West Approach Russell Ave			Hourly Total	
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	Hour	Peak
9:00	9:15	0	37	300	0	298	28	0	19	40	3201	
9:15	9:30	0	38	358	0	303	24	0	11	43	3383	
9:30	9:45	0	32	354	0	333	46	0	24	46	3571	
9:45	10:00	0	46	356	0	364	25	0	23	53	3685	
10:00	10:15	0	34	378	0	392	32	0	19	49	3779	
10:15	10:30	0	35	399	0	430	48	0	19	34	3834	
10:30	10:45	0	49	385	0	413	37	0	13	52	3828	
10:45	11:00	0	55	427	0	359	36	0	18	66	3858	
11:00	11:15	0	46	379	0	403	48	0	21	62	3873	Peak
11:15	11:30	0	39	415	0	386	48	0	21	50		
11:30	11:45	0	39	424	0	407	24	0	23	62		
11:45	12:00	0	73	404	0	387	26	0	23	63		
12:00	12:15	0	56	391	0	361	37	0	21	70	3902	Peak
12:15	12:30	0	62	441	0	359	38	0	17	59	3885	
12:30	12:45	0	56	419	0	409	31	0	21	65	3796	
12:45	13:00	0	47	410	0	420	46	0	16	50	3631	
13:00	13:15	0	49	372	0	369	44	0	19	66	3453	
13:15	13:30	0	43	373	0	350	37	0	24	60	3411	
13:30	13:45	0	46	369	0	301	39	0	18	63	3405	
13:45	14:00	0	57	359	0	291	35	0	22	47	3370	
14:00	14:15	0	36	407	0	311	37	0	27	59	3366	
14:15	14:30	0	48	393	0	315	41	0	19	65		
14:30	14:45	0	38	356	0	303	32	0	20	52		
14:45	15:00	0	53	328	0	316	24	0	32	54		

Peak Time		North Approach Forest Way			South Approach Forest Way			West Approach Russell Ave			Peak total
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	
11:00	12:00	0	197	1622	0	1583	146	0	88	237	3873
12:00	13:00	0	221	1661	0	1549	152	0	75	244	3902

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

Graphic

Total
Light
Heavy



Light Vehicles

Time		North Approach Forest Way			South Approach Forest Way			West Approach Russell Ave		
Period Start	Period End	U	R	SB	U	NB	L	U	R	L
9:00	9:15	0	37	290	0	280	27	0	18	40
9:15	9:30	0	38	347	0	285	24	0	11	42
9:30	9:45	0	32	341	0	320	43	0	23	46
9:45	10:00	0	46	342	0	351	25	0	23	51
10:00	10:15	0	34	364	0	380	32	0	18	49
10:15	10:30	0	35	389	0	409	47	0	19	34
10:30	10:45	0	49	373	0	402	37	0	13	52
10:45	11:00	0	55	416	0	349	35	0	18	66
11:00	11:15	0	45	365	0	388	47	0	19	61
11:15	11:30	0	39	408	0	371	48	0	21	48
11:30	11:45	0	38	413	0	395	24	0	23	62
11:45	12:00	0	73	394	0	373	25	0	23	62
12:00	12:15	0	56	384	0	349	34	0	21	69
12:15	12:30	0	62	431	0	346	37	0	17	58
12:30	12:45	0	55	410	0	397	31	0	21	64
12:45	13:00	0	47	398	0	405	45	0	15	50
13:00	13:15	0	48	363	0	352	44	0	19	65
13:15	13:30	0	42	358	0	337	36	0	22	60
13:30	13:45	0	46	356	0	290	38	0	18	63
13:45	14:00	0	57	348	0	276	35	0	22	47
14:00	14:15	0	36	396	0	301	35	0	26	59
14:15	14:30	0	48	386	0	299	41	0	19	64
14:30	14:45	0	37	346	0	293	31	0	20	52
14:45	15:00	0	53	324	0	304	23	0	32	54

Peak Time		North Approach Forest Way			South Approach Forest Way			West Approach Russell Ave			Peak total
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	
11:00	12:00	0	195	1580	0	1527	144	0	86	233	3765
12:00	13:00	0	220	1623	0	1497	147	0	74	241	3802

Heavy Vehicles

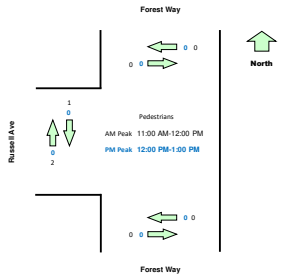
Time		North Approach Forest Way			South Approach Forest Way			West Approach Russell Ave		
Period Start	Period End	U	R	SB	U	NB	L	U	R	L
9:00	9:15	0	0	10	0	18	1	0	1	0
9:15	9:30	0	0	11	0	18	0	0	0	1
9:30	9:45	0	0	13	0	13	3	0	1	0
9:45	10:00	0	0	14	0	13	0	0	0	2
10:00	10:15	0	0	14	0	12	0	0	1	0
10:15	10:30	0	0	10	0	21	1	0	0	0
10:30	10:45	0	0	12	0	11	0	0	0	0
10:45	11:00	0	0	11	0	10	1	0	0	0
11:00	11:15	0	1	14	0	15	1	0	2	1
11:15	11:30	0	0	7	0	15	0	0	0	2
11:30	11:45	0	1	11	0	12	0	0	0	0
11:45	12:00	0	0	10	0	14	1	0	0	1
12:00	12:15	0	0	7	0	12	3	0	0	1
12:15	12:30	0	0	10	0	13	1	0	0	1
12:30	12:45	0	1	9	0	12	0	0	0	1
12:45	13:00	0	0	12	0	15	1	0	1	0
13:00	13:15	0	1	9	0	17	0	0	0	1
13:15	13:30	0	1	15	0	13	1	0	2	0
13:30	13:45	0	0	13	0	11	1	0	0	0
13:45	14:00	0	0	11	0	15	0	0	0	0
14:00	14:15	0	0	11	0	10	2	0	1	0
14:15	14:30	0	0	7	0	16	0	0	0	1
14:30	14:45	0	1	10	0	10	1	0	0	0
14:45	15:00	0	0	4	0	12	1	0	0	0

Peak Time		North Approach Forest Way			South Approach Forest Way			West Approach Russell Ave			Peak total
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	
11:00	12:00	0	2	42	0	56	2	0	2	4	108
12:00	13:00	0	1	38	0	52	5	0	1	3	100

Pedestrians Crossing

Time		North Approach Forest Way		South Approach Forest Way		West Approach Russell Ave		Hourly Total
Period Start	Period End	Westbound	Eastbound	Westbound	Eastbound	Southbound	Northbound	
9:00	9:15	0	0	0	0	0	0	4
9:15	9:30	0	0	0	0	1	0	4
9:30	9:45	0	0	0	0	2	1	7
9:45	10:00	0	0	0	0	0	0	6
10:00	10:15	0	0	0	0	0	0	10
10:15	10:30	1	0	0	0	3	0	12
10:30	10:45	0	0	0	0	0	2	9
10:45	11:00	0	0	0	0	2	2	7
11:00	11:15	0	0	0	0	0	2	3
11:15	11:30	0	0	0	0	1	0	
11:30	11:45	0	0	0	0	0	0	
11:45	12:00	0	0	0	0	0	0	
12:00	12:15	0	0	0	0	0	0	0
12:15	12:30	0	0	0	0	0	0	1
12:30	12:45	0	0	0	0	0	0	1
12:45	13:00	0	0	0	0	0	0	1
13:00	13:15	0	0	0	1	0	0	1
13:15	13:30	0	0	0	0	0	0	3
13:30	13:45	0	0	0	0	0	0	4
13:45	14:00	0	0	0	0	0	0	7
14:00	14:15	0	0	0	1	0	2	7
14:15	14:30	0	0	0	0	0	1	
14:30	14:45	0	0	0	0	1	2	
14:45	15:00	0	0	0	0	0	0	

Peak Time		North Approach Forest Way		South Approach Forest Way		West Approach Russell Ave		Peak total
Period Start	Period End	Westbound	Eastbound	Westbound	Eastbound	Southbound	Northbound	
11:00	12:00	0	0	0	0	1	2	3
12:00	13:00	0	0	0	0	0	0	0



Queues

Count the number of lanes from the sidewalk to the median.

Time		North				South			West		
Period Start	Period End	Lane 1	Lane 2	Lane 3	Lane 4	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3
9:00	9:05	0	0	0	2	0	0	0	3	0	4
9:05	9:10	2	0	0	2	0	0	0	3	1	2
9:10	9:15	0	0	0	2	0	0	0	2	0	1
9:15	9:20	14	0	0	4	0	0	0	2	0	1
9:20	9:25	0	0	0	3	0	0	0	7	0	1
9:25	9:30	4	0	0	5	0	0	0	2	0	2
9:30	9:35	13	0	0	4	0	0	0	4	0	4
9:35	9:40	0	0	0	5	0	0	0	4	0	3
9:40	9:45	7	0	0	5	0	0	0	5	0	3
9:45	9:50	0	0	0	3	0	0	0	4	0	3
9:50	9:55	0	0	0	5	0	0	0	4	0	3
9:55	10:00	0	0	0	6	0	0	0	8	1	3
10:00	10:05	0	0	0	2	0	0	0	2	0	3
10:05	10:10	0	0	0	2	0	0	0	4	0	2
10:10	10:15	0	0	0	7	0	0	0	8	1	4
10:15	10:20	6	0	0	2	0	0	0	2	1	3
10:20	10:25	5	0	0	7	0	0	0	4	1	3
10:25	10:30	0	0	0	4	0	0	0	6	0	3
10:30	10:35	0	0	0	8	0	0	0	6	0	4
10:35	10:40	0	0	0	5	0	0	0	12	0	0
10:40	10:45	5	0	0	5	0	0	0	4	0	1
10:45	10:50	1	0	0	7	0	0	0	7	0	2
10:50	10:55	0	0	0	5	0	0	0	3	0	3
10:55	11:00	1	0	0	3	0	0	0	4	0	3
11:00	11:05	2	0	0	4	0	0	0	5	0	1
11:05	11:10	2	0	0	5	0	0	0	6	0	4
11:10	11:15	3	0	0	6	0	0	0	12	0	1
11:15	11:20	3	0	0	4	0	0	0	3	0	3
11:20	11:25	3	0	0	3	0	0	0	8	0	2
11:25	11:30	0	0	0	5	0	0	0	7	1	4
11:30	11:35	0	0	0	3	0	0	0	3	0	4
11:35	11:40	0	0	0	4	0	0	0	4	0	3
11:40	11:45	0	0	0	1	0	0	0	6	0	1
11:45	11:50	1	0	0	7	0	0	0	5	1	3
11:50	11:55	17	0	0	3	0	0	0	3	1	4
11:55	12:00	6	0	0	5	0	0	0	6	0	4
12:00	12:05	4	0	0	7	0	0	0	8	1	1
12:05	12:10	0	0	0	3	0	0	0	7	1	2
12:10	12:15	3	0	0	2	0	0	0	4	0	1
12:15	12:20	2	0	0	4	0	0	0	5	1	4
12:20	12:25	3	0	0	7	0	0	0	3	1	2
12:25	12:30	11	0	0	7	0	0	0	5	0	4
12:30	12:35	2	0	0	6	0	0	0	7	0	4
12:35	12:40	0	0	0	2	0	0	0	7	0	3
12:40	12:45	0	0	0	6	0	0	0	8	0	4
12:45	12:50	3	0	0	4	0	0	0	5	1	2
12:50	12:55	0	0	0	5	0	0	0	5	1	4
12:55	13:00	2	0	0	7	0	0	0	4	1	2
13:00	13:05	0	0	0	8	0	0	0	8	1	2
13:05	13:10	0	0	0	3	0	0	0	4	0	4
13:10	13:15	0	0	0	4	0	0	0	6	1	1
13:15	13:20	0	0	0	1	0	0	0	8	0	4
13:20	13:25	1	0	0	3	0	0	0	4	1	3
13:25	13:30	1	0	0	2	0	0	0	5	0	3
13:30	13:35	0	0	0	5	0	0	0	5	0	3
13:35	13:40	3	0	0	3	0	0	0	5	0	2
13:40	13:45	0	0	0	5	0	0	0	5	1	2
13:45	13:50	0	0	0	10	0	0	0	4	0	4
13:50	13:55	2	0	0	2	0	0	0	3	0	4
13:55	14:00	0	0	0	3	0	0	0	3	0	3
14:00	14:05	5	0	0	5	0	0	0	4	0	3
14:05	14:10	1	0	0	2	0	0	0	6	0	4
14:10	14:15	0	0	0	3	0	0	0	4	0	2
14:15	14:20	1	0	0	5	0	0	0	6	1	1
14:20	14:25	0	0	0	4	0	0	0	4	0	2
14:25	14:30	0	0	0	4	0	0	0	5	0	3
14:30	14:35	5	0	0	4	0	0	0	2	1	2
14:35	14:40	0	0	0	2	0	0	0	4	0	3
14:40	14:45	0	0	0	5	0	0	0	7	0	4
14:45	14:50	0	0	0	5	0	0	0	7	0	4
14:50	14:55	0	0	0	3	0	0	0	1	1	4
14:55	15:00	0	0	0	9	0	0	0	2	0	3

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY trafficsurvey.com.au

Signalised pedestrian crossing of Forest Way between

GPS *-33.750316, 151.225572*

Date:	Sat 14/12/24
Weather:	Overcast
Suburban:	Frenchs Forest
Customer:	N/A

North:	Forest Way
East:	N/A
South:	Forest Way
West:	N/A

Survey	AM:	9:00 AM-12:00 PM
Period	PM:	12:00 PM-3:00 PM

All Pedestrians

Time		h Approach Forest	
Period Start	Period End	WB	EB
9:00	9:15	10	4
9:15	9:30	8	5
9:30	9:45	4	12
9:45	10:00	13	5
10:00	10:15	3	3
10:15	10:30	2	8
10:30	10:45	5	6
10:45	11:00	5	15
11:00	11:15	3	9
11:15	11:30	6	4
11:30	11:45	7	5
11:45	12:00	8	8
12:00	12:15	13	12
12:15	12:30	8	4
12:30	12:45	4	6
12:45	13:00	14	7
13:00	13:15	11	10
13:15	13:30	8	7
13:30	13:45	9	5
13:45	14:00	8	15
14:00	14:15	8	8
14:15	14:30	5	6
14:30	14:45	6	7
14:45	15:00	8	16

Queues Count the number of lanes from the sidewalk to the median.

Time		North			South		
Period Sta	Period En	Lane 1	Lane 2	Lane 3	Lane 1	Lane 2	Lane 3
9:00	9:05	11	1	3	1	2	2
9:05	9:10	11	1	2	2	2	2
9:10	9:15	6	3	4	3	1	1
9:15	9:20	15	4	3	2	4	3
9:20	9:25	13	7	4	2	1	1
9:25	9:30	15	5	5	1	1	1
9:30	9:35	15	7	7	2	3	3
9:35	9:40	15	4	6	2	3	2
9:40	9:45	15	7	5	2	2	2
9:45	9:50	7	2	3	2	5	5
9:50	9:55	9	1	3	0	4	2
9:55	10:00	12	6	7	3	2	1
10:00	10:05	9	1	1	0	0	0
10:05	10:10	9	4	1	3	2	1
10:10	10:15	12	5	9	3	4	5
10:15	10:20	15	5	8	1	1	2
10:20	10:25	15	3	7	1	5	1
10:25	10:30	8	2	1	3	5	2
10:30	10:35	3	1	4	3	2	1
10:35	10:40	10	3	2	6	4	6
10:40	10:45	15	7	7	3	5	3
10:45	10:50	13	7	7	2	3	3
10:50	10:55	15	3	7	0	2	2
10:55	11:00	15	1	2	2	3	2
11:00	11:05	15	2	7	2	2	2
11:05	11:10	15	1	1	1	1	2
11:10	11:15	15	3	12	2	3	2
11:15	11:20	15	4	3	2	2	3
11:20	11:25	15	4	5	0	1	1
11:25	11:30	8	3	3	1	1	1
11:30	11:35	8	3	2	2	3	2
11:35	11:40	12	1	5	1	2	2
11:40	11:45	12	3	3	5	3	3
11:45	11:50	15	5	5	2	4	5
11:50	11:55	15	4	9	5	3	4
11:55	12:00	15	2	6	2	4	5
12:00	12:05	15	4	6	2	5	5
12:05	12:10	12	5	1	3	4	4
12:10	12:15	15	6	2	1	3	2
12:15	12:20	14	4	5	2	1	2
12:20	12:25	15	6	3	1	4	5
12:25	12:30	15	8	8	4	3	4
12:30	12:35	15	5	7	2	4	3
12:35	12:40	11	3	6	2	2	3
12:40	12:45	9	2	2	3	5	2
12:45	12:50	12	1	4	2	1	1
12:50	12:55	14	1	3	1	3	6
12:55	13:00	14	3	2	2	2	3
13:00	13:05	13	4	1	1	2	2
13:05	13:10	11	1	4	1	3	2
13:10	13:15	11	3	5	1	2	2
13:15	13:20	3	1	1	1	0	1
13:20	13:25	15	5	2	1	0	1
13:25	13:30	13	3	1	4	8	5
13:30	13:35	14	4	6	2	1	2
13:35	13:40	14	2	3	2	3	1
13:40	13:45	5	2	5	2	0	1
13:45	13:50	4	1	0	1	2	1
13:50	13:55	15	4	4	1	2	2
13:55	14:00	9	1	3	2	3	3
14:00	14:05	15	5	5	1	3	3
14:05	14:10	15	3	11	1	2	1
14:10	14:15	10	4	3	1	2	4
14:15	14:20	15	4	7	2	1	2
14:20	14:25	6	3	1	4	2	2
14:25	14:30	7	4	4	4	2	2
14:30	14:35	15	3	4	2	1	2
14:35	14:40	13	5	3	2	2	3
14:40	14:45	9	3	1	1	1	0
14:45	14:50	8	2	2	5	3	3
14:50	14:55	8	2	2	1	2	2
14:55	15:00	12	2	2	4	1	2

ANNEXURE B: SIDRA LANE AND MOVEMENT SUMMARY REPORTS

(87 SHEETS)

MOVEMENT SUMMARY

Site: 103 [Naree Rd / Forest Way (Site Folder: AM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Base)]

Naree Road / Forest Way
2036 AM Peak
Site Category: 2036 + Existing Site Turn Movements
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
2	T1	All MCs	1396	10.4	1396	10.4	0.397	6.0	LOS A	9.8	74.8	0.34	0.30	0.34	54.2
3	R2	All MCs	178	9.2	178	9.2	* 0.777	48.5	LOS D	10.3	78.1	0.93	0.82	0.96	23.7
Approach			1574	10.2	1574	10.2	0.777	10.8	LOS A	10.3	78.1	0.40	0.36	0.41	44.9
East: Naree Road (E)															
4	L2	All MCs	199	0.5	199	0.5	0.345	30.4	LOS C	7.8	55.0	0.66	0.74	0.66	27.5
6	R2	All MCs	260	4.3	260	4.3	* 0.750	58.7	LOS E	15.9	115.7	0.99	0.85	1.04	25.6
Approach			460	2.7	460	2.7	0.750	46.4	LOS D	15.9	115.7	0.85	0.80	0.87	26.2
North: Forest Way (N)															
7	L2	All MCs	146	5.6	146	5.6	0.766	12.4	LOS A	27.2	201.5	0.72	0.69	0.72	39.4
8	T1	All MCs	1816	7.5	1816	7.5	* 0.766	17.7	LOS B	27.2	201.5	0.70	0.65	0.70	34.1
Approach			1962	7.3	1962	7.3	0.766	17.3	LOS B	27.2	201.5	0.71	0.65	0.71	35.0
All Vehicles			3996	7.9	3996	7.9	0.777	18.1	LOS B	27.2	201.5	0.60	0.56	0.61	35.8

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Warringah Road/Forest Way (Site Folder: AM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Base)]

Warringah Road/Forest Way
2036 AM Peak
Site Category: 2036 + Existing Site Turn Movements
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Warringah Road (E)															
5	T1	All MCs	592	15.8	592	15.8	0.706	31.0	LOS C	28.9	229.7	0.84	0.76	0.84	46.2
6	R2	All MCs	876	1.9	876	1.9	* 0.893	76.0	LOS F	21.0	149.2	1.00	0.98	1.25	18.5
Approach			1467	7.5	1467	7.5	0.893	57.9	LOS E	28.9	229.7	0.94	0.89	1.08	28.0
North: Forest Way (N)															
7	L2	All MCs	971	7.7	971	7.7	0.413	34.6	LOS C	12.6	94.2	0.22	0.85	0.22	42.6
9	R2	All MCs	1106	12.5	1105	12.5	* 0.552	64.5	LOS E	23.7	179.5	0.94	0.83	0.94	26.8
Approach			2077	10.3	2076	10.3	0.552	50.5	LOS D	23.7	179.5	0.61	0.84	0.61	26.3
West: Warringah Road (S)															
10	L2	All MCs	685	11.7	685	11.7	0.307	15.7	LOS B	8.7	66.9	0.44	0.71	0.44	44.3
11	T1	All MCs	958	4.1	958	4.1	* 0.898	61.4	LOS E	33.8	245.4	1.00	1.04	1.18	32.4
Approach			1643	7.3	1643	7.3	0.898	42.3	LOS C	33.8	245.4	0.77	0.90	0.87	34.9
All Vehicles			5187	8.5	5187	8.5	0.898	50.0	LOS D	33.8	245.4	0.75	0.87	0.83	29.4

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Russell Ave / Forest Way (Site Folder: AM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Base)]

Russell Avenue / Forest Way
2036 AM Peak
Site Category: 2036 + Existing Site Turn Movements
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
1	L2	All MCs	122	1.7	122	1.7	0.287	5.8	LOS A	0.0	0.0	0.00	0.15	0.00	33.6
2	T1	All MCs	1353	11.9	1353	11.9	0.287	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	65.0
Approach			1475	11.1	1475	11.1	0.287	0.5	NA	0.0	0.0	0.00	0.05	0.00	59.2
North: Forest Way (N)															
8	T1	All MCs	1871	7.4	1871	7.4	0.475	4.6	LOS A	6.7	50.1	0.10	0.10	0.17	36.6
9	R2	All MCs	142	0.7	142	0.7	1.047	129.3	LOS F	10.1	70.8	1.00	1.67	4.19	3.5
Approach			2013	7.0	2013	7.0	1.047	13.4	NA	10.1	70.8	0.17	0.21	0.46	19.3
West: Russell Avenue (W)															
10	L2	All MCs	221	1.9	221	1.9	0.247	5.4	LOS A	1.0	7.4	0.48	0.65	0.48	20.1
12	R2	All MCs	6	0.0	6	0.0	1.053	310.0	LOS F	2.2	15.5	1.00	1.03	1.14	0.6
Approach			227	1.9	227	1.9	1.053	13.9	LOS A	2.2	15.5	0.49	0.66	0.50	10.4
All Vehicles			3715	8.3	3715	8.3	1.053	8.3	NA	10.1	70.8	0.12	0.17	0.28	26.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 102 [Pedestrian Crossing (Forest Way) (Site Folder: AM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Base)]

Pedestrian Crossing (Forest Way)
2036 AM Peak
Site Category: 2036 + Existing Site Turn Movements
Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
2	T1	All MCs	1475	11.1	1475	11.1	0.389	5.7	LOS A	10.6	81.6	0.36	0.32	0.36	24.7
Approach			1475	11.1	1475	11.1	0.389	5.7	LOS A	10.6	81.6	0.36	0.32	0.36	24.7
North: Forest Way (N)															
8	T1	All MCs	1877	7.4	1877	7.4	* 0.528	2.9	LOS A	14.4	106.9	0.23	0.21	0.23	46.3
Approach			1877	7.4	1877	7.4	0.528	2.9	LOS A	14.4	106.9	0.23	0.21	0.23	46.3
All Vehicles			3352	9.0	3351	9.0	0.528	4.1	LOS A	14.4	106.9	0.28	0.26	0.28	36.7

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Forest Way Entry to Centre (Site Folder: AM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Base)]

Forest Way Entry to Centre
2036 AM Peak
Site Category: 2036 + Existing Site Turn Movements
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
1	L2	All MCs	87	0.0	87	0.0	0.390	9.3	LOS A	0.0	0.0	0.00	0.22	0.00	58.5
2	T1	All MCs	1475	11.1	1475	11.1	0.390	0.0	LOS A	1.2	9.2	0.00	0.06	0.00	64.5
Approach			1562	10.4	1562	10.4	0.390	0.6	NA	1.2	9.2	0.00	0.07	0.00	63.0
North: Forest Way (N)															
8	T1	All MCs	1754	6.2	1753	6.2	0.325	0.0	LOS A	6.6	48.9	0.00	0.00	0.00	69.8
Approach			1754	6.2	1753	6.2	0.325	0.0	NA	6.6	48.9	0.00	0.00	0.00	69.8
All Vehicles			3316	8.2	3315	8.2	0.390	0.3	NA	6.6	48.9	0.00	0.03	0.00	65.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

LANE SUMMARY

Site: 103 [Naree Rd / Forest Way (Site Folder: AM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Base)]

Naree Road / Forest Way
2036 AM Peak
Site Category: 2036 + Existing Site Turn Movements
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	465	10.4	465	10.4	1171	0.397	100	6.7	LOS A	9.8	74.8	Full	85	0.0	0.0
Lane 2	465	10.4	465	10.4	1171	0.397	100	6.1	LOS A	9.2	70.0	Full	85	0.0	0.0
Lane 3	465	10.4	465	10.4	1171	0.397	100	5.2	LOS A	8.1	61.7	Full	85	0.0	0.0
Lane 4	178	9.2	178	9.2	229	0.777	100	48.5	LOS D	10.3	78.1	Short	65	0.0	NA
Approach	1574	10.2	1574	10.2		0.777		10.8	LOS A	10.3	78.1				
East: Naree Road (E)															
Lane 1	199	0.5	199	0.5	578	0.345	100	30.4	LOS C	7.8	55.0	Full	500	0.0	0.0
Lane 2	260	4.3	260	4.3	347	0.750	100	58.7	LOS E	15.9	115.7	Full	500	0.0	0.0
Approach	460	2.7	460	2.7		0.750		46.4	LOS D	15.9	115.7				
North: Forest Way (N)															
Lane 1	651	7.0	651	7.0	850	0.766	100	20.3	LOS B	27.2	201.5	Full	300	0.0	0.0
Lane 2	656	7.5	656	7.5	857	0.766	100	15.8	LOS B	26.6	198.4	Full	300	0.0	0.0
Lane 3	655	7.5	655	7.5	855	0.766	100	15.8	LOS B	26.6	198.0	Full	300	-0.2 N7	0.0
Approach	1962	7.3	1962	7.3		0.766		17.3	LOS B	27.2	201.5				
All Vehicles	3996	7.9	3996	7.9		0.777		18.1	LOS B	27.2	201.5				

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

N7 The capacity reduction has been determined from the queue blockage probability based on the Back of Queue value of a Site further downstream.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	465	-	465	10.4	1171	0.397	100	NA	NA
Lane 2	465	-	465	10.4	1171	0.397	100	NA	NA
Lane 3	465	-	465	10.4	1171	0.397	100	NA	NA
Lane 4	-	178	178	9.2	229	0.777	100	21.6	3
Approach	1396	178	1574	10.2		0.777			

East: Naree Road (E)

Mov.	L2	R2	Total	%HV		Deg.	Lane	Prob.	Ov.

From E To Exit:	S	N			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	199	-	199	0.5	578	0.345	100	NA	NA
Lane 2	-	260	260	4.3	347	0.750	100	NA	NA
Approach	199	260	460	2.7		0.750			
North: Forest Way (N)									
Mov. From N To Exit:	L2 E	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	146	505	651	7.0	850	0.766	100	NA	NA
Lane 2	-	656	656	7.5	857	0.766	100	NA	NA
Lane 3	-	655	655	7.5	855	0.766	100	NA	NA
Approach	146	1816	1962	7.3		0.766			
	Total	%HV	Deg.Satn (v/c)						
All Vehicles	3996	7.9		0.777					

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate sec	Capacity veh/h	Deg. Satn veh/h	Min. Delay v/c	Merge Delay sec	sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
East: Naree Road (E)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Warringah Road/Forest Way (Site Folder: AM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Base)]

Warringah Road/Forest Way
2036 AM Peak
Site Category: 2036 + Existing Site Turn Movements
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Warringah Road (E)															
Lane 1	592	15.8	592	15.8	838	0.706	100	31.0	LOS C	28.9	229.7	Full	500	0.0	0.0
Lane 2	300	1.9	300	1.9	336	0.893	100	75.7	LOS F	21.0	149.2	Full	500	0.0	0.0
Lane 3	276	1.9	276	1.9	309	0.893	100	76.5	LOS F	19.4	138.2	Full	500	0.0	0.0
Lane 4	300	1.9	300	1.9	336	0.893	100	75.7	LOS F	21.0	149.2	Short	150	0.0	NA
Approach	1467	7.5	1467	7.5		0.893		57.9	LOS E	28.9	229.7				
North: Forest Way (N)															
Lane 1	731	7.7	731	7.7	1769	0.413	100	24.8	LOS B	0.0	0.0	Full	110	0.0	0.0
Lane 2	240	7.7	240	7.7	582	0.413	100	64.3	LOS E	12.6	94.2	Short	25	0.0	NA
Lane 3	36	100.0	36	100.0	377	0.095	100	69.9	LOS E	1.5	20.0	Short	25	0.0	NA
Lane 4	535	9.6	535	9.6	969[1]	0.552	100	80.9	LOS F	23.7[N4]	179.5[N4]	Full	110	0.0	50.0
Lane 5	535	9.6	535	9.6	969	0.552	100	47.8	LOS D	23.7[N4]	179.5[N4]	Full	110	0.0	50.0
Approach	2077	10.3	2076	10.3		0.552		50.5	LOS D	23.7	179.5				
West: Warringah Road (S)															
Lane 1	343	11.7	343	11.7	1117	0.307	100	15.7	LOS B	8.7	66.9	Short	80	0.0	NA
Lane 2	343	11.7	343	11.7	1117	0.307	100	15.7	LOS B	8.7	66.9	Short	130	0.0	NA
Lane 3	487	4.1	487	4.1	543	0.898	100	61.1	LOS E	33.8	245.4	Full	500	0.0	0.0
Lane 4	471	4.1	471	4.1	524	0.898	100	61.6	LOS E	32.8	237.9	Full	500	0.0	0.0
Approach	1643	7.3	1643	7.3		0.898		42.3	LOS C	33.8	245.4				
All Vehicles	5187	8.5	5187	8.5		0.898		50.0	LOS D	33.8	245.4				

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.
N4 Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)

East: Warringah Road (E)

Mov. From E To Exit:	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	592	-	592	15.8	838	0.706	100	NA	NA
Lane 2	-	300	300	1.9	336	0.893	100	NA	NA

Lane 3	-	276	276	1.9	309	0.893	100	NA	NA
Lane 4	-	300	300	1.9	336	0.893	100	4.5	3
Approach	592	876	1467	7.5		0.893			

North: Forest Way (N)									
Mov. From N To Exit:	L2 E	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	731	-	731	7.7	1769	0.413	100	NA	NA
Lane 2	240	-	240	7.7	582	0.413	100	100.0	1
Lane 3	-	36	36	100.0	377	0.095	100	0.0	4
Lane 4	-	535	535	9.6	969[1]	0.552	100	NA	NA
Lane 5	-	535	535	9.6	969	0.552	100	NA	NA
Approach	971	1105	2076	10.3		0.552			

West: Warringah Road (S)									
Mov. From W To Exit:	L2 N	T1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	343	-	343	11.7	1117	0.307	100	0.0	2
Lane 2	343	-	343	11.7	1117	0.307	100	0.0	3
Lane 3	-	487	487	4.1	543	0.898	100	NA	NA
Lane 4	-	471	471	4.1	524	0.898	100	NA	NA
Approach	685	958	1643	7.3		0.898			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	5187	8.5	0.898

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
West Exit: Warringah Road (S) Merge Type: **Priority**												
Exit Short Lane	1	125	0.0	535	560	3.31	2.21	627	1037	0.605	1.3	3.7
Merge Lane	2	-	100.0	Merge Lane is not Opposed				535	1800	0.297	0.0	0.0

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
East: Warringah Road (E)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0

Lane 5	0.0	0.0	0.0	0.0
West: Warringah Road (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Russell Ave / Forest Way (Site Folder: AM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Base)]

Russell Avenue / Forest Way
2036 AM Peak
Site Category: 2036 + Existing Site Turn Movements
Give-Way (Two-Way)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	495	9.4	495	9.4	1726	0.287	100	1.4	LOS A	0.0	0.0	Full	100	0.0	0.0
Lane 2	490	11.9	490	11.9	1707	0.287	100	0.0	LOS A	0.0	0.0	Full	100	0.0	0.0
Lane 3	490	11.9	490	11.9	1707	0.287	100	0.0	LOS A	0.0	0.0	Full	100	0.0	0.0
Approach	1475	11.1	1475	11.1		0.287		0.5	NA	0.0	0.0				
North: Forest Way (N)															
Lane 1	797	7.4	797	7.4	1677	0.475	100	0.0	LOS A	0.0	0.0	Full	85	-5.6 N3	0.0
Lane 2	845	7.4	845	7.4	1777	0.475	100	0.0	LOS A	0.0	0.0	Full	85	0.0	0.0
Lane 3	228	7.4	228	7.4	479 15	0.475	100	37.2	LOS C	6.7	50.1	Full	85	0.0	0.0
Lane 4	142	0.7	142	0.7	136	1.047	100	129.3	LOS F	10.1	70.8	Short	20	0.0	NA
Approach	2013	7.0	2013	7.0		1.047		13.4	NA	10.1	70.8				
West: Russell Avenue (W)															
Lane 1	221	1.9	221	1.9	894	0.247	100	5.4	LOS A	1.0	7.4	Full	35	0.0	0.0
Lane 2	6	0.0	6	0.0	6	1.053	100	310.0	LOS F	2.2	15.5	Short	22	0.0	NA
Approach	227	1.9	227	1.9		1.053		13.9	LOS A	2.2	15.5				
All Vehicles	3715	8.3	3715	8.3		1.053		8.3	NA	10.1	70.8				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

15 Continuous lane capacity reduced due to overflow of an opposed movement in an adjacent short lane.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	122	373	495	9.4	1726	0.287	100	NA	NA
Lane 2	-	490	490	11.9	1707	0.287	100	NA	NA
Lane 3	-	490	490	11.9	1707	0.287	100	NA	NA
Approach	122	1353	1475	11.1		0.287			

North: Forest Way (N)									
Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	797	-	797	7.4	1677	0.475	100	NA	NA
Lane 2	845	-	845	7.4	1777	0.475	100	NA	NA
Lane 3	228	-	228	7.4	479	0.475	100	NA	NA
Lane 4	-	142	142	0.7	136	1.047	100	100.0	3
Approach	1871	142	2013	7.0		1.047			
West: Russell Avenue (W)									
Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	221	-	221	1.9	894	0.247	100	NA	NA
Lane 2	-	6	6	0.0	6	1.053	100	0.0	1
Approach	221	6	227	1.9		1.053			
	Total	%HV	Deg.Satn (v/c)						
All Vehicles	3715	8.3	1.053						

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

Merge Analysis

Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	3.2	83.8	NA
West: Russell Avenue (W)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.2	94.7	NA

LANE SUMMARY

Site: 102 [Pedestrian Crossing (Forest Way) (Site Folder: AM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Base)]

Pedestrian Crossing (Forest Way)
2036 AM Peak
Site Category: 2036 + Existing Site Turn Movements
Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	492	11.1	492	11.1	1263	0.389	100	4.9	LOS A	9.2	70.2	Full	50	0.0	36.0
Lane 2	492	11.1	492	11.1	1263	0.389	100	5.1	LOS A	9.3	71.3	Full	50	0.0	37.4
Lane 3	492	11.1	492	11.1	1263	0.389	100	7.0	LOS A	10.6[N4]	81.6[N4]	Full	50	0.0	50.0
Approach	1475	11.1	1475	11.1		0.389		5.7	LOS A	10.6	81.6				
North: Forest Way (N)															
Lane 1	693	7.4	693	7.4	1313	0.528	100	5.1	LOS A	14.4	106.9	Full	100	0.0	11.1
Lane 2	592	7.4	592	7.4	1121	0.528	100	0.8	LOS A	3.0	22.5	Full	100	-14.6[N7]	0.0
Lane 3	592	7.4	592	7.4	1121	0.528	100	2.3	LOS A	7.1	52.7	Full	100	-14.6[N7]	0.0
Approach	1877	7.4	1877	7.4		0.528		2.9	LOS A	14.4	106.9				
All Vehicles	3352	9.0	3351	9.0		0.528		4.1	LOS A	14.4	106.9				

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

N4 Average back of queue has been restricted to the available queue storage space.
N7 The capacity reduction has been determined from the queue blockage probability based on the Back of Queue value of a Site further downstream.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	492	492	11.1	1263	0.389	100	NA	NA
Lane 2	492	492	11.1	1263	0.389	100	NA	NA
Lane 3	492	492	11.1	1263	0.389	100	NA	NA
Approach	1475	1475	11.1		0.389			

North: Forest Way (N)

Mov. From N To Exit:	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	693	693	7.4	1313	0.528	100	NA	NA
Lane 2	592	592	7.4	1121	0.528	100	NA	NA
Lane 3	592	592	7.4	1121	0.528	100	NA	NA

Approach	1877	1877	7.4	0.528	
	Total	%HV	Deg.Satn (v/c)		
All Vehicles	3351	9.0	0.528		

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Forest Way Entry to Centre (Site Folder: AM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Base)]

Forest Way Entry to Centre
2036 AM Peak
Site Category: 2036 + Existing Site Turn Movements
Give-Way (Two-Way)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	467	9.0	467	9.0	1198	0.390	100	1.8	LOS A	0.0	0.0	Full	110	-31.4 N3	0.0
Lane 2	422	11.1	422	11.1	1082	0.390	100	0.0	LOS A	0.0	0.0	Full	110	-37.4 N3	0.0
Lane 3	674	11.1	674	11.1	1728	0.390	100	0.0	LOS A	1.2 N5	9.2 N5	Full	110	0.0	0.0
Approach	1562	10.4	1562	10.4		0.390		0.6	NA	1.2	9.2				
North: Forest Way (N)															
Lane 1	585	6.2	584	6.2	1798	0.325	100	0.0	LOS A	0.0	0.0	Full	50	0.0	0.0
Lane 2	585	6.2	584	6.2	1798	0.325	100	0.0	LOS A	6.6 N5	48.9 N5	Full	50	0.0	14.6
Lane 3	585	6.2	584	6.2	1798	0.325	100	0.0	LOS A	5.2 N5	38.6 N5	Full	50	0.0	14.6
Approach	1754	6.2	1753	6.2		0.325		0.0	NA	6.6	48.9				
All Vehicles	3316	8.2	3315	8.2		0.390		0.3	NA	6.6	48.9				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Results for this lane are determined by Back of Queue values of downstream lanes (proportional to lane movement flows).

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	87	380	467	9.0	1198	0.390	100	NA	NA
Lane 2	-	422	422	11.1	1082	0.390	100	NA	NA
Lane 3	-	674	674	11.1	1728	0.390	100	NA	NA
Approach	87	1475	1562	10.4		0.390			

North: Forest Way (N)

Mov. From N To Exit:	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	584	584	6.2	1798	0.325	100	NA	NA
Lane 2	584	584	6.2	1798	0.325	100	NA	NA

Lane 3	584	584	6.2		1798	0.325	100	NA	NA
Approach	1753	1753	6.2			0.325			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	3315	8.2	0.390

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate sec	Capacity veh/h	Deg. Satn veh/h	Min. Delay v/c	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

MOVEMENT SUMMARY

Site: 103 [Naree Rd / Forest Way (Site Folder: PM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Base)]

Naree Road / Forest Way
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
2	T1	All MCs	1980	3.2	1980	3.2	0.545	9.6	LOS A	19.1	137.6	0.49	0.44	0.49	48.3
3	R2	All MCs	211	9.9	211	9.9	* 0.795	54.9	LOS D	12.9	97.9	0.97	0.85	1.04	22.4
Approach			2191	3.8	2191	3.8	0.795	14.0	LOS A	19.1	137.6	0.53	0.48	0.54	41.3
East: Naree Road (E)															
4	L2	All MCs	135	1.0	135	1.0	0.211	25.4	LOS B	4.4	31.4	0.56	0.69	0.56	29.7
6	R2	All MCs	307	3.0	307	3.0	* 0.807	58.9	LOS E	19.3	138.3	1.00	0.89	1.08	25.6
Approach			442	2.4	442	2.4	0.807	48.7	LOS D	19.3	138.3	0.86	0.83	0.92	26.4
North: Forest Way (N)															
7	L2	All MCs	208	3.1	208	3.1	0.793	14.5	LOS A	29.1	209.4	0.78	0.75	0.78	37.5
8	T1	All MCs	1734	3.2	1734	3.2	* 0.793	19.8	LOS B	29.1	209.4	0.74	0.68	0.74	32.8
Approach			1942	3.2	1942	3.2	0.793	19.2	LOS B	29.1	209.4	0.74	0.69	0.75	33.8
All Vehicles			4575	3.4	4575	3.4	0.807	19.6	LOS B	29.1	209.4	0.66	0.60	0.67	35.2

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Warringah Road/Forest Way (Site Folder: PM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Base)]

Warringah Road/Forest Way
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Warringah Road (E)															
5	T1	All MCs	264	6.3	264	6.3	0.210	9.2	LOS A	6.1	45.4	0.40	0.35	0.40	60.5
6	R2	All MCs	1391	1.8	1391	1.8	* 0.728	52.3	LOS D	26.5	188.3	0.97	0.86	0.97	24.0
Approach			1655	2.5	1655	2.5	0.728	45.4	LOS D	26.5	188.3	0.88	0.78	0.88	28.7
North: Forest Way (N)															
7	L2	All MCs	1080	2.7	1080	2.7	0.504	30.2	LOS C	9.0	64.7	0.13	1.06	0.13	45.1
9	R2	All MCs	712	5.6	712	5.6	* 0.773	90.1	LOS F	22.4	161.8	1.00	0.89	1.02	21.1
Approach			1792	3.9	1792	3.9	0.773	54.0	LOS D	22.4	161.8	0.48	0.99	0.49	25.5
West: Warringah Road (S)															
10	L2	All MCs	677	12.1	677	12.1	0.376	24.5	LOS B	12.1	93.3	0.61	0.76	0.61	36.7
11	T1	All MCs	944	4.3	944	4.3	* 0.722	42.2	LOS C	26.4	191.7	0.95	0.83	0.95	39.0
Approach			1622	7.5	1622	7.5	0.722	34.8	LOS C	26.4	191.7	0.81	0.80	0.81	38.3
All Vehicles			5068	4.6	5068	4.6	0.773	45.0	LOS D	26.5	191.7	0.71	0.86	0.72	30.3

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Russell Ave / Forest Way (Site Folder: PM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Base)]

Russell Avenue / Forest Way
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
1	L2	All MCs	139	3.0	139	3.0	0.522	5.9	LOS A	0.0	0.0	0.00	0.17	0.00	33.1
2	T1	All MCs	1376	12.6	1376	12.6	0.522	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	64.0
Approach			1515	11.7	1515	11.7	0.522	0.6	NA	0.0	0.0	0.00	0.06	0.00	57.6
North: Forest Way (N)															
8	T1	All MCs	1852	7.4	1852	7.4	0.347	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
9	R2	All MCs	160	1.3	160	1.3	0.444	19.4	LOS B	1.7	12.2	0.87	1.01	1.13	17.1
Approach			2012	7.0	2012	7.0	0.444	1.6	NA	1.7	12.2	0.07	0.08	0.09	52.3
West: Russell Avenue (W)															
10	L2	All MCs	216	1.5	216	1.5	0.480	6.6	LOS A	1.5	10.4	0.60	0.76	0.74	17.9
12	R2	All MCs	7	0.0	7	0.0	0.199	101.0	LOS F	0.5	3.7	0.98	1.00	1.01	1.7
Approach			223	1.4	223	1.4	0.480	9.7	LOS A	1.5	10.4	0.61	0.77	0.75	13.7
All Vehicles			3749	8.6	3749	8.6	0.522	1.7	NA	1.7	12.2	0.07	0.11	0.09	50.3

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 102 [Pedestrian Crossing (Forest Way) (Site Folder: PM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Base)]

Pedestrian Crossing (Forest Way)
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
2	T1	All MCs	1515	11.7	1515	11.7	0.402	5.7	LOS A	10.6	81.6	0.36	0.32	0.36	24.6
Approach			1515	11.7	1515	11.7	0.402	5.7	LOS A	10.6	81.6	0.36	0.32	0.36	24.6
North: Forest Way (N)															
8	T1	All MCs	1859	7.4	1859	7.4	* 0.472	1.8	LOS A	11.7	86.9	0.14	0.13	0.14	52.9
Approach			1859	7.4	1859	7.4	0.472	1.8	LOS A	11.7	86.9	0.14	0.13	0.14	52.9
All Vehicles			3374	9.4	3374	9.4	0.472	3.6	LOS A	11.7	86.9	0.24	0.21	0.24	39.1

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Forest Way Entry to Centre (Site Folder: PM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Base)]

Forest Way Entry to Centre
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
1	L2	All MCs	95	0.0	95	0.0	0.531	9.4	LOS A	0.0	0.0	0.00	0.21	0.00	58.3
2	T1	All MCs	1515	11.7	1515	11.7	0.531	0.1	LOS A	0.0	0.0	0.00	0.06	0.00	63.7
Approach			1609	11.1	1609	11.1	0.531	0.6	NA	0.0	0.0	0.00	0.07	0.00	62.2
North: Forest Way (N)															
8	T1	All MCs	1703	3.6	1703	3.6	0.421	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.5
Approach			1703	3.6	1703	3.6	0.421	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.5
All Vehicles			3313	7.2	3313	7.2	0.531	0.3	NA	0.0	0.0	0.00	0.03	0.00	64.2

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

LANE SUMMARY

Site: 103 [Naree Rd / Forest Way (Site Folder: PM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Base)]

Naree Road / Forest Way
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	668	3.2	668	3.2	1224	0.545	100	9.7	LOS A	19.1	137.6	Full	85	0.0	49.3
Lane 2	668	3.2	668	3.2	1224	0.545	100	9.2	LOS A	18.5	132.9	Full	85	0.0	46.0
Lane 3	644	3.2	644	3.2	1181[1]	0.545	100	10.0	LOS A	17.7	127.2	Full	85	0.0	41.9
Lane 4	211	9.9	211	9.9	265	0.795	100	54.9	LOS D	12.9	97.9	Short	65	0.0	NA
Approach	2191	3.8	2191	3.8		0.795		14.0	LOS A	19.1	137.6				
East: Naree Road (E)															
Lane 1	135	1.0	135	1.0	640	0.211	100	25.4	LOS B	4.4	31.4	Full	500	0.0	0.0
Lane 2	307	3.0	307	3.0	380	0.807	100	58.9	LOS E	19.3	138.3	Full	500	0.0	0.0
Approach	442	2.4	442	2.4		0.807		48.7	LOS D	19.3	138.3				
North: Forest Way (N)															
Lane 1	640	3.2	640	3.2	807	0.793	100	24.3	LOS B	29.1	209.4	Full	300	0.0	0.0
Lane 2	651	3.2	651	3.2	820	0.793	100	16.7	LOS B	27.7	199.1	Full	300	0.0	0.0
Lane 3	651	3.2	651	3.2	820	0.793	100	16.7	LOS B	27.7	199.1	Full	300	0.0	0.0
Approach	1942	3.2	1942	3.2		0.793		19.2	LOS B	29.1	209.4				
All Vehicles	4575	3.4	4575	3.4		0.807		19.6	LOS B	29.1	209.4				

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	668	-	668	3.2	1224	0.545	100	NA	NA
Lane 2	668	-	668	3.2	1224	0.545	100	NA	NA
Lane 3	644	-	644	3.2	1181[1]	0.545	100	NA	NA
Lane 4	-	211	211	9.9	265	0.795	100	42.4	3
Approach	1980	211	2191	3.8		0.795			
East: Naree Road (E)									
Mov.	L2	R2	Total	%HV		Deg.	Lane	Prob.	Ov.

From E To Exit:	S	N			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	135	-	135	1.0	640	0.211	100	NA	NA
Lane 2	-	307	307	3.0	380	0.807	100	NA	NA
Approach	135	307	442	2.4		0.807			
North: Forest Way (N)									
Mov. From N To Exit:	L2 E	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	208	432	640	3.2	807	0.793	100	NA	NA
Lane 2	-	651	651	3.2	820	0.793	100	NA	NA
Lane 3	-	651	651	3.2	820	0.793	100	NA	NA
Approach	208	1734	1942	3.2		0.793			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	4575	3.4	0.807

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
East: Naree Road (E)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Warringah Road/Forest Way (Site Folder: PM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Base)]

Warringah Road/Forest Way
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Warringah Road (E)															
Lane 1	264	6.3	264	6.3	1255	0.210	100	9.2	LOS A	6.1	45.4	Full	500	0.0	0.0
Lane 2	464	1.8	464	1.8	637	0.728	100	52.3	LOS D	26.5	188.3	Full	500	0.0	0.0
Lane 3	464	1.8	464	1.8	637	0.728	100	52.3	LOS D	26.5	188.3	Full	500	0.0	0.0
Lane 4	464	1.8	464	1.8	637	0.728	100	52.3	LOS D	26.5	188.3	Short	150	0.0	NA
Approach	1655	2.5	1655	2.5		0.728		45.4	LOS D	26.5	188.3				
North: Forest Way (N)															
Lane 1	937	2.7	937	2.7	1860	0.504	100	22.0	LOS B	0.0	0.0	Full	110	0.0	0.0
Lane 2	144	2.7	144	2.7	285	0.504	100	83.4	LOS F	9.0	64.7	Short	25	0.0	NA
Lane 3	13	100.0	13	100.0	176	0.072	100	92.4	LOS F	0.7	9.0	Short	25	0.0	NA
Lane 4	349	3.9	349	3.9	452[1]	0.773	100	107.3	LOS F	22.4	161.8	Full	110	0.0	40.3
Lane 5	349	3.9	349	3.9	452	0.773	100	72.9	LOS F	22.4	161.8	Full	110	0.0	40.3
Approach	1792	3.9	1792	3.9		0.773		54.0	LOS D	22.4	161.8				
West: Warringah Road (S)															
Lane 1	339	12.1	339	12.1	901	0.376	100	24.5	LOS B	12.1	93.3	Short	80	0.0	NA
Lane 2	339	12.1	339	12.1	901	0.376	100	24.5	LOS B	12.1	93.3	Short	130	0.0	NA
Lane 3	472	4.3	472	4.3	654	0.722	100	42.2	LOS C	26.4	191.7	Full	500	0.0	0.0
Lane 4	472	4.3	472	4.3	654	0.722	100	42.2	LOS C	26.4	191.7	Full	500	0.0	0.0
Approach	1622	7.5	1622	7.5		0.722		34.8	LOS C	26.4	191.7				
All Vehicles	5068	4.6	5068	4.6		0.773		45.0	LOS D	26.5	191.7				

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Approach Lane Flows (veh/h)

East: Warringah Road (E)

Mov. From E To Exit:	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	264	-	264	6.3	1255	0.210	100	NA	NA
Lane 2	-	464	464	1.8	637	0.728	100	NA	NA
Lane 3	-	464	464	1.8	637	0.728	100	NA	NA

Lane 4	-	464	464	1.8	637	0.728	100	25.7	3
Approach	264	1391	1655	2.5		0.728			
North: Forest Way (N)									
Mov. From N To Exit:	L2 E	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	937	-	937	2.7	1860	0.504	100	NA	NA
Lane 2	144	-	144	2.7	285	0.504	100	94.6	1
Lane 3	-	13	13	100.0	176	0.072	100	0.0	4
Lane 4	-	349	349	3.9	452[1]	0.773	100	NA	NA
Lane 5	-	349	349	3.9	452	0.773	100	NA	NA
Approach	1080	712	1792	3.9		0.773			
West: Warringah Road (S)									
Mov. From W To Exit:	L2 N	T1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	339	-	339	12.1	901	0.376	100	19.0	2
Lane 2	339	-	339	12.1	901	0.376	100	0.0	3
Lane 3	-	472	472	4.3	654	0.722	100	NA	NA
Lane 4	-	472	472	4.3	654	0.722	100	NA	NA
Approach	677	944	1622	7.5		0.722			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	5068	4.6	0.773

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
West Exit: Warringah Road (S) Merge Type: **Priority**												
Exit Short Lane	1	125	0.0	349	356	3.16	2.11	277	1338	0.207	0.6	0.9
Merge Lane	2	-	100.0	Merge Lane is not Opposed				349	1800	0.194	0.0	0.0

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
East: Warringah Road (E)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0

Lane 5	0.0	0.0	0.0	0.0
West: Warringah Road (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Russell Ave / Forest Way (Site Folder: PM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Base)]

Russell Avenue / Forest Way
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Give-Way (Two-Way)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	522	10.1	522	10.1	1000	0.522	100	1.6	LOS A	0.0	0.0	Full	100	-41.6 N3	0.0
Lane 2	478	12.6	478	12.6	916	0.522	100	0.1	LOS A	0.0	0.0	Full	100	-46.0 N3	0.0
Lane 3	514	12.6	514	12.6	985	0.522	100	0.1	LOS A	0.0	0.0	Full	100	-41.9 N3	0.0
Approach	1515	11.7	1515	11.7		0.522		0.6	NA	0.0	0.0				
North: Forest Way (N)															
Lane 1	617	7.4	617	7.4	1777	0.347	100	0.0	LOS A	0.0	0.0	Full	85	0.0	0.0
Lane 2	617	7.4	617	7.4	1777	0.347	100	0.0	LOS A	0.0	0.0	Full	85	0.0	0.0
Lane 3	617	7.4	617	7.4	1777	0.347	100	0.0	LOS A	0.0	0.0	Full	85	0.0	0.0
Lane 4	160	1.3	160	1.3	361	0.444	100	19.4	LOS B	1.7	12.2	Short	20	0.0	NA
Approach	2012	7.0	2012	7.0		0.444		1.6	NA	1.7	12.2				
West: Russell Avenue (W)															
Lane 1	216	1.5	216	1.5	449	0.480	100	6.6	LOS A	1.5	10.4	Full	35	-49.3 N3	0.0
Lane 2	7	0.0	7	0.0	37	0.199	100	101.0	LOS F	0.5	3.7	Short	22	0.0	NA
Approach	223	1.4	223	1.4		0.480		9.7	LOS A	1.5	10.4				
All Vehicles	3749	8.6	3749	8.6		0.522		1.7	NA	1.7	12.2				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

N3 Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	139	383	522	10.1	1000	0.522	100	NA	NA
Lane 2	-	478	478	12.6	916	0.522	100	NA	NA
Lane 3	-	514	514	12.6	985	0.522	100	NA	NA
Approach	139	1376	1515	11.7		0.522			
North: Forest Way (N)									

Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	617	-	617	7.4	1777	0.347	100	NA	NA
Lane 2	617	-	617	7.4	1777	0.347	100	NA	NA
Lane 3	617	-	617	7.4	1777	0.347	100	NA	NA
Lane 4	-	160	160	1.3	361	0.444	100	0.0	3
Approach	1852	160	2012	7.0		0.444			
West: Russell Avenue (W)									
Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	216	-	216	1.5	449	0.480	100	NA	NA
Lane 2	-	7	7	0.0	37	0.199	100	0.0	1
Approach	216	7	223	1.4		0.480			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	3749	8.6	0.522

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
West: Russell Avenue (W)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 102 [Pedestrian Crossing (Forest Way) (Site Folder: PM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Base)]

Pedestrian Crossing (Forest Way)
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	505	11.7	505	11.7	1255	0.402	100	5.6	LOS A	10.3	79.4	Full	50	0.0	47.5
Lane 2	505	11.7	505	11.7	1255	0.402	100	4.4	LOS A	8.7	67.1	Full	50	0.0	31.7
Lane 3	505	11.7	505	11.7	1255	0.402	100	7.1	LOS A	10.6[N4]	81.6[N4]	Full	50	0.0	50.0
Approach	1515	11.7	1515	11.7		0.402		5.7	LOS A	10.6	81.6				
North: Forest Way (N)															
Lane 1	620	7.4	620	7.4	1313	0.472	100	4.7	LOS A	11.7	86.9	Full	100	0.0	0.0
Lane 2	620	7.4	620	7.4	1313	0.472	100	0.4	LOS A	1.4	10.6	Full	100	0.0	0.0
Lane 3	620	7.4	620	7.4	1313	0.472	100	0.4	LOS A	1.5	11.4	Full	100	0.0	0.0
Approach	1859	7.4	1859	7.4		0.472		1.8	LOS A	11.7	86.9				
All Vehicles	3374	9.4	3374	9.4		0.472		3.6	LOS A	11.7	86.9				

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

N4 Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	505	505	11.7	1255	0.402	100	NA	NA
Lane 2	505	505	11.7	1255	0.402	100	NA	NA
Lane 3	505	505	11.7	1255	0.402	100	NA	NA
Approach	1515	1515	11.7		0.402			

North: Forest Way (N)

Mov. From N To Exit:	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	620	620	7.4	1313	0.472	100	NA	NA
Lane 2	620	620	7.4	1313	0.472	100	NA	NA
Lane 3	620	620	7.4	1313	0.472	100	NA	NA
Approach	1859	1859	7.4		0.472			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	3374	9.4	0.472

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Forest Way Entry to Centre (Site Folder: PM - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Base)]

Forest Way Entry to Centre
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Give-Way (Two-Way)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	530	9.6	530	9.6	997	0.531	100	1.8	LOS A	0.0	0.0	Full	110	-42.6 N7	0.0
Lane 2	623	11.7	623	11.7	1172	0.531	100	0.1	LOS A	0.0	0.0	Full	110	-31.7 N7	0.0
Lane 3	457	11.7	457	11.7	859	0.531	100	0.1	LOS A	0.0	0.0	Full	110	-50.0 N7	0.0
Approach	1609	11.1	1609	11.1		0.531		0.6	NA	0.0	0.0				
North: Forest Way (N)															
Lane 1	776	3.6	776	3.6	1843	0.421	100	0.0	LOS A	0.0	0.0	Full	50	0.0	0.0
Lane 2	464	3.6	464	3.6	1101	0.421	100	0.0	LOS A	0.0	0.0	Full	50	-40.3 N3	0.0
Lane 3	464	3.6	464	3.6	1101	0.421	100	0.0	LOS A	0.0	0.0	Full	50	-40.3 N3	0.0
Approach	1703	3.6	1703	3.6		0.421		0.0	NA	0.0	0.0				
All Vehicles	3313	7.2	3313	7.2		0.531		0.3	NA	0.0	0.0				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N7 The capacity reduction has been determined from the queue blockage probability based on the Back of Queue value of a Site further downstream.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	95	435	530	9.6	997	0.531	100	NA	NA
Lane 2	-	623	623	11.7	1172	0.531	100	NA	NA
Lane 3	-	457	457	11.7	859	0.531	100	NA	NA
Approach	95	1515	1609	11.1		0.531			

North: Forest Way (N)

Mov. From N To Exit:	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	776	776	3.6	1843	0.421	100	NA	NA

Lane 2	464	464	3.6		1101	0.421	100	NA	NA
Lane 3	464	464	3.6		1101	0.421	100	NA	NA
Approach	1703	1703	3.6			0.421			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	3313	7.2	0.531

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

MOVEMENT SUMMARY

Site: 103 [Naree Rd / Forest Way - Copy (Site Folder: WE - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Base)]

Naree Road / Forest Way
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
2	T1	All MCs	1718	3.3	1718	3.3	0.452	6.9	LOS A	13.2	94.7	0.39	0.35	0.39	52.6
3	R2	All MCs	210	7.5	210	7.5	* 0.811	58.4	LOS E	13.2	98.4	0.99	0.86	1.08	21.4
Approach			1928	3.7	1928	3.7	0.811	12.5	LOS A	13.2	98.4	0.45	0.41	0.46	42.9
East: Naree Road (E)															
4	L2	All MCs	125	0.0	125	0.0	0.211	28.3	LOS B	4.5	31.2	0.60	0.70	0.60	28.4
6	R2	All MCs	263	2.0	263	2.0	* 0.794	61.2	LOS E	16.6	117.9	1.00	0.88	1.08	25.2
Approach			388	1.4	388	1.4	0.794	50.6	LOS D	16.6	117.9	0.87	0.82	0.93	25.8
North: Forest Way (N)															
7	L2	All MCs	227	3.5	227	3.5	0.807	14.8	LOS B	32.2	231.0	0.79	0.76	0.79	37.7
8	T1	All MCs	1894	2.7	1894	2.7	* 0.807	19.6	LOS B	32.2	231.0	0.76	0.70	0.76	32.9
Approach			2121	2.8	2121	2.8	0.807	19.1	LOS B	32.2	231.0	0.76	0.71	0.76	33.9
All Vehicles			4436	3.1	4436	3.1	0.811	19.0	LOS B	32.2	231.0	0.64	0.59	0.65	35.5

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Warringah Road/Forest Way - Copy (Site Folder: WE - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Base)]

Warringah Road/Forest Way
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Warringah Road (E)															
5	T1	All MCs	173	2.1	173	2.1	0.132	8.6	LOS A	3.8	26.9	0.38	0.32	0.38	61.0
6	R2	All MCs	1192	2.9	1192	2.9	* 0.725	55.7	LOS D	23.2	166.3	0.98	0.85	0.98	23.0
Approach			1365	2.8	1365	2.8	0.725	49.7	LOS D	23.2	166.3	0.91	0.79	0.91	26.7
North: Forest Way (N)															
7	L2	All MCs	1204	3.4	1204	3.4	0.565	34.6	LOS C	10.2	73.8	0.13	1.12	0.13	44.6
9	R2	All MCs	713	2.7	713	2.7	* 0.782	87.5	LOS F	22.5	160.0	1.00	0.89	1.03	21.8
Approach			1916	3.1	1916	3.1	0.782	54.3	LOS D	22.5	160.0	0.46	1.03	0.47	25.4
West: Warringah Road (S)															
10	L2	All MCs	815	4.1	815	4.1	0.423	22.4	LOS B	14.0	101.6	0.59	0.77	0.59	38.3
11	T1	All MCs	1088	0.9	1088	0.9	* 0.741	39.3	LOS C	30.0	211.5	0.94	0.83	0.94	40.2
Approach			1903	2.2	1903	2.2	0.741	32.0	LOS C	30.0	211.5	0.79	0.80	0.79	39.7
All Vehicles			5184	2.7	5184	2.7	0.782	44.9	LOS D	30.0	211.5	0.70	0.88	0.70	30.5

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Russell Ave / Forest Way - Copy (Site Folder: WE - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Base)]

Russell Avenue / Forest Way
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
1	L2	All MCs	160	3.3	160	3.3	0.380	5.8	LOS A	0.0	0.0	0.00	0.16	0.00	33.6
2	T1	All MCs	1631	3.4	1631	3.4	0.380	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	65.0
Approach			1791	3.4	1791	3.4	0.380	0.5	NA	0.0	0.0	0.00	0.06	0.00	58.7
North: Forest Way (N)															
8	T1	All MCs	1748	2.3	1748	2.3	0.412	0.8	LOS A	2.3	16.1	0.10	0.10	0.11	60.7
9	R2	All MCs	233	0.5	233	0.5	0.827	38.8	LOS C	4.7	33.3	0.97	1.25	2.10	10.2
Approach			1981	2.1	1981	2.1	0.827	5.2	NA	4.7	33.3	0.20	0.23	0.34	34.2
West: Russell Avenue (W)															
10	L2	All MCs	249	1.7	249	1.7	0.353	6.5	LOS A	1.5	11.0	0.56	0.74	0.65	17.9
12	R2	All MCs	93	2.3	93	2.3	0.970	113.8	LOS F	4.5	31.9	1.00	1.44	2.77	1.5
Approach			342	1.8	342	1.8	0.970	35.6	LOS C	4.5	31.9	0.68	0.93	1.23	4.6
All Vehicles			4114	2.6	4114	2.6	0.970	5.7	NA	4.7	33.3	0.15	0.21	0.27	32.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 102 [Pedestrian Crossing (Forest Way) - Copy (Site Folder: WE - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Base)]

Pedestrian Crossing (Forest Way)
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
2	T1	All MCs	1791	3.4	1791	3.4	0.431	5.7	LOS A	11.3	81.6	0.38	0.33	0.38	24.6
Approach			1791	3.4	1791	3.4	0.431	5.7	LOS A	11.3	81.6	0.38	0.33	0.38	24.6
North: Forest Way (N)															
8	T1	All MCs	1827	2.2	1827	2.2	* 0.433	1.9	LOS A	7.4	53.0	0.16	0.15	0.16	52.4
Approach			1827	2.2	1827	2.2	0.433	1.9	LOS A	7.4	53.0	0.16	0.15	0.16	52.4
All Vehicles			3618	2.8	3618	2.8	0.433	3.8	LOS A	11.3	81.6	0.27	0.24	0.27	37.6

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Forest Way Entry to Centre - Copy (Site Folder: WE - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Base)]

Forest Way Entry to Centre
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
1	L2	All MCs	95	0.0	95	0.0	0.391	9.3	LOS A	1.5	10.8	0.00	0.15	0.00	59.6
2	T1	All MCs	1791	3.4	1791	3.4	0.391	0.0	LOS A	4.2	30.3	0.00	0.05	0.00	65.1
Approach			1885	3.2	1885	3.2	0.391	0.5	NA	4.2	30.3	0.00	0.06	0.00	63.8
North: Forest Way (N)															
8	T1	All MCs	1827	2.2	1827	2.2	0.441	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.5
Approach			1827	2.2	1827	2.2	0.441	0.0	NA	0.0	0.0	0.00	0.00	0.00	69.5
All Vehicles			3713	2.7	3713	2.7	0.441	0.3	NA	4.2	30.3	0.00	0.03	0.00	65.3

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

LANE SUMMARY

Site: 103 [Naree Rd / Forest Way - Copy (Site Folder: WE - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Base)]

Naree Road / Forest Way
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	573	3.3	573	3.3	1266	0.452	100	7.2	LOS A	13.2	94.7	Full	85	0.0	14.8
Lane 2	573	3.3	573	3.3	1266	0.452	100	7.1	LOS A	13.1	94.3	Full	85	0.0	14.4
Lane 3	573	3.3	573	3.3	1266	0.452	100	6.3	LOS A	12.1	86.8	Full	85	0.0	18.2[8]
Lane 4	210	7.5	210	7.5	259	0.811	100	58.4	LOS E	13.2	98.4	Short	65	0.0	NA
Approach	1928	3.7	1928	3.7		0.811		12.5	LOS A	13.2	98.4				
East: Naree Road (E)															
Lane 1	125	0.0	125	0.0	591	0.211	100	28.3	LOS B	4.5	31.2	Full	500	0.0	0.0
Lane 2	263	2.0	263	2.0	331	0.794	100	61.2	LOS E	16.6	117.9	Full	500	0.0	0.0
Approach	388	1.4	388	1.4		0.794		50.6	LOS D	16.6	117.9				
North: Forest Way (N)															
Lane 1	698	2.9	698	2.9	865	0.807	100	23.8	LOS B	32.2	231.0	Full	300	0.0	0.0
Lane 2	712	2.7	712	2.7	882	0.807	100	16.7	LOS B	31.0	221.7	Full	300	0.0	0.0
Lane 3	712	2.7	712	2.7	882	0.807	100	16.7	LOS B	31.0	221.7	Full	300	0.0	0.0
Approach	2121	2.8	2121	2.8		0.807		19.1	LOS B	32.2	231.0				
All Vehicles	4436	3.1	4436	3.1		0.811		19.0	LOS B	32.2	231.0				

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

8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	573	-	573	3.3	1266	0.452	100	NA	NA
Lane 2	573	-	573	3.3	1266	0.452	100	NA	NA
Lane 3	573	-	573	3.3	1266	0.452	100	NA	NA
Lane 4	-	210	210	7.5	259	0.811	100	42.9	3
Approach	1718	210	1928	3.7		0.811			

East: Naree Road (E)

Mov.	L2	R2	Total	%HV		Deg.	Lane	Prob.	Ov.

From E To Exit:	S	N			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	125	-	125	0.0	591	0.211	100	NA	NA
Lane 2	-	263	263	2.0	331	0.794	100	NA	NA
Approach	125	263	388	1.4		0.794			
North: Forest Way (N)									
Mov. From N To Exit:	L2 E	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	227	471	698	2.9	865	0.807	100	NA	NA
Lane 2	-	712	712	2.7	882	0.807	100	NA	NA
Lane 3	-	712	712	2.7	882	0.807	100	NA	NA
Approach	227	1894	2121	2.8		0.807			
	Total	%HV	Deg.Satn (v/c)						
All Vehicles	4436	3.1	0.811						

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate sec	Capacity veh/h	Deg. Satn veh/h	Min. Delay v/c	Merge Delay sec	sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
East: Naree Road (E)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Warringah Road/Forest Way - Copy (Site Folder: WE - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Base)]

Warringah Road/Forest Way
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Warringah Road (E)															
Lane 1	173	2.1	173	2.1	1307	0.132	100	8.6	LOS A	3.8	26.9	Full	500	0.0	0.0
Lane 2	397	2.9	397	2.9	548	0.725	100	55.7	LOS D	23.2	166.3	Full	500	0.0	0.0
Lane 3	397	2.9	397	2.9	548	0.725	100	55.7	LOS D	23.2	166.3	Full	500	0.0	0.0
Lane 4	397	2.9	397	2.9	548	0.725	100	55.7	LOS D	23.2	166.3	Short	150	0.0	NA
Approach	1365	2.8	1365	2.8		0.725		49.7	LOS D	23.2	166.3				
North: Forest Way (N)															
Lane 1	1043	3.4	1043	3.4	1848	0.565	100	26.0	LOS B	0.0	0.0	Full	110	0.0	0.0
Lane 2	160	3.4	160	3.4	284	0.565	100	90.1	LOS F	10.2	73.8	Short	25	0.0	NA
Lane 3	5	100.0	5	100.0	176	0.030	100	92.6	LOS F	0.3	3.7	Short	25	0.0	NA
Lane 4	354	2.0	354	2.0	452[1]	0.782	100	106.1	LOS F	22.5	160.0	Full	110	0.0	39.3
Lane 5	354	2.0	354	2.0	452	0.782	100	68.9	LOS E	22.3	159.1	Full	110	0.0	38.7
Approach	1916	3.1	1916	3.1		0.782		54.3	LOS D	22.5	160.0				
West: Warringah Road (S)															
Lane 1	408	4.1	408	4.1	965	0.423	100	22.4	LOS B	14.0	101.6	Short	80	0.0	NA
Lane 2	408	4.1	408	4.1	965	0.423	100	22.4	LOS B	14.0	101.6	Short	130	0.0	NA
Lane 3	544	0.9	544	0.9	734	0.741	100	39.3	LOS C	30.0	211.5	Full	500	0.0	0.0
Lane 4	544	0.9	544	0.9	734	0.741	100	39.3	LOS C	30.0	211.5	Full	500	0.0	0.0
Approach	1903	2.2	1903	2.2		0.741		32.0	LOS C	30.0	211.5				
All Vehicles	5184	2.7	5184	2.7		0.782		44.9	LOS D	30.0	211.5				

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Approach Lane Flows (veh/h)

East: Warringah Road (E)

Mov. From E To Exit:	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	173	-	173	2.1	1307	0.132	100	NA	NA
Lane 2	-	397	397	2.9	548	0.725	100	NA	NA
Lane 3	-	397	397	2.9	548	0.725	100	NA	NA

Lane 4	-	397	397	2.9	548	0.725	100	14.3	3
Approach	173	1192	1365	2.8		0.725			
North: Forest Way (N)									
Mov. From N To Exit:	L2 E	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1043	-	1043	3.4	1848	0.565	100	NA	NA
Lane 2	160	-	160	3.4	284	0.565	100	100.0	1
Lane 3	-	5	5	100.0	176	0.030	100	0.0	4
Lane 4	-	354	354	2.0	452[1]	0.782	100	NA	NA
Lane 5	-	354	354	2.0	452	0.782	100	NA	NA
Approach	1204	713	1916	3.1		0.782			
West: Warringah Road (S)									
Mov. From W To Exit:	L2 N	T1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	408	-	408	4.1	965	0.423	100	26.8	2
Lane 2	408	-	408	4.1	965	0.423	100	0.0	3
Lane 3	-	544	544	0.9	734	0.741	100	NA	NA
Lane 4	-	544	544	0.9	734	0.741	100	NA	NA
Approach	815	1088	1903	2.2		0.741			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	5184	2.7	0.782

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
West Exit: Warringah Road (S) Merge Type: **Priority**												
Exit Short Lane	1	125	0.0	354	357	3.07	2.05	178	1388	0.128	0.6	0.8
Merge Lane	2	-	100.0	Merge Lane is not Opposed				354	1800	0.196	0.0	0.0

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
East: Warringah Road (E)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0

Lane 5	0.0	0.0	0.0	0.0
West: Warringah Road (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Russell Ave / Forest Way - Copy (Site Folder: WE - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Base)]

Russell Avenue / Forest Way
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Give-Way (Two-Way)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	615	3.3	615	3.3	1616	0.380	100	1.5	LOS A	0.0	0.0	Full	100	-11.4 N3	0.0
Lane 2	601	3.4	601	3.4	1581	0.380	100	0.0	LOS A	0.0	0.0	Full	100	-14.4 N3	0.0
Lane 3	575	3.4	575	3.4	1511	0.380	100	0.0	LOS A	0.0	0.0	Full	100	-18.2 N3	0.0
Approach	1791	3.4	1791	3.4		0.380		0.5	NA	0.0	0.0				
North: Forest Way (N)															
Lane 1	770	2.3	770	2.3	1867	0.412	100	0.0	LOS A	0.0	0.0	Full	85	0.0	0.0
Lane 2	770	2.3	770	2.3	1867	0.412	100	0.0	LOS A	0.0	0.0	Full	85	0.0	0.0
Lane 3	208	2.3	208	2.3	505 15	0.412	100	6.2	LOS A	2.3	16.1	Full	85	0.0	0.0
Lane 4	233	0.5	233	0.5	281	0.827	100	38.8	LOS C	4.7	33.3	Short	20	0.0	NA
Approach	1981	2.1	1981	2.1		0.827		5.2	NA	4.7	33.3				
West: Russell Avenue (W)															
Lane 1	249	1.7	249	1.7	707	0.353	100	6.5	LOS A	1.5	11.0	Full	35	-14.8 N3	2.4 8
Lane 2	93	2.3	93	2.3	96	0.970	100	113.8	LOS F	4.5	31.9	Short	22	0.0	NA
Approach	342	1.8	342	1.8		0.970		35.6	LOS C	4.5	31.9				
All Vehicles	4114	2.6	4114	2.6		0.970		5.7	NA	4.7	33.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.
15 Continuous lane capacity reduced due to overflow of an opposed movement in an adjacent short lane.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	160	455	615	3.3	1616	0.380	100	NA	NA
Lane 2	-	601	601	3.4	1581	0.380	100	NA	NA
Lane 3	-	575	575	3.4	1511	0.380	100	NA	NA

Approach	160	1631	1791	3.4		0.380			
North: Forest Way (N)									
Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	770	-	770	2.3	1867	0.412	100	NA	NA
Lane 2	770	-	770	2.3	1867	0.412	100	NA	NA
Lane 3	208	-	208	2.3	505	0.412	100	NA	NA
Lane 4	-	233	233	0.5	281	0.827	100	23.0	3
Approach	1748	233	1981	2.1		0.827			
West: Russell Avenue (W)									
Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	249	-	249	1.7	707	0.353	100	NA	NA
Lane 2	-	93	93	2.3	96	0.970	100	17.4	1
Approach	249	93	342	1.8		0.970			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	4114	2.6	0.970

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
West: Russell Avenue (W)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 102 [Pedestrian Crossing (Forest Way) - Copy (Site Folder: WE - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Base)]

Pedestrian Crossing (Forest Way)
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	597	3.4	597	3.4	1385	0.431	100	5.7	LOS A	11.3[N4]	81.6[N4]	Full	50	0.0	50.0
Lane 2	597	3.4	597	3.4	1385	0.431	100	4.1	LOS A	10.2	73.5	Full	50	0.0	40.2
Lane 3	597	3.4	597	3.4	1385	0.431	100	7.3	LOS A	11.3[N4]	81.6[N4]	Full	50	0.0	50.0
Approach	1791	3.4	1791	3.4		0.431		5.7	LOS A	11.3	81.6				
North: Forest Way (N)															
Lane 1	609	2.2	609	2.2	1408	0.433	100	2.6	LOS A	7.4	53.0	Full	100	0.0	0.0
Lane 2	609	2.2	609	2.2	1408	0.433	100	0.6	LOS A	2.0	14.4	Full	100	0.0	0.0
Lane 3	609	2.2	609	2.2	1408	0.433	100	2.6	LOS A	7.4	52.6	Full	100	0.0	0.0
Approach	1827	2.2	1827	2.2		0.433		1.9	LOS A	7.4	53.0				
All Vehicles	3618	2.8	3618	2.8		0.433		3.8	LOS A	11.3	81.6				

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

N4 Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	597	597	3.4	1385	0.431	100	NA	NA
Lane 2	597	597	3.4	1385	0.431	100	NA	NA
Lane 3	597	597	3.4	1385	0.431	100	NA	NA
Approach	1791	1791	3.4		0.431			

North: Forest Way (N)

Mov. From N To Exit:	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	609	609	2.2	1408	0.433	100	NA	NA
Lane 2	609	609	2.2	1408	0.433	100	NA	NA
Lane 3	609	609	2.2	1408	0.433	100	NA	NA
Approach	1827	1827	2.2		0.433			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	3618	2.8	0.433

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Forest Way Entry to Centre - Copy (Site Folder: WE - Dec 2024)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Base)]

Forest Way Entry to Centre
2036 PM Peak
Site Category: 2036 + Existing Site Turn Movements
Give-Way (Two-Way)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	725	2.9	725	2.9	1853	0.391	100	1.2	LOS A	1.5[N5]	10.8[N5]	Full	110	0.0	0.0
Lane 2	434	3.4	434	3.4	1111	0.391	100	0.0	LOS A	0.0	0.0	Full	110	-40.2[N3]	0.0
Lane 3	726	3.4	726	3.4	1857	0.391	100	0.0	LOS A	4.2[N5]	30.3[N5]	Full	110	0.0	0.0
Approach	1885	3.2	1885	3.2		0.391		0.5	NA	4.2	30.3				
North: Forest Way (N)															
Lane 1	823	2.2	823	2.2	1868	0.441	100	0.0	LOS A	0.0	0.0	Full	50	0.0	0.0
Lane 2	500	2.2	500	2.2	1134	0.441	100	0.0	LOS A	0.0	0.0	Full	50	-39.3[N3]	0.0
Lane 3	505	2.2	505	2.2	1145	0.441	100	0.0	LOS A	0.0	0.0	Full	50	-38.7[N3]	0.0
Approach	1827	2.2	1827	2.2		0.441		0.0	NA	0.0	0.0				
All Vehicles	3713	2.7	3713	2.7		0.441		0.3	NA	4.2	30.3				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N5 Results for this lane are determined by Back of Queue values of downstream lanes (proportional to lane movement flows).

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	95	630	725	2.9	1853	0.391	100	NA	NA
Lane 2	-	434	434	3.4	1111	0.391	100	NA	NA
Lane 3	-	726	726	3.4	1857	0.391	100	NA	NA
Approach	95	1791	1885	3.2		0.391			

North: Forest Way (N)

Mov. From N To Exit:	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	823	823	2.2	1868	0.441	100	NA	NA
Lane 2	500	500	2.2	1134	0.441	100	NA	NA

Lane 3	505	505	2.2	1145	0.441	100	NA	NA
Approach	1827	1827	2.2		0.441			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	3713	2.7	0.441

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate sec	Capacity veh/h	Deg. Satn veh/h	Min. Delay v/c	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

MOVEMENT SUMMARY

Site: 103 [Naree Rd / Forest Way (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Naree Road / Forest Way
2036 AM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
2	T1	All MCs	1435	10.1	1435	10.1	0.405	12.5	LOS A	16.2	122.9	0.57	0.44	0.57	44.2
3	R2	All MCs	181	9.1	181	9.1	* 0.789	74.1	LOS F	12.1	91.0	1.00	0.90	1.12	18.8
Approach			1616	10.0	1616	10.0	0.789	19.4	LOS B	16.2	122.9	0.62	0.49	0.64	35.9
East: Naree Road (E)															
4	L2	All MCs	204	0.5	204	0.5	0.360	31.3	LOS C	8.2	57.6	0.68	0.74	0.68	27.1
6	R2	All MCs	260	4.3	260	4.3	* 0.787	60.9	LOS E	16.4	118.7	1.00	0.88	1.08	25.1
Approach			464	2.7	464	2.7	0.787	47.9	LOS D	16.4	118.7	0.86	0.82	0.90	25.7
North: Forest Way (N)															
7	L2	All MCs	146	5.6	146	5.6	0.768	12.5	LOS A	27.7	205.2	0.72	0.69	0.72	39.6
8	T1	All MCs	1856	7.3	1856	7.3	* 0.768	17.5	LOS B	27.7	205.2	0.71	0.65	0.71	34.4
Approach			2002	7.2	2002	7.2	0.768	17.1	LOS B	27.7	205.2	0.71	0.66	0.71	35.2
All Vehicles			4083	7.8	4083	7.8	0.789	21.5	LOS B	27.7	205.2	0.69	0.61	0.70	33.2

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Warringah Road/Forest Way (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Warringah Road/Forest Way
2036 AM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Warringah Road (E)															
5	T1	All MCs	592	15.8	592	15.8	0.706	31.1	LOS C	28.9	229.7	0.84	0.76	0.84	46.2
6	R2	All MCs	901	1.8	901	1.8	* 0.918	79.8	LOS F	22.3	158.5	1.00	1.01	1.30	17.8
Approach			1492	7.3	1492	7.3	0.918	60.5	LOS E	28.9	229.7	0.94	0.91	1.12	27.2
North: Forest Way (N)															
7	L2	All MCs	996	7.5	996	7.5	0.423	18.1	LOS B	8.2	61.1	0.14	0.77	0.14	47.5
9	R2	All MCs	1120	12.4	1120	12.4	* 0.559	33.1	LOS C	18.8	142.3	0.57	0.74	0.57	39.1
Approach			2116	10.1	2116	10.1	0.559	26.1	LOS B	18.8	142.3	0.37	0.75	0.37	37.6
West: Warringah Road (S)															
10	L2	All MCs	703	11.5	703	11.5	0.315	15.8	LOS B	9.0	68.9	0.44	0.72	0.44	44.3
11	T1	All MCs	958	4.1	958	4.1	* 0.898	61.4	LOS E	33.8	245.4	1.00	1.04	1.18	32.4
Approach			1661	7.2	1661	7.2	0.898	42.1	LOS C	33.8	245.4	0.76	0.90	0.87	35.0
All Vehicles			5269	8.4	5269	8.4	0.918	40.9	LOS C	33.8	245.4	0.65	0.84	0.74	33.2

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Russell Ave / Forest Way (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Russell Avenue / Forest Way
2036 AM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
1	L2	All MCs	122	1.7	122	1.7	0.443	6.2	LOS A	0.0	0.0	0.00	0.14	0.00	34.6
2	T1	All MCs	1360	11.8	1360	11.8	0.443	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	64.7
Approach			1482	11.0	1482	11.0	0.443	0.6	NA	0.0	0.0	0.00	0.05	0.00	59.3
North: Forest Way (N)															
8	T1	All MCs	1915	7.3	1915	7.3	0.470	2.7	LOS A	5.7	42.2	0.11	0.10	0.15	45.5
9	R2	All MCs	142	0.7	142	0.7	0.993	99.3	LOS F	7.6	53.6	1.00	1.52	3.43	4.5
Approach			2057	6.8	2057	6.8	0.993	9.4	NA	7.6	53.6	0.17	0.19	0.37	24.5
West: Russell Avenue (W)															
10	L2	All MCs	265	1.6	265	1.6	0.479	7.0	LOS A	1.9	13.8	0.61	0.78	0.79	17.2
12	R2	All MCs	6	0.0	6	0.0	1.000	286.5	LOS F	2.1	14.7	1.00	1.02	1.08	0.6
Approach			272	1.6	272	1.6	1.000	13.5	LOS A	2.1	14.7	0.62	0.79	0.79	10.7
All Vehicles			3811	8.1	3811	8.1	1.000	6.2	NA	7.6	53.6	0.13	0.18	0.26	31.7

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101v [Forest Way Entry to Centre (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Forest Way Entry to Centre
2036 AM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
1	L2	All MCs	148	0.0	148	0.0	0.422	11.5	LOS A	14.1	105.8	0.46	0.51	0.46	30.5
2	T1	All MCs	1458	11.2	1458	11.2	* 0.422	8.6	LOS A	15.3	117.6	0.47	0.42	0.47	34.5
Approach			1606	10.2	1606	10.2	0.422	8.8	LOS A	15.3	117.6	0.47	0.43	0.47	33.3
North: Forest Way (N)															
8	T1	All MCs	1860	7.5	1860	7.5	0.405	0.4	LOS A	4.1	30.3	0.06	0.06	0.06	66.0
9	R2	All MCs	61	0.0	61	0.0	* 0.397	73.2	LOS F	4.0	27.9	1.00	0.78	1.00	20.0
Approach			1921	7.2	1921	7.2	0.405	2.7	LOS A	4.1	30.3	0.09	0.08	0.09	49.9
West: Centre Entry (W)															
10	L2	All MCs	11	0.0	11	0.0	0.356	60.3	LOS E	2.3	15.8	1.00	0.73	1.00	17.9
12	R2	All MCs	55	0.0	55	0.0	* 0.356	76.7	LOS F	2.3	15.8	1.00	0.72	1.00	17.8
Approach			65	0.0	65	0.0	0.356	74.1	LOS F	2.3	15.8	1.00	0.73	1.00	17.8
All Vehicles			3593	8.4	3593	8.4	0.422	6.7	LOS A	15.3	117.6	0.28	0.25	0.28	36.8

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

* Critical Movement (Signal Timing)

LANE SUMMARY

Site: 103 [Naree Rd / Forest Way (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Naree Road / Forest Way
2036 AM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	481	10.1	481	10.1	1188	0.405	100	11.8	LOS A	15.7	119.0	Full	85	0.0	35.7
Lane 2	481	10.1	481	10.1	1188	0.405	100	12.3	LOS A	16.2	122.9	Full	85	0.0	38.7
Lane 3	473	10.1	473	10.1	1167[1]	0.405	100	13.5	LOS A	15.7	119.2	Full	85	0.0	35.9
Lane 4	181	9.1	181	9.1	229	0.789	100	74.1	LOS F	12.1	91.0	Short	65	0.0	NA
Approach	1616	10.0	1616	10.0		0.789		19.4	LOS B	16.2	122.9				
East: Naree Road (E)															
Lane 1	204	0.5	204	0.5	566	0.360	100	31.3	LOS C	8.2	57.6	Full	500	0.0	0.0
Lane 2	260	4.3	260	4.3	331	0.787	100	60.9	LOS E	16.4	118.7	Full	500	0.0	0.0
Approach	464	2.7	464	2.7		0.787		47.9	LOS D	16.4	118.7				
North: Forest Way (N)															
Lane 1	664	6.9	664	6.9	865	0.768	100	20.0	LOS B	27.7	205.2	Full	300	0.0	0.0
Lane 2	669	7.3	669	7.3	872	0.768	100	15.7	LOS B	27.2	202.5	Full	300	0.0	0.0
Lane 3	669	7.3	669	7.3	872	0.768	100	15.7	LOS B	27.2	202.5	Full	300	0.0	0.0
Approach	2002	7.2	2002	7.2		0.768		17.1	LOS B	27.7	205.2				
All Vehicles	4083	7.8	4083	7.8		0.789		21.5	LOS B	27.7	205.2				

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	481	-	481	10.1	1188	0.405	100	NA	NA
Lane 2	481	-	481	10.1	1188	0.405	100	NA	NA
Lane 3	473	-	473	10.1	1167[1]	0.405	100	NA	NA
Lane 4	-	181	181	9.1	229	0.789	100	35.7	3
Approach	1435	181	1616	10.0		0.789			

East: Naree Road (E)									
Mov. From E To Exit:	L2 S	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	204	-	204	0.5	566	0.360	100	NA	NA
Lane 2	-	260	260	4.3	331	0.787	100	NA	NA
Approach	204	260	464	2.7		0.787			
North: Forest Way (N)									
Mov. From N To Exit:	L2 E	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	146	517	664	6.9	865	0.768	100	NA	NA
Lane 2	-	669	669	7.3	872	0.768	100	NA	NA
Lane 3	-	669	669	7.3	872	0.768	100	NA	NA
Approach	146	1856	2002	7.2		0.768			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	4083	7.8	0.789

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
East: Naree Road (E)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Warringah Road/Forest Way (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Warringah Road/Forest Way
2036 AM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Warringah Road (E)															
Lane 1	592	15.8	592	15.8	838	0.706	100	31.1	LOS C	28.9	229.7	Full	500	0.0	0.0
Lane 2	309	1.8	309	1.8	336	0.918	100	79.5	LOS F	22.3	158.5	Full	500	0.0	0.0
Lane 3	284	1.8	284	1.8	309	0.918	100	80.5	LOS F	20.7	146.9	Full	500	0.0	0.0
Lane 4	309	1.8	309	1.8	336	0.918	100	79.5	LOS F	22.3	158.5	Short	150	0.0	NA
Approach	1492	7.3	1492	7.3		0.918		60.5	LOS E	28.9	229.7				
North: Forest Way (N)															
Lane 1	750	7.5	750	7.5	1772	0.423	100	13.2	LOS A	0.0	0.0	Full	150	0.0	0.0
Lane 2	246	7.5	246	7.5	583	0.423	100	33.1	LOS C	8.2	61.1	Short	25	0.0	NA
Lane 3	36	100.0	36	100.0	377	0.095	100	59.2	LOS E	1.5	20.0	Short	25	0.0	NA
Lane 4	542	9.5	542	9.5	969[1]	0.559	100	39.2	LOS C	16.7	126.2	Full	150	0.0	0.0
Lane 5	542	9.5	542	9.5	969	0.559	100	25.4	LOS B	18.8	142.3	Full	150	0.0	0.3
Approach	2116	10.1	2116	10.1		0.559		26.1	LOS B	18.8	142.3				
West: Warringah Road (S)															
Lane 1	352	11.5	352	11.5	1117	0.315	100	15.8	LOS B	9.0	68.9	Short	80	0.0	NA
Lane 2	352	11.5	352	11.5	1117	0.315	100	15.8	LOS B	9.0	68.9	Short	130	0.0	NA
Lane 3	487	4.1	487	4.1	543	0.898	100	61.1	LOS E	33.8	245.4	Full	500	0.0	0.0
Lane 4	471	4.1	471	4.1	524	0.898	100	61.6	LOS E	32.8	237.9	Full	500	0.0	0.0
Approach	1661	7.2	1661	7.2		0.898		42.1	LOS C	33.8	245.4				
All Vehicles	5269	8.4	5269	8.4		0.918		40.9	LOS C	33.8	245.4				

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Approach Lane Flows (veh/h)

East: Warringah Road (E)

Mov. From E To Exit:	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	592	-	592	15.8	838	0.706	100	NA	NA

Lane 2	-	309	309	1.8	336	0.918	100	NA	NA
Lane 3	-	284	284	1.8	309	0.918	100	NA	NA
Lane 4	-	309	309	1.8	336	0.918	100	10.0	3
Approach	592	901	1492	7.3		0.918			

North: Forest Way (N)

Mov. From N To Exit:	L2 E	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	750	-	750	7.5	1772	0.423	100	NA	NA
Lane 2	246	-	246	7.5	583	0.423	100	88.9	1
Lane 3	-	36	36	100.0	377	0.095	100	0.0	4
Lane 4	-	542	542	9.5	969[1]	0.559	100	NA	NA
Lane 5	-	542	542	9.5	969	0.559	100	NA	NA
Approach	996	1120	2116	10.1		0.559			

West: Warringah Road (S)

Mov. From W To Exit:	L2 N	T1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	352	-	352	11.5	1117	0.315	100	0.0	2
Lane 2	352	-	352	11.5	1117	0.315	100	0.0	3
Lane 3	-	487	487	4.1	543	0.898	100	NA	NA
Lane 4	-	471	471	4.1	524	0.898	100	NA	NA
Approach	703	958	1661	7.2		0.898			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	5269	8.4	0.918

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
West Exit: Warringah Road (S) Merge Type: **Priority**												
Exit Short Lane	1	125	0.0	542	568	3.31	2.21	627	1029	0.610	1.3	3.8
Merge Lane	2	-	100.0	Merge Lane is not Opposed				542	1800	0.301	0.0	0.0

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
East: Warringah Road (E)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

Lane 4	0.0	0.0	0.0	0.0
Lane 5	0.0	0.0	0.0	0.0
West: Warringah Road (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Russell Ave / Forest Way (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Russell Avenue / Forest Way
2036 AM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Give-Way (Two-Way)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	534	9.5	534	9.5	1207	0.443	100	1.5	LOS A	0.0	0.0	Full	110	-30.0 N3	0.0
Lane 2	463	11.8	463	11.8	1047	0.443	100	0.1	LOS A	0.0	0.0	Full	110	-38.7 N3	0.0
Lane 3	485	11.8	485	11.8	1095	0.443	100	0.1	LOS A	0.0	0.0	Full	110	-35.9 N3	0.0
Approach	1482	11.0	1482	11.0		0.443		0.6	NA	0.0	0.0				
North: Forest Way (N)															
Lane 1	837	7.3	837	7.3	1780	0.470	100	0.0	LOS A	0.0	0.0	Full	85	0.0	0.0
Lane 2	837	7.3	837	7.3	1780	0.470	100	0.0	LOS A	0.0	0.0	Full	85	0.0	0.0
Lane 3	240	7.3	240	7.3	510 15	0.470	100	21.3	LOS B	5.7	42.2	Full	85	0.0	0.0
Lane 4	142	0.7	142	0.7	143	0.993	100	99.3	LOS F	7.6	53.6	Short	20	0.0	NA
Approach	2057	6.8	2057	6.8		0.993		9.4	NA	7.6	53.6				
West: Russell Avenue (W)															
Lane 1	265	1.6	265	1.6	554	0.479	100	7.0	LOS A	1.9	13.8	Full	35	-35.7 N3	0.0
Lane 2	6	0.0	6	0.0	6	1.000 4	100	286.5	LOS F	2.1	14.7	Short	16	0.0	NA
Approach	272	1.6	272	1.6		1.000		13.5	LOS A	2.1	14.7				
All Vehicles	3811	8.1	3811	8.1		1.000		6.2	NA	7.6	53.6				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

4 x = 1.00 due to minimum capacity
15 Continuous lane capacity reduced due to overflow of an opposed movement in an adjacent short lane.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	122	412	534	9.5	1207	0.443	100	NA	NA
Lane 2	-	463	463	11.8	1047	0.443	100	NA	NA

Lane 3	-	485	485	11.8	1095	0.443	100	NA	NA
Approach	122	1360	1482	11.0		0.443			
North: Forest Way (N)									
Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	837	-	837	7.3	1780	0.470	100	NA	NA
Lane 2	837	-	837	7.3	1780	0.470	100	NA	NA
Lane 3	240	-	240	7.3	510	0.470	100	NA	NA
Lane 4	-	142	142	0.7	143	0.993	100	61.0	3
Approach	1915	142	2057	6.8		0.993			
West: Russell Avenue (W)									
Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	265	-	265	1.6	554	0.479	100	NA	NA
Lane 2	-	6	6	0.0	6	1.000[4]	100	2.6	1
Approach	265	6	272	1.6		1.000			
	Total	%HV	Deg.Satn (v/c)						
All Vehicles	3811	8.1	1.000						

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

4 x = 1.00 due to minimum capacity

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate sec veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
West: Russell Avenue (W)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	NA

LANE SUMMARY

Site: 101v [Forest Way Entry to Centre (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Forest Way Entry to Centre
2036 AM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	541	8.1	541	8.1	1281	0.422	100	9.9	LOS A	14.1	105.8	Full	150	0.0	0.0
Lane 2	533	11.2	533	11.2	1262	0.422	100	7.7	LOS A	13.6	104.4	Full	150	0.0	0.0
Lane 3	533	11.2	533	11.2	1262	0.422	100	8.9	LOS A	15.3	117.6	Full	150	0.0	0.0
Approach	1606	10.2	1606	10.2		0.422		8.8	LOS A	15.3	117.6				
North: Forest Way (N)															
Lane 1	621	7.5	621	7.5	1531	0.405	100	0.2	LOS A	1.3	9.5	Full	110	0.0	0.0
Lane 2	621	7.5	621	7.5	1531	0.405	100	0.2	LOS A	1.3	9.5	Full	110	0.0	0.0
Lane 3	619	7.5	619	7.5	1527	0.405	100	0.8	LOS A	4.1	30.3	Full	110	-0.3 N3	0.0
Lane 4	61	0.0	61	0.0	154	0.397	100	73.2	LOS F	4.0	27.9	Short	60	0.0	NA
Approach	1921	7.2	1921	7.2		0.405		2.7	LOS A	4.1	30.3				
West: Centre Entry (W)															
Lane 1	35	0.0	35	0.0	98	0.356	100	73.4	LOS F	2.3	15.8	Full	500	0.0	0.0
Lane 2	30	0.0	30	0.0	85	0.356	100	74.8	LOS F	2.0	14.0	Short	20	-0.3 N3	NA
Approach	65	0.0	65	0.0		0.356		74.1	LOS F	2.3	15.8				
All Vehicles	3593	8.4	3593	8.4		0.422		6.7	LOS A	15.3	117.6				

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

N3 Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
South: Forest Way (S)									
Lane 1	148	393	541	8.1	1281	0.422	100	NA	NA
Lane 2	-	533	533	11.2	1262	0.422	100	NA	NA
Lane 3	-	533	533	11.2	1262	0.422	100	NA	NA
Approach	148	1458	1606	10.2		0.422			
North: Forest Way (N)									

Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	621	-	621	7.5	1531	0.405	100	NA	NA
Lane 2	621	-	621	7.5	1531	0.405	100	NA	NA
Lane 3	619	-	619	7.5	1527	0.405	100	NA	NA
Lane 4	-	61	61	0.0	154	0.397	100	0.0	3
Approach	1860	61	1921	7.2		0.405			
West: Centre Entry (W)									
Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	24	35	0.0	98	0.356	100	NA	NA
Lane 2	-	30	30	0.0	85	0.356	100	0.0	1
Approach	11	55	65	0.0		0.356			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	3593	8.4	0.422

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
West: Centre Entry (W)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0

MOVEMENT SUMMARY

Site: 103 [Naree Rd / Forest Way (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Naree Road / Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
2	T1	All MCs	2059	3.1	2059	3.1	0.547	4.6	LOS A	14.9	107.3	0.31	0.28	0.31	57.4
3	R2	All MCs	217	9.6	217	9.6	* 0.660	61.6	LOS E	13.3	100.7	1.00	0.84	1.00	20.7
Approach			2277	3.7	2277	3.7	0.660	10.0	LOS A	14.9	107.3	0.37	0.34	0.38	46.2
East: Naree Road (E)															
4	L2	All MCs	141	0.9	141	0.9	0.208	23.3	LOS B	4.4	30.8	0.52	0.69	0.52	30.7
6	R2	All MCs	307	3.0	307	3.0	* 0.884	66.0	LOS E	20.7	148.8	1.00	0.96	1.18	24.1
Approach			448	2.3	448	2.3	0.884	52.5	LOS D	20.7	148.8	0.85	0.87	0.97	25.3
North: Forest Way (N)															
7	L2	All MCs	208	3.1	208	3.1	0.871	20.9	LOS B	35.8	257.2	0.85	0.84	0.92	34.7
8	T1	All MCs	1813	3.0	1813	3.0	* 0.871	25.0	LOS B	35.8	257.2	0.84	0.80	0.89	28.4
Approach			2022	3.0	2022	3.0	0.871	24.6	LOS B	35.8	257.2	0.84	0.81	0.89	29.7
All Vehicles			4746	3.3	4746	3.3	0.884	20.2	LOS B	35.8	257.2	0.62	0.59	0.65	34.6

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Warringah Road/Forest Way (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Warringah Road/Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Warringah Road (E)															
5	T1	All MCs	264	6.3	264	6.3	0.215	10.0	LOS A	6.4	47.5	0.42	0.36	0.42	59.7
6	R2	All MCs	1441	1.7	1441	1.7	* 0.754	52.8	LOS D	27.8	197.3	0.98	0.87	0.98	23.8
Approach			1705	2.4	1705	2.4	0.754	46.2	LOS D	27.8	197.3	0.89	0.79	0.89	28.3
North: Forest Way (N)															
7	L2	All MCs	1131	2.6	1131	2.6	0.520	31.8	LOS C	9.6	69.0	0.14	1.04	0.14	46.1
9	R2	All MCs	741	5.4	741	5.4	* 0.735	82.1	LOS F	22.3	161.0	1.00	0.86	1.01	24.1
Approach			1871	3.7	1871	3.7	0.735	51.7	LOS D	22.3	161.0	0.48	0.97	0.48	27.2
West: Warringah Road (S)															
10	L2	All MCs	713	11.5	713	11.5	0.396	24.8	LOS B	12.9	99.1	0.62	0.77	0.62	36.5
11	T1	All MCs	944	4.3	944	4.3	* 0.759	44.6	LOS D	27.2	197.5	0.97	0.86	0.98	38.0
Approach			1657	7.4	1657	7.4	0.759	36.1	LOS C	27.2	197.5	0.82	0.82	0.83	37.6
All Vehicles			5233	4.5	5233	4.5	0.759	45.0	LOS D	27.8	197.5	0.72	0.86	0.73	30.6

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Russell Ave / Forest Way (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Russell Avenue / Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
1	L2	All MCs	139	3.0	139	3.0	0.355	6.2	LOS A	0.0	0.0	0.00	0.18	0.00	33.9
2	T1	All MCs	1391	12.5	1391	12.5	0.355	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	64.8
Approach			1529	11.6	1529	11.6	0.355	0.6	NA	0.0	0.0	0.00	0.06	0.00	58.7
North: Forest Way (N)															
8	T1	All MCs	1939	7.1	1939	7.1	0.494	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.6
9	R2	All MCs	160	1.3	160	1.3	0.496	21.8	LOS B	1.9	13.5	0.90	1.03	1.19	15.8
Approach			2099	6.7	2099	6.7	0.496	1.7	NA	1.9	13.5	0.07	0.08	0.09	51.4
West: Russell Avenue (W)															
10	L2	All MCs	305	1.0	305	1.0	0.449	6.2	LOS A	2.0	14.2	0.55	0.74	0.69	18.5
12	R2	All MCs	7	0.0	7	0.0	0.204	105.2	LOS F	0.5	3.8	0.99	1.00	1.01	1.7
Approach			313	1.0	313	1.0	0.449	8.6	LOS A	2.0	14.2	0.56	0.74	0.70	14.9
All Vehicles			3941	8.1	3941	8.1	0.496	1.8	NA	2.0	14.2	0.08	0.12	0.10	49.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101v [Forest Way Entry to Centre (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Forest Way Entry to Centre
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
1	L2	All MCs	256	0.0	256	0.0	0.531	7.8	LOS A	7.2	53.2	0.21	0.39	0.21	31.5
2	T1	All MCs	1481	12.0	1481	12.0	* 0.531	3.7	LOS A	9.1	70.3	0.23	0.25	0.23	42.6
Approach			1737	10.2	1737	10.2	0.531	4.3	LOS A	9.1	70.3	0.23	0.28	0.23	37.2
North: Forest Way (N)															
8	T1	All MCs	1825	7.6	1825	7.6	0.430	0.3	LOS A	2.5	18.9	0.05	0.05	0.05	57.8
9	R2	All MCs	121	0.0	121	0.0	* 0.360	63.9	LOS E	7.5	52.3	1.00	0.82	1.00	17.2
Approach			1946	7.1	1946	7.1	0.430	4.2	LOS A	7.5	52.3	0.11	0.09	0.11	36.4
West: Centre Entry (W)															
10	L2	All MCs	20	0.0	20	0.0	0.791	51.2	LOS D	4.9	34.4	1.00	0.96	1.27	13.6
12	R2	All MCs	111	0.0	111	0.0	* 0.791	80.4	LOS F	4.9	34.4	1.00	0.96	1.28	13.5
Approach			131	0.0	131	0.0	0.791	75.9	LOS F	4.9	34.4	1.00	0.96	1.28	13.5
All Vehicles			3814	8.3	3814	8.3	0.791	6.7	LOS A	9.1	70.3	0.19	0.21	0.20	32.1

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

* Critical Movement (Signal Timing)

LANE SUMMARY

Site: 103 [Naree Rd / Forest Way (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Naree Road / Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	686	3.1	686	3.1	1254	0.547	100	6.1	LOS A	14.9	107.3	Full	85	0.0	26.2
Lane 2	686	3.1	686	3.1	1254	0.547	100	4.4	LOS A	12.0	86.3	Full	85	0.0	6.3
Lane 3	686	3.1	686	3.1	1254	0.547	100	3.2	LOS A	9.5	68.3	Full	85	0.0	20.3[8]
Lane 4	217	9.6	217	9.6	329	0.660	100	61.6	LOS E	13.3	100.7	Short	65	0.0	NA
Approach	2277	3.7	2277	3.7		0.660		10.0	LOS A	14.9	107.3				
East: Naree Road (E)															
Lane 1	141	0.9	141	0.9	677	0.208	100	23.3	LOS B	4.4	30.8	Full	500	0.0	0.0
Lane 2	307	3.0	307	3.0	347	0.884	100	66.0	LOS E	20.7	148.8	Full	500	0.0	0.0
Approach	448	2.3	448	2.3		0.884		52.5	LOS D	20.7	148.8				
North: Forest Way (N)															
Lane 1	666	3.1	666	3.1	765	0.871	100	30.7	LOS C	35.8	257.2	Full	300	0.0	0.0
Lane 2	678	3.0	678	3.0	778	0.871	100	21.6	LOS B	34.8	249.9	Full	300	0.0	0.0
Lane 3	678	3.0	678	3.0	778	0.871	100	21.6	LOS B	34.8	249.9	Full	300	0.0	0.0
Approach	2022	3.0	2022	3.0		0.871		24.6	LOS B	35.8	257.2				
All Vehicles	4746	3.3	4746	3.3		0.884		20.2	LOS B	35.8	257.2				

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

8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	686	-	686	3.1	1254	0.547	100	NA	NA
Lane 2	686	-	686	3.1	1254	0.547	100	NA	NA
Lane 3	686	-	686	3.1	1254	0.547	100	NA	NA
Lane 4	-	217	217	9.6	329	0.660	100	45.1	3
Approach	2059	217	2277	3.7		0.660			

East: Naree Road (E)									
Mov. From E To Exit:	L2 S	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	141	-	141	0.9	677	0.208	100	NA	NA
Lane 2	-	307	307	3.0	347	0.884	100	NA	NA
Approach	141	307	448	2.3		0.884			
North: Forest Way (N)									
Mov. From N To Exit:	L2 E	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	208	458	666	3.1	765	0.871	100	NA	NA
Lane 2	-	678	678	3.0	778	0.871	100	NA	NA
Lane 3	-	678	678	3.0	778	0.871	100	NA	NA
Approach	208	1813	2022	3.0		0.871			
	Total	%HV	Deg.Satn (v/c)						
All Vehicles	4746	3.3	0.884						

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
East: Naree Road (E)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Warringah Road/Forest Way (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Warringah Road/Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Warringah Road (E)															
Lane 1	264	6.3	264	6.3	1226	0.215	100	10.0	LOS A	6.4	47.5	Full	500	0.0	0.0
Lane 2	480	1.7	480	1.7	637	0.754	100	52.8	LOS D	27.8	197.3	Full	500	0.0	0.0
Lane 3	480	1.7	480	1.7	637	0.754	100	52.8	LOS D	27.8	197.3	Full	500	0.0	0.0
Lane 4	480	1.7	480	1.7	637	0.754	100	52.8	LOS D	27.8	197.3	Short	150	0.0	NA
Approach	1705	2.4	1705	2.4		0.754		46.2	LOS D	27.8	197.3				
North: Forest Way (N)															
Lane 1	968	2.6	968	2.6	1863	0.520	100	24.0	LOS B	0.0	0.0	Full	150	0.0	0.0
Lane 2	163	2.6	163	2.6	313	0.520	100	78.5	LOS F	9.6	69.0	Short	25	0.0	NA
Lane 3	13	100.0	13	100.0	193	0.065	100	93.9	LOS F	0.7	8.8	Short	25	0.0	NA
Lane 4	364	3.7	364	3.7	495[1]	0.735	100	99.7	LOS F	22.2	160.0	Full	150	0.0	10.9
Lane 5	364	3.7	364	3.7	495	0.735	100	64.1	LOS E	22.3	161.0	Full	150	0.0	11.4
Approach	1871	3.7	1871	3.7		0.735		51.7	LOS D	22.3	161.0				
West: Warringah Road (S)															
Lane 1	356	11.5	356	11.5	901	0.396	100	24.8	LOS B	12.9	99.1	Short	80	0.0	NA
Lane 2	356	11.5	356	11.5	901	0.396	100	24.8	LOS B	12.9	99.1	Short	130	0.0	NA
Lane 3	472	4.3	472	4.3	623	0.759	100	44.6	LOS D	27.2	197.5	Full	500	0.0	0.0
Lane 4	472	4.3	472	4.3	623	0.759	100	44.6	LOS D	27.2	197.5	Full	500	0.0	0.0
Approach	1657	7.4	1657	7.4		0.759		36.1	LOS C	27.2	197.5				
All Vehicles	5233	4.5	5233	4.5		0.759		45.0	LOS D	27.8	197.5				

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Approach Lane Flows (veh/h)

East: Warringah Road (E)

Mov. From E To Exit:	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	264	-	264	6.3	1226	0.215	100	NA	NA

Lane 2	-	480	480	1.7	637	0.754	100	NA	NA
Lane 3	-	480	480	1.7	637	0.754	100	NA	NA
Lane 4	-	480	480	1.7	637	0.754	100	29.9	3
Approach	264	1441	1705	2.4		0.754			

North: Forest Way (N)

Mov. From N To Exit:	L2 E	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	968	-	968	2.6	1863	0.520	100	NA	NA
Lane 2	163	-	163	2.6	313	0.520	100	100.0	1
Lane 3	-	13	13	100.0	193	0.065	100	0.0	4
Lane 4	-	364	364	3.7	495[1]	0.735	100	NA	NA
Lane 5	-	364	364	3.7	495	0.735	100	NA	NA
Approach	1131	741	1871	3.7		0.735			

West: Warringah Road (S)

Mov. From W To Exit:	L2 N	T1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	356	-	356	11.5	901	0.396	100	24.5	2
Lane 2	356	-	356	11.5	901	0.396	100	0.0	3
Lane 3	-	472	472	4.3	623	0.759	100	NA	NA
Lane 4	-	472	472	4.3	623	0.759	100	NA	NA
Approach	713	944	1657	7.4		0.759			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	5233	4.5	0.759

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
West Exit: Warringah Road (S) Merge Type: **Priority**												
Exit Short Lane	1	125	0.0	364	371	3.16	2.11	277	1323	0.209	0.6	0.9
Merge Lane	2	-	100.0	Merge Lane is not Opposed				364	1800	0.202	0.0	0.0

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
East: Warringah Road (E)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

Lane 4	0.0	0.0	0.0	0.0
Lane 5	0.0	0.0	0.0	0.0
West: Warringah Road (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Russell Ave / Forest Way (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Russell Avenue / Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Give-Way (Two-Way)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	486	9.8	486	9.8	1369	0.355	100	1.8	LOS A	0.0	0.0	Full	110	-20.2 N3	0.0
Lane 2	564	12.5	564	12.5	1591	0.355	100	0.0	LOS A	0.0	0.0	Full	110	-6.3 N3	0.0
Lane 3	480	12.5	480	12.5	1353	0.355	100	0.0	LOS A	0.0	0.0	Full	110	-20.3 N3	0.0
Approach	1529	11.6	1529	11.6		0.355		0.6	NA	0.0	0.0				
North: Forest Way (N)															
Lane 1	176	7.1	176	7.1	1783	0.099	20 6	0.0	LOS A	0.0	0.0	Full	85	0.0	0.0
Lane 2	881	7.1	881	7.1	1783	0.494	100 5	0.0	LOS A	0.0	0.0	Full	85	0.0	0.0
Lane 3	881	7.1	881	7.1	1783	0.494	100 5	0.0	LOS A	0.0	0.0	Full	85	0.0	0.0
Lane 4	160	1.3	160	1.3	322	0.496	100	21.8	LOS B	1.9	13.5	Short	20	0.0	NA
Approach	2099	6.7	2099	6.7		0.496		1.7	NA	1.9	13.5				
West: Russell Avenue (W)															
Lane 1	305	1.0	305	1.0	679	0.449	100	6.2	LOS A	2.0	14.2	Full	35	-26.1 N3	0.0
Lane 2	7	0.0	7	0.0	36	0.204	100	105.2	LOS F	0.5	3.8	Short	22	0.0	NA
Approach	313	1.0	313	1.0		0.449		8.6	LOS A	2.0	14.2				
All Vehicles	3941	8.1	3941	8.1		0.496		1.8	NA	2.0	14.2				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	139	347	486	9.8	1369	0.355	100	NA	NA
Lane 2	-	564	564	12.5	1591	0.355	100	NA	NA

Lane 3	-	480	480	12.5	1353	0.355	100	NA	NA
Approach	139	1391	1529	11.6		0.355			
North: Forest Way (N)									
Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	176	-	176	7.1	1783	0.099	20[6]	NA	NA
Lane 2	881	-	881	7.1	1783	0.494	100[5]	NA	NA
Lane 3	881	-	881	7.1	1783	0.494	100[5]	NA	NA
Lane 4	-	160	160	1.3	322	0.496	100	0.0	3
Approach	1939	160	2099	6.7		0.496			
West: Russell Avenue (W)									
Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	305	-	305	1.0	679	0.449	100	NA	NA
Lane 2	-	7	7	0.0	36	0.204	100	0.0	1
Approach	305	7	313	1.0		0.449			
	Total	%HV	Deg.Satn (v/c)						
All Vehicles	3941	8.1	0.496						

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

5 Lane under-utilisation found by the program
6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate sec	Capacity veh/h	Deg. Satn veh/h	Min. Delay v/c	Merge Delay sec	sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
West: Russell Avenue (W)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101v [Forest Way Entry to Centre (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Forest Way Entry to Centre
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	590	6.8	590	6.8	1111	0.531	100	5.6	LOS A	7.2	53.2	Full	180	0.0	0.0
Lane 2	574	12.0	574	12.0	1081	0.531	100	2.8	LOS A	6.5	50.0	Full	150	0.0	0.0
Lane 3	574	12.0	574	12.0	1081	0.531	100	4.3	LOS A	9.1	70.3	Full	150	0.0	0.0
Approach	1737	10.2	1737	10.2		0.531		4.3	LOS A	9.1	70.3				
North: Forest Way (N)															
Lane 1	657	7.6	657	7.6	1530	0.430	100	0.4	LOS A	2.5	18.9	Full	110	0.0	0.0
Lane 2	586	7.6	586	7.6	1364	0.430	100	0.2	LOS A	1.5	11.0	Full	110	-10.9 N3	0.0
Lane 3	582	7.6	582	7.6	1356	0.430	100	0.2	LOS A	1.2	9.3	Full	110	-11.4 N3	0.0
Lane 4	121	0.0	121	0.0	336	0.360	100	63.9	LOS E	7.5	52.3	Short	60	0.0	NA
Approach	1946	7.1	1946	7.1		0.430		4.2	LOS A	7.5	52.3				
West: Centre Entry (W)															
Lane 1	70	0.0	70	0.0	89	0.791	100	75.4	LOS F	4.9	34.4	Full	500	-8.0 N7	0.0
Lane 2	60	0.0	60	0.0	76	0.791	100	76.5	LOS F	4.2	29.6	Short	25	-11.4 N3	NA
Approach	131	0.0	131	0.0		0.791		75.9	LOS F	4.9	34.4				
All Vehicles	3814	8.3	3814	8.3		0.791		6.7	LOS A	9.1	70.3				

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

N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N7 The capacity reduction has been determined from the queue blockage probability based on the Back of Queue value of a Site further downstream.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	256	334	590	6.8	1111	0.531	100	NA	NA
Lane 2	-	574	574	12.0	1081	0.531	100	NA	NA
Lane 3	-	574	574	12.0	1081	0.531	100	NA	NA
Approach	256	1481	1737	10.2		0.531			

North: Forest Way (N)									
Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	657	-	657	7.6	1530	0.430	100	NA	NA
Lane 2	586	-	586	7.6	1364	0.430	100	NA	NA
Lane 3	582	-	582	7.6	1356	0.430	100	NA	NA
Lane 4	-	121	121	0.0	336	0.360	100	0.0	3
Approach	1825	121	1946	7.1		0.430			
West: Centre Entry (W)									
Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	20	50	70	0.0	89	0.791	100	NA	NA
Lane 2	-	60	60	0.0	76	0.791	100	20.4	1
Approach	20	111	131	0.0		0.791			
	Total	%HV	Deg.Satn (v/c)						
All Vehicles	3814	8.3	0.791						

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
West: Centre Entry (W)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0

MOVEMENT SUMMARY

Site: 103 [Naree Rd / Forest Way - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Naree Road / Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
2	T1	All MCs	1812	3.1	1812	3.1	0.466	2.0	LOS A	8.5	61.1	0.15	0.14	0.15	63.8
3	R2	All MCs	217	7.2	217	7.2	* 0.644	66.7	LOS E	13.7	101.9	1.00	0.87	1.00	19.8
Approach			2029	3.6	2029	3.6	0.644	8.9	LOS A	13.7	101.9	0.24	0.22	0.24	47.7
East: Naree Road (E)															
4	L2	All MCs	139	5.7	139	5.7	0.217	25.4	LOS B	4.6	33.8	0.56	0.69	0.56	29.7
6	R2	All MCs	263	2.0	263	2.0	0.882	68.3	LOS E	17.8	126.8	1.00	0.96	1.19	23.7
Approach			402	3.3	402	3.3	0.882	53.5	LOS D	17.8	126.8	0.85	0.87	0.97	25.0
North: Forest Way (N)															
7	L2	All MCs	225	2.9	225	2.9	* 0.896	23.9	LOS B	41.5	297.3	0.89	0.88	0.97	33.8
8	T1	All MCs	1978	2.7	1978	2.7	0.896	27.1	LOS B	41.5	297.3	0.87	0.85	0.94	27.0
Approach			2204	2.7	2204	2.7	0.896	26.8	LOS B	41.5	297.3	0.88	0.86	0.95	28.3
All Vehicles			4635	3.1	4635	3.1	0.896	21.3	LOS B	41.5	297.3	0.60	0.58	0.64	33.6

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Warringah Road/Forest Way - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Warringah Road/Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Warringah Road (E)															
5	T1	All MCs	172	1.4	172	1.4	0.133	9.4	LOS A	3.9	27.8	0.39	0.33	0.39	60.3
6	R2	All MCs	1245	2.8	1245	2.8	* 0.756	56.9	LOS E	24.7	177.1	0.99	0.87	1.01	22.7
Approach			1416	2.6	1416	2.6	0.756	51.1	LOS D	24.7	177.1	0.92	0.80	0.94	26.1
North: Forest Way (N)															
7	L2	All MCs	1263	3.2	1263	3.2	0.584	36.1	LOS C	11.0	78.8	0.14	1.10	0.14	45.8
9	R2	All MCs	747	2.6	747	2.6	* 0.747	81.5	LOS F	22.7	161.1	1.00	0.86	1.02	24.2
Approach			2010	3.0	2010	3.0	0.747	52.9	LOS D	22.7	161.1	0.46	1.01	0.47	26.8
West: Warringah Road (S)															
10	L2	All MCs	855	4.2	855	4.2	0.443	22.6	LOS B	15.0	108.5	0.60	0.77	0.60	38.1
11	T1	All MCs	1087	0.8	1087	0.8	* 0.774	41.6	LOS C	30.9	217.6	0.96	0.86	0.97	39.2
Approach			1942	2.3	1942	2.3	0.774	33.2	LOS C	30.9	217.6	0.80	0.82	0.81	38.9
All Vehicles			5368	2.6	5368	2.6	0.774	45.3	LOS D	30.9	217.6	0.71	0.89	0.71	30.6

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

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

Site: 101 [Russell Ave / Forest Way - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Russell Avenue / Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
1	L2	All MCs	160	3.3	160	3.3	0.353	6.2	LOS A	0.0	0.0	0.00	0.16	0.00	34.7
2	T1	All MCs	1648	3.3	1648	3.3	0.353	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	65.1
Approach			1808	3.3	1808	3.3	0.353	0.6	NA	0.0	0.0	0.00	0.06	0.00	59.3
North: Forest Way (N)															
8	T1	All MCs	1839	2.2	1839	2.2	0.646	3.1	LOS A	7.0	50.0	0.18	0.18	0.30	43.5
9	R2	All MCs	233	0.5	233	0.5	0.933	59.4	LOS E	7.0	49.5	0.99	1.44	2.94	7.2
Approach			2072	2.0	2072	2.0	0.933	9.4	NA	7.0	50.0	0.27	0.32	0.59	24.6
West: Russell Avenue (W)															
10	L2	All MCs	386	0.0	386	0.0	0.480	7.8	LOS A	3.1	21.5	0.62	0.86	0.87	16.0
12	R2	All MCs	22	4.8	22	4.8	0.232	45.9	LOS D	0.6	4.6	0.97	1.00	1.02	3.7
Approach			408	0.3	408	0.3	0.480	9.9	LOS A	3.1	21.5	0.63	0.87	0.88	13.5
All Vehicles			4288	2.4	4288	2.4	0.933	5.7	NA	7.0	50.0	0.19	0.26	0.37	33.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101v [Forest Way Entry to Centre - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Forest Way Entry to Centre
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Forest Way (S)															
1	L2	All MCs	260	0.0	260	0.0	0.590	8.4	LOS A	10.6	75.3	0.27	0.42	0.27	31.3
2	T1	All MCs	1757	3.4	1757	3.4	* 0.590	4.5	LOS A	13.3	95.6	0.28	0.30	0.28	40.5
Approach			2017	3.0	2017	3.0	0.590	5.0	LOS A	13.3	95.6	0.28	0.31	0.28	36.5
North: Forest Way (N)															
8	T1	All MCs	1794	2.3	1794	2.3	0.402	0.6	LOS A	5.7	40.8	0.08	0.08	0.08	55.6
9	R2	All MCs	125	0.0	125	0.0	0.344	61.4	LOS E	7.6	53.1	1.00	0.81	1.00	17.5
Approach			1919	2.1	1919	2.1	0.402	4.6	LOS A	7.6	53.1	0.14	0.13	0.14	35.6
West: Centre Entry (W)															
10	L2	All MCs	24	0.0	24	0.0	* 0.945	63.0	LOS E	6.5	45.4	1.00	1.19	1.59	12.4
12	R2	All MCs	132	0.0	132	0.0	0.945	93.9	LOS F	6.5	45.4	1.00	1.18	1.60	12.4
Approach			156	0.0	156	0.0	0.945	89.1	LOS F	6.5	45.4	1.00	1.18	1.60	12.4
All Vehicles			4092	2.5	4092	2.5	0.945	8.0	LOS A	13.3	95.6	0.25	0.26	0.27	30.6

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

* Critical Movement (Signal Timing)

LANE SUMMARY

Site: 103 [Naree Rd / Forest Way - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Naree Road / Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	604	3.1	604	3.1	1296	0.466	100	3.5	LOS A	8.5	61.1	Full	85	0.0	0.0
Lane 2	604	3.1	604	3.1	1296	0.466	100	2.1	LOS A	5.7	40.8	Full	85	0.0	0.0
Lane 3	604	3.1	604	3.1	1296	0.466	100	0.5	LOS A	1.5	10.5	Full	85	0.0	21.4[8]
Lane 4	217	7.2	217	7.2	337	0.644	100	66.7	LOS E	13.7	101.9	Short	65	0.0	NA
Approach	2029	3.6	2029	3.6		0.644		8.9	LOS A	13.7	101.9				
East: Naree Road (E)															
Lane 1	139	5.7	139	5.7	640	0.217	100	25.4	LOS B	4.6	33.8	Full	500	0.0	0.0
Lane 2	263	2.0	263	2.0	298	0.882	100	68.3	LOS E	17.8	126.8	Full	500	0.0	0.0
Approach	402	3.3	402	3.3		0.882		53.5	LOS D	17.8	126.8				
North: Forest Way (N)															
Lane 1	726	2.8	726	2.8	810	0.896	100	32.8	LOS C	41.5	297.3	Full	300	0.0	4.2
Lane 2	739	2.7	739	2.7	824	0.896	100	23.8	LOS B	40.6	291.1	Full	300	0.0	2.3
Lane 3	739	2.7	739	2.7	824	0.896	100	23.8	LOS B	40.6	291.1	Full	300	0.0	2.3
Approach	2204	2.7	2204	2.7		0.896		26.8	LOS B	41.5	297.3				
All Vehicles	4635	3.1	4635	3.1		0.896		21.3	LOS B	41.5	297.3				

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

8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	604	-	604	3.1	1296	0.466	100	NA	NA
Lane 2	604	-	604	3.1	1296	0.466	100	NA	NA
Lane 3	604	-	604	3.1	1296	0.466	100	NA	NA
Lane 4	-	217	217	7.2	337	0.644	100	46.2	3
Approach	1812	217	2029	3.6		0.644			

East: Naree Road (E)									
Mov. From E To Exit:	L2 S	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	139	-	139	5.7	640	0.217	100	NA	NA
Lane 2	-	263	263	2.0	298	0.882	100	NA	NA
Approach	139	263	402	3.3		0.882			
North: Forest Way (N)									
Mov. From N To Exit:	L2 E	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	225	501	726	2.8	810	0.896	100	NA	NA
Lane 2	-	739	739	2.7	824	0.896	100	NA	NA
Lane 3	-	739	739	2.7	824	0.896	100	NA	NA
Approach	225	1978	2204	2.7		0.896			
	Total	%HV	Deg.Satn (v/c)						
All Vehicles	4635	3.1	0.896						

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
East: Naree Road (E)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Warringah Road/Forest Way - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Warringah Road/Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Warringah Road (E)															
Lane 1	172	1.4	172	1.4	1286	0.133	100	9.4	LOS A	3.9	27.8	Full	500	0.0	0.0
Lane 2	415	2.8	415	2.8	548	0.756	100	56.9	LOS E	24.7	177.1	Full	500	0.0	0.0
Lane 3	415	2.8	415	2.8	548	0.756	100	56.9	LOS E	24.7	177.1	Full	500	0.0	0.0
Lane 4	415	2.8	415	2.8	548	0.756	100	56.9	LOS E	24.7	177.1	Short	150	0.0	NA
Approach	1416	2.6	1416	2.6		0.756		51.1	LOS D	24.7	177.1				
North: Forest Way (N)															
Lane 1	1081	3.2	1081	3.2	1851	0.584	100	28.0	LOS B	0.0	0.0	Full	150	0.0	0.0
Lane 2	182	3.2	182	3.2	311	0.584	100	83.9	LOS F	11.0	78.8	Short	25	0.0	NA
Lane 3	6	100.0	6	100.0	193	0.033	100	93.3	LOS F	0.3	4.4	Short	25	0.0	NA
Lane 4	370	1.8	370	1.8	495[1]	0.747	100	99.5	LOS F	22.6	160.7	Full	150	0.0	11.2
Lane 5	370	1.8	370	1.8	495	0.747	100	63.3	LOS E	22.7	161.1	Full	150	0.0	11.4
Approach	2010	3.0	2010	3.0		0.747		52.9	LOS D	22.7	161.1				
West: Warringah Road (S)															
Lane 1	428	4.2	428	4.2	965	0.443	100	22.6	LOS B	15.0	108.5	Short	80	0.0	NA
Lane 2	428	4.2	428	4.2	965	0.443	100	22.6	LOS B	15.0	108.5	Short	130	0.0	NA
Lane 3	543	0.8	543	0.8	702	0.774	100	41.6	LOS C	30.9	217.6	Full	500	0.0	0.0
Lane 4	543	0.8	543	0.8	702	0.774	100	41.6	LOS C	30.9	217.6	Full	500	0.0	0.0
Approach	1942	2.3	1942	2.3		0.774		33.2	LOS C	30.9	217.6				
All Vehicles	5368	2.6	5368	2.6		0.774		45.3	LOS D	30.9	217.6				

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Approach Lane Flows (veh/h)

East: Warringah Road (E)

Mov. From E To Exit:	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	172	-	172	1.4	1286	0.133	100	NA	NA

Lane 2	-	415	415	2.8	548	0.756	100	NA	NA
Lane 3	-	415	415	2.8	548	0.756	100	NA	NA
Lane 4	-	415	415	2.8	548	0.756	100	20.0	3
Approach	172	1245	1416	2.6		0.756			

North: Forest Way (N)

Mov. From N To Exit:	L2 E	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	1081	-	1081	3.2	1851	0.584	100	NA	NA
Lane 2	182	-	182	3.2	311	0.584	100	100.0	1
Lane 3	-	6	6	100.0	193	0.033	100	0.0	4
Lane 4	-	370	370	1.8	495[1]	0.747	100	NA	NA
Lane 5	-	370	370	1.8	495	0.747	100	NA	NA
Approach	1263	747	2010	3.0		0.747			

West: Warringah Road (S)

Mov. From W To Exit:	L2 N	T1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	428	-	428	4.2	965	0.443	100	32.8	2
Lane 2	428	-	428	4.2	965	0.443	100	0.0	3
Lane 3	-	543	543	0.8	702	0.774	100	NA	NA
Lane 4	-	543	543	0.8	702	0.774	100	NA	NA
Approach	855	1087	1942	2.3		0.774			

	Total	%HV	Deg.Satn (v/c)
All Vehicles	5368	2.6	0.774

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

1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
West Exit: Warringah Road (S) Merge Type: **Priority**												
Exit Short Lane	1	125	0.0	370	374	3.07	2.05	178	1371	0.130	0.6	0.8
Merge Lane	2	-	100.0	Merge Lane is not Opposed				370	1800	0.206	0.0	0.0

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
East: Warringah Road (E)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0

Lane 4	0.0	0.0	0.0	0.0
Lane 5	0.0	0.0	0.0	0.0
West: Warringah Road (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101 [Russell Ave / Forest Way - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Russell Avenue / Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Give-Way (Two-Way)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	644	3.3	644	3.3	1825	0.353	100	1.5	LOS A	0.0	0.0	Full	110	0.0	0.0
Lane 2	652	3.3	652	3.3	1849	0.353	100	0.0	LOS A	0.0	0.0	Full	110	0.0	0.0
Lane 3	512	3.3	512	3.3	1453	0.353	100	0.0	LOS A	0.0	0.0	Full	110	-21.4 N3	0.0
Approach	1808	3.3	1808	3.3		0.353		0.6	NA	0.0	0.0				
North: Forest Way (N)															
Lane 1	242	2.2	242	2.2	1869	0.129	14 5	0.0	LOS A	0.0	0.0	Full	85	0.0	0.0
Lane 2	1208	2.2	1208	2.2	1869	0.646	69 5	0.1	LOS A	0.0	0.0	Full	85	0.0	0.0
Lane 3	389	2.2	389	2.2	602 1 5	0.646	69 5	14.2	LOS A	7.0	50.0	Full	85	0.0	0.0
Lane 4	233	0.5	233	0.5	249	0.933	100	59.4	LOS E	7.0	49.5	Short	20	0.0	NA
Approach	2072	2.0	2072	2.0		0.933		9.4	NA	7.0	50.0				
West: Russell Avenue (W)															
Lane 1	386	0.0	386	0.0	805	0.480	100	7.8	LOS A	3.1	21.5	Full	35	0.0	0.0
Lane 2	22	4.8	22	4.8	95	0.232	100	45.9	LOS D	0.6	4.6	Short	22	0.0	NA
Approach	408	0.3	408	0.3		0.480		9.9	LOS A	3.1	21.5				
All Vehicles	4288	2.4	4288	2.4		0.933		5.7	NA	7.0	50.0				

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

5 Lane under-utilisation found by the program
15 Continuous lane capacity reduced due to overflow of an opposed movement in an adjacent short lane.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	160	484	644	3.3	1825	0.353	100	NA	NA
Lane 2	-	652	652	3.3	1849	0.353	100	NA	NA

Lane 3	-	512	512	3.3	1453	0.353	100	NA	NA
Approach	160	1648	1808	3.3		0.353			
North: Forest Way (N)									
Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	242	-	242	2.2	1869	0.129	14[5]	NA	NA
Lane 2	1208	-	1208	2.2	1869	0.646	69[5]	NA	NA
Lane 3	389	-	389	2.2	602	0.646	69[5]	NA	NA
Lane 4	-	233	233	0.5	249	0.933	100	49.5	3
Approach	1839	233	2072	2.0		0.933			
West: Russell Avenue (W)									
Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	386	-	386	0.0	805	0.480	100	NA	NA
Lane 2	-	22	22	4.8	95	0.232	100	0.0	1
Approach	386	22	408	0.3		0.480			
	Total	%HV	Deg.Satn (v/c)						
All Vehicles	4288	2.4	0.933						

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

5 Lane under-utilisation found by the program

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.											

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
West: Russell Avenue (W)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0

LANE SUMMARY

Site: 101v [Forest Way Entry to Centre - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Forest Way Entry to Centre
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Forest Way (S)															
Lane 1	670	2.1	670	2.1	1136	0.590	100	6.3	LOS A	10.6	75.3	Full	180	0.0	0.0
Lane 2	674	3.4	674	3.4	1142	0.590	100	3.2	LOS A	8.9	64.5	Full	150	0.0	0.0
Lane 3	674	3.4	674	3.4	1142	0.590	100	5.5	LOS A	13.3	95.6	Full	150	0.0	0.0
Approach	2017	3.0	2017	3.0		0.590		5.0	LOS A	13.3	95.6				
North: Forest Way (N)															
Lane 1	647	2.3	647	2.3	1609	0.402	100	0.3	LOS A	1.8	12.7	Full	110	0.0	0.0
Lane 2	574	2.3	574	2.3	1428	0.402	100	0.2	LOS A	1.2	8.4	Full	110	-11.2 N3	0.0
Lane 3	573	2.3	573	2.3	1425	0.402	100	1.4	LOS A	5.7	40.8	Full	110	-11.4 N3	0.0
Lane 4	125	0.0	125	0.0	364	0.344	100	61.4	LOS E	7.6	53.1	Short	60	0.0	NA
Approach	1919	2.1	1919	2.1		0.402		4.6	LOS A	7.6	53.1				
West: Centre Entry (W)															
Lane 1	84	0.0	84	0.0	89	0.945	100	89.0	LOS F	6.5	45.4	Full	500	-8.3 N7	0.0
Lane 2	72	0.0	72	0.0	76	0.945	100	89.3	LOS F	5.5	38.8	Short	25	-11.4 N3	NA
Approach	156	0.0	156	0.0		0.945		89.1	LOS F	6.5	45.4				
All Vehicles	4092	2.5	4092	2.5		0.945		8.0	LOS A	13.3	95.6				

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

N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N7 The capacity reduction has been determined from the queue blockage probability based on the Back of Queue value of a Site further downstream.

Approach Lane Flows (veh/h)

South: Forest Way (S)

Mov. From S To Exit:	L2 W	T1 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	260	410	670	2.1	1136	0.590	100	NA	NA
Lane 2	-	674	674	3.4	1142	0.590	100	NA	NA
Lane 3	-	674	674	3.4	1142	0.590	100	NA	NA
Approach	260	1757	2017	3.0		0.590			

North: Forest Way (N)									
Mov. From N To Exit:	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	647	-	647	2.3	1609	0.402	100	NA	NA
Lane 2	574	-	574	2.3	1428	0.402	100	NA	NA
Lane 3	573	-	573	2.3	1425	0.402	100	NA	NA
Lane 4	-	125	125	0.0	364	0.344	100	0.0	3
Approach	1794	125	1919	2.1		0.402			
West: Centre Entry (W)									
Mov. From W To Exit:	L2 N	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	24	60	84	0.0	89	0.945	100	NA	NA
Lane 2	-	72	72	0.0	76	0.945	100	45.2	1
Approach	24	132	156	0.0		0.945			
	Total	%HV	Deg.Satn (v/c)						
All Vehicles	4092	2.5	0.945						

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

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
There are no Exit Short Lanes for Merge Analysis at this Site.												

Variable Demand Analysis

	Initial Queued Demand veh	Residual Queued Demand veh	Time for Residual Demand to Clear sec	Duration of Oversatn sec
South: Forest Way (S)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
North: Forest Way (N)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0
Lane 3	0.0	0.0	0.0	0.0
Lane 4	0.0	0.0	0.0	0.0
West: Centre Entry (W)				
Lane 1	0.0	0.0	0.0	0.0
Lane 2	0.0	0.0	0.0	0.0

ANNEXURE C: FUTURE AVERAGE AND 95TH PERCENTILE QUEUE OUTPUTS

(12 SHEETS)

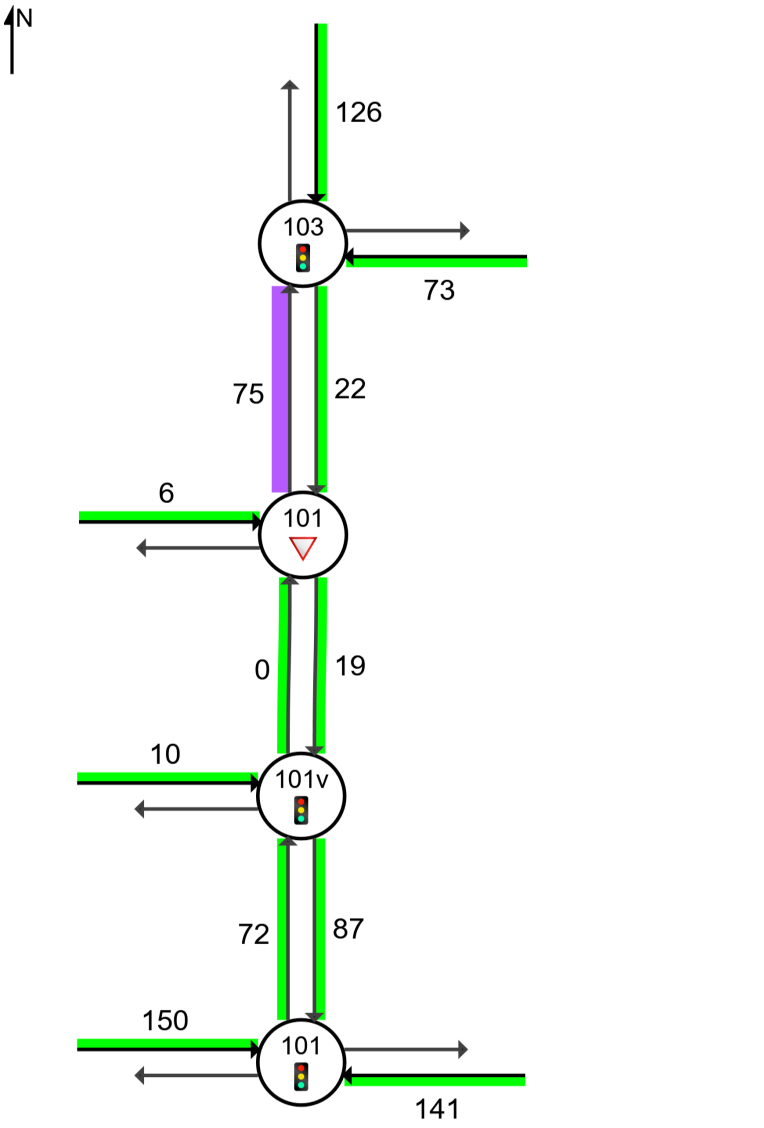
QUEUE DISTANCE (AVERAGE)

Largest Average Back of Queue Distance for any lane on the approach (metres)

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)
Network Cycle Time = 130 seconds (Network User-Given Cycle Time)



Colour code based on Queue Storage Ratio

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

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

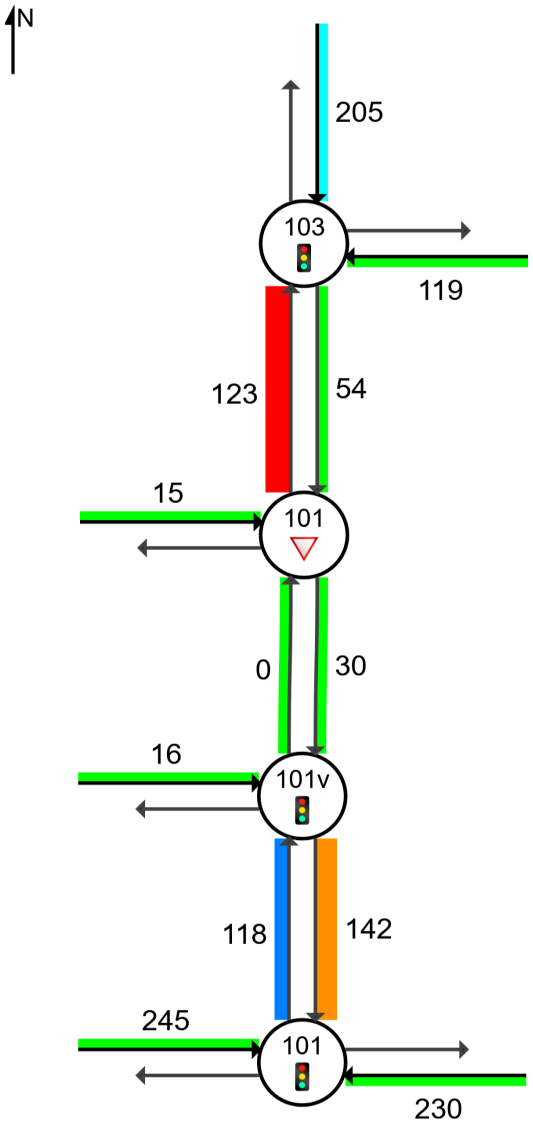
QUEUE DISTANCE (PERCENTILE)

Largest 95% Back of Queue Distance for any lane on the approach (metres)

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)
Network Cycle Time = 130 seconds (Network User-Given Cycle Time)



Colour code based on Queue Storage Ratio

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

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

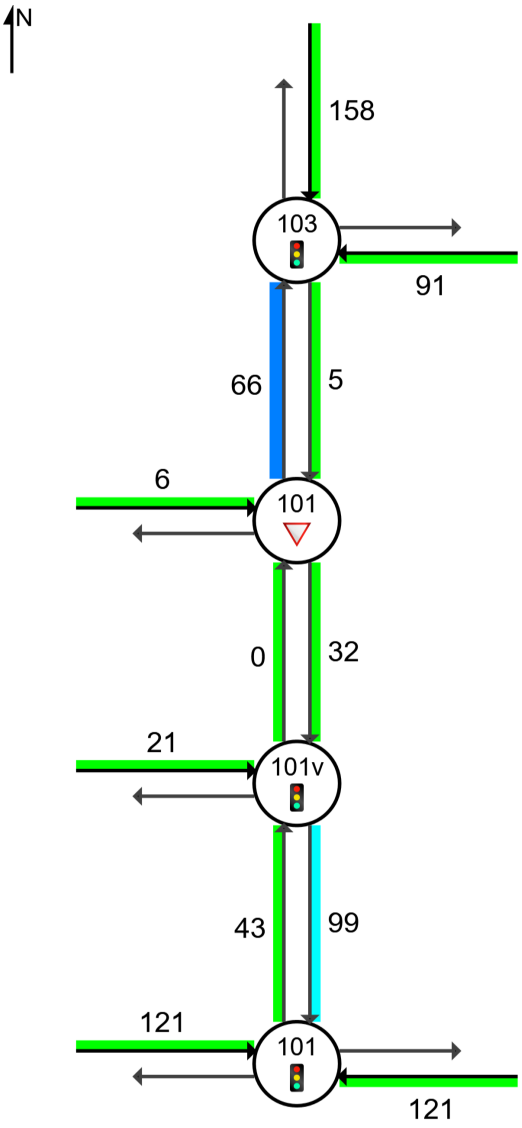
QUEUE DISTANCE (AVERAGE)

Largest Average Back of Queue Distance for any lane on the approach (metres)

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)
Network Cycle Time = 130 seconds (Network User-Given Cycle Time)



Colour code based on Queue Storage Ratio

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

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

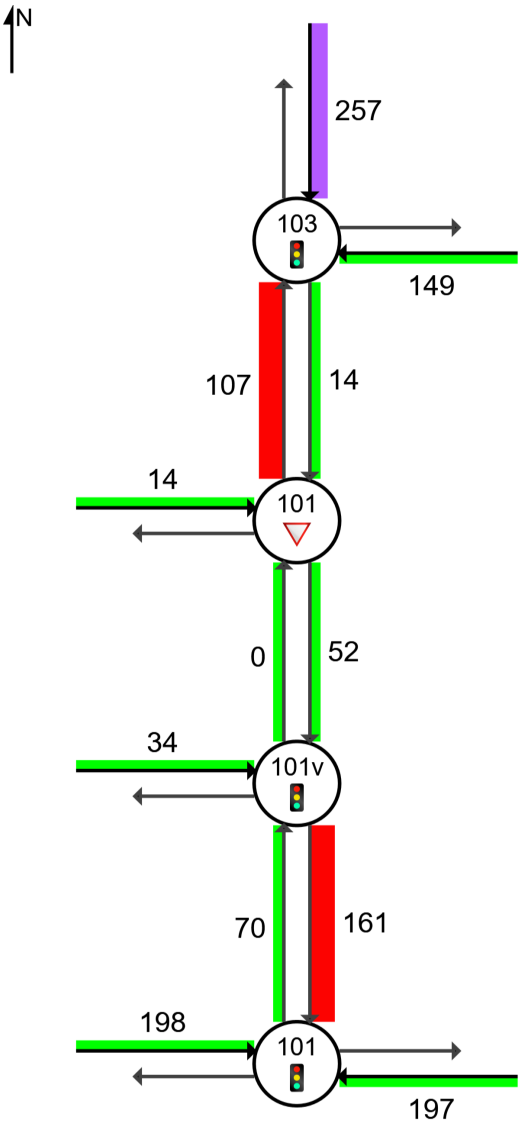
QUEUE DISTANCE (PERCENTILE)

Largest 95% Back of Queue Distance for any lane on the approach (metres)

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)
Network Cycle Time = 130 seconds (Network User-Given Cycle Time)



Colour code based on Queue Storage Ratio

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

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

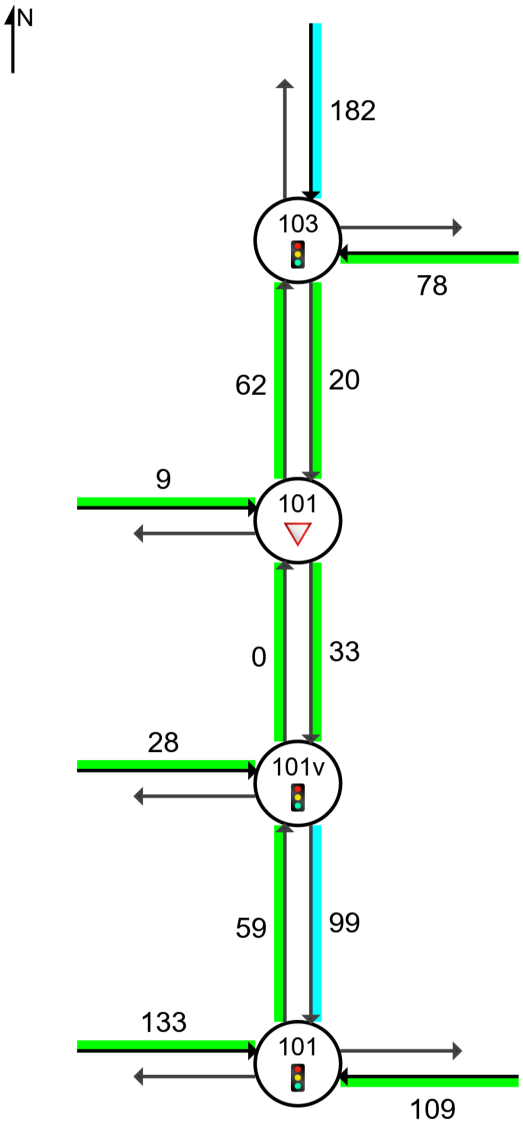
QUEUE DISTANCE (AVERAGE)

Largest Average Back of Queue Distance for any lane on the approach (metres)

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)
Network Cycle Time = 130 seconds (Network User-Given Cycle Time)



Colour code based on Queue Storage Ratio

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

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

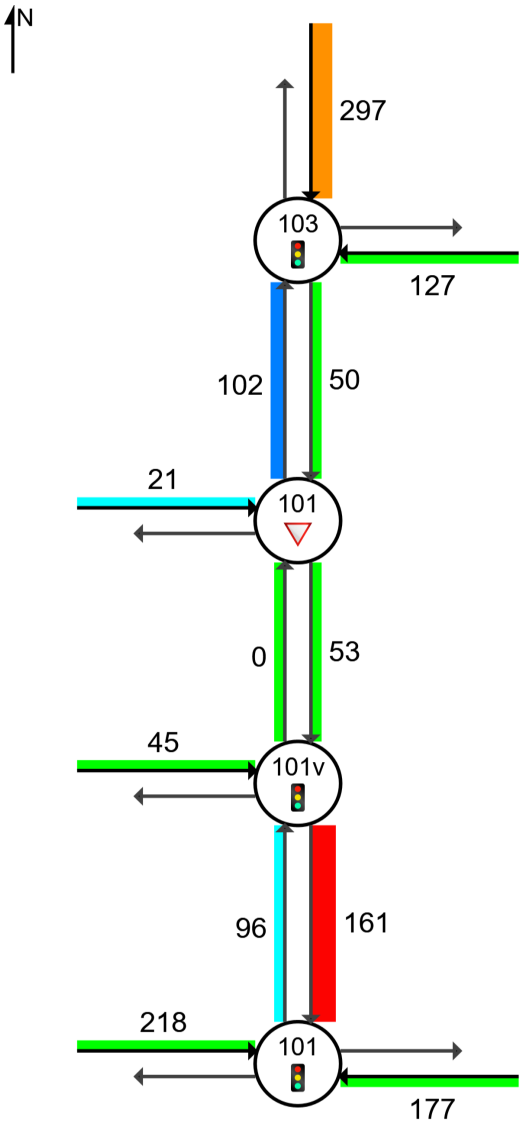
QUEUE DISTANCE (PERCENTILE)

Largest 95% Back of Queue Distance for any lane on the approach (metres)

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)
Network Cycle Time = 130 seconds (Network User-Given Cycle Time)



Colour code based on Queue Storage Ratio

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

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

ANNEXURE D: NETWORK TIMING REPORTS

(24 SHEETS)

PHASING SUMMARY

Site: 103 [Naree Rd / Forest Way (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Naree Road / Forest Way
2036 AM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

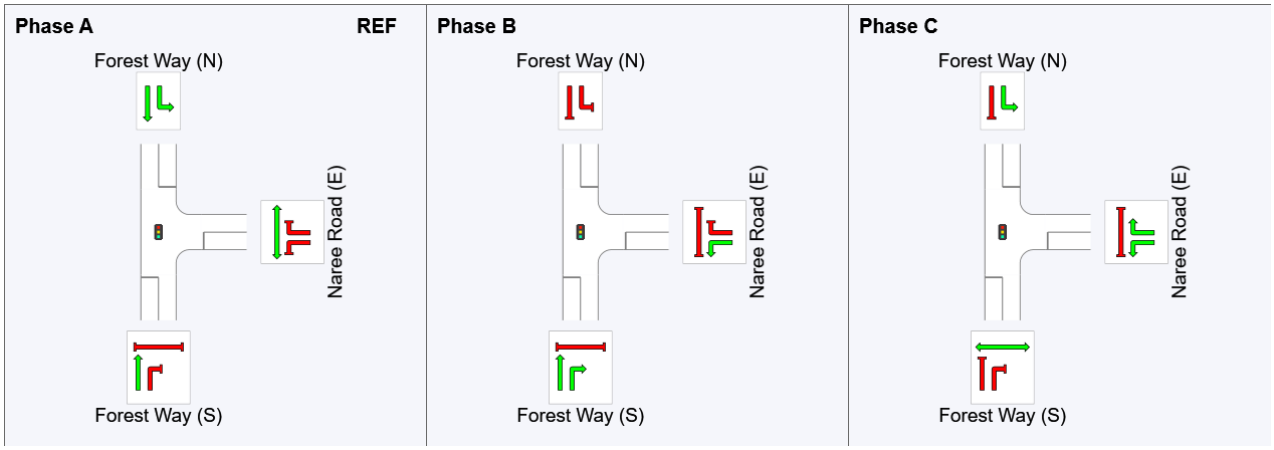
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: TCS 4706
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A
Offset: 103 seconds (Program)

Phase Timing Summary

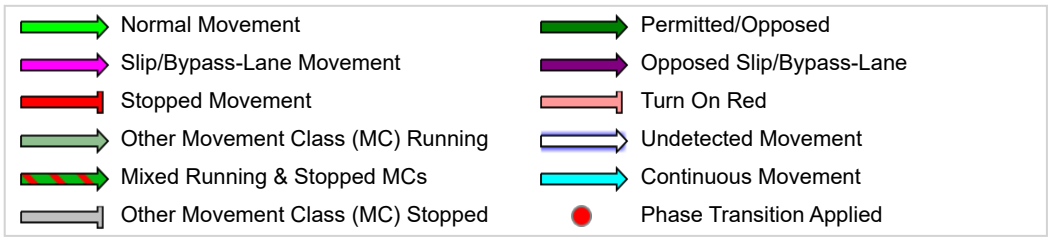
Phase	A	B	C
Phase Change Time (sec)	102	48	74
Green Time (sec)	68	18	20
Phase Time (sec)	76	26	28
Phase Split	58%	20%	22%
Phase Frequency (%)	100.0	100.0	100.0

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

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 101 [Warringah Road/Forest Way (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Warringah Road/Forest Way
2036 AM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

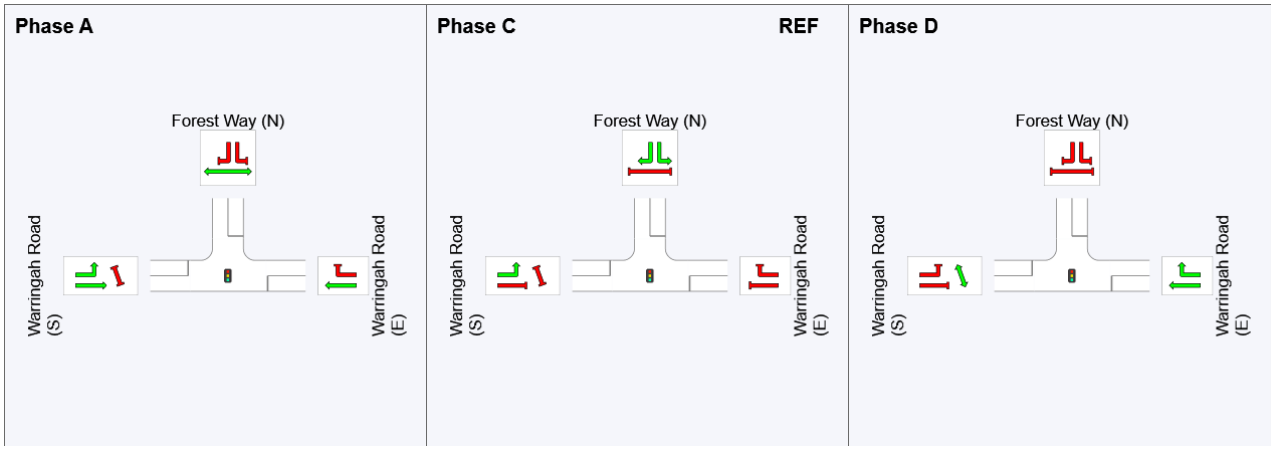
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: TCS 0007
Input Phase Sequence: A, C, D
Output Phase Sequence: A, C, D
Reference Phase: Phase C
Offset: 0 seconds (Program)

Phase Timing Summary

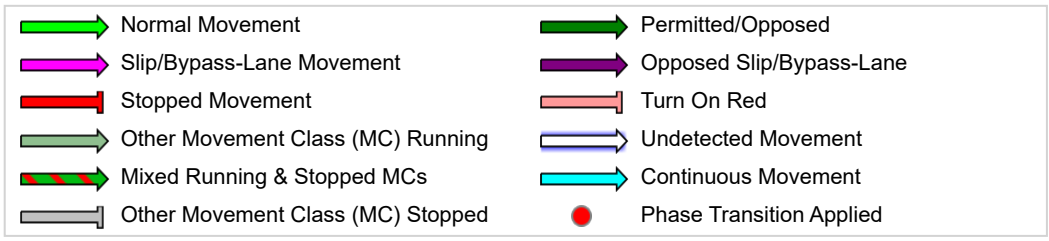
Phase	A	C	D
Phase Change Time (sec)	85	0	54
Green Time (sec)	36	47	21
Phase Time (sec)	43	57	30
Phase Split	33%	44%	23%
Phase Frequency (%)	100.0	100.0	100.0

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

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 101v [Forest Way Entry to Centre (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Forest Way Entry to Centre
2036 AM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Convert Function Default
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A
Offset: 122 seconds (Program)

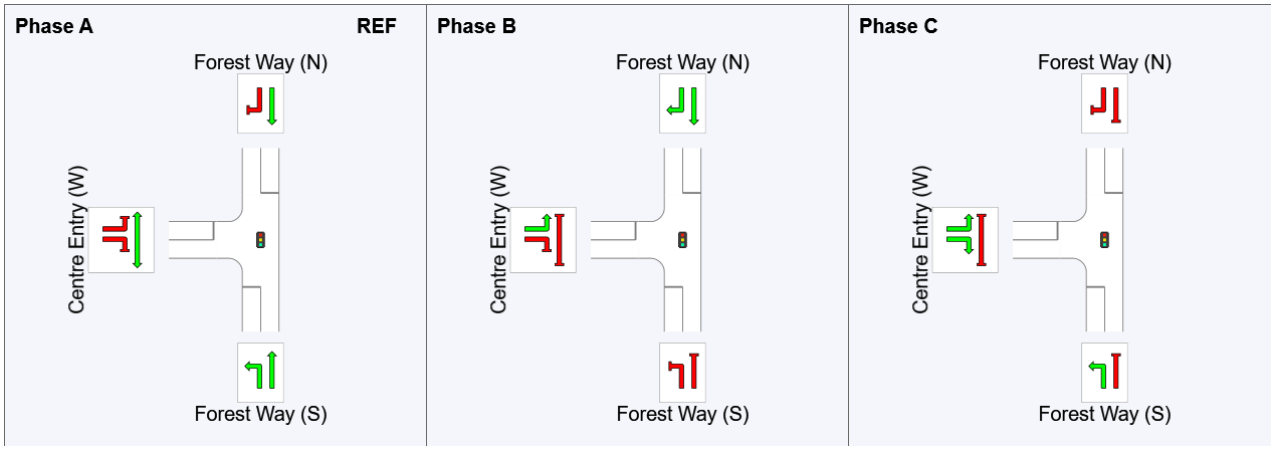
Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	123	94	111
Green Time (sec)	95	11	6
Phase Time (sec)	101	17	12
Phase Split	78%	13%	9%
Phase Frequency (%)	100.0[4]	100.0[4]	100.0

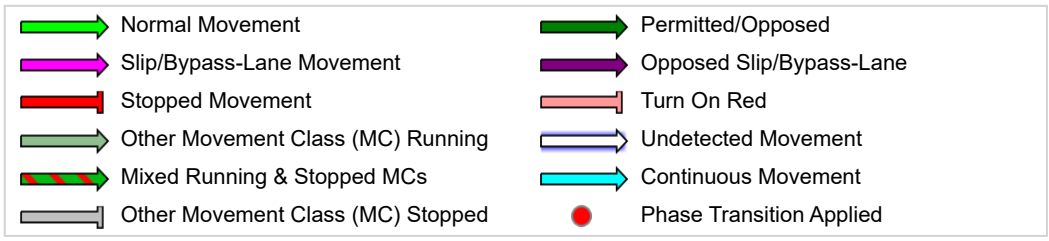
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

4 Phase Frequency specified by the user (phase times not specified).

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



NETWORK SIGNAL PHASE TIMINGS

Network: N101 [AM (Network Folder: 2036 Plus Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)
Network Cycle Time = 130 seconds (Network User-Given Cycle Time)

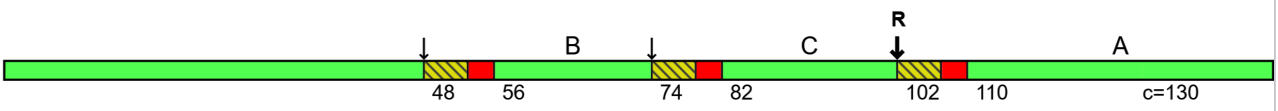
Offset Definition: Green Start
Reference Site / CCG: 101 [Warringah Road/Forest Way][1]

CCGs that exist will be listed first followed by other Network Sites. The order of CCGs and Sites is as in the Network Timing dialog, Signal Coordination table.

Displayed Phase Times for Sites/CCGs

Network Sites

Site: 103 [Naree Rd / Forest Way (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

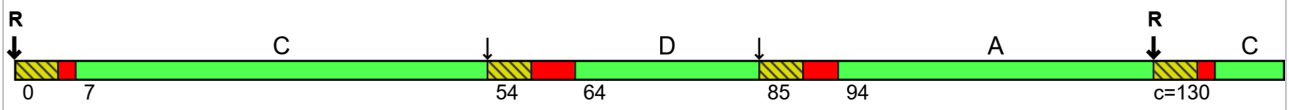


Cycle Time = 130 seconds (Network User-Given Cycle Time)
Phase Sequence: TCS 4706
Reference Phase: A
Offset: 103

Phase	A	B	C
Phase Change Time (sec)	102	48	74
Green Time (sec)	68	18	20
Phase Time (sec)	76	26	28
Phase Split	58%	20%	22%

Site: 101 [Warringah Road/Forest Way (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

Reference Site



Cycle Time = 130 seconds (Network User-Given Cycle Time)
Phase Sequence: TCS 0007
Reference Phase: C
Offset: 0

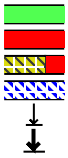
Phase	A	C	D
Phase Change Time (sec)	85	0	54
Green Time (sec)	36	47	21
Phase Time (sec)	43	57	30
Phase Split	33%	44%	23%

Site: 101v [Forest Way Entry to Centre (Site Folder: FU AM - 2036 + Dev + Ped Overpass + Passing)]

Cycle Time = 130 seconds (Network User-Given Cycle Time)
Phase Sequence: Convert Function Default
Reference Phase: A

Offset: 122

Phase	A	B	C
Phase Change Time (sec)	123	94	111
Green Time (sec)	95	11	6
Phase Time (sec)	101	17	12
Phase Split	78%	13%	9%


Green Interval
Red Interval
Intergreen
Reduced Intergreen
Phase Change
Reference Phase Change

1 Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab. This Site / CCG is included in the Route with the highest Offset Priority and is used in offset calculations.

PHASING SUMMARY

Site: 103 [Naree Rd / Forest Way (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Naree Road / Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

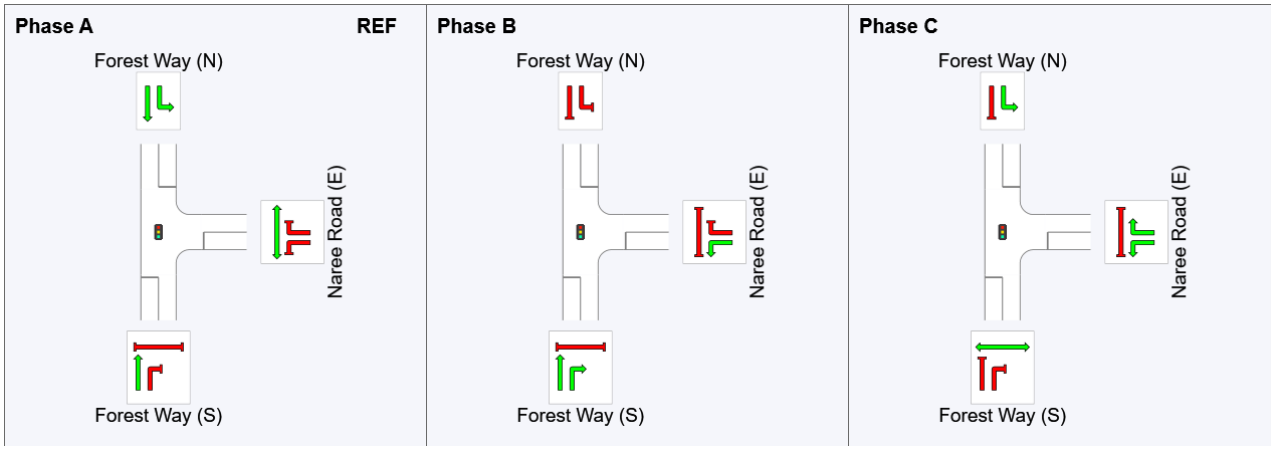
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: TCS 4706
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A
Offset: 57 seconds (Program)

Phase Timing Summary

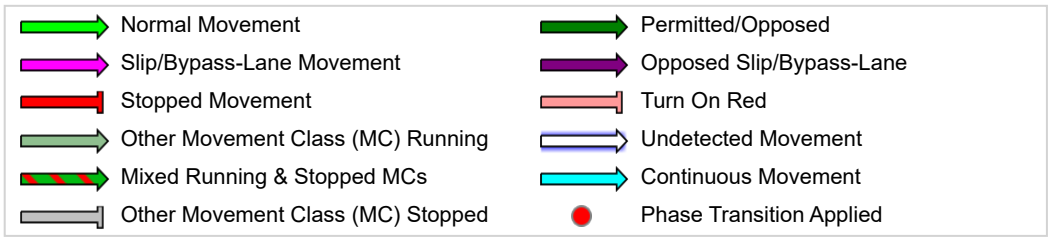
Phase	A	B	C
Phase Change Time (sec)	56	123	27
Green Time (sec)	59	26	21
Phase Time (sec)	67	34	29
Phase Split	52%	26%	22%
Phase Frequency (%)	100.0	100.0	100.0

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

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 101 [Warringah Road/Forest Way (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Warringah Road/Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

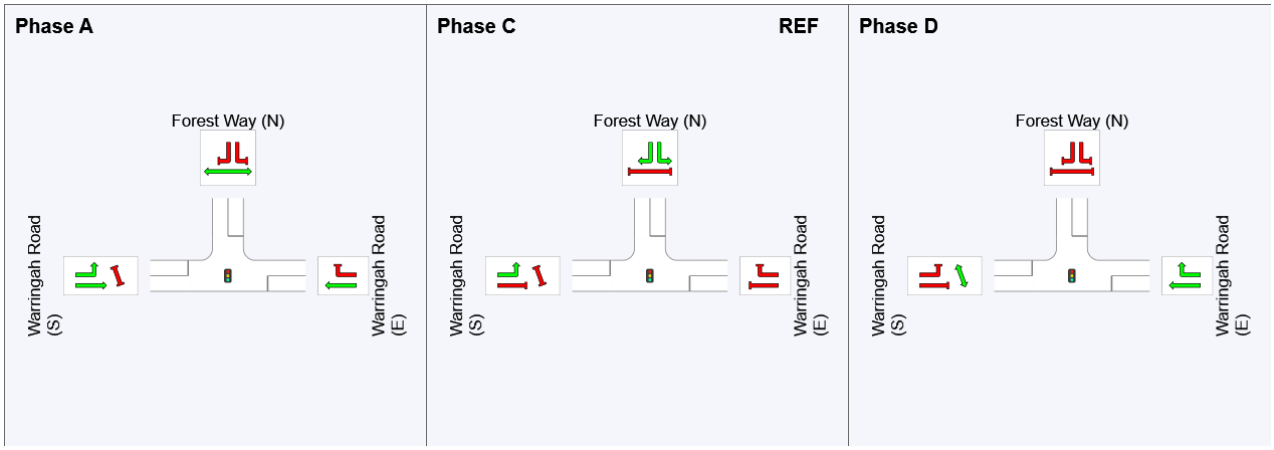
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: TCS 0007
Input Phase Sequence: A, C, D
Output Phase Sequence: A, C, D
Reference Phase: Phase C
Offset: 0 seconds (Program)

Phase Timing Summary

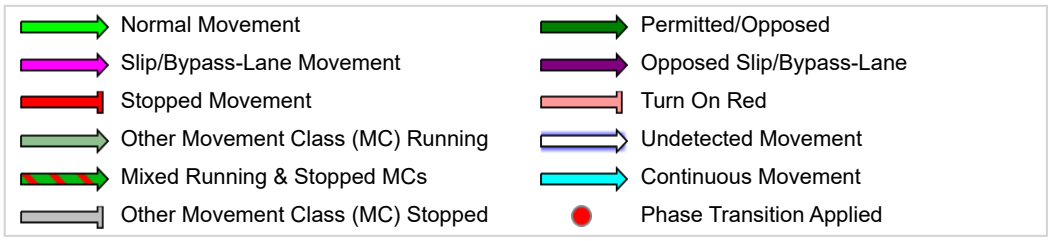
Phase	A	C	D
Phase Change Time (sec)	80	0	32
Green Time (sec)	41	25	38
Phase Time (sec)	48	35	47
Phase Split	37%	27%	36%
Phase Frequency (%)	100.0	100.0	100.0

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

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 101v [Forest Way Entry to Centre (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Forest Way Entry to Centre
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

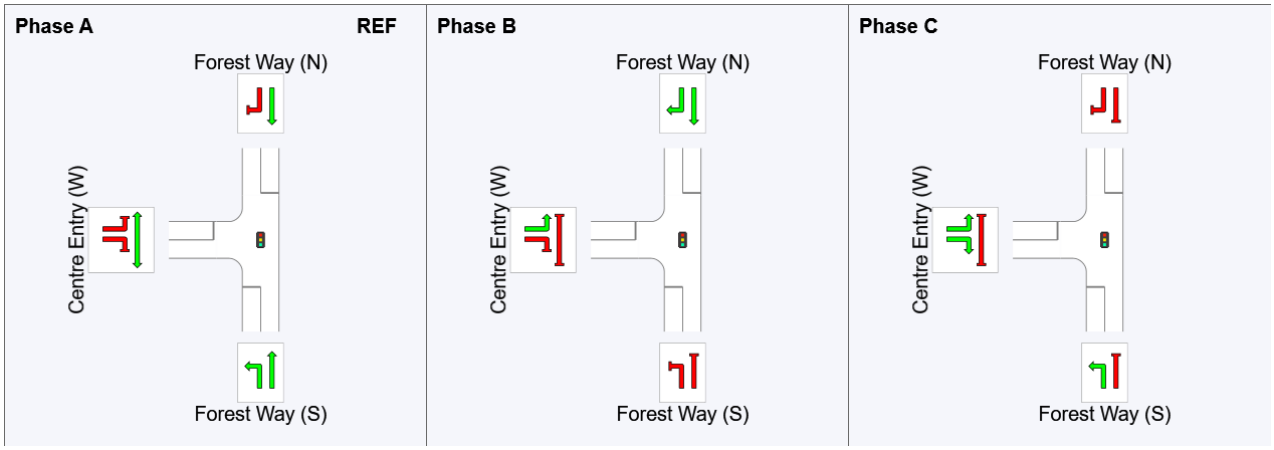
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Convert Function Default
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A
Offset: 48 seconds (Program)

Phase Timing Summary

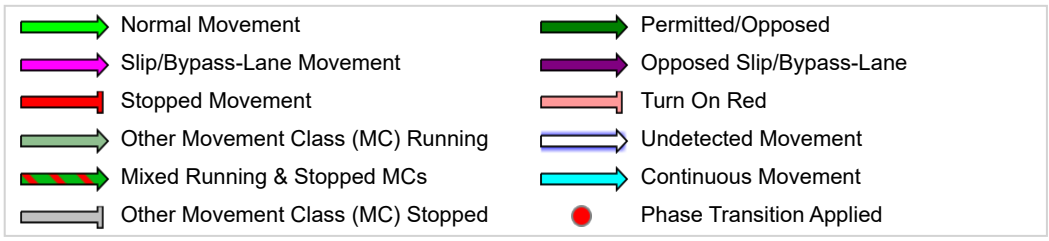
Phase	A	B	C
Phase Change Time (sec)	49	7	37
Green Time (sec)	82	24	6
Phase Time (sec)	88	30	12
Phase Split	68%	23%	9%
Phase Frequency (%)	100.0	100.0	100.0

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

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



NETWORK SIGNAL PHASE TIMINGS

Network: N101 [PM (Network Folder: 2036 Plus Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)
Network Cycle Time = 130 seconds (Network User-Given Cycle Time)

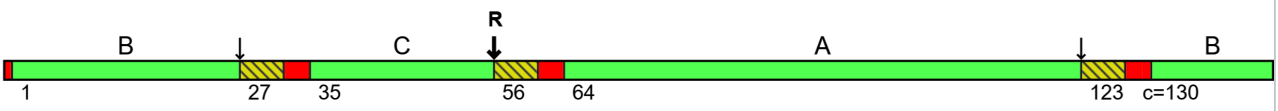
Offset Definition: Green Start
Reference Site / CCG: 101 [Warringah Road/Forest Way][1]

CCGs that exist will be listed first followed by other Network Sites. The order of CCGs and Sites is as in the Network Timing dialog, Signal Coordination table.

Displayed Phase Times for Sites/CCGs

Network Sites

Site: 103 [Naree Rd / Forest Way (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]



Cycle Time = 130 seconds (Network User-Given Cycle Time)
Phase Sequence: TCS 4706
Reference Phase: A
Offset: 57

Phase	A	B	C
Phase Change Time (sec)	56	123	27
Green Time (sec)	59	26	21
Phase Time (sec)	67	34	29
Phase Split	52%	26%	22%

Site: 101 [Warringah Road/Forest Way (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]

Reference Site

Cycle Time = 130 seconds (Network User-Given Cycle Time)
Phase Sequence: TCS 0007
Reference Phase: C
Offset: 0

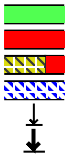
Phase	A	C	D
Phase Change Time (sec)	80	0	32
Green Time (sec)	41	25	38
Phase Time (sec)	48	35	47
Phase Split	37%	27%	36%

Site: 101v [Forest Way Entry to Centre (Site Folder: PM - Dec 2024 + Dev + Ped Overpass + Passing)]

Cycle Time = 130 seconds (Network User-Given Cycle Time)
Phase Sequence: Convert Function Default
Reference Phase: A

Offset: 48

Phase	A	B	C
Phase Change Time (sec)	49	7	37
Green Time (sec)	82	24	6
Phase Time (sec)	88	30	12
Phase Split	68%	23%	9%


Green Interval
Red Interval
Intergreen
Reduced Intergreen
Phase Change
Reference Phase Change

1 Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab. This Site / CCG is included in the Route with the highest Offset Priority and is used in offset calculations.

PHASING SUMMARY

Site: 103 [Naree Rd / Forest Way - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Naree Road / Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

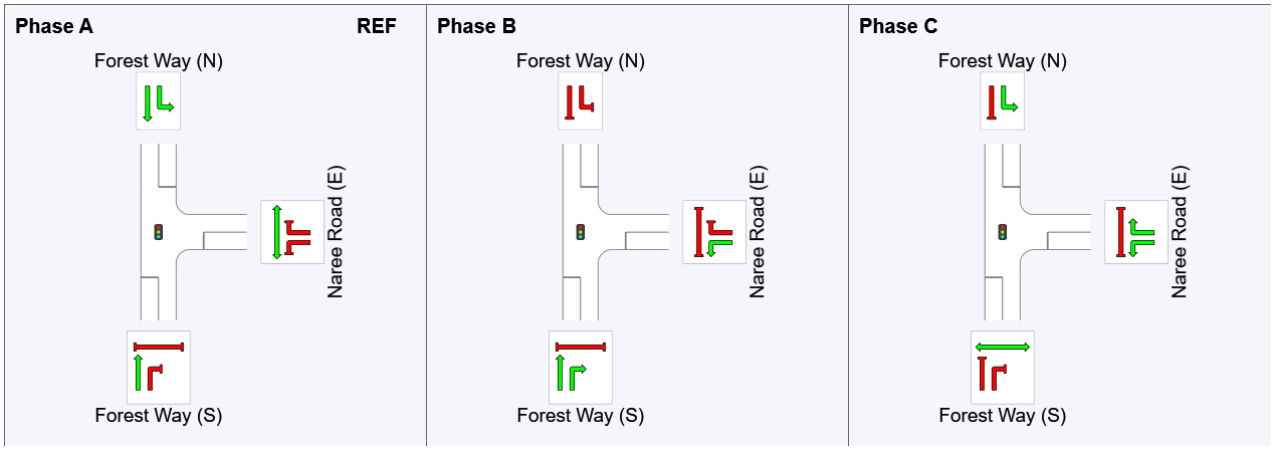
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: TCS 4706
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A
Offset: 57 seconds (Program)

Phase Timing Summary

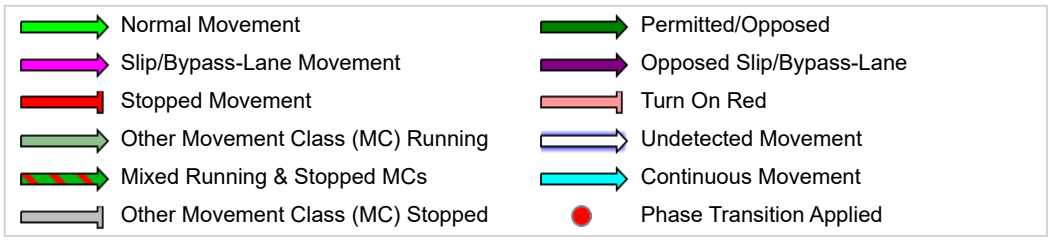
Phase	A	B	C
Phase Change Time (sec)	56	126	30
Green Time (sec)	62	26	18
Phase Time (sec)	70	34	26
Phase Split	54%	26%	20%
Phase Frequency (%)	100.0	100.0	100.0

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

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 101 [Warringah Road/Forest Way - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Warringah Road/Forest Way
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

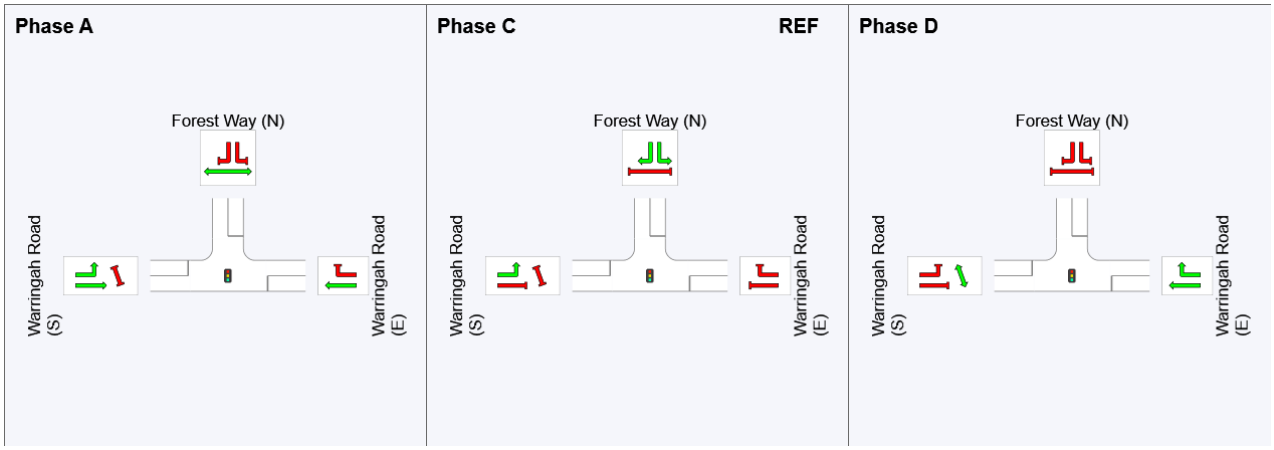
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: TCS 0007
Input Phase Sequence: A, C, D
Output Phase Sequence: A, C, D
Reference Phase: Phase C
Offset: 0 seconds (Program)

Phase Timing Summary

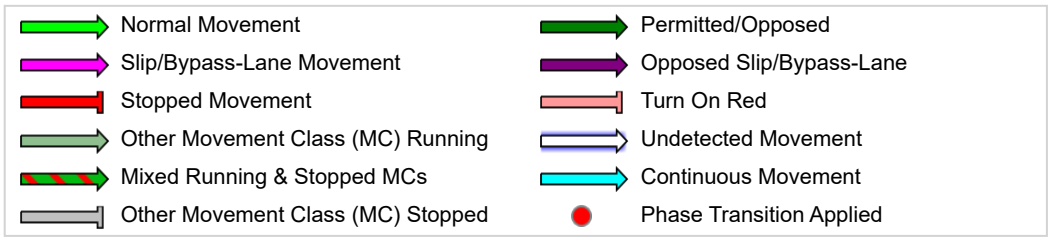
Phase	A	C	D
Phase Change Time (sec)	75	0	32
Green Time (sec)	46	25	33
Phase Time (sec)	53	35	42
Phase Split	41%	27%	32%
Phase Frequency (%)	100.0	100.0	100.0

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

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 101v [Forest Way Entry to Centre - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Forest Way Entry to Centre
2036 PM Peak + Dev Growth
New FW Signals
Site Category: 2036 + Development Traffic + 28% Passing Trade
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Network User-Given Cycle Time)

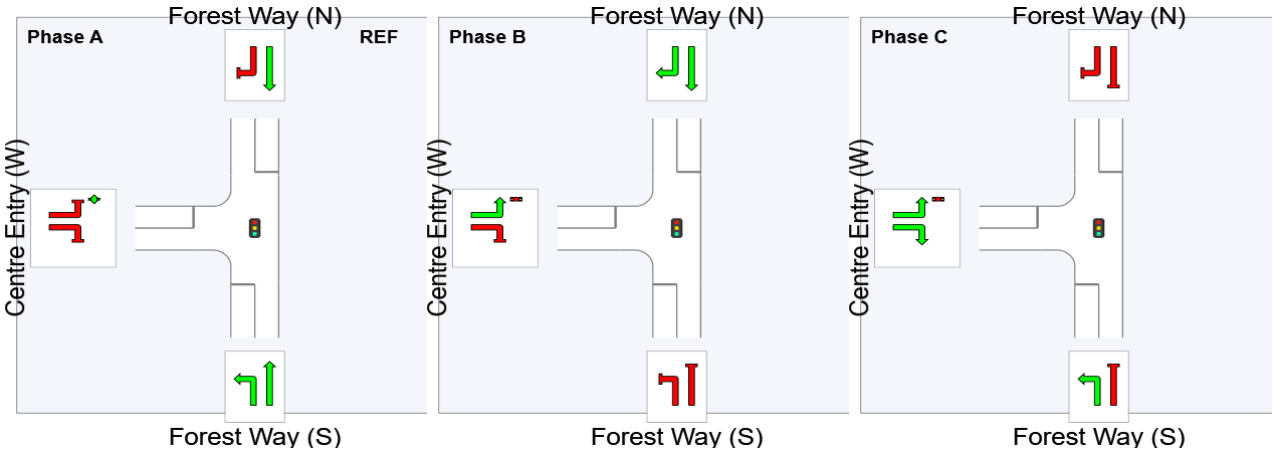
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Convert Function Default
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A
Offset: 48 seconds (Program)

Phase Timing Summary

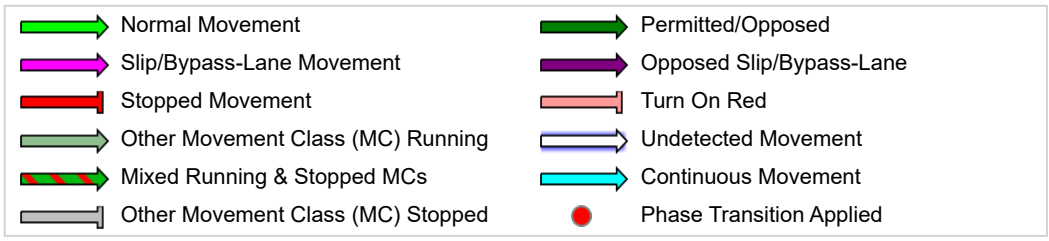
Phase	A	B	C
Phase Change Time (sec)	49	5	37
Green Time (sec)	80	26	6
Phase Time (sec)	86	32	12
Phase Split	66%	25%	9%
Phase Frequency (%)	100.0	100.0	100.0

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

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



NETWORK SIGNAL PHASE TIMINGS

Network: N101 [WE (Network Folder: 2036 Plus Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Network
Network Category: (None)
Network Cycle Time = 130 seconds (Network User-Given Cycle Time)

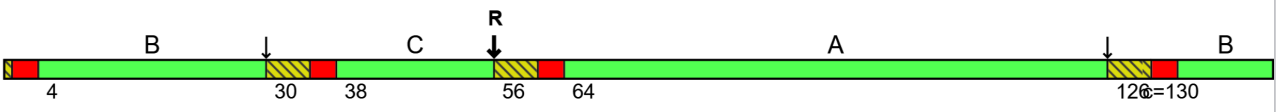
Offset Definition: Green Start
Reference Site / CCG: 101 [Warringah Road/Forest Way - Copy (2)][1]

CCGs that exist will be listed first followed by other Network Sites. The order of CCGs and Sites is as in the Network Timing dialog, Signal Coordination table.

Displayed Phase Times for Sites/CCGs

Network Sites

Site: 103 [Naree Rd / Forest Way - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

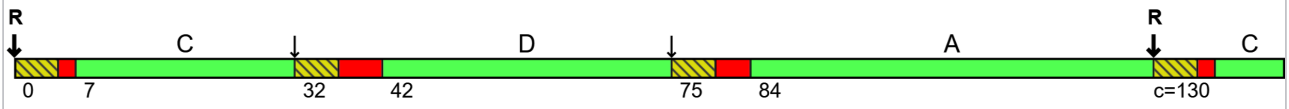


Cycle Time = 130 seconds (Network User-Given Cycle Time)
Phase Sequence: TCS 4706
Reference Phase: A
Offset: 57

Phase	A	B	C
Phase Change Time (sec)	56	126	30
Green Time (sec)	62	26	18
Phase Time (sec)	70	34	26
Phase Split	54%	26%	20%

Site: 101 [Warringah Road/Forest Way - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

Reference Site



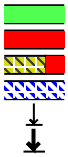
Cycle Time = 130 seconds (Network User-Given Cycle Time)
Phase Sequence: TCS 0007
Reference Phase: C
Offset: 0

Phase	A	C	D
Phase Change Time (sec)	75	0	32
Green Time (sec)	46	25	33
Phase Time (sec)	53	35	42
Phase Split	41%	27%	32%

Site: 101v [Forest Way Entry to Centre - Copy (2) (Site Folder: WE - Dec 2024 + Dev + Ped Overpass + Passing Trade)]

Cycle Time = 130 seconds (Network User-Given Cycle Time)
Phase Sequence: Convert Function Default
Reference Phase: A
Offset: 48

Phase	A	B	C
Phase Change Time (sec)	49	5	37
Green Time (sec)	80	26	6
Phase Time (sec)	86	32	12
Phase Split	66%	25%	9%


Green Interval
Red Interval
Intergreen
Reduced Intergreen
Phase Change
Reference Phase Change

1 Reference Site / CCG as specified in the Network Timing dialog, Network Timing Data tab. This Site / CCG is included in the Route with the highest Offset Priority and is used in offset calculations.