15 July 2019 181457 TAAA

Health Infrastructure
Level 14, 77 Pacific Highway
North Sydney NSW 2060

SSD 9536 Wyong Hospital Redevelopment

Updated SIDRA Analysis (addressing Roads and Maritime comments)

Dear sirs/madams,

TTW has reviewed the contents of Roads and Maritime Services' (Roads and Maritime) letter dated 1 July 2019 and updated the SIDRA intersection analysis modelling to reflect the following requested changes:

- A lower lane saturation capacity value of 1850 tcu/h for through movements and 1810 tcu/h for shared and turning movements has been applied.
- Lane utilisation for lane 3 of Pacific Highway East approach has been adjusted to 25% to reflect SCATS counts.
- Cycle time has been changed to a practical cycle time with an upper limit of 130 seconds, to reflect that the site has no fixed cycle time.
- The signals and the on-site roundabout are modelled as a network. Reporting of results is as per the default parameters on SIDRA.

Implementation of these parameters has also included clarification of the details with Roads and Maritime via email on 8 July 2019.

Roads and Maritime's letter also provided comment on results of the previous analysis models, including:

1. Satisfactory operation of through movements and right-turn movements in the 2028 AM scenario without development traffic.
2. Poor performance of the right-turn from the Pacific Highway into the site in the 2028 AM scenario with addition of development traffic, including high DOS and queue length greater than the turning bay (with continued satisfactory operation of through movements).
3. Optimum cycle time scenarios compromising the operation of through movements on the Highway.
4. The proposal for an extended right-turn bay providing minimal improvement to intersection performance.
5. DOS of the highway eastbound calculated at 0.85 under the lane capacity recommended by RMS.
6. Capacity improvements required to mitigate the impact on the highway from this development should be further investigated and resubmitted.

We have provided response to these comments in the later sections of this letter report, following the updated modelling results.

The remainder of this document outlines the key results of the updated modelling, the impacts on the local road network, and the recommended strategy for future traffic conditions and conditions of approval.

Intersection Operation – Morning Peak

After incorporating the updated modelling parameters the overall operation of the Pacific Highway intersection during the morning peak is outlined in Table 1, with detailed modelling results provided in **Attachment A**.

Table 1: Summary of intersection modelling results – AM Peak

Scenario	Leg	AM Peak			
		DOS	Delay (sec)	Avg Queue Length (m)	LOS
2018 (Existing)	Craigie Avenue	0.64	48	43	D
	Pacific Highway (East)	0.85	36	146	C
	Hospital Rd	0.21	27	14	B
	Pacific Highway (West)	0.87	49	56	D
	Overall	**0.87**	**41**	**146**	**C**
2021 (No development)	Craigie Avenue	0.70	52	50	D
	Pacific Highway (East)	0.87	37	166	C
	Hospital Rd	0.22	30	15	C
	Pacific Highway (West)	0.88	52	62	D
	Overall	**0.88**	**43**	**166**	**D**
2021+ Development	Craigie Avenue	0.71	53	50	D
	Pacific Highway (East)	0.87	38	166	C
	Hospital Rd	0.24	29	17	C
	Pacific Highway (West)	0.88	52	63	D
	Overall	**0.88**	**44**	**166**	**D**
2028 (No development)	Craigie Avenue	0.75	54	59	D
	Pacific Highway (East)	1.06	78	330	F
	Hospital Rd	0.22	30	15	C
	Pacific Highway (West)	1.02	58	71	E
	Overall	**1.06**	**66**	**330**	**E**
2028+ Development	Craigie Avenue	0.82	56	63	D
	Pacific Highway (East)	1.08	83	343	F
	Hospital Rd	0.29	30	20	C
	Pacific Highway (West)	1.02	62	80	E
	Overall	**1.1**	**69**	**343**	**E**

Existing Operations

The modelling results demonstrate that the intersection currently operates well, at an overall Level of Service (LOS) C, and a maximum average queue length of 146 metres on the east approach of the Pacific Highway. This maximum queue relates to the through traffic (see following sections for details of turning movements). The degree of saturation on the east and west approaches of the Pacific Highway are currently 0.85 and 0.87 respectively, which is slightly above the limit of 0.85 recommended by Roads and Maritime.

2021 Operations

Modelling background growth only to 2021, the intersection performance deteriorates slightly with an increase in the maximum queue of 20 metres (on Pacific Highway east approach), additional delay of approximately 2 seconds, and decrease to LOS D. Therefore, in the expected opening year of the hospital development, background traffic growth will have resulted in some decrease to performance.

With the addition of development traffic for the opening year 2021, there is no increase to overall average maximum queue length, negligible changes to vehicle delay, and overall LOS D is maintained as per the background growth scenario.

2028 Operations

For the year 2028 under background growth only, the intersection is operating at capacity. Maximum queue length is expected to increase from 146 metres under existing conditions to 330 metres under background growth alone. Delay is also expected to increase by 60% from 41 seconds to 66 seconds, reducing the overall operation to LOS E. Therefore, background traffic growth will have resulted in significant decreases to performance with no impacts from any growth of hospital traffic.

With the addition of development traffic for the year 2028, there are minor decreases in performance relative to the background growth scenario. Queue lengths are increased by 13 metres (less than 4%), delay is increased by 3 seconds (less than 5%), and overall LOS E is maintained.

Intersection Operation – Morning Peak – East Approach

Taking account of the updated modelling parameters, separated results for the east approach lanes during the morning peak are provided in Table 2.

Table 2: Intersection modelling results for the east approach of the Pacific Highway

Scenario	Turn	AM Peak			
		DOS	Delay (sec)	Average Queue	LOS
2018 Existing	Left turn	0.09	8	0	A
	Through	0.85	34	146	C
	Right turn	0.68	48	71	D
	Overall	**0.85**	**36**	**146**	**C**
2021 (No development)	Left turn	0.09	8	0	A
	Through	0.87	35	166	C
	Right turn	0.66	50	75	D
	Overall	**0.87**	**37**	**166**	**C**
2021+ Development	Left turn	0.09	8	0	A
	Through	0.87	36	167	C
	Right turn	0.72	50	86	D
	Overall	**0.87**	**37**	**167**	**C**
2028 (No development)	Left turn	0.11	8	0	A
	Through	1.06	98	330	F
	Right turn	0.70	52	78	D
	Overall	**1.06**	**78**	**330**	**F**
2028+ Development	Left turn	0.11	8	0	A
	Through	1.08	108	343	F
	Right turn	0.82	54	111	D
	Overall	**1.08**	**83**	**343**	**F**

The modelling results demonstrate that all manoeuvres on the east approach currently operate well, with critical delay occurring for the right-turn lane into the hospital site, and critical queue lengths occurring for the through traffic.

As discussed above, the maximum queue lengths for the east approach occur on the through traffic lane. While this queue length grows from the existing condition to the 2021 (background) and 2028 (background) conditions, the addition of the hospital development traffic results in negligible increases. Impact to external traffic as a result of the hospital development is therefore minimal, in the order of 1 second additional delay in the year 2021.

Higher increases in queue lengths occur for the right-turn lane into the hospital site with addition of the development traffic. Naturally, this is to be expected, as this is the lane that services the hospital. With the addition of development traffic through to year 2021, there is no change to delay relative to the background growth condition, and the relative increase in average queue length of 15 metres is contained well within the existing turning lane (140 metres long). Through to year 2028, the development traffic increases queue length relative to background growth by 33 metres which remains within the turning lane, and LOS D is also maintained.

Intersection Operation – Afternoon Peak

Following implementation of updated modelling parameters, overall operation of the Pacific Highway intersection during the afternoon peak is detailed in Table 3 with detailed modelling results attached in Appendix A.

Table 3: Summary of intersection modelling results – PM Peak

Scenario	Leg	PM Peak			
		DOS	Delay (sec)	95% Queue Length (m)	LOS
2018 (Existing)	Craigie Avenue	0.57	37	33	C
	Pacific Highway (East)	0.84	39	89	C
	Hospital Rd	0.68	31	44	C
	Pacific Highway (West)	0.84	39	73	C
	Overall	**0.84**	**37**	**89**	**C**
2021 (No development)	Craigie Avenue	0.60	37	35	C
	Pacific Highway (East)	0.89	41	101	C
	Hospital Rd	0.68	31	44	C
	Pacific Highway (West)	0.89	41	82	C
	Overall	**0.89**	**39**	**101**	**C**
2021+ Development	Craigie Avenue	0.61	37	35	C
	Pacific Highway (East)	0.89	42	101	C
	Hospital Rd	0.73	32	49	C
	Pacific Highway (West)	0.89	41	82	C
	Overall	**0.89**	**39**	**101**	**C**
2028 (No development)	Craigie Avenue	0.73	46	49	D
	Pacific Highway (East)	0.87	42	128	C
	Hospital Rd	0.73	38	50	C
	Pacific Highway (West)	0.89	41	99	C
	Overall	**0.89**	**41**	**128**	**C**
2028+ Development	Craigie Avenue	0.76	47	52	D
	Pacific Highway (East)	0.89	45	134	D
	Hospital Rd	0.88	42	50	C
	Pacific Highway (West)	0.89	45	112	D
	Overall	**0.89**	**45**	**134**	**D**

The results indicate that the proposed redevelopment would have minor impact on the overall performance of the intersection, however the intersection would not require any capacity improvements on the basis of additional development traffic. Modelling results for the afternoon peak are generally better than the morning peak (due to a broader spread of traffic) and this is not considered as a critical scenario.

Operational Outcomes

As detailed in the introduction to this letter report, Roads and Maritime provided comment on a number of outcomes of the previous analysis models. Following updates to the input parameters as requested by Roads and Maritime, these outputs have now changed, and the original comments may no longer apply or may have changed. Our response to these comments is as follows.

Regarding point 1, the updated models demonstrate that in the 2028 AM scenario without development traffic the intersection does not operate satisfactorily, with a DOS of 1.06 which exceeds the limit recommended by Roads and Maritime.

Regarding point 2, the updated models demonstrate that in the 2028 AM scenario with development traffic the right turn lane operates at DOS 0.82 which is below the recommended limit, and with an average queue length of 111 metres which is within the existing right turn bay length of 140 metres. While the DOS for through traffic is considered unsatisfactory at 1.08, as noted in the response to point 1 this shall occur regardless of development traffic.

Regarding point 3, optimum cycle time is no longer proposed and the signals are run at a practical cycle time as requested by Roads and Maritime.

Regarding point 5, DOS results for all models have varied and have been covered in the above comments.

Regards points 4 and 6, the applicant's position is maintained as per previous discussions between the project team and RMS, which is that a post-operation intersection assessment should be undertaken ahead of any further development, to more accurately assess impacts and the appropriate mitigation measures (if required).

Conclusion

The updated modelling results demonstrate that for the critical morning peak, there are some decreases to performance of the Pacific Highway intersection in the year 2021 and significant decreases in the year 2028. This is due to background traffic growth only. The addition of the hospital development traffic in both modelling years creates additional minor impacts, generally relating to hospital access movements without significant impacts to the east and west bound through traffic.

TTW maintains its previous advice and recommendations and notes that the updated modelling does not result in any amendment to the outcomes of the intersection assessment and proposed way forward as discussed in the meeting with Roads and Maritime on 22 May 2019. No intersection capacity improvements are required for the year 2021 (at the completion of the CSB, the subject of SSD 9536) to accommodate the hospital development traffic.

As agreed with Roads and Maritime at the meeting, to adequately determine if any further road works are required, a post operational intersection analysis should be undertaken ahead of any further development. The report is to include a review of the traffic conditions and the level of service of the intersection of the Pacific Highway / Craigie Avenue / Hospital Entrance.

The result of this report would then be referred to Roads and Maritime for further consultation on any potential intersection improvements that may be required to meet the future demand of the hospital, taking account of any broader network improvements or changes under consideration by Roads and Maritime.

It is anticipated this requirement will be implemented as a suitable condition of consent to ensure the optimal safety and efficiency of this intersection and access to the hospital site into the future.

Should you require anything further please contact the undersigned.

Yours faithfully,
TAYLOR THOMSON WHITTING (NSW) PTY LTD
in its capacity as trustee for the
TAYLOR THOMSON WHITTING NSW TRUST

PAUL YANNOULATOS
Technical Director

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Attachment A – SIDRA Modelling Results

AM Peak Results

MOVEMENT SUMMARY

Site: 1 [Pacific Highway with Craigie Avenue (AM) - EXISTING]

Network: N101 [AM - Existing]

Signalised Intersection of Pacific Highway with Craigie Avenue and Wyong Hospital entry
Site Category: Existing
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Craigie Avenue														
4a	L1	200	6.3	200	6.3	0.410	40.2	LOS C	5.8	42.7	0.85	0.78	0.85	33.9
6a	R1	47	0.0	47	0.0	0.641	54.0	LOS D	5.9	42.0	0.98	0.83	1.00	7.1
6b	R3	124	2.5	124	2.5	0.641	56.7	LOS E	5.9	42.0	0.98	0.83	1.00	37.7
Approach		372	4.2	372	4.2	0.641	47.5	LOS D	5.9	42.7	0.91	0.80	0.92	33.4
East: Pacific Highway														
24b	L3	113	9.3	113	9.3	0.091	8.0	LOS A	0.1	0.5	0.02	0.63	0.02	61.9
25	T1	749	5.9	749	5.9	0.849	34.2	LOS C	19.8	145.9	0.85	0.80	0.91	52.3
26	R2	334	0.6	334	0.6	0.679	47.8	LOS D	10.1	71.0	0.89	0.83	0.89	40.4
Approach		1196	4.8	1196	4.8	0.849	35.5	LOS C	19.8	145.9	0.79	0.79	0.82	49.9
North: Wyong Hospital														
27	L2	100	2.1	100	2.1	0.126	13.8	LOS A	1.1	7.6	0.61	0.66	0.61	54.5
27a	L1	14	7.7	14	7.7	0.213	48.3	LOS D	1.9	13.8	0.90	0.73	0.90	10.1
29	R2	46	4.5	46	4.5	0.213	50.4	LOS D	1.9	13.8	0.90	0.73	0.90	29.4
Approach		160	3.3	160	3.3	0.213	27.4	LOS B	1.9	13.8	0.72	0.69	0.72	43.9
West: Pacific Highway														
30	L2	193	0.5	193	0.5	0.283	30.5	LOS C	3.8	27.0	0.60	0.75	0.60	38.3
31	T1	425	11.6	425	11.6	0.698	51.9	LOS D	7.2	55.6	0.97	0.82	1.00	46.3
32a	R1	99	7.4	99	7.4	0.871	74.6	LOS F	4.0	29.5	1.00	0.91	1.35	25.1
Approach		717	8.1	717	8.1	0.871	49.3	LOS D	7.2	55.6	0.87	0.81	0.94	42.4
All Vehicles		2444	5.6	2444	5.6	0.871	40.8	LOS C	19.8	145.9	0.83	0.79	0.87	45.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	SouthEast Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P6	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P7	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P8	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		211	54.3	LOS E			0.95	0.95

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

MOVEMENT SUMMARY

Site: 1 [Pacific Highway with Craigie Avenue (AM) - 2021]

Network: N103 [AM - 2021 Without Development]

Signalised Intersection of Pacific Highway with Craigie Avenue and Wyong Hospital entry
Site Category: 2021 Base
Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Craigie Avenue														
4a	L1	213	6.4	213	6.4	0.447	44.4	LOS D	6.8	50.1	0.87	0.79	0.87	32.3
6a	R1	47	0.0	47	0.0	0.692	60.0	LOS E	6.8	48.5	0.99	0.85	1.04	6.5
6b	R3	132	2.4	132	2.4	0.692	62.7	LOS E	6.8	48.5	0.99	0.85	1.04	36.1
Approach		392	4.3	392	4.3	0.692	52.4	LOS D	6.8	50.1	0.93	0.82	0.95	31.9
East: Pacific Highway														
24b	L3	120	9.6	120	9.6	0.097	8.0	LOS A	0.1	0.5	0.02	0.63	0.02	61.8
25	T1	796	6.0	796	6.0	0.872	35.4	LOS C	22.6	166.0	0.83	0.79	0.90	51.9
26	R2	334	0.6	334	0.6	0.658	49.6	LOS D	10.7	75.1	0.88	0.83	0.88	39.8
Approach		1249	4.9	1249	4.9	0.872	36.6	LOS C	22.6	166.0	0.76	0.79	0.81	49.5
North: Wyong Hospital														
27	L2	100	2.1	100	2.1	0.125	14.6	LOS B	1.2	8.5	0.61	0.66	0.61	54.1
27a	L1	14	7.7	14	7.7	0.220	52.8	LOS D	2.1	15.0	0.91	0.73	0.91	9.4
29	R2	46	4.5	46	4.5	0.220	54.9	LOS D	2.1	15.0	0.91	0.73	0.91	28.1
Approach		160	3.3	160	3.3	0.220	29.5	LOS C	2.1	15.0	0.72	0.69	0.72	42.8
West: Pacific Highway														
30	L2	193	0.5	193	0.5	0.278	31.4	LOS C	4.1	28.5	0.58	0.74	0.58	37.8
31	T1	452	11.7	452	11.7	0.674	53.5	LOS D	8.0	61.8	0.95	0.80	0.96	45.8
32a	R1	104	7.1	104	7.1	0.881	80.2	LOS F	4.5	33.5	1.00	0.92	1.35	23.9
Approach		748	8.2	748	8.2	0.881	51.5	LOS D	8.0	61.8	0.86	0.80	0.92	41.8
All Vehicles		2549	5.7	2549	5.7	0.881	43.0	LOS D	22.6	166.0	0.82	0.79	0.86	44.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P2	SouthEast Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
P6	East Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
P7	North Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
P8	West Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
All Pedestrians		211	59.3	LOS E			0.96	0.96

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

MOVEMENT SUMMARY

Site: 1 [Pacific Highway with Craigie Avenue (AM) - 2021+ Dev]

Network: N102 [AM - 2021 With Development]

Signalised Intersection of Pacific Highway with Craigie Avenue and Wyong Hospital entry
Site Category: 2021 Base + Development
Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Craigie Avenue														
4a	L1	213	6.4	213	6.4	0.447	44.4	LOS D	6.8	50.1	0.87	0.79	0.87	32.3
6a	R1	53	0.0	53	0.0	0.710	60.6	LOS E	7.1	50.3	1.00	0.86	1.06	6.4
6b	R3	132	2.4	132	2.4	0.710	63.2	LOS E	7.1	50.3	1.00	0.86	1.06	36.0
Approach		397	4.2	397	4.2	0.710	52.8	LOS D	7.1	50.3	0.93	0.82	0.96	31.6
East: Pacific Highway														
24b	L3	120	9.6	120	9.6	0.097	8.0	LOS A	0.1	0.5	0.02	0.63	0.02	61.8
25	T1	796	6.0	796	6.0	0.875	35.7	LOS C	22.6	166.5	0.83	0.80	0.90	51.8
26	R2	374	0.6	374	0.6	0.718	49.6	LOS D	12.3	86.2	0.90	0.84	0.90	39.7
Approach		1289	4.7	1289	4.7	0.875	37.1	LOS C	22.6	166.5	0.77	0.79	0.82	49.2
North: Wyong Hospital														
27	L2	112	1.9	112	1.9	0.137	14.3	LOS A	1.3	9.3	0.61	0.67	0.61	54.2
27a	L1	15	7.1	15	7.1	0.242	53.0	LOS D	2.3	16.6	0.91	0.74	0.91	9.4
29	R2	52	4.1	52	4.1	0.242	55.1	LOS D	2.3	16.6	0.91	0.74	0.91	28.0
Approach		178	3.0	178	3.0	0.242	29.3	LOS C	2.3	16.6	0.72	0.69	0.72	42.9
West: Pacific Highway														
30	L2	216	0.5	216	0.5	0.317	32.7	LOS C	4.7	33.4	0.61	0.75	0.61	37.1
31	T1	452	11.7	452	11.7	0.702	55.0	LOS D	8.2	63.2	0.97	0.82	0.99	45.3
32a	R1	104	7.1	104	7.1	0.881	80.2	LOS F	4.5	33.5	1.00	0.92	1.35	23.9
Approach		772	7.9	772	7.9	0.881	52.2	LOS D	8.2	63.2	0.87	0.82	0.93	41.3
All Vehicles		2636	5.5	2636	5.5	0.881	43.4	LOS D	22.6	166.5	0.82	0.80	0.87	44.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	SouthEast Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
P6	East Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
P7	North Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
P8	West Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
All Pedestrians		211	59.3	LOS E			0.96	0.96

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

MOVEMENT SUMMARY

Site: 1 [Pacific Highway with Craigie Avenue (AM) - 2028]

Network: N101 [AM - 2028 Without Development]

Signalised Intersection of Pacific Highway with Craigie Avenue and Wyong Hospital entry
Site Category: 2028 Base
Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Craigie Avenue														
4a	L1	244	6.5	244	6.5	0.513	45.4	LOS D	8.0	58.9	0.89	0.80	0.89	32.0
6a	R1	47	0.0	47	0.0	0.774	63.5	LOS E	8.0	56.7	1.00	0.91	1.13	6.2
6b	R3	152	2.8	152	2.8	0.774	66.1	LOS E	8.0	56.7	1.00	0.91	1.13	35.2
Approach		443	4.5	443	4.5	0.774	54.4	LOS D	8.0	58.9	0.94	0.85	1.00	31.5
East: Pacific Highway														
24b	L3	137	9.2	137	9.2	0.111	8.1	LOS A	0.1	0.6	0.02	0.63	0.02	61.8
25	T1	914	5.9	914	5.9	1.058	98.3	LOS F	44.9	330.1	0.90	1.23	1.43	35.2
26	R2	334	0.6	334	0.6	0.695	52.0	LOS D	11.1	77.8	0.91	0.84	0.91	39.0
Approach		1384	4.9	1384	4.9	1.058	78.2	LOS F	44.9	330.1	0.82	1.07	1.16	37.1
North: Wyong Hospital														
27	L2	100	2.1	100	2.1	0.130	15.2	LOS B	1.3	9.0	0.63	0.67	0.63	53.7
27a	L1	14	7.7	14	7.7	0.220	52.8	LOS D	2.1	15.0	0.91	0.73	0.91	9.4
29	R2	46	4.5	46	4.5	0.220	54.9	LOS D	2.1	15.0	0.91	0.73	0.91	28.1
Approach		160	3.3	160	3.3	0.220	29.9	LOS C	2.1	15.0	0.73	0.69	0.73	42.6
West: Pacific Highway														
30	L2	193	0.5	193	0.5	0.267	29.7	LOS C	3.9	27.2	0.56	0.74	0.56	38.8
31	T1	518	11.6	518	11.6	0.716	53.0	LOS D	9.3	71.5	0.96	0.82	0.98	45.9
32a	R1	121	7.8	121	7.8	1.029	122.4	LOS F	6.8	50.5	1.00	1.10	1.80	17.7
Approach		832	8.5	832	8.5	1.029	57.7	LOS E	9.3	71.5	0.87	0.84	1.00	40.0
All Vehicles		2819	5.8	2819	5.8	1.058	65.7	LOS E	44.9	330.1	0.85	0.95	1.07	37.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P2	SouthEast Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
P6	East Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
P7	North Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
P8	West Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
All Pedestrians		211	59.3	LOS E			0.96	0.96

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

MOVEMENT SUMMARY

Site: 1 [Pacific Highway with Craigie Avenue (AM) - 2028 + Dev]

Network: N101 [AM - 2028 With Development]

Signalised Intersection of Pacific Highway with Craigie Avenue and Wyong Hospital entry
Site Category: 2028 Base + Development
Signals - Fixed Time Coordinated Cycle Time = 130 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Craigie Avenue														
4a	L1	244	6.5	244	6.5	0.513	45.4	LOS D	8.0	58.9	0.89	0.80	0.89	32.0
6a	R1	62	0.0	62	0.0	0.824	66.7	LOS E	8.9	63.1	1.00	0.95	1.20	5.9
6b	R3	152	2.8	152	2.8	0.824	69.4	LOS E	8.9	63.1	1.00	0.95	1.20	34.4
Approach		458	4.4	458	4.4	0.824	56.2	LOS D	8.9	63.1	0.94	0.87	1.03	30.5
East: Pacific Highway														
24b	L3	137	9.2	137	9.2	0.111	8.1	LOS A	0.1	0.6	0.02	0.63	0.02	61.8
25	T1	914	5.9	914	5.9	1.075	108.0	LOS F	46.6	342.9	0.90	1.27	1.49	33.6
26	R2	435	0.7	435	0.7	0.815	53.6	LOS D	15.7	110.9	0.95	0.89	1.01	38.4
Approach		1485	4.7	1485	4.7	1.075	82.8	LOS F	46.6	342.9	0.83	1.10	1.21	35.8
North: Wyong Hospital														
27	L2	131	2.4	131	2.4	0.158	14.1	LOS A	1.5	10.7	0.60	0.67	0.60	54.3
27a	L1	18	5.9	18	5.9	0.289	53.5	LOS D	2.7	20.1	0.92	0.75	0.92	9.3
29	R2	61	5.2	61	5.2	0.289	55.6	LOS D	2.7	20.1	0.92	0.75	0.92	27.9
Approach		209	3.5	209	3.5	0.289	29.6	LOS C	2.7	20.1	0.72	0.70	0.72	42.7
West: Pacific Highway														
30	L2	252	0.8	252	0.8	0.378	34.4	LOS C	5.9	41.3	0.64	0.77	0.64	36.2
31	T1	518	11.6	518	11.6	0.840	61.9	LOS E	10.4	80.0	1.00	0.93	1.15	43.4
32a	R1	121	7.8	121	7.8	1.029	122.4	LOS F	6.8	50.5	1.00	1.10	1.80	17.7
Approach		891	8.0	891	8.0	1.029	62.3	LOS E	10.4	80.0	0.90	0.91	1.10	38.1
All Vehicles		3043	5.5	3043	5.5	1.075	69.2	LOS E	46.6	342.9	0.86	0.98	1.12	36.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	SouthEast Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
P6	East Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
P7	North Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
P8	West Full Crossing	53	59.3	LOS E	0.2	0.2	0.96	0.96
All Pedestrians		211	59.3	LOS E			0.96	0.96

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

PM Peak Results

MOVEMENT SUMMARY

Site: 1 [Pacific Highway with Craigie Avenue (PM) - EXISTING]

Network: N101 [PM - Existing]

Signalised Intersection of Pacific Highway with Craigie Avenue and Wyong Hospital entry
Site Category: Existing
Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Craigie Avenue														
4a	L1	142	2.2	142	2.2	0.217	25.8	LOS B	2.9	20.4	0.71	0.70	0.71	40.9
6a	R1	37	0.0	37	0.0	0.570	43.7	LOS D	4.7	32.7	0.96	0.81	0.96	8.4
6b	R3	129	0.0	129	0.0	0.570	46.4	LOS D	4.7	32.7	0.96	0.81	0.96	41.0
Approach		308	1.0	308	1.0	0.570	36.6	LOS C	4.7	32.7	0.85	0.76	0.85	38.6
East: Pacific Highway														
24b	L3	124	3.4	124	3.4	0.110	8.0	LOS A	0.1	0.5	0.02	0.63	0.02	62.0
25	T1	498	4.9	498	4.9	0.844	41.1	LOS C	12.1	88.5	0.94	0.87	1.05	49.8
26	R2	143	0.7	143	0.7	0.751	57.2	LOS E	4.4	31.3	1.00	0.85	1.14	37.3
Approach		765	3.9	765	3.9	0.844	38.7	LOS C	12.1	88.5	0.80	0.83	0.90	48.8
North: Wyong Hospital														
27	L2	312	0.0	312	0.0	0.601	20.8	LOS B	4.7	32.7	0.91	0.81	0.91	50.6
27a	L1	81	0.0	81	0.0	0.683	44.4	LOS D	6.3	44.4	0.99	0.86	1.04	10.9
29	R2	135	0.8	135	0.8	0.683	46.5	LOS D	6.3	44.4	0.99	0.86	1.04	30.9
Approach		527	0.2	527	0.2	0.683	31.0	LOS C	6.3	44.4	0.94	0.83	0.96	41.3
West: Pacific Highway														
30	L2	81	0.0	81	0.0	0.089	15.8	LOS B	0.8	5.5	0.34	0.67	0.34	49.0
31	T1	755	4.3	755	4.3	0.740	36.7	LOS C	10.1	73.4	0.92	0.82	0.96	51.4
32a	R1	189	3.9	189	3.9	0.835	57.4	LOS E	6.1	44.0	1.00	0.92	1.23	29.4
Approach		1025	3.9	1025	3.9	0.835	38.8	LOS C	10.1	73.4	0.89	0.83	0.96	48.0
All Vehicles		2626	2.8	2626	2.8	0.844	37.0	LOS C	12.1	88.5	0.87	0.82	0.93	46.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	SouthEast Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P6	East Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P7	North Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P8	West Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		211	44.3	LOS E			0.94	0.94

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

MOVEMENT SUMMARY

Site: 1 [Pacific Highway with Craigie Avenue (PM) - 2021]

Network: N101 [PM - 2021 Without Development]

Signalised Intersection of Pacific Highway with Craigie Avenue and Wyong Hospital entry
Site Category: 2021 Base
Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Craigie Avenue														
4a	L1	151	2.1	151	2.1	0.230	25.9	LOS B	3.0	21.7	0.72	0.71	0.72	40.8
6a	R1	37	0.0	37	0.0	0.600	44.0	LOS D	4.9	34.6	0.97	0.81	0.97	8.3
6b	R3	138	0.0	138	0.0	0.600	46.7	LOS D	4.9	34.6	0.97	0.81	0.97	40.9
Approach		325	1.0	325	1.0	0.600	36.7	LOS C	4.9	34.6	0.85	0.76	0.85	38.6
East: Pacific Highway														
24b	L3	132	3.2	132	3.2	0.117	8.1	LOS A	0.1	0.7	0.03	0.63	0.03	62.0
25	T1	527	4.8	527	4.8	0.893	45.2	LOS D	13.9	101.4	0.95	0.93	1.13	48.4
26	R2	143	0.7	143	0.7	0.751	57.2	LOS E	4.4	31.3	1.00	0.85	1.14	37.3
Approach		802	3.8	802	3.8	0.893	41.3	LOS C	13.9	101.4	0.81	0.86	0.95	47.9
North: Wyong Hospital														
27	L2	313	0.3	313	0.3	0.605	20.9	LOS B	4.7	32.9	0.91	0.81	0.91	50.5
27a	L1	81	0.0	81	0.0	0.678	44.3	LOS D	6.3	43.9	0.99	0.85	1.03	11.0
29	R2	134	0.0	134	0.0	0.678	46.4	LOS D	6.3	43.9	0.99	0.85	1.03	31.0
Approach		527	0.2	527	0.2	0.678	30.9	LOS C	6.3	43.9	0.94	0.83	0.96	41.4
West: Pacific Highway														
30	L2	81	0.0	81	0.0	0.089	15.8	LOS B	0.8	5.5	0.34	0.67	0.34	49.0
31	T1	801	4.3	801	4.3	0.786	38.5	LOS C	11.2	81.6	0.95	0.86	1.02	50.7
32a	R1	201	3.7	201	3.7	0.885	60.9	LOS E	6.8	48.8	1.00	0.97	1.33	28.4
Approach		1083	3.9	1083	3.9	0.885	41.0	LOS C	11.2	81.6	0.91	0.87	1.02	47.2
All Vehicles		2738	2.8	2738	2.8	0.893	38.6	LOS C	13.9	101.4	0.88	0.85	0.97	45.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P2	SouthEast Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P6	East Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P7	North Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P8	West Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		211	44.3	LOS E			0.94	0.94

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

MOVEMENT SUMMARY

Site: 1 [Pacific Highway with Craigie Avenue (PM) - 2021+ Dev]

Network: N101 [PM - 2021 With Development]

Signalised Intersection of Pacific Highway with Craigie Avenue and Wyong Hospital entry
Site Category: 2021 Base + Development
Signals - Fixed Time Coordinated Cycle Time = 100 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Craigie Avenue														
4a	L1	151	2.1	151	2.1	0.230	25.9	LOS B	3.0	21.7	0.72	0.71	0.72	40.8
6a	R1	40	0.0	40	0.0	0.609	44.1	LOS D	5.0	35.3	0.97	0.82	0.97	8.3
6b	R3	138	0.0	138	0.0	0.609	46.8	LOS D	5.0	35.3	0.97	0.82	0.97	40.8
Approach		328	1.0	328	1.0	0.609	36.9	LOS C	5.0	35.3	0.85	0.77	0.85	38.4
East: Pacific Highway														
24b	L3	132	3.2	132	3.2	0.118	8.1	LOS A	0.1	0.7	0.03	0.63	0.03	62.0
25	T1	527	4.8	527	4.8	0.893	45.2	LOS D	13.9	101.4	0.95	0.93	1.13	48.4
26	R2	154	0.7	154	0.7	0.806	58.9	LOS E	4.9	34.5	1.00	0.88	1.21	36.8
Approach		813	3.8	813	3.8	0.893	41.8	LOS C	13.9	101.4	0.81	0.87	0.97	47.7
North: Wyong Hospital														
27	L2	336	0.3	336	0.3	0.650	21.2	LOS B	5.1	35.9	0.93	0.82	0.93	50.4
27a	L1	87	0.0	87	0.0	0.733	45.9	LOS D	7.0	49.0	1.00	0.90	1.10	10.7
29	R2	144	0.7	144	0.7	0.733	48.0	LOS D	7.0	49.0	1.00	0.90	1.10	30.4
Approach		567	0.4	567	0.4	0.733	31.8	LOS C	7.0	49.0	0.96	0.85	1.00	41.0
West: Pacific Highway														
30	L2	81	0.0	81	0.0	0.089	15.8	LOS B	0.8	5.5	0.34	0.67	0.34	49.0
31	T1	801	4.3	801	4.3	0.786	38.5	LOS C	11.2	81.6	0.95	0.86	1.02	50.7
32a	R1	201	3.7	201	3.7	0.885	60.9	LOS E	6.8	48.8	1.00	0.97	1.33	28.4
Approach		1083	3.9	1083	3.9	0.885	41.0	LOS C	11.2	81.6	0.91	0.87	1.02	47.2
All Vehicles		2792	2.8	2792	2.8	0.893	38.9	LOS C	13.9	101.4	0.88	0.85	0.98	45.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P2	SouthEast Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P6	East Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P7	North Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P8	West Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		211	44.3	LOS E			0.94	0.94

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

MOVEMENT SUMMARY

Site: 1 [Pacific Highway with Craigie Avenue (PM) - 2028]

Network: N101 [PM - 2028 Without Development]

Signalised Intersection of Pacific Highway with Craigie Avenue and Wyong Hospital entry
Site Category: 2028 Base
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Craigie Avenue														
4a	L1	174	2.4	174	2.4	0.270	31.1	LOS C	4.3	30.7	0.74	0.72	0.74	38.0
6a	R1	37	0.0	37	0.0	0.728	56.6	LOS E	7.0	49.0	1.00	0.88	1.09	6.8
6b	R3	158	0.0	158	0.0	0.728	59.3	LOS E	7.0	49.0	1.00	0.88	1.09	37.0
Approach		368	1.1	368	1.1	0.728	45.7	LOS D	7.0	49.0	0.88	0.81	0.92	35.3
East: Pacific Highway														
24b	L3	152	3.5	152	3.5	0.136	8.1	LOS A	0.1	0.8	0.03	0.63	0.03	61.9
25	T1	606	4.9	606	4.9	0.867	45.0	LOS D	17.5	127.9	0.92	0.87	1.02	48.5
26	R2	143	0.7	143	0.7	0.708	64.7	LOS E	5.2	36.3	1.00	0.83	1.07	35.1
Approach		901	4.0	901	4.0	0.867	41.9	LOS C	17.5	127.9	0.78	0.83	0.86	47.8
North: Wyong Hospital														
27	L2	313	0.3	313	0.3	0.619	25.3	LOS B	6.2	43.4	0.92	0.82	0.92	48.2
27a	L1	81	0.0	81	0.0	0.732	55.1	LOS D	7.1	50.0	1.00	0.89	1.08	9.2
29	R2	134	0.0	134	0.0	0.732	57.2	LOS E	7.1	50.0	1.00	0.89	1.08	27.6
Approach		527	0.2	527	0.2	0.732	38.0	LOS C	7.1	50.0	0.95	0.85	0.99	38.3
West: Pacific Highway														
30	L2	81	0.0	81	0.0	0.083	15.0	LOS B	0.8	5.4	0.29	0.66	0.29	49.8
31	T1	920	4.3	920	4.3	0.740	35.8	LOS C	13.6	98.6	0.88	0.78	0.88	51.7
32a	R1	232	4.1	232	4.1	0.886	69.1	LOS E	9.2	66.3	1.00	0.97	1.26	26.3
Approach		1233	4.0	1233	4.0	0.886	40.7	LOS C	13.6	98.6	0.86	0.81	0.92	47.4
All Vehicles		3029	3.0	3029	3.0	0.886	41.2	LOS C	17.5	127.9	0.86	0.82	0.91	45.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P2	SouthEast Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P6	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P7	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P8	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		211	54.3	LOS E			0.95	0.95

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

MOVEMENT SUMMARY

Site: 1 [Pacific Highway with Craigie Avenue (PM) - 2028 + Dev]

Network: N101 [PM - 2028 With Development]

Signalised Intersection of Pacific Highway with Craigie Avenue and Wyong Hospital entry
Site Category: 2028 Base + Development
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Site Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
SouthEast: Craigie Avenue														
4a	L1	174	2.4	174	2.4	0.270	31.1	LOS C	4.3	30.7	0.74	0.72	0.74	38.0
6a	R1	46	0.0	46	0.0	0.759	57.9	LOS E	7.5	52.4	1.00	0.90	1.12	6.7
6b	R3	158	0.0	158	0.0	0.759	60.6	LOS E	7.5	52.4	1.00	0.90	1.12	36.7
Approach		378	1.1	378	1.1	0.759	46.7	LOS D	7.5	52.4	0.88	0.82	0.94	34.6
East: Pacific Highway														
24b	L3	152	3.5	152	3.5	0.138	8.5	LOS A	0.2	1.6	0.05	0.64	0.05	61.6
25	T1	606	4.9	606	4.9	0.891	48.4	LOS D	18.4	134.2	0.94	0.91	1.07	47.3
26	R2	181	0.6	181	0.6	0.783	65.1	LOS E	6.6	46.8	1.00	0.87	1.13	35.0
Approach		939	3.8	939	3.8	0.891	45.2	LOS D	18.4	134.2	0.81	0.86	0.92	46.4
North: Wyong Hospital														
27	L2	395	0.3	395	0.3	0.718	24.8	LOS B	7.1	50.0	0.95	0.84	0.95	48.5
27a	L1	102	0.0	102	0.0	0.878	64.5	LOS E	7.1	50.0	1.00	1.05	1.29	8.1
29	R2	168	0.0	168	0.0	0.878	66.6	LOS E	7.1	50.0	1.00	1.05	1.29	25.3
Approach		665	0.2	665	0.2	0.878	41.5	LOS C	7.1	50.0	0.97	0.93	1.09	36.9
West: Pacific Highway														
30	L2	102	0.0	102	0.0	0.108	16.2	LOS B	1.1	7.6	0.32	0.67	0.32	48.6
31	T1	920	4.3	920	4.3	0.811	42.2	LOS C	15.4	112.2	0.93	0.86	0.99	49.4
32a	R1	232	4.1	232	4.1	0.886	69.1	LOS E	9.2	66.3	1.00	0.97	1.26	26.3
Approach		1254	3.9	1254	3.9	0.886	45.1	LOS D	15.4	112.2	0.90	0.87	0.99	45.7
All Vehicles		3236	2.8	3236	2.8	0.891	44.6	LOS D	18.4	134.2	0.88	0.87	0.98	43.4

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

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P6	East Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P7	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P8	West Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		211	54.3	LOS E			0.95	0.95

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