12 October 2021

ptc.

Matt Rheuben
SINSW
Level 8
259 George Street
Sydney
NSW 2000

Dear Matt,

1. New Primary School in Edmondson Park – Request for further Information

ptc. has been engaged by Richard Crookes Constructions on behalf of School Infrastructure NSW (SINSW) to address comments received following the submission of the State Significant Development Application (SSDA) for the proposed development of a new primary school at Buchan Avenue in Edmondson Park.

This letter has been prepared in response to the following documents:

- Letter dated 17 September 2021 from Liverpool City Council (Council), and
- Letter dated 24 September 2021 from the Department of Planning, Industry & Environment (DPIE).

The individual items are addressed below.

2. Council Comments

Council Comment

It should be noted that the VISSIM model of the area prepared by AECOM as part of the Transport Management and Accessibility Plan for Edmondson Park South – Concept Plan (MOD 5) has not been endorsed by Council. The proponent needs to confirm whether the proposed access to the school off Faulkner Way was previously modelled in the AECOM traffic models.

Response

To our knowledge, the access to the school off Faulkner Way was not previously modelled by AECOM. However, please see the below, which provides an overview of assumptions made about the school site since the original masterplan.

The screenshot below shows the masterplan for the Edmondson Park South area prepared by Landcom in around 2010. The area originally allocated to the school was larger than the current development is seeking approval for.

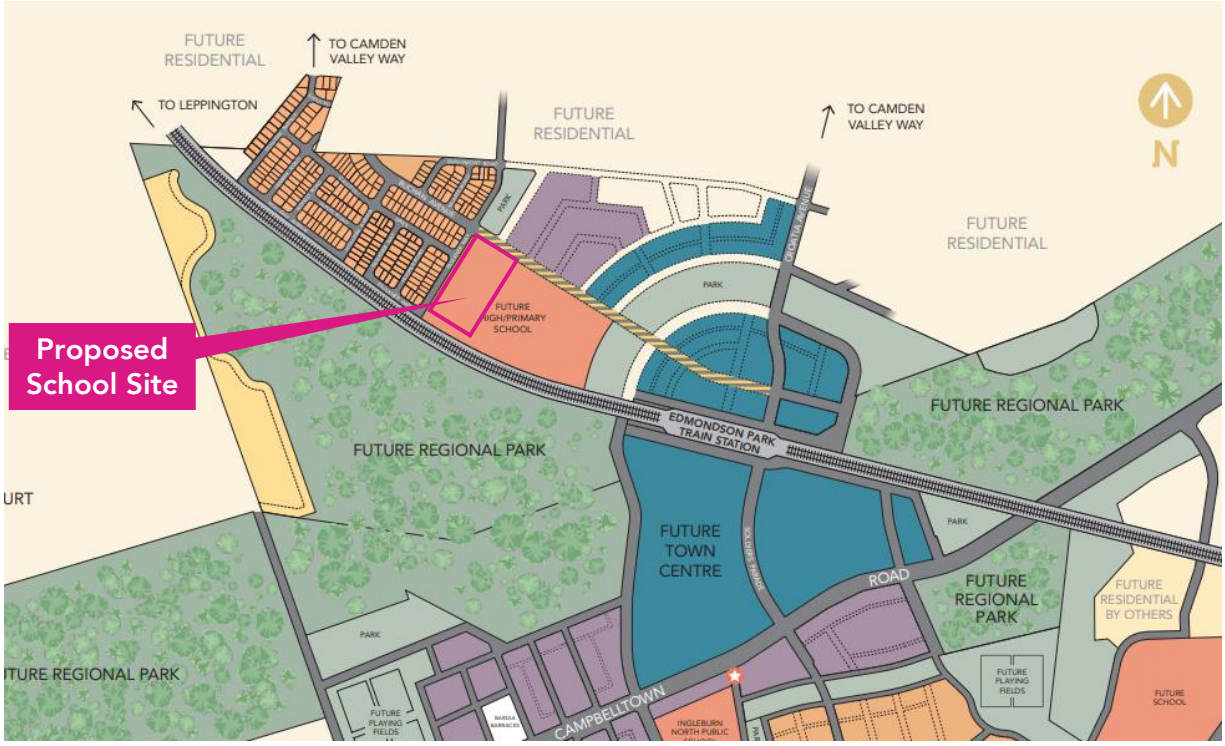

Figure 1 - Edmondson Park South Masterplan by Landcom

The Edmondson Park South DCP 2012 was based on the above masterplan, with the large area being allocated to schools, as shown in the below figure.

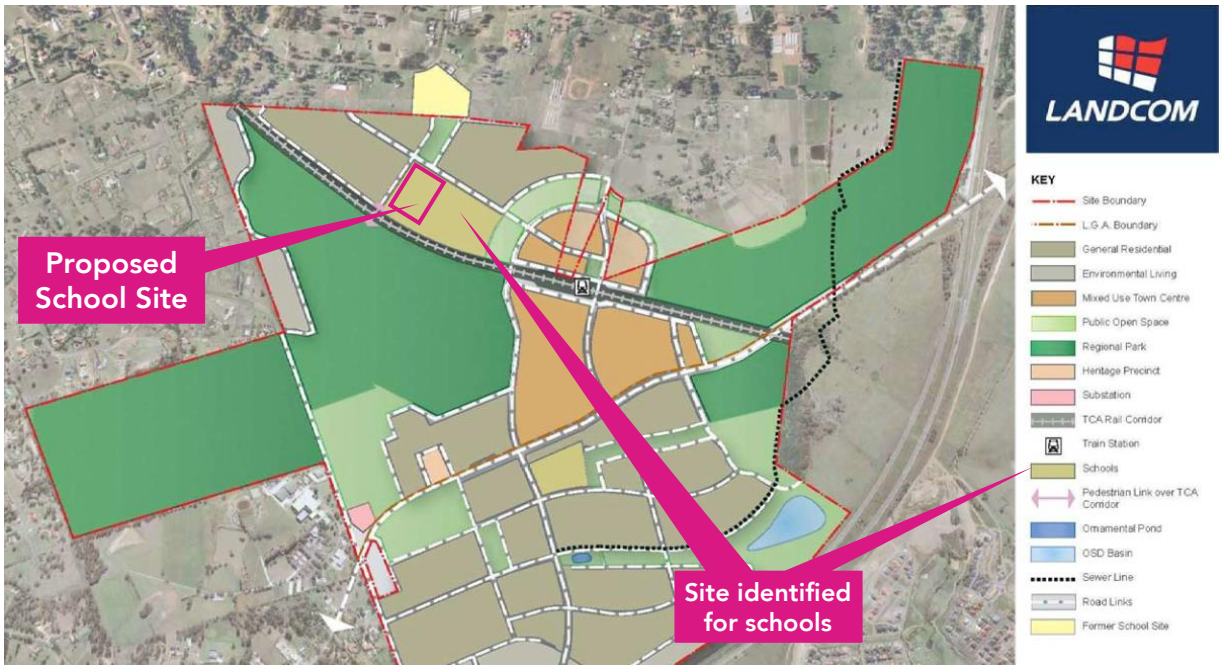

Figure 2 - Edmondson Park South Concept Plan (Source: Edmondson Park DCP 2012, Figure 2)

The original development application assumed that the primary school would have 500 students and the high school 1,000 students. Further, a 50% car use was assumed, meaning that the primary school would generate 250 and the high school 500 trips during the morning peak hour, see an excerpt from the original TIA report below.

It is noted at this stage that the current proposal is seeking approval for a 46% car mode share, which was based on a detailed analysis of public and active transport accessibility of the school.

Educational trips

One high school and two primary schools including the existing Ingleburn North Public School are proposed within the Concept Plan of Edmondson Park South. The total number of enrolments proposed for the high school is 1,000 students and for the two proposed primary schools are further 500 students each. Based on a trip rate of one trip per two students, it is expected that the schools will generate 1,000 trips in the AM peak hour.

However, the majority of these trips are expected to be generated within Edmondson Park South, especially the primary schools as they are intended to cater for a local catchment. The locations of the schools have been selected based on accessibility to the local communities and public transport facilities. This will encourage students to walk and cycle or catch public transport to and from schools reducing the potential traffic impacts around school sites. It has been assumed that 50% of the school trips will be made by active transport (walking and cycling) or by public transport.

Due to the development pattern and forecast population growth in Edmondson Park South and the wider precinct, the co-located high school and primary school situated at the north of the SWRL will only be opened after 2016.

Traffic generated by the schools during the afternoon will occur before the typical PM peak hour (5-6PM) and have therefore not been assessed on the PM peak scenario.

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Revision 1 - 9 September 2010 67

Figure 3 - Edmondson Park South Part 3A - Concept Plan Appl.; Transport Management and Accessibility Plan; by AECOM

The above assumptions were modified as part of the modification application in relation to the Town Centre North. During the consultation phase, the Department of Education and Training advised Landcom that "*enrolment projections indicated the proposal would generate an additional 571 public school primary students and 289 public school secondary students (based on an assumed 25% single dwellings, 50% medium density dwellings and 25% high density dwellings)*" (refer to the excerpt below).

8 June 2018 and 24 July 2018	**Department of Education and Training (DET)**	DET advised that enrolment projections indicated the proposal would generate an additional 571 public school primary students and 289 public school secondary students (based on an assumed 25% single dwellings, 50% medium density dwellings and 25% high density dwellings). DET confirmed priority planning for a new primary school and a new secondary school in Edmondson Park. It further advised that potential delivery options are being considered, which include options to co-locate the schools (as a K–12 arrangement) or as separate school sites. It also advised that a number of potential locations are under consideration. DET advised it supported the retention of an identified site for the potential new school. DET noted that the final option for new education facilities was not resolved and they would work with Landcom to evaluate the various delivery options.

Figure 4 - Stakeholder Engagement Outcomes Summary Report; Modification Application; 23 August 2018

Based on the above, AECOM adopted the new school population numbers in their updated modelling and presented them in MOD5 report showing the primary school only and in Mod5 Addendum report for both the primary and secondary schools. A comparison of the school population assumptions is presented in the below excerpt from AECOM's report.

Table 1 Comparison of modelling changes for Edmondson Park Town Centre North

Land use	Concept Plan (2010)	Concept Plan MOD 4	Concept Plan MOD 5 (2ha School)	Concept Plan MOD 5 (6ha School)
Residential	440 dwellings*	440 dwellings*	3,286 dwellings	3,030 dwellings
Retail	-	-	5,200m²	5,200m²
School	~1,500 students Combined Primary and High School (7.6ha)	~1,500 students Combined Primary and High School (7.6ha)	~1,000 students Primary School (2ha)	~3,000 students Combined Primary and High School (6ha)

Not part of this application

* includes dwellings within the OSL land (located outside of the approved Concept Plan), which had an indicative yield of 71 dwellings

Figure 5 - Edmondson Park South - Concept Plan MOD 5 – TMAP Addendum – 4th June 2020

It should be noted that this development application is seeking approval for a primary school only. With this in mind, the above comparison shows that the student population of the proposed primary school is below the originally assumed student population within the combined primary and secondary school.

According to AECOM's reports, only minor changes were made to the extent of the previous VISSIM model; The modelling extents are shown in Figure 6.

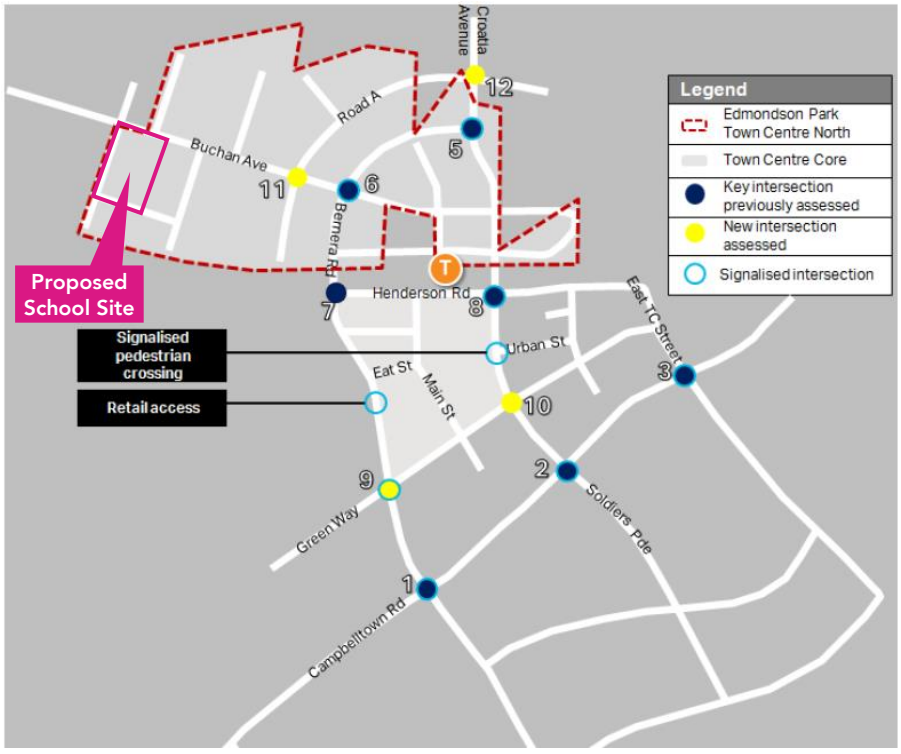

Figure 6 - VISSIM model extent TMAP (Source: AECOM, 2019)

The access to the school off Faulkner Way does not appear to have been modelled by AECOM. However, as part of the previous response to the RtS, the Buchan Avenue / Faulkner Way intersection was modelled by **ptc.** using SIDRA. Amended modelling is presented in the following response.

Council Comment

The SIDRA results in Attachment 1 of the traffic advice prepared by PTC show errors on the forecast traffic flows along Faulkner Way with only 14 vehicles in AM peak hour and 3 vehicles in PM peak hour. The vehicular trips in and out of the schools normally occur within the same hour during AM and PM peaks. Hence, it is recommended that an interim roundabout is to be installed at the intersection of Buchan Avenue/Faulkner Way when the student number reaches the required threshold. The threshold is to be identified and confirmed by Council. An interim roundabout is requested as a signalised intersection might be required as an ultimate treatment when the high school site is developed and operational

Response

The previously submitted SIDRA model does not have any errors, but rather is based on the assumption that following the pick-up / drop-off along Faulkner Way, parents will continue on and turn left / right at the end of this road instead of undertaking U-turns. Undertaking U-turns would be less convenient and not advised. Upon the pick-up / drop-off, parents can drive southbound along Faulkner Way and either turn left into the future South Road to exit towards the east, or turn right and continue along Faulkner Way to exit further to the west. This is shown in Figure 7.

As the school is located at the southern end of the enrolment catchment, it is assumed that no students will arrive from the south.

Figure 7 - Drop-off / Pick-up Vehicles exiting southbound

In order to address Council's suggestion that an interim roundabout is required at the intersection of Buchan Avenue and Faulkner Way, an assessment has been undertaken using an assumption that 20% of vehicles would undertake a U-turn to exit via the Buchan Avenue / Faulkner Way intersection and 80% of vehicles would continue driving southbound, as shown in Figure 8. It should be noted however, that we do not expect that 20% of vehicles would undertake a U-turn and therefore, the below is a theoretical assessment.

Figure 8 - Drop-off / Pick-up Vehicles exiting southbound (80%), and northbound (20%)

The proposed traffic distribution for all drop-off / pick-up vehicles exiting southbound as well as vehicles exiting southbound (80%), and northbound (20%) are shown in Figure 9 and Figure 10 respectively.

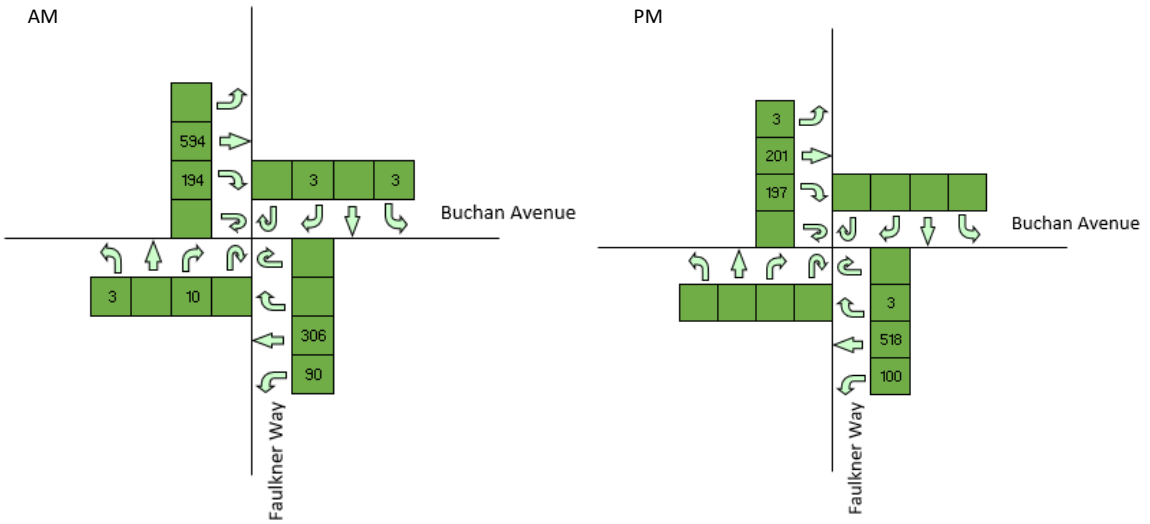

Figure 9 - Peak Hour Traffic Volumes – All Drop-off / Pick-up Vehicles exiting southbound (l: AM, r: PM)

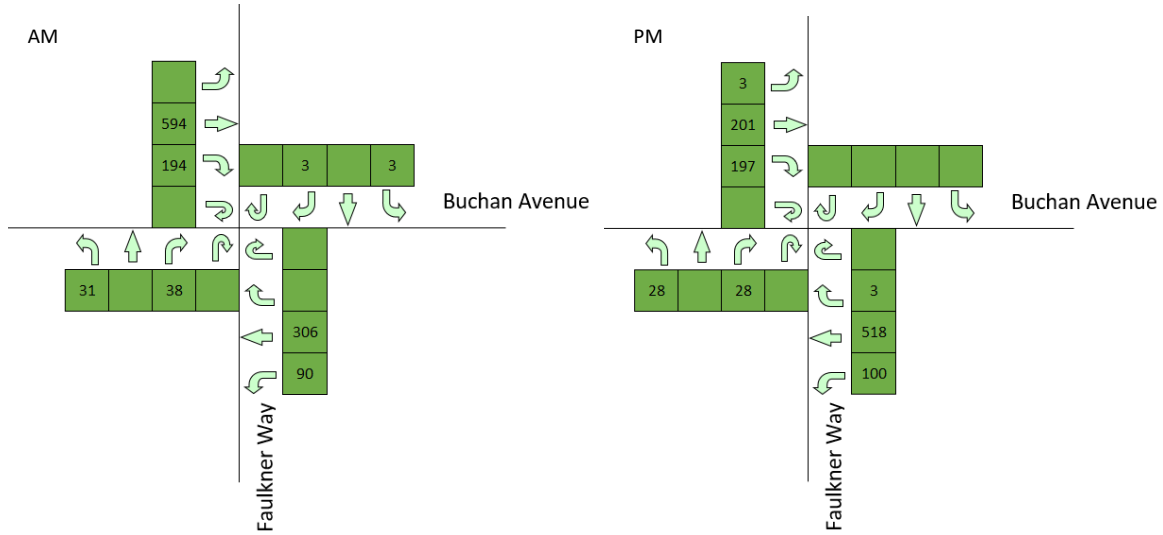

Figure 10 - Peak Hour Traffic Volumes - Drop-off / Pick-up vehicles exiting southbound (80%), and northbound (20%) (l: AM, r: PM)

SIDRA Modelling

In order to confirm the current and future operation of the intersection, an assessment has been undertaken using the SIDRA modelling software, which presents a range of performance indicators.

Typically, there are four performance indicators used to summarise the performance of an intersection, being:

- Average Delay – The average delay encountered by all vehicles passing through the intersection. It is often important to review the average delay of each approach as a side road could have a long delay time, while the large free flowing major traffic will provide an overall low average delay.
- Degree of Saturation (DoS) – The total usage of the intersection expressed as a factor of 1 with 1 representing 100% use/saturation (e.g. 0.8=80% saturation).
- 95% Queue lengths (Q95) – is defined to be the queue length in metres that has only a 5-percent probability of being exceeded during the analysis time period. It transforms the average delay into measurable distance units.
- Level of Service (LoS) – This is a categorisation of average delay, intended for simple reference. TfNSW adopts the following bands:

Table 1 - Level of Service Criteria

Level of Service	Average Delay (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	<14	Good operation	
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity. At signals, incidents would cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode
F	>70	Extra capacity required	Extreme delay, major treatment required

As per the previous assessment, the intersection has been modelled for the following scenarios:

- Existing scenario: existing intersection arrangement – with no zebra crossing (refer to the figure below).

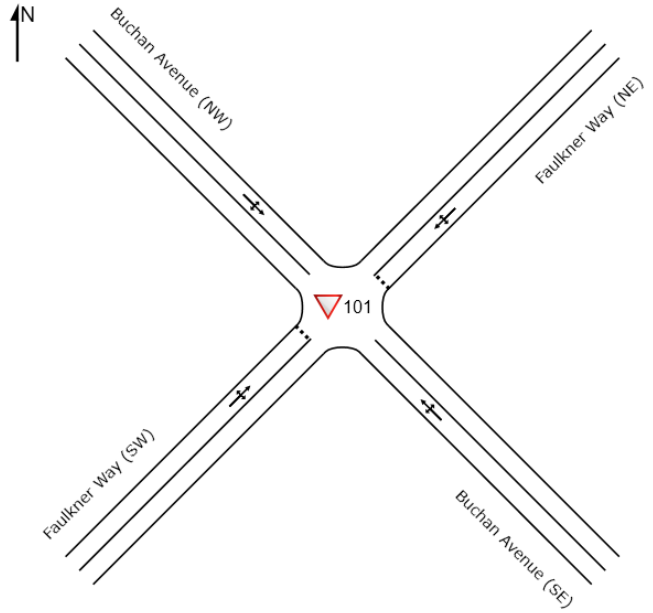

Figure 11 - Existing Scenario – No Zebra Crossing

- Proposed scenario – with zebra crossings (refer to the below figure).

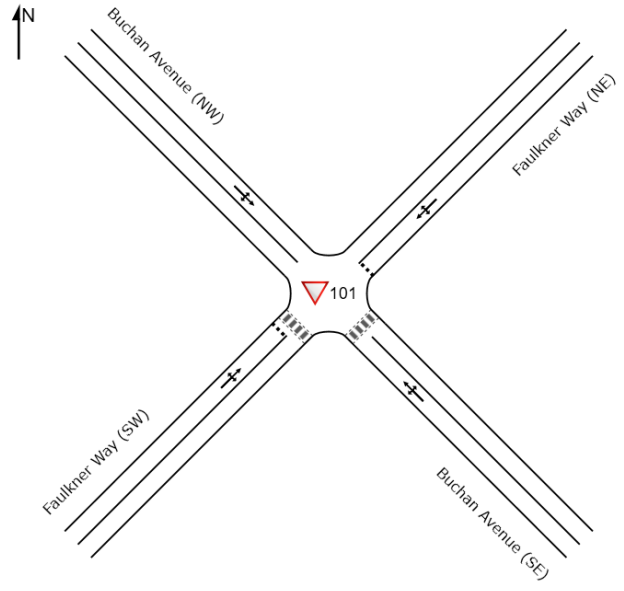

Figure 12 - With Proposed Zebra Crossings

Table 2 and Table 3 summarise the most relevant SIDRA results for both modelling scenarios with all vehicles exiting southbound as well as 20% of vehicles exiting northbound respectively. Full SIDRA results can be found in Attachment 1.

Table 2 - SIDRA Modelling Results for all Drop-off / Pick-up Vehicles exiting southbound

Inter-section	Period	Scenario	Worst LoS	Delay (s)[1]	Highest DoS (v/s)	Highest Q95 (m)
Buchan Avenue / Faulkner Way	AM Peak	Existing – no zebra crossings	B	18.9	0.496	24.6
		With zebra crossings	D	55.2	1.012	350.1
	PM Peak	Existing – no zebra crossings	A	12.9	0.348	17.3
		With zebra crossings	C	31.1	0.917	168.3

Table 3 - SIDRA Modelling Results for Drop-off / Pick-up vehicles exiting southbound (80%), and northbound (20%)

Inter-section	Period	Scenario	Worst LoS	Delay (s)[2]	Highest DoS (v/s)	Highest Q95 (m)
Buchan Avenue / Faulkner Way	AM Peak	Existing – no zebra crossings	B	20.6	0.496	24.6
		With zebra crossings (overall intersection)	E	65.6	1.012	350.1
		Right turn off Faulkner Way	E	65.6	0.55	13.9
		Through movement on Buchan Avenue (eastbound)	D	52.4	1.012	350.1
	PM Peak	Existing – no zebra crossings	A	13.9	0.348	17.3
		With zebra crossings	C	36.5	0.917	168.3

Existing – without zebra crossings – scenario, both vehicle outbound conditions (refer to Table 2 and Table 3)

The SIDRA results show a LoS A for all turn movements from Buchan Avenue and a minimum LoS B for all turn movements from Faulkner Way in both AM and PM peak hours. The intersection operates with minimum 50% spare capacity and a maximum queue length of 24.6 meters. The results show that the school development does not warrant an upgrade of the Buchan Avenue / Faulkner Way intersection.

Proposed – with zebra crossings – scenario, southbound exit (refer to Table 2)

With the estimated number of pedestrians crossing the roads, all turn movements from the north-west approach of Buchan Avenue have a LoS D in the AM peak hour, the arm has a queue length of 350.1 meters and the DoS is above 100%, meaning that there is no spare capacity. Similarly, in the PM peak, the south-east approach of Buchan Avenue has a LoS C on all turn movements, a queue length of 168.3 meters and a 92% DoS. This result can be attributed to the high number of pedestrians using the Buchan Avenue crossing. In accordance with the modelling guidelines, a LoS C is "satisfactory" and D is "operating near capacity", neither of which warrant an upgrade to the intersection. The LoS of the right turn movement from Faulkner Way southwest is D and C in the morning and afternoon peak hour respectively. This is due to the longer waiting time for vehicles exiting the minor road (Faulkner Way), which is not unusual for minor roads during peaks.

[1] Delay of the most critical turn movement has been considered

[2] Delay of the most critical turn movement has been considered

Proposed – with zebra crossings – scenario, north and southbound exit (refer to Table 3)

There are no significant changes to the LoS or other parameters along Buchan Avenue compared with the results of the modelling of all vehicles exiting southbound (refer to the pink and orange numbers in Table 2 and Table 3). The overall LoS of the intersection is an E in the morning peak hour, but this is solely driven by the right turn movement from Faulkner Way southwest, refer to the blue numbers in Table 3. The low LoS is due to the longer waiting time for vehicles exiting the minor road (Faulkner Way), which is not unusual for minor roads during peaks; The DoS of 0.55 and the queuing of 13.9m (just over 2 cars) is acceptable and is not expected to cause any issues along Faulkner Way.

It is noted that the assumed 20% of vehicles undertaking U-turns and exiting through the Buchan Avenue / Faulkner Way intersection is seen as high and unlikely to occur, thus the performance of the right turn movement off Faulkner Way is expected to be better than the modelled results.

Summary

The intersection analysis shows that it is the pedestrian movements at the zebra crossings which is the major factor contributing towards the reduced performance of the intersection during the school peak hours, even with 20% of vehicles undertaking a U-turn and exiting via the Buchan Avenue / Faulkner Way intersection.

Vehicular traffic at a roundabout would be affected by pedestrians in the same way as traffic is affected at a priority-controlled intersection. Therefore, an upgrade of the Buchan Avenue / Faulkner Way intersection to a roundabout is not likely to improve the overall performance.

A way of improving the vehicular movements at this intersection would be to not install the proposed zebra crossings, which is not recommended for various reasons, the main ones being children's safety and encouragement of active transport.

It should be noted that the crossing at Buchan Avenue will have a crossing supervisor who will be holding back students and vehicles during the school peak times. This will manage the movement of pedestrians and traffic flows.

The traffic generated by the proposed primary school does not warrant the installation of a roundabout at the Buchan Avenue / Faulkner Way intersection.

Council Comment

The proposed marked pedestrian crossings and their locations need to be referred to Council's Pedestrian, Active Transport and Traffic Committee for comment.

Response

Noted. The plan was submitted in the SSDA (**ptc.**'s Transport and Traffic Assessment Report dated 11/06/2021). No comments have been received on the submitted plans.

3. DPIE Comments

DPIE Comment

Submission of a Street Parking Demand Survey reviewing usage and availability of street parking in vicinity of the site, to support the proposed reduced on-site parking provision during operation and off-site parking proposed during construction.

Response

Given the current COVID impact on the traffic and parking behaviour, as well as the fact that Buchan Avenue east of Faulkner Way has not been opened for use yet, physical surveys are not seen as a reliable method of assessing parking occupancy. However, the following outlines the processes undertaken to discuss on-street parking availability during both construction and operation of the proposed school.

During Construction

It is assumed that there will be approximately 65 construction staff (on average) per day during the construction period. 15 parking spaces for the construction staff will be provided adjacent to the school site on Lot 2 (also owned by DoE), but also on-street parking will be available.

To minimise car usage, the contractor will be encouraged to assist in the transportation of workers to the site and all site personnel will be made aware of the public transport options available in the vicinity of the site and encouraged to utilise these facilities.

Site personnel who choose to drive will also be encouraged to consider car-pooling wherever practicable.

The on-street parking spaces available in the vicinity of the site are shown in Figure 13. Approximately 56 spaces as marked by green lines would potentially be available for construction staff at all times during the construction period, as these are directly adjacent to the development site and there are no other attractors in the vicinity which generate a demand for parking.

Further up to 76 spaces will be available along the future south and east road once their construction by Landcom is completed.

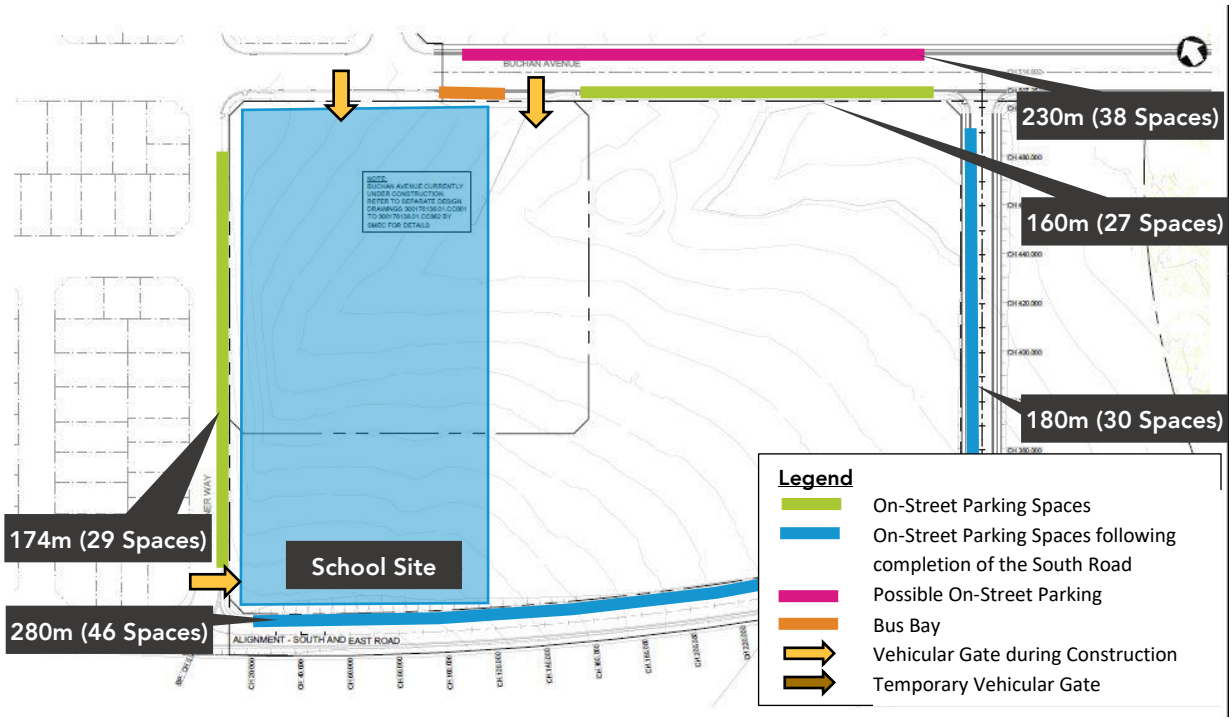

Figure 13 – On-Street Parking Spaces on the vicinity of the Site

Approximately 38 on-street parking spaces as marked by pink lines in Figure 13 may be available temporarily or periodically for the following reasons:

- The land to the north of Buchan Avenue is vacant at the moment, therefore, the kerbside parking spaces on the northern side of Buchan Avenue are less likely to be utilised. However, if any construction is undertaken on the now vacant land, the number of kerbside parking spaces may be reduced.

During Operation – western and northern area

A desktop study of Nearmap imagery has been undertaken to determine the parking occupancy within 200-300m west and north of the proposed school. Images from 5 different days from a non-COVID affected time period in 2020 and 2021 have been reviewed to assess the parking availability in the residential area. The nominated streets are shown in Figure 14. The on-street parking occupancy is presented in Table 4.

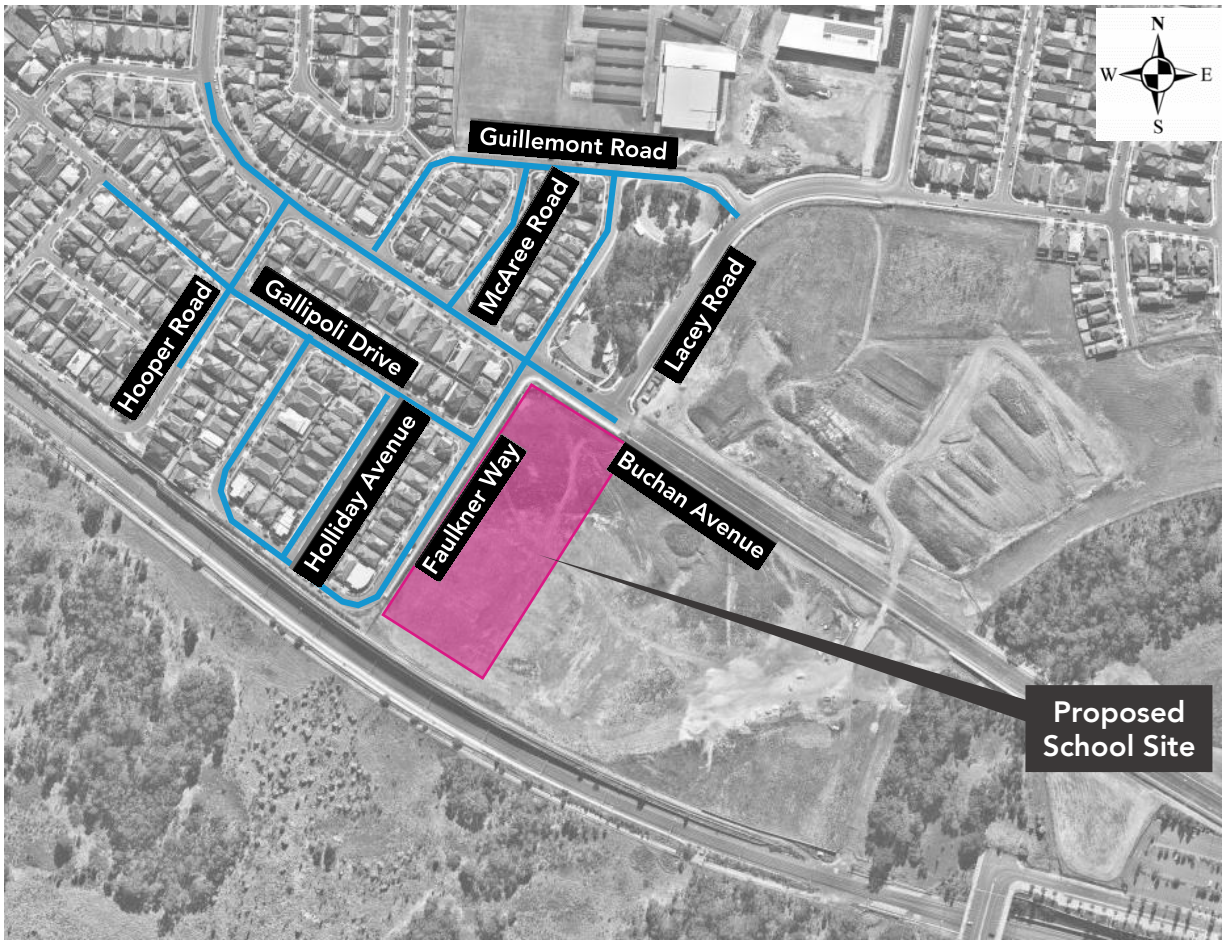

Figure 14 - Nominated Roads for Parking Occupancy (Source: Nearmap Imagery)

Table 4 - On-street Parking Occupancy

Roads	# On-street Spaces	19-May-21			22-Feb-21			1-Oct-20			3-Aug-20			23-Jan-20		
		Occu-pied	Vacant	% Vacant	Occu-pied	Vacant	% Vacant	Occu-pied	Vacant	% Vacant	Occu-pied	Vacant	% Vacant	Occu-pied	Vacant	% Vacant
Buchan Avenue between Hemmie Road and Lacey Drive	54	26	28	52%	15	39	72%	18	36	67%	18	36	67%	21	33	61%
Faulkner Way between Guillemont Road and Gallipoli Drive	123	18	105	85%	11	112	91%	20	103	84%	16	107	87%	15	108	88%
Gallipoli Drive between Isonzo Road and Faulkner Way	58	4	54	93%	8	50	86%	12	46	79%	11	47	81%	7	51	88%
Hooper Road between Gallipoli Drive and Faulkner Way	21	2	19	90%	2	19	90%	6	15	71%	3	18	86%	4	17	81%
Holliday Avenue between Buchan Avenue and Taplin Road	26	1	25	96%	3	23	88%	3	23	88%	3	23	88%	2	24	92%
McAree Road between Guillemont Road and Buchan Avenue	22	3	19	86%	5	17	77%	4	18	82%	0	22	100%	3	19	86%
Guillemont Road between Lacey Road and Buchan Avenue	36	11	25	69%	9	27	75%	10	26	72%	12	24	67%	5	31	86%
Total	**340**	**65**	**275**	81%	**53**	**287**	84%	**73**	**267**	79%	**63**	**277**	81%	**57**	**283**	83%

There are approximately 340 on-street parking spaces available within a distance of 200-300m from the School site. The analysis of Nearmap imagery shows that at least 267 on-street spaces (79%) were vacant. Although reliance on on-street parking spaces during school operation is not expected, the analysis shows that ample on-street parking is available in the western and northern area.

During Operation – north-eastern area

The area towards the north of Buchan Avenue and east of Lacey Street has not been developed yet. Therefore, reference has been made to the *Edmondson Park DCP 2012* to understand the future planning for this area. *Edmondson Park South Concept Plan* is presented in Figure 15, which shows that the area towards the northeast is zoned as General Residential, similar to the area to the north and west of the school. This means that the on-street occupancy on Lacey Street, Buchan Avenue and any other future roads within a distance of 200-300m from the School site are likely to have a parking occupancy similar to the surrounding roads towards the north and west as presented in Table 4.

Based on the above, ample of on street-parking is expected to be available in the vicinity of the School site.

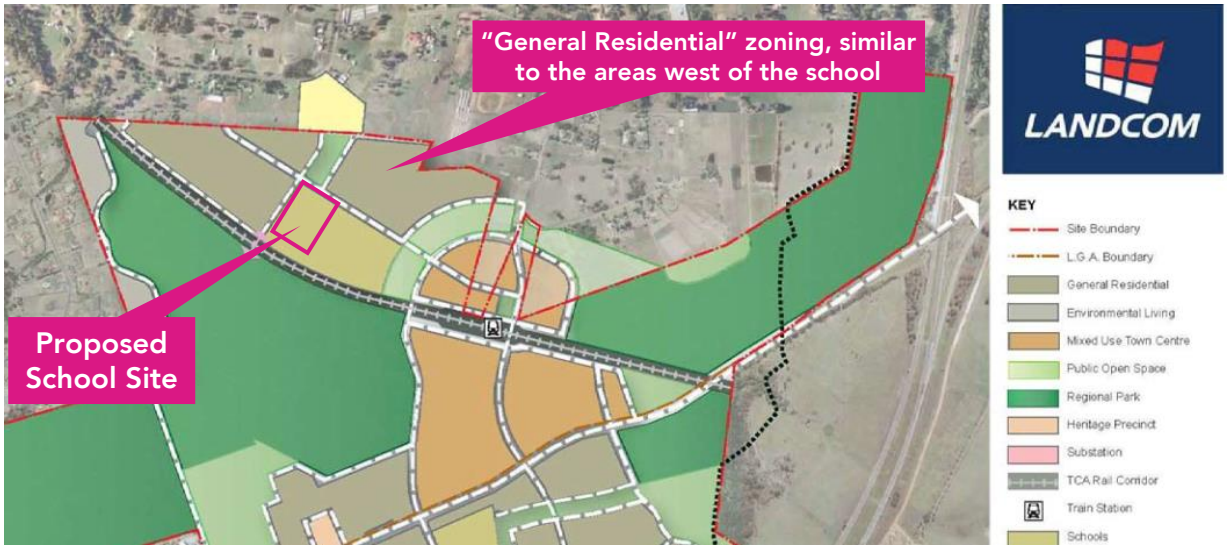

Figure 15 - Edmondson Park South Concept Plan (Source: Edmondson Park DCP 2012, Figure 2)

During Operation – South Road

A section of the future South Road along the frontage of the proposed school will be able to accommodate approximately 13 parking spaces, as shown in the figure below.

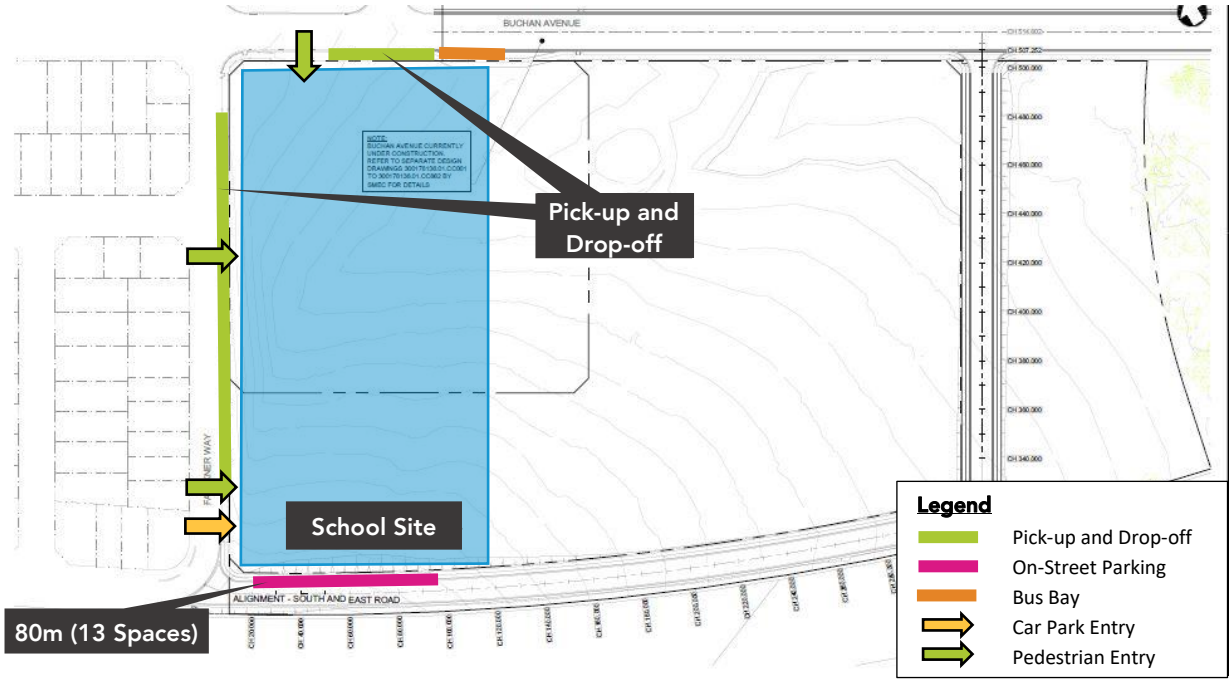

Figure 16 – On-Street Parking Spaces on the vicinity of the Site

We trust that this letter assists in the assessment of the application. For any further enquiries, please contact our office on (02) 8920 0800.

Kind regards,

Kasia Balsam
Team Leader

Document Control: Prepared by *PS* on *12 October 2021*. Reviewed by *KB/SW* on *12 October 2021*.

Attachment 1 SIDRA Results

MOVEMENT SUMMARY

Site: 101 [1a. Buchan Avenue / Faulkner Way - AM Peak - Existing - No Zebra Crossing (Site Folder: AM Peak Hour)]

New Site
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Buchan Avenue (SE)														
4	L2	90	0	95	0.0	0.217	3.5	LOS A	0.0	0.2	0.01	0.11	0.01	39.8
5	T1	306	0	322	0.0	0.217	0.0	LOS A	0.0	0.2	0.01	0.11	0.01	39.6
6	R2	1	0	1	0.0	0.217	7.1	LOS A	0.0	0.2	0.01	0.11	0.01	39.4
Approach		397	0	418	0.0	0.217	0.8	NA	0.0	0.2	0.01	0.11	0.01	39.7
NorthEast: Faulkner Way (NE)														
7	L2	3	0	3	0.0	0.022	6.0	LOS A	0.1	0.5	0.71	0.78	0.71	35.4
8	T1	1	0	1	0.0	0.022	14.7	LOS B	0.1	0.5	0.71	0.78	0.71	35.4
9	R2	3	0	3	0.0	0.022	17.2	LOS B	0.1	0.5	0.71	0.78	0.71	35.2
Approach		7	0	7	0.0	0.022	12.1	LOS A	0.1	0.5	0.71	0.78	0.71	35.3
NorthWest: Buchan Avenue (NW)														
10	L2	1	0	1	0.0	0.496	6.6	LOS A	3.5	24.6	0.39	0.18	0.52	38.9
11	T1	594	0	625	0.0	0.496	1.6	LOS A	3.5	24.6	0.39	0.18	0.52	38.8
12	R2	194	0	204	0.0	0.496	6.7	LOS A	3.5	24.6	0.39	0.18	0.52	38.6
Approach		789	0	831	0.0	0.496	2.8	NA	3.5	24.6	0.39	0.18	0.52	38.7
SouthWest: Faulkner Way (SW)														
1	L2	3	0	3	0.0	0.057	4.4	LOS A	0.2	1.2	0.73	0.81	0.73	34.3
2	T1	1	0	1	0.0	0.057	14.0	LOS A	0.2	1.2	0.73	0.81	0.73	34.3
3	R2	10	0	11	0.0	0.057	18.9	LOS B	0.2	1.2	0.73	0.81	0.73	34.1
Approach		14	0	15	0.0	0.057	15.4	LOS B	0.2	1.2	0.73	0.81	0.73	34.1
All Vehicles		1207	0	1271	0.0	0.496	2.4	NA	3.5	24.6	0.27	0.17	0.35	39.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [1b. Buchan Avenue / Faulkner Way - AM Peak - Proposed - With Zebra Crossings (Site Folder: AM Peak Hour)]

New Site
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Buchan Avenue (SE)														
4	L2	90	0	95	0.0	0.526	7.7	LOS A	4.6	32.4	0.66	0.80	0.96	37.5
5	T1	306	0	322	0.0	0.526	5.8	LOS A	4.6	32.4	0.66	0.80	0.96	37.4
6	R2	1	0	1	0.0	0.526	16.2	LOS B	4.6	32.4	0.66	0.80	0.96	37.2
Approach		397	0	418	0.0	0.526	6.3	NA	4.6	32.4	0.66	0.80	0.96	37.4
NorthEast: Faulkner Way (NE)														
7	L2	3	0	3	0.0	0.026	10.0	LOS A	0.1	0.5	0.79	0.87	0.79	34.8
8	T1	1	0	1	0.0	0.026	16.5	LOS B	0.1	0.5	0.79	0.87	0.79	34.8
9	R2	3	0	3	0.0	0.026	17.2	LOS B	0.1	0.5	0.79	0.87	0.79	34.5
Approach		7	0	7	0.0	0.026	14.0	LOS A	0.1	0.5	0.79	0.87	0.79	34.7
NorthWest: Buchan Avenue (NW)														
10	L2	1	0	1	0.0	1.012	55.2	LOS D	50.0	350.1	1.00	3.37	5.30	25.4
11	T1	594	0	625	0.0	1.012	52.4	LOS D	50.0	350.1	1.00	3.37	5.30	25.3
12	R2	194	0	204	0.0	1.012	53.4	LOS D	50.0	350.1	1.00	3.37	5.30	25.2
Approach		789	0	831	0.0	1.012	52.7	NA	50.0	350.1	1.00	3.37	5.30	25.3
SouthWest: Faulkner Way (SW)														
1	L2	3	0	3	0.0	0.143	4.7	LOS A	0.4	2.7	0.89	0.90	0.89	28.9
2	T1	1	0	1	0.0	0.143	15.6	LOS B	0.4	2.7	0.89	0.90	0.89	28.9
3	R2	10	0	11	0.0	0.143	46.4	LOS D	0.4	2.7	0.89	0.90	0.89	28.7
Approach		14	0	15	0.0	0.143	35.3	LOS C	0.4	2.7	0.89	0.90	0.89	28.8
All Vehicles		1207	0	1271	0.0	1.012	37.0	NA	50.0	350.1	0.89	2.48	3.80	28.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2a. Buchan Avenue / Faulkner Way - PM Peak - Existing - No Zebra Crossing (Site Folder: PM Peak Hour)]

New Site
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Buchan Avenue (SE)														
4	L2	100	0	105	0.0	0.338	3.4	LOS A	0.0	0.3	0.01	0.08	0.01	39.9
5	T1	518	0	545	0.0	0.338	0.0	LOS A	0.0	0.3	0.01	0.08	0.01	39.7
6	R2	3	0	3	0.0	0.338	4.6	LOS A	0.0	0.3	0.01	0.08	0.01	39.5
Approach		621	0	654	0.0	0.338	0.6	NA	0.0	0.3	0.01	0.08	0.01	39.8
NorthEast: Faulkner Way (NE)														
7	L2	1	0	1	0.0	0.007	4.0	LOS A	0.0	0.2	0.50	0.58	0.50	36.6
8	T1	1	0	1	0.0	0.007	10.3	LOS A	0.0	0.2	0.50	0.58	0.50	36.6
9	R2	1	0	1	0.0	0.007	11.8	LOS A	0.0	0.2	0.50	0.58	0.50	36.3
Approach		3	0	3	0.0	0.007	8.7	LOS A	0.0	0.2	0.50	0.58	0.50	36.5
NorthWest: Buchan Avenue (NW)														
10	L2	3	0	3	0.0	0.348	7.7	LOS A	2.5	17.3	0.62	0.44	0.77	37.8
11	T1	201	0	212	0.0	0.348	3.6	LOS A	2.5	17.3	0.62	0.44	0.77	37.6
12	R2	197	0	207	0.0	0.348	7.9	LOS A	2.5	17.3	0.62	0.44	0.77	37.4
Approach		401	0	422	0.0	0.348	5.7	NA	2.5	17.3	0.62	0.44	0.77	37.5
SouthWest: Faulkner Way (SW)														
1	L2	1	0	1	0.0	0.007	5.4	LOS A	0.0	0.2	0.64	0.67	0.64	36.4
2	T1	1	0	1	0.0	0.007	9.4	LOS A	0.0	0.2	0.64	0.67	0.64	36.4
3	R2	1	0	1	0.0	0.007	12.9	LOS A	0.0	0.2	0.64	0.67	0.64	36.2
Approach		3	0	3	0.0	0.007	9.2	LOS A	0.0	0.2	0.64	0.67	0.64	36.3
All Vehicles		1028	0	1082	0.0	0.348	2.6	NA	2.5	17.3	0.25	0.22	0.31	38.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2b. Buchan Avenue / Faulkner Way - PM Peak - Proposed - With Zebra Crossings (Site Folder: PM Peak Hour)]

New Site
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Buchan Avenue (SE)														
4	L2	100	0	105	0.0	0.917	25.5	LOS B	24.0	168.3	0.98	2.28	3.44	31.4
5	T1	518	0	545	0.0	0.917	25.1	LOS B	24.0	168.3	0.98	2.28	3.44	31.3
6	R2	3	0	3	0.0	0.917	27.7	LOS B	24.0	168.3	0.98	2.28	3.44	31.2
Approach		621	0	654	0.0	0.917	25.2	NA	24.0	168.3	0.98	2.28	3.44	31.3
NorthEast: Faulkner Way (NE)														
7	L2	1	0	1	0.0	0.008	6.1	LOS A	0.0	0.2	0.67	0.70	0.67	36.3
8	T1	1	0	1	0.0	0.008	11.3	LOS A	0.0	0.2	0.67	0.70	0.67	36.2
9	R2	1	0	1	0.0	0.008	11.8	LOS A	0.0	0.2	0.67	0.70	0.67	36.0
Approach		3	0	3	0.0	0.008	9.7	LOS A	0.0	0.2	0.67	0.70	0.67	36.2
NorthWest: Buchan Avenue (NW)														
10	L2	3	0	3	0.0	0.566	10.6	LOS A	4.6	32.4	0.71	0.99	1.17	36.5
11	T1	201	0	212	0.0	0.566	7.2	LOS A	4.6	32.4	0.71	0.99	1.17	36.4
12	R2	197	0	207	0.0	0.566	10.8	LOS A	4.6	32.4	0.71	0.99	1.17	36.2
Approach		401	0	422	0.0	0.566	9.0	NA	4.6	32.4	0.71	0.99	1.17	36.3
SouthWest: Faulkner Way (SW)														
1	L2	1	0	1	0.0	0.013	5.8	LOS A	0.0	0.3	0.78	0.79	0.78	34.2
2	T1	1	0	1	0.0	0.013	10.3	LOS A	0.0	0.3	0.78	0.79	0.78	34.2
3	R2	1	0	1	0.0	0.013	31.1	LOS C	0.0	0.3	0.78	0.79	0.78	34.0
Approach		3	0	3	0.0	0.013	15.7	LOS B	0.0	0.3	0.78	0.79	0.78	34.1
All Vehicles		1028	0	1082	0.0	0.917	18.8	NA	24.0	168.3	0.88	1.77	2.54	33.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [3a. Buchan Avenue / Faulkner Way - AM Peak - Existing - No Zebra Crossing - 20-80 Distribution (Site Folder: AM Peak Hour - Change in Distribution)]

New Site
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Buchan Avenue (SE)														
4	L2	90	0	95	0.0	0.217	3.5	LOS A	0.0	0.2	0.01	0.11	0.01	39.8
5	T1	306	0	322	0.0	0.217	0.0	LOS A	0.0	0.2	0.01	0.11	0.01	39.6
6	R2	1	0	1	0.0	0.217	7.1	LOS A	0.0	0.2	0.01	0.11	0.01	39.4
Approach		397	0	418	0.0	0.217	0.8	NA	0.0	0.2	0.01	0.11	0.01	39.7
NorthEast: Faulkner Way (NE)														
7	L2	3	0	3	0.0	0.023	6.0	LOS A	0.1	0.5	0.72	0.78	0.72	35.4
8	T1	1	0	1	0.0	0.023	14.7	LOS B	0.1	0.5	0.72	0.78	0.72	35.3
9	R2	3	0	3	0.0	0.023	17.8	LOS B	0.1	0.5	0.72	0.78	0.72	35.1
Approach		7	0	7	0.0	0.023	12.3	LOS A	0.1	0.5	0.72	0.78	0.72	35.2
NorthWest: Buchan Avenue (NW)														
10	L2	1	0	1	0.0	0.496	6.6	LOS A	3.5	24.6	0.39	0.18	0.52	38.9
11	T1	594	0	625	0.0	0.496	1.6	LOS A	3.5	24.6	0.39	0.18	0.52	38.8
12	R2	194	0	204	0.0	0.496	6.7	LOS A	3.5	24.6	0.39	0.18	0.52	38.6
Approach		789	0	831	0.0	0.496	2.8	NA	3.5	24.6	0.39	0.18	0.52	38.7
SouthWest: Faulkner Way (SW)														
1	L2	31	0	33	0.0	0.223	4.9	LOS A	0.7	5.1	0.65	0.76	0.69	34.9
2	T1	1	0	1	0.0	0.223	15.4	LOS B	0.7	5.1	0.65	0.76	0.69	34.9
3	R2	38	0	40	0.0	0.223	20.6	LOS B	0.7	5.1	0.65	0.76	0.69	34.7
Approach		70	0	74	0.0	0.223	13.6	LOS A	0.7	5.1	0.65	0.76	0.69	34.8
All Vehicles		1263	0	1329	0.0	0.496	2.9	NA	3.5	24.6	0.28	0.19	0.37	38.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [3b. Buchan Avenue / Faulkner Way - AM Peak - Proposed - With Zebra Crossings - 20-80 Distribution (Site Folder: AM Peak Hour - Change in Distribution)]

New Site
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Buchan Avenue (SE)														
4	L2	90	0	95	0.0	0.526	7.7	LOS A	4.6	32.4	0.66	0.80	0.96	37.5
5	T1	306	0	322	0.0	0.526	5.8	LOS A	4.6	32.4	0.66	0.80	0.96	37.4
6	R2	1	0	1	0.0	0.526	16.2	LOS B	4.6	32.4	0.66	0.80	0.96	37.2
Approach		397	0	418	0.0	0.526	6.3	NA	4.6	32.4	0.66	0.80	0.96	37.4
NorthEast: Faulkner Way (NE)														
7	L2	3	0	3	0.0	0.026	10.0	LOS A	0.1	0.6	0.79	0.88	0.79	34.7
8	T1	1	0	1	0.0	0.026	16.5	LOS B	0.1	0.6	0.79	0.88	0.79	34.7
9	R2	3	0	3	0.0	0.026	17.8	LOS B	0.1	0.6	0.79	0.88	0.79	34.4
Approach		7	0	7	0.0	0.026	14.3	LOS A	0.1	0.6	0.79	0.88	0.79	34.6
NorthWest: Buchan Avenue (NW)														
10	L2	1	0	1	0.0	1.012	55.2	LOS D	50.0	350.1	1.00	3.37	5.30	25.4
11	T1	594	0	625	0.0	1.012	52.4	LOS D	50.0	350.1	1.00	3.37	5.30	25.3
12	R2	194	0	204	0.0	1.012	53.4	LOS D	50.0	350.1	1.00	3.37	5.30	25.2
Approach		789	0	831	0.0	1.012	52.7	NA	50.0	350.1	1.00	3.37	5.30	25.3
SouthWest: Faulkner Way (SW)														
1	L2	31	0	33	0.0	0.550	20.1	LOS B	2.0	13.9	0.86	1.05	1.27	26.9
2	T1	1	0	1	0.0	0.550	32.1	LOS C	2.0	13.9	0.86	1.05	1.27	26.8
3	R2	38	0	40	0.0	0.550	65.6	LOS E	2.0	13.9	0.86	1.05	1.27	26.7
Approach		70	0	74	0.0	0.550	44.9	LOS D	2.0	13.9	0.86	1.05	1.27	26.8
All Vehicles		1263	0	1329	0.0	1.012	37.4	NA	50.0	350.1	0.89	2.42	3.69	28.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [4a. Buchan Avenue / Faulkner Way - PM Peak - Existing - No Zebra Crossing - 20-80 Distribution (Site Folder: PM Peak Hour - Change in Distribution)]

New Site
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Buchan Avenue (SE)														
4	L2	100	0	105	0.0	0.338	3.4	LOS A	0.0	0.3	0.01	0.08	0.01	39.9
5	T1	518	0	545	0.0	0.338	0.0	LOS A	0.0	0.3	0.01	0.08	0.01	39.7
6	R2	3	0	3	0.0	0.338	4.6	LOS A	0.0	0.3	0.01	0.08	0.01	39.5
Approach		621	0	654	0.0	0.338	0.6	NA	0.0	0.3	0.01	0.08	0.01	39.8
NorthEast: Faulkner Way (NE)														
7	L2	1	0	1	0.0	0.007	4.0	LOS A	0.0	0.2	0.50	0.58	0.50	36.6
8	T1	1	0	1	0.0	0.007	10.3	LOS A	0.0	0.2	0.50	0.58	0.50	36.6
9	R2	1	0	1	0.0	0.007	12.2	LOS A	0.0	0.2	0.50	0.58	0.50	36.3
Approach		3	0	3	0.0	0.007	8.8	LOS A	0.0	0.2	0.50	0.58	0.50	36.5
NorthWest: Buchan Avenue (NW)														
10	L2	3	0	3	0.0	0.348	7.7	LOS A	2.5	17.3	0.62	0.44	0.77	37.8
11	T1	201	0	212	0.0	0.348	3.6	LOS A	2.5	17.3	0.62	0.44	0.77	37.6
12	R2	197	0	207	0.0	0.348	7.9	LOS A	2.5	17.3	0.62	0.44	0.77	37.4
Approach		401	0	422	0.0	0.348	5.7	NA	2.5	17.3	0.62	0.44	0.77	37.5
SouthWest: Faulkner Way (SW)														
1	L2	28	0	29	0.0	0.131	5.7	LOS A	0.4	3.0	0.64	0.77	0.64	36.2
2	T1	1	0	1	0.0	0.131	10.2	LOS A	0.4	3.0	0.64	0.77	0.64	36.2
3	R2	28	0	29	0.0	0.131	13.9	LOS A	0.4	3.0	0.64	0.77	0.64	36.0
Approach		57	0	60	0.0	0.131	9.8	LOS A	0.4	3.0	0.64	0.77	0.64	36.1
All Vehicles		1082	0	1139	0.0	0.348	3.0	NA	2.5	17.3	0.27	0.25	0.33	38.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [4b. Buchan Avenue / Faulkner Way - PM Peak - Proposed - With Zebra Crossings - 20-80 Distribution (Site Folder: PM Peak Hour - Change in Distribution)]

New Site
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
SouthEast: Buchan Avenue (SE)														
4	L2	100	0	105	0.0	0.917	25.5	LOS B	24.0	168.3	0.98	2.28	3.44	31.4
5	T1	518	0	545	0.0	0.917	25.1	LOS B	24.0	168.3	0.98	2.28	3.44	31.3
6	R2	3	0	3	0.0	0.917	27.7	LOS B	24.0	168.3	0.98	2.28	3.44	31.2
Approach		621	0	654	0.0	0.917	25.2	NA	24.0	168.3	0.98	2.28	3.44	31.3
NorthEast: Faulkner Way (NE)														
7	L2	1	0	1	0.0	0.008	6.1	LOS A	0.0	0.2	0.68	0.71	0.68	36.2
8	T1	1	0	1	0.0	0.008	11.3	LOS A	0.0	0.2	0.68	0.71	0.68	36.2
9	R2	1	0	1	0.0	0.008	12.2	LOS A	0.0	0.2	0.68	0.71	0.68	35.9
Approach		3	0	3	0.0	0.008	9.9	LOS A	0.0	0.2	0.68	0.71	0.68	36.1
NorthWest: Buchan Avenue (NW)														
10	L2	3	0	3	0.0	0.566	10.6	LOS A	4.6	32.4	0.71	0.99	1.17	36.5
11	T1	201	0	212	0.0	0.566	7.2	LOS A	4.6	32.4	0.71	0.99	1.17	36.4
12	R2	197	0	207	0.0	0.566	10.8	LOS A	4.6	32.4	0.71	0.99	1.17	36.2
Approach		401	0	422	0.0	0.566	9.0	NA	4.6	32.4	0.71	0.99	1.17	36.3
SouthWest: Faulkner Way (SW)														
1	L2	28	0	29	0.0	0.292	8.3	LOS A	0.9	6.6	0.83	0.96	0.96	32.3
2	T1	1	0	1	0.0	0.292	13.5	LOS A	0.9	6.6	0.83	0.96	0.96	32.2
3	R2	28	0	29	0.0	0.292	36.5	LOS C	0.9	6.6	0.83	0.96	0.96	32.0
Approach		57	0	60	0.0	0.292	22.2	LOS B	0.9	6.6	0.83	0.96	0.96	32.1
All Vehicles		1082	0	1139	0.0	0.917	19.0	NA	24.0	168.3	0.87	1.73	2.46	33.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.