Ref: 23033
Date: Aug 2023
Issue: A

Mount St Josephs Catholic College

273 Horsley Road, Milperra

Traffic & Parking Assessment

Transport and Traffic Planning Associates

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1.0 Introduction

This report has been prepared to assess the existing traffic circumstances and provide an alternative traffic solution to improve the safety and efficiency of the Mount St Josephs Catholic College at 273 Horsely Road, Milperra (Figure 1).

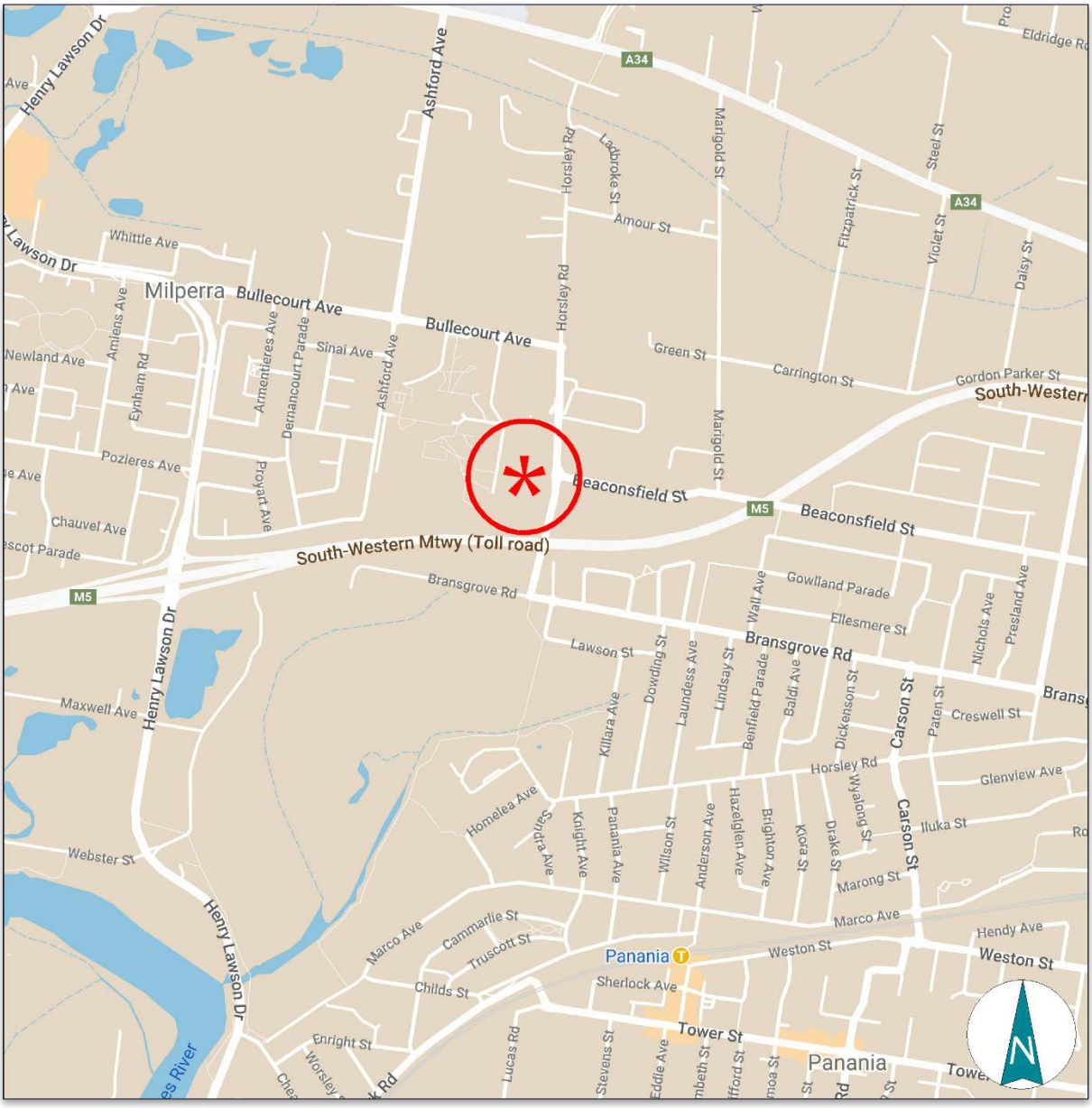


Figure 1 - Site Location

The Milperra area is currently undergoing large changes with the sale of the Western Sydney University land resulting in rezoning a redevelopment, providing for a large new residential area increasing, which will result in increased demand for school capacity.

The anticipated increase in traffic due to the new developments has created cause for concern over the safety of the school's patrons, with the Horlsey Road and Beaconsfield Street intersection already causing unacceptable delays. As such, this traffic assessment is required to determine a safer alternative to the existing operation during school drop-off and pick-up periods.

The purpose of this report is to:

- describe the site, the area planning and the proposed development scheme
- describe the existing road network, traffic and transport circumstances
- describe the future and proposed road network, traffic and transport circumstances
- assess the suitability of the proposed access
- assess the potential traffic implications, including the compound development outcome
- assess the adequacy of the proposed parking provision
- assess the proposed vehicle access, internal circulation and servicing arrangements

2.0 Approved Development

2.1 Site, Context & Existing Circumstances

The site (Figure 2) is a consolidation of Lot 102 in DP 874035 and the recently acquired Lot 104 in DP 1268911, which occupies an irregularly shaped area of 6.37ha with frontage to the western side of Horsley Road and the northern side of the South Western Motorway.

The Milperra area which surrounds the subject site comprises:

- the adjoining Western Sydney University (recently sold for new development)
- the residential area extending to the west of the site
- the commercial and industrial uses to the north and east of the site
- the Milperra parklands surrounding the residential area

Figure 2 - Site Boundary

2.2 Surrounding Development Schemes

2.2.1 Western Sydney University Development

The Western Sydney University land has been sold with the master planning in progress for the redevelopment and rezoning of the land with the council agreement for the following:

- Dedication of 14,400m2 of land as RE1 Public Recreation Zoned land
- Construction and dedication of local roads incl. shared cycleway and 668m2
- Open space embellishment within the site
- Milperra Reserve embellishment
- Repair and renovate Milperra Community Centre
- Affordable housing contribution
- Undergrounding powerlines along Ashford Avenue are being added, subject to any relevant Ausgrid approval.

2.2.2 Proposed Development at 270 Horsley Road

The opposing industrial property at 270 Horsley Road is going through approval for a new warehouse and distribution centre comprising 12 tenancies and providing 335 car spaces, likely to increase the traffic along Horsely Road significantly.

2.2.3 Proposed Development at 339-349 Horsley Road

A new industrial /commercial development comprising 29,531m^2 of warehouse space plus 3,268m^2 of office area and providing for some 174 car parking spaces is proposed along Horsley Road to the north of the school.

2.3 Proposed Development Scheme

It is proposed to temporarily relocate the existing drop-off and pick-up to the recently acquired car park to the south, which Western Sydney University previously owned. Provisions for new line marking and signage are proposed, with minor earthworks to widen the access, providing seamless traffic movements and ensuring vehicles operate in and out of Horsely Road more efficiently.

Furthermore, the school is anticipated to have a student growth from some 851 students to 950 students in the next 5 years resulting in an additional 5 staff to that of the existing 76 staff.

The proposal does involve the discussion to upgrade the Horsley Road and Beaconsfield Street intersection, subject to the outcome of the investigation in Section 4. This investigation will include the existing and proposed arrangements with the anticipated student growth as well as the development growth in the surrounding network.

3.0 Existing Road Network and Traffic Conditions

3.1 Road Network

The existing road network serving the Milperra area (Figure 3) comprises the following:

- *M5 Motorway* – a State Road and arterial route connecting between Mascot and Prestons with a connection provided at The River Road interchange
- *Milperra Road/Newbridge* – a State Road and arterial route connecting between Bankstown and Liverpool
- Henry Lawson Drive – a State Road and sub-arterial route
- *Bullecourt Avenue/Horsley Road/Beaconsfield Street* – a Regional Road and east-west collector route
- *Queen Street/Edge Street* – a Regional Road and north-south collector route
- *Ashford Avenue* – a collector road connecting to Milperra road

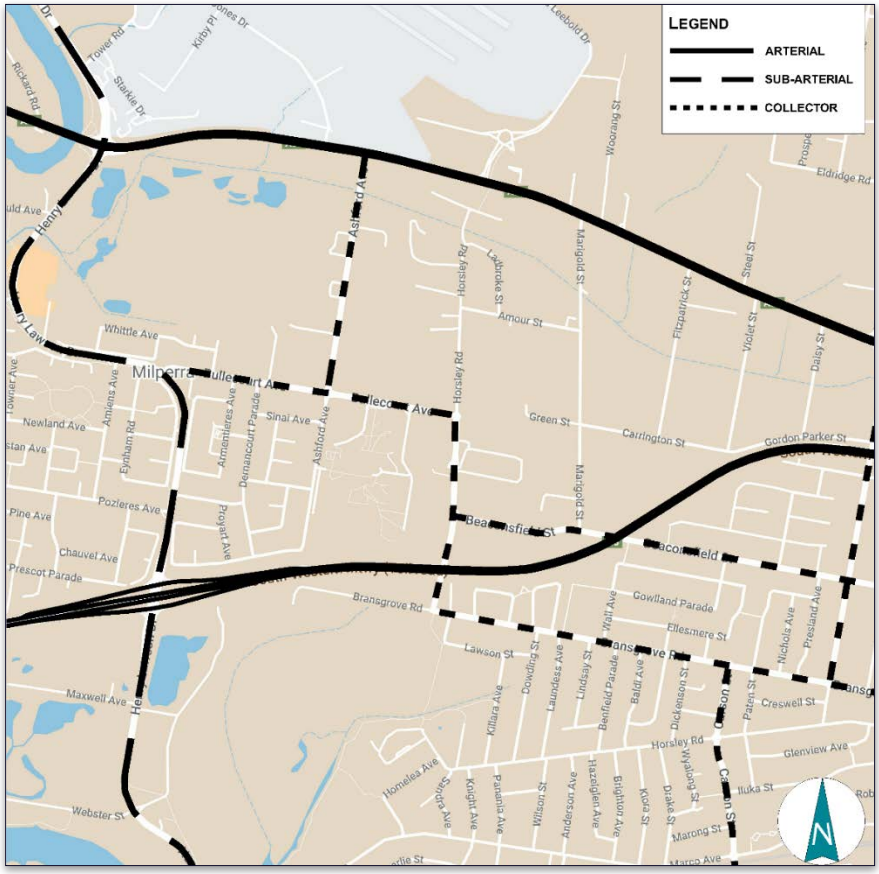


Figure 3 - Road Network

3.2 Traffic Controls

The existing traffic controls which have been applied to the road system in the vicinity of the site (Figure 4) include:

- The 50 kmph speed restriction on the local and collector road system with the 40 kmph school restrictions along the site frontage
- The roundabouts at the following intersections:
    - Horsley Road and Beaconsfield Street
    - Horsley Road and WSU Access
    - Horsley Road and Bullecourt Avenue
    - Bullecourt Avenue and Ashford Avenue
    - Bransgrove Road and Lawson Street
- the raised pedestrian crossing along Horsley Road south of Beaconsfield Street

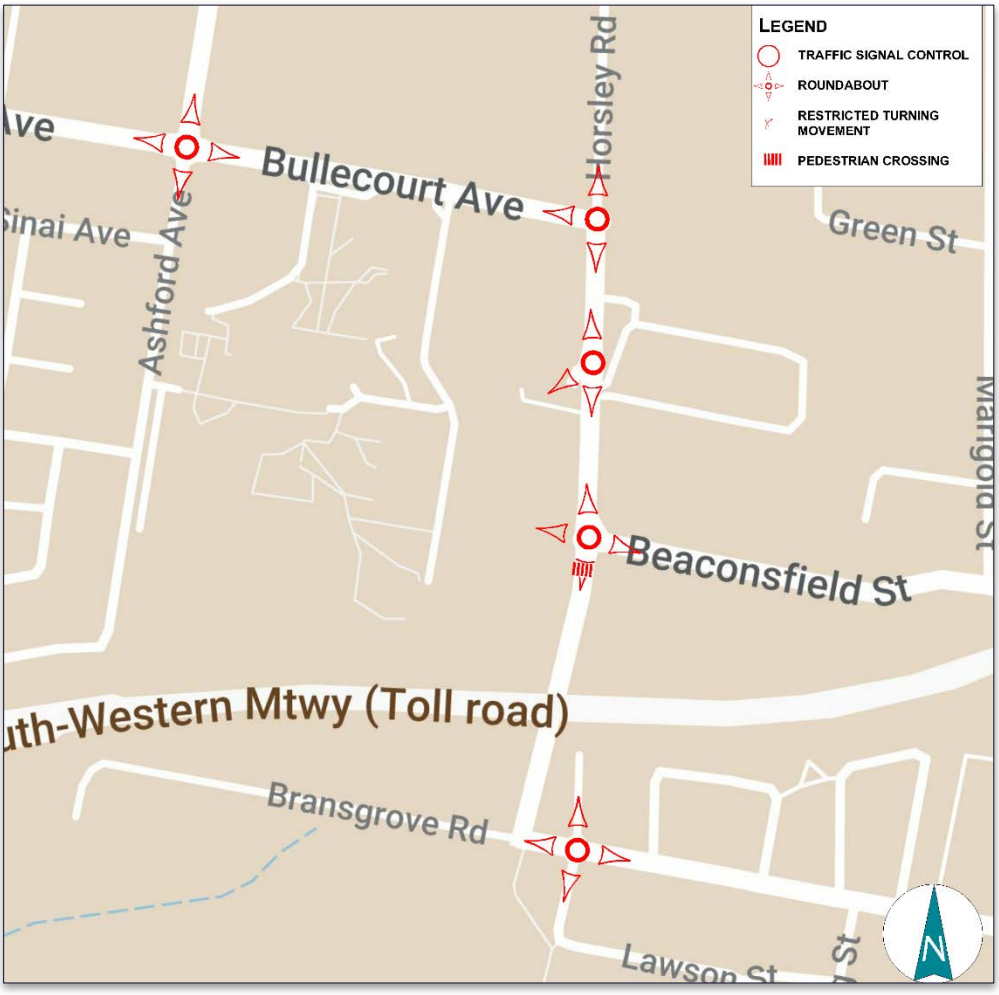


Figure 4 - Traffic Controls

3.3 Traffic Conditions

Traffic surveys were undertaken at the relevant intersections in the area during the AM and PM peak periods; the results of these surveys are provided in Appendix C.

The operational performance of these intersections has been assessed using SIDRA, and the results are provided in Appendix D and summarised in the following while the criteria for assessing SIDRA results are reproduced overleaf:

	AM		PM	
	LOS	AVD	LOS	AVD
Horsley Road and Beaconsfield Street	F	210.2	F	98.8
Horsley Road and School Departure Driveway	A	1.1	A	0.3

The results of the SIDRA assessments indicate that the school departure operates exceptionally well, while the Beaconsfield Street intersection is causing significant delays to the transport network.

3.4 Transport Services

The site is well served by the school bus routes provided by Transdev, with further details of times and routes provided in Appendix D.

3.5 Bicycles and Pedestrians

There are shared paths along Henry Lawson Road and the southern part of Horsley Road for the bicycle to operate safely to access the school. See Figure 5 below, sourced from the TfNSW Cycleway Finder, demonstrating available cycling routes.

The proposal for further bike routes and facilities is provided upon the completion of the WSU redevelopment works.

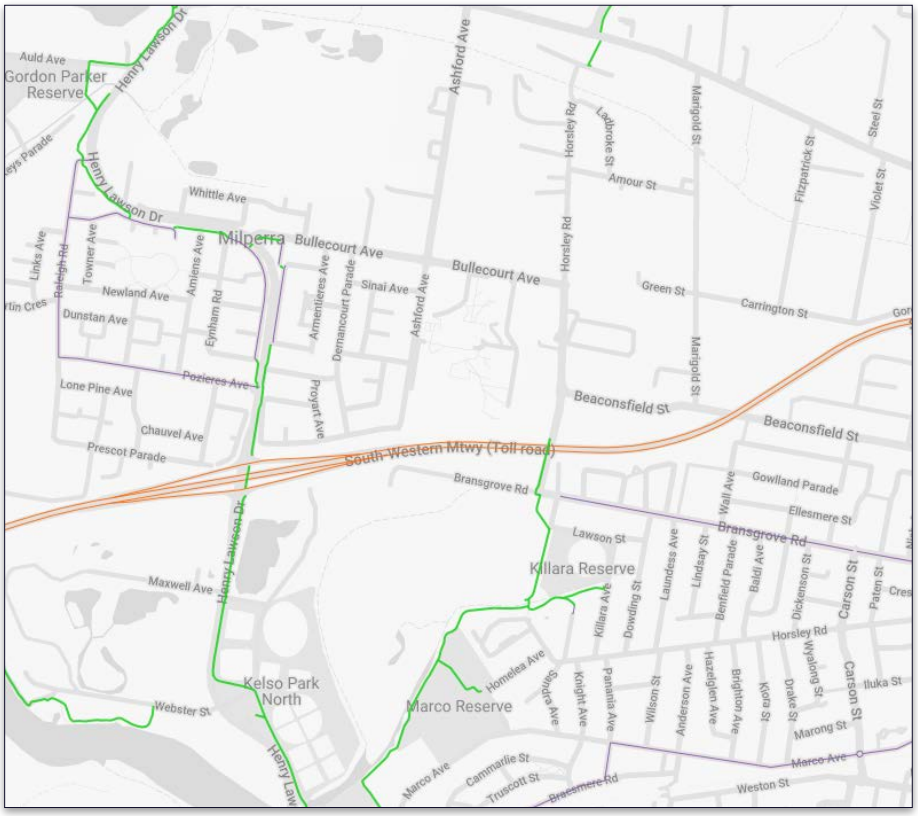


Figure 5 – Cycle Routes

There are sufficient pedestrian facilities in the vicinity of the site, with footpaths available on both sides of Horsley Road and Beaconsfield Street, as well as the raised pedestrian crossing provided at the southern side of the Horsley Road at the Beaconsfield Street intersection.

4.0 Traffic

4.1 Background

The school's existing traffic circumstances are assessed in a traffic survey undertaken on the 14th of March 2023, and the traffic counts at the access and departure points during the school peak periods are demonstrated in Figure 6 and Figure 7.

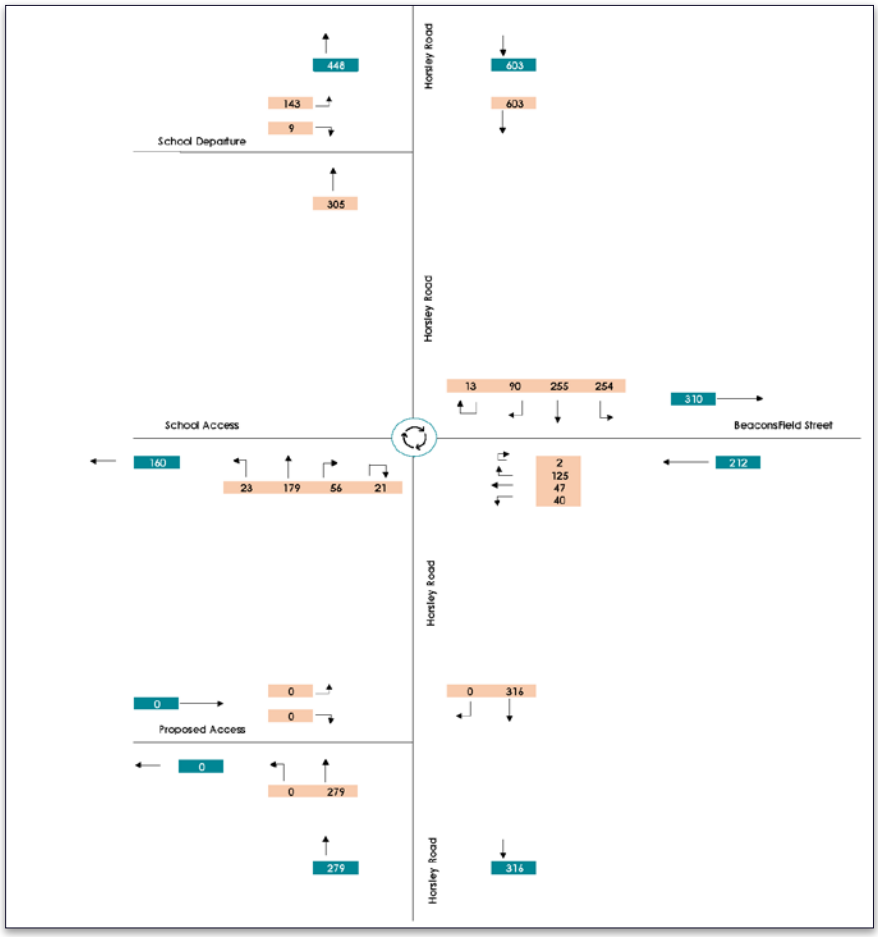


Figure 6 – Existing AM Peak Traffic Movements

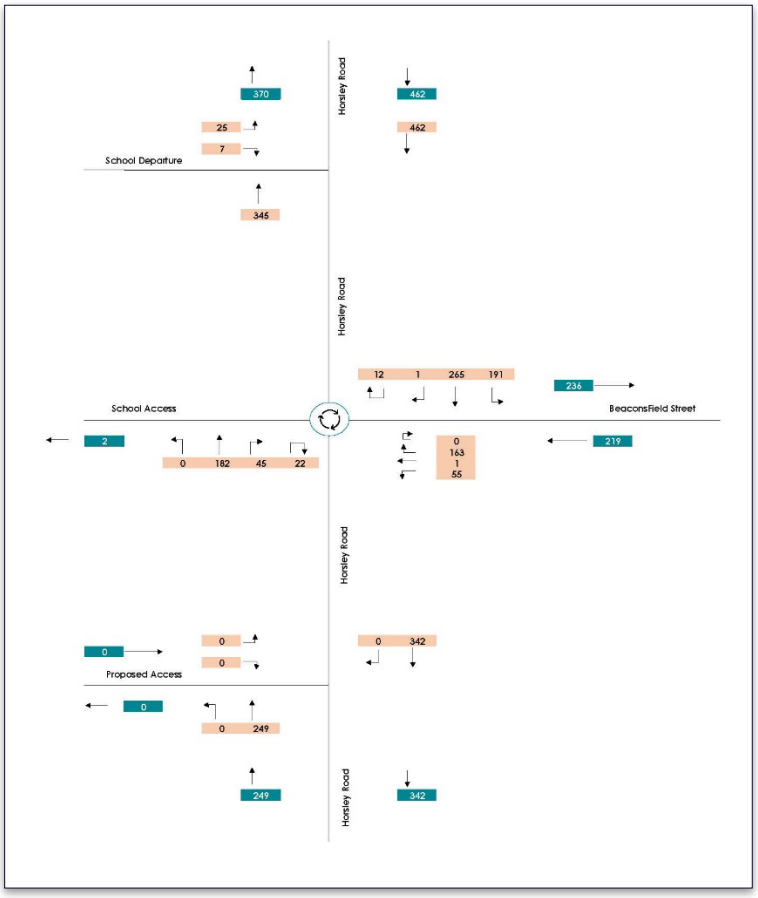


Figure 7 – Existing PM Peak Traffic Movements

Analysis of the existing traffic circumstances and observations indicate an unsatisfactory scenario during the morning peak due to the Horsley Road and Beaconsfield Street intersection congestion, while the afternoon peak does not represent the traffic volumes accurately for pick up with many school students using the bus zones along the school's frontage.

In understanding the difference between the peak movement hours, the traffic problem at the school frontage will be solved using the AM peak data because it provides the worst-case scenario, revealing the most capable resolutions.

4.2 Proposed Access operations

Based on the base data and circumstances, it is apparent that the queue lengths and delays are far from satisfactory and require intersection upgrades and/or redistribution of traffic. The proposed plans provide a new

drop off/pick up area in the recently acquired car park to the south of the original school. This car park will alleviate traffic congestion along Horsley Road with fewer traffic movements requiring access to the Beaconsfield Street Intersection.

4.2.1 Change of existing on-site direction

The principal behind this change in direction is to relieve queues accessing the site, which results in the blockage of the roundabout for other road users. The distribution of this traffic is demonstrated in Figure 8 below.

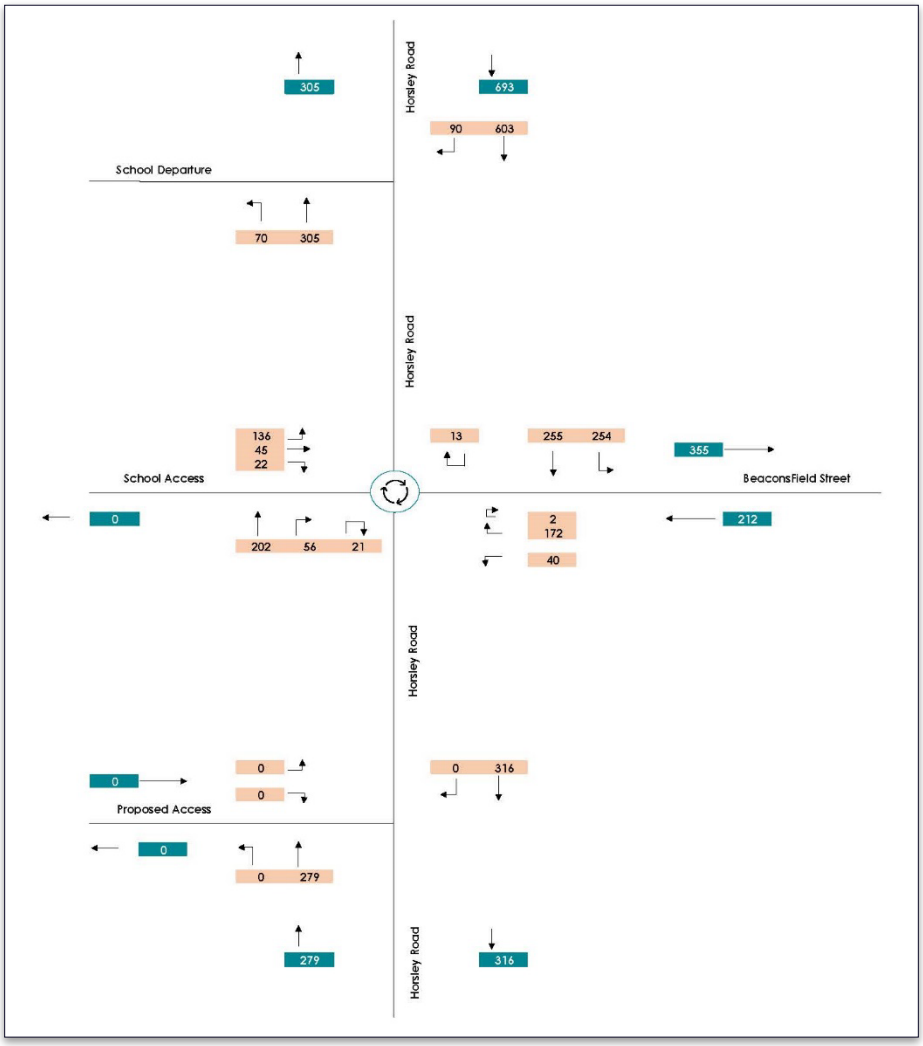


Figure 8 – Direction Change AM Peak Traffic Movements

SIDRA modelling has been undertaken for the redirection of traffic circumstances, as discussed previously. The results of that assessment are provided in Appendix D and summarised in the following:

	AM	
	LOS	AVD
Horsley Road and Beaconsfield Street	F	103.4
Horsley Road and School Departure Driveway	A	5.0

The SIDRA results indicate that the Horsley Road and Beaconsfield Street intersection has improved significantly but remains in an unacceptable Level of Service. The other safety concern with this arrangement is the traffic direction will put the passenger side facing the road frontage resulting in the additional requirement to have kids crossing in front of the vehicles at some point in the drop-off/pick-up process.

4.2.2 Closure of Existing Access and Departure

The idea behind this closure is to relieve queues created by the backing up of vehicles trying to access an over-saturated drop-off/pick-up area. The distribution of this traffic is demonstrated in Figure 9 below.

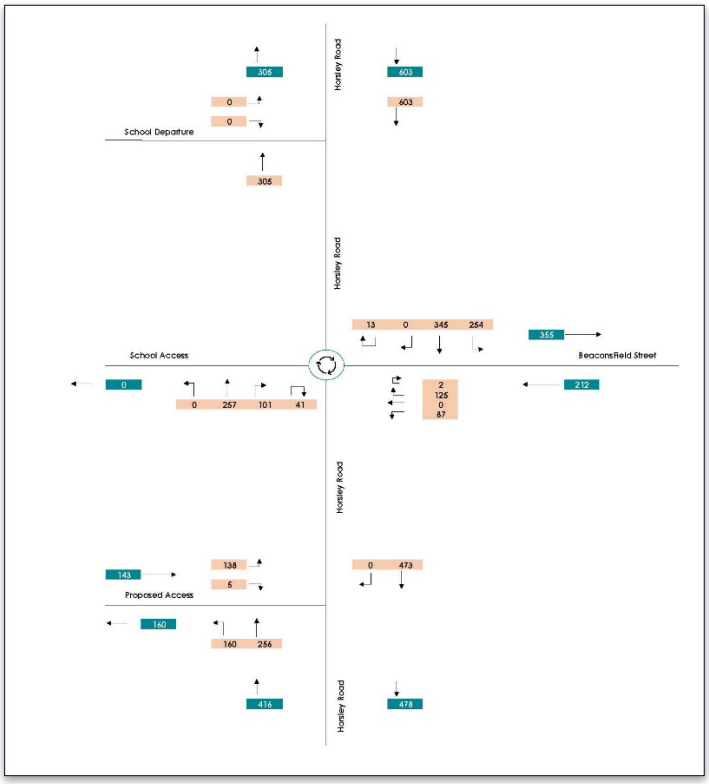


Figure 9 – Closure of existing drop-off AM Peak Traffic Movements

SIDRA modelling has been undertaken for the redistribution of traffic circumstances, as discussed previously. The results of that assessment are provided in Appendix D and summarised in the following:

	AM	
	LOS	AVD
Horsley Road and Beaconsfield Street	F	108.4
Horsley Road and School Departure Driveway	A	0.2
Horsley Road and Proposed School Access	A	2.5

The SIDRA results indicate that the Horsley Road and Beaconsfield Street intersection has improved significantly; nevertheless remains in an unacceptable Level of Service.

4.2.3 Use of Both Existing and Proposed Parking Areas

This distribution arrangement is anticipated to ease traffic congestion from the southern portion of the site only, with most traffic likely to access the existing arrangement due to habit and ease of departure from their approach direction. The distribution of this traffic is demonstrated in Figure 10 below.

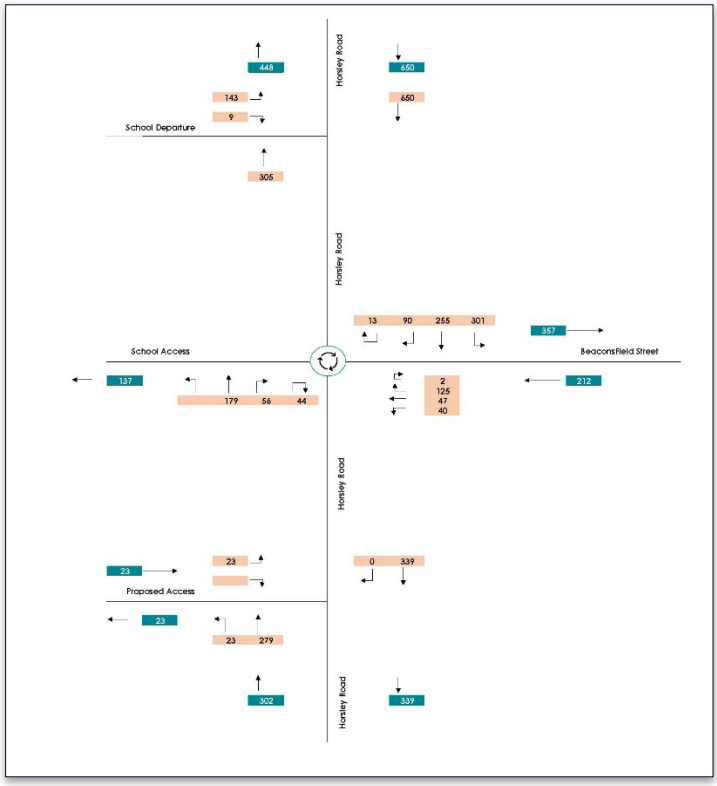


Figure 10 – Both accesses in operation AM Peak Traffic Movements

SIDRA modelling has been undertaken for the redistribution of traffic circumstances, as discussed previously. The results of that assessment are provided in Appendix D and summarised in the following:

	AM	
	LOS	AVD
Horsley Road and Beaconsfield Street	F	239.9
Horsley Road and School Departure Driveway	A	0.7
Horsley Road and Proposed School Access	A	0.3

The SIDRA results indicate that the Horsley Road and Beaconsfield Street intersection has decreased in the Level of Service. This is likely due to the resulting increase in U-turn movements produced from the left-out departure of the proposed car parking.

In an effort to understand what the intersection requires to achieve an acceptable traffic situation, TTPA has run further SIDRA analysis testing an upgrade to the existing roundabout and for the potential of signalising the intersection as demonstrated below.

4.3 Intersection Upgrades

This assessment has been undertaken to understand what upgrades would be required at the Horesley Road and Beaconsfield Street intersection for satisfactory traffic performance to be achieved. The evaluation looks both at the upgrade of the existing roundabout and the conversion to a traffic signal-controlled intersection.

4.3.1 Roundabout Upgrade

The existing roadway is limited on the Western side for widening with properties already situated close to the carriageways. However, at the expense of a partial part of school land, the roundabout has the potential for an upgrade that will see additional operating lanes, preventing the inevitable congestion from the right turn and U-turn movements.

A potential roundabout upgrade plan is demonstrated in the below figure (Figure 11).

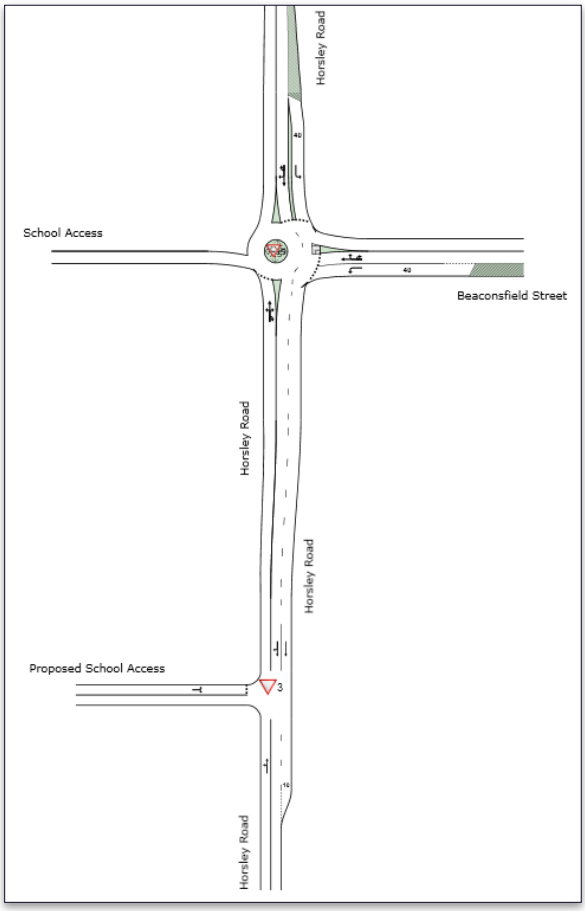


Figure 11 – Proposed intersection upgrade for a roundabout intersection

SIDRA modelling has been undertaken. The results for the different distributions of the assessment are provided in Appendix C and summarised in the following:

	Existing		Direction Change		Both Access		New Access Only	
	LOS	AVD	LOS	AVD	LOS	AVD	LOS	AVD
Horsley Road and Beaconsfield Street	F	191.1	F	96.0	260.3	F	47.0	D
Horsley Road and School Departure Driveway	A	1.3	A	5.3	0.8	A	0.2	A

Horsley Road and Proposed School Access	-	-	-	-	3.0	A	31.9	C

The SIDRA results indicate that the intersections have improved to an acceptable level of service in the Full Closre scenario. This assessment summary does, however, neglect the level of service of separate approaches, which, when inspected, demonstrated that Horsley Road to the south still maintains unacceptable delays of up to 170 seconds.

4.3.2 Traffic Control Signal (TCS) Intersection Upgrade

The signalising of the proposed intersection is generally expensive, however, in comparison to the roundabout upgrade scheme, it may be feasible with no loss to school land. Traffic signals also restrict the existing U-turn movement currently available on the roundabout, which results in a change in traffic distribution, as demonstrated in Figure 12.

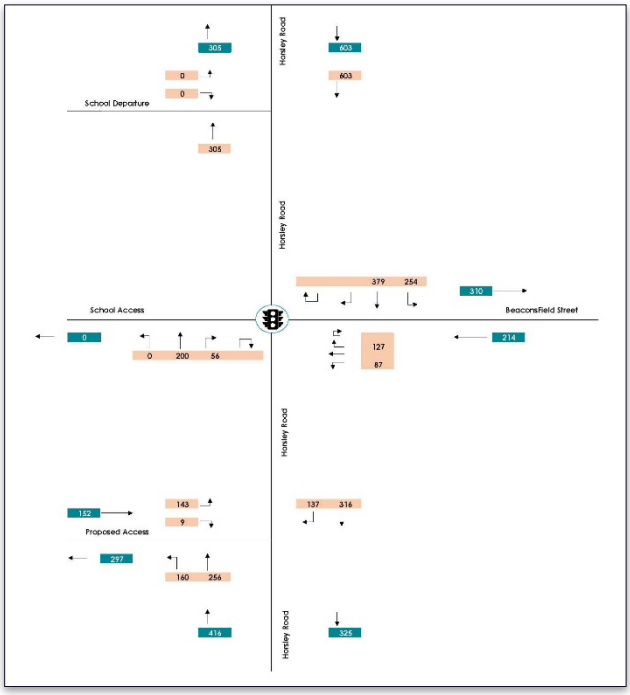


Figure 12 – Traffic Controlled with New Access AM Peak Traffic Movements

The proposed TCS upgrade plan includes removing on-street parking and no-stopping areas to allow for more traffic lanes, as demonstrated in Figure 13.

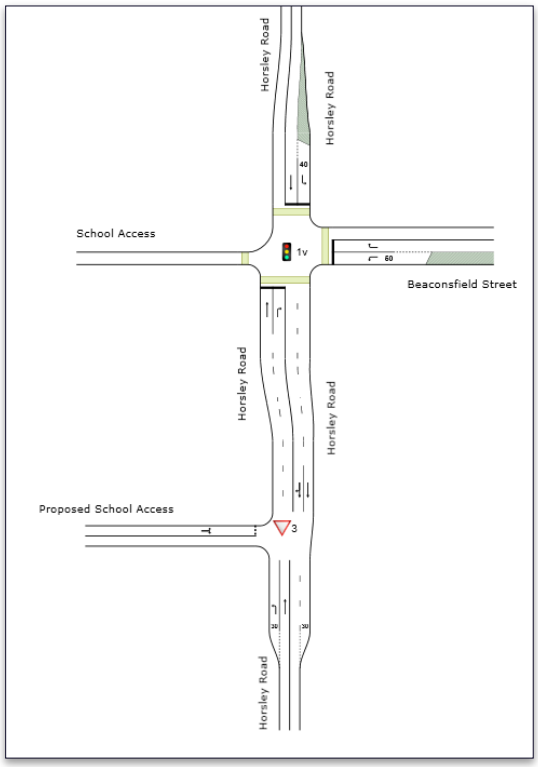


Figure 13 – Proposed intersection upgrade for traffic-controlled intersection

SIDRA modelling has been undertaken. The results of that assessment are provided in Appendix C and summarised in the following:

	Existing		Direction Change		Both Access		New Access Only	
	LOS	AVD	LOS	AVD	LOS	AVD	LOS	AVD
Horsley Road and Beaconsfield Street	F	897.2	F	81.8	B	15.8	B	16.5
Horsley Road and School Departure Driveway	A	1.6	A	6.6	A	1.0	A	0.1
Horsley Road and Proposed School Access	-	-	-	-	A	6.7	A	6.7

The SIDRA results indicate that the School Departure Driveway and Proposed School Access intersections are still relatively unaffected. However, the Beaconsfield intersection has improved to a far better Level of Service, with an average delay of around half a minute.

5.0 Parking

There are some 75 spaces provided on the existing school site. However, the new school land acquisition of the site to the south, which comprises a large car park, provides an additional 721 parking spaces.

The minimum parking guidelines provided in the Bankstown Development Control Plan (DCP) are as follows:

1 car space per employee or classroom, whichever is the greater; and

1 car space per 8 students in year 12

This equates to some 93 car spaces required on site. It is evident that the school's existing circumstance has a shortfall of some 18 car spaces. The anticipated growth of the school will see the additional requirement of 7 spaces bring the total to 100 car spaces and the shortfall of 25.

The proposed use of the previous WSU car park as a temporary measure has the capacity to accommodate the shortfall of parking spaces, including the school's growth.

A reduction of 22 parking spaces is proposed to the new parking area to make way for the new drop off/pick up area, as demonstrated in Appendix A. This reduction in parking is negligible in the scheme of the school and furthermore provides a safer arrangement for children accessing the site.

It is understood that the acquired car park is a temporary measure, and as such, the school should look into solutions to increase the parking capacity prior to the closing of the temporary parking facility.

6.0 Access, Internal Circulation and Servicing

6.1 Access

The design of the existing vehicle access that is proposed to serve as the new school driveway will comply with the requirements of AS2890.1&2 (as applicable) and the Bankstown DCP. There will continue to be satisfactory driveway widths, grades and sight distances available as is the case of the existing circumstance.

Details of the turning path assessment for the access movements are provided in Appendix E.

6.2 Internal Circulation

The design of the internal circulation and parking arrangements, including grades, widths, parking bays, manoeuvring provisions, etc., comply with the requirements of AS2890.1&6 and the Bankstown DCP. Details of representative turning circumstances are provided in Appendix E.

6.3 Servicing

Consistent with the current arrangement, refuse collection will continue to occur off-street along the site's new access. All loading activities related to deliveries, maintenance etc., which typically involves van, utes, etc., can rely on the available off-street parking within the site. The NSW Fire and Rescue recently assessed the access for emergency trucks, which was found to be compliant.

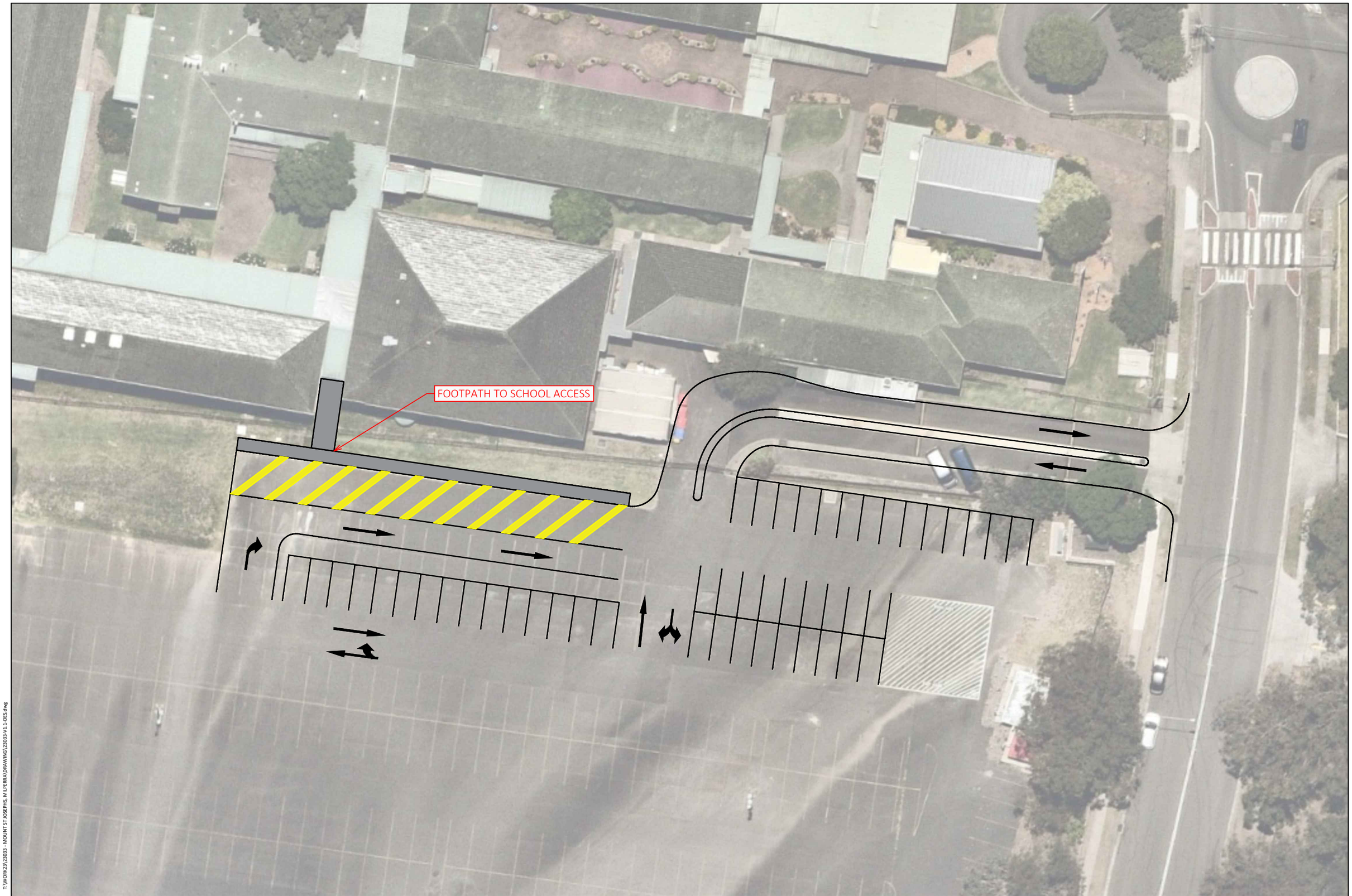
7.0 Conclusion

Assessment of the proposed traffic circumstances at Mount St Josephs College, Milperra has concluded that:

- The proposed new car park and drop off / pick up location will improve the traffic along Horsley Road.
- Upgrading the Horsley Road and Beaconsfield Street intersection is required to prevent unacceptable queuing and delays to vehicles.
- The proposed parking provision will be adequate and appropriate however will require a new assessment at the conclusion of the temporary arrangement.
- The provisions for vehicle access, internal circulation and servicing at the new access will be suitable and appropriate.

Appendix A
Proposed Plans

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994



273 HORSLEY RD, MILPERRA NSW 2214
EXISTING CIRCUMSTANCE
LINE MARKING & SIGNAGE PLAN

DRAWING REF NO. 23033-V1.1-DES SHEET NO. 01 OF 01 ISSUE DATE 4 April 2023

DESIGNED BY
L.ELLSON

SCALE
A3

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1:400

LEGEND
SIGN POST LOCATION

ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994
Address: Level 6, Suite 604, 10 Help Street, Chatswood NSW 2067
P: (02) 9411 5660 E: info@ttpa.com.au W: www.ttpa.com.au

Appendix B
Traffic Survey

ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY trafficsurvey.com.au

Intersection of Beaconsfield St and Horsley Rd, Milperra

GPS -33.941876, 150.994328

Date:	Tue 14/03/23
Weather:	Overcast
Suburban:	Milperra
Customer:	TTPA

North:	Horsley Rd
East:	Beaconsfield St
South:	Horsley Rd
West:	School Access

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	2:00 PM-4:00 PM
Traffic Peak	AM:	7:45 AM-8:45 AM
	PM:	3:00 PM-4:00 PM

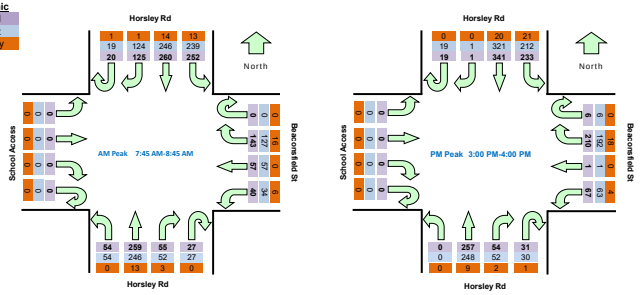
All Vehicles

Time		North Approach Horsley Rd				East Approach Beaconsfield St				South Approach Horsley Rd				West Approach School Access				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	0	37	37	0	18	2	5	0	13	64	0	0	0	0	0	917	
7:15	7:30	2	1	37	30	0	37	0	7	1	14	74	2	0	0	0	0	1043	
7:30	7:45	0	6	42	54	0	30	3	7	1	11	100	2	0	0	0	0	1200	
7:45	8:00	4	11	41	47	0	48	3	10	1	7	98	10	0	0	0	0	1292	Peak
8:00	8:15	5	26	61	47	0	38	10	8	5	12	69	21	0	0	0	0	1223	
8:15	8:30	5	49	86	82	0	30	21	11	9	17	35	17	0	0	0	0		
8:30	8:45	6	39	72	76	0	27	23	11	12	19	57	6	0	0	0	0		
8:45	9:00	2	2	46	49	2	35	1	11	0	13	48	0	0	1	0	1		
14:00	14:15	0	0	51	47	0	33	2	7	0	7	39	0	0	0	0	0	807	
14:15	14:30	1	0	43	25	0	43	0	14	5	10	52	0	0	0	0	0	904	
14:30	14:45	1	0	50	36	1	42	0	18	0	11	45	0	0	0	0	0	1092	
14:45	15:00	2	0	72	42	0	38	0	8	3	7	52	0	0	0	0	0	1187	
15:00	15:15	7	0	76	42	6	47	0	12	9	9	75	0	0	0	0	0	1220	Peak
15:15	15:30	11	0	91	75	0	56	0	23	18	30	77	0	0	0	0	0		
15:30	15:45	1	1	86	65	0	65	1	15	1	9	55	0	0	0	0	0		
15:45	16:00	0	0	88	51	0	42	0	17	3	6	50	0	0	0	0	0		

Peak Time		North Approach Horsley Rd				East Approach Beaconsfield St				South Approach Horsley Rd				West Approach School Access				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
7:45	8:45	20	125	260	252	0	143	57	40	27	55	259	54	0	0	0	0	1292
15:00	16:00	19	1	341	233	6	210	1	67	31	54	257	0	0	0	0	0	1220

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 Horsley Rd				East Approach Beaconsfield St				South Approach Horsley Rd				West Approach School Access			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	0	34	32	0	16	2	3	0	11	59	0	0	0	0	0
7:15	7:30	2	1	34	26	0	36	0	7	1	9	73	2	0	0	0	0
7:30	7:45	0	6	40	45	0	27	3	5	1	10	92	2	0	0	0	0
7:45	8:00	4	11	41	44	0	42	3	10	1	6	95	10	0	0	0	0
8:00	8:15	4	25	56	44	0	35	10	5	5	11	69	21	0	0	0	0
8:15	8:30	5	49	81	75	0	29	21	10	9	17	32	17	0	0	0	0
8:30	8:45	6	39	68	76	0	21	23	9	12	18	50	6	0	0	0	0
8:45	9:00	2	2	41	44	2	32	1	9	0	11	45	0	0	1	0	1
14:00	14:15	0	0	48	45	0	29	2	7	0	6	39	0	0	0	0	0
14:15	14:30	0	0	37	23	0	39	0	12	5	8	48	0	0	0	0	0
14:30	14:45	1	0	48	30	1	38	0	17	0	8	42	0	0	0	0	0
14:45	15:00	2	0	67	39	0	35	0	7	3	7	48	0	0	0	0	0
15:00	15:15	7	0	68	40	6	44	0	12	9	9	72	0	0	0	0	0
15:15	15:30	11	0	89	70	0	51	0	21	18	29	72	0	0	0	0	0
15:30	15:45	1	1	80	58	0	58	1	15	1	8	55	0	0	0	0	0
15:45	16:00	0	0	84	44	0	39	0	15	2	6	49	0	0	0	0	0

Peak Time		North Approach Horsley Rd				East Approach Beaconsfield St				South Approach Horsley Rd				West Approach School Access				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
7:45	8:45	19	124	246	239	0	127	57	34	27	52	246	54	0	0	0	0	1225
15:00	16:00	19	1	321	212	6	192	1	63	30	52	248	0	0	0	0	0	1145

Heavy Vehicles

Time		North Approach Horsley Rd				East Approach Beaconsfield St				South Approach Horsley Rd				West Approach School Access			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	0	3	5	0	2	0	2	0	2	5	0	0	0	0	0
7:15	7:30	0	0	3	4	0	1	0	0	0	5	1	0	0	0	0	0
7:30	7:45	0	0	2	9	0	3	0	2	0	1	8	0	0	0	0	0
7:45	8:00	0	0	0	3	0	6	0	0	0	1	3	0	0	0	0	0
8:00	8:15	1	1	5	3	0	3	0	3	0	1	0	0	0	0	0	0
8:15	8:30	0	0	5	7	0	1	0	1	0	0	3	0	0	0	0	0
8:30	8:45	0	0	4	0	0	6	0	2	0	1	7	0	0	0	0	0
8:45	9:00	0	0	5	5	0	3	0	2	0	2	3	0	0	0	0	0
14:00	14:15	0	0	3	2	0	4	0	0	0	1	0	0	0	0	0	0
14:15	14:30	1	0	6	2	0	4	0	2	0	2	4	0	0	0	0	0
14:30	14:45	0	0	2	6	0	4	0	1	0	3	3	0	0	0	0	0
14:45	15:00	0	0	5	3	0	3	0	1	0	0	4	0	0	0	0	0
15:00	15:15	0	0	8	2	0	3	0	0	0	0	3	0	0	0	0	0
15:15	15:30	0	0	2	5	0	5	0	2	0	1	5	0	0	0	0	0
15:30	15:45	0	0	6	7	0	7	0	0	0	1	0	0	0	0	0	0
15:45	16:00	0	0	4	7	0	3	0	2	1	0	1	0	0	0	0	0

Peak Time		North Approach Horsley Rd				East Approach Beaconsfield St				South Approach Horsley Rd				West Approach School Access				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
7:45	8:45	1	1	14	13	0	16	0	6	0	3	13	0	0	0	0	0	67
15:00	16:00	0	0	20	21	0	18	0	4	1	2	9	0	0	0	0	0	75

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY trafficsurvey.com.au

Intersection of School Access and Horsley Rd, Milperra

GPS	-33.941366, 150.994298
Date:	Tue 14/03/23
Weather:	Overcast
Suburban:	Milperra
Customer:	TTPA

North:	Horsley Rd
East:	N/A
South:	Horsley Rd
West:	School Access

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	2:00 PM-4:00 PM
Traffic Peak	AM:	7:45 AM-8:45 AM
	PM:	3:00 PM-4:00 PM

All Vehicles

Time		North Approach Horsley Rd			South Approach Horsley Rd			West Approach School Acces			Hourly Total	
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	Hour	Peak
7:00	7:15	0	0	74	0	82	0	0	0	0	825	
7:15	7:30	0	0	70	0	111	0	0	0	0	951	
7:30	7:45	0	0	102	0	130	0	0	0	3	1130	
7:45	8:00	0	0	103	0	146	0	0	0	4	1240	Peak
8:00	8:15	0	0	135	0	107	0	0	4	36	1170	
8:15	8:30	0	0	220	0	65	0	0	2	73		
8:30	8:45	0	0	189	0	84	0	0	4	68		
8:45	9:00	0	0	99	0	84	0	0	0	0		
14:00	14:15	0	0	95	0	72	0	0	3	2	717	
14:15	14:30	0	0	69	0	95	0	0	0	0	794	
14:30	14:45	0	0	86	0	87	0	0	1	1	949	
14:45	15:00	0	0	116	0	90	0	0	0	0	1059	
15:00	15:15	0	0	125	0	122	0	0	0	2	1088	Peak
15:15	15:30	0	0	176	0	133	0	0	1	9		
15:30	15:45	0	0	151	0	120	0	0	2	12		
15:45	16:00	0	0	135	0	92	0	0	4	4		

Peak Time		North Approach Horsley Rd			South Approach Horsley Rd			West Approach School Acces			Peak
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	total
7:45	8:45	0	0	647	0	402	0	0	10	181	1240
15:00	16:00	0	0	587	0	467	0	0	7	27	1088

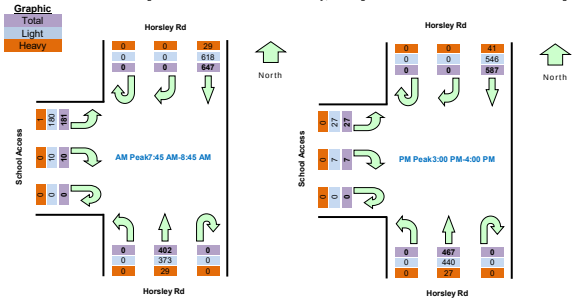
Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total

Light

Heavy



Light Vehicles

Time		North Approach Horsley Rd			South Approach Horsley Rd			West Approach School Acces		
Period Start	Period End	U	R	SB	U	NB	L	U	R	L
7:00	7:15	0	0	66	0	75	0	0	0	0
7:15	7:30	0	0	63	0	109	0	0	0	0
7:30	7:45	0	0	91	0	119	0	0	0	3
7:45	8:00	0	0	100	0	137	0	0	0	4
8:00	8:15	0	0	125	0	104	0	0	4	35
8:15	8:30	0	0	208	0	61	0	0	2	73
8:30	8:45	0	0	185	0	71	0	0	4	68
8:45	9:00	0	0	89	0	78	0	0	0	0
14:00	14:15	0	0	90	0	68	0	0	3	2
14:15	14:30	0	0	60	0	87	0	0	0	0
14:30	14:45	0	0	78	0	80	0	0	1	1
14:45	15:00	0	0	108	0	83	0	0	0	0
15:00	15:15	0	0	115	0	116	0	0	0	2
15:15	15:30	0	0	169	0	123	0	0	1	9
15:30	15:45	0	0	138	0	113	0	0	2	12
15:45	16:00	0	0	124	0	88	0	0	4	4

Peak Time		North Approach Horsley Rd			South Approach Horsley Rd			West Approach School Acces			Peak
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	total
7:45	8:45	0	0	618	0	373	0	0	10	180	1181
15:00	16:00	0	0	546	0	440	0	0	7	27	1020

Heavy Vehicles

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

Peak Time		North Approach Horsley Rd			South Approach Horsley Rd			West Approach School Acces			Peak
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	total
7:45	8:45	0	0	29	0	29	0	0	0	1	59
15:00	16:00	0	0	41	0	27	0	0	0	0	68

Appendix C
SIDRA Results

ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

MOVEMENT SUMMARY

Site: 1 [Horsley Rd & Beaconsfield St (Site Folder: Existing AM Peak 8:15 AM - 8:45 AM)]

Network: N101 [AM (Network Folder: Exisiting)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	46	0.0	46	0.0	1.521	492.8	LOS F	54.2	398.9	1.00	7.00	13.01	2.6
2	T1	358	7.3	358	7.3	1.521	489.6	LOS F	54.2	398.9	1.00	7.00	13.01	2.5
3	R2	112	7.1	112	7.1	1.521	492.6	LOS F	54.2	398.9	1.00	7.00	13.01	5.4
3u	U	42	0.0	42	0.0	1.521	493.7	LOS F	54.2	398.9	1.00	7.00	13.01	4.5
Approach		558	6.1	558	6.1	1.521	490.8	LOS F	54.2	398.9	1.00	7.00	13.01	3.3
East: Beaconsfield Street														
4	L2	80	12.5	80	12.5	1.442	430.2	LOS F	38.3	288.3	1.00	5.62	11.48	6.0
5	T1	94	0.0	94	0.0	1.442	432.4	LOS F	38.3	288.3	1.00	5.62	11.48	4.0
6	R2	250	11.2	250	11.2	1.442	431.7	LOS F	38.3	288.3	1.00	5.62	11.48	3.9
6u	U	4	0.0	4	0.0	1.442	431.7	LOS F	38.3	288.3	1.00	5.62	11.48	7.0
Approach		428	8.9	428	8.9	1.442	431.6	LOS F	38.3	288.3	1.00	5.62	11.48	4.3
North: Horsley Road														
7	L2	508	5.5	508	5.5	0.425	4.6	LOS A	1.4	10.6	0.44	0.53	0.44	35.8
8	T1	510	6.7	510	6.7	0.489	3.3	LOS A	2.0	14.7	0.47	0.55	0.47	34.7
9	R2	180	0.0	180	0.0	0.489	9.8	LOS A	2.0	14.7	0.47	0.55	0.47	14.8
9u	U	26	0.0	26	0.0	0.489	7.2	LOS A	2.0	14.7	0.47	0.55	0.47	19.3
Approach		1224	5.1	1224	5.1	0.489	4.9	LOS A	2.0	14.7	0.46	0.55	0.46	33.7
All Vehicles		2210	6.1	2210	6.1	1.521	210.2	LOS F	54.2	398.9	0.70	3.16	5.76	6.6

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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [Horsley Rd & School Departure (Site Folder: Existing AM Peak 8:15 AM - 8:45 AM)]

Network: N101 [AM (Network Folder: Exisiting)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	610	8.9	418	8.7	0.227	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach		610	8.9	418 N1	8.7	0.227	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.9
North: Horsley Road														
8	T1	1206	5.1	1206	5.1	0.639	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.6
Approach		1206	5.1	1206	5.1	0.639	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.6
West: School Departure														
10	L2	286	0.0	286	0.0	0.465	3.8	LOS A	1.0	7.3	0.61	0.86	0.91	17.8
12	R2	18	0.0	18	0.0	0.465	48.9	LOS D	1.0	7.3	0.61	0.86	0.91	7.2
Approach		304	0.0	304	0.0	0.465	6.5	LOS A	1.0	7.3	0.61	0.86	0.91	17.4
All Vehicles		2120	5.5	1928 N 1	6.0	0.639	1.1	NA	1.0	7.3	0.10	0.14	0.14	32.5

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1 [Horsley Rd & Beaconsfield St (Site Folder: Existing PM Peak 3:15 PM - 3:45 PM)]

Network: N101 [PM (Network Folder: Exisiting)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	2	0.0	2	0.0	1.129	150.8	LOS F	22.3	161.1	1.00	3.52	5.49	7.3
2	T1	364	3.3	364	3.3	1.129	147.5	LOS F	22.3	161.1	1.00	3.52	5.49	7.1
3	R2	90	4.4	90	4.4	1.129	150.6	LOS F	22.3	161.1	1.00	3.52	5.49	13.7
3u	U	44	4.5	44	4.5	1.129	151.7	LOS F	22.3	161.1	1.00	3.52	5.49	11.9
Approach		500	3.6	500	3.6	1.129	148.5	LOS F	22.3	161.1	1.00	3.52	5.49	9.0
East: Beaconsfield Street														
4	L2	110	7.3	110	7.3	1.235	247.3	LOS F	27.0	203.1	1.00	4.60	8.57	9.4
5	T1	2	0.0	2	0.0	1.235	250.1	LOS F	27.0	203.1	1.00	4.60	8.57	6.4
6	R2	326	9.2	326	9.2	1.235	249.3	LOS F	27.0	203.1	1.00	4.60	8.57	6.3
6u	U	2	0.0	2	0.0	1.235	249.4	LOS F	27.0	203.1	1.00	4.60	8.57	10.7
Approach		440	8.6	440	8.6	1.235	248.8	LOS F	27.0	203.1	1.00	4.60	8.57	7.1
North: Horsley Road														
7	L2	382	9.9	382	9.9	0.342	4.6	LOS A	1.0	7.8	0.43	0.54	0.43	35.7
8	T1	550	4.4	550	4.4	0.405	3.3	LOS A	1.5	10.7	0.45	0.46	0.45	36.0
9	R2	2	0.0	2	0.0	0.405	9.8	LOS A	1.5	10.7	0.45	0.46	0.45	15.7
9u	U	24	0.0	24	0.0	0.405	7.2	LOS A	1.5	10.7	0.45	0.46	0.45	21.6
Approach		958	6.5	958	6.5	0.405	3.9	LOS A	1.5	10.7	0.44	0.49	0.44	35.8
All Vehicles		1898	6.2	1898	6.2	1.235	98.8	LOS F	27.0	203.1	0.72	2.24	3.66	12.3

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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [Horsley Rd & School Departure (Site Folder: Existing PM Peak 3:15 PM - 3:45 PM)] Network: N101 [PM (Network Folder: Exisiting)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	690	6.1	590	5.9	0.314	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach		690	6.1	590[N1]	5.9	0.314	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.9
North: Horsley Road														
8	T1	924	6.7	924	6.7	0.495	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.8
Approach		924	6.7	924	6.7	0.495	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.8
West: School Departure														
10	L2	50	0.0	50	0.0	0.152	2.7	LOS A	0.2	1.3	0.66	0.63	0.66	17.6
12	R2	14	0.0	14	0.0	0.152	23.1	LOS B	0.2	1.3	0.66	0.63	0.66	6.9
Approach		64	0.0	64	0.0	0.152	7.1	LOS A	0.2	1.3	0.66	0.63	0.66	15.9
All Vehicles		1678	6.2	1578[N1]	6.6	0.495	0.3	NA	0.2	1.3	0.03	0.03	0.03	37.7

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1 [Horsley Rd & Beaconsfield St (Site Folder: Existing AM Peak 8:15 AM - 8:45 AM Direction Change)]

Network: N101 [Direction Change (Network Folder: Proposed Distribution)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	404	6.4	404	6.4	1.234	234.5	LOS F	34.1	251.1	1.00	4.73	7.67	4.8
3	R2	112	7.1	112	7.1	1.234	237.5	LOS F	34.1	251.1	1.00	4.73	7.67	9.9
3u	U	42	0.0	42	0.0	1.234	238.6	LOS F	34.1	251.1	1.00	4.73	7.67	8.4
Approach		558	6.1	558	6.1	1.234	235.4	LOS F	34.1	251.1	1.00	4.73	7.67	6.2
East: Beaconsfield Street														
4	L2	80	12.5	80	12.5	1.235	248.1	LOS F	26.4	198.5	1.00	4.53	8.40	9.4
6	R2	344	8.1	344	8.1	1.235	249.3	LOS F	26.4	198.5	1.00	4.53	8.40	6.3
6u	U	4	0.0	4	0.0	1.235	249.6	LOS F	26.4	198.5	1.00	4.53	8.40	10.7
Approach		428	8.9	428	8.9	1.235	249.0	LOS F	26.4	198.5	1.00	4.53	8.40	7.0
North: Horsley Road														
7	L2	508	5.5	508	5.5	0.477	5.7	LOS A	1.4	10.6	0.61	0.66	0.61	35.4
8	T1	510	6.7	510	6.7	0.439	4.3	LOS A	1.4	10.3	0.59	0.58	0.59	35.4
9u	U	26	0.0	26	0.0	0.439	8.2	LOS A	1.4	10.3	0.59	0.58	0.59	20.3
Approach		1044	5.9	1044	5.9	0.477	5.1	LOS A	1.4	10.6	0.60	0.62	0.60	35.3
West: School Access														
10	L2	272	0.0	272	0.0	0.724	21.0	LOS B	3.4	23.6	1.00	1.21	1.56	35.4
11	T1	90	0.0	90	0.0	0.724	21.0	LOS B	3.4	23.6	1.00	1.21	1.56	43.9
12	R2	44	0.0	44	0.0	0.724	23.9	LOS B	3.4	23.6	1.00	1.21	1.56	41.4
Approach		406	0.0	406	0.0	0.724	21.3	LOS B	3.4	23.6	1.00	1.21	1.56	38.8
All Vehicles		2436	5.5	2436	5.5	1.235	103.4	LOS F	34.1	251.1	0.83	2.35	3.75	12.7

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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [Horsley Rd & School Departure (Site Folder: Existing AM Peak 8:15 AM - 8:45 AM Direction Change)]

Network: N101 [Direction Change (Network Folder: Proposed Distribution)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	140	0.0	121	0.0	0.350	3.5	LOS A	0.0	0.0	0.00	0.15	0.00	16.9
2	T1	610	8.9	526	8.3	0.350	0.3	LOS A	0.0	0.0	0.00	0.15	0.00	42.3
Approach		750	7.2	647 N1	6.8	0.350	0.9	NA	0.0	0.0	0.00	0.15	0.00	36.9
North: Horsley Road														
8	T1	1206	5.1	1206	5.1	0.850	4.9	LOS A	6.1	44.1	1.00	0.17	1.71	26.6
9	R2	180	0.0	180	0.0	0.850	20.2	LOS B	6.1	44.1	1.00	0.17	1.71	22.6
Approach		1386	4.5	1386	4.5	0.850	6.9	NA	6.1	44.1	1.00	0.17	1.71	25.9
All Vehicles		2136	5.4	2033 N1	5.7	0.850	5.0	NA	6.1	44.1	0.68	0.16	1.17	28.9

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1 [Horsley Rd & Beaconsfield St (Site Folder: Development Peak 8:15 AM - 8:45 AM Both Access)]

Network: N101 [Both Access (Network Folder: Proposed Distribution)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	2	0.0	2	0.0	1.630	588.4	LOS F	4.1	30.0	1.00	7.70	14.44	0.5
2	T1	384	6.8	384	6.8	1.630	585.5	LOS F	4.1	30.0	1.00	7.70	14.44	0.3
3	R2	120	6.7	120	6.7	1.630	588.3	LOS F	4.1	30.0	1.00	7.70	14.44	3.1
3u	U	88	0.0	88	0.0	1.630	589.3	LOS F	4.1	30.0	1.00	7.70	14.44	0.3
Approach		594	5.7	594	5.7	1.630	586.6	LOS F	4.1	30.0	1.00	7.70	14.44	0.9
East: Beaconsfield Street														
4	L2	80	12.5	80	12.5	1.412	403.7	LOS F	36.7	276.7	1.00	5.46	11.12	4.1
5	T1	94	0.0	94	0.0	1.412	405.8	LOS F	36.7	276.7	1.00	5.46	11.12	4.2
6	R2	250	11.2	250	11.2	1.412	405.2	LOS F	36.7	276.7	1.00	5.46	11.12	4.1
6u	U	4	0.0	4	0.0	1.412	405.2	LOS F	36.7	276.7	1.00	5.46	11.12	7.3
Approach		428	8.9	428	8.9	1.412	405.0	LOS F	36.7	276.7	1.00	5.46	11.12	4.2
North: Horsley Road														
7	L2	508	5.5	508	5.5	0.434	4.7	LOS A	1.5	10.7	0.49	0.55	0.49	35.7
8	T1	464	7.3	464	7.3	0.476	3.5	LOS A	1.9	13.8	0.51	0.58	0.51	18.8
9	R2	180	0.0	180	0.0	0.476	10.0	LOS A	1.9	13.8	0.51	0.58	0.51	14.7
9u	U	26	0.0	26	0.0	0.476	7.4	LOS A	1.9	13.8	0.51	0.58	0.51	18.8
Approach		1178	5.3	1178	5.3	0.476	5.1	LOS A	1.9	13.8	0.50	0.57	0.50	30.8
All Vehicles		2200	6.1	2200	6.1	1.630	239.9	LOS F	36.7	276.7	0.73	3.45	6.33	3.9

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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [Horsley Rd & School Departure (Site Folder: Development Peak 8:15 AM - 8:45 AM Both Access)]

Network: N101 [Both Access (Network Folder: Proposed Distribution)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	610	8.9	405	8.8	0.220	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach		610	8.9	405[N1]	8.8	0.220	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.9
North: Horsley Road														
8	T1	1206	5.1	1206	5.1	0.639	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.6
Approach		1206	5.1	1206	5.1	0.639	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.6
West: School Departure														
10	L2	246	0.0	246	0.0	0.354	2.5	LOS A	0.7	4.6	0.57	0.62	0.68	18.9
12	R2	12	0.0	12	0.0	0.354	44.5	LOS D	0.7	4.6	0.57	0.62	0.68	7.9
Approach		258	0.0	258	0.0	0.354	4.4	LOS A	0.7	4.6	0.57	0.62	0.68	18.6
All Vehicles		2074	5.6	1869[N1]	6.2	0.639	0.7	NA	0.7	4.6	0.08	0.09	0.09	33.8

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 3 [Horsley Rd & Proposed School Access (Site Folder: Development Peak 8:15 AM - 8:45 AM Both Access)]

Network: N101 [Both Access (Network Folder: Proposed Distribution)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	46	0.0	46	0.0	0.275	3.6	LOS A	54.5	403.1	0.00	0.07	0.00	40.9
2	T1	466	7.3	466	7.3	0.275	0.2	LOS A	54.5	403.1	0.00	0.07	0.00	40.5
Approach		512	6.6	512	6.6	0.275	0.5	NA	54.5	403.1	0.00	0.07	0.00	40.5
North: Horsley Road														
8	T1	906	4.9	849	4.8	0.449	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.8
Approach		906	4.9	849 N1	4.8	0.449	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.8
West: Proposed School Access														
10	L2	46	0.0	46	0.0	0.106	1.8	LOS A	5.4	37.7	0.49	0.40	0.49	9.5
12	R2	2	0.0	2	0.0	0.106	15.1	LOS B	5.4	37.7	0.49	0.40	0.49	20.7
Approach		48	0.0	48	0.0	0.106	2.4	LOS A	5.4	37.7	0.49	0.40	0.49	10.2
All Vehicles		1466	5.3	1409 N1	5.5	0.449	0.3	NA	54.5	403.1	0.02	0.04	0.02	38.5

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1 [Horsley Rd & Beaconsfield St (Site Folder: Development Peak 8:15 AM - 8:45 AM New Access Only)]

Network: N101 [New Access Only (Network Folder: Proposed Distribution)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	2	0.0	2	0.0	0.913	27.9	LOS B	4.1	30.0	1.00	1.32	1.70	7.0
2	T1	358	7.3	358	7.3	0.913	25.1	LOS B	4.1	30.0	1.00	1.32	1.70	5.9
3	R2	112	7.1	112	7.1	0.913	27.9	LOS B	4.1	30.0	1.00	1.32	1.70	26.5
3u	U	42	0.0	42	0.0	0.913	28.9	LOS C	4.1	30.0	1.00	1.32	1.70	5.9
Approach		514	6.6	514	6.6	0.913	26.1	LOS B	4.1	30.0	1.00	1.32	1.70	14.3
East: Beaconsfield Street														
4	L2	174	5.7	174	5.7	1.525	502.3	LOS F	42.5	320.0	1.00	6.16	12.12	3.4
5	T1	2	0.0	2	0.0	1.525	505.2	LOS F	42.5	320.0	1.00	6.16	12.12	3.5
6	R2	250	11.2	250	11.2	1.525	504.5	LOS F	42.5	320.0	1.00	6.16	12.12	3.4
6u	U	4	0.0	4	0.0	1.525	504.6	LOS F	42.5	320.0	1.00	6.16	12.12	6.1
Approach		430	8.8	430	8.8	1.525	503.6	LOS F	42.5	320.0	1.00	6.16	12.12	3.4
North: Horsley Road														
7	L2	508	5.5	508	5.5	0.458	5.0	LOS A	1.5	11.3	0.55	0.58	0.55	35.5
8	T1	690	4.9	690	4.9	0.528	3.7	LOS A	2.2	15.9	0.59	0.52	0.59	20.4
9	R2	2	0.0	2	0.0	0.528	10.2	LOS A	2.2	15.9	0.59	0.52	0.59	15.2
9u	U	26	0.0	26	0.0	0.528	7.6	LOS A	2.2	15.9	0.59	0.52	0.59	20.4
Approach		1226	5.1	1226	5.1	0.528	4.4	LOS A	2.2	15.9	0.57	0.55	0.57	32.3
All Vehicles		2170	6.2	2170	6.2	1.525	108.4	LOS F	42.5	320.0	0.76	1.84	3.13	7.7

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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [Horsley Rd & School Departure (Site Folder: Development Peak 8:15 AM - 8:45 AM New Access Only)]

Network: N101 [New Access Only (Network Folder: Proposed Distribution)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	610	8.9	527	8.4	0.285	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach		610	8.9	527[N1]	8.4	0.285	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.9
North: Horsley Road														
8	T1	1206	5.1	1206	5.1	0.648	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.5
Approach		1206	5.1	1206	5.1	0.648	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.5
West: School Departure														
10	L2	2	0.0	2	0.0	0.031	2.1	LOS A	0.0	0.2	0.85	0.75	0.85	12.2
12	R2	2	0.0	2	0.0	0.031	43.8	LOS D	0.0	0.2	0.85	0.75	0.85	4.0
Approach		4	0.0	4	0.0	0.031	23.0	LOS B	0.0	0.2	0.85	0.75	0.85	8.7
All Vehicles		1820	6.4	1737[N] 1	6.7	0.648	0.2	NA	0.0	0.2	0.00	0.00	0.00	39.4

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 3 [Horsley Rd & Proposed School Access (Site Folder: Development Peak 8:15 AM - 8:45 AM New Access Only)]

Network: N101 [New Access Only (Network Folder: Proposed Distribution)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	320	0.0	320	0.0	0.423	4.3	LOS A	2.4	17.4	0.00	0.30	0.00	42.8
2	T1	466	7.3	466	7.3	0.423	0.8	LOS A	2.4	17.4	0.00	0.30	0.00	42.3
Approach		786	4.3	786	4.3	0.423	2.2	NA	2.4	17.4	0.00	0.30	0.00	42.5
North: Horsley Road														
8	T1	906	4.9	846	4.8	0.447	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.8
Approach		906	4.9	846 N1	4.8	0.447	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.8
West: Proposed School Access														
10	L2	286	0.0	286	0.0	0.744	8.7	LOS A	1.5	10.3	0.59	1.33	1.33	8.1
12	R2	18	0.0	18	0.0	0.744	30.5	LOS C	1.5	10.3	0.59	1.33	1.33	18.7
Approach		304	0.0	304	0.0	0.744	10.0	LOS A	1.5	10.3	0.59	1.33	1.33	9.0
All Vehicles		1996	3.9	1936 N1	4.0	0.744	2.5	NA	2.4	17.4	0.09	0.33	0.21	33.2

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1 [Horsley Rd & Beaconsfield St - Existing (Site Folder: Development Peak 8:15 AM - 8:45 AM RAB MOD)]

Network: N101 [Exisitng (Network Folder: RAB MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	46	0.0	46	0.0	1.787	730.9	LOS F	67.7	498.7	1.00	7.93	15.67	0.4
2	T1	358	7.3	358	7.3	1.787	728.2	LOS F	67.7	498.7	1.00	7.93	15.67	0.2
3	R2	112	7.1	112	7.1	1.787	731.0	LOS F	67.7	498.7	1.00	7.93	15.67	2.5
3u	U	42	0.0	42	0.0	1.787	731.9	LOS F	67.7	498.7	1.00	7.93	15.67	0.4
Approach		558	6.1	558	6.1	1.787	729.3	LOS F	67.7	498.7	1.00	7.93	15.67	0.7
East: Beaconsfield Street														
4	L2	80	12.5	80	12.5	0.453	16.9	LOS B	1.2	8.6	0.85	1.02	1.03	28.5
5	T1	94	0.0	94	0.0	0.453	19.1	LOS B	1.2	8.6	0.85	1.02	1.03	26.0
6	R2	250	11.2	250	11.2	0.672	25.4	LOS B	2.3	17.9	0.93	1.22	1.45	26.0
6u	U	4	0.0	4	0.0	0.672	25.5	LOS B	2.3	17.9	0.93	1.22	1.45	31.8
Approach		428	8.9	428	8.9	0.672	22.4	LOS B	2.3	17.9	0.90	1.14	1.28	26.5
North: Horsley Road														
7	L2	508	5.5	508	5.5	0.419	4.4	LOS A	1.4	10.4	0.41	0.52	0.41	35.8
8	T1	510	6.7	510	6.7	0.483	3.2	LOS A	2.0	14.4	0.43	0.54	0.43	22.2
9	R2	180	0.0	180	0.0	0.483	9.7	LOS A	2.0	14.4	0.43	0.54	0.43	14.9
9u	U	26	0.0	26	0.0	0.483	7.1	LOS A	2.0	14.4	0.43	0.54	0.43	19.5
Approach		1224	5.1	1224	5.1	0.483	4.8	LOS A	2.0	14.4	0.42	0.53	0.42	31.0
All Vehicles		2210	6.1	2210	6.1	1.787	191.1	LOS F	67.7	498.7	0.66	2.52	4.44	4.9

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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [Horsley Rd & School Departure - Existing (Site Folder: Development Peak 8:15 AM - 8:45 AM RAB MOD)]

Network: N101 [Exisitng (Network Folder: RAB MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	610	8.9	458	9.3	0.249	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach		610	8.9	458 N1	9.3	0.249	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.9
North: Horsley Road														
8	T1	1206	5.1	1206	5.1	0.639	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.6
Approach		1206	5.1	1206	5.1	0.639	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.6
West: School Departure														
10	L2	286	0.0	286	0.0	0.498	4.6	LOS A	1.1	8.0	0.64	1.00	1.02	17.3
12	R2	18	0.0	18	0.0	0.498	53.9	LOS D	1.1	8.0	0.64	1.00	1.02	6.8
Approach		304	0.0	304	0.0	0.498	7.6	LOS A	1.1	8.0	0.64	1.00	1.02	16.9
All Vehicles		2120	5.5	1968 N1	5.9	0.639	1.3	NA	1.1	8.0	0.10	0.15	0.16	32.4

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1 [Horsley Rd & Beaconsfield St - Direction Change (Site Folder: Development Peak 8:15 AM - 8:45 AM RAB MOD)]

Network: N101 [Direction Change (Network Folder: RAB MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	404	6.4	404	6.4	1.392	373.7	LOS F	46.1	339.7	1.00	6.08	10.68	0.5
3	R2	112	7.1	112	7.1	1.392	376.5	LOS F	46.1	339.7	1.00	6.08	10.68	4.6
3u	U	42	0.0	42	0.0	1.392	377.6	LOS F	46.1	339.7	1.00	6.08	10.68	0.7
Approach		558	6.1	558	6.1	1.392	374.6	LOS F	46.1	339.7	1.00	6.08	10.68	1.4
East: Beaconsfield Street														
4	L2	80	12.5	80	12.5	0.302	16.1	LOS B	0.6	4.3	0.74	0.89	0.77	29.4
6	R2	344	8.1	344	8.1	0.781	26.9	LOS B	3.6	26.6	0.98	1.33	1.69	25.5
6u	U	4	0.0	4	0.0	0.781	27.4	LOS B	3.6	26.6	0.98	1.33	1.69	31.4
Approach		428	8.9	428	8.9	0.781	24.9	LOS B	3.6	26.6	0.93	1.25	1.52	26.2
North: Horsley Road														
7	L2	508	5.5	508	5.5	0.473	5.6	LOS A	1.4	10.5	0.60	0.65	0.60	35.4
8	T1	510	6.7	510	6.7	0.435	4.2	LOS A	1.4	10.3	0.58	0.57	0.58	23.1
9u	U	26	0.0	26	0.0	0.435	8.1	LOS A	1.4	10.3	0.58	0.57	0.58	20.4
Approach		1044	5.9	1044	5.9	0.473	5.0	LOS A	1.4	10.5	0.59	0.61	0.59	32.8
West: School Access														
10	L2	272	0.0	272	0.0	0.730	22.0	LOS B	3.4	23.9	1.00	1.23	1.61	34.8
11	T1	90	0.0	90	0.0	0.730	21.9	LOS B	3.4	23.9	1.00	1.23	1.61	43.4
12	R2	44	0.0	44	0.0	0.730	24.9	LOS B	3.4	23.9	1.00	1.23	1.61	34.2
Approach		406	0.0	406	0.0	0.730	22.3	LOS B	3.4	23.9	1.00	1.23	1.61	37.4
All Vehicles		2436	5.5	2436	5.5	1.392	96.0	LOS F	46.1	339.7	0.81	2.08	3.23	10.4

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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [Horsley Rd & School Departure - Direction Change (Site Folder: Development Peak 8:15 AM - 8:45 AM RAB MOD)]

Network: N101 [Direction Change (Network Folder: RAB MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	140	0.0	125	0.0	0.361	3.5	LOS A	0.0	0.0	0.00	0.15	0.00	16.9
2	T1	610	8.9	543	8.6	0.361	0.3	LOS A	0.0	0.0	0.00	0.15	0.00	42.3
Approach		750	7.2	668 N1	7.0	0.361	0.9	NA	0.0	0.0	0.00	0.15	0.00	36.9
North: Horsley Road														
8	T1	1206	5.1	1206	5.1	0.857	5.3	LOS A	6.2	45.0	1.00	0.17	1.77	25.9
9	R2	180	0.0	180	0.0	0.857	21.1	LOS B	6.2	45.0	1.00	0.17	1.77	22.2
Approach		1386	4.5	1386	4.5	0.857	7.4	NA	6.2	45.0	1.00	0.17	1.77	25.3
All Vehicles		2136	5.4	2054 N1	5.6	0.857	5.3	NA	6.2	45.0	0.67	0.16	1.20	28.5

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1 [Horsley Rd & Beaconsfield St - Partial Closure (Site Folder: Development Peak 8:15 AM - 8:45 AM RAB MOD)]

Network: N101 [Both Access (Network Folder: RAB MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	2	0.0	2	0.0	2.008	927.3	LOS F	4.1	30.0	1.00	8.66	17.21	0.3
2	T1	384	6.8	384	6.8	2.008	924.6	LOS F	4.1	30.0	1.00	8.66	17.21	0.2
3	R2	120	6.7	120	6.7	2.008	927.4	LOS F	4.1	30.0	1.00	8.66	17.21	2.0
3u	U	88	0.0	88	0.0	2.008	928.3	LOS F	4.1	30.0	1.00	8.66	17.21	0.2
Approach		594	5.7	594	5.7	2.008	925.7	LOS F	4.1	30.0	1.00	8.66	17.21	0.6
East: Beaconsfield Street														
4	L2	80	12.5	80	12.5	0.359	20.9	LOS B	0.7	5.3	0.78	0.95	0.90	27.5
5	T1	94	0.0	94	0.0	0.881	44.4	LOS D	5.1	38.2	1.00	1.58	2.35	19.5
6	R2	250	11.2	250	11.2	0.881	43.7	LOS D	5.1	38.2	1.00	1.58	2.35	20.7
6u	U	4	0.0	4	0.0	0.881	43.7	LOS D	5.1	38.2	1.00	1.58	2.35	27.4
Approach		428	8.9	428	8.9	0.881	39.6	LOS C	5.1	38.2	0.96	1.47	2.08	21.4
North: Horsley Road														
7	L2	508	5.5	508	5.5	0.426	4.6	LOS A	1.4	10.4	0.44	0.53	0.44	35.7
8	T1	464	7.3	464	7.3	0.467	3.3	LOS A	1.8	13.4	0.46	0.56	0.46	19.2
9	R2	180	0.0	180	0.0	0.467	9.8	LOS A	1.8	13.4	0.46	0.56	0.46	14.8
9u	U	26	0.0	26	0.0	0.467	7.2	LOS A	1.8	13.4	0.46	0.56	0.46	19.2
Approach		1178	5.3	1178	5.3	0.467	4.9	LOS A	1.8	13.4	0.45	0.55	0.45	31.0
All Vehicles		2200	6.1	2200	6.1	2.008	260.3	LOS F	5.1	38.2	0.70	2.92	5.29	3.6

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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [Horsley Rd & School Departure - Partial Closure (Site Folder: Development Peak 8:15 AM - 8:45 AM RAB MOD)]

Network: N101 [Both Access (Network Folder: RAB MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	610	8.9	434	9.5	0.236	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach		610	8.9	434[N1]	9.5	0.236	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.9
North: Horsley Road														
8	T1	1206	5.1	1206	5.1	0.639	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.6
Approach		1206	5.1	1206	5.1	0.639	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.6
West: School Departure														
10	L2	246	0.0	246	0.0	0.371	2.9	LOS A	0.7	4.9	0.59	0.69	0.74	18.6
12	R2	12	0.0	12	0.0	0.371	47.8	LOS D	0.7	4.9	0.59	0.69	0.74	7.7
Approach		258	0.0	258	0.0	0.371	5.0	LOS A	0.7	4.9	0.59	0.69	0.74	18.3
All Vehicles		2074	5.6	1898[N 1]	6.1	0.639	0.8	NA	0.7	4.9	0.08	0.09	0.10	33.8

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 3 [Horsley Rd & Proposed School Access - Partial Closure (Site Folder: Development Peak 8:15 AM - 8:45 AM RAB MOD)]

Network: N101 [Both Access (Network Folder: RAB MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	46	0.0	46	0.0	0.275	3.6	LOS A	69.4	513.7	0.00	0.07	0.00	40.9
2	T1	466	7.3	466	7.3	0.275	0.2	LOS A	69.4	513.7	0.00	0.07	0.00	40.5
Approach		512	6.6	512	6.6	0.275	0.5	NA	69.4	513.7	0.00	0.07	0.00	40.5
North: Horsley Road														
8	T1	906	4.9	873	5.0	0.596	2.8	LOS A	2.4	17.3	0.41	0.20	0.66	36.3
9	R2	274	0.0	263	0.0	0.596	8.2	LOS A	2.4	17.3	0.55	0.27	0.88	11.5
Approach		1180	3.7	1136 N1	3.9	0.596	4.0	NA	2.4	17.3	0.44	0.22	0.71	29.3
West: Proposed School Access														
10	L2	46	0.0	46	0.0	0.140	1.8	LOS A	6.9	48.0	0.55	0.47	0.55	9.2
12	R2	2	0.0	2	0.0	0.140	47.3	LOS D	6.9	48.0	0.55	0.47	0.55	20.3
Approach		48	0.0	48	0.0	0.140	3.7	LOS A	6.9	48.0	0.55	0.47	0.55	9.9
All Vehicles		1740	4.5	1696 N1	4.6	0.596	3.0	NA	69.4	513.7	0.31	0.18	0.49	31.4

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1 [Horsley Rd & Beaconsfield St - Full Closure (Site Folder: Development Peak 8:15 AM - 8:45 AM RAB MOD)]

Network: N101 [New Access Only (Network Folder: RAB MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	2	0.0	2	0.0	1.158	173.1	LOS F	4.1	30.0	1.00	3.90	6.08	1.5
2	T1	358	7.3	353	7.4	1.158	170.2	LOS F	4.1	30.0	1.00	3.90	6.08	1.0
3	R2	112	7.1	110	7.3	1.158	172.9	LOS F	4.1	30.0	1.00	3.90	6.08	9.0
3u	U	42	0.0	41	0.0	1.158	174.1	LOS F	4.1	30.0	1.00	3.90	6.08	1.0
Approach		514	6.6	506 N1	6.7	1.158	171.1	LOS F	4.1	30.0	1.00	3.90	6.08	3.1
East: Beaconsfield Street														
4	L2	174	5.7	174	5.7	0.471	17.1	LOS B	1.3	9.3	0.87	1.03	1.07	29.2
5	T1	2	0.0	2	0.0	0.701	28.2	LOS B	2.6	19.6	0.95	1.25	1.53	23.4
6	R2	250	11.2	250	11.2	0.701	27.5	LOS B	2.6	19.6	0.95	1.25	1.53	25.3
6u	U	4	0.0	4	0.0	0.701	27.5	LOS B	2.6	19.6	0.95	1.25	1.53	31.2
Approach		430	8.8	430	8.8	0.701	23.3	LOS B	2.6	19.6	0.92	1.16	1.34	26.8
North: Horsley Road														
7	L2	508	5.5	508	5.5	0.447	4.8	LOS A	1.5	11.0	0.50	0.56	0.50	35.6
8	T1	690	4.9	690	4.9	0.515	3.5	LOS A	2.1	15.4	0.54	0.49	0.54	20.8
9	R2	2	0.0	2	0.0	0.515	10.1	LOS A	2.1	15.4	0.54	0.49	0.54	15.4
9u	U	26	0.0	26	0.0	0.515	7.5	LOS A	2.1	15.4	0.54	0.49	0.54	20.8
Approach		1226	5.1	1226	5.1	0.515	4.2	LOS A	2.1	15.4	0.53	0.52	0.53	32.5
All Vehicles		2170	6.2	2162 N1	6.2	1.158	47.0	LOS D	4.1	30.0	0.71	1.44	1.99	14.1

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.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 2 [Horsley Rd & School Departure - Full Closure (Site Folder: Development Peak 8:15 AM - 8:45 AM RAB MOD)]

Network: N101 [New Access Only (Network Folder: RAB MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	610	8.9	562	9.0	0.305	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach		610	8.9	562[N1]	9.0	0.305	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.9
North: Horsley Road														
8	T1	1206	5.1	1206	5.1	0.643	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	39.6
Approach		1206	5.1	1206	5.1	0.643	0.1	NA	0.0	0.0	0.00	0.00	0.00	39.6
West: School Departure														
10	L2	2	0.0	2	0.0	0.033	2.3	LOS A	0.0	0.2	0.86	0.78	0.86	11.7
12	R2	2	0.0	2	0.0	0.033	47.7	LOS D	0.0	0.2	0.86	0.78	0.86	3.8
Approach		4	0.0	4	0.0	0.033	25.0	LOS B	0.0	0.2	0.86	0.78	0.86	8.3
All Vehicles		1820	6.4	1772[N1]	6.5	0.643	0.2	NA	0.0	0.2	0.00	0.00	0.00	39.5

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 3 [Horsley Rd & Proposed School Access - Full Closure (Site Folder: Development Peak 8:15 AM - 8:45 AM RAB MOD)]

Network: N101 [New Access Only (Network Folder: RAB MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	320	0.0	320	0.0	0.423	4.3	LOS A	0.0	0.0	0.00	0.30	0.00	42.8
2	T1	466	7.3	466	7.3	0.423	0.8	LOS A	0.0	0.0	0.00	0.30	0.00	42.3
Approach		786	4.3	786	4.3	0.423	2.2	NA	0.0	0.0	0.00	0.30	0.00	42.5
North: Horsley Road														
8	T1	906	4.9	902	4.9	0.724	6.1	LOS A	4.2	30.0	0.70	0.28	1.33	32.8
9	R2	274	0.0	273	0.0	0.724	14.4	LOS A	4.2	30.0	1.00	0.40	1.91	10.3
Approach		1180	3.7	1174 N1	3.7	0.724	8.0	NA	4.2	30.0	0.77	0.31	1.46	26.4
West: Proposed School Access														
10	L2	286	0.0	286	0.0	1.181	194.4	LOS F	6.8	47.9	1.00	12.32	12.32	1.7
12	R2	18	0.0	18	0.0	1.181	299.5	LOS F	6.8	47.9	1.00	12.32	12.32	5.5
Approach		304	0.0	304	0.0	1.181	200.6	LOS F	6.8	47.9	1.00	12.32	12.32	2.0
All Vehicles		2270	3.4	2264 N1	3.4	1.181	31.9	NA	6.8	47.9	0.53	1.92	2.41	16.4

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1v [Horsley Rd & Beaconsfield St - Conversion (Site Folder: Development Peak 8:15 AM - 8:45 AM TCS - Existing)]

Network: N101 [Existing (Network Folder: TCS MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 60 seconds (Network Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	46	0.0	46	0.0	0.897	42.3	LOS C	9.1	67.4	1.00	1.22	1.49	5.3
2	T1	358	7.3	358	7.3	0.897	36.0	LOS C	9.1	67.4	1.00	1.22	1.49	4.0
3	R2	112	7.1	112	7.1	0.245	22.6	LOS B	1.7	12.3	0.84	0.73	0.84	27.7
Approach		516	6.6	516	6.6	0.897	33.6	LOS C	9.1	67.4	0.96	1.11	1.35	11.7
East: Beaconsfield Street														
4	L2	80	12.5	80	12.5	0.377	24.2	LOS B	2.7	19.6	0.87	0.80	0.87	25.5
5	T1	94	0.0	94	0.0	0.377	28.9	LOS C	2.7	19.6	0.87	0.80	0.87	23.4
6	R2	250	11.2	250	11.2	* 0.647	28.2	LOS B	4.4	33.5	0.96	0.85	1.02	24.9
Approach		424	9.0	424	9.0	0.647	27.6	LOS B	4.4	33.5	0.93	0.83	0.96	24.7
North: Horsley Road														
7	L2	508	5.5	508	5.5	1.361	361.4	LOS F	6.1	45.0	1.00	3.30	5.32	4.8
8	T1	510	6.7	510	6.7	* 3.726	2470.4	LOS F	6.2	45.0	1.00	5.50	12.07	0.1
9	R2	180	0.0	180	0.0	* 3.726	2476.0	LOS F	6.2	45.0	1.00	5.50	12.07	0.1
Approach		1198	5.2	1198	5.2	3.726	1576.9	LOS F	6.2	45.0	1.00	4.57	9.21	0.6
All Vehicles		2138	6.3	2138	6.3	3.726	897.2	LOS F	9.1	67.4	0.98	2.99	5.68	1.2

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Horsley Road											
P1	Full	100	24.4	LOS C	0.2	0.2	0.90	0.90	192.1	218.0	1.13
East: Beaconsfield Street											
P2	Full	100	24.4	LOS C	0.2	0.2	0.90	0.90	189.0	214.0	1.13
North: Horsley Road											
P3	Full	100	24.4	LOS C	0.2	0.2	0.90	0.90	189.0	214.0	1.13
West: School Access											
P4	Full	100	24.4	LOS C	0.2	0.2	0.90	0.90	182.9	206.0	1.13
All Pedestrians		400	24.4	LOS C	0.2	0.2	0.90	0.90	188.2	213.0	1.13

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: 2 [Horsley Rd & School Departure (Site Folder: Development Peak 8:15 AM - 8:45 AM TCS - Existing)]

Network: N101 [Existing (Network Folder: TCS MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	610	8.9	610	8.9	0.331	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach		610	8.9	610	8.9	0.331	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.9
North: Horsley Road														
8	T1	1206	5.1	1206	5.1	0.639	0.1	LOS A	128.8	941.4	0.00	0.00	0.00	39.6
Approach		1206	5.1	1206	5.1	0.639	0.1	NA	128.8	941.4	0.00	0.00	0.00	39.6
West: School Departure														
10	L2	286	0.0	286	0.0	0.553	7.7	LOS A	1.9	13.5	0.71	1.19	1.22	16.0
12	R2	18	0.0	18	0.0	0.553	56.2	LOS D	1.9	13.5	0.71	1.19	1.22	6.1
Approach		304	0.0	304	0.0	0.553	10.5	LOS A	1.9	13.5	0.71	1.19	1.22	15.6
All Vehicles		2120	5.5	2120	5.5	0.639	1.6	NA	128.8	941.4	0.10	0.17	0.18	32.1

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1v [Horsley Rd & Beaconsfield St - Conversion (Site Folder: Development Peak 8:15 AM - 8:45 AM TCS - Direction Change)]

Network: N101 [Direction Change (Network Folder: TCS MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90 seconds (Network Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	404	6.4	404	6.4	0.625	27.4	LOS B	9.2	68.2	0.90	0.78	0.90	5.2
3	R2	112	7.1	112	7.1	0.539	42.9	LOS D	2.9	21.6	0.98	0.80	0.98	21.6
Approach		516	6.6	516	6.6	0.625	30.8	LOS C	9.2	68.2	0.92	0.78	0.92	12.5
East: Beaconsfield Street														
4	L2	80	12.5	80	12.5	0.146	27.6	LOS B	1.6	12.1	0.76	0.71	0.76	25.3
6	R2	344	8.1	344	8.1	0.933	62.2	LOS E	10.6	79.2	1.00	1.35	1.51	17.1
Approach		424	9.0	424	9.0	0.933	55.7	LOS D	10.6	79.2	0.95	1.23	1.37	18.3
North: Horsley Road														
7	L2	508	5.5	508	5.5	0.750	18.3	LOS B	6.1	45.0	0.66	0.76	0.70	29.5
8	T1	510	6.7	510	6.7	* 1.168	206.7	LOS F	6.1	45.0	1.00	2.32	2.84	1.5
Approach		1018	6.1	1018	6.1	1.168	112.7	LOS F	6.1	45.0	0.83	1.54	1.77	8.1
West: School Access														
10	L2	272	0.0	272	0.0	* 1.021	97.7	LOS F	17.8	124.7	1.00	1.29	1.92	13.9
11	T1	90	0.0	90	0.0	1.021	92.2	LOS F	17.8	124.7	1.00	1.29	1.92	22.4
12	R2	44	0.0	44	0.0	* 1.021	97.7	LOS F	17.8	124.7	1.00	1.29	1.92	14.4
Approach		406	0.0	406	0.0	1.021	96.5	LOS F	17.8	124.7	1.00	1.29	1.92	16.2
All Vehicles		2364	5.7	2364	5.7	1.168	81.8	LOS F	17.8	124.7	0.90	1.28	1.54	11.8

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Horsley Road											
P1	Full	100	39.4	LOS D	0.2	0.2	0.94	0.94	207.1	218.0	1.05
East: Beaconsfield Street											
P2	Full	100	39.4	LOS D	0.2	0.2	0.94	0.94	204.0	214.0	1.05
North: Horsley Road											
P3	Full	100	39.4	LOS D	0.2	0.2	0.94	0.94	204.0	214.0	1.05
West: School Access											
P4	Full	100	39.4	LOS D	0.2	0.2	0.94	0.94	197.3	205.3	1.04

All Pedestrians	400	39.4	LOS D	0.2	0.2	0.94	0.94	203.1	212.8	1.05

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: 2 [Horsley Rd & School Departure (Site Folder: Development Peak 8:15 AM - 8:45 AM TCS - Direction Change)]

Network: N101 [Direction Change (Network Folder: TCS MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	140	0.0	139	0.0	0.404	3.5	LOS A	0.0	0.0	0.00	0.15	0.00	16.9
2	T1	610	8.9	607	8.9	0.404	0.3	LOS A	0.0	0.0	0.00	0.15	0.00	42.2
Approach		750	7.2	746 N1	7.2	0.404	0.9	NA	0.0	0.0	0.00	0.15	0.00	36.9
North: Horsley Road														
8	T1	1206	5.1	1206	5.1	0.851	7.4	LOS A	30.6	222.6	1.00	0.18	1.91	23.3
9	R2	180	0.0	180	0.0	0.851	24.3	LOS B	30.6	222.6	1.00	0.18	1.91	20.5
Approach		1386	4.5	1386	4.5	0.851	9.6	NA	30.6	222.6	1.00	0.18	1.91	22.8
All Vehicles		2136	5.4	2132 N 1	5.4	0.851	6.6	NA	30.6	222.6	0.65	0.17	1.24	26.7

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 1v [Horsley Rd & Beaconsfield St - Conversion (Site Folder: Development Peak 8:15 AM - 8:45 AM TCS - Both Access)]

Network: N101 [Both Access (Network Folder: TCS MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 60 seconds (Network Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	384	6.8	384	6.8	0.425	11.6	LOS A	4.1	30.0	0.71	0.61	0.71	9.7
3	R2	120	6.7	120	6.7	* 0.561	25.4	LOS B	2.1	15.2	0.91	0.81	0.95	26.5
Approach		504	6.7	504	6.7	0.561	14.9	LOS B	4.1	30.0	0.76	0.66	0.77	19.8
East: Beaconsfield Street														
4	L2	80	12.5	80	12.5	0.557	21.6	LOS B	5.0	38.3	0.87	0.80	0.87	27.3
6	R2	250	11.2	250	11.2	* 0.557	21.6	LOS B	5.0	38.3	0.87	0.80	0.87	27.3
Approach		330	11.5	330	11.5	0.557	21.6	LOS B	5.0	38.3	0.87	0.80	0.87	27.3
North: Horsley Road														
7	L2	508	5.5	508	5.5	0.671	16.4	LOS B	6.1	45.0	0.79	0.79	0.79	30.3
8	T1	464	7.3	464	7.3	0.491	12.0	LOS A	5.8	43.3	0.74	0.64	0.74	11.9
Approach		972	6.4	972	6.4	0.671	14.3	LOS A	6.1	45.0	0.76	0.72	0.77	26.8
All Vehicles		1806	7.4	1806	7.4	0.671	15.8	LOS B	6.1	45.0	0.78	0.72	0.79	25.7

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Horsley Road											
P1	Full	100	24.4	LOS C	0.2	0.2	0.90	0.90	192.1	218.0	1.13
East: Beaconsfield Street											
P2	Full	100	24.4	LOS C	0.2	0.2	0.90	0.90	185.9	210.0	1.13
North: Horsley Road											
P3	Full	100	24.4	LOS C	0.2	0.2	0.90	0.90	189.0	214.0	1.13
West: School Access											
P4	Full	100	9.9	LOS A	0.1	0.1	0.80	0.80	168.4	206.0	1.22
All Pedestrians		400	20.8	LOS C	0.2	0.2	0.88	0.88	183.9	212.0	1.15

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: 2 [Horsley Rd & School Departure (Site Folder: Development Peak 8:15 AM - 8:45 AM TCS - Both Access)]

Network: N101 [Both Access (Network Folder: TCS MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	610	8.9	610	8.9	0.331	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach		610	8.9	610	8.9	0.331	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.9
North: Horsley Road														
8	T1	1206	5.1	1206	5.1	0.639	0.1	LOS A	0.8	5.7	0.00	0.00	0.00	39.6
Approach		1206	5.1	1206	5.1	0.639	0.1	NA	0.8	5.7	0.00	0.00	0.00	39.6
West: School Departure														
10	L2	246	0.0	246	0.0	0.445	5.4	LOS A	1.0	7.0	0.68	0.95	0.98	17.2
12	R2	12	0.0	12	0.0	0.445	55.8	LOS D	1.0	7.0	0.68	0.95	0.98	6.8
Approach		258	0.0	258	0.0	0.445	7.7	LOS A	1.0	7.0	0.68	0.95	0.98	16.9
All Vehicles		2074	5.6	2074	5.6	0.639	1.0	NA	1.0	7.0	0.08	0.12	0.12	33.6

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Horsley Rd & Proposed School Access (Site Folder: Development Peak 8:15 AM - 8:45 AM TCS - Both Access)]

Network: N101 [Both Access (Network Folder: TCS MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	46	0.0	46	0.0	0.025	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	45.2
2	T1	466	7.3	466	7.3	0.250	0.1	LOS A	0.6	4.3	0.00	0.00	0.00	39.9
Approach		512	6.6	512	6.6	0.250	0.6	NA	0.6	4.3	0.00	0.05	0.00	40.5
North: Horsley Road														
8	T1	906	4.9	906	4.9	0.668	3.9	LOS A	3.0	21.9	0.44	0.21	0.74	35.2
9	R2	274	0.0	274	0.0	0.668	10.3	LOS A	3.0	21.9	0.64	0.31	1.08	11.1
Approach		1180	3.7	1180	3.7	0.668	5.4	NA	3.0	21.9	0.49	0.24	0.82	28.4
West: Proposed School Access														
10	L2	2	0.0	2	0.0	0.733	53.7	LOS D	1.1	7.4	0.98	1.54	1.54	2.8
12	R2	46	0.0	46	0.0	0.733	108.7	LOS F	1.1	7.4	0.98	1.54	1.54	8.5
Approach		48	0.0	48	0.0	0.733	106.4	LOS F	1.1	7.4	0.98	1.54	1.54	8.3
All Vehicles		1740	4.5	1740	4.5	0.733	6.7	NA	3.0	21.9	0.36	0.22	0.60	28.5

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1v [Horsley Rd & Beaconsfield St - Conversion (Site Folder: Development Peak 8:15 AM - 8:45 AM TCS - New Access Only)]

Network: N101 [New Access Only (Network Folder: TCS MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 60 seconds (Network Optimum Cycle Time - Minimum Delay)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	400	6.5	400	6.5	0.354	7.1	LOS A	3.8	27.9	0.56	0.49	0.56	14.6
3	R2	112	7.1	112	7.1	0.580	22.5	LOS B	1.9	13.9	0.86	0.82	0.95	27.8
Approach		512	6.6	512	6.6	0.580	10.4	LOS A	3.8	27.9	0.63	0.56	0.64	23.0
East: Beaconsfield Street														
4	L2	174	5.7	174	5.7	0.434	26.2	LOS B	2.8	20.7	0.91	0.78	0.91	25.6
6	R2	254	11.0	254	11.0	* 0.657	28.4	LOS B	4.5	34.2	0.97	0.85	1.03	24.9
Approach		428	8.9	428	8.9	0.657	27.5	LOS B	4.5	34.2	0.94	0.82	0.98	25.1
North: Horsley Road														
7	L2	508	5.5	508	5.5	0.470	11.2	LOS A	5.3	38.6	0.62	0.72	0.62	32.9
8	T1	758	4.5	758	4.5	* 0.854	17.9	LOS B	6.2	45.0	0.71	0.81	0.93	9.3
Approach		1266	4.9	1266	4.9	0.854	15.2	LOS B	6.2	45.0	0.67	0.77	0.80	24.4
All Vehicles		2206	6.1	2206	6.1	0.854	16.5	LOS B	6.2	45.0	0.71	0.73	0.80	24.5

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Horsley Road											
P1	Full	100	24.4	LOS C	0.2	0.2	0.90	0.90	192.1	218.0	1.13
East: Beaconsfield Street											
P2	Full	100	24.4	LOS C	0.2	0.2	0.90	0.90	189.0	214.0	1.13
North: Horsley Road											
P3	Full	100	24.4	LOS C	0.2	0.2	0.90	0.90	189.0	214.0	1.13
West: School Access											
P4	Full	100	24.4	LOS C	0.2	0.2	0.90	0.90	182.9	206.0	1.13
All Pedestrians		400	24.4	LOS C	0.2	0.2	0.90	0.90	188.2	213.0	1.13

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: 2 [Horsley Rd & School Departure (Site Folder: Development Peak 8:15 AM - 8:45 AM TCS - New Access Only)]

Network: N101 [New Access Only (Network Folder: TCS MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
2	T1	610	8.9	610	8.9	0.331	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	39.9
Approach		610	8.9	610	8.9	0.331	0.0	NA	0.0	0.0	0.00	0.00	0.00	39.9
North: Horsley Road														
8	T1	1206	5.1	1206	5.1	0.639	0.1	LOS A	6.0	44.1	0.00	0.00	0.00	39.6
Approach		1206	5.1	1206	5.1	0.639	0.1	NA	6.0	44.1	0.00	0.00	0.00	39.6
West: School Departure														
10	L2	2	0.0	2	0.0	0.043	2.5	LOS A	0.0	0.2	0.83	0.74	0.83	12.4
12	R2	2	0.0	2	0.0	0.043	41.7	LOS C	0.0	0.2	0.83	0.74	0.83	4.1
Approach		4	0.0	4	0.0	0.043	22.1	LOS B	0.0	0.2	0.83	0.74	0.83	8.9
All Vehicles		1820	6.4	1820	6.4	0.639	0.1	NA	6.0	44.1	0.00	0.00	0.00	39.5

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Horsley Rd & Proposed School Access (Site Folder: Development Peak 8:15 AM - 8:45 AM TCS - New Access Only)]

Network: N101 [New Access Only (Network Folder: TCS MOD)]

273 Horsley Rd, Milperra NSW 2214
Site Category: School Traffic Assessment
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Horsley Road														
1	L2	46	0.0	46	0.0	0.025	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	45.2
2	T1	512	6.6	512	6.6	0.482	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	39.6
Approach		558	6.1	558	6.1	0.482	0.7	NA	0.0	0.0	0.00	0.05	0.00	40.1
North: Horsley Road														
8	T1	632	7.0	632	7.0	0.567	3.4	LOS A	2.0	14.7	0.41	0.25	0.61	35.5
9	R2	274	0.0	274	0.0	0.567	9.4	LOS A	2.0	14.7	0.67	0.41	0.98	11.1
Approach		906	4.9	906	4.9	0.567	5.2	NA	2.0	14.7	0.49	0.30	0.72	26.6
West: Proposed School Access														
10	L2	286	0.0	286	0.0	0.881	20.1	LOS B	2.5	17.4	0.66	2.48	2.48	6.6
12	R2	18	0.0	18	0.0	0.881	51.4	LOS D	2.5	17.4	0.66	2.48	2.48	16.3
Approach		304	0.0	304	0.0	0.881	21.9	LOS B	2.5	17.4	0.66	2.48	2.48	7.4
All Vehicles		1768	4.4	1768	4.4	0.881	6.7	NA	2.5	17.4	0.37	0.60	0.80	24.3

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.
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).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Appendix D
Transport Services

ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

transdev

SCHOOL BUS TIMETABLE

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T: (02) 8700 0555

Opal, the only way to travel to and from school
Although some might have a free pass,
all students must tap on and tap off, every time
so we can adjust services if necessary.
Report lost, stolen, or damaged card immediately.
While waiting for the replacement Opal card, students must use a Child/Youth Opal card or purchase a Single Trip ticket.
Visit **transportnsw.info/school-students** or call **131 500**

Mount St. Joseph High School (Milperra)

T: (02) 8724 6200

Route Number	Departure Time	MORNING Route Description
902x **S556**	07:04	**From Sandy Point** via Route 902X to Pleasure Point (07:12) and Voyager Point (07:17) via Heathcote Rd *(becomes Route S556)* (R) Nuwarra (L) Junction (R) Stockton (R) Newbridge (L) Nuwarra to St Joseph **(07:41)** – transfer to Bus S560
S510	07:08	**From Wattle Grove** via Delfin (R) Wattle Grove, Australis (R) Village Way (L) Bardia, Walder (Hammondville 07:23) (R) Stewart (R) Keato (R) Heathcote (R) Nuwarra (L) Junction (R) Stockton (R) Newbridge (L) Nuwarra to St Josephs **(07:41)** – transfer to Bus S560
S530	07:30	**From Chester Hill Station** via Chester Hill Rd (R) Highway (L) Johnston (R) Denman (L) Henry Lawson (L) Milperra (R) Marigold (R) Beaconsfield (R) Horsley to school **(08:02)**
S534	07:37	**From Condell Park** (Pringle & Chertsey) via Pringle (R) Lancelot (L) Simmat (R) Townsend (L) Manahan (L) Railway (R) Edgar (last pick up Yanderra) then express to school **(07:57)**
S560	07:38	**From Moorebank Shops** via Stockton (R) Newbridge (L) Nuwarra ***(pick up transfers at St Joseph 07:42)*** (L) Alfred (R) Epsom, Abingdon (R) Ascot (R) Bent (R) Chippenham (L) Faversham (R) Central (L) Haddenham (R) Ernest (R) Barry (L) Governor Macquarie (L) Newbridge (R) Marigold (R) Beaconsfield (R) Horsley to school **(08:10)**
S543	07:40	**From Yagoona** (cnr Marion & Pringle) via Marion (R) Saltash (R) Waruda (R) Edgar (last pick up Saurine) then express to school **(08:00)**
S606	07:40	**From Georges Hall** via Georges (R) Rex (L) Bambil (L) Amaroo (R) Flinders (R) Rex (L) Bellevue, last pick up Surrey, to school **(08:03)**
S117	**07:50**	**From Revesby Heights** via The River (L) Sandakan (L) Morotai (L) The River (L) Henry Lawson (R) Dilke (R) Villiers (L) Roma (L) Playford (L) Dilke (L) Clancy (R) Chamberlain (L) Alma (R) Faraday (R) Windsor (L) Davies (L) Ryan (L) Faraday (R) Doyle, Beaconsfield (R) Horsley **(08:30)**
962	**7:57**	**From Padstow Station** via Howard (R) Cahors (L) Sphinx, Marco (R) Polo (L) Bransgrove (R) Horsley **(08:11)**
S162	08:01	**From De La Salle** (Revesby Heights) via The River (R) Ferndale (L) Kennedy (R) Burns (L) Picnic Point (R) Doris, Lambeth (R) Tower (L) Hinemoa (R) Weston (L) Carson (L) Bransgrove (R) Horsley **(08:23)**
S129	08:05	**From UWS Milperra** via Bullecourt (R) Henry Lawson (L) Amiens (R) Newland (L) Raleigh (L) Pozieres (L) Henry Lawson (R) Bullecourt (R) Horsley **(08:20)**
S157	08:08	**From Bankstown Station (South Tce)** via (R) Restwell (R) Macauley (L) Chapel (R) Canterbury (L) The River (R) Beaconsfield (R) Horsley **(08:24)**
962	08:15	**From East Hills Station** via Park (R) Maclaurin (R) Henry Lawson (R) Bullecourt (R) Horsley (8:25)

Legend:
(L) Bus turns Left.
(R) Bus turns Right.
Route numbers in *Italic* refer to public bus services.

Update: 27 March 2019

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SCHOOL BUS TIMETABLE

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Mount St. Joseph High School (Milperra)

T: (02) 8724 6200

Route Number	Departure Time	AFTERNOON Route Description
962	**15:21**	**To Padstow Station** via Horsley (L) Bullecourt (R) Polo (L) Marco, Sphinx (R) Cahors (L) Howard (15:33)
S135	15:25	**To Picnic Point** (opposite school - facing south in Horsley) via (L) Bransgrove (R) Paten (R) Horsley (L) Carson (R) Weston, Anderson (R) Tower (L) Stevens (L) Singleton, Milford (L) Henderson (R) Lambeth, Doris (R) Picnic Point (L) Henry Lawson (R) Carinya to Picnic Point Boatshed, return (L) Henry Lawson (R) Picnic Point
S143	15:30	**To Revesby Heights** (school side of road - facing north in Horsley) via (R) Beaconsfield (R) Victoria (L) Thorn (L) The River (L) Beaconsfield (L) Victoria (R) Bransgrove (L) Polo (L) Marco (R) The River (L) Sandakan (L) Moratai (R) Centaur (L) Edinburgh (R) The River (L) Ferndale (L) Kennedy (R) Burns (R) Picnic Point
S164	15:30	**To Milperra** (bus stop North of Beaconsfield) via Horsley (L) Bullecourt (L) Dernancourt (R) Hermies (L) Henry Lawson (R) Pozieres (R) Raleigh (R) Newland (R) Amiens (L) Pozieres (L) Henry Lawson
S507	15:30 (15:50 Mon)	**To Yagoona** (school side of road - facing north in Horsley) *(1st stop Saurine)* Edgar (L) Waruda (L) Saltash (L) Marion to Pringle
S551	15:30	**To Condell Park** (school side of road - facing north in Horsley) *(First stop Yanderra)* via Edgar (L) Railway (R) Manahan (R) Townsend (L) Simmat (R) Lancelot (L) Pringle to Chertsey
S131	15:35	**To Bankstown Station** express (from opposite school - facing south in Horsley)
S155	15:35	**To Bankstown Station** (opposite school - facing south in Horsley) via Horsley (L) Bransgrove (L) The River *(bus becomes Route 923)* (R) Canterbury (L) Chapel (R) McCauley (L) Restwell (L) South Tce to Bankstown Station
S505	15:35	**To Chester Hill** (school side of road - facing north in Horsley) via Horsley (L) Bullecourt (R) Henry Lawson (R) Denman (L) Johnston (R) Highway (L) Chester Hill Rd to Chester Hill Station
S612	15:35	**To Georges Hall** (school side of road - facing north in Horsley) *(First stop Surrey)* via Marion (R) Surrey (L) Bellevue (R) Rex (L) Flinders (L) Amaroo (R) Bambil (L) Rex (L) Georges (R) Haig
S169	15:37	**To Padstow Heights (First stop St Lukes)** (school side of road - facing north in Horsley) via Doyle (L) Sphinx (R) Cahors Memorial (L) Howard to Padstow Station (15:53) *bus becomes Route 927 to Padstow Heights via* (R) Faraday (L) Alma (R) Chamberlain (L) Clancy

Legend:
(L) Bus turns Left.
(R) Bus turns Right.
Route numbers in *Italic* refer to public bus services.

Update: 27 March 2019

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SCHOOL BUS TIMETABLE

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Visit **transportnsw.info/school-students** or call **131 500**

Mount St. Joseph High School (Milperra)

T: (02) 8724 6200

S148	15:40	**To Padstow Heights** (opposite school - facing south in Horsley) via (L) Bransgrove (R) Carson (R) Weston (L) Woodburn, Picnic Point (L) Burns (L) Kennedy (R) Ferndale (R) The River (L) Henry Lawson (R) Dilke (R) Villiers (L) Roma (L) Playford (L) Dilke (L) Clancy (R) ramp onto Davies (L) Ryan (R) Howard (R) Memorial, Cahors (R) Gibson to cnr Turvey. (Students for Gibson Ave may catch Bus **S169** to Padstow Station and then catch a Route *M92 to* Bankstown Station)

Legend:
(L) Bus turns Left.
(R) Bus turns Right.
Route numbers in *Italic* refer to public bus services.

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SCHOOL BUS TIMETABLE

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Mount St. Joseph High School (Milperra)

T: (02) 8724 6200

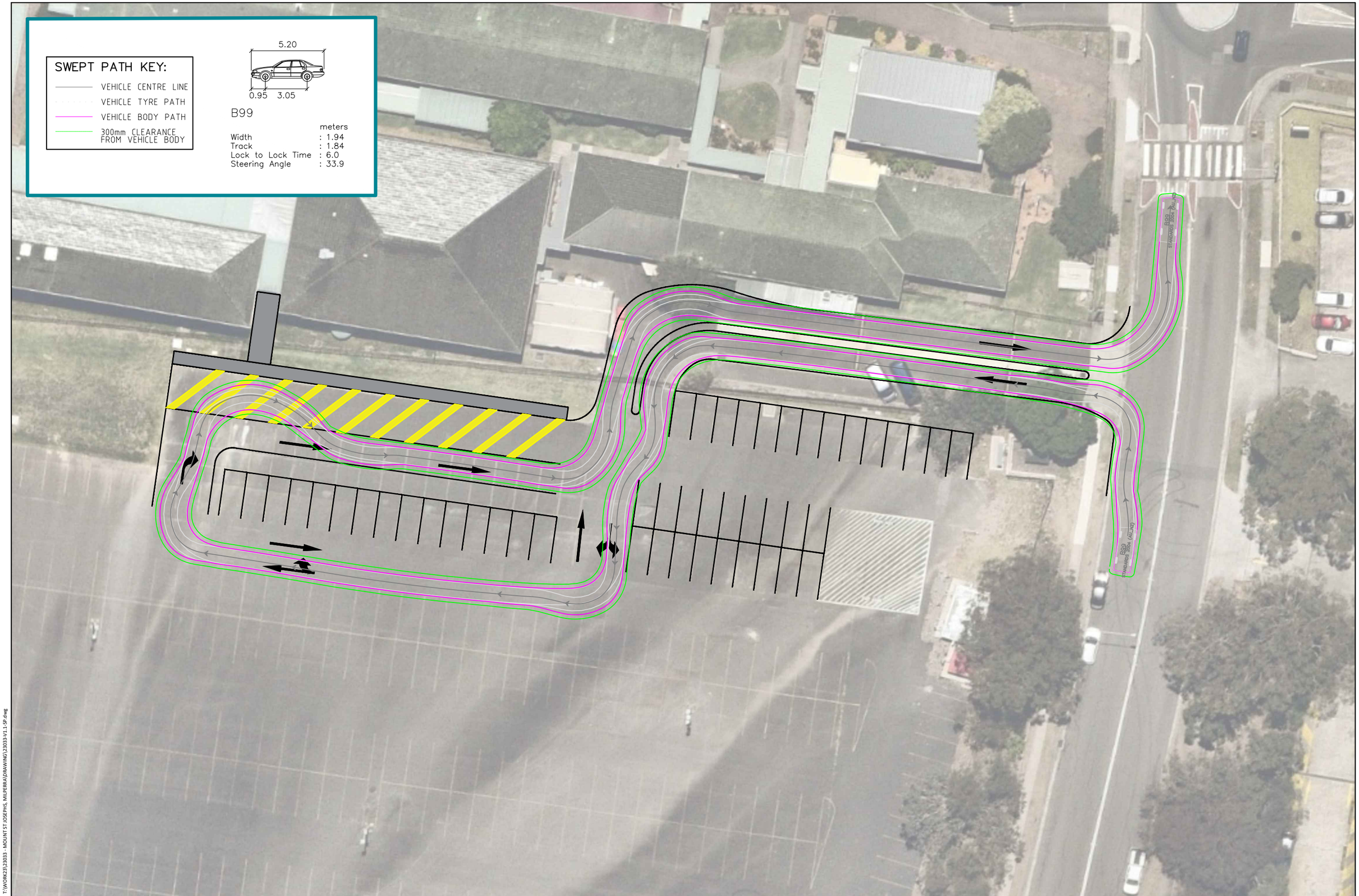
Route Number	Departure Time	AFTERNOON Route Description
S575	15:40	**To Wattle Grove** via Horsley (L) Bullecourt (R) Henry Lawson (L) Newbridge (R) Governor Macquarie (R) Barry (L) Ernest (L) Haddenham (R) Central (L) Faversham (R) Chippenham (L) Bent (L) Ascot (L) Abingdon, Epsom (L) Alfred (R) Nuwarra (R) Newbridge (L) Stockton (L) Junction (R) Nuwarra (L) Heathcote (L) Walder (Hammondville Shops 4:15 – Students for Sandy Point etc change to **Bus S559**) (R) Stewart (R) Keato (R) Heathcote (L) Bardia (R) Village Way (L) Australis, Wattle Grove (L) Delfin
S559 ***902X***	16:15	**From Hammondville Shops** (connect off above) to Sandy Point via (R) Stewart (R) Keato (L) Heathcote, Heathcote Station then to Voyager Point, Pleasure Point & Sandy Point

Legend:
(L) Bus turns Left.
(R) Bus turns Right.
Route numbers in *Italic* refer to public bus services.

Update: 27 March 2019

Appendix E
Swept Path Assessment

ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994



273 HORSLEY RD, MILPERRA NSW 2214

ACCESS AND DEPARTURE OF A 99th PERCENTILE VEHICLE IN THE PROPOSED DROP-OFF/PICK-UP

SWEPT PATH ASSESSMENT

DRAWING REF NO. 23033-V1.1-SP SHEET NO. 01 OF 01 ISSUE DATE 15 May 2023

DESIGNED BY L.ELLSON REVIEWED BY R.NETTLE

SCALE A3 0 4.0 8.0 1:400

N

DISCLAIMER

This drawing has been prepared using vehicle modelling computer software AutoTurn Pro V11.0 in conjunction with AutoCAD 2018. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.

ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

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