



Stevens Land Pty Ltd

Traffic and Parking Impact Assessment Report

Loxford Childcare Centre, Gillieston Heights

19 March 2025

ENGINEERING PLANNING SURVEYING CERTIFICATION PROJECT MANAGEMENT



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1 Introduction

Barker Ryan Stewart have been engaged by Stevens Land Pty Ltd to prepare a Traffic and Parking Impact Assessment in accordance with the requirements of the Maitland City Council DCP 2011 and the NSW Government's 'Guide to Transport Impact Assessment 2024' to accompany a Development Application for the construction of a new Childcare Centre in Precinct 1B subdivision at 464 Cessnock Road, Gillieston Heights.

The purpose of this report is to assess and address traffic, access, car parking and pedestrian impacts generated by the proposed development. This can be briefly outlined as follows:

- The expected traffic generation to/from the proposed development.
- The impact of the proposed development on the road network.
- Vehicle parking provisions.
- Access design requirements.
- Delivery and Waste Collection.
- Provision for pedestrians.
- Availability of public transport.

This Traffic and Parking Impact Assessment Report concludes that the subject site is suitable for the proposed development in relation to traffic impact, car parking provision, vehicle and pedestrian access and safety considerations.

2 **Existing Conditions**

2.1 Site Location

The site of the proposed childcare centre is at the corner of Road MC01 and Road MC11 in Precinct 1B, 464 Cessnock Road, Gillieston Heights, as shown below in Figure 2.1.

The proposed residential subdivision is for 224 residential lots with associated subdivision roads. Access will be provided to Precinct 1A via the extension of the Precinct 1A road network (sub-arterial road - Road MC01, and local roads MC05, MC08 and MC11. Road MC01 provides access to Cessnock Road via the new traffic signal controlled intersection. The design of the subdivision road network allows for connections to future residential development to the south west.

The site will have direct vehicular access to and from Road MC01 via a concrete driveway adjacent to the site's southern boundary.

The childcare centre will be located in a residential area and will be surrounded by residential properties on all sides.



Figure 2.1: Site Location (Source: ADW Johnson 2022)

2.2 Existing and Proposed Road Network

The following information has been extracted from a 2022 Traffic Report by Coulston Budd Rogers and Kafes Pty Ltd for the proposed Precinct 1B Residential Subdivision at 464 Cessnock Road, Gillieston Heights.

Cessnock Road (MR159)

Cessnock Road runs in north south direction to the east of the site. It connects Maitland in the north with Kurri Kurri in the south. The South Maitland Rail Corridor is located to the west of the site. To the north and north east of the site is the existing Gillieston Heights residential precinct. The land to south is undeveloped rural land that has been identified for future residentia! development.

Subdivision Roads

The subdivision plan below shows a sub-arterial road (Road MC01) travelling west from the intersection with Cessnock Road. The intersection of Road MC01 and Cessnock Road will be traffic signal controlled with TfNSW identifying a concept design of the intersection in the MR195 Corridor Study.

Through Precinct 1B, Road MC01 provides one traffic and one parking lane in each direction (with a 15.4 metre wide carriageway). North and south of Road MC01 is a network of local roads that provide access to individual lots. These roads provide one traffic lane in each direction within carriageways varying from eight to eleven metres wide. Internal intersections are priority controlled.



Figure 2.2: Proposed Precinct 1B Subdivision

2.3 Public Transport, Pedestrians and Cyclists

Road MC01 will be a future bus route connecting the proposed and future residential development with Cessnock Road. Dwellings within the proposed residential subdivision are located within a 400 metre radius of bus stops located on Road MC01.

Active transport routes are shown in Figure 2.3 (Mobility Plan prepared by ADW Johnson). These include:

- 1.7 metre wide on road cycleway either side of Road MC01;
- 2.5 metre wide shared cycle/pedestrian paths along, Road MC01, Road MC05, Road MC08, Road MC11 and Road MC (unnamed adjacent to the rail corridor).

The above cycleways/pedestrian paths would connect to the cycleways/pedestrian paths provided in Precinct 1A.



Figure 2.3: Mobility Plan (Source: ADW Johnson 2022)

3 Proposed Development

3.1 Development Description

The proposed development is for a 110-place childcare centre as shown below in Figure 3.1.

It is proposed to provide 29 parking spaces within the site including one accessible space. Access to and from the carpark will be off subdivision Road MC01.



Figure 3.1: Proposed Childcare Centre

3.2 Access

The proposed driveway is 7.3 metres wide and complies with the driveway width requirements of AS/NZS 2890.1-2004 Parking Facilities – Off Street Car Parking for a Category 2 driveway with access to and from a local road, serving between 25 and 100 parking spaces.

The proposed driveway location complies with Figure 3.3 – Minimum Sight Distance for Pedestrian Safety AS/NZS 2890.1.

3.3 Parking Assessment

Maitland DCP 2011 has the following car parking requirements for Centre Based Child Care Facilities:

• 1 space per 4 children in attendance or part thereof.

The parking requirement for the proposed childcare centre would be calculated as 110 / 4 = 28 spaces.

The development is proposing the provision of 29 parking spaces which complies with the DCP requirement.

The proposed carpark has been designed to the following dimensions:

- Parking Bays: 2.6m x 5.5m;
- Aisle Width: 7.3 metres.

These dimensions comply with the requirements of AS/NZS 2890.1 for User Class 3A (Short term, high turnover parking).

3.4 Service Vehicles

It is proposed that waste collection will be conducted by a contractor using a Medium Rigid Vehicle (MRV).

The MRV will enter the carpark from the adjacent street, travel through the carpark and reverse into the loading bay to collect waste, then exit the site in a forward direction.

To ensure that there are no conflicts with other vehicles, it is proposed that waste collection will be conducted outside of the operating hours of the centre.

4 Traffic Assessment

4.1 Trip Generation

The traffic that will be generated by the proposed development has been assessed from the following trips rates found in Table5.56 of the NSW Guide to Transport Impact Assessment 2024 (GTIA 2024), reproduced below.

	Long care o	day entre	Pre-se	Pre-school		Occasional care		Outside school hours care (OSHC)		OSHC)
Weekday rates	Avg	Short cut	Avg	Short cut	Avg	Short cut	Avg	Short cut	Avg	Short cut
Person trips (person	trips/lice	ensed c	hild plac	ces)					
Site AM peak hour	0.85	0.99	1.08	1.33	0.77	0.96	0.47	0.65	0.89	1.07
Site PM peak hour	0.83	0.89	1.03	1.22	0.84	1.26	0.49	0.58	0.89	1.19
Network AM peak hour	0.66	0.79	1.09	1.30	0.73	0.96	0.08	0.16	0.81	1.06
Network PM peak hour	0.39	0.49	0.60	0.88	0.06	0.10	0.28	0.47	0.36	0.65
Daily	3.07	3.13	2.50	2.78	1.83	2.56	1.51	1.77	2.52	3.10
Vehicle trips (vehicle	trips/lic	ensed o	hild pla	ces)				_	
Site AM peak hour	0.81	0.97	0.86	1.17	0.63	0.92	0.38	0.55	0.77	1.04
Site PM peak hour	0.80	0.84	0.76	1.01	0.78	1.18	0.43	0.50	0.78	1.02
Network AM peak hour	0.64	0.75	0.83	1.13	0.63	0.92	0.07	0.14	0.69	1.01
Network PM peak hour	0.39	0.51	0.51	0.70	0.06	0.10	0.23	0.36	0.33	0.63
Daily	2.97	3.03	196	2.54	165	238	130	157	2 27	299

It is assumed that the development will operate as a Long-day Care Centre for 110 children. Assuming the higher trip rate, the following trips would be generated by the proposed development:

- AM Peak 110 x 0.97 = 107 trips per hour.
- PM Peak $110 \times 0.84 = 92$ trips per hour.

The surveys undertaken in 2015 to identify the above trip rates also assessed the average mode share for childcare centres as shown below in Table 5.57 from the GTIA 2024, reproduced below.

Mode	Sydney Average and range	Regional Average and range
Car	87% (46% to 99%)	89% (84% to 93%)
Non-car	13% (1% to 54%)	11% (7% to 16%)

Table 5.57. Mode share summary for child care centres

Assuming the average travel mode share of 89% by private vehicle for regional areas, the trip rates would be reduced to:

- AM Peak $110 \times 0.97 \times 0.89 = 96$ trips per hour (rounded up to the nearest even number).
- $PM Peak 110 \times 0.84 \times 0.89 = 82$ trips per hour.

4.2 Traffic Impacts

4.2.1 Subdivision Roads

The 2022 Traffic Report for precinct 1B prepared by Coulston Budd Rogers & Kafes provides the following commentary regarding the traffic impacts of the proposed subdivision:

TfNSW has provided 2036 weekday morning (AM) and afternoon (PM) peak hour traffic flows on Road MC01 west of Cessnock Road for full development of the area. These have been extracted from the MR195 Corridor Study and are summarised below:

- Weekday morning (AM) peak hour 584 and 205 vehicles per hour in the eastbound and westbound directions respectively; and
- Weekday afternoon (PM) peak hour 199 and 642 vehicles per hour in the eastbound and westbound directions respectively.

Based on the subdivision layout, this traffic would split at the roundabout within Precinct 1A, with some 25% to/from the north (Auburn Street), some 20% to/from the south (Road MC04) and the balance to/from the west (Road MC01).

This would result in the following traffic flows:

- Auburn Street some 195 to 210 vehicles per hour (two way) in the weekday AM and PM peak hours;
- Road MC04 some 160 to 170 vehicles per hour (two way) in the weekday AM and PM peak hours; and
- Road MC01 (west of Auburn Street) some 435 to 460 vehicles per hour (two way) in the weekday AM and PM peak hours.

Based on the above data, the directional split of traffic flows that will be generated by the subdivision at full development is calculated as:

- AM: 75% outbound, 25% inbound; and
- PM: 25% outbound, 75% inbound.

The future AM and PM traffic volumes at the roundabout within Precinct 1A can therefore be illustrated as shown below in Figure 4.1:



Figure 4.1: 2036 Traffic Volumes

The impact of the additional traffic that will be generated by the proposed childcare centre has been assessed based on the following assumptions:

- All staff will arrive during the morning peak and depart during the afternoon peak;
- All visitors (parents / carers) will arrive and depart during the peak periods;
- AM peak traffic volumes will be 54 inbound, 42 outbound;
- PM peak traffic volumes will be: 35 inbound, 47 outbound.

The future AM and PM traffic volumes, including development traffic, at the roundabout within Precinct 1A can therefore be illustrated as shown below in Figure 4.2:



Figure 4.2: 2036 Traffic Volumes + Childcare Development

To assess the impact of the additional traffic that will be generated by the proposed childcare centre, the roundabout on Road MC01 has been modelled using Sidra 9.1 software and the results are shown below in Table 4.1.

Intersection	Scenario	Peak Period	Degree of Saturation (v/c)	Worst Delay (sec)	Level of Service (LoS)	95% Queue Length (m)	Worst Approach (Delay)	Worst Approach (Queue)
	2036	AM	0.296	9.2	A	12.7	Auburn Street (Right Turn)	Road MC01 (West Approach)
Roundabout	2036	PM	0.282	8.3	A	12.0	Road MC04 (Right Turn)	Road MC01 (East Approach)
MC01	2036 +	AM	0.332	9.5	A	15.0	Auburn Street (Right Turn)	Road MC01 (West Approach)
	Development	PM	0.309	8.5	A	13.8	Road MC04 (Right Turn)	Road MC01 (East Approach)

Table 4.1: Sidra Modelling Results

The Sidra results shown above indicate that the roundabout on Road MC01will operate at a high level of service at full development of the subdivision in 2036 and with the additional traffic that will be generated by the proposed childcare centre. The degree of saturation indicates that the intersection will operate at no more than 35% capacity, ensuring that it will be able to cater for any unforeseen increase in traffic volumes through the subdivision.

The proposed development will, therefore, have no impact on the safety and efficiency of Road MC01 or the surrounding road network.

4.2.2 Cessnock Road (MR159)

The 2022 Traffic Report for precinct 1B prepared by Coulston Budd Rogers & Kafes also provided the following commentary regarding the traffic impacts of the proposed subdivision on Cessnock Road:

TfNSW has undertaken an assessment of the traffic effects of future development in the area through the Main Road 195 Corridor Study (MR195 Study). This has identified appropriate road works and contributions to road upgrades for future development along the corridor. For the subject site, the MR195 Study has identified a new traffic signal-controlled intersection on Cessnock Road to provide access to the northern residential precinct.

With regards to the intersection of Road MC01/Cessnock Road, TfNSW in its response to the Precinct 1A DA has advised that:

• It is satisfied that the traffic impact assessment and associated traffic modelling which supports the design of the intersection of the Cessnock Road and the collector road (Road MC01), facilitates access to the proposed residential subdivision;

Since the proposed childcare centre will generate minimal additional traffic to the local road network it is expected that the proposed traffic signals at the Cessnock Road / MC01 intersection will have sufficient spare capacity to cater for the additional traffic volumes.

5 Conclusion/Recommendations

Barker Ryan Stewart have been engaged to prepare a Traffic and Parking Impact Assessment in accordance with the requirements of the Maitland DCP 2011 and the NSW Government's 'Guide to Transport Impact Assessment 2024' to accompany a Development Application for the construction of a new Childcare Centre in Precinct 1B subdivision at 464 Cessnock Road, Gillieston Heights.

The site of the proposed childcare centre is within a proposed residential subdivision (Precinct 1B) at the corner of Road MC01 and Road MC11, 464 Cessnock Road, Gillieston Heights.

It is proposed to provide 29 parking spaces within the site including one accessible space. Access to and from the carpark will be off subdivision Road MC01.

The Maitland DCP parking requirement for the proposed childcare centre has been calculated as 29 spaces. The development is proposing the provision of 30 parking spaces which complies with the DCP requirement.

The proposed access and carpark have been have designed to comply with the requirements of AS/NZS 2890.1: 2004 Parking – Off-street car parking.

It is assumed that the development will operate as a Long-day Care Centre for 110 children. On this basis the following trips would be generated:

- AM Peak $110 \times 0.97 = 107$ trips per hour.
- $PM Peak 110 \times 0.84 = 92$ trips per hour.

Assuming the average travel mode share of 89% by private vehicle for regional areas, the trip rates would be reduced to:

- AM Peak $110 \times 0.97 \times 0.89 = 96$ trips per hour.
- $PM Peak 110 \times 0.84 \times 0.89 = 82$ trips per hour.

The impact of the additional traffic that will be generated by the proposed childcare centre on the roundabout on Road MC01 has been modelled using Sidra 9.1 software.

The modelling results indicate that the roundabout on Road MC01 will operate at a high level of service at full development of the subdivision in 2036 and with the additional traffic that will be generated by the proposed childcare centre. The degree of saturation indicates that the intersection will operate at no more than 35% capacity, ensuring that it will be able to cater for any unforeseen increase in traffic volumes through the subdivision.

The proposed development will, therefore, have minimal impact on the safety and efficiency of Road MC01 or the surrounding road network.

Since the proposed childcare centre will generate minimal additional traffic to the local road network it is expected that the proposed traffic signals at the Cessnock Road / MC01 intersection will have sufficient spare capacity to cater for the additional traffic volumes.

The Traffic and Parking Impact Assessment concludes that the subject site is suitable for the proposed development in relation to the impact of traffic, car parking provision, vehicle and pedestrian access and safety considerations.

6 References

Australian Standards, 'AS/NZS 2890.1:2004 Off-Street Car Parking'.

Australian Standards, 'AS 2890.2:2018 Off-Street Commercial Vehicle Facilities'.

Australian Standards, 'AS/NZS 2890.6:2002 Off-Street Parking for People with Disabilities'.

NSW 'Transport Impact Assessment Guide 2024.

NSW Department of Planning, 'SEPP (Transport and Infrastructure) 2021'.

Maitland City Council's DCP 2011.

Appendix A - Site Plan



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ADRESS:	CESSNOCK RD, GILLIESTON HEIGHTS NSW	Legen	d - Proposed Site Plan
LOT:	CONSOLIDATION OF LOT 719 D.P LOTS 301,302,303,304 D.P		VEHICLE ENTRY / CAR CIRCULATION PROPERTY LINE PROPOSED SET BACK
SITE AREA: GFA:	3099 m² TBC (APPROX)		RETAINING WALL PROPOSED BUILDING
TOTAL PARKING: MIN 1 SPACE PER 4 CHILDREN	29 SPACES (28 + 1 ACC)		PROPOSED GARDEN BED/ OUTDOOR PLAY AREA PROPOSED PAVING
CHILDREN: STAFF:	110 18	+ + + + + + + + + + +	PROPOSED ASPHALT
- FIRE HOSE REELS AND FIRE HY BE COORDINATED AND CONFIRM DESIGN	DRANT LOCATIONS TO IED IN DEVELOPED	Abbre	viations - GA

Appendix B – Sidra Movement Summaries

WSite: 101 [Road MC01 / Auburn St / Road MC04 - 2036 AM (Site Folder: General)]

Road MC01 / Auburn St / Road MC04 - 2036 AM Site Category: (None) Roundabout

Vehi	Vehicle Movement Performance													
Mov ID Turn		INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delav	Level of Service	95% B QU	ACK OF	Prop. Que	Effective Stop Rate	Aver. No.	Aver. Speed
		[Total	HV]	[Total	HV]				[Veh.	Dist]			Cycles	
veh/h % veħ/h %						V/C	sec		veh	m				km/h
Sout	h: Road	d MC04												
1	L2	25	1.0	26	1.0	0.115	5.4	LOS A	0.6	4.1	0.30	0.60	0.30	44.8
2	T1	5	1.0	5	1.0	0.115	4.6	LOS A	0.6	4.1	0.30	0.60	0.30	45.3
3	R2	90	1.0	95	1.0	0.115	7.2	LOS A	0.6	4.1	0.30	0.60	0.30	45.1
Appr	oach	120	1.0	126	1.0	0.115	6.7	LOS A	0.6	4.1	0.30	0.60	0.30	45.0
East:	Road	MC01												
4	L2	20	1.0	21	1.0	0.094	4.9	LOS A	0.5	3.5	0.20	0.52	0.20	45.6
5	T1	60	1.0	63	1.0	0.094	4.2	LOS A	0.5	3.5	0.20	0.52	0.20	46.2
6	R2	30	1.0	32	1.0	0.094	6.7	LOS A	0.5	3.5	0.20	0.52	0.20	45.9
Appr	oach	110	1.0	116	1.0	0.094	5.0	LOS A	0.5	3.5	0.20	0.52	0.20	46.0
North	n: Aubu	ırn Street												
7	L2	110	1.0	116	1.0	0.180	7.4	LOS A	1.0	7.0	0.58	0.71	0.58	44.4
8	T1	5	1.0	5	1.0	0.180	6.6	LOS A	1.0	7.0	0.58	0.71	0.58	44.9
9	R2	30	1.0	32	1.0	0.180	9.2	LOS A	1.0	7.0	0.58	0.71	0.58	44.7
Appr	oach	145	1.0	153	1.0	0.180	7.7	LOS A	1.0	7.0	0.58	0.71	0.58	44.4
West	: Road	MC01												
10	L2	15	1.0	16	1.0	0.296	5.5	LOS A	1.8	12.7	0.37	0.52	0.37	45.6
11	T1	295	1.0	311	1.0	0.296	4.8	LOS A	1.8	12.7	0.37	0.52	0.37	46.1
12	R2	15	1.0	16	1.0	0.296	7.3	LOS A	1.8	12.7	0.37	0.52	0.37	45.9
Appr	oach	325	1.0	342	1.0	0.296	4.9	LOS A	1.8	12.7	0.37	0.52	0.37	46.1
All Vehi	cles	700	1.0	737	1.0	0.296	5.8	LOS A	1.8	12.7	0.37	0.57	0.37	45.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

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

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).

Queue Model: SIDRA Standard.

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

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

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WSite: 101 [Road MC01 / Auburn St / Road MC04 - 2036 PM (Site Folder: 2036)]

Road MC01 / Auburn St / Road MC04 - 2036 PM Site Category: (None) Roundabout

Vehi	Vehicle Movement Performance													
Mov	Turn		JT MES		ND NS	Deg.	Aver.	Level of	95% B		Prop.	Effective	Aver.	Aver.
ID	Turri	[Total		[Total	H\/ 1	Satn	Delay	Service	[\/eh	Dist 1	Que	Stop Rate	Cvcles	Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m			0,000	km/h
South	n: Roa	d MC04	/0	VOII/II	/0	10	000		Von		_			
1	L2	15	1.0	16	1.0	0.072	6.5	LOS A	0.4	2.6	0.47	0.59	0.47	45.2
2	T1	44	1.0	46	1.0	0.072	5.7	LOS A	0.4	2.6	0.47	0.59	0.47	45.7
3	R2	5	1.0	5	1.0	0.072	8.3	LOS A	0.4	2.6	0.47	0.59	0.47	45.5
Appro	bach	64	1.0	67	1.0	0.072	6.1	LOS A	0.4	2.6	0.47	0.59	0.47	45.6
East:	Road	MC01												
4	L2	70	1.0	74	1.0	0.282	5.0	LOS A	1.7	12.0	0.25	0.53	0.25	45.6
5	T1	190	1.0	200	1.0	0.282	4.3	LOS A	1.7	12.0	0.25	0.53	0.25	46.1
6	R2	85	1.0	89	1.0	0.282	6.9	LOS A	1.7	12.0	0.25	0.53	0.25	45.9
Appro	bach	345	1.0	363	1.0	0.282	5.1	LOS A	1.7	12.0	0.25	0.53	0.25	45.9
North	: Aubu	ırn Street												
7	L2	10	1.0	11	1.0	0.049	5.1	LOS A	0.2	1.7	0.26	0.57	0.26	45.1
8	T1	13	1.0	14	1.0	0.049	4.4	LOS A	0.2	1.7	0.26	0.57	0.26	45.7
9	R2	30	1.0	32	1.0	0.049	7.0	LOS A	0.2	1.7	0.26	0.57	0.26	45.4
Appro	bach	53	1.0	56	1.0	0.049	6.0	LOS A	0.2	1.7	0.26	0.57	0.26	45.4
West	Road	MC01												
10	L2	28	1.0	29	1.0	0.111	5.4	LOS A	0.6	4.0	0.32	0.54	0.32	45.4
11	T1	64	1.0	67	1.0	0.111	4.7	LOS A	0.6	4.0	0.32	0.54	0.32	46.0
12	R2	23	1.0	24	1.0	0.111	7.3	LOS A	0.6	4.0	0.32	0.54	0.32	45.7
Appro	bach	115	1.0	121	1.0	0.111	5.4	LOS A	0.6	4.0	0.32	0.54	0.32	45.8
All Vehic	les	577	1.0	607	1.0	0.282	5.3	LOS A	1.7	12.0	0.29	0.54	0.29	45.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

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

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).

Queue Model: SIDRA Standard.

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

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

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Site: 101 [Road MC01 / Auburn St / Road MC04 - 2036 AM + Development (Site Folder: 2036 + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Road MC01 / Auburn St / Road MC04 - 2036 AM + Development Site Category: (None) Roundabout

Vehicle Movement Performance 95% Back Of Demand Arrival Eff. Aver. Mov Deg. Aver. Level of Prop. No. of Speed Μον Flows Queue Turn Flows Stop ID Class Delay Satn Que [Total HV] [Total HV] [Veh. Dist] Rate Cycles % km/h South: Road MC04 1 L2 All MCs 26 1.0 26 1.0 0.121 5.7 LOS A 0.6 4.3 0.37 0.61 0.37 44.3 2 LOS A T1 All MCs 5 1.0 5 1.0 0.121 5.0 0.6 4.3 0.37 0.61 0.37 44.7 3 R2 All MCs 1.0 1.0 0.121 7.5 LOS A 0.6 4.3 0.37 0.61 0.37 44.2 95 95 Approach 126 1.0 126 1.0 0.121 7.0 LOS A 4.3 0.37 0.37 44.2 0.6 0.61 East: Road MC01 L2 All MCs LOS A 1.0 1.0 0.137 4.9 0.8 5.4 0.20 0.49 0.20 45.4 4 21 21 5 T1 All MCs 120 1.0 120 1.0 0.137 4.2 LOS A 0.8 54 0.20 0.49 0.20 45.7 All MCs LOS A 6 R2 1.0 32 1.0 0.137 6.7 0.8 5.4 0.20 0.49 0.20 45.3 32 1.0 0.137 LOS A 0.49 0.20 Approach 173 1.0 173 4.7 0.8 5.4 0.20 45.6 North: Auburn Street 7 L2 All MCs 116 1.0 116 1.0 0.188 7.7 LOS A 1.0 7.4 0.61 0.67 0.61 43.8 8 All MCs 7.0 LOS A 1.0 7.4 0.61 T1 5 1.0 5 1.0 0.188 0.67 0.61 44 2 9 R2 All MCs 32 1.0 32 1.0 0.188 9.5 LOS A 1.0 7.4 0.61 0.67 0.61 43.7 1.0 1.0 0.188 LOS A 7.4 0.67 0.61 Approach 153 153 8.1 1.0 0.61 43.8 West: Road MC01 10 L2 All MCs 1.0 0.332 5.5 LOS A 15.0 0.38 0.50 0.38 45.1 1.0 2.1 16 16 11 T1 All MCs 355 1.0 355 1.0 0.332 4.8 LOS A 2.1 15.0 0.38 0.50 0.38 45.5 12 All MCs 7.4 LOS A 2.1 15.0 0.38 0.50 0.38 R2 16 1.0 16 1.0 0.332 45.1 1.0 0.332 LOS A 2.1 15.0 0.38 0.50 Approach 386 1.0 386 4.9 0.38 45.5 All Vehicles 838 1.0 838 1.0 0.332 LOS A 2.1 15.0 0.38 5.8 0.55 0.38 45.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (Control Delay: Geometric Delay is included).

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

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

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

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

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Organisation: BARKER RYAN STEWART | Licence: NETWORK / 1PC | Processed: Wednesday, 19 March 2025 4:06:56 PM Project: C:\Users\robert\Documents\Loxford Childcare\Loxford.sip9

WSite: 101 [Road MC01 / Auburn St / Road MC04 - 2036 PM + Development (Site Folder: 2036 + Development)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Road MC01 / Auburn St / Road MC04 - 2036 PM + Development Site Category: (None) Roundabout

Vehicle Movement	Perform	nance

Mov ID	Turn	Mov Class	Dem Fl [Total]	iand ows HV]	Ar Fl [Total I	rival ows HV]	Deg. Satn	Aver. Delay	Level of Service	95% B Que [Veh.	ack Of eue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South	: Roa	d MC04													
1	L2	All MCs	16	1.0	16	1.0	0.075	6.7	LOS A	0.4	2.7	0.50	0.60	0.50	44.7
2	T1	All MCs	46	1.0	46	1.0	0.075	5.9	LOS A	0.4	2.7	0.50	0.60	0.50	45.1
3	R2	All MCs	5	1.0	5	1.0	0.075	8.5	LOS A	0.4	2.7	0.50	0.60	0.50	44.6
Appro	ach		67	1.0	67	1.0	0.075	6.3	LOS A	0.4	2.7	0.50	0.60	0.50	45.0
East:	Road	MC01													
4	L2	All MCs	74	1.0	74	1.0	0.309	5.1	LOS A	1.9	13.8	0.26	0.51	0.26	45.2
5	T1	All MCs	237	1.0	237	1.0	0.309	4.3	LOS A	1.9	13.8	0.26	0.51	0.26	45.5
6	R2	All MCs	89	1.0	89	1.0	0.309	6.9	LOS A	1.9	13.8	0.26	0.51	0.26	45.1
Appro	ach		400	1.0	400	1.0	0.309	5.0	LOS A	1.9	13.8	0.26	0.51	0.26	45.4
North:	Aubu	urn Street													
7	L2	All MCs	11	1.0	11	1.0	0.052	5.4	LOS A	0.3	1.8	0.32	0.58	0.32	44.6
8	T1	All MCs	14	1.0	14	1.0	0.052	4.7	LOS A	0.3	1.8	0.32	0.58	0.32	45.0
9	R2	All MCs	32	1.0	32	1.0	0.052	7.2	LOS A	0.3	1.8	0.32	0.58	0.32	44.5
Appro	ach		56	1.0	56	1.0	0.052	6.3	LOS A	0.3	1.8	0.32	0.58	0.32	44.7
West:	Road	I MC01													
10	L2	All MCs	29	1.0	29	1.0	0.156	5.5	LOS A	0.8	5.8	0.34	0.52	0.34	45.1
11	T1	All MCs	117	1.0	117	1.0	0.156	4.7	LOS A	0.8	5.8	0.34	0.52	0.34	45.5
12	R2	All MCs	24	1.0	24	1.0	0.156	7.3	LOS A	0.8	5.8	0.34	0.52	0.34	45.0
Appro	ach		171	1.0	171	1.0	0.156	5.2	LOS A	0.8	5.8	0.34	0.52	0.34	45.3
All Ve	hicles	;	694	1.0	694	1.0	0.309	5.3	LOS A	1.9	13.8	0.31	0.52	0.31	45.3

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