TRAFFIC IMPACT ASSESSMENT

RESIDENTIAL PLANNING PROPOSAL

LOT 2 IN DP 508780 AND LOTS 300 & 301 IN DP 625002
39, 39A AND 41 BROCKLESBY ROAD, MEDOWIE

PREPARED FOR: McCLOY PROJECT MANAGEMENT PTY LTD

AMENDED APRIL 2023

REF: 22/101

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39, 39A AND 41 BROCKLESBY ROAD, MEDOWIE

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This document has been prepared, checked, and released in accordance with the Quality Control Standards established by Intersect Traffic Pty Ltd.

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This document has been authorised by 

Date 26th April 2023

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1. INTRODUCTION

Intersect Traffic Pty Ltd (Intersect Traffic) was engaged by McCloy Project Management Pty Ltd to prepare a traffic impact assessment (TIA) for the proposed rezoning of Lot 2 in DP 508780 and Lots 300 & 301 in DP 625002 – 39, 39A & 41 Brocklesby Road, Medowie. The planning proposal for the subject site is for a rezoning from the existing large rural lots of minimum lot size of 2 ha to small residential lots of a minimum size of 350 m^2. The concept subdivision plan is provided within ***Appendix 1***.

Access for a future low density residential subdivision development is proposed via a connecting new public road at Brocklesby Road, approximately 300 metres south of Ferodale Road. All residential sites are proposed to gain vehicular access via new internal subdivision roads, except for 4 lots which are proposed to be via direct driveway vehicular accesses at Brocklesby Road at the south eastern corner of the site.

The aim of this TIA is to determine the likely impact of the traffic generated by the subject site development on the adjacent local and state road network and allow Port Stephens Council to assess the merits of the planning proposal in an informed manner.

This report presents the findings of the traffic assessment and includes the following:

1. An outline of the existing situation near the site.
2. An assessment of the traffic impacts of the proposed development including the predicted traffic generation, trip distribution and its impact on existing road and intersection capacities.
3. An assessment of the proposed subdivision access and layout.
4. A review of parking, public transport, pedestrian, and cycle way requirements for the proposed development, including assessment against Council and TfNSW standards and requirements.
5. A presentation of conclusions and recommendations.

2. SITE DESCRIPTION

The subject site is located centrally and towards the eastern fringe of Medowie, amid urban and rural residential properties. The site is approximately 1.5 kilometres southeast of the Medowie Road / Ferodale Road roundabout intersection (and the Medowie commercial business area) and approximately 1.5 kilometres northeast of the Medowie Road / Brocklesby Road T-intersection. The site lies approximately 33 kilometres north of Newcastle, 33 kilometres southwest of Nelson Bay, 15 kilometres east of Raymond Terrace and approximately 8 kilometres north of Williamtown (and Newcastle Airport). The site has an approximately 140-metre-long eastern frontage to Brocklesby Road and is bounded by Wirreanda Public School to the north, a large lot rural residential subdivision to the south and an existing minimum 350 m^2 lot size developing residential estate to the west. The site contains 3 residential dwellings with associated structures and comprises mostly vacant grassed and vegetated land areas. ***Figure 1*** below shows the location of the land proposed for rezoning.

Figure 1 - Site Location Plan

The site contains the following property descriptors:

- Formal land title of Lot 2 in DP 508780 and Lots 300 & 301 in DP 625002,
- Residential addresses of 39, 39A & 41 Brocklesby Road, Medowie,
- Lot area of approximately 5 hectares, and
- Land zoning of RU2 – Rural Landscape within the Port Stephens LEP (2013).

The existing three lots of the site currently have 4 vehicular accesses via Brocklesby Road. Previous photographs shown on the initial page and the introduction page and ***Photograph 1*** below show various sections of the site whilst ***Photograph 2*** shows the existing gravel vehicular crossing and internal driveway which is approximately the location of the proposed new subdivision road access.

Photograph 1 -Development site from Brocklesby Road

Photograph 2 Existing site access and subdivision access – Brocklesby Road

3. EXISTING ROAD NETWORK

3.1 Medowie Road

Medowie Road near the site is a sub-arterial road under a functional road hierarchy and is a classified road known as Regional Road 518 (RR 518). As a regional road it is under the care and control of Port Stephens Council which receives some contributory funding from TfNSW for maintenance. Its main function is to provide a connection for Medowie and surrounding areas to the arterial and sub-arterial road network at the Pacific Motorway to the west and Nelson Bay Road to the east. It is a sealed road approximately 17 kilometres long. Medowie Road's southern end at MR108 (Nelson Bay Road) at Williamtown is approximately 8 kilometres south of Ferodale Road and its northern end at the Pacific Highway (M1 Motorway) is approximately 9 kilometres north of Ferodale Road. Approximately 5 kilometres south of Ferodale Road, Medowie Road forms a four-leg roundabout intersection with Richardson Road (MR 104) at Campvale. Richardson Road is a sub-arterial road that runs between Raymond Terrace and Salt Ash via Campvale. The intersection of Medowie Road and Ferodale Road is also a 4-leg roundabout intersection.

Medowie Road is a two lane two way sealed rural road and urban road except were widened at intersections with travel lanes varying between 3.2 to 3.8 metres in width and sealed shoulders between 1.5 and 3.0 metres in width except where kerb and gutter has been constructed in some of the urban areas. The road is centre line and edge line marked for its full length.

Near the site north and south of Ferodale Road, a 50 km/h speed zoning applies to Medowie Road, whilst an 80-kilometre speed zoning applies on Medowie Road north and south of Brocklesby Road. At the time of inspection, Medowie Road was observed to be in fair to good condition. ***Photographs 3 & 4*** below show the various road standards of Medowie Road near the site.

Photograph 3 – Medowie Road north from Ferodale Road

Photograph 4 – Medowie Road south from Brocklesby Road

3.2 Ferodale Road

Ferodale Road near the site is a major local collector road approximately 3.4 kilometres long. Under a classified hierarchy it is therefore under the care and control of Port Stephens Council. Its main function is to provide a connection for Medowie traffic to all areas of Medowie and to the local sub-arterial road, Medowie Road. At its eastern end 1.4 kilometres east of Ferodale Road it forms a T-intersection with Coachwood Drive and James Road whilst at its western end its sealed section connects to Fairlands Road approximately 2.0 kilometres west of Ferodale Road.

Ferodale Road is a two lane two way sealed urban road, with a mixture of rural style and kerb and guttered urban style constructions. Travel lanes in Ferodale Road vary between 3.2 to 3.5 metres in width with sealed shoulders between 0.5 and 1.0 metres in width in the rural type sections whilst the carriageway between kerb and guttered urban sections is approximately 11 metres wide with travel lanes approximately 3.5 metres wide and parking lanes approximately 2.0 metres wide. The road is centre line marked for its full length.

A 50 km/h speed zoning applies to Ferodale Road, except near the site east and west of Brockelsby Road, where a 40 km/hr speed zoning applies during school drop-off and pick-up times. At the time of inspection, Ferodale Road was observed to be in fair to good condition. ***Photographs 5 & 6*** below show the various road standards of Ferodale Road near the site.

Photograph 5 – Ferodale Road east from Medowie Road

Photograph 6 – Ferodale Road west from Brocklesby Road

3.3 Brocklesby Road

Brocklesby Road near the site is a local collector road approximately 1.9 kilometres long. Under a classified hierarchy it is therefore under the care and control of Port Stephens Council. Its main function is to provide a connection for local traffic between the local residential streets, Wirreanda Public School, and the major roads, Ferodale Road and Medowie Road which, respectively, form a T-intersection with Brocklesby Road at its northern and western ends.

Brocklesby Road is a two-lane two-way sealed road, with a 700 metre long east / west section between Medowie Road and James Road and a 1.2 kilometre long north / south section (to which the site has a frontage) between James Road and Ferodale Road. The east /west section of Brocklesby Road has a 7-metre-wide carriageway between kerbs. The north / south section is a 7-metre-wide sealed rural style road with gravel / grassed shoulders and table drains, for approximately 800 metres north of James Road to the southern boundary of the site. The 400 metres section of Brocklesby Road from this boundary to Ferodale Road has a 9- to 10-metre-wide carriageway between kerbs. Travel lanes on all sections of Brocklesby Road are approximately 3 to 3.5 metres wide and parking lanes at the Ferodale Road end are approximately 2.0 metres wide.

A 50 km/h speed zoning applies to all of Brocklesby Road however, during school drop-off and pick-up times, a 40 km/hr speed zoning applies for the 400-metre northern section, from Ferodale Road to the southern boundary of the subject site. At the time of inspection, Brocklesby Road was observed to be in fair to good condition. ***Photographs 7 & 8*** below show the various road standards of Brocklesby Road near the site.

Photograph 7 – Brocklesby Road adjacent to the site frontage.

Photograph 8 – Brocklesby Road south from Ferodale Road

4. TRANSPORT NETWORK IMPROVEMENTS

Section 5.3 – Future Traffic and Transport of the Medowie Planning Strategy identifies the future transport infrastructure requirements in Medowie. *Figure 9* of the strategy diagrammatically shows the road network with major features and proposed improvements whilst *Table 4* of the Strategy details the adopted future road, pedestrian, and cycle "traffic and transport" improvements for the Medowie Study Area, in tabular form. *Figure 9 and Table 4 of the Section 5.3 of the Medowie Planning Strategy are* presented in ***Appendix 2*** of this assessment for reference.

Future transport network upgrades near the site will form part of the Port Stephens Council development contributions plan works whilst maintenance and rehabilitation works would be undertaken in future in line with Port Stephens Council works programs.

5. TRAFFIC VOLUMES

Intersect Traffic engaged Northern Transport Planning and Engineering (NTPE) to undertake traffic counts at the Medowie Road / Ferodale Road 4-leg roundabout intersection (Intersection 1) and the Ferodale Road / Brocklesby Road T-intersection (Intersection 2). The traffic counts were undertaken over the 6 am – 9am and the 3 pm – 6 pm periods on Wednesday 23 November 2022. Upon examination of the counts, it was determined that the AM and PM peak hour periods at both intersections occurred from 8.00 am to 9.00 am and 4.45 pm to 5.45 pm, respectively.

Intersect Traffic also carried out traffic counts at the Medowie Road / Brocklesby Road T-intersection (Intersection 3) at the anticipated peak hour periods of 8.00 am - 9.00 am and 3.30 pm – 4.30 pm on 14 December 2022 and 15th December 2022 whilst awaiting the results of the NTPE traffic counts.

The NTPE and Intersect Traffic count data is presented in ***Appendix 3***.

To determine the 2032 mid-block peak hour volumes, the 2022 volumes, calculated from the traffic data, were increased by an annual background growth factor of 1.5% for 10 years for all roads. This percentage was adopted for the following reasons:

- The rate is frequently accepted by TfNSW for regional roads, and
- The assessment will include a further separate increase in traffic by analysis of all known proposed residential development on Medowie Road, Ferodale Road and Brocklesby Road as provided in the Port Stephens Council – Medowie Planning Strategy adopted 13 December 2012 i.e., cumulative impacts of all future known developments.

The 2022 and 2032 two-way mid-block peak hour traffic volumes thus determined is presented in ***Table 1*** below.

Table 1 – Existing peak hour mid-block traffic volumes

Road	Section	2022		2032	
		AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)
Medowie Road	north of Ferodale Road	709	808	823	938
Medowie Road	south of Ferodale Road	1045	1135	1213	1317
Ferodale Road	east of Medowie Road	707	550	821	638
Ferodale Road	west of Medowie Road	653	1065	758	1236
Ferodale Road	east of Brocklesby Road	314	318	364	369
Ferodale Road	west of Brocklesby Road	313	351	363	407
Brocklesby Road	south of Ferodale Road	196	155	227	180
Medowie Road	north of Brocklesby Road	1020	1089	1184	1264
Medowie Road	south of Brocklesby Road	1182	1231	1372	1429
Brocklesby Road	east of Medowie Road	268	208	311	241

The above table of volumes is considered relevant for the analysis and is utilised for the traffic assessment.

6. ROAD CAPACITIES

As with development all the roads in this section of Medowie will become urban roads with speed zonings less than 100 km/h therefore road capacity assessment is based on the road network being an urban road network. *Table 4.3* of the *RTA's Guide to Traffic Generating Developments*, reproduced below, is utilised to determine their mid-block capacities.

Table 4.3
Typical mid-block capacities for urban roads with interrupted flow

Type of Road	One-Way Mid-block Lane Capacity (pcu/hr)	
Median or inner lane:	Divided Road	1,000
	Undivided Road	900
Outer or kerb lane:	With Adjacent Parking Lane	900
	Clearway Conditions	900
	Occasional Parked Cars	600
4 lane undivided:	Occasional Parked Cars	1,500
	Clearway Conditions	1,800
4 lane divided:	Clearway Conditions	1,900

Source: - RTA's Guide to Traffic Generating Developments (2002).

Noting the one-way mid-block capacity from the above table for an undivided inner lane or outer lane or kerb lane with adjacent parking is 900 vtph, a one-way one-lane mid-block peak hour capacity of 900 vtph and a two-way two-lane mid-block peak hour capacity of 1,800 vtph for a LoS C would apply. Therefore, the two-way two-lane mid-block peak hour capacity for Medowie Road near Ferodale Road, Ferodale Road near Brocklesby Road and Brocklesby Road adjacent to the site is 1,800 vtph.

Further, as Ferodale Road east of Brocklesby Road and Brocklesby Road provide direct access to residential dwellings the environmental capacity goals for the road network are also relevant. Table 4.6 of the RMS' *RTA Guide to Traffic Generating Developments* provides guidance on the environmental capacity goals for local streets. This table is reproduced below.

Table 4.6
Environmental capacity performance standards on residential streets

Road class	Road type	Maximum Speed (km/hr)	Maximum peak hour volume (veh/hr)
Local	Access way	25	100
	Street	40	200 environmental goal
			300 maximum
Collector	Street	50	300 environmental goal
			500 maximum

Note: Maximum speed relates to the appropriate design maximum speeds in new residential developments. In existing areas maximum speed relates to 85th percentile speed.

Ferodale Road east of Brocklesby Road and Brocklesby Road as collector streets would have a maximum environmental capacity goal of 500 vtph.

From the traffic volumes observed in ***Section 5*** and noting the likely technical two-way mid-block road capacity of Medowie Road and Ferodale Road and the likely environmental two-way mid-block road capacity of Brocklesby Road are all in excess of their predicted 2022 and 2032 traffic volumes, it is concluded that the adjacent road network is operating within its technical and environmental road capacities and has scope to cater for additional traffic.

7. ALTERNATE TRANSPORT MODES

Hunter Valley Buses operates public bus services in the region with Routes 136 (Raymond Terrace – Medowie– Williamtown (Newcastle Airport) - Fern Bay – Stockton – Newcastle) and 137 (Raymond Terrace – Medowie– Salt Ash – Tilligerry Peninsula) travelling near the subject site. The nearest public bus stop is located in Kindlebark Drive at Tea Tree Drive approximately 600 metres northeast of the site, which is not convenient for site use. It is considered that the subject site does not warrant the provision of a bus service, however future demand may alter this. Currently, Hunter Valley Buses runs school bus services in the Medowie area. A number of these school services pick-up and drop-off at the school bus stop located in Brocklesby Road at the entrance to Wirreanda Public School, approximately 250 metres north of the site. This bus stop may provide opportunity for residents and school children once a demand from the subdivision is established.

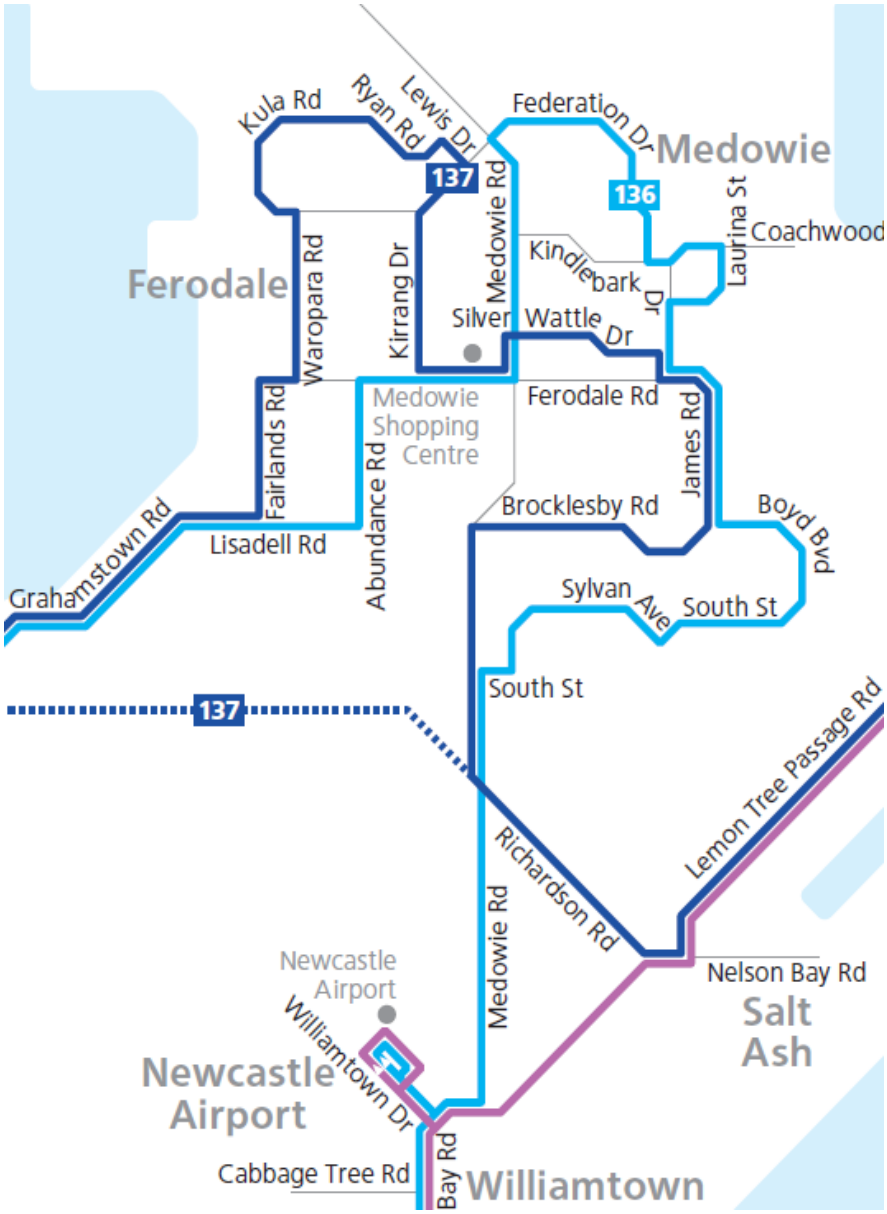


Figure 2 - Extract – Bus Route Map

The frontage of the development, on the western side of Brocklesby Road is mainly rural style road construction with a table drain and a grassed verge, without a hardstand footpath, however a concrete footpath is present on the eastern side of Brocklesby Road. It is approximately 1 metre wide, from opposite the southern boundary of the development site to Wirreanda Road and then approximately 2 metres wide to the school crossing and then 1 metre wide to Ferodale Road. A concrete and paver footpath of various widths is present on the west side of Brocklesby Road and commences approximately 80 metres north of the northern site boundary and runs along the eastern school boundary, the school bus stop and connects to footpaths and pedestrian crossings in Ferodale Road and Brocklesby Road.

The school crossing of Brocklesby Road is approximately 140 metres north of the site. A marked pedestrian crossing of Ferodale Road, located 30 metres west of Brocklesby Road, connecting the south side of Ferodale Road to the north side footpath network is approximately 300 metres north of the site.

These pedestrian facilities are suitable for use by future residents of the planning proposal, and they connect or are planned to connect to further footpaths in many streets as well as the footpath infrastructure proposed for the frontage of the site and interconnecting internal footpaths within the development.

There are no cycleways adjacent to the site. The subdivision roadway infrastructure is planned to connect to “The Gardens” residential subdivision currently under construction west of the proposed subject development. The residential streets west of the development permit a direct connection to the major cycleway on Medowie Road approximately 400 metres west of the development.

The low traffic volumes, low speed zonings of a maximum of 50 km/h in Brocklesby Road and Ferodale Road and the adjoining residential streets, facilitate relative safe access for the site for use by all cyclists.

Photographs 9 – 13, show some of the existing bus, pedestrian, and cycleway structures / facilities available for future site use as alternate transport modes.

Photograph 9 – Brocklesby Road school bus stop.

Photograph 10 – Brocklesby Road verge fronting the development.

Photograph 11 – Brocklesby Road footpath (east side) north from Wirreanda Road

Photograph 12 – Pedestrian Crossing on Ferodale Road

Photograph 13 – Medowie Road cycleway south from Ferodale Road

8. PROPOSED DEVELOPMENT

The planning proposed involves the rezoning of the site to enable the subdivision of the 5-hectare rural property into low density residential allotments. The concept subdivision plan is provided in ***Appendix 1***.

The specific details of the development are:

- Subdivision of the rural lots into 64 low density residential lots with a minimum lot size of 350 m^2,
- Provision of two (2) drainage reserve lots,
- Construction of a new public road access and intersection connecting to Brocklesby Road located approximately 60 metres south of the northern boundary and approximately 80 metres north of the southern boundary of the site,
- Construction of new circulating style public roads (providing vehicular access to the new residential lots) including a through road connecting to Macadamia Circuit in "The Gardens" low density residential subdivision west of the subject site,
- Drainage, services, and landscape works, and
- Construction to Port Stephens Council standards.

It is noted that the staging plan for the development at this stage relies on access through the adjoining development west towards Medowie Road via Macadamia Circuit and Gardenia Avenue to Medowie Road (roundabout). However, this report assesses the full development of the planning proposal where it is considered the direct access to Brocklesby Road is more convenient. Traffic in the initial stages of the development will be insignificant and it would be expected that the Medowie Road / Gardenia Avenue roundabout could easily cater for this additional traffic.

9. FUTURE DEVELOPMENT

The subject development is one of several likely residential, commercial, and industrial planning proposals identified in *Section 3.0 - Key Strategy Maps of the Medowie Planning Strategy* adopted by Port Stephens Council on 13 December 2016. *Figure 5 Planning Precincts* diagrammatically shows the proposed development areas whilst *Table 2 Planning Precincts* details the likely yield of dwellings proposed for the Medowie Study Area, in tabular form. *Figure 5 and Table 2 of Section 3 of the Medowie Planning Strategy are* presented in ***Appendix 4*** of this assessment for reference.

The subject development area is denoted as Area F in the Medowie Planning Strategy. Residential Areas A to M are considered in this assessment as they are considered to have the most impact on the intersections that will also be impacted by the subject development. All other identified developments within the Medowie Planning Strategy are considered to be included in the 1.5% growth rate per annum used in the analyses of all roads of and intersections 1, 2 and 3 of this report.

In this assessment some of the proposed residential development areas of A – M have received development approval and are under construction or proposed for construction, some proposed for part construction and others are not planned for development within a 10-year period. Of the A – M Areas, residential developments (Areas A and E) are currently under construction and 50% occupied and together with Area B, approved for construction, will be fully occupied within a 5-year period, whilst Area H, not yet approved, is also expected to be fully occupied within 5 years.

The client has also advised that if the planning proposal is approved it is anticipated that the subject subdivision would be completed and occupied within a 5-year period of the approval date. Developments C and D are expected to be 50% completed in 10 years' time whilst all other developments are not considered to have started construction before 2032.

10. TRAFFIC GENERATION

The *RTA's Guide to Traffic Generating Development's* and TfNSW's *RMS Technical Direction TDT 2013/04* provides specific advice on the traffic generation potential of various land uses. Regarding low density residential dwellings for regional areas the following advice is provided.

Rates:

Daily vehicle trips = Average 7.4 per dwelling in regional areas.
PM peak (1) hour = Maximum 0.90 per dwelling in regional areas.
AM peak (1) hour = Average 0.85 per dwelling in regional areas.

The additional traffic generated on the network by the planning proposal can be calculated as shown below, rounded up.

Daily trips	= 64 x 7.4 vtpd = **474 vtpd.**
PM peak hour trips	= 64 x 0.90 vtph = **58 vtph**.
AM peak hour trips	= 64 x 0.85 vtph = **55 vtph**.

The calculation of traffic generated by the planning proposal represents the traffic accessing the site, however as there are 3 existing dwellings accessing Brocklesby Road the additional traffic on the road network as a result of the development will be 3 vtph less in the AM and PM peak hour periods, which will be **52 vtph AM** and **55 vtph PM**.

11. TRIP DISTRIBUTION

11.1 Subject development

Before carrying out any traffic assessment the additional peak hour traffic generated by the development, Area F, needs to be distributed through the adjoining road network. On completion of the subject subdivision development, it is assumed that there will be an equivalent amount of traffic exchange between the subject development subdivision and the adjoining partially completed "The Gardens" subdivision, Area E. This would result in the traffic generated by the subject development being distributed as if it were not connected to "The Gardens" subdivision. There may be some minor variations to this and other proposed assumptions however their impact on the assessment is considered insignificant.

Based on the distribution of existing traffic volumes at Intersections 1, 2 and 3, counted for this assessment, the likely origin / destinations of traffic using the development is as follows:

- In the AM 80% of traffic will be outbound and in the PM 70% of traffic will be inbound,
- Brocklesby Road traffic will have origin / destinations 70% south and 30% north of the site access,
- The 70% south traffic on Brocklesby Road will have origin / destinations 70% Brocklesby Road west; and 70% Medowie Road south at the Medowie Road / Brocklesby Road T-intersection,
- The 30% north traffic will have origin / destinations 70% Ferodale Road west of Brocklesby Road which will be split 20% west, 10% north at the Medowie Road / Ferodale Road roundabout.

Therefore, the adopted development traffic trip distribution at the subdivision access and Intersections 1, 2 and 3 for this assessment for 2027, five years' time, is shown in ***Figure 3***, below.

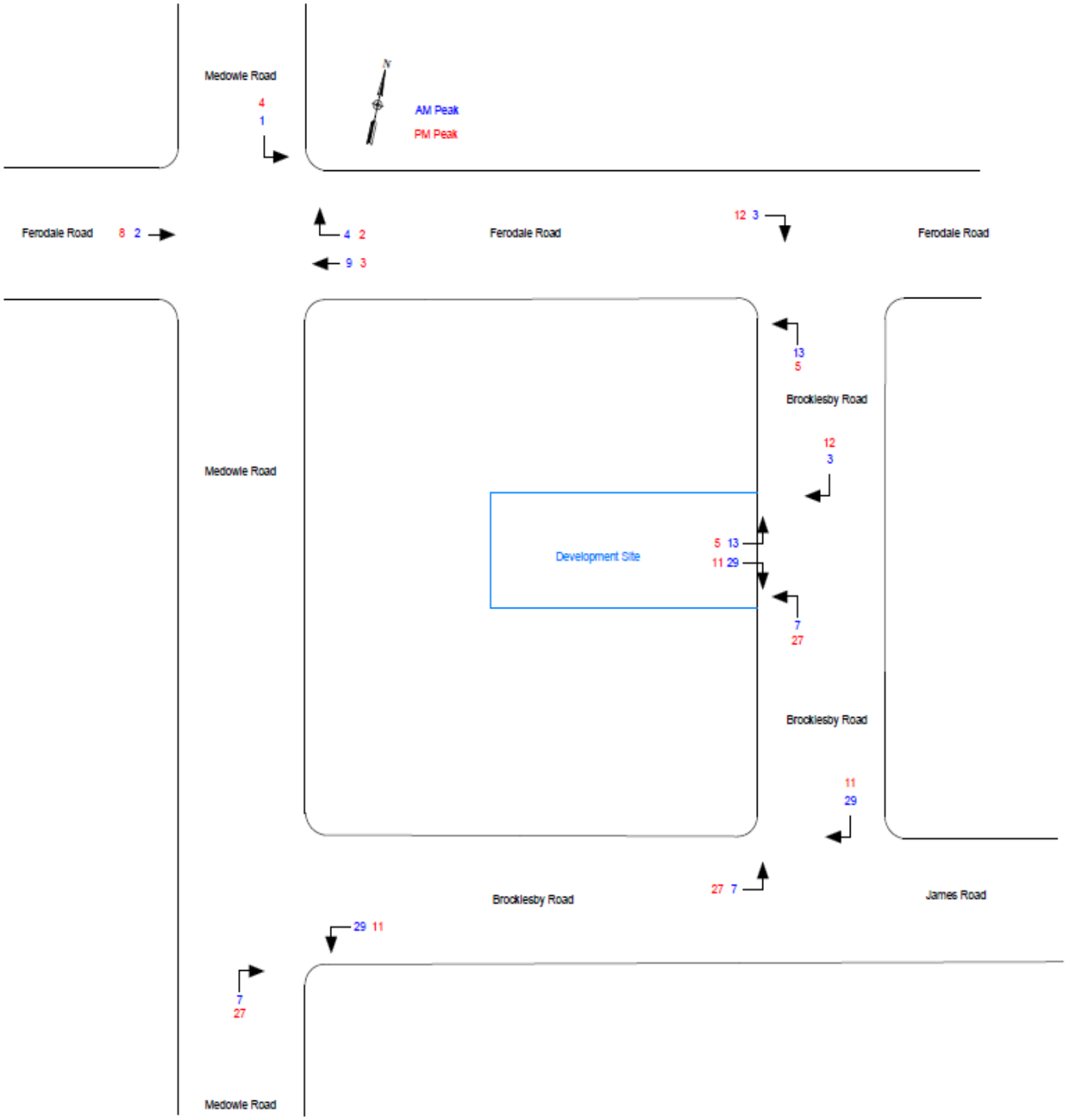


Figure 3 - Development Traffic Trip Distribution

11.2 Other developments

The other developments are divided into 3 Groups. Medowie Planning Strategy Areas A & E, termed Group 1, which are currently 50% occupied, are proposed to be fully constructed and occupied and contributing to the road network by 2027 whilst 100% of yet contributing Areas B and H, termed Group 2, are also proposed to be fully constructed and occupied and contributing to the road network by 2027. 50% of Areas C & D, termed Group 3, are expected to be contributing to the road network by 2032.

The inbound and outbound AM and PM peak hour traffic percentages for each of these areas are the same as for the subject development and are shown in ***Table 2*** below. The trip distributions adopted are very similar to that of the subject development, with an estimated 10% travelling via Brocklesby Road, near Wirreanda School.

Table 2 – Proposed Other Developments - Trip Distributions

Medowie Planning Strategy / Development			Inbound/Outbound Distribution				Completion %			Factored Distributions			
			20	80	70	30							
GROUP	AREA	LOTS	AM In	AM Out	PM In	PM Out	2032	2027	2022	AM In	AM Out	PM In	PM Out
1	A	480	82	326	302	130	100	*100	*50	41	163	151	65
2	B	48	8	33	30	13	100	*100	0	8	33	30	13
3	C	48	8	33	30	13	*50	0	0	4	16	15	6
3	D	72	12	49	45	19	*50	0	0	6	24	23	10
1	E	300	51	204	189	81	100	*100	*50	26	102	95	41
THIS DEV	F	60	10	41	38	16	100	*100	0	10	41	38	16
2	H	60	10	41	38	16	100	*100	0	10	41	38	16

* Percentage relevant to completion date

Separate trip distributions for each of the areas have been calculated at Intersections 1, 2 and 3 with the combined trip distribution of Group 1 (Areas A & E), as described above, as of 2027 shown in ***Figure 4***, below, the combined trip distribution of Group 2 (Areas B & H), as described above, in 2027 shown in ***Figure 5***, below, whilst the combined trip distribution of Group 3 (Areas C & D), as described above, in 2032 shown in ***Figure 6***, below.

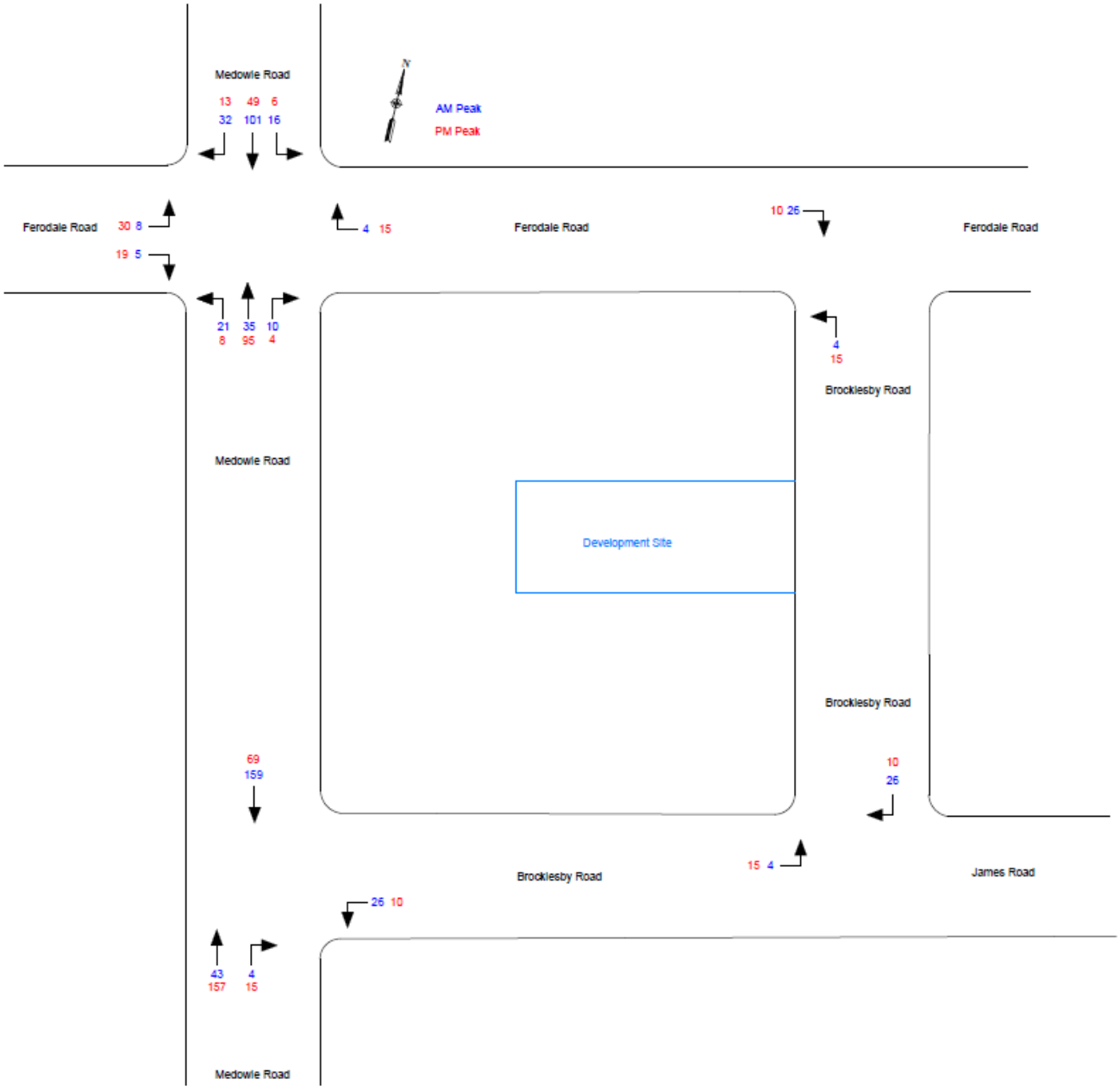


Figure 4 - Group 1 Development Traffic Trip Distribution

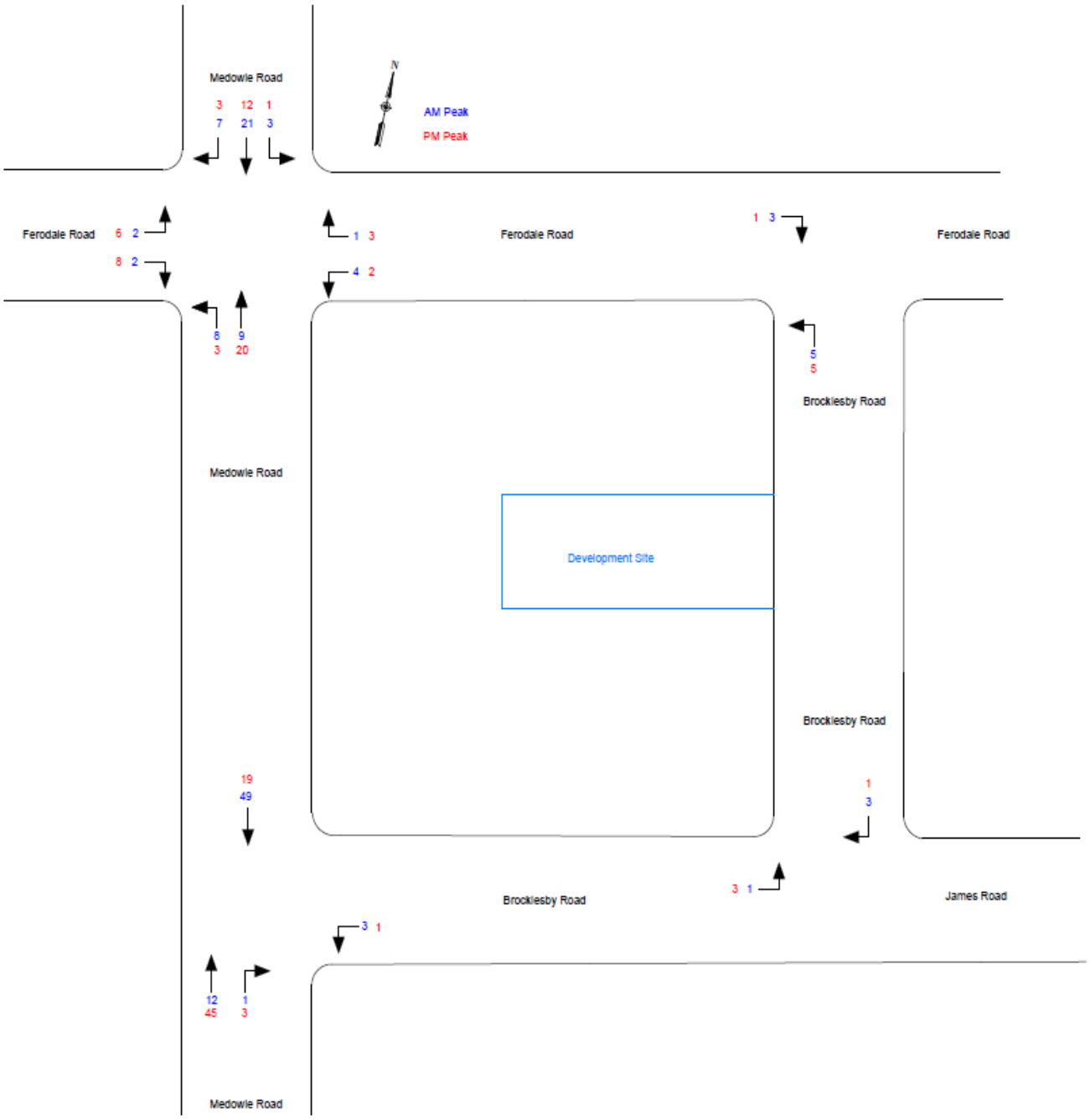


Figure 5 - Group 2 Development Traffic Trip Distribution

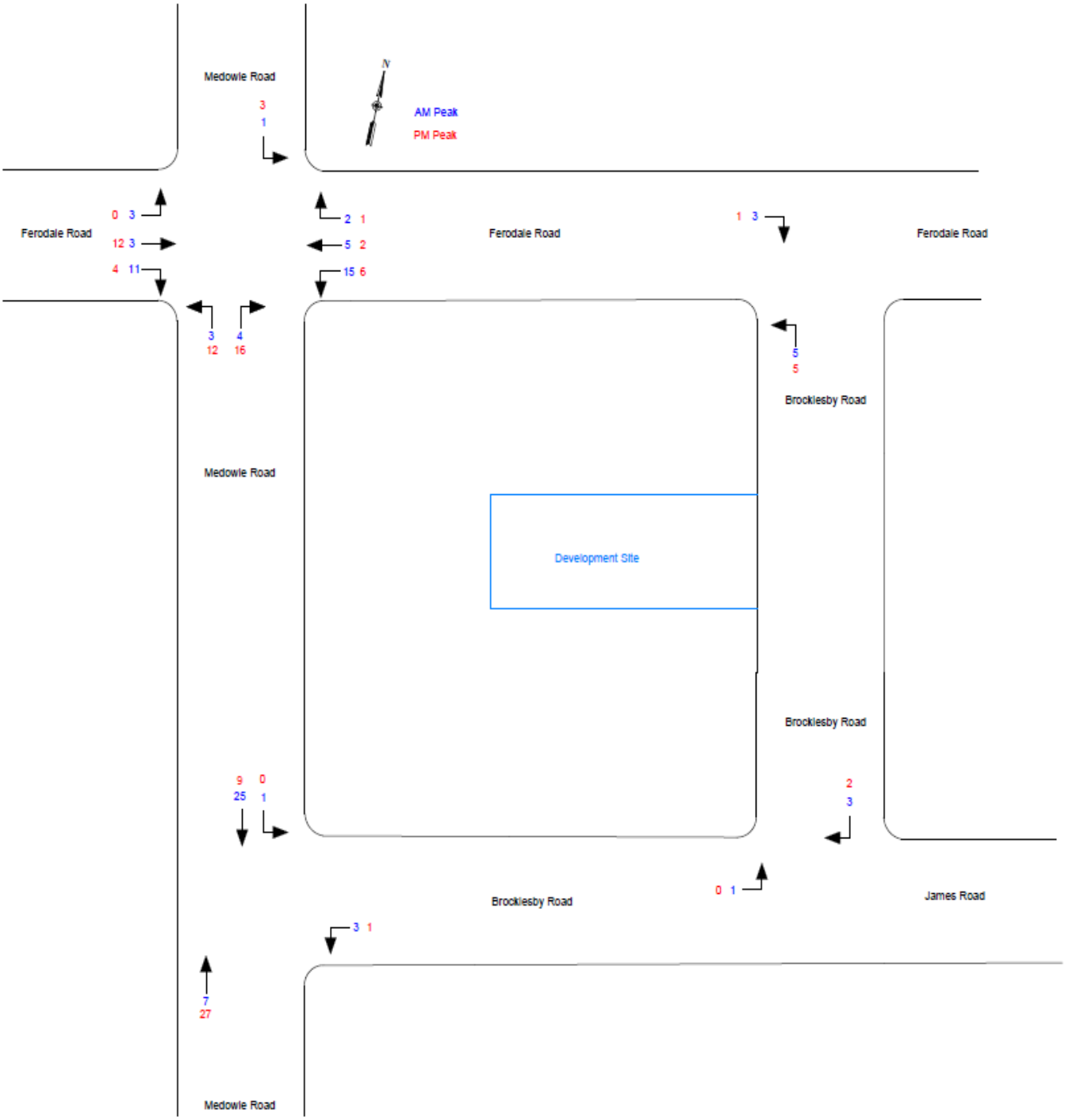


Figure 6 - Group 3 Development Traffic Trip Distribution

12. TRAFFIC IMPACT ASSESSMENT

12.1 Road Network Capacity

This assessment (***Sections 5 and 6***) has determined that the local road network is operating within its two-way mid-block technical and environmental capacity as relevant. ***Section 9*** above has determined that the additional traffic generated by this development will increase the two-way mid-block peak hour traffic volumes by a maximum number of trips per hour as follows:

- Medowie Road north of Ferodale Road – 5 vtph AM peak and 6 vtph PM peak,
- Medowie Road south of Ferodale Road – 0 vtph AM peak and 4 vtph PM peak,
- Ferodale Road east of Medowie Road – 16 vtph AM peak and PM peak,
- Ferodale Road west of Medowie Road – 10 vtph AM peak and 11 vtph PM peak,
- Medowie Road north of Brocklesby Road – 0 vtph AM peak and PM peak, and
- Medowie Road south of Brocklesby Road – 0 vtph AM peak and PM peak.
- Brocklesby Road east of Medowie Road – 38 vtph AM peak and 36 vtph PM peak,
- Ferodale Road east of Brocklesby Road – 0 vtph AM peak and PM peak,
- Ferodale Road west of Brocklesby Road – 16 vtph AM peak and PM peak, and
- Brocklesby Road south of Ferodale Road – 38 vtph AM peak and 36 vtph PM peak.

The addition of this traffic onto the 2027 traffic volumes determined in ***Section 5***, including the 1.5% annual growth factor increase for 5 years will not result in the peak hour two-way mid-block capacity thresholds for all roads to be reached as demonstrated in ***Table 3***.

Table 3 – Road Capacity Assessment – 2027 post subject planning proposal.

Road	Section	Capacity	2022		2027 + Development		Development traffic	
		vtph	AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)	AM	PM
Medowie Road	north of Ferodale Road	1800	709	808	769	876	5	6
Medowie Road	south of Ferodale Road	1800	1045	1135	1126	1223	0	0
Ferodale Road	east of Medowie Road	1800	707	550	778	609	16	16
Ferodale Road	west of Medowie Road	1800	653	1065	714	1157	11	10
Ferodale Road	east of Brocklesby Road	500	314	318	338	343	0	0
Ferodale Road	west of Brocklesby Road	1800	313	351	353	394	16	16
Brocklesby Road	south of Ferodale Road	500	196	155	250	203	39	36
Medowie Road	north of Brocklesby Road	1800	1020	1089	1099	1173	0	0
Medowie Road	south of Brocklesby Road	1800	1182	1231	1312	1362	39	36
Brocklesby Road	east of Medowie Road	500	268	208	328	260	39	36

Similarly, traffic generated by the other residential developments detailed in the Medowie Planning Strategy those of Groups 1 and 2 impacting in 2027, shown in ***Table 4***, below and those of Groups 1,2 and 3 in 2032, shown in ***Table 5*** below will also not impact adversely on the road network.

Table 4 – Road Capacity Assessment – 2027 post planning proposal plus Group 1 & 2 traffic.

Road	Section	Capacity	2027 + Development		2027 + Dev + Group 1 & 2		Development traffic		Group 1 & 2 traffic	
		vtph	AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)	AM	PM	AM	PM
Medowie Road	north of Ferodale Road	1800	769	876	1008	1129	5	6	239	253
Medowie Road	south of Ferodale Road	1800	1126	1223	1342	1445	0	0	216	222
Ferodale Road	east of Medowie Road	1800	778	609	816	640	16	16	38	31
Ferodale Road	west of Medowie Road	1800	714	1157	799	1247	11	10	85	90
Ferodale Road	east of Brocklesby Road	500	338	343	376	374	0	0	38	31
Ferodale Road	west of Brocklesby Road	1800	353	394	353	394	16	16	0	0
Brocklesby Road	south of Ferodale Road	500	250	203	288	234	39	36	38	31
Medowie Road	north of Brocklesby Road	1800	1099	1173	1362	1458	0	0	263	285
Medowie Road	south of Brocklesby Road	1800	1312	1362	1579	1676	39	36	267	314
Brocklesby Road	east of Medowie Road	500	328	260	366	291	39	36	38	31

Table 5 – Road Capacity Assessment – 2032 post planning proposal plus Group 1,2 & 3 traffic.

Road	Section	Capacity vtph	2032 + Dev + Group 1 & 2		2032 + Dev + Group 1, 2 & 3		Group 3 traffic	
			AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)	AM	PM
Medowie Road	north of Ferodale Road	1800	1067	1197	1072	1200	5	3
Medowie Road	south of Ferodale Road	1800	1429	1539	1462	1575	33	36
Ferodale Road	east of Medowie Road	1800	875	685	905	719	30	34
Ferodale Road	west of Medowie Road	1800	854	1336	878	1360	24	24
Ferodale Road	east of Brocklesby Road	500	402	400	402	400	0	0
Ferodale Road	west of Brocklesby Road	1800	379	423	409	457	30	34
Brocklesby Road	south of Ferodale Road	500	304	247	308	249	4	2
Medowie Road	north of Brocklesby Road	1800	1447	1549	1480	1582	33	33
Medowie Road	south of Brocklesby Road	1800	1678	1779	1717	1815	39	36
Brocklesby Road	east of Medowie Road	500	388	308	423	346	35	38

It is however noted that by 2032 Medowie Road south of Brocklesby Road will be reaching capacity for a LoS C by 2032. It would however be acceptable for Medowie Road as a classified regional road to operate with a LoS D with a one-way lane capacity of up to 1,100 vtph i.e., two-way capacity 2,200 vtph so additional traffic growth beyond 2032 could still be catered for on this section of Medowie Road.

12.2 Intersection Capacity

Intersection capacity on busy intersections is best assessed using the Sidra Intersection analysis program. This software package predicts likely delays, queue lengths and levels of service that will occur at intersections. Assessment is then based on the LoS requirements of TfNSW shown below.

Table 4.2
Level of service criteria for intersections

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

Source: - RTA's Guide to Traffic Generating Developments (2002)

The three intersections most likely to be impacted by the development are the Medowie Road / Ferodale Road 4-leg roundabout intersection (Intersection 1), the Medowie Road / Brocklesby Road T-intersection (Intersection 2) and the Ferodale Road / Brocklesby Road T-intersection (Intersection 3). Assumptions made for the modelling were:

- The existing intersections will remain as per current conditions.
- Traffic count data used is as collected by NTPE and Intersect Traffic shown in ***Appendix 3***.

- Future traffic growth is calculated at a 1.5% background traffic growth rate per annum for all roads.
- Brocklesby Road right turn movements gap acceptance have been altered to a 6 second critical gap and a 3.5 second follow up headway as calibration to match Sidra results to observed delays and queue lengths. These values are still within the acceptable criteria set by Austroads.
- Traffic generated by the development is distributed as per trip distribution ***Figures 3, 4, 5 & 6***.

The 2022 model will not be impacted by the subject development, nor any of the 'other developments". The impact of the subject development traffic on 2027 models as per ***Figure 3***, assuming only a 1.5% growth rate increase per annum for 5 years has been initially assessed. However, the full impact on the intersections in 2027 will need to include the currently under construction and 50% occupied Group 1 (Areas A and E) development traffic as per ***Figure 4***, which will be 100% completed by 2027 as a base to consider the future impact of the subject development. The additional effect of the other Group 2 (Areas B and H) development traffic as per ***Figure 5***, estimated to be completed by 2027 has also been assessed.

2032 models of all 3 intersections, with the subject development, Group 1 and Group 2 development traffic included as a 2032 base, with Group 3 development traffic and with 10 years of growth rate increase of 1.5% per annum, as per ***Figure 6***, has then be analysed.

The results of the modelling for the 'all vehicles' case at these intersections and noting the worst movement average delay, level of service (LoS) and 95% back of queue (vehicles) delay at the priority-controlled intersection have been summarised in ***Tables 6, 7 & 8*** below. The Sidra Movement Summary Tables are provided in ***Attachment C***.

Table 6 – Sidra Results (all vehicles) for Medowie Road / Ferodale Road roundabout intersection

Modelled Peak	Degree of Saturation (v/c)	Average Delay (s)	Level of Service	Worst 95% back of queue length (cars)
2022AM	0.692	9.0	A	7.7
2027AM	0.790	12.0	A	11.0
2027AM+dev	0.811	12.5	A	11.9
2027AM Group 1	0.941	19.9	B	21.2
2027AM+Group 1 + dev	0.956	21.4	B	23.3
2027AM+Group 1 & 2 + dev	1.018	29.3	C	33.1
2032AM	0.917	17.6	B	19.2
2032AM + dev	0.919	17.8	B	19.6
2032AM+ Group 1,2&3 +dev	1.143	54.7	D	64.2
2022PM	0.740	9.1	A	9.6
2027PM	0.838	11.5	A	14.1
2027PM+dev	0.851	11.9	A	15.0
2027PM+Group 1	1.074	46.0	C	54.9
2027PM+Group 1 & 2 + dev	1.145	55.1	E	78.0
2032PM	0.955	18.4	B	26.4
2032PM + dev	0.968	19.9	B	28.9
2032PM+ Group 1	1.165	64.1	E	84.1
2032PM+ Group 1&2	1.128	91.4	F	115.0
2032PM+ Group 1&2 + dev	1.274	96.6	F	120.7
2032PM+ Group 1,2&3 +dev	1.306	107.1	F	129.8

The modelling shows that the Medowie Road / Ferodale Road 4 leg roundabout intersection is currently operating satisfactorily and will continue to do so with 5- and 10-years' background traffic

growth. It will also function satisfactorily in 2027 when the subject planning proposal traffic is expected to fully impact on the road network, and similarly in 2027 when Group 1 and 2 "other" developments, now 50% occupied, are expected to be fully occupied. All critical performance indicators are less than the recommended TfNSW criteria for good operation. The intersection will operate satisfactorily in 2032 with only the subject development however the impact of all "other" developments with the subject development by 2032 will result in the roundabout failing or being very close to failure in the AM and PM peak periods, respectively. It is noted that Project MTT44 within the Port Stephens Local Infrastructure Contributions Plan identifies that this intersection is to be upgraded with improvements to the approaches to the intersection (2025) that will increase the capacity of the roundabout and that developments in the Medowie catchment will be required to contribute to this project via a local infrastructure contribution conditioned with any development consent for the development.

Table 7 – Sidra Results (all vehicles) for Medowie Road / Brocklesby Road T-intersection

Modelled Peak	Degree of Saturation (v/c)	Average Delay (s)	Worst Level of Service	Worst 95% back of queue length (cars)
2022AM	0.332	2.3	B	1.1
2027AM	0.347	2.5	B	1.4
2027AM+dev	0.393	2.8	B	1.7
2027AM+Group 1&2 + dev	0.703	4.3	D	3.6
2032AM	0.412	2.8	B	1.8
2032AM + dev	0.562	2.3	D	2.8
2032AM+ Group 1&2	0.758	4.7	E	3.9
2032AM+ Group 1&2 +dev	0.851	6.1	E	5.5
2032AM+ Group 1,2&3 +dev	0.933	8.2	F	7.8
2022PM	0.366	1.6	B	0.6
2027PM	0.394	1.7	B	0.6
2027PM+dev	0.395	1.9	B	1.8
2027PM+Group 1&2 + dev	0.507	2.3	D	1.3
2032PM	0.425	1.8	C	0.8
2032PM + dev	0.425	2.1	C	0.9
2032PM+ Group 1&2	0.537	1.7	E	0.9
2032PM+ Group 1&2+ dev	0.537	2.7	F	1.8
2032PM+ Group 1,2&3 +dev	0.552	2.8	F	2.0

The modelling shows that the Medowie Road / Brocklesby Road T-intersection is currently operating satisfactorily and will continue to do so with 5- and 10-years' background traffic growth. It will also function satisfactorily in 2027 when the subject planning proposal traffic is expected to impact, and similarly in 2027 when Group 1 and 2 "other developments", now 50% occupied, are expected to be fully occupied. All critical performance indicators are less than the recommended TfNSW criteria for good operation. In 2032 the intersection will operate satisfactorily with only the subject development however the impact of all Group 1, 2 & 3 "other" developments with the subject development will result in the right-hand turn movement from Brocklesby Road beginning to fail. It is noted that Project MTT5 within the Port Stephens Local Infrastructure Contributions Plan identifies that this intersection is to be upgraded to a roundabout (2032) and that developments in the Medowie catchment will be required to contribute to this project via a local infrastructure contribution conditioned with any development consent for the development.

Table 8 – Sidra Results (all vehicles) for Ferodale Road / Brocklesby Road T-intersection

Modelled Peak	Degree of Saturation (v/c)	Average Delay (s)	Worst Level of Service	Worst 95% back of queue length (cars)
2022AM	0.110	2.9	A	0.4
2027AM	0.119	2.9	A	0.5
2027AM+dev	0.131	3.0	A	0.5
2027AM+Group 1&2 + dev	0.141	3.0	A	0.6
2032AM	0.122	2.2	A	0.5
2032AM + dev	0.128	2.9	A	0.5
2032AM+ Group 1,2&3 +dev	0.139	3.2	A	0.5
2022PM	0.115	2.6	A	0.3
2027PM	0.124	2.6	A	0.3
2027PM+dev	0.128	2.8	A	0.4
2027PM+Group 1&2 + dev	0.141	3.0	A	0.5
2032PM	0.134	2.6	A	0.4
2032PM + dev	0.137	2.7	A	0.4
2032PM+ Group 1,2&3 +dev	0.153	3.0	A	0.6

The modelling shows that the Ferodale Road / Brocklesby Road T-intersection is currently operating satisfactorily and will continue to do so in 2027 with 5 years' background traffic growth with the subject development and Group 1 & 2 development. Similarly, the intersection will function satisfactorily in 2032 with the development and Group 1, 2 & 3 development. All critical performance indicators are less than the recommended TfNSW criteria for a LoS A operation, which demonstrates that whilst the mid-block peak hour traffic volumes at this intersection are slightly higher than those allowed for uninterrupted flow conditions the intersection will perform satisfactorily in the future. This situation would also apply for the Brocklesby Road / James Road T-intersection and no intersection upgrades would be required.

Overall, it is considered the proposed development does not adversely impact on the operation of the Medowie Road / Ferodale Road roundabout intersection, the Medowie Road / Brocklesby Road give way-controlled T-intersection and the Ferodale Road / Brocklesby Road stop sign-controlled T-intersection. However, with the impact of "other" existing known likely developments future design planning for the upgrades of the Medowie Road / Ferodale Road roundabout intersection and the Ferodale Road / Brocklesby Road give way-controlled T-intersection as per Council's Local Infrastructure Plan will be required.

Payment of Local Infrastructure developer contributions as identified in the Port Stephens Local Infrastructure Contributions Plan represents the planning proposals fair and reasonable contribution to these works.

The proposed Subdivision Access Road at Brocklesby Road with volumes of approximately 55 vtph and 310 vtph expected in 2032 will operate with uninterrupted flow conditions.

Safe Intersection Sight Distance (SISD) at the subdivision access should comply with *Austroads Road Design Guide – Part 4A – Signalised and unsignalised intersections (2020).* Table 3.2 of this Guide indicates SISD for the subdivision access should be of the order of 100 metres for a 50 km speed zoning given the longitudinal grade of the road near the access. By observation on site, the available sight distance at the proposed subdivision access was determined as greater than 150 metres from the north and south in Brocklesby Road, however, it will need to be checked at construction stage. It is therefore concluded however, that the proposed subdivision access road is located in a suitably safe position ensuring an acceptable level of road safety is maintained on Brocklesby Road.

In addition, Australian Standard 2890.1:2004 requires the location of a new road accessing an existing road when constructed to not conflict with existing driveway accesses on the opposite side of the road as shown in *Figure 3.1 Prohibited Locations of Access Driveways*. This will be achieved in relation to the driveways of 46A and 48 Brocklesby Road opposite with the location of the proposed new subdivision road shown on the concept plan.

12.3 On-Site Car Parking

The planning proposal as a residential subdivision does not generate an immediate on-site parking demand however future development of the individual allotments will generate such a demand. The allotments with a minimum size of 350 m^2 are large enough to ensure that the on-site parking provisions can be accommodated within the lots. Future development on the individual allotments will need to be compliant with the Port Stephens Council DCP which is the provision of one parking space for a dwelling with two bedrooms or less or two parking spaces for dwellings with more than two bedrooms.

12.4 Alternative Transport Modes

It has been determined in ***Section 7*** that the site is not currently well serviced by public transport and there is adequate pedestrian and cycle way infrastructure in the area. The additional alternative transport demand from the residential development is not considered sufficient for there to be a nexus for the extension of public transport services to the site (at this stage) or the construction of external pedestrian and cycle way infrastructure. However, footways and cycleways within the subdivision envelope may be required and fees payable for applicable transport facilities contained within Council's Local Infrastructure Contribution Plans.

Council in an RFI dated 24 March 2023 has indicated the desire of establishing a possible future bus route through the site by requiring the collector road through the site to be 13 metres wide. Currently it is proposed that the collector road match the collector road through the adjoining development "The Gardens" which has been constructed with an 11-metre-wide pavement. Therefore, there is really no benefit in providing the collector road within this development with a 13-metre-wide carriageway as the constraint to the possible future bus route has already been constructed with the 11-metre-wide collector road within The Gardens. It is also noted that some Council's allow bus routes on 11-metre-wide roads e.g., Newcastle City Council so having an 11-metre-wide collector road through the site is not really considered to physical inhibit the use of the road in the future as a bus route.

As stated previously in the report the nearest existing bus stop is some 600 metres from the site with other bus stops in Brocklesby Road south of the site being 800 to 900 metres from the site. Should a demand for public transport services be established in the future then bus stops could be provided along Brocklesby Road adjacent to the site or even within the development on the collector road using funding from the developer contributions plan. This would need to be the subject of future consultation with the bus company, Port Stephens Council and TfNSW.

12.5 Subdivision Design

The subdivision design is provided in ***Appendix 1***. The internal layout consists of a main entry access public road west from Brocklesby Road which ring circulates around to connect the access road and provide all proposed new lots with vehicular access. This ensures no turning heads need to be provided. Three (3) T-intersections are required however this is the most efficient design for the site. A through connection road from the development through to "The Gardens" residential subdivision is proposed to permit choices for traffic from the subject development and the adjoining subdivision for good connectivity and efficient traffic flow. This is proposed to be constructed to the same standard as the collector road within The Gardens i.e. 11 metre wide carriageway.

Minimum road reserve widths of 16 metres, comprising a minimum 8-metre-wide sealed road between kerbs (carriageway) and verge widths of a minimum of 4.0 metres on each are required by Port Stephens Council DCP – 0041 Geometrical Road Design – Development Design Specification for a local street. As the development plans provide at least this requirement the development is compliant with port Stephens Council requirements. However, where development roads directly adjoin vegetated areas at subdivision boundaries, NSW Fire and Rescue require a minimum 10.5 metre carriageway. This has been provided on the plans. Overall, it is concluded that the internal road layout and subdivision design is satisfactory and compliant with Council requirements and current best practice.

13. CONCLUSIONS

This traffic impact assessment for the proposed rezoning (planning proposal) of Lot 2 in DP 508780 and Lots 300 & 301 in DP 625002 – 39, 39A & 41 Brockelsby Road, Medowie from a rural landscape zoning to a low-density residential zoning for a likely 64 lot residential subdivision has concluded the following:

- The existing road network around the site is operating below its technical and environmental capacity thresholds and has capacity to accommodate additional traffic from the planning proposal.
- Using traffic generation rates contained within the TfNSW's *RMS TDT 2013/04* it is estimated that the development will generate an additional 474 vtpd or 52 vtph in the AM peak and 55 vtph in the PM peak on the network.
- There is sufficient spare capacity within the immediate road network to cater for the proposed residential subdivision without the need to upgrade the adjoining local and state road network.
- Sidra modelling of the Medowie Road / Ferodale Road 4-leg roundabout intersection (Intersection 1) and the Medowie Road / Brocklesby Road T-intersection (Intersection 2) has shown that these intersections are currently operating satisfactorily and will continue to do so in 2027 and 2032 with the additional traffic generated by the planning proposal as well as five years and ten years respective background traffic growth. They will continue to do so in 2027 with "other" Group 1 and 2 development traffic, however, will likely fail in 2032 with "other" Group 1, 2 and 3 development traffic in 2032.
- Upgrading of the existing Medowie Road / Ferodale Road roundabout by 2025 and upgrading of the Medowie Road / Brocklesby Road intersection to a roundabout by 2032 have been identified in Port Stephens Local Infrastructure Contributions Plan and thus the planning proposal will be required to contribute to these works in accordance with the current contributions plan.
- Sidra modelling of the Ferodale Road / Brocklesby Road T-intersection (Intersection 3) has shown that this intersection is currently operating satisfactorily and will continue to do so in 2027 with the additional traffic generated by the planning proposal plus Group 1 and 2 developments with five years background traffic growth; and in 2032 with the subject development traffic plus Group 1, 2 and 3 development traffic with ten years background traffic growth.
- The Brocklesby Road / James Road T-intersection and the proposed subdivision access intersection at Brocklesby Road will also operate with uninterrupted flow conditions post development through to and beyond 2032.
- Subject to the works identified in the Port Stephens Local Infrastructure Contributions Plan being constructed as per the Plans Works Schedule, the development, with other developments, will not result in adverse impacts on the local and state road network up to and beyond 2032.
- The proposed location of the subdivision access intersection at Brocklesby Road provides suitable safe intersection sight distance, is located according to Austroads and therefore a suitably safe access intersection (BAR/BAL) can be constructed.

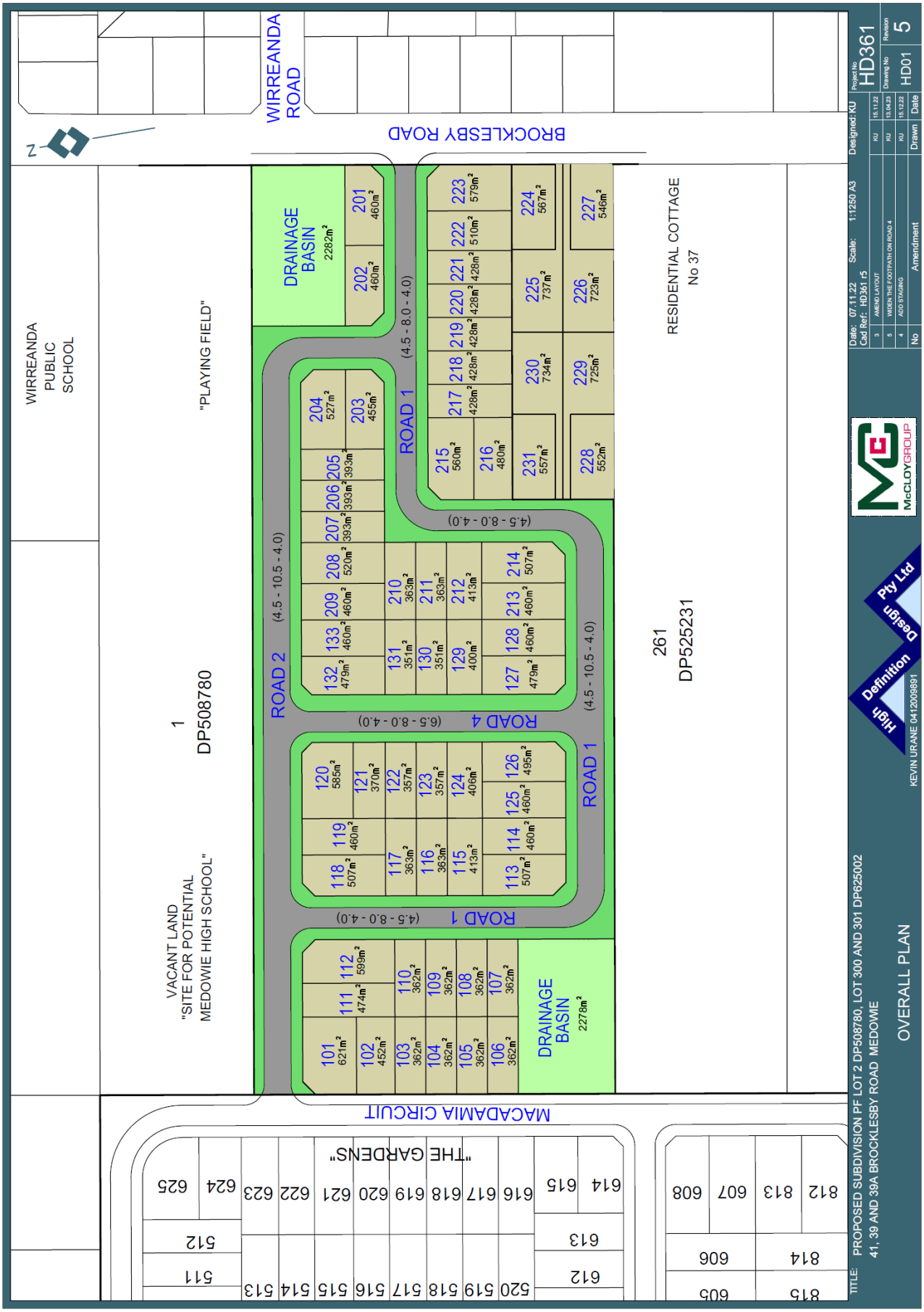
- The planning proposal as a residential subdivision does not generate an immediate on-site parking demand however future development of the individual allotments will generate such a demand. The allotments with a minimum size of 350 m^2 are large enough to ensure on-site parking provisions can be accommodated.
- The additional alternative transport demand from the residential development is not considered sufficient for there to be a nexus for the extension of public transport services to the site at this stage or the construction of external pedestrian and cycle way infrastructure, however Port Stephens Council construction and contribution requirements will apply for provision of local supporting infrastructure.
- The internal road layout and subdivision design is satisfactory and compliant with Port Stephens Council requirements and current best practice.

14. RECOMMENDATION

Having carried out this traffic impact assessment for a residential planning proposal for Lot 2 in DP 508780 and Lots 300 & 301 in DP 625002 – 39, 39A & 41 Brockelsby Road, Medowie, it is recommended the planning proposal can be supported from a traffic impact perspective as subject to the implementation of Council's Local Infrastructure Contributions Plan the local and state road network has sufficient capacity to cater for the additional traffic generated by the planning proposal therefore the proposal will not adversely impact on the local and state road network. The planning proposal also complies with all requirements of Port Stephens Council, Austroads and TfNSW.

JR Garry BE (Civil), Masters of Traffic
Director
Intersect Traffic Pty Ltd

APPENDIX 1
DEVELOPMENT PLANS


WIRREANDA ROAD
BROCKLESBY ROAD
WIRREANDA PUBLIC SCHOOL
"PLAYING FIELD"
1 DP508780
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RESIDENTIAL COTTAGE No 37
261 DP525231
DRAINAGE BASIN 2282m²
DRAINAGE BASIN 2278m²
ROAD 1 (4.5 - 8.0 - 4.0)
ROAD 2 (4.5 - 10.5 - 4.0)
ROAD 4 (6.5 - 8.0 - 4.0)
MACADAMIA CIRCUIT
"THE GARDENS"
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41, 39 AND 39A BROCKLESBY ROAD MEDOWIE
OVERALL PLAN
Date: 07.11.22
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Scale: 1:1250 A3
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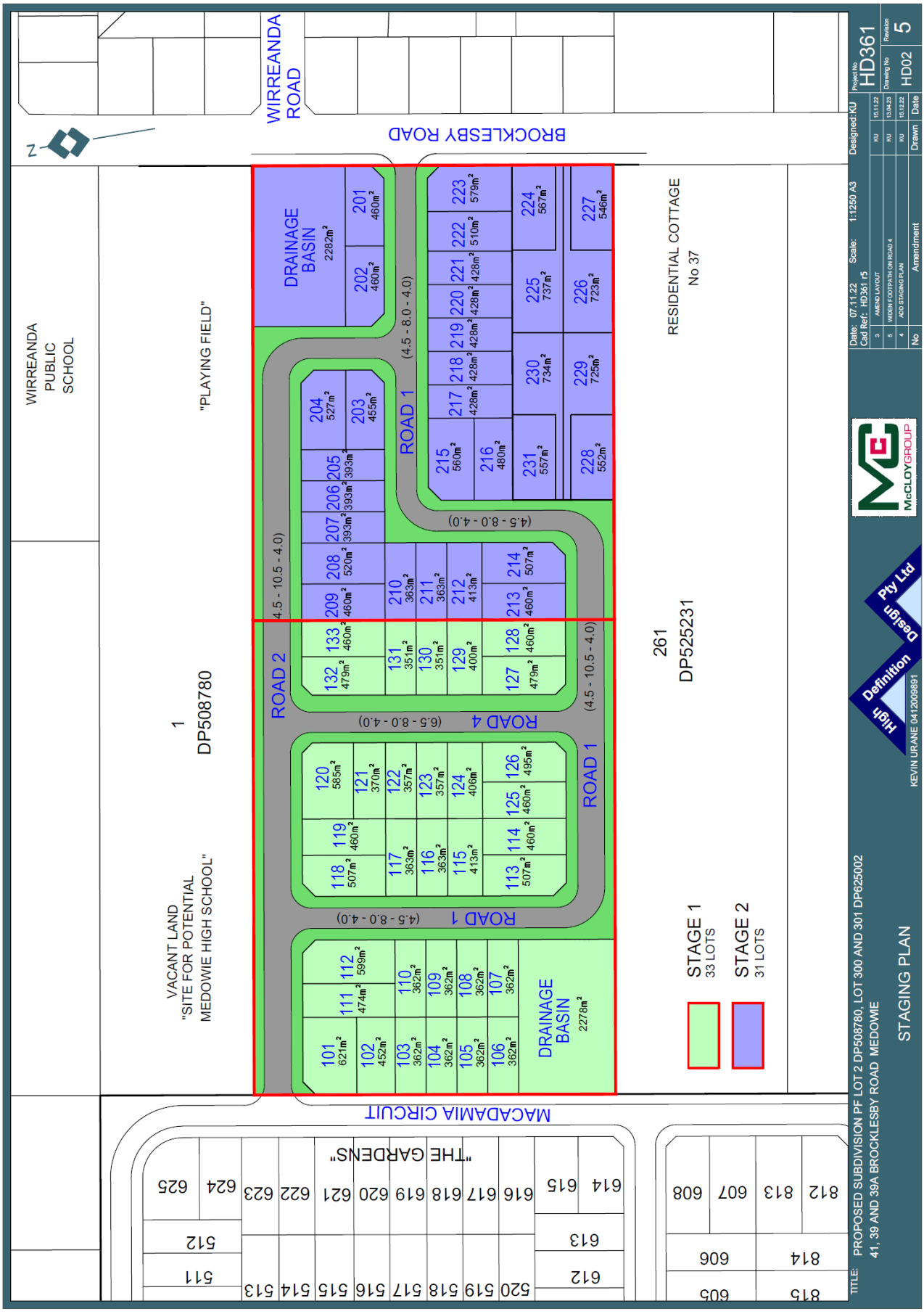
Drawing No HD01
Revision 5
No Amendment Drawn Date
3 AMEND LAYOUT KU 15.11.22
5 WIDEN THE FOOTPATH ON ROAD 4 KU 13.04.23
4 ADD STAGING KU 15.12.22
McCLOYGROUP
High Definition Design Pty Ltd
KEVIN URANE 0412009891


WIRREANDA ROAD
BROCKLESBY ROAD
WIRREANDA PUBLIC SCHOOL
"PLAYING FIELD"
1 DP508780
VACANT LAND "SITE FOR POTENTIAL MEDOWIE HIGH SCHOOL"
RESIDENTIAL COTTAGE No 37
261 DP525231
DRAINAGE BASIN 2282m²
DRAINAGE BASIN 2278m²
ROAD 1
ROAD 2
ROAD 4
(4.5 - 8.0 - 4.0)
(4.5 - 10.5 - 4.0)
(6.5 - 8.0 - 4.0)
STAGE 1 33 LOTS
STAGE 2 31 LOTS
MACADAMIA CIRCUIT
"THE GARDENS"
TITLE: PROPOSED SUBDIVISION PF LOT 2 DP508780, LOT 300 AND 301 DP625002 41, 39 AND 39A BROCKLESBY ROAD MEDOWIE
STAGING PLAN
Date: 07.11.22 Scale: 1:1250 A3 Designed:KU
Cad Ref: HD361 r5
Project No HD361
Drawing No HD02
Revision 5
No Amendment Drawn Date
3 AMEND LAYOUT KU 15.11.22
5 WIDEN FOOTPATH ON ROAD 4 KU 13.04.23
4 ADD STAGING PLAN KU 15.12.22
McCLOYGROUP
High Definition Design Pty Ltd
KEVIN URANE 0412009891

APPENDIX 2
MEDOWIE PLANNING STRATEGY EXTRACTS

Figure 9 Future Traffic & Transport

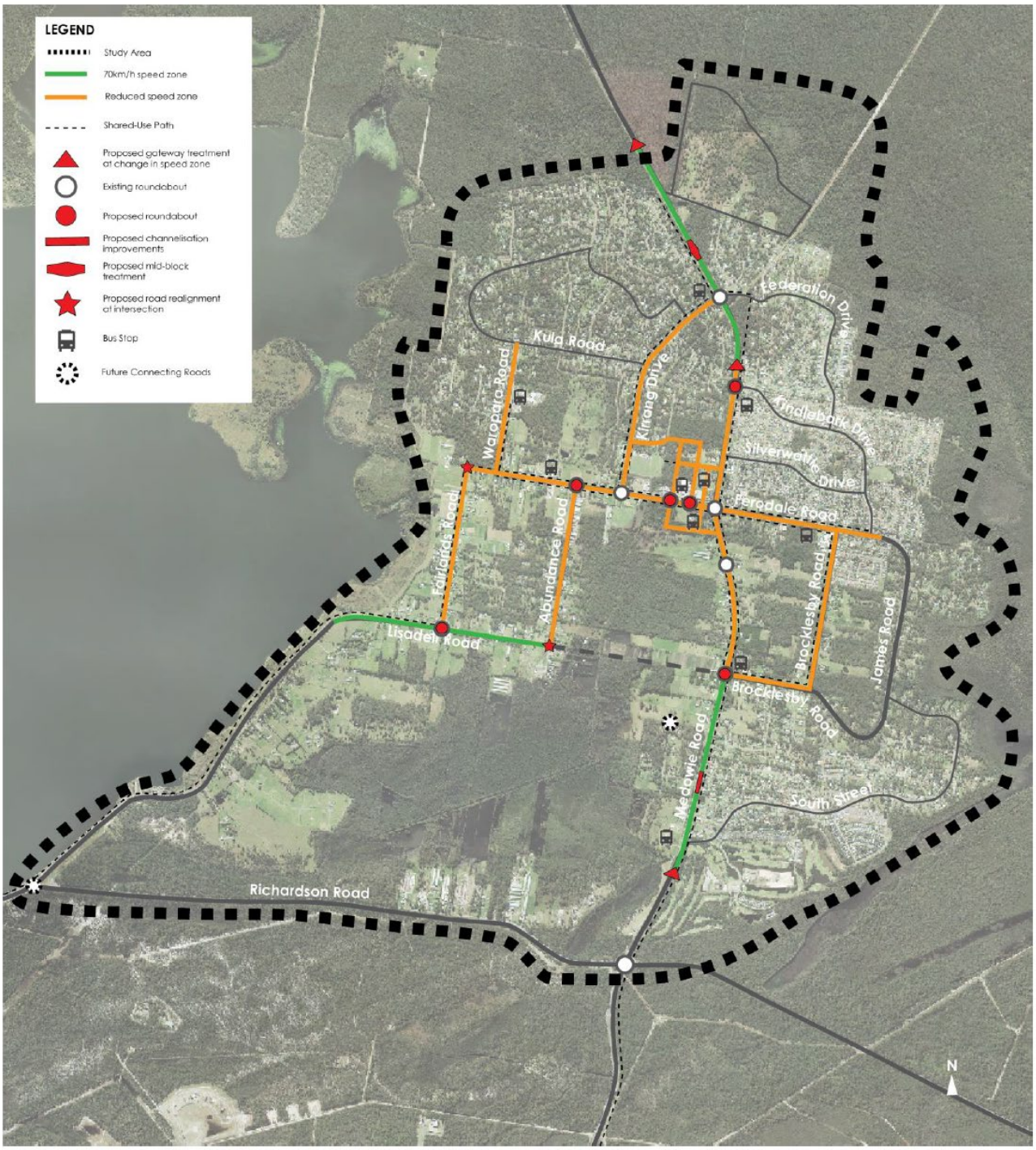


Table 4 Traffic & Transport Upgrades

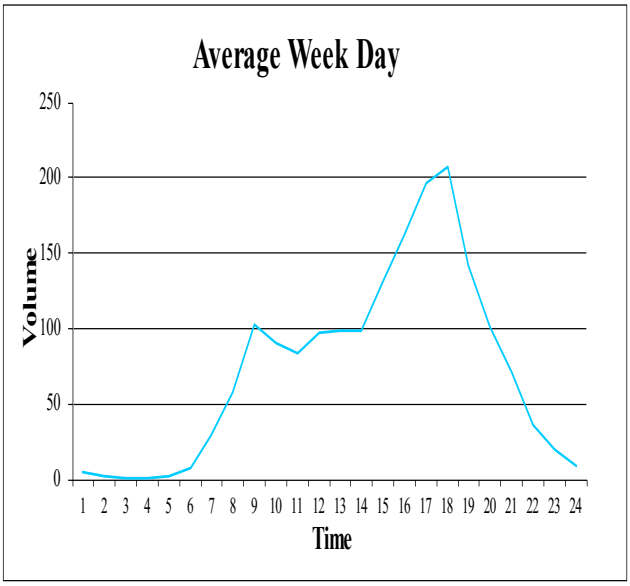
Location	Works
Medowie Rd (north of Boundary Rd)	Gateway treatment at entrance to Medowie and change in speed zone to 70km/h
Medowie Rd (north of Kindlebark Dr)	Gateway treatment and change in speed zone to 50km/h
Medowie Rd (south of Brocklesby Rd)	Gateway treatment at change in speed zone to 50km/h
Medowie Rd (south of South St)	Gateway treatment at entry to Medowie and change in speed zone to 70km/h
Lisadell Rd and Abundance Rd (Fairlands Rd to Industrial Rd)	Investigate widening of road pavement to provide a minimum carriageway width of 11m (2 x 3.5m wide traffic, 2 x 2m wide road shoulders. Current width varies but has a general minimum of 7m (2 x 3.0m wide traffic lanes 2 x 0.5m wide road shoulders)
Lisadell Rd (at Fairlands Rd)	Roundabout intersection. Short-term priority to widen road shoulder for left turn into Fairlands Rd
Lisadell Rd (at Abundance Rd)	Investigate possible road realignment – introduce horizontal curve to create a T intersection with priority given to the through movement
Lisadell Rd (west of Ferodale Rd)	Gateway treatment at change in speed zone to 50km/h
Abundance Dr (at Ferodale Rd)	Roundabout intersection. Signpost Abundance Rd as the route to Raymond Terrace
Ferodale Rd (at Kirrang Dr)	Existing roundabout – upgrade to current geometric standards
Ferodale Rd (at Peppertree Rd)	Roundabout intersection to replace existing T intersection
Ferodale Rd (at main access to commercial)	Roundabout intersection to replace several access driveways
Medowie Rd (at Brocklesby Rd)	Roundabout intersection (to suit possible future development on west side of Medowie Rd)
Medowie Rd (at Blueberry Rd)	Improve channelization of existing intersection – shoulder widening and left turn lane
Medowie Rd (at Kindlebark Dr)	Roundabout intersection
Various roads (on-road routes in residential areas)	Implement 50km/h area speed zoning with share the road signs supplemented with pavement markings
Off Medowie Rd (Medowie Rd to Cherry Tree Cl)	Off-road shared path
Medowie Rd (Silver Wattle Dr to Ferodale Rd)	Off-road shared path on east side
Various Rd (on-road routes in residential areas)	Implement 50km/h area speed zoning with share the road signs supplemented with pavement markings

Location	Works
Off Ford Av (Ford Av to Sylvan Av)	Complete off-road shared path within cadastral corridor
Medowie Rd (At Silver Wattle Dr)	Install pedestrian refuge island
Silver Wattle Dr (at Medowie Rd)	Install pedestrian refuge island
Kirrang Dr (at Ferodale Rd)	Install pedestrian refuge island
Brocklesby Rd (at Ferodale Rd)	Install pedestrian refuge island to replace existing median with no pedestrian refuge
Medowie Rd (Boundary Rd to Kirrang Dr)	Off-road shared path on west side to future residential area. Investigate possible alternate route – Boundary Rd to Federation Dr via Settlers Cl/Overland Av/Explorers Cl
Medowie Rd (Federation Cl to Kindlebark Dr)	Off-road shared path on east side
Medowie Rd (south of Ferodale Rd at small commercial centre)	Install pedestrian refuge island
Medowie Rd (at Blueberry Rd)	Install pedestrian refuge island
Muir St (town centre to Yulong Oval)	Shared path with bridge over creek
Kirrang Dr (Ferodale Rd to Medowie Rd)	Off-road shared path west side
Brocklesby Rd (Medowie Rd to Ferodale Rd)	Off-road shared path north and west side
Medowie Rd (Ferodale Rd to South St)	Off-road shared path east side
Ferodale Rd	Off-road shared path south side (Kirrang Dr to Coachwood Dr) (Medowie Rd to Coachwood Dr) (Kirrang Dr to Medowie Rd)
Medowie Rd (Ferodale Rd to approx. 500m south)	Off-road shared path west side
Waropara Rd (Ferodale Rd to Medowie Christian School)	Off-road shared path east side
'Kingston' residential release area	Investigate off-road shared path-west to Ferodale Park Sports Complex (subject to engineering and cost review)

APPENDIX 3
TRAFFIC DATA

Site 1 FERODALE RD 440M WEST OF BROCKLESBY RD [60] Eastbound

Day / Time	Wed 23/11/22	Thu 24/11/2022	Fri 25/11/2022	Sat 26/11/2022	Sun 27/11/2022	Mon 28/11/2022	Tue 29/11/2022	W/Day Ave.	W/End Ave.	7 Day Ave
0:00	10	3	3	7	6	1	6	5	7	5
1:00	1	2	5	3	1	3	1	2	2	2
2:00	1	1	1	1	3	2	0	1	2	1
3:00	1	0	0	1	3	1	0	0	2	1
4:00	2	2	2	2	2	4	2	2	2	2
5:00	8	7	6	2	1	11	5	7	2	6
6:00	28	33	22	17	11	28	35	29	14	25
7:00	51	55	71	30	17	60	53	58	24	48
8:00	115	98	104	62	44	95	104	103	53	89
9:00	72	87	113	103	92	83	97	90	98	92
10:00	83	83	74	102	106	86	95	84	104	90
11:00	142	98	92	131	122	75	79	97	127	106
12:00	116	85	103	136	127	95	92	98	132	108
13:00	108	87	108	117	114	94	93	98	116	103
14:00	128	134	152	113	106	113	131	132	110	125
15:00	168	176	166	115	117	163	142	163	116	150
16:00	191	189	199	116	122	207	197	197	119	174
17:00	189	228	195	121	103	201	220	207	112	180
18:00	162	159	146	112	101	126	117	142	107	132
19:00	95	124	106	102	73	88	93	101	88	97
20:00	81	79	77	56	57	60	62	72	57	67
21:00	26	50	39	34	28	30	38	37	31	35
22:00	11	25	38	38	13	13	13	20	26	22
23:00	3	16	14	25	6	6	8	9	16	11
Total	**1792**	**1821**	**1836**	**1546**	**1375**	**1645**	**1683**	**1755**	**1461**	**1671**

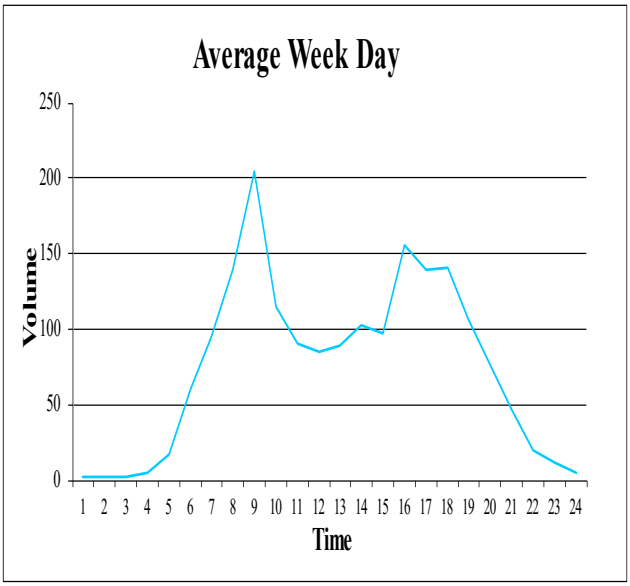


Summary

	from	to	
AM Peak	11:00 AM	12:00 PM	142
PM Peak	5:00 PM	6:00 PM	228
Week Day Average			1755
Weekend Day Average			1461
7 Day Average			1671

Site 1 FERODALE RD 440M WEST OF BROCKLESBY RD [60] Westbound

Day	Wed	Thu	Fri	Sat	Sun	Mon	Tue	W/Day	W/End	7 Day
Time	23/11/22	24/11/2022	25/11/2022	26/11/2022	27/11/2022	28/11/2022	29/11/2022	Ave.	Ave.	Ave
0:00	3	0	3	1	3	3	2	2	2	2
1:00	2	0	5	3	3	0	0	1	3	2
2:00	1	3	1	2	2	5	3	3	2	2
3:00	8	6	4	3	4	4	2	5	4	4
4:00	17	18	20	4	3	18	15	18	4	14
5:00	63	64	50	17	11	59	65	60	14	47
6:00	101	95	86	50	18	102	90	95	34	77
7:00	141	143	139	66	31	122	149	139	49	113
8:00	199	204	211	128	85	195	216	205	107	177
9:00	96	116	128	153	136	107	126	115	145	123
10:00	81	79	96	133	132	107	91	91	133	103
11:00	92	91	96	133	129	81	66	85	131	98
12:00	99	77	88	113	118	79	101	89	116	96
13:00	181	78	97	98	88	83	71	102	93	99
14:00	104	95	110	105	88	92	88	98	97	97
15:00	153	186	145	84	91	137	154	155	88	136
16:00	125	162	141	111	104	124	144	139	108	130
17:00	150	152	134	103	100	130	136	140	102	129
18:00	111	97	136	84	84	94	94	106	84	100
19:00	73	87	94	76	61	69	61	77	69	74
20:00	49	55	45	47	39	43	43	47	43	46
21:00	11	23	26	34	28	24	16	20	31	23
22:00	11	10	19	21	11	7	11	12	16	13
23:00	4	9	6	15	3	1	3	5	9	6
Total	**1875**	**1850**	**1880**	**1584**	**1372**	**1686**	**1747**	**1808**	**1478**	**1713**



Summary

	from	to	
AM Peak	8:00 AM	9:00 AM	216
PM Peak	3:00 PM	4:00 PM	186
Week Day Average			1808
Weekend Day Average			1478
7 Day Average			1713

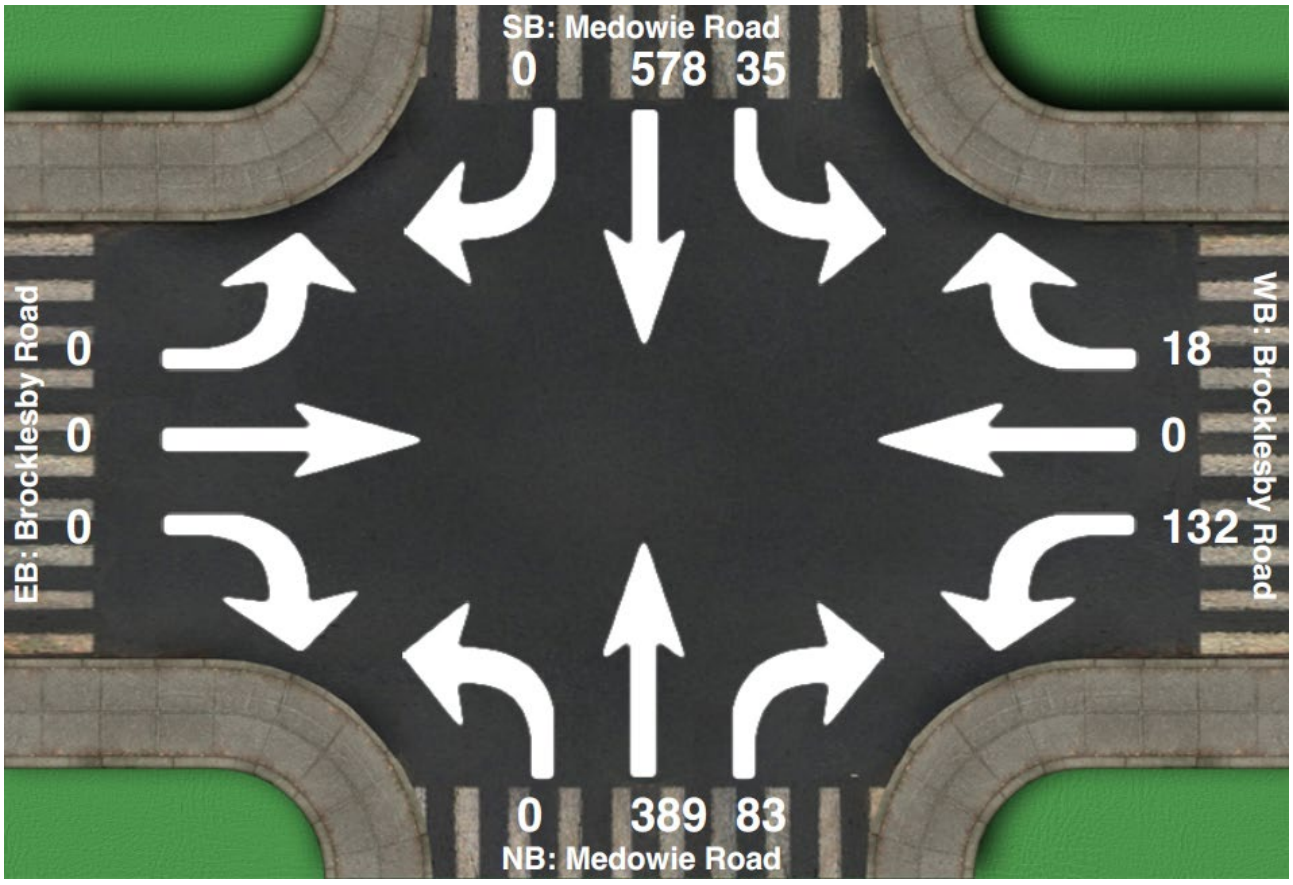
Intersect Traffic
PO Box 268
East Maitland, Nsw, 2323
0423324188

Intersection Peak Hour
08:00 - 09:00
Turn Count Summary

Location: Medowie Road at Brocklesby Road , Medowie
GPS Coordinates: Lat=-32.805892, Lon=151.836796
Date: 2022-12-15
Day of week: Thursday
Weather: Sunny
Analyst: Peter

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
08:00	3	133	0	30	0	3	0	87	10	0	0	0	266
08:15	13	147	0	27	0	4	0	94	26	0	0	0	311
08:30	11	137	0	38	0	7	0	93	26	0	0	0	312
08:45	8	161	0	37	0	4	0	115	21	0	0	0	346



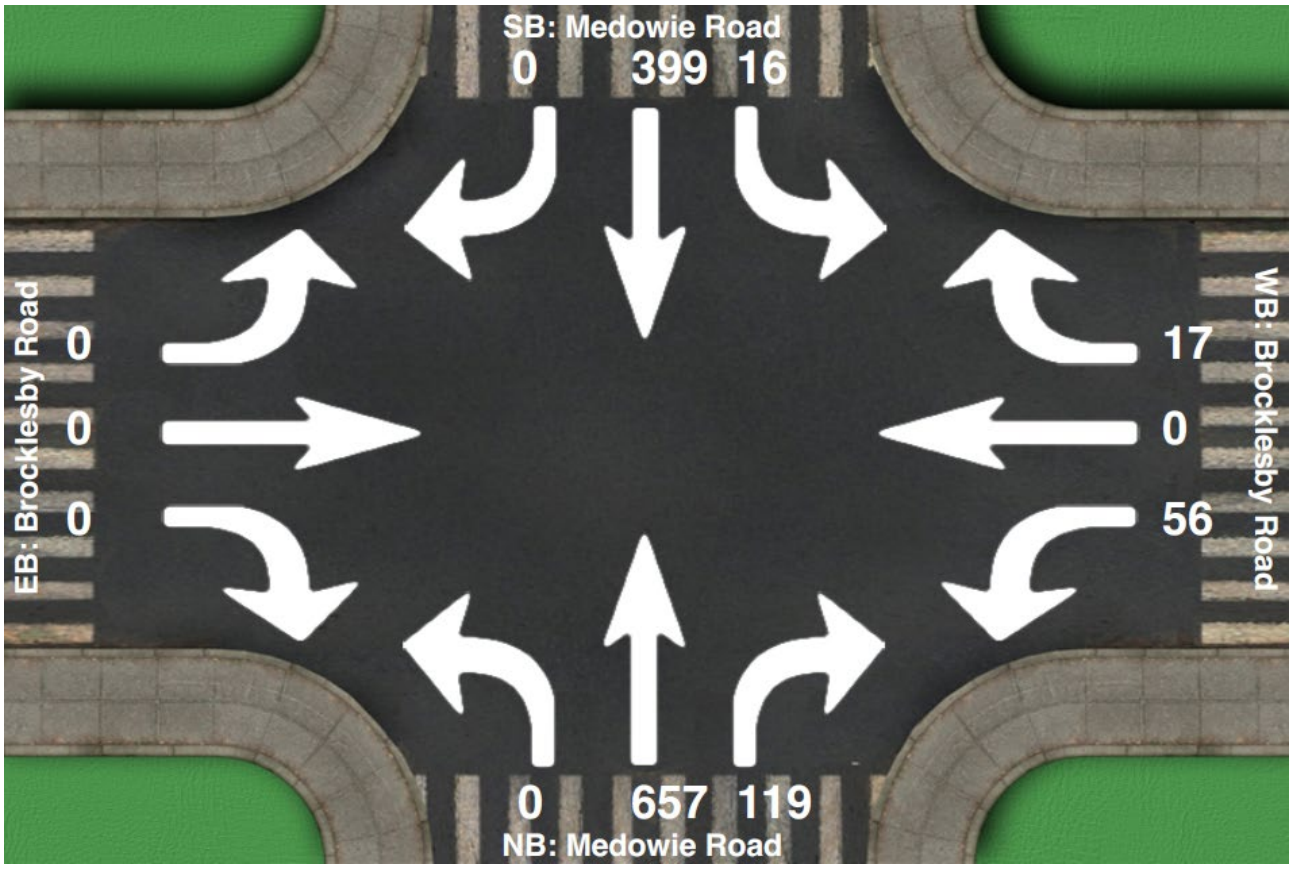
Intersection Peak Hour
16:30 - 17:30

Turn Count Summary

Location: Medowie Road at Brocklesby Road , Medowie
GPS Coordinates: Lat=-32.752809, Lon=151.867406
Date: 2022-12-14
Day of week: Wednesday
Weather: Sunny
Analyst: Peter

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:30	4	99	0	17	0	8	0	190	45	0	0	0	363
16:45	5	101	0	18	0	4	0	165	29	0	0	0	322
17:00	4	104	0	10	0	3	0	162	20	0	0	0	303
17:15	3	95	0	11	0	2	0	140	25	0	0	0	276



APPENDIX 4
FUTURE PLANNING PRECINCTS

Figure 5 Planning Precincts

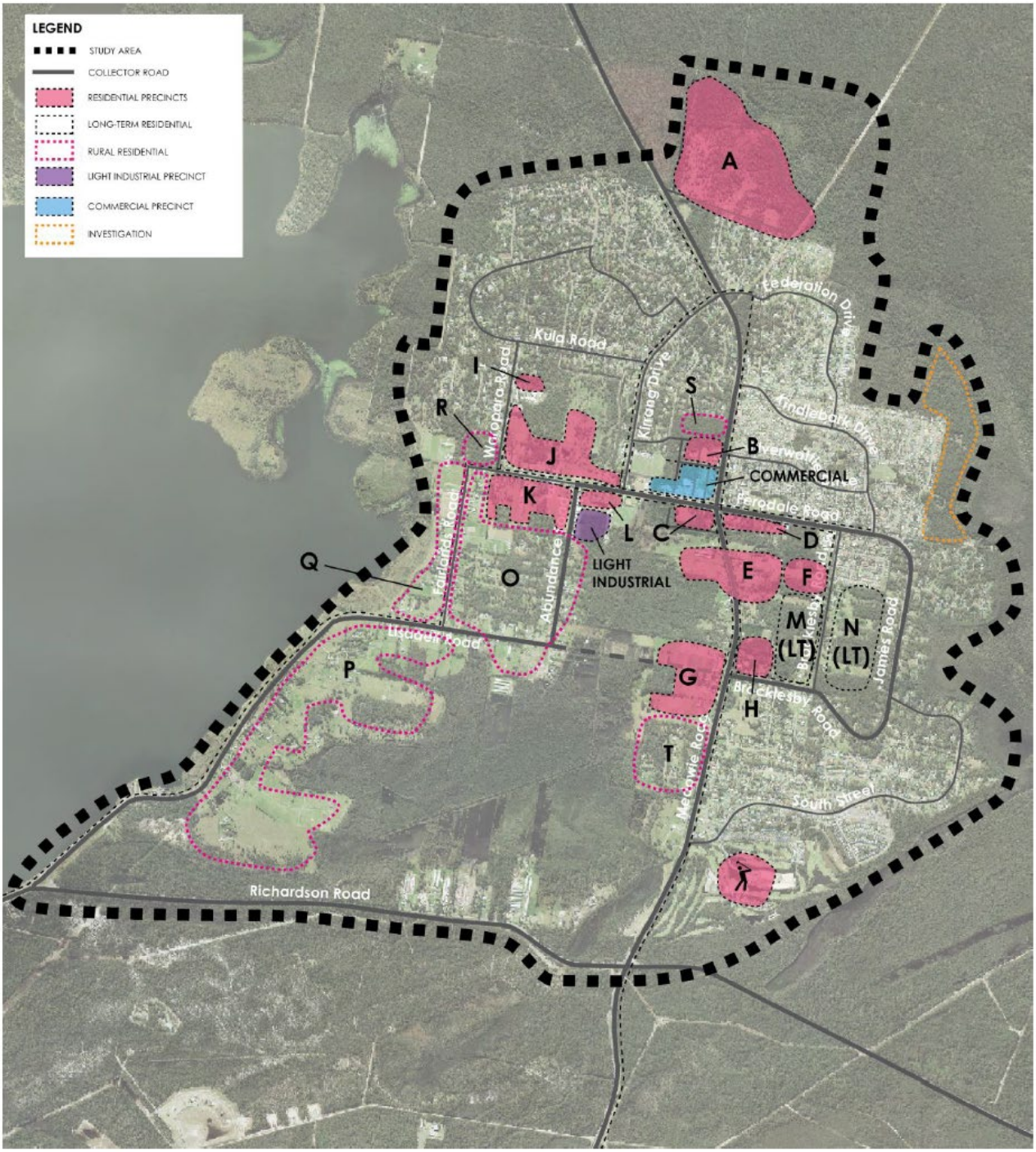


Table 2 Planning Precincts (estimate only)

Precinct	Area (ha) (estimate)	Dwelling yield (estimate)
Residential release areas		
A	40	480
B	4	48
C	4	48
D	6	72
E	25	300
F	5	60
G	28	336
H	5	60
I	2	24
J	28	336
K	20	240
L	3	36
M	10	120 (excludes vegetation)
N	20	240 (excludes vegetation)
TOTAL	**200**	**2400**
Rural residential release areas		

APPENDIX 5
SIDRA SUMMARY MOVEMENT TABLES

MEDOWIE ROAD / FERODALE ROAD INTERSECTION

MOVEMENT SUMMARY

Site: 101 [2027AM+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	39	0.0	39	0.0	0.390	5.9	LOS A	2.7	19.4	0.69	0.64	0.69	44.4
2	T1	All MCs	179	0.6	179	0.6	0.390	6.0	LOS A	2.7	19.4	0.69	0.64	0.69	44.7
3	R2	All MCs	129	4.4	129	4.4	0.390	9.9	LOS A	2.7	19.4	0.69	0.64	0.69	44.1
3u	U	All MCs	2	0.0	2	0.0	0.390	11.4	LOS A	2.7	19.4	0.69	0.64	0.69	44.2
Approach			349	1.9	349	1.9	0.390	7.5	LOS A	2.7	19.4	0.69	0.64	0.69	44.4
East: Ferodale Road															
4	L2	All MCs	263	3.4	263	3.4	0.811	20.9	LOS B	11.9	89.9	1.00	1.22	1.76	38.1
5	T1	All MCs	212	16.0	212	16.0	0.811	21.8	LOS B	11.9	89.9	1.00	1.22	1.76	38.2
6	R2	All MCs	59	5.8	59	5.8	0.811	24.9	LOS B	11.9	89.9	1.00	1.22	1.76	37.8
6u	U	All MCs	1	0.0	1	0.0	0.811	26.1	LOS B	11.9	89.9	1.00	1.22	1.76	37.9
Approach			535	8.7	535	8.7	0.811	21.7	LOS B	11.9	89.9	1.00	1.22	1.76	38.1
North: Medowie Road															
7	L2	All MCs	49	0.0	49	0.0	0.578	8.5	LOS A	5.2	38.0	0.81	0.76	0.94	43.6
8	T1	All MCs	345	5.3	345	5.3	0.578	8.7	LOS A	5.2	38.0	0.81	0.76	0.94	43.8
9	R2	All MCs	87	5.2	87	5.2	0.578	12.5	LOS A	5.2	38.0	0.81	0.76	0.94	43.3
9u	U	All MCs	7	0.0	7	0.0	0.578	14.0	LOS A	5.2	38.0	0.81	0.76	0.94	43.4
Approach			488	4.7	488	4.7	0.578	9.5	LOS A	5.2	38.0	0.81	0.76	0.94	43.7
West: Ferodale Road															
10	L2	All MCs	77	8.8	77	8.8	0.449	6.3	LOS A	3.2	23.3	0.69	0.66	0.69	44.0
11	T1	All MCs	103	0.0	103	0.0	0.449	6.0	LOS A	3.2	23.3	0.69	0.66	0.69	44.4
12	R2	All MCs	214	7.4	214	7.4	0.449	10.1	LOS A	3.2	23.3	0.69	0.66	0.69	43.8
12u	U	All MCs	9	0.0	9	0.0	0.449	11.5	LOS A	3.2	23.3	0.69	0.66	0.69	43.8
Approach			404	5.6	404	5.6	0.449	8.4	LOS A	3.2	23.3	0.69	0.66	0.69	44.0
All Vehicles			1776	5.6	1776	5.6	0.811	12.5	LOS A	11.9	89.9	0.82	0.85	1.08	42.0

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.

MOVEMENT SUMMARY

Site: 101 [2027AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	39	0.0	39	0.0	0.384	5.8	LOS A	2.7	19.0	0.68	0.63	0.68	44.5
2	T1	All MCs	179	0.6	179	0.6	0.384	5.9	LOS A	2.7	19.0	0.68	0.63	0.68	44.7
3	R2	All MCs	129	4.4	129	4.4	0.384	9.8	LOS A	2.7	19.0	0.68	0.63	0.68	44.1
3u	U	All MCs	2	0.0	2	0.0	0.384	11.3	LOS A	2.7	19.0	0.68	0.63	0.68	44.2
Approach			349	1.9	349	1.9	0.384	7.4	LOS A	2.7	19.0	0.68	0.63	0.68	44.5
East: Ferodale Road															
4	L2	All MCs	263	3.4	263	3.4	0.790	19.5	LOS B	11.0	82.8	1.00	1.17	1.68	38.6
5	T1	All MCs	202	16.9	202	16.9	0.790	20.4	LOS B	11.0	82.8	1.00	1.17	1.68	38.7
6	R2	All MCs	54	6.3	54	6.3	0.790	23.5	LOS B	11.0	82.8	1.00	1.17	1.68	38.4
6u	U	All MCs	1	0.0	1	0.0	0.790	24.7	LOS B	11.0	82.8	1.00	1.17	1.68	38.4
Approach			520	8.9	520	8.9	0.790	20.3	LOS B	11.0	82.8	1.00	1.17	1.68	38.6
North: Medowie Road															
7	L2	All MCs	48	0.0	48	0.0	0.577	8.4	LOS A	5.2	37.8	0.81	0.76	0.94	43.7
8	T1	All MCs	345	5.3	345	5.3	0.577	8.7	LOS A	5.2	37.8	0.81	0.76	0.94	43.8
9	R2	All MCs	87	5.2	87	5.2	0.577	12.5	LOS A	5.2	37.8	0.81	0.76	0.94	43.3
9u	U	All MCs	7	0.0	7	0.0	0.577	13.9	LOS A	5.2	37.8	0.81	0.76	0.94	43.4
Approach			486	4.7	486	4.7	0.577	9.4	LOS A	5.2	37.8	0.81	0.76	0.94	43.7
West: Ferodale Road															
10	L2	All MCs	77	8.8	77	8.8	0.447	6.3	LOS A	3.2	23.1	0.69	0.66	0.69	44.1
11	T1	All MCs	103	0.0	103	0.0	0.447	6.0	LOS A	3.2	23.1	0.69	0.66	0.69	44.4
12	R2	All MCs	214	7.4	214	7.4	0.447	10.1	LOS A	3.2	23.1	0.69	0.66	0.69	43.8
12u	U	All MCs	9	0.0	9	0.0	0.447	11.5	LOS A	3.2	23.1	0.69	0.66	0.69	43.9
Approach			404	5.6	404	5.6	0.447	8.3	LOS A	3.2	23.1	0.69	0.66	0.69	44.0
All Vehicles			1760	5.6	1760	5.6	0.790	12.0	LOS A	11.0	82.8	0.81	0.83	1.05	42.3

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.

MOVEMENT SUMMARY

Site: 101 [2027AM+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	39	0.0	39	0.0	0.390	5.9	LOS A	2.7	19.4	0.69	0.64	0.69	44.4
2	T1	All MCs	179	0.6	179	0.6	0.390	6.0	LOS A	2.7	19.4	0.69	0.64	0.69	44.7
3	R2	All MCs	129	4.4	129	4.4	0.390	9.9	LOS A	2.7	19.4	0.69	0.64	0.69	44.1
3u	U	All MCs	2	0.0	2	0.0	0.390	11.4	LOS A	2.7	19.4	0.69	0.64	0.69	44.2
Approach			349	1.9	349	1.9	0.390	7.5	LOS A	2.7	19.4	0.69	0.64	0.69	44.4
East: Ferodale Road															
4	L2	All MCs	263	3.4	263	3.4	0.811	20.9	LOS B	11.9	89.9	1.00	1.22	1.76	38.1
5	T1	All MCs	212	16.0	212	16.0	0.811	21.8	LOS B	11.9	89.9	1.00	1.22	1.76	38.2
6	R2	All MCs	59	5.8	59	5.8	0.811	24.9	LOS B	11.9	89.9	1.00	1.22	1.76	37.8
6u	U	All MCs	1	0.0	1	0.0	0.811	26.1	LOS B	11.9	89.9	1.00	1.22	1.76	37.9
Approach			535	8.7	535	8.7	0.811	21.7	LOS B	11.9	89.9	1.00	1.22	1.76	38.1
North: Medowie Road															
7	L2	All MCs	49	0.0	49	0.0	0.578	8.5	LOS A	5.2	38.0	0.81	0.76	0.94	43.6
8	T1	All MCs	345	5.3	345	5.3	0.578	8.7	LOS A	5.2	38.0	0.81	0.76	0.94	43.8
9	R2	All MCs	87	5.2	87	5.2	0.578	12.5	LOS A	5.2	38.0	0.81	0.76	0.94	43.3
9u	U	All MCs	7	0.0	7	0.0	0.578	14.0	LOS A	5.2	38.0	0.81	0.76	0.94	43.4
Approach			488	4.7	488	4.7	0.578	9.5	LOS A	5.2	38.0	0.81	0.76	0.94	43.7
West: Ferodale Road															
10	L2	All MCs	77	8.8	77	8.8	0.449	6.3	LOS A	3.2	23.3	0.69	0.66	0.69	44.0
11	T1	All MCs	103	0.0	103	0.0	0.449	6.0	LOS A	3.2	23.3	0.69	0.66	0.69	44.4
12	R2	All MCs	214	7.4	214	7.4	0.449	10.1	LOS A	3.2	23.3	0.69	0.66	0.69	43.8
12u	U	All MCs	9	0.0	9	0.0	0.449	11.5	LOS A	3.2	23.3	0.69	0.66	0.69	43.8
Approach			404	5.6	404	5.6	0.449	8.4	LOS A	3.2	23.3	0.69	0.66	0.69	44.0
All Vehicles			1776	5.6	1776	5.6	0.811	12.5	LOS A	11.9	89.9	0.82	0.85	1.08	42.0

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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MOVEMENT SUMMARY

Site: 101 [2027AM+Grp1&2+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	67	0.0	67	0.0	0.495	6.7	LOS A	3.8	27.3	0.75	0.68	0.78	44.2
2	T1	All MCs	225	0.6	225	0.6	0.495	6.7	LOS A	3.8	27.3	0.75	0.68	0.78	44.5
3	R2	All MCs	140	4.4	140	4.4	0.495	10.7	LOS A	3.8	27.3	0.75	0.68	0.78	43.9
3u	U	All MCs	2	0.0	2	0.0	0.495	12.2	LOS A	3.8	27.3	0.75	0.68	0.78	44.0
Approach			435	1.7	435	1.7	0.495	8.0	LOS A	3.8	27.3	0.75	0.68	0.78	44.2
East: Ferodale Road															
4	L2	All MCs	267	3.4	267	3.4	1.018	78.7	LOS F	33.1	249.5	1.00	2.40	4.10	23.8
5	T1	All MCs	202	16.9	202	16.9	1.018	79.8	LOS F	33.1	249.5	1.00	2.40	4.10	23.8
6	R2	All MCs	64	6.3	64	6.3	1.018	82.7	LOS F	33.1	249.5	1.00	2.40	4.10	23.7
6u	U	All MCs	1	0.0	1	0.0	1.018	83.9	LOS F	33.1	249.5	1.00	2.40	4.10	23.7
Approach			535	8.8	535	8.8	1.018	79.6	LOS F	33.1	249.5	1.00	2.40	4.10	23.8
North: Medowie Road															
7	L2	All MCs	68	0.0	68	0.0	0.780	13.8	LOS A	11.0	80.4	0.98	1.00	1.42	41.0
8	T1	All MCs	452	5.3	452	5.3	0.780	14.1	LOS A	11.0	80.4	0.98	1.00	1.42	41.2
9	R2	All MCs	118	5.2	118	5.2	0.780	17.9	LOS B	11.0	80.4	0.98	1.00	1.42	40.7
9u	U	All MCs	6	0.0	6	0.0	0.780	19.3	LOS B	11.0	80.4	0.98	1.00	1.42	40.8
Approach			644	4.6	644	4.6	0.780	14.8	LOS B	11.0	80.4	0.98	1.00	1.42	41.1
West: Ferodale Road															
10	L2	All MCs	87	8.8	87	8.8	0.505	7.5	LOS A	4.0	29.3	0.77	0.72	0.82	43.6
11	T1	All MCs	105	0.0	105	0.0	0.505	7.1	LOS A	4.0	29.3	0.77	0.72	0.82	43.9
12	R2	All MCs	222	7.4	222	7.4	0.505	11.3	LOS A	4.0	29.3	0.77	0.72	0.82	43.3
12u	U	All MCs	9	0.0	9	0.0	0.505	12.6	LOS A	4.0	29.3	0.77	0.72	0.82	43.4
Approach			424	5.7	424	5.7	0.505	9.5	LOS A	4.0	29.3	0.77	0.72	0.82	43.5
All Vehicles			2038	5.3	2038	5.3	1.018	29.3	LOS C	33.1	249.5	0.89	1.24	1.86	35.3

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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MOVEMENT SUMMARY

Site: 101 [2032AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	42	0.0	42	0.0	0.427	6.1	LOS A	3.0	21.7	0.72	0.65	0.72	44.3
2	T1	All MCs	193	0.6	193	0.6	0.427	6.2	LOS A	3.0	21.7	0.72	0.65	0.72	44.6
3	R2	All MCs	139	4.4	139	4.4	0.427	10.1	LOS A	3.0	21.7	0.72	0.65	0.72	44.0
3u	U	All MCs	2	0.0	2	0.0	0.427	11.6	LOS A	3.0	21.7	0.72	0.65	0.72	44.1
Approach			376	1.9	376	1.9	0.427	7.7	LOS A	3.0	21.7	0.72	0.65	0.72	44.3
East: Ferodale Road															
4	L2	All MCs	283	3.4	283	3.4	0.917	36.1	LOS C	19.2	145.0	1.00	1.64	2.52	32.8
5	T1	All MCs	217	16.9	217	16.9	0.917	37.2	LOS C	19.2	145.0	1.00	1.64	2.52	32.9
6	R2	All MCs	59	6.3	59	6.3	0.917	40.2	LOS C	19.2	145.0	1.00	1.64	2.52	32.7
6u	U	All MCs	1	0.0	1	0.0	0.917	41.3	LOS C	19.2	145.0	1.00	1.64	2.52	32.7
Approach			561	8.9	561	8.9	0.917	37.0	LOS C	19.2	145.0	1.00	1.64	2.52	32.9
North: Medowie Road															
7	L2	All MCs	51	0.0	51	0.0	0.647	10.2	LOS A	6.7	48.8	0.88	0.85	1.11	42.7
8	T1	All MCs	371	5.3	371	5.3	0.647	10.5	LOS A	6.7	48.8	0.88	0.85	1.11	42.9
9	R2	All MCs	94	5.2	94	5.2	0.647	14.3	LOS A	6.7	48.8	0.88	0.85	1.11	42.4
9u	U	All MCs	7	0.0	7	0.0	0.647	15.7	LOS B	6.7	48.8	0.88	0.85	1.11	42.5
Approach			524	4.7	524	4.7	0.647	11.2	LOS A	6.7	48.8	0.88	0.85	1.11	42.8
West: Ferodale Road															
10	L2	All MCs	83	8.8	83	8.8	0.497	7.0	LOS A	3.8	28.0	0.74	0.69	0.77	43.8
11	T1	All MCs	111	0.0	111	0.0	0.497	6.6	LOS A	3.8	28.0	0.74	0.69	0.77	44.1
12	R2	All MCs	231	7.4	231	7.4	0.497	10.8	LOS A	3.8	28.0	0.74	0.69	0.77	43.5
12u	U	All MCs	10	0.0	10	0.0	0.497	12.1	LOS A	3.8	28.0	0.74	0.69	0.77	43.6
Approach			435	5.6	435	5.6	0.497	9.0	LOS A	3.8	28.0	0.74	0.69	0.77	43.7
All Vehicles			1896	5.6	1896	5.6	0.917	17.6	LOS B	19.2	145.0	0.85	1.01	1.37	39.7

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.

MOVEMENT SUMMARY

Site: 101 [2032AM+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	41	0.0	41	0.0	0.415	6.1	LOS A	2.9	20.9	0.71	0.65	0.71	44.4
2	T1	All MCs	193	0.6	193	0.6	0.415	6.2	LOS A	2.9	20.9	0.71	0.65	0.71	44.6
3	R2	All MCs	129	4.4	129	4.4	0.415	10.1	LOS A	2.9	20.9	0.71	0.65	0.71	44.0
3u	U	All MCs	2	0.0	2	0.0	0.415	11.6	LOS A	2.9	20.9	0.71	0.65	0.71	44.1
Approach			365	1.9	365	1.9	0.415	7.6	LOS A	2.9	20.9	0.71	0.65	0.71	44.4
East: Ferodale Road															
4	L2	All MCs	283	3.4	283	3.4	0.919	36.6	LOS C	19.6	147.3	1.00	1.65	2.54	32.7
5	T1	All MCs	218	16.0	218	16.0	0.919	37.6	LOS C	19.6	147.3	1.00	1.65	2.54	32.8
6	R2	All MCs	63	5.8	63	5.8	0.919	40.6	LOS C	19.6	147.3	1.00	1.65	2.54	32.5
6u	U	All MCs	1	0.0	1	0.0	0.919	41.8	LOS C	19.6	147.3	1.00	1.65	2.54	32.6
Approach			565	8.6	565	8.6	0.919	37.5	LOS C	19.6	147.3	1.00	1.65	2.54	32.7
North: Medowie Road															
7	L2	All MCs	53	0.0	53	0.0	0.644	10.0	LOS A	6.6	48.3	0.87	0.84	1.09	42.8
8	T1	All MCs	372	5.3	372	5.3	0.644	10.3	LOS A	6.6	48.3	0.87	0.84	1.09	43.0
9	R2	All MCs	94	5.2	94	5.2	0.644	14.1	LOS A	6.6	48.3	0.87	0.84	1.09	42.5
9u	U	All MCs	7	0.0	7	0.0	0.644	15.5	LOS B	6.6	48.3	0.87	0.84	1.09	42.6
Approach			525	4.6	525	4.6	0.644	11.0	LOS A	6.6	48.3	0.87	0.84	1.09	42.9
West: Ferodale Road															
10	L2	All MCs	83	8.8	83	8.8	0.496	6.9	LOS A	3.8	27.7	0.73	0.69	0.76	43.8
11	T1	All MCs	114	0.0	114	0.0	0.496	6.6	LOS A	3.8	27.7	0.73	0.69	0.76	44.1
12	R2	All MCs	231	7.4	231	7.4	0.496	10.7	LOS A	3.8	27.7	0.73	0.69	0.76	43.5
12u	U	All MCs	9	0.0	9	0.0	0.496	12.0	LOS A	3.8	27.7	0.73	0.69	0.76	43.6
Approach			437	5.6	437	5.6	0.496	8.9	LOS A	3.8	27.7	0.73	0.69	0.76	43.7
All Vehicles			1893	5.5	1893	5.5	0.919	17.8	LOS B	19.6	147.3	0.85	1.01	1.38	39.7

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.

MOVEMENT SUMMARY

Site: 101 [2032AM+Grp1,2&3+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	75	0.0	75	0.0	0.531	7.3	LOS A	4.4	31.2	0.78	0.71	0.84	44.1
2	T1	All MCs	239	0.6	239	0.6	0.531	7.3	LOS A	4.4	31.2	0.78	0.71	0.84	44.3
3	R2	All MCs	144	4.4	144	4.4	0.531	11.3	LOS A	4.4	31.2	0.78	0.71	0.84	43.7
3u	U	All MCs	2	0.0	2	0.0	0.531	12.8	LOS A	4.4	31.2	0.78	0.71	0.84	43.8
Approach			460	1.7	460	1.7	0.531	8.6	LOS A	4.4	31.2	0.78	0.71	0.84	44.1
East: Ferodale Road															
4	L2	All MCs	303	3.4	303	3.4	1.143	163.6	LOS F	64.2	481.8	1.00	3.75	7.13	15.3
5	T1	All MCs	223	16.0	223	16.0	1.143	164.7	LOS F	64.2	481.8	1.00	3.75	7.13	15.4
6	R2	All MCs	71	5.8	71	5.8	1.143	167.7	LOS F	64.2	481.8	1.00	3.75	7.13	15.3
6u	U	All MCs	1	0.0	1	0.0	1.143	168.8	LOS F	64.2	481.8	1.00	3.75	7.13	15.3
Approach			598	8.4	598	8.4	1.143	164.5	LOS F	64.2	481.8	1.00	3.75	7.13	15.3
North: Medowie Road															
7	L2	All MCs	74	0.0	74	0.0	0.807	16.1	LOS B	12.2	88.5	1.00	1.09	1.57	40.0
8	T1	All MCs	415	5.3	415	5.3	0.807	16.4	LOS B	12.2	88.5	1.00	1.09	1.57	40.1
9	R2	All MCs	135	5.2	135	5.2	0.807	20.2	LOS B	12.2	88.5	1.00	1.09	1.57	39.7
9u	U	All MCs	7	0.0	7	0.0	0.807	21.5	LOS B	12.2	88.5	1.00	1.09	1.57	39.7
Approach			631	4.6	631	4.6	0.807	17.2	LOS B	12.2	88.5	1.00	1.09	1.57	40.0
West: Ferodale Road															
10	L2	All MCs	96	8.8	96	8.8	0.574	8.7	LOS A	5.2	38.1	0.82	0.78	0.95	43.0
11	T1	All MCs	117	0.0	117	0.0	0.574	8.3	LOS A	5.2	38.1	0.82	0.78	0.95	43.3
12	R2	All MCs	249	7.4	249	7.4	0.574	12.5	LOS A	5.2	38.1	0.82	0.78	0.95	42.7
12u	U	All MCs	9	0.0	9	0.0	0.574	13.8	LOS A	5.2	38.1	0.82	0.78	0.95	42.8
Approach			472	5.7	472	5.7	0.574	10.7	LOS A	5.2	38.1	0.82	0.78	0.95	42.9
All Vehicles			2160	5.3	2160	5.3	1.143	54.7	LOS D	64.2	481.8	0.91	1.68	2.82	28.4

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.

MOVEMENT SUMMARY

Site: 101 [2022PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	281	0.0	281	0.0	0.646	6.1	LOS A	6.5	45.8	0.73	0.62	0.76	44.8
2	T1	All MCs	336	3.1	336	3.1	0.646	6.2	LOS A	6.5	45.8	0.73	0.62	0.76	45.1
3	R2	All MCs	89	0.0	89	0.0	0.646	9.9	LOS A	6.5	45.8	0.73	0.62	0.76	44.6
3u	U	All MCs	1	0.0	1	0.0	0.646	11.6	LOS A	6.5	45.8	0.73	0.62	0.76	44.6
Approach			707	1.5	707	1.5	0.646	6.6	LOS A	6.5	45.8	0.73	0.62	0.76	44.9
East: Ferodale Road															
4	L2	All MCs	68	0.0	68	0.0	0.300	6.4	LOS A	1.9	13.4	0.67	0.64	0.67	44.8
5	T1	All MCs	155	2.0	155	2.0	0.300	6.5	LOS A	1.9	13.4	0.67	0.64	0.67	45.0
6	R2	All MCs	33	0.0	33	0.0	0.300	10.2	LOS A	1.9	13.4	0.67	0.64	0.67	44.5
6u	U	All MCs	1	0.0	1	0.0	0.300	11.9	LOS A	1.9	13.4	0.67	0.64	0.67	44.5
Approach			257	1.2	257	1.2	0.300	7.0	LOS A	1.9	13.4	0.67	0.64	0.67	44.9
North: Medowie Road															
7	L2	All MCs	34	3.1	34	3.1	0.365	6.9	LOS A	2.5	18.1	0.76	0.68	0.76	44.3
8	T1	All MCs	188	2.8	188	2.8	0.365	6.9	LOS A	2.5	18.1	0.76	0.68	0.76	44.5
9	R2	All MCs	56	1.9	56	1.9	0.365	10.7	LOS A	2.5	18.1	0.76	0.68	0.76	44.0
9u	U	All MCs	6	0.0	6	0.0	0.365	12.3	LOS A	2.5	18.1	0.76	0.68	0.76	44.0
Approach			284	2.6	284	2.6	0.365	7.8	LOS A	2.5	18.1	0.76	0.68	0.76	44.4
West: Ferodale Road															
10	L2	All MCs	192	3.8	192	3.8	0.740	12.0	LOS A	9.6	68.2	0.95	0.92	1.28	41.7
11	T1	All MCs	200	1.6	200	1.6	0.740	11.9	LOS A	9.6	68.2	0.95	0.92	1.28	41.9
12	R2	All MCs	232	0.9	232	0.9	0.740	15.7	LOS B	9.6	68.2	0.95	0.92	1.28	41.4
12u	U	All MCs	3	0.0	3	0.0	0.740	17.3	LOS B	9.6	68.2	0.95	0.92	1.28	41.4
Approach			626	2.0	626	2.0	0.740	13.4	LOS A	9.6	68.2	0.95	0.92	1.28	41.6
All Vehicles			1875	1.8	1875	1.8	0.740	9.1	LOS A	9.6	68.2	0.80	0.73	0.92	43.7

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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MOVEMENT SUMMARY

Site: 101 [2027PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	303	0.0	303	0.0	0.710	7.4	LOS A	8.5	60.5	0.81	0.69	0.91	44.3
2	T1	All MCs	362	3.1	362	3.1	0.710	7.5	LOS A	8.5	60.5	0.81	0.69	0.91	44.6
3	R2	All MCs	96	0.0	96	0.0	0.710	11.2	LOS A	8.5	60.5	0.81	0.69	0.91	44.1
3u	U	All MCs	1	0.0	1	0.0	0.710	12.9	LOS A	8.5	60.5	0.81	0.69	0.91	44.1
Approach			762	1.5	762	1.5	0.710	7.9	LOS A	8.5	60.5	0.81	0.69	0.91	44.4
East: Ferodale Road															
4	L2	All MCs	74	0.0	74	0.0	0.337	6.8	LOS A	2.2	15.5	0.71	0.66	0.71	44.6
5	T1	All MCs	167	2.0	167	2.0	0.337	6.9	LOS A	2.2	15.5	0.71	0.66	0.71	44.9
6	R2	All MCs	35	0.0	35	0.0	0.337	10.6	LOS A	2.2	15.5	0.71	0.66	0.71	44.3
6u	U	All MCs	1	0.0	1	0.0	0.337	12.3	LOS A	2.2	15.5	0.71	0.66	0.71	44.3
Approach			277	1.2	277	1.2	0.337	7.3	LOS A	2.2	15.5	0.71	0.66	0.71	44.7
North: Medowie Road															
7	L2	All MCs	36	3.1	36	3.1	0.417	7.4	LOS A	3.0	21.6	0.81	0.71	0.82	44.1
8	T1	All MCs	203	2.8	203	2.8	0.417	7.5	LOS A	3.0	21.6	0.81	0.71	0.82	44.3
9	R2	All MCs	60	1.9	60	1.9	0.417	11.2	LOS A	3.0	21.6	0.81	0.71	0.82	43.8
9u	U	All MCs	7	0.0	7	0.0	0.417	12.8	LOS A	3.0	21.6	0.81	0.71	0.82	43.9
Approach			306	2.6	306	2.6	0.417	8.3	LOS A	3.0	21.6	0.81	0.71	0.82	44.2
West: Ferodale Road															
10	L2	All MCs	206	3.8	206	3.8	0.838	17.3	LOS B	14.1	100.5	1.00	1.14	1.62	39.3
11	T1	All MCs	215	1.6	215	1.6	0.838	17.2	LOS B	14.1	100.5	1.00	1.14	1.62	39.5
12	R2	All MCs	249	0.9	249	0.9	0.838	20.9	LOS B	14.1	100.5	1.00	1.14	1.62	39.1
12u	U	All MCs	3	0.0	3	0.0	0.838	22.5	LOS B	14.1	100.5	1.00	1.14	1.62	39.1
Approach			675	2.0	675	2.0	0.838	18.6	LOS B	14.1	100.5	1.00	1.14	1.62	39.3
All Vehicles			2020	1.8	2020	1.8	0.838	11.5	LOS A	14.1	100.5	0.86	0.84	1.11	42.6

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.

MOVEMENT SUMMARY

Site: 101 [2027PM+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	303	0.0	303	0.0	0.715	7.6	LOS A	8.7	61.8	0.82	0.70	0.93	44.3
2	T1	All MCs	362	3.1	362	3.1	0.715	7.7	LOS A	8.7	61.8	0.82	0.70	0.93	44.5
3	R2	All MCs	96	0.0	96	0.0	0.715	11.4	LOS A	8.7	61.8	0.82	0.70	0.93	44.0
3u	U	All MCs	1	0.0	1	0.0	0.715	13.0	LOS A	8.7	61.8	0.82	0.70	0.93	44.0
Approach			762	1.5	762	1.5	0.715	8.1	LOS A	8.7	61.8	0.82	0.70	0.93	44.3
East: Ferodale Road															
4	L2	All MCs	74	0.0	74	0.0	0.344	6.8	LOS A	2.2	15.8	0.72	0.66	0.72	44.6
5	T1	All MCs	170	2.0	170	2.0	0.344	6.9	LOS A	2.2	15.8	0.72	0.66	0.72	44.8
6	R2	All MCs	37	0.0	37	0.0	0.344	10.6	LOS A	2.2	15.8	0.72	0.66	0.72	44.3
6u	U	All MCs	1	0.0	1	0.0	0.344	12.3	LOS A	2.2	15.8	0.72	0.66	0.72	44.3
Approach			282	1.2	282	1.2	0.344	7.4	LOS A	2.2	15.8	0.72	0.66	0.72	44.7
North: Medowie Road															
7	L2	All MCs	41	2.8	41	2.8	0.427	7.7	LOS A	3.2	22.6	0.82	0.72	0.84	44.1
8	T1	All MCs	203	2.8	203	2.8	0.427	7.7	LOS A	3.2	22.6	0.82	0.72	0.84	44.3
9	R2	All MCs	60	1.9	60	1.9	0.427	11.4	LOS A	3.2	22.6	0.82	0.72	0.84	43.8
9u	U	All MCs	7	0.0	7	0.0	0.427	13.0	LOS A	3.2	22.6	0.82	0.72	0.84	43.8
Approach			311	2.6	311	2.6	0.427	8.5	LOS A	3.2	22.6	0.82	0.72	0.84	44.2
West: Ferodale Road															
10	L2	All MCs	206	3.8	206	3.8	0.851	18.3	LOS B	15.0	106.7	1.00	1.18	1.68	38.9
11	T1	All MCs	225	1.5	225	1.5	0.851	18.2	LOS B	15.0	106.7	1.00	1.18	1.68	39.1
12	R2	All MCs	249	0.9	249	0.9	0.851	21.9	LOS B	15.0	106.7	1.00	1.18	1.68	38.7
12u	U	All MCs	3	0.0	3	0.0	0.851	23.5	LOS B	15.0	106.7	1.00	1.18	1.68	38.7
Approach			684	2.0	684	2.0	0.851	19.6	LOS B	15.0	106.7	1.00	1.18	1.68	38.9
All Vehicles			2039	1.8	2039	1.8	0.851	11.9	LOS A	15.0	106.7	0.87	0.86	1.14	42.4

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.

MOVEMENT SUMMARY

Site: 101 [2027PM+Group1&2+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	315	0.0	315	0.0	0.913	18.9	LOS B	22.3	158.6	1.00	1.25	1.74	39.0
2	T1	All MCs	483	3.1	483	3.1	0.913	19.1	LOS B	22.3	158.6	1.00	1.25	1.74	39.2
3	R2	All MCs	101	0.0	101	0.0	0.913	22.7	LOS B	22.3	158.6	1.00	1.25	1.74	38.8
3u	U	All MCs	1	0.0	1	0.0	0.913	24.3	LOS B	22.3	158.6	1.00	1.25	1.74	38.8
Approach			900	1.7	900	1.7	0.913	19.4	LOS B	22.3	158.6	1.00	1.25	1.74	39.1
East: Ferodale Road															
4	L2	All MCs	76	0.0	76	0.0	0.453	9.4	LOS A	3.5	24.6	0.87	0.79	0.95	43.2
5	T1	All MCs	169	2.0	169	2.0	0.453	9.6	LOS A	3.5	24.6	0.87	0.79	0.95	43.4
6	R2	All MCs	56	0.0	56	0.0	0.453	13.3	LOS A	3.5	24.6	0.87	0.79	0.95	42.9
6u	U	All MCs	1	0.0	1	0.0	0.453	14.9	LOS B	3.5	24.6	0.87	0.79	0.95	42.9
Approach			302	1.1	302	1.1	0.453	10.3	LOS A	3.5	24.6	0.87	0.79	0.95	43.3
North: Medowie Road															
7	L2	All MCs	47	3.1	47	3.1	0.668	11.4	LOS A	7.2	51.9	0.94	0.89	1.21	42.1
8	T1	All MCs	320	2.8	320	2.8	0.668	11.4	LOS A	7.2	51.9	0.94	0.89	1.21	42.3
9	R2	All MCs	123	1.9	123	1.9	0.668	15.2	LOS B	7.2	51.9	0.94	0.89	1.21	41.9
9u	U	All MCs	6	0.0	6	0.0	0.668	16.7	LOS B	7.2	51.9	0.94	0.89	1.21	41.9
Approach			497	2.6	497	2.6	0.668	12.4	LOS A	7.2	51.9	0.94	0.89	1.21	42.2
West: Ferodale Road															
10	L2	All MCs	244	3.8	244	3.8	1.145	156.2	LOS F	78.0	555.6	1.00	3.97	7.36	15.9
11	T1	All MCs	224	1.6	224	1.6	1.145	156.1	LOS F	78.0	555.6	1.00	3.97	7.36	15.9
12	R2	All MCs	278	0.9	278	0.9	1.145	159.8	LOS F	78.0	555.6	1.00	3.97	7.36	15.8
12u	U	All MCs	3	0.0	3	0.0	1.145	161.4	LOS F	78.0	555.6	1.00	3.97	7.36	15.8
Approach			749	2.1	749	2.1	1.145	157.6	LOS F	78.0	555.6	1.00	3.97	7.36	15.9
All Vehicles			2448	1.9	2448	1.9	1.145	59.1	LOS E	78.0	555.6	0.97	1.95	3.26	27.5

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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MOVEMENT SUMMARY

Site: 101 [2032PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	326	0.0	326	0.0	0.781	9.3	LOS A	11.6	82.0	0.91	0.79	1.11	43.4
2	T1	All MCs	390	3.1	390	3.1	0.781	9.5	LOS A	11.6	82.0	0.91	0.79	1.11	43.6
3	R2	All MCs	104	0.0	104	0.0	0.781	13.2	LOS A	11.6	82.0	0.91	0.79	1.11	43.1
3u	U	All MCs	1	0.0	1	0.0	0.781	14.8	LOS B	11.6	82.0	0.91	0.79	1.11	43.1
Approach			821	1.5	821	1.5	0.781	9.9	LOS A	11.6	82.0	0.91	0.79	1.11	43.4
East: Ferodale Road															
4	L2	All MCs	79	0.0	79	0.0	0.377	7.2	LOS A	2.5	17.8	0.75	0.68	0.75	44.5
5	T1	All MCs	180	2.0	180	2.0	0.377	7.3	LOS A	2.5	17.8	0.75	0.68	0.75	44.7
6	R2	All MCs	38	0.0	38	0.0	0.377	11.0	LOS A	2.5	17.8	0.75	0.68	0.75	44.2
6u	U	All MCs	1	0.0	1	0.0	0.377	12.7	LOS A	2.5	17.8	0.75	0.68	0.75	44.2
Approach			298	1.2	298	1.2	0.377	7.8	LOS A	2.5	17.8	0.75	0.68	0.75	44.6
North: Medowie Road															
7	L2	All MCs	39	3.1	39	3.1	0.472	8.7	LOS A	3.8	27.0	0.86	0.77	0.94	43.5
8	T1	All MCs	219	2.8	219	2.8	0.472	8.7	LOS A	3.8	27.0	0.86	0.77	0.94	43.8
9	R2	All MCs	65	1.9	65	1.9	0.472	12.5	LOS A	3.8	27.0	0.86	0.77	0.94	43.3
9u	U	All MCs	7	0.0	7	0.0	0.472	14.0	LOS A	3.8	27.0	0.86	0.77	0.94	43.3
Approach			330	2.6	330	2.6	0.472	9.6	LOS A	3.8	27.0	0.86	0.77	0.94	43.6
West: Ferodale Road															
10	L2	All MCs	222	3.8	222	3.8	0.955	35.1	LOS C	26.4	188.3	1.00	1.72	2.58	33.1
11	T1	All MCs	232	1.6	232	1.6	0.955	35.0	LOS C	26.4	188.3	1.00	1.72	2.58	33.2
12	R2	All MCs	269	0.9	269	0.9	0.955	38.8	LOS C	26.4	188.3	1.00	1.72	2.58	32.9
12u	U	All MCs	4	0.0	4	0.0	0.955	40.4	LOS C	26.4	188.3	1.00	1.72	2.58	32.9
Approach			727	2.0	727	2.0	0.955	36.5	LOS C	26.4	188.3	1.00	1.72	2.58	33.0
All Vehicles			2176	1.8	2176	1.8	0.955	18.4	LOS B	26.4	188.3	0.91	1.08	1.53	39.4

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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MOVEMENT SUMMARY

Site: 101 [2032PM+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	326	0.0	326	0.0	0.786	9.6	LOS A	11.8	83.8	0.92	0.81	1.14	43.2
2	T1	All MCs	389	3.1	389	3.1	0.786	9.8	LOS A	11.8	83.8	0.92	0.81	1.14	43.4
3	R2	All MCs	104	0.0	104	0.0	0.786	13.4	LOS A	11.8	83.8	0.92	0.81	1.14	43.0
3u	U	All MCs	1	0.0	1	0.0	0.786	15.1	LOS B	11.8	83.8	0.92	0.81	1.14	43.0
Approach			821	1.5	821	1.5	0.786	10.2	LOS A	11.8	83.8	0.92	0.81	1.14	43.3
East: Ferodale Road															
4	L2	All MCs	79	0.0	79	0.0	0.384	7.2	LOS A	2.6	18.1	0.75	0.68	0.75	44.4
5	T1	All MCs	183	2.0	183	2.0	0.384	7.3	LOS A	2.6	18.1	0.75	0.68	0.75	44.7
6	R2	All MCs	40	0.0	40	0.0	0.384	11.1	LOS A	2.6	18.1	0.75	0.68	0.75	44.2
6u	U	All MCs	1	0.0	1	0.0	0.384	12.7	LOS A	2.6	18.1	0.75	0.68	0.75	44.2
Approach			303	1.2	303	1.2	0.384	7.8	LOS A	2.6	18.1	0.75	0.68	0.75	44.5
North: Medowie Road															
7	L2	All MCs	43	2.8	43	2.8	0.484	9.0	LOS A	3.9	28.2	0.87	0.78	0.96	43.4
8	T1	All MCs	219	2.8	219	2.8	0.484	9.0	LOS A	3.9	28.2	0.87	0.78	0.96	43.6
9	R2	All MCs	65	1.9	65	1.9	0.484	12.8	LOS A	3.9	28.2	0.87	0.78	0.96	43.1
9u	U	All MCs	7	0.0	7	0.0	0.484	14.3	LOS A	3.9	28.2	0.87	0.78	0.96	43.2
Approach			335	2.6	335	2.6	0.484	9.8	LOS A	3.9	28.2	0.87	0.78	0.96	43.5
West: Ferodale Road															
10	L2	All MCs	222	3.8	222	3.8	0.968	39.1	LOS C	28.9	205.7	1.00	1.83	2.77	31.9
11	T1	All MCs	241	1.5	241	1.5	0.968	38.9	LOS C	28.9	205.7	1.00	1.83	2.77	32.1
12	R2	All MCs	268	0.9	268	0.9	0.968	42.7	LOS D	28.9	205.7	1.00	1.83	2.77	31.8
12u	U	All MCs	3	0.0	3	0.0	0.968	44.3	LOS D	28.9	205.7	1.00	1.83	2.77	31.8
Approach			735	2.0	735	2.0	0.968	40.4	LOS C	28.9	205.7	1.00	1.83	2.77	31.9
All Vehicles			2194	1.8	2194	1.8	0.968	19.9	LOS B	28.9	205.7	0.92	1.13	1.60	38.8

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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Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\MedowieRd_FerodaleRd.sip9

MOVEMENT SUMMARY

Site: 101 [2032PM+Group1,2&3+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Brocklesby Road Residential Planning Proposal
Medowie Road / Ferodale Road Roundabout Intersection
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
1	L2	All MCs	351	0.0	351	0.0	0.973	29.5	LOS C	35.0	248.1	1.00	1.65	2.26	35.0
2	T1	All MCs	511	3.1	511	3.1	0.973	29.7	LOS C	35.0	248.1	1.00	1.65	2.26	35.2
3	R2	All MCs	125	0.0	125	0.0	0.973	33.3	LOS C	35.0	248.1	1.00	1.65	2.26	34.9
3u	U	All MCs	1	0.0	1	0.0	0.973	35.0	LOS C	35.0	248.1	1.00	1.65	2.26	34.9
Approach			987	1.6	987	1.6	0.973	30.1	LOS C	35.0	248.1	1.00	1.65	2.26	35.1
East: Ferodale Road															
4	L2	All MCs	87	0.0	87	0.0	0.438	8.0	LOS A	3.2	22.4	0.80	0.73	0.84	44.0
5	T1	All MCs	182	2.0	182	2.0	0.438	8.2	LOS A	3.2	22.4	0.80	0.73	0.84	44.2
6	R2	All MCs	58	0.0	58	0.0	0.438	11.9	LOS A	3.2	22.4	0.80	0.73	0.84	43.7
6u	U	All MCs	1	0.0	1	0.0	0.438	13.5	LOS A	3.2	22.4	0.80	0.73	0.84	43.7
Approach			328	1.1	328	1.1	0.438	8.8	LOS A	3.2	22.4	0.80	0.73	0.84	44.0
North: Medowie Road															
7	L2	All MCs	53	2.8	53	2.8	0.561	9.1	LOS A	5.0	35.9	0.86	0.79	1.00	43.3
8	T1	All MCs	283	2.8	283	2.8	0.561	9.2	LOS A	5.0	35.9	0.86	0.79	1.00	43.6
9	R2	All MCs	82	1.9	82	1.9	0.561	12.9	LOS A	5.0	35.9	0.86	0.79	1.00	43.1
9u	U	All MCs	7	0.0	7	0.0	0.561	14.5	LOS A	5.0	35.9	0.86	0.79	1.00	43.1
Approach			425	2.6	425	2.6	0.561	10.0	LOS A	5.0	35.9	0.86	0.79	1.00	43.4
West: Ferodale Road															
10	L2	All MCs	260	3.8	260	3.8	1.306	294.7	LOS F	129.8	924.9	1.00	5.75	11.36	9.9
11	T1	All MCs	239	1.5	239	1.5	1.306	294.6	LOS F	129.8	924.9	1.00	5.75	11.36	10.0
12	R2	All MCs	289	0.9	289	0.9	1.306	298.3	LOS F	129.8	924.9	1.00	5.75	11.36	9.9
12u	U	All MCs	3	0.0	3	0.0	1.306	299.9	LOS F	129.8	924.9	1.00	5.75	11.36	9.9
Approach			792	2.1	792	2.1	1.306	296.0	LOS F	129.8	924.9	1.00	5.75	11.36	9.9
All Vehicles			2533	1.8	2533	1.8	1.306	107.1	LOS F	129.8	924.9	0.95	2.67	4.71	20.3

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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Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\MedowieRd_FerodaleRd.sip9

MEDOWIE ROAD / BROCKLESBY ROAD INTERSECTION
MOVEMENT SUMMARY

▽ Site: 101 [2022AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Medowie Road / Brocklesby Road Give Way Controlled T-intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
2	T1	All MCs	409	5.0	409	5.0	0.217	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
3	R2	All MCs	87	2.0	87	2.0	0.135	10.9	LOS A	0.5	3.5	0.59	0.85	0.59	50.5
Approach			497	4.5	497	4.5	0.217	1.9	NA	0.5	3.5	0.10	0.15	0.10	72.4
East: Brocklesby Road															
4	L2	All MCs	139	2.0	139	2.0	0.287	9.4	LOS A	1.1	8.1	0.64	0.87	0.75	48.9
6	R2	All MCs	19	2.0	19	2.0	0.287	18.8	LOS B	1.1	8.1	0.64	0.87	0.75	48.9
Approach			158	2.0	158	2.0	0.287	10.5	LOS A	1.1	8.1	0.64	0.87	0.75	48.9
North: Medowie Road															
7	L2	All MCs	37	2.0	37	2.0	0.020	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.9
8	T1	All MCs	608	5.0	608	5.0	0.322	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			645	4.8	645	4.8	0.322	0.5	NA	0.0	0.0	0.00	0.04	0.00	78.6
All Vehicles			1300	4.3	1300	4.3	0.322	2.3	NA	1.1	8.1	0.12	0.18	0.13	71.1

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

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Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\MedowieRd_BrocklesbyRd.sip9

MOVEMENT SUMMARY

Site: 101 [2027AM+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Medowie Road / Brocklesby Road Give Way Controlled T-intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
2	T1	All MCs	441	5.0	441	5.0	0.234	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
3	R2	All MCs	101	2.0	101	2.0	0.169	11.6	LOS A	0.6	4.4	0.62	0.87	0.62	50.0
Approach			542	4.4	542	4.4	0.234	2.2	NA	0.6	4.4	0.12	0.16	0.12	71.9
East: Brocklesby Road															
4	L2	All MCs	180	2.0	180	2.0	0.393	11.0	LOS A	1.7	12.4	0.71	0.95	0.95	47.9
6	R2	All MCs	20	2.0	20	2.0	0.393	23.3	LOS B	1.7	12.4	0.71	0.95	0.95	47.8
Approach			200	2.0	200	2.0	0.393	12.2	LOS A	1.7	12.4	0.71	0.95	0.95	47.9
North: Medowie Road															
7	L2	All MCs	40	2.0	40	2.0	0.022	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.9
8	T1	All MCs	656	5.0	656	5.0	0.347	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
Approach			696	4.8	696	4.8	0.347	0.5	NA	0.0	0.0	0.00	0.04	0.00	78.6
All Vehicles			1438	4.3	1438	4.3	0.393	2.8	NA	1.7	12.4	0.14	0.21	0.18	69.9

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

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Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\MedowieRd_BrocklesbyRd.sip9

MOVEMENT SUMMARY

Site: 101 [2027AM+Group1&2+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Medowie Road / Brocklesby Road Give Way Controlled T-intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
2	T1	All MCs	499	5.0	499	5.0	0.264	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
3	R2	All MCs	106	2.0	106	2.0	0.270	16.3	LOS B	1.0	7.2	0.78	0.95	0.89	47.0
Approach			605	4.5	605	4.5	0.270	2.9	NA	1.0	7.2	0.14	0.17	0.16	71.1
East: Brocklesby Road															
4	L2	All MCs	197	2.0	197	2.0	0.703	21.9	LOS B	3.6	25.8	0.91	1.22	1.76	41.2
6	R2	All MCs	23	2.0	23	2.0	0.703	46.9	LOS D	3.6	25.8	0.91	1.22	1.76	41.2
Approach			220	2.0	220	2.0	0.703	24.6	LOS B	3.6	25.8	0.91	1.22	1.76	41.2
North: Medowie Road															
7	L2	All MCs	41	2.0	41	2.0	0.022	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.9
8	T1	All MCs	875	5.0	875	5.0	0.463	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
Approach			916	4.9	916	4.9	0.463	0.4	NA	0.0	0.0	0.00	0.03	0.00	78.7
All Vehicles			1741	4.4	1741	4.4	0.703	4.3	NA	3.6	25.8	0.16	0.23	0.28	68.3

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

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Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\MedowieRd_BrocklesbyRd.sip9

MOVEMENT SUMMARY

Site: 101 [2032AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Medowie Road / Brocklesby Road Give Way Controlled T-intersection
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
2	T1	All MCs	475	5.0	475	5.0	0.252	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
3	R2	All MCs	101	2.0	101	2.0	0.186	12.3	LOS A	0.7	4.8	0.66	0.88	0.66	49.5
Approach			577	4.5	577	4.5	0.252	2.2	NA	0.7	4.8	0.12	0.15	0.12	72.1
East: Brocklesby Road															
4	L2	All MCs	161	2.0	161	2.0	0.412	12.0	LOS A	1.8	12.7	0.75	0.98	1.03	46.9
6	R2	All MCs	22	2.0	22	2.0	0.412	26.8	LOS B	1.8	12.7	0.75	0.98	1.03	46.8
Approach			183	2.0	183	2.0	0.412	13.8	LOS A	1.8	12.7	0.75	0.98	1.03	46.9
North: Medowie Road															
7	L2	All MCs	43	2.0	43	2.0	0.023	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.9
8	T1	All MCs	706	5.0	706	5.0	0.374	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
Approach			749	4.8	749	4.8	0.374	0.5	NA	0.0	0.0	0.00	0.04	0.00	78.6
All Vehicles			1509	4.3	1509	4.3	0.412	2.8	NA	1.8	12.7	0.14	0.20	0.17	70.4

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

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Tuesday, 3 January 2023 10:56:14 AM
Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\MedowieRd_BrocklesbyRd.sip9

MOVEMENT SUMMARY

Site: 101 [2032AM+Group1,2&3+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Medowie Road / Brocklesby Road Give Way Controlled T-intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
2	T1	All MCs	540	5.0	540	5.0	0.286	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
3	R2	All MCs	114	2.0	114	2.0	0.344	19.4	LOS B	1.3	9.4	0.83	0.98	1.03	45.1
Approach			654	4.5	654	4.5	0.344	3.4	NA	1.3	9.4	0.14	0.17	0.18	70.4
East: Brocklesby Road															
4	L2	All MCs	208	2.0	208	2.0	0.933	50.4	LOS D	7.8	55.7	0.98	1.75	3.55	30.9
6	R2	All MCs	25	2.0	25	2.0	0.933	86.3	LOS F	7.8	55.7	0.98	1.75	3.55	30.8
Approach			234	2.0	234	2.0	0.933	54.3	LOS D	7.8	55.7	0.98	1.75	3.55	30.9
North: Medowie Road															
7	L2	All MCs	44	2.0	44	2.0	0.024	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.9
8	T1	All MCs	952	5.0	952	5.0	0.504	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach			996	4.9	996	4.9	0.504	0.4	NA	0.0	0.0	0.00	0.03	0.00	78.6
All Vehicles			1883	4.4	1883	4.4	0.933	8.2	NA	7.8	55.7	0.17	0.29	0.50	63.7

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

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Tuesday, 3 January 2023 11:08:05 AM
Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\MedowieRd_BrocklesbyRd.sip9

MOVEMENT SUMMARY

Site: 101 [2027PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Medowie Road / Brocklesby Road Give Way Controlled T-intersection
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
2	T1	All MCs	745	5.0	745	5.0	0.394	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
3	R2	All MCs	135	2.0	135	2.0	0.161	9.3	LOS A	0.6	4.5	0.52	0.77	0.52	51.6
Approach			880	4.5	880	4.5	0.394	1.5	NA	0.6	4.5	0.08	0.12	0.08	73.5
East: Brocklesby Road															
4	L2	All MCs	64	2.0	64	2.0	0.182	7.1	LOS A	0.6	4.4	0.64	0.79	0.64	48.5
6	R2	All MCs	19	2.0	19	2.0	0.182	25.0	LOS B	0.6	4.4	0.64	0.79	0.64	48.4
Approach			83	2.0	83	2.0	0.182	11.3	LOS A	0.6	4.4	0.64	0.79	0.64	48.5
North: Medowie Road															
7	L2	All MCs	18	2.0	18	2.0	0.010	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.9
8	T1	All MCs	452	5.0	452	5.0	0.240	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			471	4.9	471	4.9	0.240	0.3	NA	0.0	0.0	0.00	0.02	0.00	79.1
All Vehicles			1433	4.5	1433	4.5	0.394	1.7	NA	0.6	4.5	0.09	0.13	0.09	73.0

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

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Tuesday, 3 January 2023 11:16:22 AM
Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\MedowieRd_BrocklesbyRd.sip9

MOVEMENT SUMMARY

Site: 101 [2027PM+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Medowie Road / Brocklesby Road Give Way Controlled T-intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
2	T1	All MCs	745	5.0	745	5.0	0.395	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
3	R2	All MCs	163	2.0	163	2.0	0.195	9.4	LOS A	0.8	5.6	0.53	0.77	0.53	51.5
Approach			908	4.5	908	4.5	0.395	1.8	NA	0.8	5.6	0.09	0.14	0.09	72.6
East: Brocklesby Road															
4	L2	All MCs	75	2.0	75	2.0	0.199	7.2	LOS A	0.7	4.8	0.63	0.79	0.63	48.6
6	R2	All MCs	19	2.0	19	2.0	0.199	26.3	LOS B	0.7	4.8	0.63	0.79	0.63	48.6
Approach			94	2.0	94	2.0	0.199	11.0	LOS A	0.7	4.8	0.63	0.79	0.63	48.6
North: Medowie Road															
7	L2	All MCs	18	2.0	18	2.0	0.010	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.9
8	T1	All MCs	453	5.0	453	5.0	0.240	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			471	4.9	471	4.9	0.240	0.3	NA	0.0	0.0	0.00	0.02	0.00	79.1
All Vehicles			1473	4.4	1473	4.4	0.395	1.9	NA	0.8	5.6	0.10	0.14	0.10	72.2

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

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Tuesday, 3 January 2023 11:36:18 AM
Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\MedowieRd_BrocklesbyRd.sip9

MOVEMENT SUMMARY

Site: 101 [2027PM+Group1&2+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Medowie Road / Brocklesby Road Give Way Controlled T-intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
2	T1	All MCs	958	5.0	958	5.0	0.507	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
3	R2	All MCs	182	2.0	182	2.0	0.247	10.4	LOS A	1.0	7.2	0.58	0.83	0.60	50.8
Approach			1140	4.5	1140	4.5	0.507	1.8	NA	1.0	7.2	0.09	0.13	0.10	72.9
East: Brocklesby Road															
4	L2	All MCs	85	2.0	85	2.0	0.358	9.7	LOS A	1.3	9.4	0.76	0.97	0.99	44.4
6	R2	All MCs	20	2.0	20	2.0	0.358	54.4	LOS D	1.3	9.4	0.76	0.97	0.99	44.3
Approach			105	2.0	105	2.0	0.358	18.2	LOS B	1.3	9.4	0.76	0.97	0.99	44.4
North: Medowie Road															
7	L2	All MCs	18	2.0	18	2.0	0.010	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.9
8	T1	All MCs	540	5.0	540	5.0	0.286	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			558	4.9	558	4.9	0.286	0.3	NA	0.0	0.0	0.00	0.02	0.00	79.2
All Vehicles			1803	4.5	1803	4.5	0.507	2.3	NA	1.3	9.4	0.10	0.15	0.12	72.0

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

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Tuesday, 3 January 2023 11:38:32 AM
Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\MedowieRd_BrocklesbyRd.sip9

MOVEMENT SUMMARY

Site: 101 [2032PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Medowie Road / Brocklesby Road Give Way Controlled T-intersection
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
2	T1	All MCs	803	5.0	803	5.0	0.425	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
3	R2	All MCs	145	2.0	145	2.0	0.183	9.7	LOS A	0.7	5.1	0.54	0.79	0.54	51.3
Approach			948	4.5	948	4.5	0.425	1.6	NA	0.7	5.1	0.08	0.12	0.08	73.4
East: Brocklesby Road															
4	L2	All MCs	68	2.0	68	2.0	0.228	7.8	LOS A	0.8	5.6	0.68	0.85	0.73	47.3
6	R2	All MCs	21	2.0	21	2.0	0.228	30.8	LOS C	0.8	5.6	0.68	0.85	0.73	47.3
Approach			89	2.0	89	2.0	0.228	13.1	LOS A	0.8	5.6	0.68	0.85	0.73	47.3
North: Medowie Road															
7	L2	All MCs	20	2.0	20	2.0	0.011	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.9
8	T1	All MCs	487	5.0	487	5.0	0.258	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			507	4.9	507	4.9	0.258	0.3	NA	0.0	0.0	0.00	0.02	0.00	79.1
All Vehicles			1544	4.5	1544	4.5	0.425	1.8	NA	0.8	5.6	0.09	0.13	0.09	72.8

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

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Friday, 6 January 2023 4:06:53 PM
Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\MedowieRd_BrocklesbyRd.sip9

MOVEMENT SUMMARY

Site: 101 [2032PM+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Medowie Road / Brocklesby Road Give Way Controlled T-intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
2	T1	All MCs	802	5.0	802	5.0	0.425	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
3	R2	All MCs	174	2.0	174	2.0	0.218	9.8	LOS A	0.9	6.3	0.55	0.79	0.55	51.3
Approach			976	4.5	976	4.5	0.425	1.8	NA	0.9	6.3	0.10	0.14	0.10	72.5
East: Brocklesby Road															
4	L2	All MCs	80	2.0	80	2.0	0.251	7.9	LOS A	0.9	6.4	0.68	0.86	0.76	47.3
6	R2	All MCs	21	2.0	21	2.0	0.251	32.7	LOS C	0.9	6.4	0.68	0.86	0.76	47.3
Approach			101	2.0	101	2.0	0.251	13.1	LOS A	0.9	6.4	0.68	0.86	0.76	47.3
North: Medowie Road															
7	L2	All MCs	20	2.0	20	2.0	0.011	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.9
8	T1	All MCs	487	5.0	487	5.0	0.258	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			507	4.9	507	4.9	0.258	0.3	NA	0.0	0.0	0.00	0.02	0.00	79.0
All Vehicles			1584	4.4	1584	4.4	0.425	2.1	NA	0.9	6.4	0.10	0.15	0.11	71.9

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

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Tuesday, 3 January 2023 11:40:22 AM
Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\MedowieRd_BrocklesbyRd.sip9

MOVEMENT SUMMARY

Site: 101 [2032PM+Group1,2&3+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Medowie Road / Brocklesby Road Give Way Controlled T-intersection
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Medowie Road															
2	T1	All MCs	1043	5.0	1043	5.0	0.552	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	79.4
3	R2	All MCs	193	2.0	193	2.0	0.280	11.2	LOS A	1.2	8.7	0.61	0.87	0.68	50.3
Approach			1236	4.5	1236	4.5	0.552	1.9	NA	1.2	8.7	0.10	0.14	0.11	72.8
East: Brocklesby Road															
4	L2	All MCs	93	2.0	93	2.0	0.526	13.3	LOS A	2.0	14.4	0.85	1.09	1.30	40.5
6	R2	All MCs	22	2.0	22	2.0	0.526	80.4	LOS F	2.0	14.4	0.85	1.09	1.30	40.4
Approach			115	2.0	115	2.0	0.526	26.2	LOS B	2.0	14.4	0.85	1.09	1.30	40.5
North: Medowie Road															
7	L2	All MCs	20	2.0	20	2.0	0.011	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.9
8	T1	All MCs	584	5.0	584	5.0	0.309	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			604	4.9	604	4.9	0.309	0.3	NA	0.0	0.0	0.00	0.02	0.00	79.1
All Vehicles			1955	4.5	1955	4.5	0.552	2.8	NA	2.0	14.4	0.11	0.16	0.14	71.2

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

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Tuesday, 3 January 2023 12:51:50 PM
Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\MedowieRd_BrocklesbyRd.sip9

FERODALE ROAD / BROCKLESBY ROAD INTERSECTION

MOVEMENT SUMMARY

Site: 101 [2022AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Ferodale Road / Brockelsby Road Stop Sign Controlled T-Intersection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brockelsby Road															
1	L2	All MCs	72	1.5	72	1.5	0.108	7.3	LOS A	0.4	2.9	0.30	0.88	0.30	36.8
3	R2	All MCs	42	5.0	42	5.0	0.108	8.1	LOS A	0.4	2.9	0.30	0.88	0.30	36.6
Approach			114	2.8	114	2.8	0.108	7.6	LOS A	0.4	2.9	0.30	0.88	0.30	36.7
East: Ferodale Road															
4	L2	All MCs	65	1.6	65	1.6	0.110	3.4	LOS A	0.0	0.0	0.00	0.15	0.00	39.0
5	T1	All MCs	142	3.7	142	3.7	0.110	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	39.5
Approach			207	3.0	207	3.0	0.110	1.1	NA	0.0	0.0	0.00	0.15	0.00	39.4
West: Ferodale Road															
11	T1	All MCs	85	2.5	85	2.5	0.065	0.0	LOS A	0.2	1.4	0.18	0.20	0.18	39.3
12	R2	All MCs	31	0.0	31	0.0	0.065	5.0	LOS A	0.2	1.4	0.18	0.20	0.18	38.7
Approach			116	1.8	116	1.8	0.065	1.3	NA	0.2	1.4	0.18	0.20	0.18	39.1
All Vehicles			437	2.7	437	2.7	0.110	2.9	NA	0.4	2.9	0.13	0.35	0.13	38.6

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

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Monday, 2 January 2023 10:39:39 PM
Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\Sidra Summary Movement Tables\FerodaleRd_BrocklesbyRd\2022AM.sip9

MOVEMENT SUMMARY

Site: 101 [2027AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Ferodale Road / Brockelsby Road Stop Sign Controlled T-Intersection
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brockelsby Road															
1	L2	All MCs	77	1.5	77	1.5	0.118	7.4	LOS A	0.5	3.2	0.31	0.88	0.31	36.7
3	R2	All MCs	45	5.0	45	5.0	0.118	8.2	LOS A	0.5	3.2	0.31	0.88	0.31	36.6
Approach			122	2.8	122	2.8	0.118	7.7	LOS A	0.5	3.2	0.31	0.88	0.31	36.7
East: Ferodale Road															
4	L2	All MCs	70	1.6	70	1.6	0.119	3.5	LOS A	0.0	0.0	0.00	0.15	0.00	39.0
5	T1	All MCs	153	3.7	153	3.7	0.119	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	39.5
Approach			223	3.0	223	3.0	0.119	1.1	NA	0.0	0.0	0.00	0.15	0.00	39.4
West: Ferodale Road															
11	T1	All MCs	92	2.5	92	2.5	0.071	0.0	LOS A	0.2	1.5	0.19	0.21	0.19	39.3
12	R2	All MCs	33	0.0	33	0.0	0.071	5.1	LOS A	0.2	1.5	0.19	0.21	0.19	38.7
Approach			125	1.8	125	1.8	0.071	1.3	NA	0.2	1.5	0.19	0.21	0.19	39.1
All Vehicles			471	2.7	471	2.7	0.119	2.9	NA	0.5	3.2	0.13	0.36	0.13	38.6

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

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Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\Sidra Summary Movement Tables\FerodaleRd_BrocklesbyRd\2022AM.sip9

MOVEMENT SUMMARY

Site: 101 [2027AM+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Ferodale Road / Brockelsby Road Stop Sign Controlled T-Intersection
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brockelsby Road															
1	L2	All MCs	92	1.2	92	1.2	0.131	7.4	LOS A	0.5	3.6	0.31	0.88	0.31	36.8
3	R2	All MCs	45	5.0	45	5.0	0.131	8.3	LOS A	0.5	3.6	0.31	0.88	0.31	36.6
Approach			137	2.5	137	2.5	0.131	7.7	LOS A	0.5	3.6	0.31	0.88	0.31	36.7
East: Ferodale Road															
4	L2	All MCs	70	1.6	70	1.6	0.119	3.5	LOS A	0.0	0.0	0.00	0.15	0.00	39.0
5	T1	All MCs	153	3.7	153	3.7	0.119	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	39.5
Approach			223	3.0	223	3.0	0.119	1.1	NA	0.0	0.0	0.00	0.15	0.00	39.4
West: Ferodale Road															
11	T1	All MCs	92	2.5	92	2.5	0.073	0.0	LOS A	0.2	1.7	0.20	0.22	0.20	39.2
12	R2	All MCs	36	0.0	36	0.0	0.073	5.1	LOS A	0.2	1.7	0.20	0.22	0.20	38.7
Approach			128	1.8	128	1.8	0.073	1.4	NA	0.2	1.7	0.20	0.22	0.20	39.1
All Vehicles			489	2.6	489	2.6	0.131	3.0	NA	0.5	3.6	0.14	0.37	0.14	38.5

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

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Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\Sidra Summary Movement Tables\FerodaleRd_BrocklesbyRd\2022AM.sip9

MOVEMENT SUMMARY

Site: 101 [2027AM+Group1&2+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Ferodale Road / Brockelsby Road Stop Sign Controlled T-Intersection
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brockelsby Road															
1	L2	All MCs	102	1.1	102	1.1	0.141	7.4	LOS A	0.6	4.0	0.32	0.88	0.32	36.7
3	R2	All MCs	45	5.0	45	5.0	0.141	8.5	LOS A	0.6	4.0	0.32	0.88	0.32	36.6
Approach			147	2.3	147	2.3	0.141	7.7	LOS A	0.6	4.0	0.32	0.88	0.32	36.7
East: Ferodale Road															
4	L2	All MCs	70	1.6	70	1.6	0.119	3.5	LOS A	0.0	0.0	0.00	0.15	0.00	39.0
5	T1	All MCs	153	3.7	153	3.7	0.119	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	39.5
Approach			223	3.0	223	3.0	0.119	1.1	NA	0.0	0.0	0.00	0.15	0.00	39.4
West: Ferodale Road															
11	T1	All MCs	92	2.5	92	2.5	0.096	0.0	LOS A	0.4	2.9	0.27	0.31	0.27	38.9
12	R2	All MCs	69	0.0	69	0.0	0.096	5.0	LOS A	0.4	2.9	0.27	0.31	0.27	38.3
Approach			161	1.4	161	1.4	0.096	2.1	NA	0.4	2.9	0.27	0.31	0.27	38.7
All Vehicles			532	2.3	532	2.3	0.141	3.3	NA	0.6	4.0	0.17	0.40	0.17	38.4

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

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Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\Sidra Summary Movement Tables\FerodaleRd_BrocklesbyRd\2022AM.sip9

MOVEMENT SUMMARY

Site: 101 [2032AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Ferodale Road / Brockelsby Road Stop Sign Controlled T-Intersection
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brockelsby Road															
1	L2	All MCs	79	1.5	79	1.5	0.122	7.4	LOS A	0.5	3.3	0.32	0.88	0.32	36.7
3	R2	All MCs	46	5.0	46	5.0	0.122	8.3	LOS A	0.5	3.3	0.32	0.88	0.32	36.6
Approach			125	2.8	125	2.8	0.122	7.7	LOS A	0.5	3.3	0.32	0.88	0.32	36.7
East: Ferodale Road															
4	L2	All MCs	72	1.6	72	1.6	0.121	3.5	LOS A	0.0	0.0	0.00	0.15	0.00	39.0
5	T1	All MCs	157	3.7	157	3.7	0.121	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	39.5
Approach			229	3.0	229	3.0	0.121	1.1	NA	0.0	0.0	0.00	0.15	0.00	39.3
West: Ferodale Road															
11	T1	All MCs	94	2.5	94	2.5	0.073	0.0	LOS A	0.2	1.6	0.19	0.21	0.19	39.3
12	R2	All MCs	34	0.0	34	0.0	0.073	5.1	LOS A	0.2	1.6	0.19	0.21	0.19	38.7
Approach			128	1.8	128	1.8	0.073	1.4	NA	0.2	1.6	0.19	0.21	0.19	39.1
All Vehicles			482	2.7	482	2.7	0.122	2.9	NA	0.5	3.3	0.13	0.36	0.13	38.6

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

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Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\Sidra Summary Movement Tables\FerodaleRd_BrocklesbyRd\2022AM.sip9

MOVEMENT SUMMARY

Site: 101 [2032AM+Group1,2&3+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Ferodale Road / Brockelsby Road Stop Sign Controlled T-Intersection
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brockelsby Road															
1	L2	All MCs	90	1.4	90	1.4	0.139	7.5	LOS A	0.5	3.9	0.34	0.88	0.34	36.7
3	R2	All MCs	49	5.0	49	5.0	0.139	8.7	LOS A	0.5	3.9	0.34	0.88	0.34	36.6
Approach			139	2.6	139	2.6	0.139	7.9	LOS A	0.5	3.9	0.34	0.88	0.34	36.6
East: Ferodale Road															
4	L2	All MCs	76	1.6	76	1.6	0.128	3.5	LOS A	0.0	0.0	0.00	0.15	0.00	39.0
5	T1	All MCs	165	3.7	165	3.7	0.128	0.0	LOS A	0.0	0.0	0.00	0.15	0.00	39.5
Approach			241	3.0	241	3.0	0.128	1.1	NA	0.0	0.0	0.00	0.15	0.00	39.3
West: Ferodale Road															
11	T1	All MCs	99	2.5	99	2.5	0.104	0.0	LOS A	0.4	3.2	0.29	0.32	0.29	38.9
12	R2	All MCs	75	0.0	75	0.0	0.104	5.1	LOS A	0.4	3.2	0.29	0.32	0.29	38.3
Approach			173	1.4	173	1.4	0.104	2.2	NA	0.4	3.2	0.29	0.32	0.29	38.6
All Vehicles			553	2.4	553	2.4	0.139	3.2	NA	0.5	3.9	0.18	0.39	0.18	38.4

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

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Monday, 2 January 2023 10:51:51 PM
Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\Sidra Summary Movement Tables\FerodaleRd_BrocklesbyRd \2022AM.sip9

MOVEMENT SUMMARY

Site: 101 [2027PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Ferodale Road / Brockelsby Road Stop Sign Controlled T-Intersection
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brockelsby Road															
1	L2	All MCs	53	0.0	53	0.0	0.091	7.9	LOS A	0.3	2.4	0.29	0.87	0.29	44.2
3	R2	All MCs	40	0.0	40	0.0	0.091	8.8	LOS A	0.3	2.4	0.29	0.87	0.29	44.0
Approach			93	0.0	93	0.0	0.091	8.3	LOS A	0.3	2.4	0.29	0.87	0.29	44.1
East: Ferodale Road															
4	L2	All MCs	29	0.0	29	0.0	0.078	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	48.1
5	T1	All MCs	119	1.9	119	1.9	0.078	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	49.3
Approach			149	1.5	149	1.5	0.078	0.9	NA	0.0	0.0	0.00	0.11	0.00	49.1
West: Ferodale Road															
11	T1	All MCs	172	1.3	172	1.3	0.124	0.0	LOS A	0.3	2.4	0.14	0.18	0.14	48.9
12	R2	All MCs	53	0.0	53	0.0	0.124	5.6	LOS A	0.3	2.4	0.14	0.18	0.14	47.5
Approach			226	1.0	226	1.0	0.124	1.3	NA	0.3	2.4	0.14	0.18	0.14	48.5
All Vehicles			467	1.0	467	1.0	0.124	2.6	NA	0.3	2.4	0.13	0.29	0.13	47.8

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

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Friday, 6 January 2023 6:40:50 PM
Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\FerodaleRd_BrocklesbyRd.sip9

MOVEMENT SUMMARY

Site: 101 [2027PM+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Ferodale Road / Brockelsby Road Stop Sign Controlled T-Intersection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brockelsby Road															
1	L2	All MCs	66	0.0	66	0.0	0.102	7.9	LOS A	0.4	2.7	0.29	0.87	0.29	44.2
3	R2	All MCs	40	0.0	40	0.0	0.102	8.9	LOS A	0.4	2.7	0.29	0.87	0.29	44.0
Approach			106	0.0	106	0.0	0.102	8.3	LOS A	0.4	2.7	0.29	0.87	0.29	44.1
East: Ferodale Road															
4	L2	All MCs	29	0.0	29	0.0	0.078	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	48.1
5	T1	All MCs	119	1.9	119	1.9	0.078	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	49.3
Approach			148	1.5	148	1.5	0.078	0.9	NA	0.0	0.0	0.00	0.11	0.00	49.1
West: Ferodale Road															
11	T1	All MCs	173	1.3	173	1.3	0.128	0.0	LOS A	0.4	2.7	0.15	0.19	0.15	48.8
12	R2	All MCs	59	0.0	59	0.0	0.128	5.6	LOS A	0.4	2.7	0.15	0.19	0.15	47.4
Approach			232	1.0	232	1.0	0.128	1.4	NA	0.4	2.7	0.15	0.19	0.15	48.4
All Vehicles			486	0.9	486	0.9	0.128	2.8	NA	0.4	2.7	0.13	0.31	0.13	47.6

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

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Friday, 6 January 2023 6:51:39 PM
Project: C:\Work Documents\2022\22.101 - Medowie Planning Proposal\FerodaleRd_BrocklesbyRd.sip9

MOVEMENT SUMMARY

Site: 101 [2027PM+G1&G2+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Ferodale Road / Brockelsby Road Stop Sign Controlled T-Intersection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brockelsby Road															
1	L2	All MCs	78	0.0	78	0.0	0.112	7.9	LOS A	0.4	3.0	0.29	0.87	0.29	44.2
3	R2	All MCs	40	0.0	40	0.0	0.112	9.1	LOS A	0.4	3.0	0.29	0.87	0.29	44.0
Approach			118	0.0	118	0.0	0.112	8.3	LOS A	0.4	3.0	0.29	0.87	0.29	44.1
East: Ferodale Road															
4	L2	All MCs	29	0.0	29	0.0	0.078	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	48.1
5	T1	All MCs	119	1.9	119	1.9	0.078	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	49.3
Approach			148	1.5	148	1.5	0.078	0.9	NA	0.0	0.0	0.00	0.11	0.00	49.1
West: Ferodale Road															
11	T1	All MCs	173	1.3	173	1.3	0.141	0.0	LOS A	0.5	3.5	0.18	0.23	0.18	48.5
12	R2	All MCs	80	0.0	80	0.0	0.141	5.6	LOS A	0.5	3.5	0.18	0.23	0.18	47.2
Approach			253	0.9	253	0.9	0.141	1.8	NA	0.5	3.5	0.18	0.23	0.18	48.1
All Vehicles			519	0.9	519	0.9	0.141	3.0	NA	0.5	3.5	0.15	0.34	0.15	47.4

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

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MOVEMENT SUMMARY

Site: 101 [2032PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Ferodale Road / Brockelsby Road Stop Sign Controlled T-Intersection
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brockelsby Road															
1	L2	All MCs	57	0.0	57	0.0	0.100	8.0	LOS A	0.4	2.6	0.31	0.87	0.31	44.2
3	R2	All MCs	43	0.0	43	0.0	0.100	9.1	LOS A	0.4	2.6	0.31	0.87	0.31	44.0
Approach			100	0.0	100	0.0	0.100	8.4	LOS A	0.4	2.6	0.31	0.87	0.31	44.1
East: Ferodale Road															
4	L2	All MCs	32	0.0	32	0.0	0.084	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	48.1
5	T1	All MCs	128	1.9	128	1.9	0.084	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	49.3
Approach			160	1.5	160	1.5	0.084	0.9	NA	0.0	0.0	0.00	0.11	0.00	49.1
West: Ferodale Road															
11	T1	All MCs	186	1.3	186	1.3	0.134	0.0	LOS A	0.4	2.7	0.15	0.18	0.15	48.9
12	R2	All MCs	57	0.0	57	0.0	0.134	5.7	LOS A	0.4	2.7	0.15	0.18	0.15	47.5
Approach			243	1.0	243	1.0	0.134	1.4	NA	0.4	2.7	0.15	0.18	0.15	48.5
All Vehicles			503	1.0	503	1.0	0.134	2.6	NA	0.4	2.7	0.13	0.30	0.13	47.7

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

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MOVEMENT SUMMARY

Site: 101 [2032PM+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Ferodale Road / Brockelsby Road Stop Sign Controlled T-Intersection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brockelsby Road															
1	L2	All MCs	60	0.0	60	0.0	0.103	8.0	LOS A	0.4	2.7	0.31	0.87	0.31	44.1
3	R2	All MCs	43	0.0	43	0.0	0.103	9.1	LOS A	0.4	2.7	0.31	0.87	0.31	44.0
Approach			103	0.0	103	0.0	0.103	8.4	LOS A	0.4	2.7	0.31	0.87	0.31	44.1
East: Ferodale Road															
4	L2	All MCs	32	0.0	32	0.0	0.084	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	48.1
5	T1	All MCs	128	1.9	128	1.9	0.084	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	49.4
Approach			160	1.5	160	1.5	0.084	0.9	NA	0.0	0.0	0.00	0.11	0.00	49.1
West: Ferodale Road															
11	T1	All MCs	185	1.3	185	1.3	0.137	0.0	LOS A	0.4	2.9	0.16	0.19	0.16	48.8
12	R2	All MCs	63	0.0	63	0.0	0.137	5.7	LOS A	0.4	2.9	0.16	0.19	0.16	47.4
Approach			248	1.0	248	1.0	0.137	1.5	NA	0.4	2.9	0.16	0.19	0.16	48.4
All Vehicles			512	1.0	512	1.0	0.137	2.7	NA	0.4	2.9	0.14	0.30	0.14	47.7

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

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MOVEMENT SUMMARY

Site: 101 [2032PM+G1,2&3+DEV (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Ferodale Road / Brockelsby Road Stop Sign Controlled T-Intersection
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Brockelsby Road															
1	L2	All MCs	74	0.0	74	0.0	0.115	8.0	LOS A	0.4	3.1	0.31	0.87	0.31	44.1
3	R2	All MCs	43	0.0	43	0.0	0.115	9.3	LOS A	0.4	3.1	0.31	0.87	0.31	44.0
Approach			117	0.0	117	0.0	0.115	8.5	LOS A	0.4	3.1	0.31	0.87	0.31	44.1
East: Ferodale Road															
4	L2	All MCs	32	0.0	32	0.0	0.084	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	48.1
5	T1	All MCs	128	1.9	128	1.9	0.084	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	49.4
Approach			160	1.5	160	1.5	0.084	0.9	NA	0.0	0.0	0.00	0.11	0.00	49.1
West: Ferodale Road															
11	T1	All MCs	185	1.3	185	1.3	0.153	0.0	LOS A	0.6	3.9	0.19	0.24	0.19	48.5
12	R2	All MCs	87	0.0	87	0.0	0.153	5.7	LOS A	0.6	3.9	0.19	0.24	0.19	47.1
Approach			273	0.9	273	0.9	0.153	1.8	NA	0.6	3.9	0.19	0.24	0.19	48.1
All Vehicles			549	0.9	549	0.9	0.153	3.0	NA	0.6	3.9	0.16	0.33	0.16	47.4

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

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