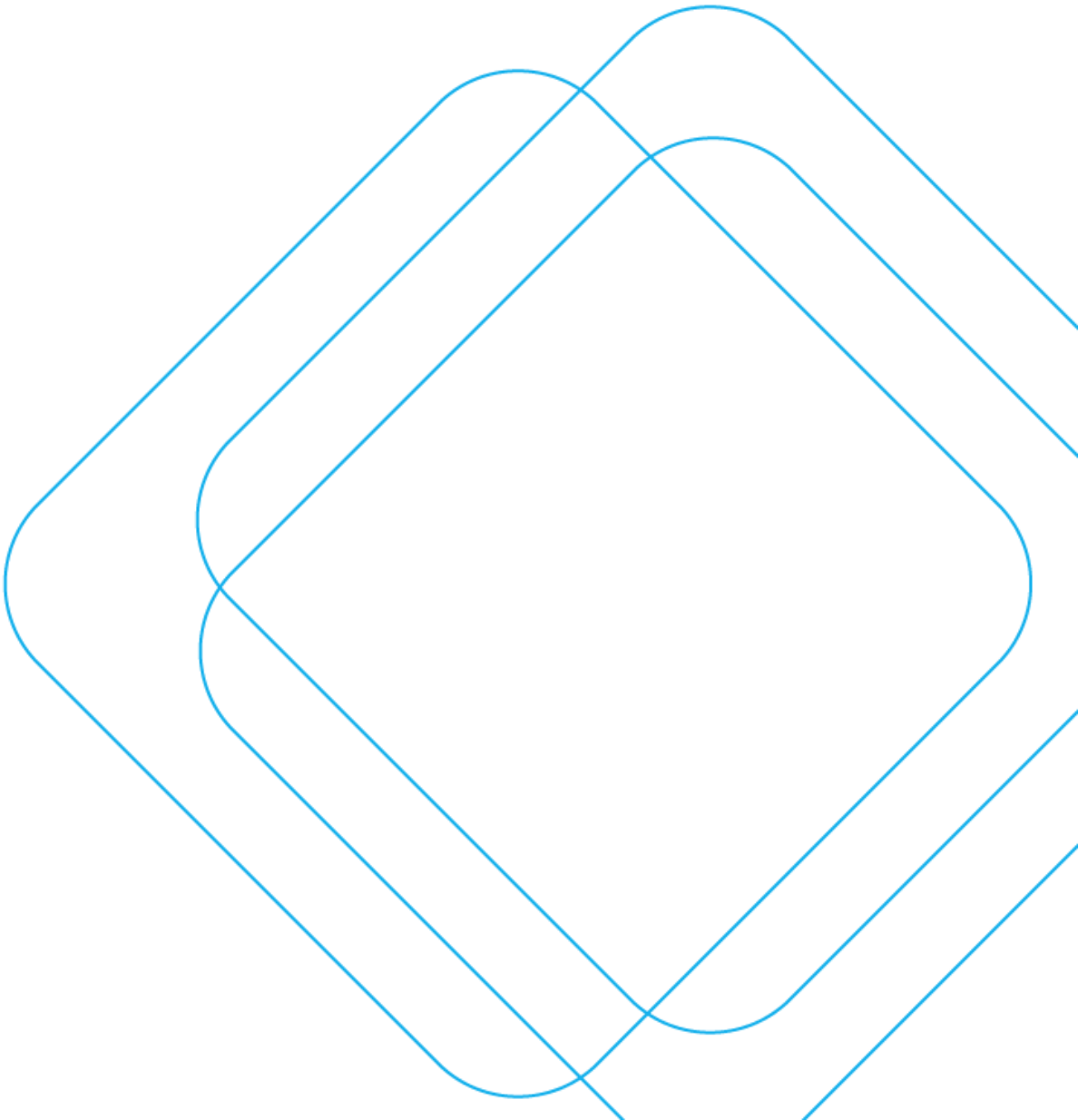
SCT Consulting

559 ANAMBAH ROAD GOSFORTH

Transport Impact Assessment

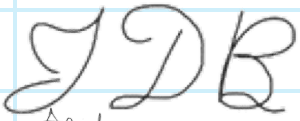
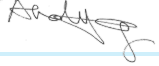
30 AUGUST 2024

SCT Consulting acknowledges the traditional owners of the lands on which we work.
We pay our respects to Elders past, present and emerging.



Quality Assurance

Project:	559 Anambah Road Gosforth		
Project Number:	SCT_00581		
Client:	Thirdi Anambah Pty Ltd	**ACN:**	661 880 619
Prepared by:	SCT Consulting PTY. LTD. (SCT Consulting)	**ABN:**	53 612 624 058

Information	Name	Position	Signature
Author:	Shawn Cen	Principal Consultant	
Reviewer:	Jonathan Busch	Associate Director	
Authoriser:	Andy Yung	Director	

Version	Date	Details
1.0	30 July 2024	Draft report
2.0	26 August 2024	Updated draft report
3.0	29 August 2024	Final report
4.0	30 August 2024	Updated final report

Contents

Executive Summary

Background

SCT Consulting has been engaged by Thirdi Anambah Pty Ltd to prepare a Traffic Impact Assessment for a proposed residential subdivision development application (DA) at 599 Anambah Road in the suburb of Gosforth, within the Maitland City Local Government Area.

The proposal

The proposed site covers a land area of approximately 66 hectares zoned R1 General Residential, which is located in the northernmost proportion of the Anambah Urban Release Area (URA). It is proposed that the site be subdivided for residential development, with associated roads and services including Stage 1 works and a concept master plan for full development. Stage 1 of the development seeks consent for 240 residential allotments and the full development will deliver up to 900 dwellings. The east-west and north-south sub-arterial roads form the higher-order roads in the subdivision master plan.

Access to the state road network would be via Anambah Road to New England Highway only, which permits all movements in and out.

The proposed cross-sections of the internal road network are designed according to Maitland City Council's Manual of Engineering Standards. The deviations are additional width for shared paths along watercourses and the edge of the subdivision. The carriageway is widened locally to satisfy bus movement.

Traffic impacts

As requested by TfNSW, and documented in correspondence dated 31 May 2024, the modelling assumptions have been confirmed as follows:

– 70% west and 30% east traffic distribution (A 50%:50% sensitivity analysis will be included at the request of TfNSW)

– A release rate of 300 lots per year in Lochinvar URA

– Three per cent p.a. growth on New England Highway in addition to development traffic from the Lochinvar URA

– Site completion year of 2028 and sensitivity test of 2038 (This will be carried out for 240 dwellings of Stage 1 and 900 dwellings of full development)

– Adoption of 0.71/0.78 veh/h (AM peak/PM peak) traffic generation rates for residential dwellings across the area.

– Based on the access strategy of the proposal, New England Highway / Anambah Road / Shipley Drive (roundabout) is considered for traffic modelling.

The modelling scenarios are summarised below.

Development scenario	Without background traffic growth	2028 with background growth	2038 with background growth
Future year base	-	Yes	Yes
With Stage 1 (240 lots)	Yes	Yes	Yes
Full development (900 lots)	Yes	Yes	Yes

The modelling confirms that the existing infrastructure will accommodate both the Stage 1 development and the full development scenario without any background traffic growth.

Existing infrastructure will cater for traffic growth generated by Stage 1 by 2028 (with background growth), without infrastructure upgrade. For the full development in 2028 (with background growth), an additional left turn lane for eastbound traffic would be required at the existing roundabout to maintain a satisfactory level of service (refer to **Figure 4-1**).

Without any infrastructure upgrade, the roundabout will fail in 2038 based on background growth alone (i.e. before the introduction of any additional traffic from the proposal). Hence, the roundabout needs to be upgraded by 2038 to respond to the significant background traffic growth on New England Highway including Lochinvar URA. These upgrades include a full signalisation at the Anambah Road intersection and additional lanes on New England Highway.

No further upgrade is required for Stage 1 development in 2038 (with background growth) due to the subject development's additional 240 lots. For full development (900 lots), traffic modelling indicates that additional upgrades are required at the Anambah Road intersection, such as additional lanes on the north approach and right turn lanes on the east approach (refer to **Figure 4-3**).

Given the complexities and uncertainty resulting from background growth and timing, along with multiple different Urban Release Areas, developments and landowners contributing to the need for upgrades, the exact timing and scope of any upgrades should be re-evaluated closer to the delivery dates and during each future subdivision application.

Conclusion

Due to background growth alone, the roundabout at the intersection of New England Highway / Anambah Road / Shipley Drive will fail by 2038, independent of any additional traffic resulting from the proposal. Conversely, without any background growth applied to the New England Highway corridor, the roundabout can accommodate all 900 lots under the proposal.

The study concludes that the impacts of the proposed development are at a level able to be accommodated by the existing and proposed infrastructure and that a Traffic Impact Assessment will be prepared for each Stage subsequent to Stage 1 to fully consider the impacts of actual traffic growth at that time.

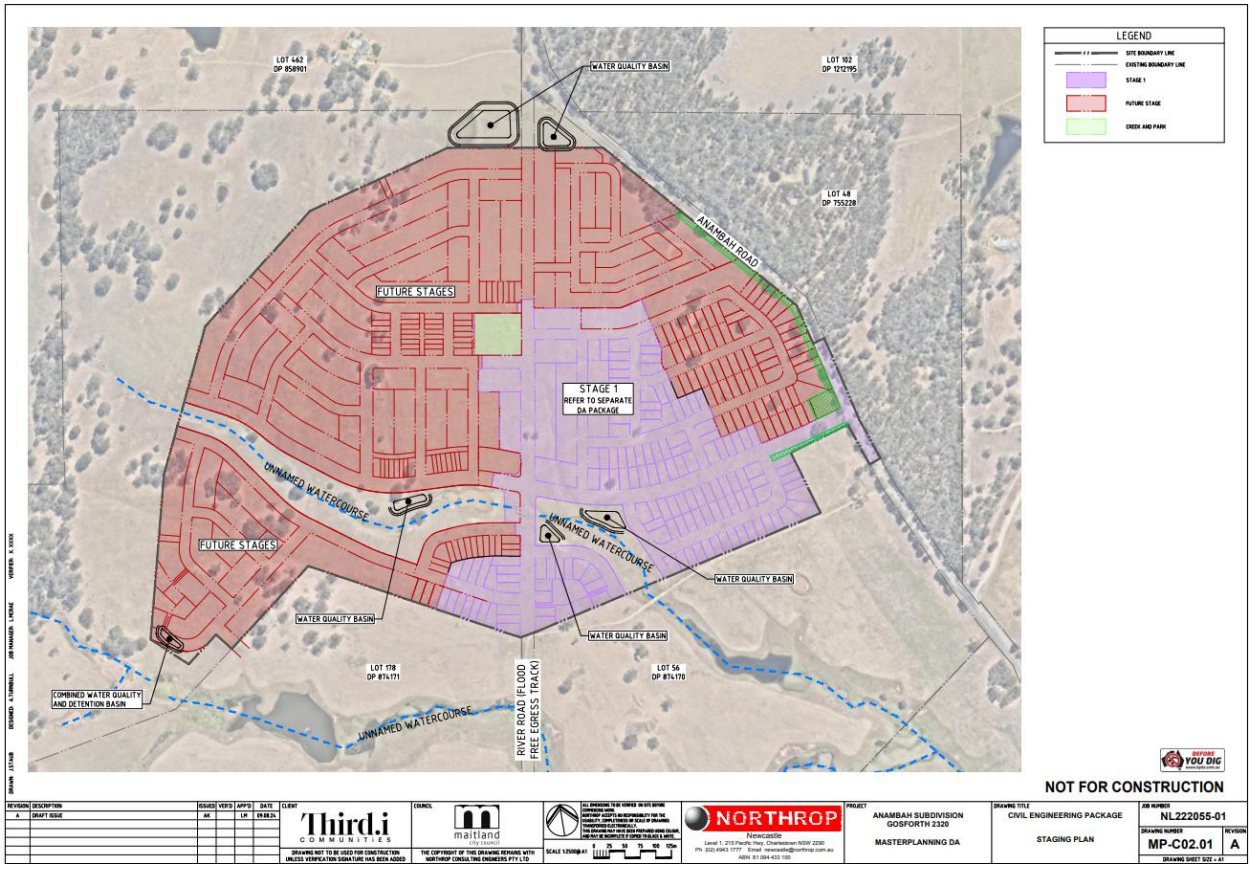
1.0 Introduction

1.1 Background

SCT Consulting has been engaged by Thirdi Anambah Pty Ltd to prepare a Traffic Impact Assessment for a proposed subdivision development application (DA) at 599 Anambah Road Gosforth, in Maitland City Local Government Area (LGA).

As shown in **Figure 1-1,** the site is located in the northernmost portion of the Anambah Urban Release Area (URA). It is currently R1 General Residential zoned land, which is located around 10km to the northwest of Maitland City Centre and 5km to the New England Highway. The subdivision will deliver 900 residential lots covering a land area of about 66 hectares whereas Stage 1 (labelled in purple) is expected to deliver 240 lots in the east portion of the site including the access road with Anambah Road. This DA will therefore consider both the concept master plan for full development and the Stage 1 works.

Figure 1-1 Proposed master plan and staging



Source: Northrop, 2024

1.2 Purpose of this report

SCT Consulting has assessed traffic impacts to support the subdivision. The report includes the following:

– A review of existing conditions

– Traffic data collection during the weekday morning and afternoon peak periods for the intersection of Anambah Road / New England Highway

– Future vehicle trip generation from the proposed development and surrounding urban growth area and distribution of the trips to the surrounding road network based on preferred access strategies and travel patterns

– SIDRA intersection modelling for the scenarios requested by TfNSW

– Assessment of cumulative impacts on the road, active transport, and public transport network

– Evaluation of the consistency of the proposed road cross-sections as part of this DA with Council's guidelines.

1.3 Report structure

The report comprises the following sections:

– **Section 2** describes the existing transport conditions for all modes of transport

– **Section 3** describes the proposed development, including its access strategy and proposed road network

– **Section 4** assesses the estimated trips generated, their distribution based on the preferred access strategy, and the likely traffic impacts associated with the additional trips

– **Section 5** summarises the report and presents the conclusion.

2.0 Existing conditions

2.1 The site

The proposed development is located in the northernmost portion of Anambah URA at 559 Anambah Road, bounded to the east by Anambah Road (**Figure 2-1**). The site is predominantly rural land with small vegetation patches across the central and northern parts of the site.

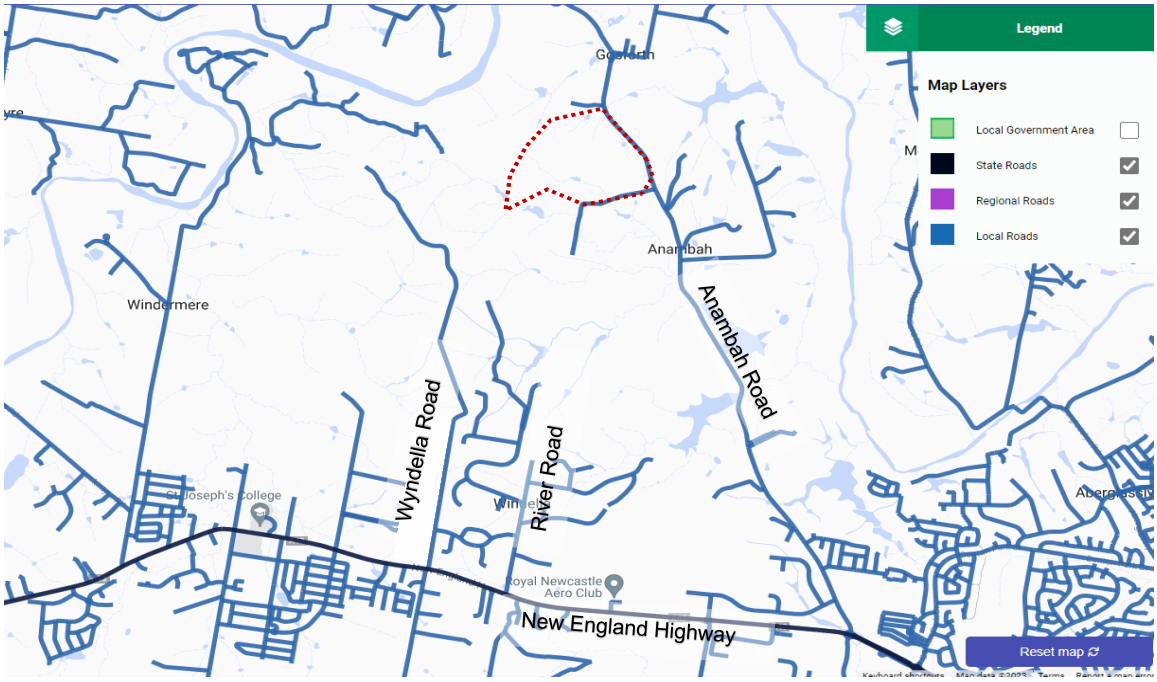
Figure 2-1 Existing site aerial

Source: Nearmap, 2024

2.2 Road network

The road network in the vicinity of the site is shown in **Figure 2-2** where New England Highway is a classified State road and other roads are all Local roads. New England Highway connects to Maitland and through onto Newcastle to the east. To the west, it connects to Branxton. There are interchanges with the M15 Hunter Expressway via Allandale Road and Lovedale Road at Allandale.

Figure 2-2 Classified state and regional road network



Source: Transport for NSW, 2024

– **New England Highway** is a state road, classified as a primary road. It would provide the main access for residents to the site in all directions. It generally varies between one and two lanes with no on-street parking provided. Speed limit also varies from 40 and 50 km/h in urban areas and school zones to 90 km/h west of Lochinvar. The New England Highway provides key connections to the Hunter Expressway and Pacific Highway / Motorway.

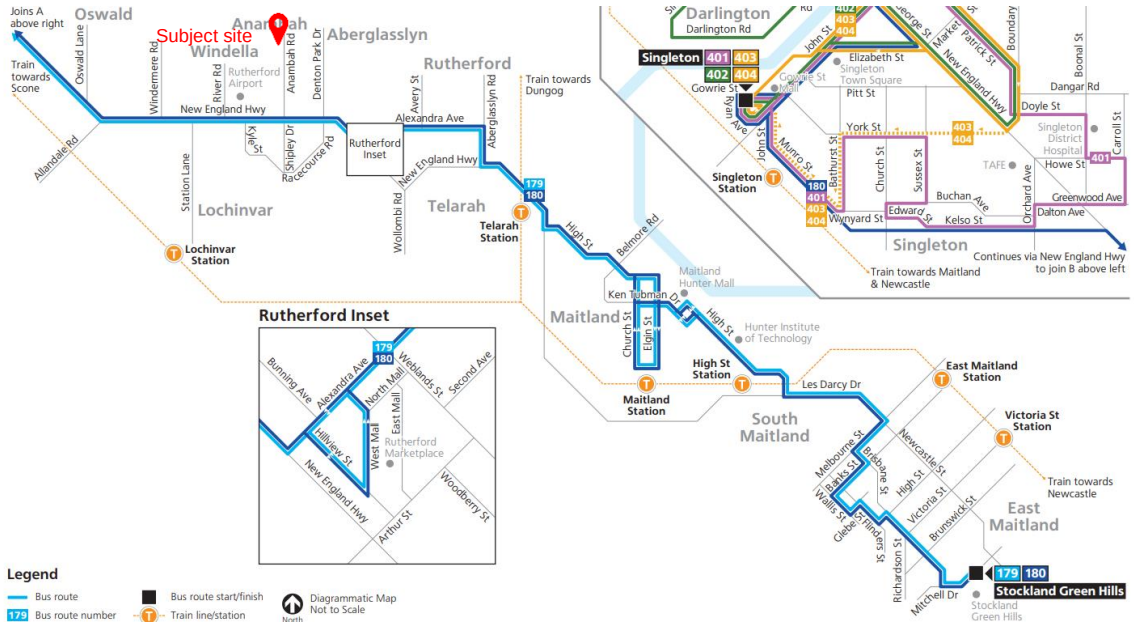
– **Anambah Road** is a local rural road, which is the only existing road connected to the site. The speed limit is 100 km/h and one travel lane is available in each direction. No formal on-street parking is provided, however, in some locations, there is sufficient shoulder width for vehicles to park. No kerb or gutter is currently in place along the road. Anambah Road connects to the New England Highway at a dual-lane roundabout in Rutherford.

– **River Road** is a local two-lane road, providing access to the nearby suburb of Windella. The speed limit is 50 km/h and no on-street parking is provided, however, there would be space to park on the road shoulder at places along its length. The formed section of River Road is currently 1.3km in length and ends at a turnaround point to the north. River Road connects to the New England Highway with a priority (give-way) intersection. There is an unformed section of River Road from the northern extent of the formed section of River Road and the southern boundary of the Site.

2.3 Public transport

The closest bus stop is on Anambah Road before Cagney Road where Route 178 (Loop service Rutherford to Anambah Road) is running at 11 services per day. Other bus stops on New England Highway are 600m to the west of the Anambah Road roundabout where Routes 179 and 180 follow a similar route (Maitland and Stockland Green Hills). The frequency is approximately hourly from 8 am to 6 pm (**Figure 2-3**). Two school bus routes (2481 and 2482) are provided along Anambah Road.

Figure 2-3 Public transport network



Source: Transport for NSW, 2023

Lochinvar Station is 7km to the southwest of the site. There are no feeder bus routes to this station. Lochinvar Station is served by the Hunter Line, which has an approximately hourly frequency from 7am to 10pm. The Hunter Line connects Lochinvar to Newcastle Interchange and Scone.

2.4 Active transport

There are no dedicated active transport facilities located near the site. With a lack of footpaths along any local roads, pedestrians and cyclists are required to utilise road shoulders or the roadway if they need to walk or cycle.

The walking and cycling infrastructure along New England Highway is shown in **Figure 2-4** and **Figure 2-5**.

Figure 2-4 Walking and cycling infrastructure – Anambah Road/ New England Highway

Source: Nearmaps, SCT Consulting, 2024

There are shared paths on all legs of the New England Highway/ Anambah Road roundabout. There are wide shoulders along New England Highway that would be suitable for experienced cyclists.

Figure 2-5 Walking and cycling infrastructure – Wyndella Road/ New England Highway

Source: Nearmaps, SCT Consulting, 2024

There is a footpath within the subdivision area to the south of the New England Highway with crossings on all legs of New England Highway/ Wyndella Road.

There are on-road cycle lanes on the eastern, western and southern approaches to New England Highway/ Wyndella Road. There are wide shoulders along New England Highway that would be suitable for experienced cyclists. A shared path runs along the western side of Springfield Drive south of New England Highway.

2.5 Intersection performance

To determine the impact of the development on future traffic, the current performance of nearby intersections should be understood. The key intersection to this project was identified as New England Highway / Anambah Road / Shipley Drive (roundabout) because the subject site will only be accessed via Anambah Road.

2.5.1 Traffic surveys

Intersection turning count surveys were undertaken at the roundabout on 11 October 2023 (Wednesday). Surveys were conducted between 7am-9am and 3pm-5pm to capture typical weekday peak periods. The survey was within the school term and collected turning counts of light and heavy vehicles within fifteen-minute intervals. Queue lengths were also collected in five-minute intervals for calibration.

2.5.2 Modelling

Intersections were modelled in SIDRA 9.1. SIDRA models the delay to road users based on demands and geometry of intersections, it is a typical software used for developments of this scale. Queue lengths were used to calibrate the model.

2.5.3 Intersection level of service definition

Intersection Level of Service (LoS) is a typical measure used by traffic engineers to identify when roads are congested. The Level of Service, as defined in TfNSW Traffic Modelling Guidelines, is provided in **Table 2-1**.

Table 2-1 Level of Service definitions

Level of Service	Average delay per vehicle	Performance explanation
A	Less than 14.5s	Good operation
B	14.5s to 28.4s	Good with acceptable delays and spare capacity
C	28.5s to 42.4s	Satisfactory
D	42.5s to 56.4s	Operating near capacity
E	56.5s to 70.4s	At capacity. At signals incidents will cause excessive delays. Roundabouts require another control method.
F	70.5s or greater	At capacity. At signals incidents will cause excessive delays. Roundabouts require another control method.

Source: Roads and Maritime Services (2002), Traffic Modelling Guidelines

In addition, the following measure of performance is included to complement the Level of Service measure:

– **Degree of Saturation (DoS):** a measure of the volume/capacity for the worst turning movement at the intersection. A DoS of 1.0 implies the turning movement is at capacity.

2.5.4 Intersection performance

The performance of the intersection is presented in **Table 2-2**:

Table 2-2 2023 existing intersection performance

Intersection	Delay	LoS	DoS	Delay	LoS	DoS
	Weekday AM peak			Weekday PM peak		
New England Highway / Anambah Road / Shipley Drive	17.5s	B	0.47	16.5s	B	0.54

Traffic modelling confirms that there are no existing capacity issues at the intersection. It is currently operating satisfactorily with limited delay and excess capacity for some future growth.

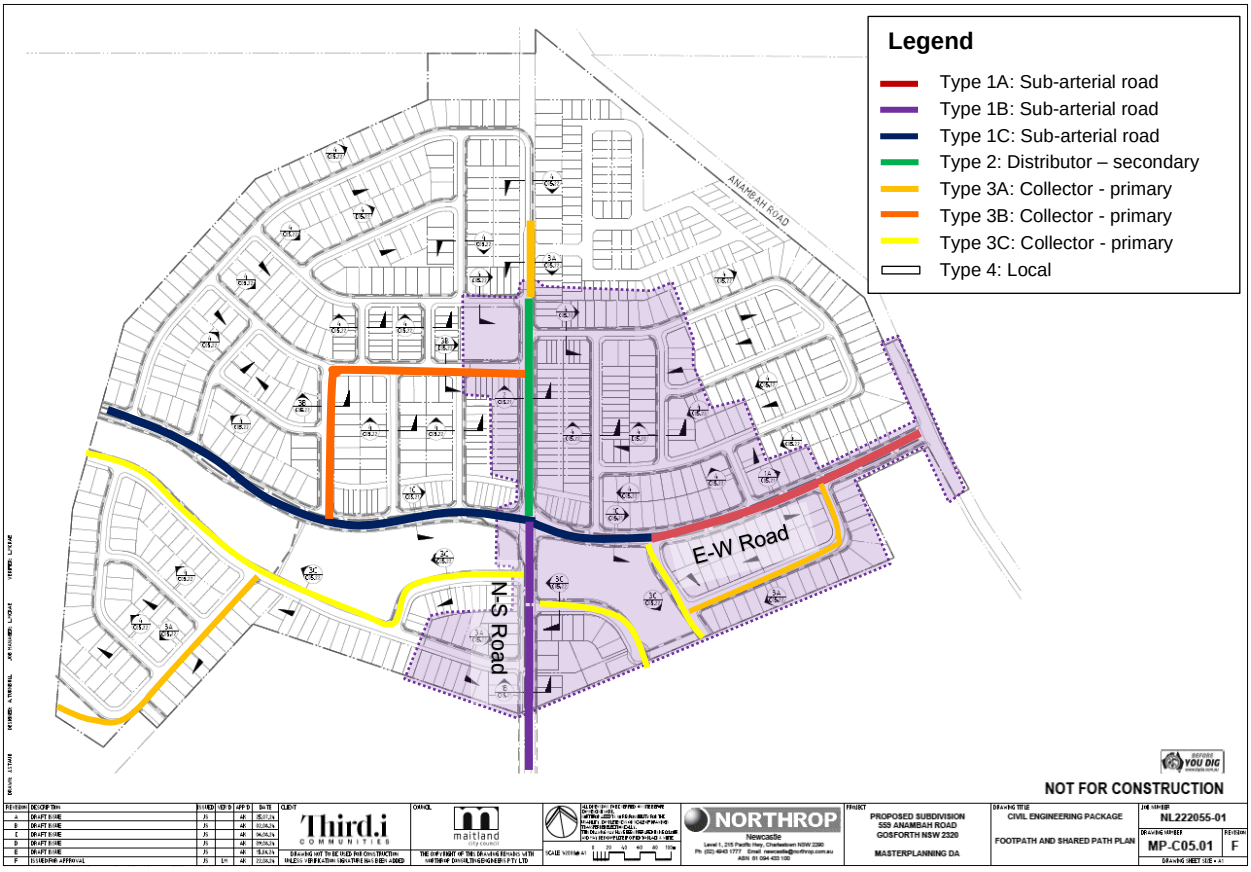
SIDRA output summaries are documented in **Appendix A**.

3.0 The proposal

3.1 Proposed development

The proposed site covers a land area of approximately 66 hectares zoned R1 General Residential which is proposed to be subdivided for residential development, with associated roads and services. The subdivision will deliver 240 residential lots in Stage 1 (labelled in purple in **Figure 3-1**) and 900 lots when fully developed. The layout plan is based on a grid road network containing different road hierarchies.

Figure 3-1 Proposed master plan



Source: Northrop, 2024

The east-west and north-south sub-arterial roads form the higher-order roads in the subdivision and intersect as a roundabout in the centre of the site. They are further extended as sub-arterial and distributor to the west and north. Lower hierarchy roads are provided across the four quadrants to ensure connectivity and permeability for the subdivision. The site would gain strategic access as follows via Anambah Road to New England Highway, which permits all movements in and out

3.2 Street cross-section

The Maitland City Council's Manual of Engineering Standards (MOES) – Road Design defines the requirements for street cross sections for the DA (**Figure 3-2**).

Figure 3-2 Street cross sections for different road types

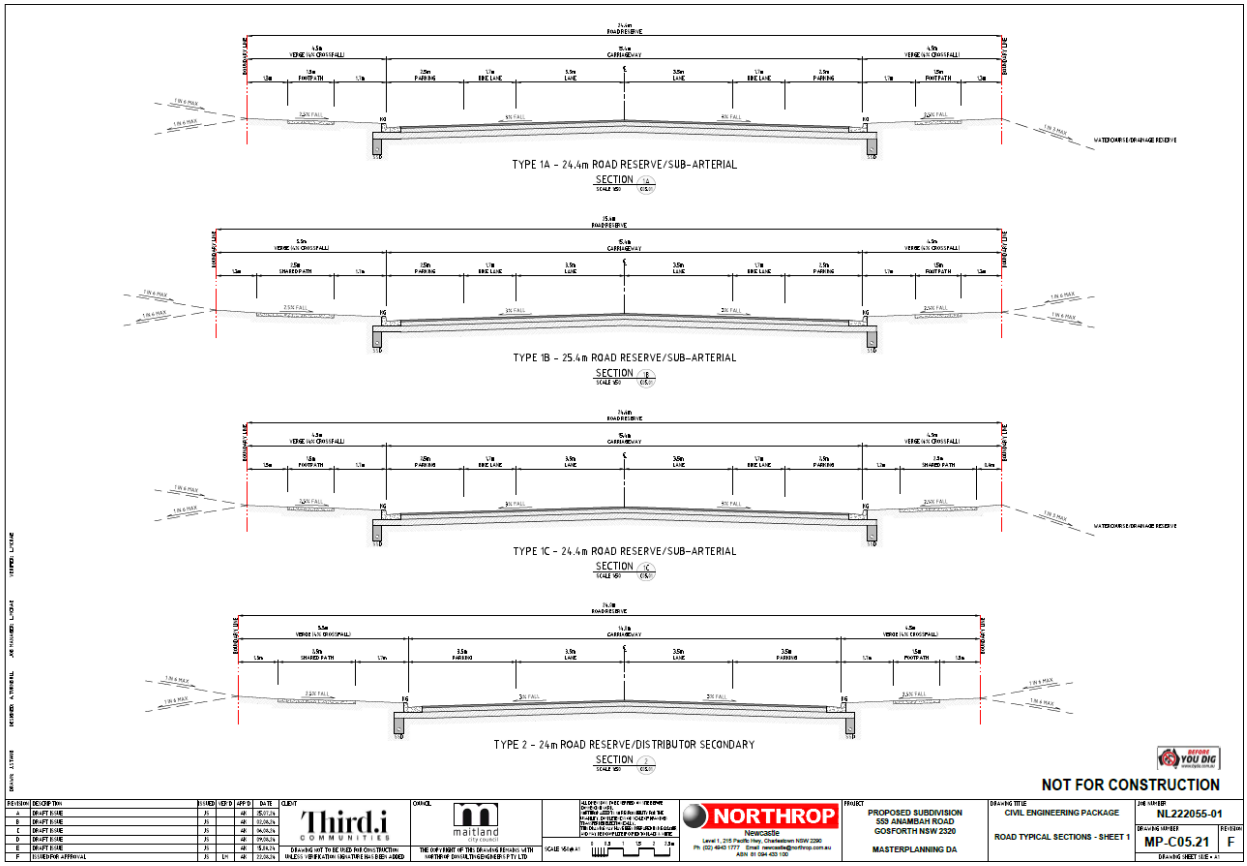
ROAD TYPE	MAX NO. LOTS	RESERVE WIDTH (m) [a]	CARRIAGEWAY / KERB-KERB (m) [b]	ON-ROAD BICYCLE FACILITY	FOOTWAY VERGE (m) [c]	KERB [d]	FOOTPATH (1.5m WIDE) [e]	DESIGN ESA [f]
Local – Place [i]	10	17	8	Mixed	4.5	Rolled	As Required	1×10^5
Local – Access [i]	20	17	8	Mixed	4.5	Rolled	One side	1×10^5
Local – Secondary [i]	50	17	8	Mixed	4.5	Rolled	One side	2×10^5
Local - Primary [i]	100	17	8	Mixed	4.5	Rolled	One side	5×10^5
Collector - Secondary [i]	200	17	8	Mixed (Parking)	4.5	Upright	One side	1×10^6
Collector - Primary [iv]	300	20	11	Mixed (Parking) [p]	4.5	Upright	One side	1.5×10^6
Distributor –Secondary [v]	400	23	14	Mixed (Parking) [p]	4.5	Upright	Both sides	2×10^6
Distributor - Primary [m v]	500	24	15 [q]	1.5m Lane	4.5	Upright	Both sides	5×10^6
Sub-Arterial [n]	3500	24.4	15.4 [r]	1.7m Lane [s]	4.5	Upright	Both sides	1×10^7 min
Industrial - Secondary	10 [g]	22	13	Mixed	4.5	Upright	As Required	5×10^6
Industrial - Primary	> 10	22	13	Mixed	4.5	Upright	As Required	1×10^7
School Bus/Public Route [o]			9min / 12min					$2/5 \times 10^6$ min
Business / School Precinct			15.4	1.7m Lane	5.5 min [h]	Upright		1×10^7 min

Source: Maitland City Council, 2024

The proposed road sections as shown in **Figure 3-3** and **Figure 3-4** generally follow MOES including:

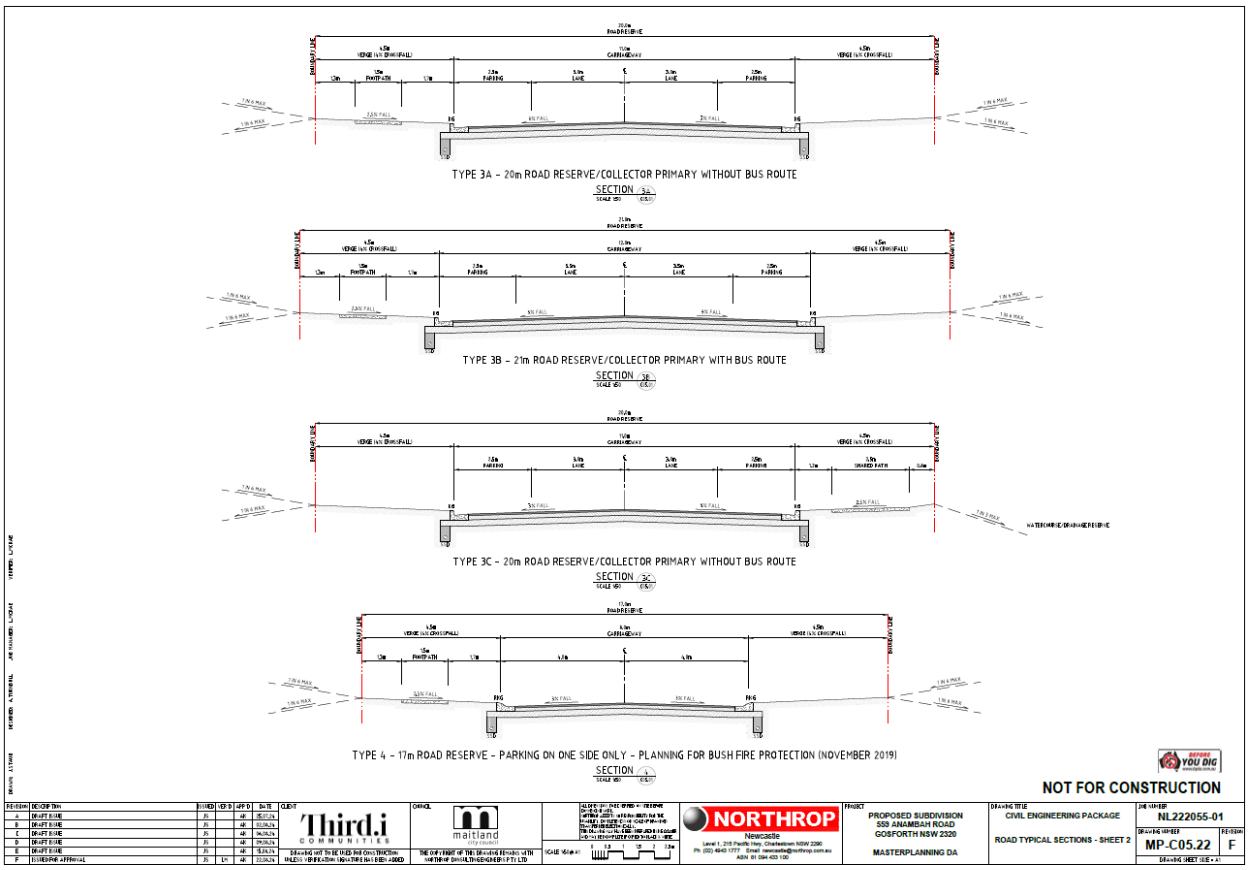
- Type 1A: Sub-arterial road (24.4m wide)
- Type 1B: Sub-arterial (25.4m wide)
- Type 1C: Sub-arterial road (24.4m wide)
- Type 2: Distributor – secondary (24m wide)
- Type 3A: Collector - primary (20m wide)
- Type 3B: Collector - primary (21m wide)
- Type 3C: Collector - primary (20m wide)
- Type 4: Parking on one side only – Planning for bush fire protection (17m wide)

Figure 3-3 Road cross-sections – 24-25.4m wide roads



Source: Northrop, 2024

Figure 3-4 Road cross-sections - 17-21m wide roads



Source: Northrop, 2024

Table 3-1 assessed the proposed road cross-sections against the Council's requirements. The justification of the deviations is discussed as follows.

– **25.4m Type 1B Sub-arterial** (from 24.4m): the verge close to the watercourse(s) is/are widened by 1m to accommodate a shared path per local examples. There is no widening for the verge given no street trees and limited services. The proposed section is beneficial to promote active transport given it complies with Council's requirement and includes an additional shared path.

– **24.4m Type 1C Sub-arterial** (from 24.4m): the 4.5m verge close to the watercourse(s) accommodates 2.5m shared path per local examples. The proposed section is beneficial to promote active transport given it complies with Council's requirement and includes an additional shared path.

– **24m Type 2 Distributor secondary** (from 23m): the verge close to the watercourse is widened by 1m to accommodate a shared path per local examples. The proposed section is beneficial to promote active transport given it complies with Council's requirement and includes an additional shared path.

– **21m Type 3B Collector Primary with Bus Route** (from 20m): the carriageway width is widened by 1m to accommodate bus movement, which improves its functionality and is beneficial to bus use increase.

– **17m Type 6 Parking on one side only – Planning for bush fire protection** (from 17m): There is no change to the cross-section for a local primary. Parking is allowed on one side only which leaves the space for two-way movements.

Table 3-1 Proposed road characteristics and DCP compliance

Road type	Indicative number of dwellings that the road would serve under this DA	Proposed reserve width	Proposed carriageway / kerb – kerb width	On-Road Bicycle Facility	Footpath (1.5m wide)	Compliance
1A Sub-Arterial	Up to 630 dwellings	24.4m	15.4m	1.7m	Both sides	**Yes**
1B Sub-Arterial	Up to 630 dwellings	25.4m	15.4m	1.7m	One side with shared path on the other side	**See justification above**
1C Sub-Arterial	Up to 630 dwellings	24.4m	15.4m	1.7m	One side with shared path on the other side	**See justification above**
2 Distributor - Secondary	Up to 400 dwellings	24m	14m	Mixed (Parking)	Both sides	**See justification above**
3A Collector – Primary without bus route	Up to 300 dwellings	20m	11m	Mixed (Parking)	One side	**Yes**
3B Collector – Primary with bus route	Up to 300 dwellings	21m	12m	Mixed (Parking)	One side	**See justification above**
3C Collector – Primary without bus route	Up to 300 dwellings	20m	11m	Mixed (Parking)	One side	**Yes**
4 Parking on one side only – Planning for bush fire protection	Up to 100 dwellings	17m	8m	Mixed	One side	**See justification above**

3.3 Proposed active transport

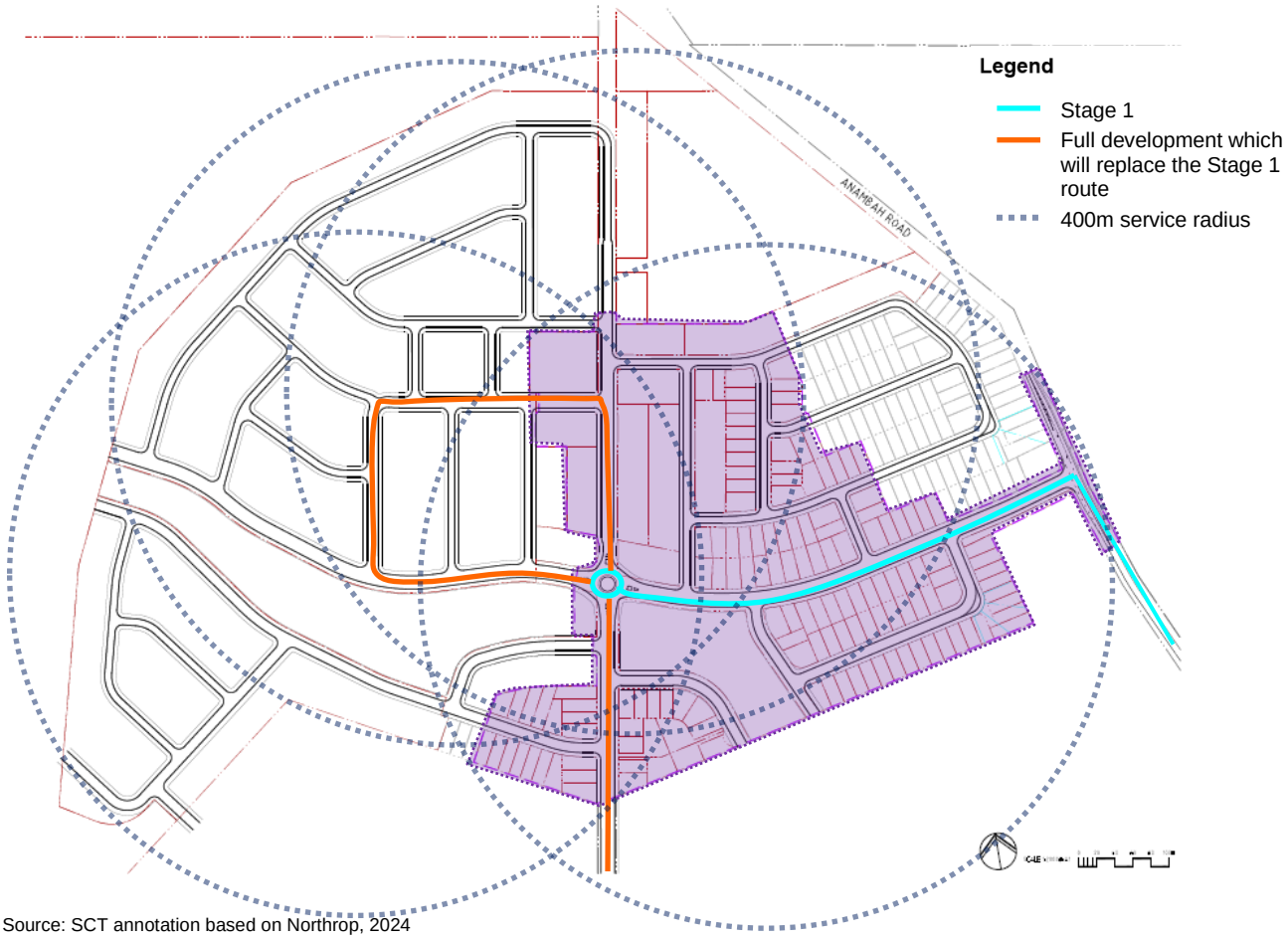
On-road bicycle lanes are provided on the sub-arterial. 2.5m shared paths are also available around the proposed park. The verges will accommodate a 2.5m shared path when it faces with watercourse or on the edge of the site, which provides further opportunity for safe cycling within the subdivision.

Footpaths are available on all roads with additional pedestrian pathways available to cross the watercourse in the south.

3.4 Proposed bus route

Bus routes are proposed for development both at Stage 1 and at full development. The potential routes are proposed along E-W Road and N-S Road and directed to the centre of the development, as shown in **Figure 3-5**. It is evident that the majority of the properties are within a 400m radial distance of the bus route.

Figure 3-5 Bus route



Source: SCT annotation based on Northrop, 2024

4.0 Traffic impact assessment

4.1 Trip generation and distribution

According to correspondence with TfNSW dated on 31 May 2024 (**Appendix B**), the modelling assumptions have been confirmed as follows:

– 70% west and 30% east traffic distribution (A 50%:50% sensitivity analysis will be included at the request of TfNSW)

– A release rate of 300 lots per year in Lochinvar URA

– Three per cent p.a. growth on New England Highway. This is in addition to development traffic from the Lochinvar URA

– Site completion year of 2028 and sensitivity test of 2038 (This will be carried out for 240 dwellings of Stage 1 and 900 dwellings of full development)

– Adoption of 0.71/0.78 veh/h (AM peak/PM peak) traffic generation rates for residential dwellings in the area.

– A 90% outbound and 10% inbound ratio is applied to the development traffic in the AM peak, which is inversed for the PM peak hour.

The trip generation from Lochinvar and the proposal are shown in **Table 4-1**.

Table 4-1 Trip generation for the proposed development and Lochinvar

Development Precinct		Expected number of lots	Trip generation rate	Peak hour traffic	
				AM peak	PM peak
Traffic growth by LURA		Up to 4,200 dwellings by 2038	0.71/0.78 veh/dwg for AM and PM peak hour	+2,982 trips	+3,276 trips
Development traffic	*Stage 1*	240 dwellings		+170 trips	+187 trips
	Full development	900 dwellings		+639 trips	+702 trips
Total		**4,440 – 5,100 dwellings**		**+3,153 – 3,621 trips**	**+3,463 – 3,978 trips**

4.2 Road network impact

4.2.1 Intersection on New England Highway

SIDRA 9.1 modelling was undertaken for the intersection of New England Highway / Anambah Road / Shipley Drive given it provides strategic access for the proposal. The following scenarios were tested to assess the cumulative impact of the development on the New England Highway according to TfNSW requirements (**Table 4-2**).

Table 4-2 Modelling scenarios

Development scenario	Without background traffic growth		2028 with background growth		2038 with background growth	
Future year base	-		Yes		Yes	
Stage 1 (240 dwellings)	Yes (70%:30% distribution)	Yes (50%:50% distribution)	Yes (70%:30% distribution)	Yes (50%:50% distribution)	Yes (70%:30% distribution)	Yes (50%:50% distribution)
Full development (900 dwellings)	Yes (70%:30% distribution)	Yes (50%:50% distribution)	Yes (70%:30% distribution)	Yes (50%:50% distribution)	Yes (70%:30% distribution)	Yes (50%:50% distribution)

Modelling results are shown in **Table 4-3** and detailed SIDRA summary are shown in **Appendix A**.

Table 4-3 Intersection performances – New England Highway / Anambah Road

Without background growth						2028 (with infrastructure upgrade for full development of 900 dwellings only)						2038 (with infrastructure upgrade)					
Delay	LoS	DoS	Delay	LoS	DoS	Delay	LoS	DoS	Delay	LoS	DoS	Delay	LoS	DoS	Delay	LoS	DoS
Weekday AM peak			Weekday PM peak			Weekday AM peak			Weekday PM peak			Weekday AM peak			Weekday PM peak		
Future year base																	
-			-			22.4s	B	0.64	21.1s	B	0.64	52.5s	D	0.96	53.8s	D	0.96
With Stage 1 (240 dwellings) – 70%:30% distribution																	
19.1s	B	0.48	16.6s	B	0.63	21.7s	B	0.65	23.0s	B	0.73	55.4s	D	0.97	52.0s	D	0.99
With Stage 1 (240 dwellings) – 50%:50% distribution																	
18.7s	B	0.48	17.0s	B	0.63	20.9s	B	0.65	23.9s	B	0.73	54.3s	D	0.96	54.5s	D	1.00
Full development (900 dwellings) – 70%:30% distribution																	
36.0s	C	0.74	31.7s	C	0.92	44.3s	D	0.9	32.9s	C	0.8	53.9s	D	0.95	54.7s	D	0.93
Full development (900 dwellings) – 50%:50% distribution																	
29.8s	C	0.78	36.5s	C	0.93	35.4s	C	0.95	46.9s	D	0.89	53.6s	D	0.95	56.2s	D	0.95

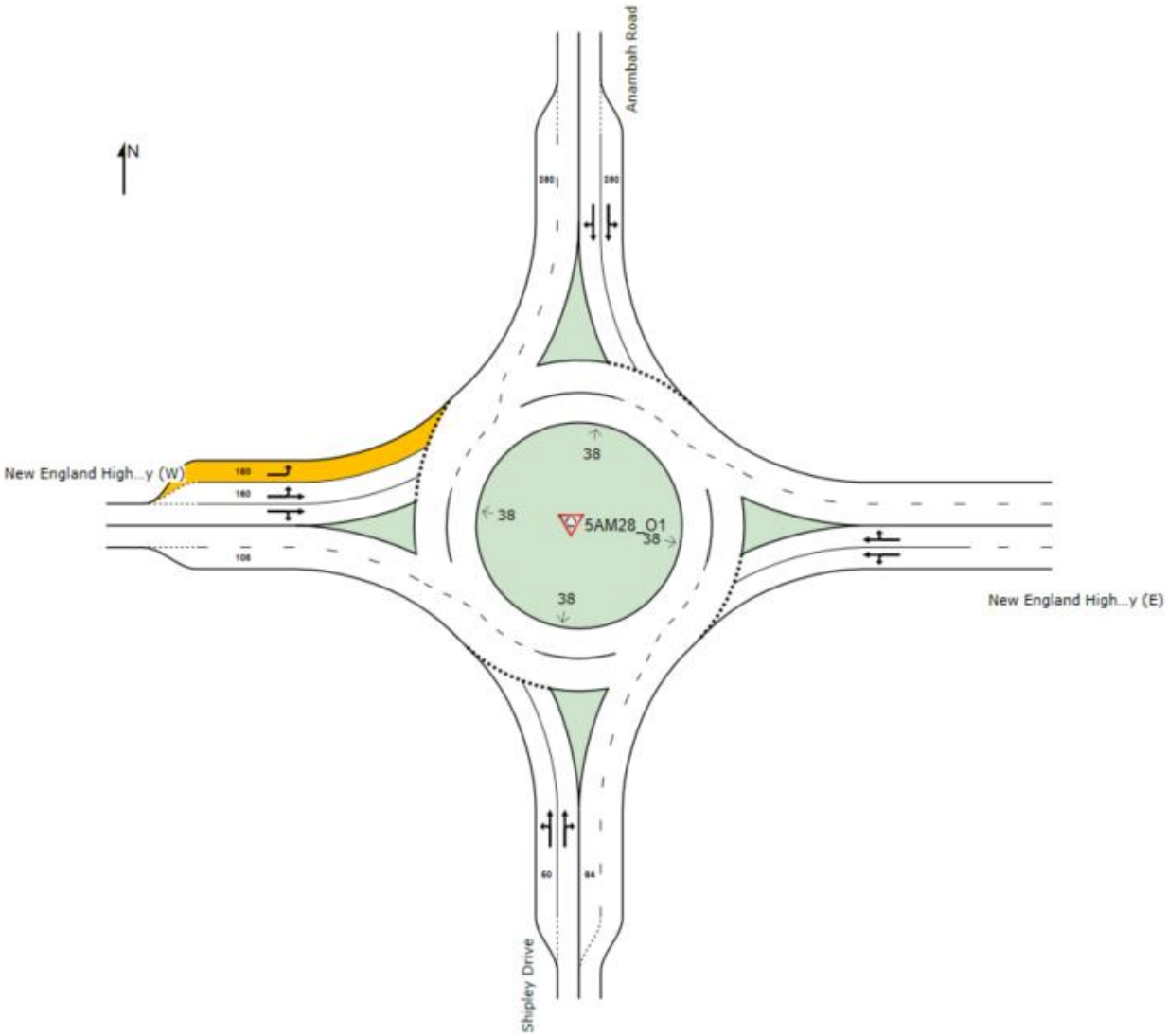
4.2.1.1 Without background traffic growth

The modelling confirms that the existing infrastructure (i.e. the existing roundabout) will accommodate the traffic growth as a result of both the Stage 1 development (240 lots) and the full development (900 lots) scenarios without any background traffic growth applied. No infrastructure upgrade is required.

4.2.1.2 Future 2028

The modelling confirms that the existing infrastructure will accommodate traffic growth generated by Stage 1 by 2028, including background growth. For the full development in 2028 (with background growth applied), however, the roundabout fails in the PM peak hour with a LoS of F with a degree of saturation of 1.04 at the west approach. An additional left turn lane on the west approach would improve the intersection performance which results in a LoS of D (Delay at 44 seconds) for the roundabout. This infrastructure is shown in **Figure 4-1**.

Figure 4-1 Intersection upgrade for future 2028 + 900 dwellings



Note that the yellow section represents the infrastructure required for the development.

4.2.1.3 Future 2038

Future year base 2038

Traffic modelling confirms that without any infrastructure upgrade, the roundabout will fail in 2038 based on background growth alone (i.e. before the introduction of any additional traffic from the proposal). The modelling shows a LoS F with a degree of saturation of 1.60 for the Anambah Road roundabout in the PM peak.

Hence, the roundabout needs to be upgraded by 2038 independent of any additional traffic from the proposal to respond to the significant background traffic growth on New England Highway (**Figure 4-2**):

– Signalisation of the intersection

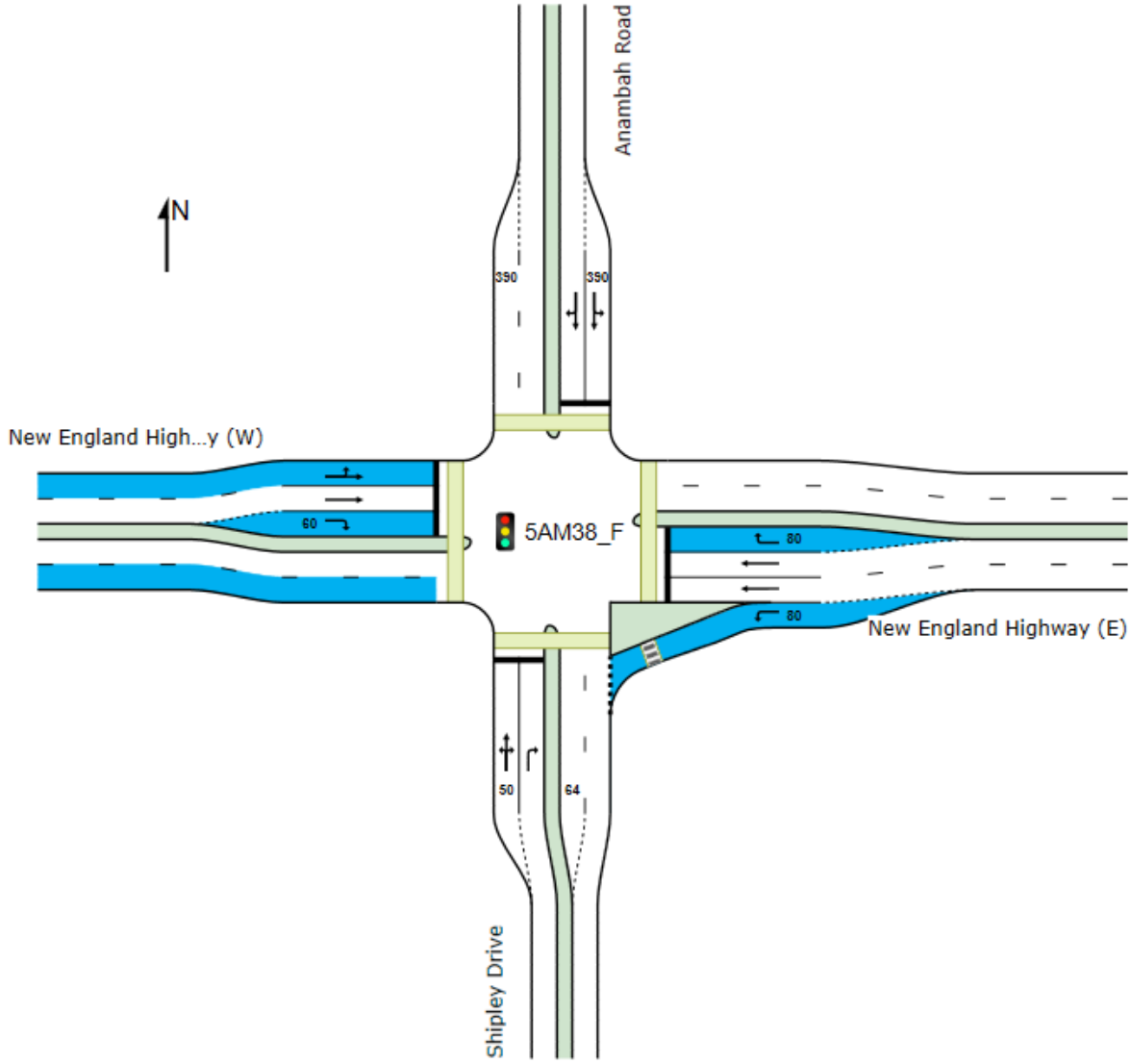
– Duplication of the west approach and exit

– High angle slip lane for left turners on the westbound approach of the New England Highway

– Additional westbound right turn bay of the New England Highway

– Additional eastbound right turn bay of the New England Highway.

Figure 4-2 Intersection upgrade for future base case 2038



Note that the blue section represents the infrastructure required for the background traffic growth

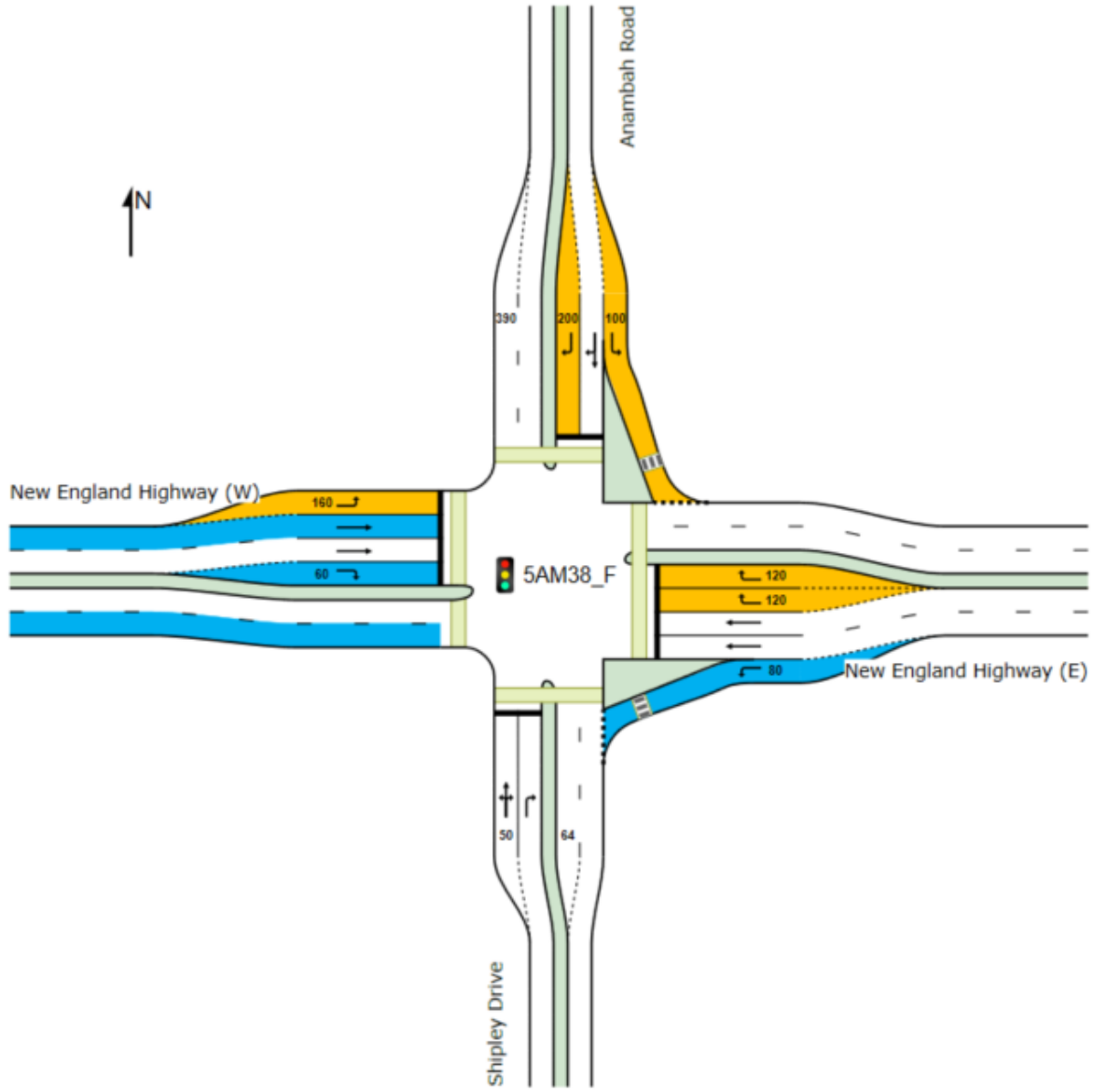
The proposed infrastructure upgrade is considered a minimum requirement to cater for background traffic growth and would result in a satisfactory intersection performance, i.e. a 53.8-second delay (LoS D) at Anambah Road.

Future year with development 2038

No further upgrade is required for Stage 1 development except for phase time optimisation.

For the full development, additional upgrades may be required at the Anambah Road intersection due to the increased development traffic in both peak hours (**Figure 4-3**).

Figure 4-3 Intersection upgrade for full development by 2038



Note that the blue section represents the infrastructure required for the background growth/ the yellow section represents the infrastructure required for the development.

The proposed upgrade will include:

– High angle slip lane for left turners on the southbound Anambah Road

– Additional southbound right turn bay of Anambah Road

– Additional eastbound left turn bay of the New England Highway

– Additional westbound right turn bays of the New England Highway.

The above upgrade at the Anambah Road intersection would ensure the intersection performance is maintained at a satisfactory level by 2038 with the addition of full development traffic.

4.2.2 Site Entry Road

Given the site location and the nature of the surrounding development, it is expected that the mid-block traffic volume on Anambah Road in the vicinity of the site will be low. In line with the intersection modelling for New England Highway, the traffic modelling was undertaken for the Site Entry Road / Anambah Road to make sure there is no

capacity issue at the proposed access. The modelling result indicates that there is no capacity issue at the proposed Anambah Road access point (**Table 4-4**).

Table 4-4 Intersection performances – Site Entry Road

Scenarios	Delay	LoS	DoS	Delay	LoS	DoS
	Weekday AM peak			Weekday PM peak		
Full development (900 dwellings)	5.7s	A	0.41	7.8s	A	0.38

4.3 Walking and cycling

A minimum of 1.5m footpath is provided at least on one side across the precinct, which will encourage walking. On-road cycle paths are proposed according to the *Maitland Manual of Engineering Standards* including 1.7m wide on both sides of the sub-arterial. Additional shared paths of 2.5m are available adjacent to the park and near watercourses. This complies with the Council-recommended geometric design for shared paths. With the high-quality cycleway, the cycling facility will promote cycling to and from nearby destinations.

It is expected that pedestrian refuges are available near the roundabout (where east and west sub-arterial roads intersect) to facilitate pedestrian crossings. The proposed pedestrian infrastructure, including footpaths and walkways in the landscape, will ensure pedestrian comfort and permeability while shortening walking distances overall from surrounding destinations.

Due to the long travel distances, walking and cycling is expected to be low, regardless of infrastructure provision. However, the proposed on-road bike lane on the north-south sub-arterial road together with the shared paths and footpaths on the lower-hierarchy road network can be further integrated into the future development to the south, which will enhance active transport accessibility within the entire urban release area.

4.4 Public transport

Bus-capable carriageway is available within the site to satisfy future bus needs. Given the scale of the development, it is expected that the public transport demand would be limited, hence no significant impact on the public transport network.

5.0 Conclusion

This traffic impact assessment shows:

– The cross-section requirements per Maitland Council's Manual of Engineering Standards – Road Design are generally met.

– Some deviations exist due to the provision of additional shared paths and bus-capable carriageways. The proposed sections are beneficial to promote active transport and bus use given it complies with the Council's requirements and have better functional outcomes.

– The roundabout of Anambah Road / New England Highway performs at a satisfactory level,

  - With proposal but without background traffic growth
  - With background traffic growth up to 2028 with Stage 1 of the development.

– An additional left turn lane (west to north) is proposed for the roundabout due to full development by 2028 (with background growth), which will ensure the roundabout operates at Level of Service D.

– Intersection upgrades would be required in 2038 (with background growth only), due to growth on the road network and the release of the Lochinvar URA, independent of the proposed development.

– No further upgrade is required for Stage 1 development in 2038 (with background growth) at the intersection.

– Additional development traffic as the result of the full development in 2038 (with background growth) indicates that the development does trigger the need for further upgrades at the Anambah Road intersection, especially turning lanes in the east, north and west approaches that service the development.

APPENDIX A

SIDRA OUTPUT

MOVEMENT SUMMARY

Site: 5AM_X [NEW_ANA_23_AM_X (Site Folder: Base Year)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.228	15.3	LOS B	0.9	6.9	0.71	0.81	0.71	48.4
2	T1	All MCs	39	8.1	39	8.1	0.228	13.4	LOS A	1.1	8.1	0.71	0.83	0.71	48.4
3	R2	All MCs	71	10.4	71	10.4	0.228	17.5	LOS B	1.1	8.1	0.71	0.89	0.71	46.6
Approach			153	8.3	153	8.3	0.228	15.8	LOS B	1.1	8.1	0.71	0.85	0.71	47.5
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.189	3.5	LOS A	1.0	7.1	0.25	0.37	0.25	54.9
5	T1	All MCs	681	7.7	681	7.7	0.239	3.6	LOS A	1.5	11.2	0.24	0.41	0.24	54.4
6	R2	All MCs	198	1.6	198	1.6	0.239	9.6	LOS A	1.5	11.2	0.24	0.42	0.24	53.2
Approach			1106	5.7	1106	5.7	0.239	4.7	LOS A	1.5	11.2	0.24	0.40	0.24	54.3
North: Anambah Road															
7	L2	All MCs	154	8.9	154	8.9	0.282	7.3	LOS A	1.2	9.1	0.67	0.74	0.67	52.7
8	T1	All MCs	34	3.1	34	3.1	0.282	7.8	LOS A	1.2	9.1	0.67	0.80	0.67	51.1
9	R2	All MCs	49	12.8	49	12.8	0.163	15.7	LOS B	0.6	4.7	0.66	0.85	0.66	48.1
Approach			237	8.9	237	8.9	0.282	9.1	LOS A	1.2	9.1	0.67	0.77	0.67	51.4
West: New England Highway (W)															
10	L2	All MCs	27	7.7	27	7.7	0.468	5.8	LOS A	2.6	19.5	0.54	0.51	0.54	53.2
11	T1	All MCs	802	6.4	802	6.4	0.468	5.1	LOS A	2.7	19.8	0.54	0.52	0.54	53.4
12	R2	All MCs	60	8.8	60	8.8	0.468	12.0	LOS A	2.7	19.8	0.54	0.53	0.54	52.1
Approach			889	6.6	889	6.6	0.468	5.6	LOS A	2.7	19.8	0.54	0.52	0.54	53.3
All Vehicles			2385	6.5	2385	6.5	0.468	6.2	LOS A	2.7	19.8	0.43	0.51	0.43	53.1

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.
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: 5PM_X [NEW_ANA_23_PM_X (Site Folder: Base Year)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.316	11.3	LOS A	1.4	9.9	0.69	0.78	0.72	50.9
2	T1	All MCs	49	4.3	49	4.3	0.316	10.0	LOS A	1.4	9.9	0.69	0.78	0.72	51.3
3	R2	All MCs	306	1.0	306	1.0	0.498	15.8	LOS B	2.9	20.6	0.74	0.90	0.91	47.3
Approach			447	2.1	447	2.1	0.498	14.3	LOS A	2.9	20.6	0.73	0.86	0.85	48.4
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.336	4.0	LOS A	1.9	13.9	0.35	0.41	0.35	54.4
5	T1	All MCs	635	4.3	635	4.3	0.425	4.0	LOS A	2.8	20.3	0.36	0.43	0.36	54.0
6	R2	All MCs	159	7.3	159	7.3	0.425	10.1	LOS A	2.8	20.3	0.36	0.44	0.36	52.7
Approach			1038	4.5	1038	4.5	0.425	5.0	LOS A	2.8	20.3	0.36	0.43	0.36	53.9
North: Anambah Road															
7	L2	All MCs	283	2.6	283	2.6	0.465	9.1	LOS A	2.7	19.4	0.80	0.88	0.95	51.4
8	T1	All MCs	55	5.8	55	5.8	0.240	10.9	LOS A	1.0	7.2	0.74	0.86	0.74	49.7
9	R2	All MCs	32	3.3	32	3.3	0.240	16.5	LOS B	1.0	7.2	0.74	0.86	0.74	48.9
Approach			369	3.1	369	3.1	0.465	10.0	LOS A	2.7	19.4	0.79	0.87	0.90	50.9
West: New England Highway (W)															
10	L2	All MCs	34	3.1	34	3.1	0.541	7.3	LOS A	3.8	27.6	0.70	0.69	0.80	52.5
11	T1	All MCs	849	5.2	849	5.2	0.541	6.9	LOS A	3.8	27.6	0.70	0.70	0.80	52.6
12	R2	All MCs	59	0.0	59	0.0	0.541	13.6	LOS A	3.8	27.3	0.70	0.71	0.80	51.5
Approach			942	4.8	942	4.8	0.541	7.3	LOS A	3.8	27.6	0.70	0.70	0.80	52.5
All Vehicles			2797	4.0	2797	4.0	0.541	7.9	LOS A	3.8	27.6	0.59	0.65	0.66	52.1

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.
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: 5AM_X [NEW_ANA_23_AM_X_Stage 1 (Site Folder: Base Year Stage 1)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.261	17.7	LOS B	1.1	8.1	0.76	0.85	0.76	47.2
2	T1	All MCs	39	8.1	39	8.1	0.261	15.3	LOS B	1.2	9.4	0.76	0.86	0.76	47.2
3	R2	All MCs	71	10.4	71	10.4	0.261	19.1	LOS B	1.2	9.4	0.76	0.91	0.76	45.7
Approach			153	8.3	153	8.3	0.261	17.8	LOS B	1.2	9.4	0.76	0.88	0.76	46.5
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.196	3.7	LOS A	1.1	7.9	0.35	0.40	0.35	54.4
5	T1	All MCs	681	7.7	681	7.7	0.249	3.9	LOS A	1.8	13.3	0.36	0.42	0.36	53.8
6	R2	All MCs	203	1.6	203	1.6	0.249	9.7	LOS A	1.8	13.3	0.37	0.43	0.37	52.7
Approach			1112	5.7	1112	5.7	0.249	4.9	LOS A	1.8	13.3	0.36	0.42	0.36	53.7
North: Anambah Road															
7	L2	All MCs	202	6.8	202	6.8	0.383	7.9	LOS A	1.8	13.6	0.71	0.79	0.78	52.3
8	T1	All MCs	34	3.1	34	3.1	0.383	7.4	LOS A	1.8	13.6	0.71	0.79	0.78	52.8
9	R2	All MCs	162	3.9	162	3.9	0.294	13.8	LOS A	1.3	9.0	0.68	0.85	0.68	48.4
Approach			398	5.3	398	5.3	0.383	10.3	LOS A	1.8	13.6	0.70	0.81	0.74	50.6
West: New England Highway (W)															
10	L2	All MCs	40	5.3	40	5.3	0.476	5.8	LOS A	2.7	20.1	0.55	0.52	0.55	53.2
11	T1	All MCs	802	6.4	802	6.4	0.476	5.1	LOS A	2.8	20.4	0.55	0.53	0.55	53.4
12	R2	All MCs	60	8.8	60	8.8	0.476	12.1	LOS A	2.8	20.4	0.55	0.53	0.55	52.1
Approach			902	6.5	902	6.5	0.476	5.6	LOS A	2.8	20.4	0.55	0.53	0.55	53.3
All Vehicles			2565	6.1	2565	6.1	0.476	6.8	LOS A	2.8	20.4	0.50	0.54	0.51	52.6

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: 5PM_X [NEW_ANA_23_PM_X_Stage 1 (Site Folder: Base Year Stage 1)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.334	12.0	LOS A	1.5	10.7	0.71	0.81	0.77	50.4
2	T1	All MCs	49	4.3	49	4.3	0.334	10.9	LOS A	1.5	10.7	0.71	0.81	0.77	50.8
3	R2	All MCs	306	1.0	306	1.0	0.523	16.6	LOS B	3.1	22.2	0.77	0.93	0.98	46.8
Approach			447	2.1	447	2.1	0.523	15.1	LOS B	3.1	22.2	0.75	0.89	0.91	47.9
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.357	4.1	LOS A	2.1	15.2	0.38	0.42	0.38	54.3
5	T1	All MCs	635	4.3	635	4.3	0.452	4.2	LOS A	3.1	22.5	0.39	0.45	0.39	53.7
6	R2	All MCs	212	5.5	212	5.5	0.452	10.2	LOS A	3.1	22.5	0.40	0.47	0.40	52.3
Approach			1091	4.2	1091	4.2	0.452	5.3	LOS A	3.1	22.5	0.39	0.45	0.39	53.6
North: Anambah Road															
7	L2	All MCs	289	2.5	289	2.5	0.498	9.9	LOS A	3.1	22.1	0.83	0.90	1.02	50.9
8	T1	All MCs	55	5.8	55	5.8	0.272	10.8	LOS A	1.2	8.6	0.76	0.87	0.76	49.4
9	R2	All MCs	45	2.3	45	2.3	0.272	16.4	LOS B	1.2	8.6	0.76	0.87	0.76	48.6
Approach			389	3.0	389	3.0	0.498	10.8	LOS A	3.1	22.1	0.82	0.89	0.95	50.4
West: New England Highway (W)															
10	L2	All MCs	159	0.7	159	0.7	0.634	8.8	LOS A	5.3	38.0	0.78	0.79	0.97	52.1
11	T1	All MCs	849	5.2	849	5.2	0.634	8.5	LOS A	5.3	38.0	0.78	0.79	0.98	52.1
12	R2	All MCs	59	0.0	59	0.0	0.634	15.2	LOS B	5.2	37.7	0.78	0.80	0.98	51.1
Approach			1067	4.2	1067	4.2	0.634	8.9	LOS A	5.3	38.0	0.78	0.79	0.97	52.0
All Vehicles			2995	3.8	2995	3.8	0.634	8.8	LOS A	5.3	38.0	0.64	0.69	0.75	51.7

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: 5AM_X [NEW_ANA_23_AM_X_Stage 1 50% (Site Folder: Base Year Stage 1 50%)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.252	17.1	LOS B	1.0	7.7	0.75	0.84	0.75	47.5
2	T1	All MCs	39	8.1	39	8.1	0.252	14.8	LOS B	1.2	9.1	0.75	0.85	0.75	47.5
3	R2	All MCs	71	10.4	71	10.4	0.252	18.7	LOS B	1.2	9.1	0.75	0.90	0.75	45.9
Approach			153	8.3	153	8.3	0.252	17.2	LOS B	1.2	9.1	0.75	0.87	0.75	46.8
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.195	3.6	LOS A	1.1	7.7	0.32	0.39	0.32	54.6
5	T1	All MCs	681	7.7	681	7.7	0.247	3.8	LOS A	1.7	12.8	0.33	0.42	0.33	54.0
6	R2	All MCs	207	1.5	207	1.5	0.247	9.7	LOS A	1.7	12.8	0.33	0.43	0.33	52.8
Approach			1115	5.7	1115	5.7	0.247	4.9	LOS A	1.7	12.8	0.33	0.41	0.33	53.9
North: Anambah Road															
7	L2	All MCs	234	5.8	234	5.8	0.432	8.2	LOS A	2.2	16.2	0.72	0.82	0.83	52.1
8	T1	All MCs	34	3.1	34	3.1	0.432	7.8	LOS A	2.2	16.2	0.72	0.82	0.83	52.5
9	R2	All MCs	130	4.9	130	4.9	0.276	14.7	LOS B	1.1	8.2	0.68	0.86	0.68	47.9
Approach			398	5.3	398	5.3	0.432	10.3	LOS A	2.2	16.2	0.71	0.83	0.78	50.6
West: New England Highway (W)															
10	L2	All MCs	37	5.7	37	5.7	0.476	5.8	LOS A	2.7	20.0	0.56	0.52	0.56	53.2
11	T1	All MCs	802	6.4	802	6.4	0.476	5.2	LOS A	2.7	20.3	0.56	0.53	0.56	53.4
12	R2	All MCs	60	8.8	60	8.8	0.476	12.1	LOS A	2.7	20.3	0.56	0.54	0.56	52.1
Approach			899	6.6	899	6.6	0.476	5.7	LOS A	2.7	20.3	0.56	0.53	0.56	53.3
All Vehicles			2565	6.1	2565	6.1	0.476	6.7	LOS A	2.7	20.3	0.49	0.55	0.50	52.7

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: 5PM_X [NEW_ANA_23_PM_X_Stage 1 50% (Site Folder: Base Year Stage 1 50%)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.341	12.3	LOS A	1.5	11.0	0.72	0.82	0.79	50.2
2	T1	All MCs	49	4.3	49	4.3	0.341	11.3	LOS A	1.5	11.0	0.72	0.82	0.79	50.6
3	R2	All MCs	306	1.0	306	1.0	0.533	17.0	LOS B	3.2	22.8	0.78	0.94	1.00	46.6
Approach			447	2.1	447	2.1	0.533	15.4	LOS B	3.2	22.8	0.76	0.90	0.93	47.7
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.367	4.1	LOS A	2.2	15.8	0.38	0.42	0.38	54.3
5	T1	All MCs	635	4.3	635	4.3	0.465	4.2	LOS A	3.2	23.3	0.39	0.46	0.39	53.7
6	R2	All MCs	248	4.7	248	4.7	0.465	10.1	LOS A	3.2	23.3	0.40	0.48	0.40	52.2
Approach			1127	4.1	1127	4.1	0.465	5.5	LOS A	3.2	23.3	0.39	0.45	0.39	53.5
North: Anambah Road															
7	L2	All MCs	293	2.5	293	2.5	0.503	9.8	LOS A	3.1	22.2	0.83	0.90	1.02	50.9
8	T1	All MCs	55	5.8	55	5.8	0.268	10.9	LOS A	1.1	8.3	0.76	0.87	0.76	49.4
9	R2	All MCs	41	2.5	41	2.5	0.268	16.5	LOS B	1.1	8.3	0.76	0.87	0.76	48.7
Approach			389	3.0	389	3.0	0.503	10.7	LOS A	3.1	22.2	0.81	0.90	0.95	50.4
West: New England Highway (W)															
10	L2	All MCs	123	0.9	123	0.9	0.628	9.1	LOS A	5.1	37.3	0.78	0.80	0.99	52.0
11	T1	All MCs	849	5.2	849	5.2	0.628	8.7	LOS A	5.1	37.3	0.79	0.81	0.99	52.0
12	R2	All MCs	59	0.0	59	0.0	0.628	15.5	LOS B	5.1	36.9	0.79	0.81	1.00	50.9
Approach			1032	4.4	1032	4.4	0.628	9.2	LOS A	5.1	37.3	0.79	0.81	0.99	51.9
All Vehicles			2995	3.8	2995	3.8	0.628	8.9	LOS A	5.1	37.3	0.64	0.70	0.75	51.6

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: 5AM_X [NEW_ANA_23_AM_X_wDev (Site Folder: Base Year with Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.402	27.4	LOS B	2.1	15.5	0.88	0.97	1.05	43.3
2	T1	All MCs	39	8.1	39	8.1	0.402	23.7	LOS B	2.1	15.5	0.88	0.97	1.05	43.3
3	R2	All MCs	71	10.4	71	10.4	0.402	36.0	LOS C	2.0	15.1	0.88	1.02	1.10	38.0
Approach			153	8.3	153	8.3	0.402	30.4	LOS C	2.1	15.5	0.88	0.99	1.07	40.6
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.246	4.5	LOS A	1.7	12.2	0.60	0.49	0.60	53.3
5	T1	All MCs	681	7.7	681	7.7	0.311	5.3	LOS A	3.0	22.1	0.66	0.49	0.66	52.5
6	R2	All MCs	218	1.4	218	1.4	0.311	10.5	LOS A	3.0	22.1	0.68	0.49	0.68	51.4
Approach			1126	5.6	1126	5.6	0.311	6.2	LOS A	3.0	22.1	0.65	0.49	0.65	52.4
North: Anambah Road															
7	L2	All MCs	335	4.1	335	4.1	0.647	11.4	LOS A	4.3	30.9	0.82	0.96	1.13	49.9
8	T1	All MCs	34	3.1	34	3.1	0.647	11.1	LOS A	4.3	30.9	0.82	0.96	1.13	50.2
9	R2	All MCs	473	1.3	473	1.3	0.743	18.5	LOS B	5.9	42.0	0.86	1.06	1.31	45.8
Approach			842	2.5	842	2.5	0.743	15.4	LOS B	5.9	42.0	0.84	1.01	1.23	47.4
West: New England Highway (W)															
10	L2	All MCs	74	2.8	74	2.8	0.506	5.9	LOS A	3.2	23.7	0.60	0.55	0.62	53.1
11	T1	All MCs	802	6.4	802	6.4	0.506	5.5	LOS A	3.2	23.8	0.60	0.57	0.62	53.2
12	R2	All MCs	60	8.8	60	8.8	0.506	12.5	LOS A	3.2	23.8	0.60	0.58	0.62	51.9
Approach			937	6.3	937	6.3	0.506	6.0	LOS A	3.2	23.8	0.60	0.57	0.62	53.1
All Vehicles			3058	5.1	3058	5.1	0.743	9.9	LOS A	5.9	42.0	0.70	0.68	0.82	50.4

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: 5PM_X [NEW_ANA_23_PM_X_wDev (Site Folder: Base Year with Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.390	14.4	LOS A	1.8	13.2	0.76	0.89	0.90	48.8
2	T1	All MCs	49	4.3	49	4.3	0.390	14.0	LOS A	1.8	13.2	0.76	0.89	0.90	49.2
3	R2	All MCs	306	1.0	306	1.0	0.601	19.5	LOS B	4.0	27.9	0.83	1.01	1.16	45.3
Approach			447	2.1	447	2.1	0.601	17.9	LOS B	4.0	27.9	0.81	0.97	1.08	46.3
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.417	4.3	LOS A	2.6	18.7	0.45	0.44	0.45	53.9
5	T1	All MCs	635	4.3	635	4.3	0.528	4.5	LOS A	3.9	28.1	0.47	0.49	0.47	53.2
6	R2	All MCs	358	3.2	358	3.2	0.528	10.3	LOS A	3.9	28.1	0.48	0.52	0.48	51.6
Approach			1237	3.7	1237	3.7	0.528	6.1	LOS A	3.9	28.1	0.47	0.49	0.47	52.8
North: Anambah Road															
7	L2	All MCs	305	2.4	305	2.4	0.631	13.9	LOS A	4.9	34.8	0.93	1.00	1.27	48.2
8	T1	All MCs	55	5.8	55	5.8	0.631	13.0	LOS A	4.9	34.8	0.85	0.94	0.99	47.8
9	R2	All MCs	83	1.3	83	1.3	0.364	18.2	LOS B	1.9	13.6	0.83	0.93	0.92	46.9
Approach			443	2.6	443	2.6	0.631	14.6	LOS B	4.9	34.8	0.90	0.98	1.17	47.9
West: New England Highway (W)															
10	L2	All MCs	500	0.2	500	0.2	0.924	25.0	LOS B	17.8	126.7	1.00	1.42	2.30	42.8
11	T1	All MCs	849	5.2	849	5.2	0.924	24.9	LOS B	17.8	126.7	1.00	1.43	2.33	42.6
12	R2	All MCs	59	0.0	59	0.0	0.924	31.7	LOS C	17.0	124.0	1.00	1.43	2.34	41.9
Approach			1409	3.2	1409	3.2	0.924	25.2	LOS B	17.8	126.7	1.00	1.42	2.32	42.6
All Vehicles			3537	3.2	3537	3.2	0.924	16.3	LOS B	17.8	126.7	0.78	0.98	1.37	46.9

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.
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: 5AM_X [NEW_ANA_23_AM_X_wDev 50% (Site Folder: Base Year with Dev 50%)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.344	21.3	LOS B	1.7	12.6	0.84	0.92	0.94	45.9
2	T1	All MCs	39	8.1	39	8.1	0.344	18.8	LOS B	1.7	12.6	0.84	0.93	0.94	45.9
3	R2	All MCs	71	10.4	71	10.4	0.344	29.8	LOS C	1.6	12.3	0.84	0.98	0.98	40.4
Approach			153	8.3	153	8.3	0.344	24.6	LOS B	1.7	12.6	0.84	0.95	0.96	43.1
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.224	4.1	LOS A	1.4	10.3	0.50	0.45	0.50	53.7
5	T1	All MCs	681	7.7	681	7.7	0.284	4.7	LOS A	2.5	18.5	0.55	0.46	0.55	53.0
6	R2	All MCs	232	1.4	232	1.4	0.284	10.1	LOS A	2.5	18.5	0.56	0.46	0.56	51.8
Approach			1140	5.5	1140	5.5	0.284	5.7	LOS A	2.5	18.5	0.54	0.46	0.54	52.9
North: Anambah Road															
7	L2	All MCs	456	3.0	456	3.0	0.781	13.6	LOS A	6.7	47.8	0.88	1.07	1.42	48.4
8	T1	All MCs	34	3.1	34	3.1	0.781	13.4	LOS A	6.7	47.8	0.88	1.07	1.42	48.8
9	R2	All MCs	352	1.8	352	1.8	0.621	17.1	LOS B	3.9	28.0	0.81	0.99	1.09	46.5
Approach			842	2.5	842	2.5	0.781	15.0	LOS B	6.7	47.8	0.85	1.04	1.28	47.6
West: New England Highway (W)															
10	L2	All MCs	61	3.4	61	3.4	0.503	6.1	LOS A	3.2	23.3	0.60	0.56	0.62	53.0
11	T1	All MCs	802	6.4	802	6.4	0.503	5.6	LOS A	3.2	23.3	0.60	0.58	0.62	53.2
12	R2	All MCs	60	8.8	60	8.8	0.503	12.6	LOS A	3.1	23.3	0.60	0.59	0.62	51.8
Approach			923	6.4	923	6.4	0.503	6.1	LOS A	3.2	23.3	0.60	0.58	0.62	53.1
All Vehicles			3058	5.1	3058	5.1	0.781	9.3	LOS A	6.7	47.8	0.66	0.68	0.79	50.8

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.

MOVEMENT SUMMARY

Site: 5PM_X [NEW_ANA_23_PM_X_wDev 50% (Site Folder: Base Year with Dev 50%)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.427	16.0	LOS B	2.0	14.9	0.80	0.93	0.98	47.7
2	T1	All MCs	49	4.3	49	4.3	0.427	16.0	LOS B	2.0	14.9	0.80	0.93	0.98	48.1
3	R2	All MCs	306	1.0	306	1.0	0.654	21.8	LOS B	4.5	31.9	0.86	1.06	1.29	44.1
Approach			447	2.1	447	2.1	0.654	20.0	LOS B	4.5	31.9	0.84	1.02	1.19	45.2
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.455	4.3	LOS A	3.0	22.0	0.46	0.44	0.46	53.9
5	T1	All MCs	635	4.3	635	4.3	0.576	4.6	LOS A	4.7	33.7	0.48	0.49	0.48	53.0
6	R2	All MCs	491	2.4	491	2.4	0.576	10.4	LOS A	4.7	33.7	0.50	0.54	0.50	51.1
Approach			1370	3.4	1370	3.4	0.576	6.6	LOS A	4.7	33.7	0.48	0.50	0.48	52.5
North: Anambah Road															
7	L2	All MCs	320	2.3	320	2.3	0.617	12.6	LOS A	4.5	32.4	0.91	0.98	1.22	49.0
8	T1	All MCs	55	5.8	55	5.8	0.354	12.0	LOS A	1.8	12.7	0.82	0.92	0.90	48.3
9	R2	All MCs	69	1.5	69	1.5	0.354	17.6	LOS B	1.8	12.7	0.82	0.92	0.90	47.6
Approach			443	2.6	443	2.6	0.617	13.3	LOS A	4.5	32.4	0.89	0.96	1.13	48.7
West: New England Highway (W)															
10	L2	All MCs	367	0.3	367	0.3	0.926	29.8	LOS C	17.9	127.7	1.00	1.51	2.55	40.7
11	T1	All MCs	849	5.2	849	5.2	0.926	29.5	LOS C	17.9	127.7	1.00	1.51	2.56	40.4
12	R2	All MCs	59	0.0	59	0.0	0.926	36.5	LOS C	16.8	122.5	1.00	1.51	2.57	39.7
Approach			1276	3.5	1276	3.5	0.926	29.9	LOS C	17.9	127.7	1.00	1.51	2.56	40.5
All Vehicles			3537	3.2	3537	3.2	0.926	17.5	LOS B	17.9	127.7	0.77	0.99	1.40	46.2

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.
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: 5AM28_F [NEW_ANA_28_AM_F (Site Folder: Future Year 2028)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.255	14.5	LOS A	1.1	8.5	0.75	0.84	0.75	49.2
2	T1	All MCs	39	8.1	39	8.1	0.255	13.1	LOS A	1.1	8.5	0.75	0.84	0.75	49.2
3	R2	All MCs	71	10.4	71	10.4	0.255	22.4	LOS B	1.1	8.2	0.76	0.91	0.76	43.8
Approach			153	8.3	153	8.3	0.255	17.8	LOS B	1.1	8.5	0.75	0.87	0.75	46.5
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.212	3.5	LOS A	1.1	8.3	0.26	0.37	0.26	54.9
5	T1	All MCs	810	7.5	810	7.5	0.268	3.8	LOS A	1.8	13.1	0.25	0.40	0.25	54.4
6	R2	All MCs	198	1.6	198	1.6	0.268	9.6	LOS A	1.8	13.1	0.25	0.41	0.25	53.3
Approach			1235	5.8	1235	5.8	0.268	4.7	LOS A	1.8	13.1	0.25	0.39	0.25	54.3
North: Anambah Road															
7	L2	All MCs	154	8.9	154	8.9	0.370	9.3	LOS A	1.8	13.2	0.77	0.87	0.86	51.3
8	T1	All MCs	34	3.1	34	3.1	0.370	9.6	LOS A	1.8	13.2	0.77	0.89	0.83	50.0
9	R2	All MCs	49	12.8	49	12.8	0.214	18.2	LOS B	0.8	6.2	0.77	0.91	0.77	46.6
Approach			237	8.9	237	8.9	0.370	11.2	LOS A	1.8	13.2	0.77	0.88	0.84	50.0
West: New England Highway (W)															
10	L2	All MCs	27	7.7	27	7.7	0.641	7.0	LOS A	5.3	38.7	0.66	0.62	0.74	52.6
11	T1	All MCs	1165	5.1	1165	5.1	0.641	6.4	LOS A	5.3	38.7	0.66	0.63	0.74	52.9
12	R2	All MCs	60	8.8	60	8.8	0.641	13.5	LOS A	5.3	38.7	0.66	0.63	0.75	51.6
Approach			1252	5.3	1252	5.3	0.641	6.8	LOS A	5.3	38.7	0.66	0.63	0.74	52.8
All Vehicles			2877	6.0	2877	6.0	0.641	6.8	LOS A	5.3	38.7	0.50	0.56	0.54	52.8

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.

MOVEMENT SUMMARY

Site: 5PM28_F [NEW_ANA_28_PM_F (Site Folder: Future Year 2028)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.416	17.3	LOS B	2.0	14.2	0.79	0.92	0.96	48.0
2	T1	All MCs	49	4.3	49	4.3	0.416	14.5	LOS A	2.0	14.2	0.79	0.92	0.96	48.3
3	R2	All MCs	306	1.0	306	1.0	0.635	21.1	LOS B	4.3	30.1	0.85	1.05	1.25	44.5
Approach			447	2.1	447	2.1	0.635	19.6	LOS B	4.3	30.1	0.83	1.01	1.16	45.5
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.448	4.1	LOS A	3.0	21.2	0.40	0.41	0.40	54.2
5	T1	All MCs	997	3.2	997	3.2	0.567	4.7	LOS A	4.5	32.8	0.42	0.43	0.42	53.9
6	R2	All MCs	159	7.3	159	7.3	0.567	10.3	LOS A	4.5	32.8	0.44	0.43	0.44	52.6
Approach			1400	3.6	1400	3.6	0.567	5.2	LOS A	4.5	32.8	0.42	0.42	0.42	53.8
North: Anambah Road															
7	L2	All MCs	283	2.6	283	2.6	0.526	10.7	LOS A	3.2	23.2	0.85	0.94	1.07	50.3
8	T1	All MCs	55	5.8	55	5.8	0.272	11.9	LOS A	1.1	8.4	0.79	0.89	0.81	49.0
9	R2	All MCs	32	3.3	32	3.3	0.272	17.5	LOS B	1.1	8.4	0.79	0.89	0.81	48.3
Approach			369	3.1	369	3.1	0.526	11.5	LOS A	3.2	23.2	0.84	0.93	1.01	49.9
West: New England Highway (W)															
10	L2	All MCs	34	3.1	34	3.1	0.637	8.3	LOS A	5.3	39.0	0.77	0.76	0.94	52.1
11	T1	All MCs	1007	5.1	1007	5.1	0.637	8.0	LOS A	5.3	39.0	0.77	0.77	0.95	52.2
12	R2	All MCs	59	0.0	59	0.0	0.637	14.7	LOS B	5.3	38.5	0.77	0.78	0.95	51.2
Approach			1099	4.7	1099	4.7	0.637	8.3	LOS A	5.3	39.0	0.77	0.77	0.95	52.2
All Vehicles			3316	3.7	3316	3.7	0.637	8.9	LOS A	5.3	39.0	0.64	0.67	0.76	51.5

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.

MOVEMENT SUMMARY

Site: 5AM28_O1 [NEW_ANA_28_AM_O1 (Site Folder: Future Year 2028 wDev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.301	21.4	LOS B	1.3	9.7	0.80	0.89	0.87	45.5
2	T1	All MCs	39	8.1	39	8.1	0.301	18.1	LOS B	1.4	10.8	0.80	0.90	0.87	45.6
3	R2	All MCs	71	10.4	71	10.4	0.301	21.7	LOS B	1.4	10.8	0.81	0.94	0.85	44.3
Approach			153	8.3	153	8.3	0.301	20.7	LOS B	1.4	10.8	0.80	0.92	0.86	44.9
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.222	3.8	LOS A	1.4	10.1	0.38	0.40	0.38	54.3
5	T1	All MCs	810	7.5	810	7.5	0.282	4.2	LOS A	2.3	17.2	0.40	0.42	0.40	53.8
6	R2	All MCs	203	1.6	203	1.6	0.282	9.8	LOS A	2.3	17.2	0.41	0.42	0.41	52.6
Approach			1241	5.7	1241	5.7	0.282	5.1	LOS A	2.3	17.2	0.40	0.41	0.40	53.7
North: Anambah Road															
7	L2	All MCs	202	6.8	202	6.8	0.427	9.7	LOS A	2.2	15.9	0.79	0.90	0.92	50.9
8	T1	All MCs	34	3.1	34	3.1	0.427	9.7	LOS A	2.2	15.9	0.79	0.95	0.93	48.5
9	R2	All MCs	163	3.9	163	3.9	0.427	16.1	LOS B	2.1	15.4	0.79	0.95	0.93	47.6
Approach			399	5.3	399	5.3	0.427	12.3	LOS A	2.2	15.9	0.79	0.92	0.92	49.3
West: New England Highway (W)															
10	L2	All MCs	40	5.3	40	5.3	0.650	6.9	LOS A	5.5	40.0	0.67	0.63	0.76	52.6
11	T1	All MCs	1165	5.1	1165	5.1	0.650	6.6	LOS A	5.5	40.1	0.67	0.64	0.76	52.8
12	R2	All MCs	60	8.8	60	8.8	0.650	13.0	LOS A	5.5	40.1	0.67	0.64	0.76	51.6
Approach			1265	5.3	1265	5.3	0.650	6.9	LOS A	5.5	40.1	0.67	0.64	0.76	52.8
All Vehicles			3057	5.6	3057	5.6	0.650	7.5	LOS A	5.5	40.1	0.58	0.60	0.64	52.2

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.
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: 5PM28_O1 [NEW_ANA_28_PM_O1 (Site Folder: Future Year 2028 wDev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.443	18.6	LOS B	2.1	15.5	0.81	0.94	1.02	47.2
2	T1	All MCs	49	4.3	49	4.3	0.443	15.5	LOS B	2.1	15.5	0.81	0.94	1.02	47.6
3	R2	All MCs	306	1.0	306	1.0	0.674	23.0	LOS B	4.7	33.5	0.87	1.09	1.35	43.5
Approach			447	2.1	447	2.1	0.674	21.3	LOS B	4.7	33.5	0.85	1.04	1.24	44.6
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.471	4.2	LOS A	3.2	23.1	0.43	0.42	0.43	54.0
5	T1	All MCs	997	3.2	997	3.2	0.596	4.9	LOS A	5.0	36.0	0.46	0.44	0.46	53.7
6	R2	All MCs	212	5.5	212	5.5	0.596	10.3	LOS A	5.0	36.0	0.48	0.45	0.48	52.3
Approach			1453	3.5	1453	3.5	0.596	5.6	LOS A	5.0	36.0	0.46	0.44	0.46	53.5
North: Anambah Road															
7	L2	All MCs	289	2.5	289	2.5	0.570	11.9	LOS A	3.8	27.0	0.88	0.97	1.15	49.5
8	T1	All MCs	55	5.8	55	5.8	0.312	11.8	LOS A	1.4	10.3	0.80	0.92	0.86	48.5
9	R2	All MCs	45	2.3	45	2.3	0.312	17.9	LOS B	1.4	10.3	0.80	0.92	0.86	47.8
Approach			389	3.0	389	3.0	0.570	12.6	LOS A	3.8	27.0	0.86	0.96	1.07	49.1
West: New England Highway (W)															
10	L2	All MCs	158	0.7	158	0.7	0.734	10.1	LOS A	7.5	54.1	0.86	0.88	1.17	51.0
11	T1	All MCs	1007	5.1	1007	5.1	0.734	10.2	LOS A	7.5	54.1	0.86	0.89	1.18	51.0
12	R2	All MCs	59	0.0	59	0.0	0.734	16.5	LOS B	7.4	53.6	0.86	0.90	1.18	50.0
Approach			1224	4.2	1224	4.2	0.734	10.5	LOS A	7.5	54.1	0.86	0.89	1.18	50.9
All Vehicles			3514	3.5	3514	3.5	0.734	10.1	LOS A	7.5	54.1	0.69	0.73	0.88	50.8

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.

MOVEMENT SUMMARY

Site: 5AM28_O1 [NEW_ANA_28_AM_O1_50% (Site Folder: Future Year 2028 wDev_50%)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.289	20.3	LOS B	1.2	9.2	0.79	0.88	0.84	46.0
2	T1	All MCs	39	8.1	39	8.1	0.289	17.2	LOS B	1.4	10.3	0.79	0.89	0.84	46.1
3	R2	All MCs	71	10.4	71	10.4	0.289	20.9	LOS B	1.4	10.3	0.79	0.93	0.82	44.7
Approach			153	8.3	153	8.3	0.289	19.8	LOS B	1.4	10.3	0.79	0.91	0.83	45.4
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.221	3.7	LOS A	1.4	9.9	0.36	0.39	0.36	54.4
5	T1	All MCs	810	7.5	810	7.5	0.279	4.1	LOS A	2.3	16.6	0.37	0.41	0.37	53.9
6	R2	All MCs	206	1.6	206	1.6	0.279	9.8	LOS A	2.3	16.6	0.37	0.42	0.37	52.7
Approach			1244	5.7	1244	5.7	0.279	5.0	LOS A	2.3	16.6	0.37	0.41	0.37	53.8
North: Anambah Road															
7	L2	All MCs	234	6.8	234	6.8	0.491	10.4	LOS A	2.6	19.4	0.81	0.93	0.99	50.4
8	T1	All MCs	34	3.1	34	3.1	0.395	10.0	LOS A	1.9	13.5	0.78	0.95	0.90	48.3
9	R2	All MCs	132	3.9	132	3.9	0.395	16.4	LOS B	1.9	13.5	0.78	0.95	0.90	47.5
Approach			399	5.5	399	5.5	0.491	12.4	LOS A	2.6	19.4	0.80	0.94	0.95	49.2
West: New England Highway (W)															
10	L2	All MCs	37	5.3	37	5.3	0.650	6.9	LOS A	5.5	39.9	0.67	0.63	0.77	52.6
11	T1	All MCs	1165	5.1	1165	5.1	0.650	6.6	LOS A	5.5	40.1	0.67	0.64	0.77	52.8
12	R2	All MCs	60	8.8	60	8.8	0.650	13.1	LOS A	5.5	40.1	0.67	0.65	0.76	51.6
Approach			1262	5.3	1262	5.3	0.650	6.9	LOS A	5.5	40.1	0.67	0.64	0.77	52.8
All Vehicles			3057	5.6	3057	5.6	0.650	7.5	LOS A	5.5	40.1	0.57	0.60	0.63	52.3

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: 5PM28_O1 [NEW_ANA_28_PM_O1_50% (Site Folder: Future Year 2028 wDev_50%)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.454	19.1	LOS B	2.2	16.0	0.82	0.95	1.04	46.9
2	T1	All MCs	49	4.3	49	4.3	0.454	16.0	LOS B	2.2	16.0	0.82	0.95	1.04	47.2
3	R2	All MCs	306	1.0	306	1.0	0.690	23.9	LOS B	4.9	34.8	0.88	1.11	1.39	43.1
Approach			447	2.1	447	2.1	0.690	22.1	LOS B	4.9	34.8	0.86	1.06	1.28	44.2
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.481	4.2	LOS A	3.3	23.8	0.43	0.42	0.43	54.0
5	T1	All MCs	997	3.2	997	3.2	0.609	4.9	LOS A	5.2	37.5	0.46	0.45	0.46	53.6
6	R2	All MCs	247	5.5	247	5.5	0.609	10.3	LOS A	5.2	37.5	0.48	0.46	0.48	52.2
Approach			1488	3.5	1488	3.5	0.609	5.7	LOS A	5.2	37.5	0.46	0.45	0.46	53.4
North: Anambah Road															
7	L2	All MCs	293	2.5	293	2.5	0.573	11.8	LOS A	3.8	27.1	0.88	0.97	1.15	49.6
8	T1	All MCs	55	5.8	55	5.8	0.307	11.8	LOS A	1.4	10.0	0.80	0.92	0.85	48.6
9	R2	All MCs	42	2.3	42	2.3	0.307	17.8	LOS B	1.4	10.0	0.80	0.92	0.85	47.9
Approach			389	3.0	389	3.0	0.573	12.4	LOS A	3.8	27.1	0.86	0.96	1.08	49.2
West: New England Highway (W)															
10	L2	All MCs	123	0.7	123	0.7	0.731	10.4	LOS A	7.4	53.4	0.86	0.90	1.19	50.7
11	T1	All MCs	1007	5.1	1007	5.1	0.731	10.6	LOS A	7.4	53.4	0.86	0.91	1.20	50.7
12	R2	All MCs	59	0.0	59	0.0	0.731	16.9	LOS B	7.2	52.7	0.86	0.91	1.20	49.7
Approach			1189	4.3	1189	4.3	0.731	10.9	LOS A	7.4	53.4	0.86	0.90	1.20	50.7
All Vehicles			3514	3.6	3514	3.6	0.731	10.3	LOS A	7.4	53.4	0.69	0.74	0.88	50.7

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: 5AM28_O1 [NEW_ANA_28_AM_O1_No Wyndella (Site Folder: Future Year 2028 wDev (No Wyndella))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.475	35.2	LOS C	2.6	19.2	0.91	1.01	1.16	40.4
2	T1	All MCs	39	8.1	39	8.1	0.475	29.7	LOS C	2.6	19.2	0.91	1.01	1.16	40.6
3	R2	All MCs	71	10.4	71	10.4	0.475	44.4	LOS D	2.4	18.0	0.91	1.06	1.23	35.1
Approach			153	8.3	153	8.3	0.475	38.0	LOS C	2.6	19.2	0.91	1.03	1.20	37.7
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.279	4.5	LOS A	2.0	14.6	0.63	0.49	0.63	53.1
5	T1	All MCs	810	7.5	810	7.5	0.353	5.9	LOS A	3.6	26.4	0.69	0.48	0.69	52.5
6	R2	All MCs	218	1.4	218	1.4	0.353	10.6	LOS A	3.6	26.4	0.71	0.48	0.71	51.3
Approach			1256	5.7	1256	5.7	0.353	6.5	LOS A	3.6	26.4	0.68	0.48	0.68	52.4
North: Anambah Road															
7	L2	All MCs	335	4.1	335	4.1	0.886	26.1	LOS B	8.3	60.2	0.95	1.31	2.04	41.6
8	T1	All MCs	34	3.1	34	3.1	0.886	25.8	LOS B	8.3	60.2	0.95	1.31	2.04	41.9
9	R2	All MCs	473	1.3	473	1.3	0.976	48.1	LOS D	15.7	111.2	0.99	1.71	3.22	34.0
Approach			842	2.5	842	2.5	0.976	38.5	LOS C	15.7	111.2	0.97	1.53	2.70	36.9
West: New England Highway (W)															
10	L2	All MCs	74	2.8	74	2.8	0.685	7.7	LOS A	6.4	46.9	0.73	0.68	0.85	52.4
11	T1	All MCs	1165	5.1	1165	5.1	0.685	7.2	LOS A	6.4	47.0	0.73	0.69	0.86	52.5
12	R2	All MCs	60	8.8	60	8.8	0.685	14.3	LOS A	6.4	47.0	0.73	0.69	0.86	51.3
Approach			1299	5.1	1299	5.1	0.685	7.5	LOS A	6.4	47.0	0.73	0.69	0.86	52.5
All Vehicles			3550	4.8	3550	4.8	0.976	15.8	LOS B	15.7	111.2	0.78	0.83	1.25	46.9

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.
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: 5PM28_O1 [NEW_ANA_28_PM_O1_No Wyndella (Site Folder: Future Year 2028 wDev (No Wyndella))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.535	23.6	LOS B	2.8	20.0	0.87	1.01	1.19	44.5
2	T1	All MCs	49	4.3	49	4.3	0.535	21.4	LOS B	2.8	20.0	0.87	1.01	1.19	44.8
3	R2	All MCs	306	1.0	306	1.0	0.805	33.2	LOS C	6.9	48.5	0.93	1.25	1.80	39.1
Approach			447	2.1	447	2.1	0.805	29.9	LOS C	6.9	48.5	0.91	1.17	1.61	40.6
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.534	4.5	LOS A	3.8	27.6	0.51	0.45	0.51	53.6
5	T1	All MCs	997	3.2	997	3.2	0.676	5.4	LOS A	6.2	44.7	0.56	0.48	0.56	53.0
6	R2	All MCs	358	3.2	358	3.2	0.676	10.6	LOS A	6.2	44.7	0.58	0.51	0.58	51.5
Approach			1599	3.2	1599	3.2	0.676	6.4	LOS A	6.2	44.7	0.56	0.48	0.56	52.8
North: Anambah Road															
7	L2	All MCs	305	2.4	305	2.4	0.700	17.1	LOS B	5.7	40.6	0.96	1.07	1.42	46.3
8	T1	All MCs	55	5.8	55	5.8	0.700	14.9	LOS B	5.7	40.6	0.88	0.99	1.08	46.7
9	R2	All MCs	83	1.3	83	1.3	0.404	19.8	LOS B	2.1	15.3	0.85	0.96	0.99	46.0
Approach			443	2.6	443	2.6	0.700	17.3	LOS B	5.7	40.6	0.93	1.04	1.30	46.3
West: New England Highway (W)															
10	L2	All MCs	499	0.2	499	0.2	1.038	67.5	LOS E	43.2	308.0	1.00	2.51	4.93	28.8
11	T1	All MCs	1007	5.1	1007	5.1	1.038	67.6	LOS E	43.2	308.0	1.00	2.49	4.90	28.8
12	R2	All MCs	59	0.0	59	0.0	1.038	74.5	LOS F	40.5	294.8	1.00	2.48	4.89	28.5
Approach			1565	3.3	1565	3.3	1.038	67.8	LOS E	43.2	308.0	1.00	2.50	4.91	28.8
All Vehicles			4055	3.0	4055	3.0	1.038	33.9	LOS C	43.2	308.0	0.81	1.40	2.43	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.
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: 5AM28_O1 [NEW_ANA_28_AM_O1_Mod_No Wyndella (Site Folder: Future Year 2028 wDev Modified (No Wyndella))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.474	35.2	LOS C	2.6	19.1	0.91	1.01	1.16	40.4
2	T1	All MCs	39	8.1	39	8.1	0.474	29.6	LOS C	2.6	19.1	0.91	1.01	1.16	40.6
3	R2	All MCs	71	10.4	71	10.4	0.474	44.3	LOS D	2.3	17.9	0.91	1.06	1.23	35.1
Approach			153	8.3	153	8.3	0.474	38.0	LOS C	2.6	19.1	0.91	1.03	1.19	37.8
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.278	4.5	LOS A	2.0	14.3	0.62	0.49	0.62	53.1
5	T1	All MCs	810	7.5	810	7.5	0.352	5.9	LOS A	3.5	26.0	0.69	0.48	0.69	52.5
6	R2	All MCs	218	1.4	218	1.4	0.352	10.6	LOS A	3.5	26.0	0.71	0.48	0.71	51.3
Approach			1256	5.7	1256	5.7	0.352	6.5	LOS A	3.5	26.0	0.68	0.48	0.68	52.4
North: Anambah Road															
7	L2	All MCs	335	4.1	335	4.1	0.822	19.2	LOS B	6.4	46.0	0.92	1.18	1.67	45.1
8	T1	All MCs	34	3.1	34	3.1	0.822	18.8	LOS B	6.4	46.0	0.92	1.18	1.67	45.4
9	R2	All MCs	473	1.3	473	1.3	0.903	29.9	LOS C	9.7	68.4	0.95	1.37	2.17	40.4
Approach			842	2.5	842	2.5	0.903	25.2	LOS B	9.7	68.4	0.93	1.29	1.95	42.3
West: New England Highway (W)															
10	L2	All MCs	74	2.8	74	2.8	0.105	6.0	LOS A	0.4	3.1	0.46	0.56	0.46	53.8
11	T1	All MCs	1165	5.1	1165	5.1	0.555	5.1	LOS A	3.9	28.5	0.61	0.53	0.63	53.2
12	R2	All MCs	60	8.8	60	8.8	0.555	12.3	LOS A	3.9	28.5	0.61	0.56	0.64	51.9
Approach			1299	5.1	1299	5.1	0.555	5.5	LOS A	3.9	28.5	0.60	0.53	0.62	53.2
All Vehicles			3550	4.8	3550	4.8	0.903	11.9	LOS A	9.7	68.4	0.72	0.71	0.98	49.0

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: 5PM28_O1 [NEW_ANA_28_PM_O1_Mod_No Wyndella (Site Folder: Future Year 2028 wDev Modified (No Wyndella))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.533	23.5	LOS B	2.7	19.9	0.87	1.01	1.18	44.5
2	T1	All MCs	49	4.3	49	4.3	0.533	21.4	LOS B	2.7	19.9	0.87	1.01	1.18	44.8
3	R2	All MCs	306	1.0	306	1.0	0.802	32.9	LOS C	6.8	48.1	0.93	1.24	1.79	39.2
Approach			447	2.1	447	2.1	0.802	29.7	LOS C	6.8	48.1	0.91	1.17	1.60	40.7
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.533	4.5	LOS A	3.8	27.1	0.51	0.45	0.51	53.6
5	T1	All MCs	997	3.2	997	3.2	0.675	5.4	LOS A	6.1	43.8	0.55	0.49	0.55	53.1
6	R2	All MCs	358	3.2	358	3.2	0.675	10.6	LOS A	6.1	43.8	0.58	0.51	0.58	51.5
Approach			1599	3.2	1599	3.2	0.675	6.4	LOS A	6.1	43.8	0.55	0.49	0.55	52.8
North: Anambah Road															
7	L2	All MCs	305	2.4	305	2.4	0.585	10.9	LOS A	3.7	26.6	0.86	0.97	1.13	50.2
8	T1	All MCs	55	5.8	55	5.8	0.585	11.2	LOS A	3.7	26.6	0.81	0.94	0.93	48.9
9	R2	All MCs	83	1.3	83	1.3	0.337	16.8	LOS B	1.5	11.0	0.79	0.93	0.86	47.7
Approach			443	2.6	443	2.6	0.585	12.1	LOS A	3.7	26.6	0.84	0.96	1.05	49.5
West: New England Highway (W)															
10	L2	All MCs	499	0.2	499	0.2	0.584	9.9	LOS A	4.9	35.6	0.80	0.82	0.98	51.6
11	T1	All MCs	1007	5.1	1007	5.1	0.584	8.0	LOS A	4.9	35.6	0.80	0.79	0.97	52.1
12	R2	All MCs	59	0.0	59	0.0	0.584	15.3	LOS B	4.6	33.2	0.80	0.81	0.99	51.0
Approach			1565	3.3	1565	3.3	0.584	8.9	LOS A	4.9	35.6	0.80	0.80	0.97	51.9
All Vehicles			4055	3.0	4055	3.0	0.802	10.6	LOS A	6.8	48.1	0.72	0.73	0.88	50.4

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: 5AM28_O1 [NEW_ANA_28_AM_O1_Mod_50%_No Wyndella (Site Folder: Future Year 2028 wDev Modified_50% (No Wyndella))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.398	26.7	LOS B	2.0	15.0	0.87	0.97	1.04	43.6
2	T1	All MCs	39	8.1	39	8.1	0.398	23.1	LOS B	2.0	15.0	0.87	0.97	1.04	43.6
3	R2	All MCs	71	10.4	71	10.4	0.398	35.4	LOS C	1.9	14.6	0.88	1.02	1.10	38.2
Approach			153	8.3	153	8.3	0.398	29.8	LOS C	2.0	15.0	0.88	0.99	1.07	40.9
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.252	4.1	LOS A	1.7	12.1	0.53	0.44	0.53	53.6
5	T1	All MCs	810	7.5	810	7.5	0.319	5.1	LOS A	2.9	21.7	0.57	0.45	0.57	53.0
6	R2	All MCs	232	1.4	232	1.4	0.319	10.2	LOS A	2.9	21.7	0.59	0.46	0.59	51.8
Approach			1269	5.6	1269	5.6	0.319	5.8	LOS A	2.9	21.7	0.56	0.45	0.56	52.9
North: Anambah Road															
7	L2	All MCs	456	3.0	456	3.0	0.945	31.1	LOS C	12.5	89.5	0.97	1.53	2.71	39.4
8	T1	All MCs	34	3.1	34	3.1	0.945	30.9	LOS C	12.5	89.5	0.97	1.53	2.71	39.6
9	R2	All MCs	352	1.8	352	1.8	0.781	23.3	LOS B	5.6	39.9	0.90	1.15	1.51	43.3
Approach			842	2.5	842	2.5	0.945	27.9	LOS B	12.5	89.5	0.94	1.37	2.21	41.0
West: New England Highway (W)															
10	L2	All MCs	61	3.5	61	3.5	0.087	6.1	LOS A	0.4	2.5	0.46	0.56	0.46	53.8
11	T1	All MCs	1165	5.1	1165	5.1	0.557	5.2	LOS A	3.9	28.6	0.61	0.54	0.64	53.2
12	R2	All MCs	60	8.8	60	8.8	0.557	12.5	LOS A	3.9	28.6	0.62	0.58	0.65	51.9
Approach			1286	5.2	1286	5.2	0.557	5.6	LOS A	3.9	28.6	0.60	0.55	0.63	53.1
All Vehicles			3550	4.8	3550	4.8	0.945	12.0	LOS A	12.5	89.5	0.68	0.73	1.00	49.0

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: 5PM28_O1 [NEW_ANA_28_PM_O1_Mod_50%_No Wyndella (Site Folder: Future Year 2028 wDev Modified_50% (No Wyndella))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.595	27.5	LOS B	3.2	23.1	0.90	1.05	1.30	42.4
2	T1	All MCs	49	4.3	49	4.3	0.595	25.9	LOS B	3.2	23.1	0.90	1.05	1.30	42.7
3	R2	All MCs	306	1.0	306	1.0	0.889	46.9	LOS D	9.3	65.5	0.96	1.42	2.36	34.4
Approach			447	2.1	447	2.1	0.889	40.6	LOS C	9.3	65.5	0.95	1.30	2.03	36.5
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.569	4.5	LOS A	4.4	31.3	0.52	0.45	0.52	53.6
5	T1	All MCs	997	3.2	997	3.2	0.721	5.5	LOS A	7.3	52.1	0.57	0.49	0.57	52.8
6	R2	All MCs	491	2.4	491	2.4	0.721	10.6	LOS A	7.3	52.1	0.61	0.53	0.61	51.1
Approach			1733	2.9	1733	2.9	0.721	6.8	LOS A	7.3	52.1	0.57	0.50	0.57	52.4
North: Anambah Road															
7	L2	All MCs	320	2.3	320	2.3	0.603	11.1	LOS A	3.9	28.0	0.87	0.98	1.15	50.0
8	T1	All MCs	55	5.8	55	5.8	0.603	11.5	LOS A	3.9	28.0	0.80	0.93	0.89	48.7
9	R2	All MCs	69	1.5	69	1.5	0.348	17.0	LOS B	1.6	11.4	0.80	0.93	0.88	47.9
Approach			443	2.6	443	2.6	0.603	12.1	LOS A	3.9	28.0	0.85	0.97	1.08	49.5
West: New England Highway (W)															
10	L2	All MCs	367	0.3	367	0.3	0.493	10.6	LOS A	3.4	24.0	0.79	0.81	0.94	51.4
11	T1	All MCs	1007	5.1	1007	5.1	0.638	10.3	LOS A	6.0	44.2	0.86	0.89	1.16	51.0
12	R2	All MCs	59	0.0	59	0.0	0.638	17.7	LOS B	5.5	40.1	0.86	0.91	1.18	49.4
Approach			1433	3.6	1433	3.6	0.638	10.7	LOS A	6.0	44.2	0.85	0.87	1.10	51.0
All Vehicles			4056	3.0	4056	3.0	0.889	12.5	LOS A	9.3	65.5	0.74	0.77	0.98	49.2

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.
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: 5AM38_F [NEW_ANA_38_AM_F (Site Folder: Future Year 2038)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 145 seconds (Site User-Given Phase Times)

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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.527	44.0	LOS D	4.9	36.2	0.99	0.77	0.99	30.7
2	T1	All MCs	39	8.1	39	8.1	* 0.527	68.2	LOS E	4.9	36.2	0.99	0.77	0.99	31.5
3	R2	All MCs	71	10.4	71	10.4	0.493	77.0	LOS F	5.0	37.9	1.00	0.77	1.00	26.1
Approach			153	8.3	153	8.3	0.527	65.4	LOS E	5.0	37.9	1.00	0.77	1.00	28.6
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.189	11.1	LOS A	3.1	22.3	0.23	0.61	0.23	51.2
5	T1	All MCs	1082	7.1	1082	7.1	0.551	23.9	LOS B	23.9	177.7	0.67	0.61	0.67	45.0
6	R2	All MCs	198	1.6	198	1.6	* 0.868	86.7	LOS F	15.3	108.3	1.00	0.95	1.23	25.0
Approach			1507	5.8	1507	5.8	0.868	30.2	LOS C	23.9	177.7	0.65	0.65	0.68	39.9
North: Anambah Road															
7	L2	All MCs	154	8.9	154	8.9	0.475	54.4	LOS D	11.5	86.1	0.92	0.80	0.92	30.3
8	T1	All MCs	34	3.1	34	3.1	0.475	68.8	LOS E	11.5	86.1	0.92	0.80	0.92	31.1
9	R2	All MCs	49	12.8	49	12.8	0.351	76.0	LOS F	3.4	26.7	0.98	0.75	0.98	26.2
Approach			237	8.9	237	8.9	0.475	61.0	LOS E	11.5	86.1	0.93	0.79	0.93	29.4
West: New England Highway (W)															
10	L2	All MCs	27	7.7	27	7.7	* 0.960	40.7	LOS C	83.8	605.6	1.00	1.08	1.16	30.8
11	T1	All MCs	2011	3.7	2011	3.7	* 0.960	66.1	LOS E	83.8	605.6	1.00	1.08	1.16	31.7
12	R2	All MCs	60	8.8	60	8.8	0.277	92.0	LOS F	3.9	29.5	0.95	0.76	0.95	27.6
Approach			2099	3.9	2099	3.9	0.960	66.5	LOS E	83.8	605.6	1.00	1.07	1.16	28.7
All Vehicles			3995	5.1	3995	5.1	0.960	52.5	LOS D	83.8	605.6	0.86	0.89	0.96	32.1

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
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 Green.
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.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Shipley Drive												
P1	Full	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
East: New England Highway (E)												

P2	Full	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
North: Anambah Road												
P3	Full	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
West: New England Highway (W)												
P4	Full	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
All Pedestrians		0	211	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91

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

MOVEMENT SUMMARY

Site: 5PM38_F [NEW_ANA_38_PM_F (Site Folder: Future Year 2038)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 149 seconds (Site User-Given Phase Times)

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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	* 0.963	97.8	LOS F	19.8	142.1	1.00	1.13	1.43	23.1
2	T1	All MCs	49	4.3	49	4.3	* 0.963	108.5	LOS F	19.8	142.1	1.00	1.13	1.43	23.5
3	R2	All MCs	306	1.0	306	1.0	0.963	114.8	LOS F	19.8	142.1	1.00	1.14	1.43	22.3
Approach			447	2.1	447	2.1	0.963	110.6	LOS F	19.8	142.1	1.00	1.14	1.43	21.1
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.190	19.8	LOS B	2.5	18.0	0.15	0.59	0.15	52.0
5	T1	All MCs	1853	2.1	1853	2.1	* 0.898	45.4	LOS D	63.6	453.2	0.93	0.89	0.98	39.5
6	R2	All MCs	159	7.3	159	7.3	0.559	83.3	LOS F	10.8	80.4	0.97	0.81	0.97	27.7
Approach			2256	2.6	2256	2.6	0.898	45.3	LOS D	63.6	453.2	0.85	0.85	0.89	34.3
North: Anambah Road															
7	L2	All MCs	283	2.6	283	2.6	0.881	72.7	LOS F	26.5	190.8	1.00	0.97	1.18	26.1
8	T1	All MCs	55	5.8	55	5.8	0.881	96.5	LOS F	26.5	190.8	1.00	0.97	1.18	26.6
9	R2	All MCs	32	3.3	32	3.3	0.432	86.2	LOS F	2.4	17.3	1.00	0.73	1.00	24.5
Approach			369	3.1	369	3.1	0.881	77.3	LOS F	26.5	190.8	1.00	0.95	1.16	26.0
West: New England Highway (W)															
10	L2	All MCs	34	3.1	34	3.1	* 0.730	21.7	LOS B	39.0	284.2	0.84	0.79	0.84	37.5
11	T1	All MCs	1335	4.8	1335	4.8	0.730	40.9	LOS C	39.0	284.2	0.84	0.78	0.84	39.4
12	R2	All MCs	59	0.0	59	0.0	0.788	108.3	LOS F	4.7	32.8	1.00	0.86	1.25	23.8
Approach			1428	4.6	1428	4.6	0.788	43.3	LOS D	39.0	284.2	0.85	0.78	0.86	35.1
All Vehicles			4501	3.2	4501	3.2	0.963	53.8	LOS D	63.6	453.2	0.88	0.87	0.96	31.7

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.
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 Green.
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.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Shipley Drive												
P1	Full	50	53	68.8	LOS F	0.2	0.2	0.96	0.96	222.6	200.0	0.90
East: New England Highway (E)												

P2	Full	50	53	68.8	LOS F	0.2	0.2	0.96	0.96	222.6	200.0	0.90
North: Anambah Road												
P3	Full	50	53	68.8	LOS F	0.2	0.2	0.96	0.96	222.6	200.0	0.90
West: New England Highway (W)												
P4	Full	50	53	68.8	LOS F	0.2	0.2	0.96	0.96	222.6	200.0	0.90
All Pedestrians		0	211	68.8	LOS F	0.2	0.2	0.96	0.96	222.6	200.0	0.90

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

MOVEMENT SUMMARY

Site: 5AM38_F [NEW_ANA_38_AM_O1 (Site Folder: Future Year 2038 wDev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 145 seconds (Site User-Given Phase Times)

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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.573	44.1	LOS D	4.9	36.5	1.00	0.77	1.00	30.6
2	T1	All MCs	39	8.1	39	8.1	* 0.573	69.2	LOS E	4.9	36.5	1.00	0.77	1.00	31.4
3	R2	All MCs	71	10.4	71	10.4	0.538	78.4	LOS F	5.0	38.4	1.00	0.77	1.00	25.9
Approach			153	8.3	153	8.3	0.573	66.4	LOS E	5.0	38.4	1.00	0.77	1.00	28.4
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.190	11.4	LOS A	3.2	23.3	0.24	0.61	0.24	51.0
5	T1	All MCs	1082	7.1	1082	7.1	0.551	23.9	LOS B	23.9	177.6	0.67	0.61	0.67	45.0
6	R2	All MCs	203	1.6	203	1.6	* 0.892	89.5	LOS F	16.0	113.8	1.00	0.98	1.28	24.6
Approach			1512	5.7	1512	5.7	0.892	30.8	LOS C	23.9	177.6	0.65	0.66	0.69	39.6
North: Anambah Road															
7	L2	All MCs	202	6.8	202	6.8	0.545	53.8	LOS D	14.5	107.3	0.92	0.82	0.92	30.5
8	T1	All MCs	34	3.1	34	3.1	0.545	68.4	LOS E	14.5	107.3	0.92	0.82	0.92	31.3
9	R2	All MCs	163	3.9	163	3.9	0.933	95.2	LOS F	13.6	98.0	1.00	1.03	1.40	23.1
Approach			399	5.3	399	5.3	0.933	72.0	LOS F	14.5	107.3	0.95	0.90	1.12	27.1
West: New England Highway (W)															
10	L2	All MCs	40	5.3	40	5.3	* 0.966	42.4	LOS C	86.1	622.1	1.00	1.10	1.17	30.2
11	T1	All MCs	2011	3.7	2011	3.7	* 0.966	69.0	LOS E	86.1	622.1	1.00	1.10	1.18	31.0
12	R2	All MCs	60	8.8	60	8.8	0.277	92.2	LOS F	3.9	29.5	0.95	0.76	0.95	27.6
Approach			2111	3.9	2111	3.9	0.966	69.1	LOS E	86.1	622.1	1.00	1.09	1.17	28.1
All Vehicles			4175	4.9	4175	4.9	0.966	55.4	LOS D	86.1	622.1	0.87	0.90	0.99	31.3

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.
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 Green.
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.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Shipley Drive												
P1	Full	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
East: New England Highway (E)												

P2	Full	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
North: Anambah Road												
P3	Full	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
West: New England Highway (W)												
P4	Full	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
All Pedestrians		0	211	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91

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

MOVEMENT SUMMARY

Site: 5PM38_F [NEW_ANA_38_PM_O1 (Site Folder: Future Year 2038 wDev)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 147 seconds (Site User-Given Phase Times)

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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	* 0.989	108.9	LOS F	20.7	148.8	1.00	1.17	1.51	21.7
2	T1	All MCs	49	4.3	49	4.3	* 0.989	117.9	LOS F	20.7	148.8	1.00	1.17	1.51	22.1
3	R2	All MCs	306	1.0	306	1.0	0.989	124.4	LOS F	20.7	148.8	1.00	1.18	1.51	21.0
Approach			447	2.1	447	2.1	0.989	120.5	LOS F	20.7	148.8	1.00	1.18	1.51	20.0
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.189	17.1	LOS B	2.4	17.0	0.14	0.58	0.14	52.1
5	T1	All MCs	1853	2.1	1853	2.1	* 0.865	33.1	LOS C	54.0	385.1	0.86	0.80	0.87	44.0
6	R2	All MCs	212	5.5	212	5.5	0.832	90.2	LOS F	16.1	117.6	1.00	0.92	1.16	25.7
Approach			2309	2.5	2309	2.5	0.865	36.7	LOS C	54.0	385.1	0.80	0.79	0.82	37.3
North: Anambah Road															
7	L2	All MCs	289	2.5	289	2.5	0.992	106.1	LOS F	32.7	234.8	1.00	1.13	1.45	21.1
8	T1	All MCs	55	5.8	55	5.8	0.992	127.4	LOS F	32.7	234.8	1.00	1.13	1.45	21.5
9	R2	All MCs	45	2.3	45	2.3	0.731	89.6	LOS F	3.6	25.5	1.00	0.83	1.21	24.0
Approach			389	3.0	389	3.0	0.992	107.2	LOS F	32.7	234.8	1.00	1.09	1.42	21.5
West: New England Highway (W)															
10	L2	All MCs	158	0.7	158	0.7	* 0.757	22.1	LOS B	41.3	299.1	0.84	0.82	0.84	38.4
11	T1	All MCs	1335	4.8	1335	4.8	0.757	40.0	LOS C	41.3	299.1	0.84	0.80	0.84	40.4
12	R2	All MCs	59	0.0	59	0.0	0.933	117.4	LOS F	5.0	34.8	1.00	0.96	1.54	22.4
Approach			1553	4.2	1553	4.2	0.933	41.1	LOS C	41.3	299.1	0.85	0.80	0.87	35.8
All Vehicles			4698	3.1	4698	3.1	0.992	52.0	LOS D	54.0	385.1	0.85	0.86	0.95	32.2

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
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 Green.
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.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Shipley Drive												
P1	Full	50	53	67.8	LOS F	0.2	0.2	0.96	0.96	221.6	200.0	0.90
East: New England Highway (E)												

P2	Full	50	53	67.8	LOS F	0.2	0.2	0.96	0.96	221.6	200.0	0.90
North: Anambah Road												
P3	Full	50	53	67.8	LOS F	0.2	0.2	0.96	0.96	221.6	200.0	0.90
West: New England Highway (W)												
P4	Full	50	53	67.8	LOS F	0.2	0.2	0.96	0.96	221.6	200.0	0.90
All Pedestrians		0	211	67.8	LOS F	0.2	0.2	0.96	0.96	221.6	200.0	0.90

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

MOVEMENT SUMMARY

Site: 5AM38_F [NEW_ANA_38_AM_O1_50% (Site Folder: Future Year 2038 wDev_50%)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 145 seconds (Site User-Given Phase Times)

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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.573	44.1	LOS D	4.9	36.5	1.00	0.77	1.00	30.6
2	T1	All MCs	39	8.1	39	8.1	* 0.573	69.2	LOS E	4.9	36.5	1.00	0.77	1.00	31.4
3	R2	All MCs	71	10.4	71	10.4	0.538	78.4	LOS F	5.0	38.4	1.00	0.77	1.00	25.9
Approach			153	8.3	153	8.3	0.573	66.4	LOS E	5.0	38.4	1.00	0.77	1.00	28.4
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.190	11.4	LOS A	3.2	23.3	0.24	0.61	0.24	51.0
5	T1	All MCs	1082	7.1	1082	7.1	0.552	23.9	LOS B	23.9	177.6	0.67	0.61	0.67	45.0
6	R2	All MCs	206	1.6	206	1.6	* 0.905	91.4	LOS F	16.5	117.2	1.00	0.99	1.30	24.3
Approach			1515	5.7	1515	5.7	0.905	31.2	LOS C	23.9	177.6	0.65	0.66	0.69	39.4
North: Anambah Road															
7	L2	All MCs	234	6.8	234	6.8	0.612	54.5	LOS D	16.7	123.5	0.94	0.83	0.94	30.4
8	T1	All MCs	34	3.1	34	3.1	0.612	69.3	LOS E	16.7	123.5	0.94	0.83	0.94	31.2
9	R2	All MCs	131	3.9	131	3.9	0.748	79.0	LOS F	9.6	69.1	1.00	0.87	1.12	25.8
Approach			398	5.5	398	5.5	0.748	63.8	LOS E	16.7	123.5	0.96	0.84	1.00	28.8
West: New England Highway (W)															
10	L2	All MCs	36	5.3	36	5.3	* 0.964	41.5	LOS C	85.3	616.4	1.00	1.09	1.17	30.4
11	T1	All MCs	2011	3.7	2011	3.7	* 0.964	67.9	LOS E	85.3	616.4	1.00	1.09	1.17	31.2
12	R2	All MCs	60	8.8	60	8.8	0.277	92.1	LOS F	3.9	29.5	0.95	0.76	0.95	27.6
Approach			2107	3.9	2107	3.9	0.964	68.2	LOS E	85.3	616.4	1.00	1.08	1.17	28.3
All Vehicles			4173	4.9	4173	4.9	0.964	54.3	LOS D	85.3	616.4	0.87	0.90	0.97	31.6

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.
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 Green.
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.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Shipley Drive												
P1	Full	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
East: New England Highway (E)												

P2	Full	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
North: Anambah Road												
P3	Full	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
West: New England Highway (W)												
P4	Full	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
All Pedestrians		0	211	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91

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

MOVEMENT SUMMARY

Site: 5PM38_F [NEW_ANA_38_PM_O1_50% (Site Folder: Future Year 2038 wDev_50%)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 147 seconds (Site User-Given Phase Times)

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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	* 0.989	108.9	LOS F	20.7	148.8	1.00	1.17	1.51	21.7
2	T1	All MCs	49	4.3	49	4.3	* 0.989	118.0	LOS F	20.7	148.8	1.00	1.17	1.51	22.1
3	R2	All MCs	306	1.0	306	1.0	0.989	124.4	LOS F	20.7	148.8	1.00	1.18	1.51	21.0
Approach			447	2.1	447	2.1	0.989	120.5	LOS F	20.7	148.8	1.00	1.18	1.51	20.0
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.189	17.4	LOS B	2.4	17.0	0.14	0.58	0.14	52.1
5	T1	All MCs	1853	2.1	1853	2.1	* 0.874	35.0	LOS C	55.5	395.5	0.88	0.82	0.90	43.1
6	R2	All MCs	247	5.5	247	5.5	0.969	115.2	LOS F	22.2	162.8	1.00	1.07	1.43	21.9
Approach			2344	2.6	2344	2.6	0.969	41.6	LOS C	55.5	395.5	0.81	0.82	0.87	35.5
North: Anambah Road															
7	L2	All MCs	293	2.5	293	2.5	0.999	110.1	LOS F	33.6	241.6	1.00	1.14	1.47	20.7
8	T1	All MCs	55	5.8	55	5.8	0.999	131.4	LOS F	33.6	241.6	1.00	1.14	1.47	21.0
9	R2	All MCs	41	2.3	41	2.3	0.661	88.6	LOS F	3.2	22.8	1.00	0.79	1.14	24.1
Approach			388	3.0	388	3.0	0.999	110.8	LOS F	33.6	241.6	1.00	1.10	1.44	21.0
West: New England Highway (W)															
10	L2	All MCs	123	0.7	123	0.7	* 0.739	21.8	LOS B	39.8	288.7	0.83	0.80	0.83	38.5
11	T1	All MCs	1335	4.8	1335	4.8	0.739	39.0	LOS C	39.8	288.7	0.83	0.78	0.83	40.5
12	R2	All MCs	59	0.0	59	0.0	0.933	116.8	LOS F	5.0	34.8	1.00	0.96	1.54	22.4
Approach			1517	4.3	1517	4.3	0.933	40.6	LOS C	39.8	288.7	0.84	0.79	0.86	36.0
All Vehicles			4697	3.1	4697	3.1	0.999	54.5	LOS D	55.5	395.5	0.85	0.87	0.98	31.5

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.
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 Green.
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.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Shipley Drive												
P1	Full	50	53	67.8	LOS F	0.2	0.2	0.96	0.96	221.6	200.0	0.90
East: New England Highway (E)												

P2	Full	50	53	67.8	LOS F	0.2	0.2	0.96	0.96	221.6	200.0	0.90
North: Anambah Road												
P3	Full	50	53	67.8	LOS F	0.2	0.2	0.96	0.96	221.6	200.0	0.90
West: New England Highway (W)												
P4	Full	50	53	67.8	LOS F	0.2	0.2	0.96	0.96	221.6	200.0	0.90
All Pedestrians		0	211	67.8	LOS F	0.2	0.2	0.96	0.96	221.6	200.0	0.90

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

MOVEMENT SUMMARY

Site: 5AM38_F [NEW_ANA_38_AM_O1_Mod_No Wyndella_Infra test (Site Folder: Future Year 2038 wDev Mod (No Wydnella))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	* 0.874	90.1	LOS F	6.3	46.8	1.00	0.96	1.38	24.5
2	T1	All MCs	39	8.1	39	8.1	0.874	81.3	LOS F	6.3	46.8	1.00	0.96	1.38	25.0
3	R2	All MCs	71	10.4	71	10.4	0.635	79.1	LOS F	5.0	38.2	1.00	0.81	1.07	25.8
Approach			153	8.3	153	8.3	0.874	82.8	LOS F	6.3	46.8	1.00	0.89	1.24	25.2
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.170	8.4	LOS A	1.3	9.4	0.13	0.59	0.13	52.6
5	T1	All MCs	1082	7.1	1082	7.1	0.522	20.4	LOS B	22.8	169.1	0.66	0.59	0.66	45.6
6	R2	All MCs	218	1.4	218	1.4	* 0.923	92.6	LOS F	8.7	61.4	1.00	1.01	1.45	23.5
Approach			1527	5.7	1527	5.7	0.923	28.9	LOS C	22.8	169.1	0.63	0.65	0.69	40.5
North: Anambah Road															
7	L2	All MCs	335	4.1	335	4.1	0.664	41.8	LOS C	18.4	133.2	0.90	0.84	0.90	34.9
8	T1	All MCs	34	3.1	34	3.1	* 0.916	79.4	LOS F	20.0	141.6	1.00	1.03	1.31	25.3
9	R2	All MCs	473	1.3	473	1.3	0.916	85.0	LOS F	20.0	141.6	1.00	1.03	1.31	24.8
Approach			842	2.5	842	2.5	0.916	67.6	LOS E	20.0	141.6	0.96	0.95	1.14	28.1
West: New England Highway (W)															
10	L2	All MCs	74	2.8	74	2.8	0.055	21.0	LOS B	1.3	9.2	0.27	0.64	0.27	49.4
11	T1	All MCs	2011	3.7	2011	3.7	* 0.950	64.9	LOS E	77.1	557.3	1.00	1.06	1.15	33.3
12	R2	All MCs	60	8.8	60	8.8	0.481	97.7	LOS F	4.1	31.1	1.00	0.76	1.00	26.1
Approach			2146	3.8	2146	3.8	0.950	64.3	LOS E	77.1	557.3	0.97	1.03	1.12	29.2
All Vehicles			4668	4.3	4668	4.3	0.950	53.9	LOS D	77.1	557.3	0.86	0.89	0.99	31.7

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.
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 Green.
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.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Shipley Drive												
P1	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92

East: New England Highway (E)											
P2	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
North: Anambah Road											
P3	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
West: New England Highway (W)											
P41	Stage 1	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P42	Stage 2	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
All Pedestrians		0	263	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92

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

MOVEMENT SUMMARY

Site: 5PM38_F [NEW_ANA_38_PM_O1_Mod_No Wyndella_Infra test (Site Folder: Future Year 2038 wDev Mod (No Wydnella))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.787	77.0	LOS F	15.4	110.7	1.00	0.91	1.11	27.8
2	T1	All MCs	49	4.3	49	4.3	* 0.787	72.0	LOS F	15.4	110.7	1.00	0.91	1.11	28.5
3	R2	All MCs	306	1.0	306	1.0	0.787	77.0	LOS F	15.6	110.7	1.00	0.90	1.11	27.9
Approach			447	2.1	447	2.1	0.787	76.4	LOS F	15.6	110.7	1.00	0.90	1.11	26.4
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.190	21.8	LOS B	2.0	14.3	0.18	0.60	0.18	52.2
5	T1	All MCs	1853	2.1	1853	2.1	* 0.929	56.1	LOS D	68.9	491.5	0.99	1.00	1.11	35.4
6	R2	All MCs	358	3.2	358	3.2	0.512	66.8	LOS E	11.1	79.6	0.95	0.81	0.95	29.6
Approach			2455	2.4	2455	2.4	0.929	54.2	LOS D	68.9	491.5	0.90	0.93	0.99	31.7
North: Anambah Road															
7	L2	All MCs	305	2.4	305	2.4	0.445	27.8	LOS B	12.5	89.5	0.73	0.78	0.73	40.3
8	T1	All MCs	55	5.8	55	5.8	* 0.584	72.4	LOS F	4.9	35.9	1.00	0.78	1.03	27.3
9	R2	All MCs	83	3.3	83	3.3	0.584	78.1	LOS F	4.9	35.9	1.00	0.78	1.03	26.1
Approach			443	3.0	443	3.0	0.584	42.8	LOS D	12.5	89.5	0.81	0.78	0.82	34.7
West: New England Highway (W)															
10	L2	All MCs	499	3.1	499	3.1	0.663	42.7	LOS D	27.3	195.9	0.87	0.85	0.87	35.0
11	T1	All MCs	1335	4.8	1335	4.8	0.853	54.1	LOS D	43.1	314.3	0.97	0.92	1.02	35.5
12	R2	All MCs	59	0.0	59	0.0	* 0.889	114.1	LOS F	4.6	32.2	1.00	0.93	1.46	23.7
Approach			1893	4.2	1893	4.2	0.889	52.9	LOS D	43.1	314.3	0.94	0.90	0.99	32.0
All Vehicles			5239	3.1	5239	3.1	0.929	54.7	LOS D	68.9	491.5	0.92	0.91	0.99	31.5

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.
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 Green.
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.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Shipley Drive												
P1	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92

East: New England Highway (E)											
P2	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
North: Anambah Road											
P3	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
West: New England Highway (W)											
P41	Stage 1	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P42	Stage 2	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
All Pedestrians		0	263	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92

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

MOVEMENT SUMMARY

Site: 5AM38_F [NEW_ANA_38_AM_O1_50%_No Wyndella (Site Folder: Future Year 2038 wDev_50% (No Wyndella))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

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: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.789	83.2	LOS F	6.1	44.8	1.00	0.89	1.23	25.4
2	T1	All MCs	39	8.1	39	8.1	* 0.789	77.8	LOS F	6.1	44.8	1.00	0.89	1.23	25.9
3	R2	All MCs	71	10.4	71	10.4	0.714	81.7	LOS F	5.1	39.1	1.00	0.84	1.15	25.4
Approach			153	8.3	153	8.3	0.789	81.1	LOS F	6.1	44.8	1.00	0.87	1.19	25.5
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.170	8.1	LOS A	1.3	9.4	0.13	0.58	0.13	52.6
5	T1	All MCs	1082	7.1	1082	7.1	0.515	19.6	LOS B	22.3	165.6	0.65	0.58	0.65	46.0
6	R2	All MCs	232	1.4	232	1.4	* 0.882	86.9	LOS F	8.9	62.8	1.00	0.97	1.35	24.4
Approach			1541	5.6	1541	5.6	0.882	28.0	LOS B	22.3	165.6	0.62	0.64	0.68	40.9
North: Anambah Road															
7	L2	All MCs	456	4.1	456	4.1	0.910	70.8	LOS F	31.8	230.7	1.00	1.04	1.21	28.4
8	T1	All MCs	34	3.1	34	3.1	* 0.699	67.7	LOS E	12.9	92.2	1.00	0.85	1.04	28.6
9	R2	All MCs	352	1.8	352	1.8	0.699	70.7	LOS F	12.9	92.2	1.00	0.84	1.04	28.0
Approach			842	3.1	842	3.1	0.910	70.6	LOS F	31.8	230.7	1.00	0.95	1.13	27.5
West: New England Highway (W)															
10	L2	All MCs	61	3.5	61	3.5	0.045	21.0	LOS B	1.0	7.5	0.27	0.64	0.27	49.4
11	T1	All MCs	2011	3.7	2011	3.7	* 0.948	63.8	LOS E	76.6	553.0	1.00	1.05	1.14	33.6
12	R2	All MCs	60	8.8	60	8.8	0.481	97.6	LOS F	4.1	31.1	1.00	0.76	1.00	26.1
Approach			2132	3.9	2132	3.9	0.948	63.5	LOS E	76.6	553.0	0.98	1.03	1.12	29.4
All Vehicles			4667	4.5	4667	4.5	0.948	53.6	LOS D	76.6	553.0	0.87	0.88	0.98	31.8

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.
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 Green.
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.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Shipley Drive												
P1	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
East: New England Highway (E)												

P2 Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
North: Anambah Road											
P3 Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
West: New England Highway (W)											
P41 Stage 1	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P42 Stage 2	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
All Pedestrians	0	263	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92

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

MOVEMENT SUMMARY

Site: 5PM38_F [NEW_ANA_38_PM_O1_50%_No Wyndella (Site Folder: Future Year 2038 wDev_50% (No Wyndella))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Anambah Road / Shipley Drive
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 136 seconds (Site User-Given Phase Times)

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: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.863	82.8	LOS F	16.1	115.5	1.00	0.98	1.23	26.6
2	T1	All MCs	49	4.3	49	4.3	* 0.863	77.9	LOS F	16.1	115.5	1.00	0.98	1.23	27.2
3	R2	All MCs	306	1.0	306	1.0	0.863	82.7	LOS F	16.2	115.5	1.00	0.97	1.23	26.6
Approach			447	2.1	447	2.1	0.863	82.2	LOS F	16.2	115.5	1.00	0.98	1.23	25.3
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.190	18.4	LOS B	2.0	14.3	0.19	0.60	0.19	52.2
5	T1	All MCs	1853	2.1	1853	2.1	0.876	36.4	LOS C	54.7	389.7	0.90	0.86	0.94	41.8
6	R2	All MCs	491	3.2	491	3.2	* 0.799	73.3	LOS F	16.7	119.9	1.00	0.91	1.12	27.7
Approach			2587	2.4	2587	2.4	0.876	41.7	LOS C	54.7	389.7	0.85	0.84	0.90	35.5
North: Anambah Road															
7	L2	All MCs	320	2.4	320	2.4	0.550	38.2	LOS C	15.6	111.3	0.87	0.82	0.87	36.2
8	T1	All MCs	55	5.8	55	5.8	* 0.753	76.5	LOS F	4.5	32.8	1.00	0.85	1.21	26.6
9	R2	All MCs	69	1.5	69	1.5	0.753	82.2	LOS F	4.5	32.8	1.00	0.85	1.22	25.3
Approach			443	2.7	443	2.7	0.753	49.7	LOS D	15.6	111.3	0.90	0.83	0.96	32.6
West: New England Highway (W)															
10	L2	All MCs	366	0.3	366	0.3	0.951	66.1	LOS E	66.5	477.0	1.00	1.08	1.19	29.5
11	T1	All MCs	1335	4.8	1335	4.8	* 0.951	72.5	LOS F	66.5	477.0	1.00	1.10	1.20	30.6
12	R2	All MCs	59	0.0	59	0.0	0.863	111.3	LOS F	4.4	31.0	1.00	0.91	1.41	24.3
Approach			1760	3.7	1760	3.7	0.951	72.5	LOS F	66.5	477.0	1.00	1.09	1.20	27.4
All Vehicles			5238	2.9	5238	2.9	0.951	56.2	LOS D	66.5	477.0	0.92	0.94	1.04	31.1

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
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 Green.
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.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Shipley Drive												
P1	Full	50	53	62.3	LOS F	0.2	0.2	0.96	0.96	216.1	200.0	0.93
East: New England Highway (E)												

P2 Full	50	53	62.3	LOS F	0.2	0.2	0.96	0.96	216.1	200.0	0.93
North: Anambah Road											
P3 Full	50	53	62.3	LOS F	0.2	0.2	0.96	0.96	216.1	200.0	0.93
West: New England Highway (W)											
P41 Stage 1	50	53	62.3	LOS F	0.2	0.2	0.96	0.96	216.1	200.0	0.93
P42 Stage 2	50	53	62.3	LOS F	0.2	0.2	0.96	0.96	216.1	200.0	0.93
All Pedestrians	0	263	62.3	LOS F	0.2	0.2	0.96	0.96	216.1	200.0	0.93

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

MOVEMENT SUMMARY

Site: 4AM_X [ANA_ACC_AM_X (Site Folder: Access)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Anambah Road / Access Road
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: Anambah Road (S)															
10	L2	All MCs	67	1.0	67	1.0	0.053	5.6	LOS A	0.0	0.0	0.00	0.40	0.00	54.2
11	T1	All MCs	32	1.0	32	1.0	0.053	0.0	LOS A	0.0	0.0	0.00	0.40	0.00	56.5
Approach			99	1.0	99	1.0	0.053	3.8	NA	0.0	0.0	0.00	0.40	0.00	54.9
North: Anambah Road (N)															
5	T1	All MCs	32	1.0	32	1.0	0.019	0.0	LOS A	0.0	0.2	0.06	0.10	0.06	59.0
6	R2	All MCs	5	1.0	5	1.0	0.019	5.7	LOS A	0.0	0.2	0.06	0.10	0.06	52.1
Approach			37	1.0	37	1.0	0.019	0.8	NA	0.0	0.2	0.06	0.10	0.06	57.9
West: Access Road															
7	L2	All MCs	5	1.0	5	1.0	0.411	4.7	LOS A	1.4	9.7	0.16	0.55	0.16	48.8
9	R2	All MCs	605	1.0	605	1.0	0.411	4.8	LOS A	1.4	9.7	0.16	0.55	0.16	48.5
Approach			611	1.0	611	1.0	0.411	4.8	LOS A	1.4	9.7	0.16	0.55	0.16	48.5
All Vehicles			746	1.0	746	1.0	0.411	4.5	NA	1.4	9.7	0.13	0.50	0.13	49.7

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.

MOVEMENT SUMMARY

Site: 4AM_X [ANA_ACC_PM_X (Site Folder: Access)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Anambah Road / Access Road
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: Anambah Road (S)															
10	L2	All MCs	665	1.0	665	1.0	0.377	5.7	LOS A	0.0	0.0	0.00	0.55	0.00	52.9
11	T1	All MCs	32	1.0	32	1.0	0.377	0.1	LOS A	0.0	0.0	0.00	0.55	0.00	55.0
Approach			697	1.0	697	1.0	0.377	5.4	NA	0.0	0.0	0.00	0.55	0.00	53.0
North: Anambah Road (N)															
5	T1	All MCs	32	1.0	32	1.0	0.021	0.6	LOS A	0.1	0.4	0.20	0.23	0.20	58.4
6	R2	All MCs	5	1.0	5	1.0	0.021	7.8	LOS A	0.1	0.4	0.20	0.23	0.20	51.6
Approach			37	1.0	37	1.0	0.021	1.6	NA	0.1	0.4	0.20	0.23	0.20	57.3
West: Access Road															
7	L2	All MCs	5	1.0	5	1.0	0.060	4.6	LOS A	0.1	1.0	0.20	0.56	0.20	48.7
9	R2	All MCs	74	1.0	74	1.0	0.060	5.2	LOS A	0.1	1.0	0.20	0.56	0.20	48.4
Approach			79	1.0	79	1.0	0.060	5.1	LOS A	0.1	1.0	0.20	0.56	0.20	48.5
All Vehicles			813	1.0	813	1.0	0.377	5.2	NA	0.1	1.0	0.03	0.54	0.03	52.7

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.

APPENDIX B

TFNSW EMAIL CORRESPONDENCE

Shawn Cen

From: Development North <Development.North@transport.nsw.gov.au>
Sent: Friday, 31 May 2024 1:34 PM
To: Shawn Cen
Cc: Tfnsw ExternalContact211
Subject: RE: 559 Anambah Road Gosforth NSW 2320 - consultation with TfNSW

Hi Shawn,

Thanks for reaching out to TfNSW regarding traffic assumptions for your future TIA.

TfNSW provides the following comments for you in red:

- 3% p.a. growth on New England Highway - Agreed
- 300 lots per year in Lochinvar URA – Seek confirmation from Council
- Site completion year of 2028 and sensitivity test of 2038 – Agreed
- 70% west and 30% east traffic distribution – A 50% / 50% sensitivity analysis is also requested as this site is located closer to Maitland.
- Adopt 0.71/0.78 veh/h traffic generation rate for dwellings - Agreed

Please note that flood free access along Anambah Road and a possible concept DA is an issue that will need to be resolved with Council.

Apologies for the delayed response.

Regards,

Masa Kimura
Development Services Case Officer
Regional and Outer Metropolitan
Development Services
Transport for NSW

T 1300 207 783 **M** 0407 707 999 **E** masa.kimura@transport.nsw.gov.au

transport.nsw.gov.au

6 Stewart Avenue, Newcastle NSW 2302
Locked Bag 2030, Newcastle NSW 2302

Working days Monday to Friday, 8:00am – 3:30pm

Transport
for NSW

OFFICIAL

From: Liz Smith <Liz.Smith@transport.nsw.gov.au>
Sent: Wednesday, May 22, 2024 12:15 PM
To: Shawn Cen <shawn.cen@sctconsulting.com.au>; Development North <Development.North@transport.nsw.gov.au>

Thoughtful Transport Solutions

Suite 4.03, Level 4, 157 Walker Street, North Sydney NSW 2060
sctconsulting.com.au