

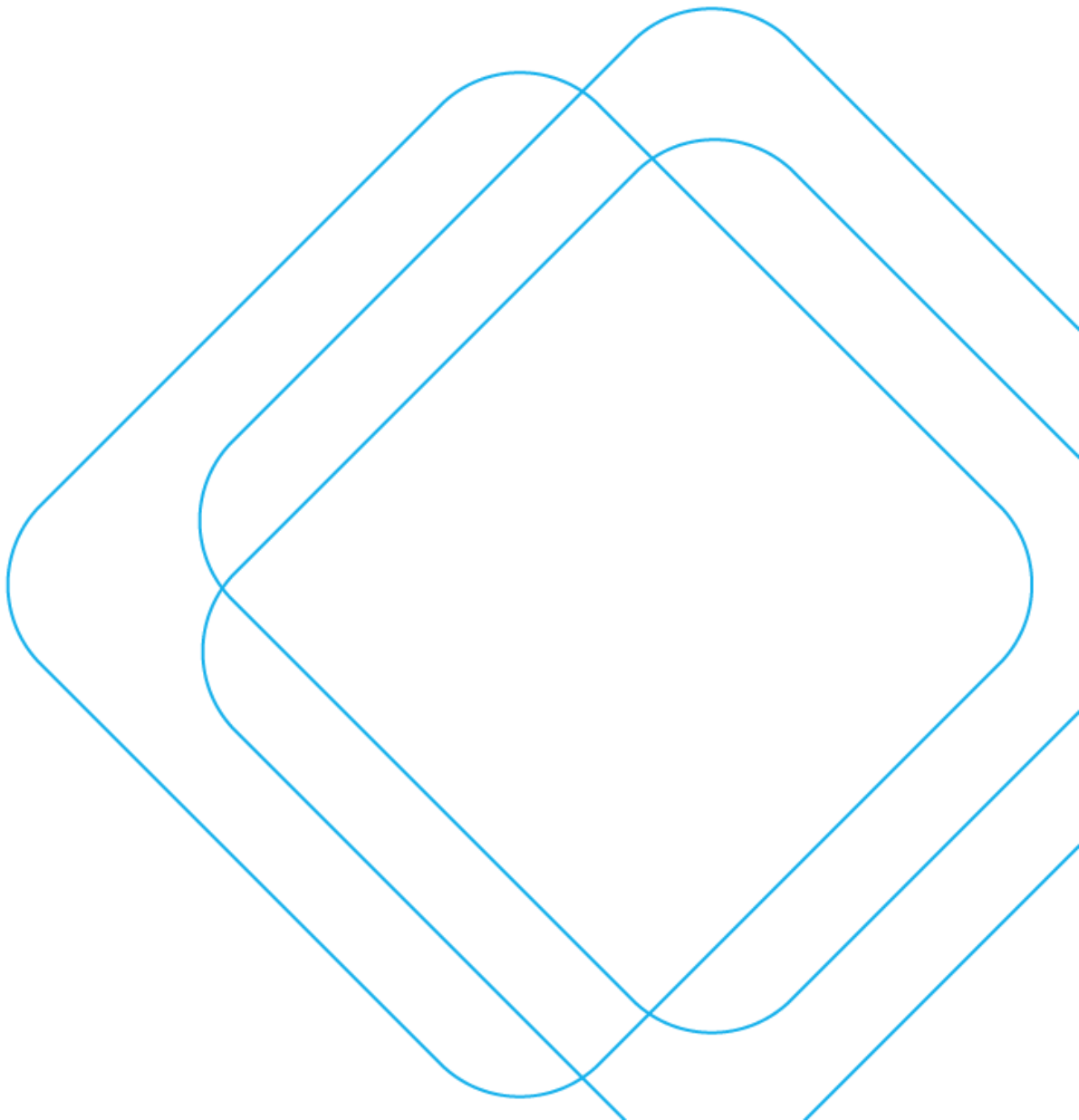
559 ANAMBAH ROAD GOSFORTH

Transport Impact Assessment

20 NOVEMBER 2025



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

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Project Number:	SCT_00581		
Client:	Thirdi Anambah Pty Ltd	ACN:	661 880 619
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Executive Summary

Background

SCT Consulting has been engaged by Thirdi Anambah Pty Ltd to prepare a Transport Impact Assessment for a proposed residential subdivision development application (DA) at 559 Anambah Road in the suburb of Gosforth, within the Maitland City Local Government Area.

This document has been revised to address the authorities' comments and reflected the final layout, yield and associated modelling results as a result of the proposal. However, it is recommended be read in conjunction with the Responses to Submissions (**Appendix A**) and Emergency Access Strategy.

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 220 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.

Transport 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 2033, 2034 and 2038 (This will be carried out for 220 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 as the main intersection for traffic modelling together with the site access at Anambah Road. River Road / New England Highway is also included for emergency access testing.

The modelling scenarios for New England Highway / Anambah Road are summarised **Table E1**.

Table E1 Modelling scenarios

Development scenario	Without background traffic growth	2028 with background growth	2033 with background growth	2034 with background growth	2038 with background growth
Future year base	-	Yes	Yes	Yes	Yes
With Stage 1 (220 lots)	Yes	Yes	Yes	Yes	Yes
Full development (900 lots)	Yes	Yes	-	-	Yes

The modelling confirms that the roundabout of Anambah Road / New England Highway would perform at a satisfactory level,

- With background traffic growth up to 2028 with Stage 1 and full development
- With background traffic growth up to 2033 with Stage 1

The roundabout would fail in 2034 with background traffic growth and Stage 1. Any further growth will cause failure of the intersection operation (**Table E2**).

Table E2 Performance of the roundabout at NEH / Anambah Road

Development scenario	2028	2033	2034
With background growth and Stage 1 (220 lots)	Satisfactory	Satisfactory	Unsatisfactory
With background growth and full development (900 lots)	Satisfactory	Unsatisfactory	Unsatisfactory

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 in 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 etc.

The traffic modelling also indicates that additional upgrades are required in 2038 given the proposed development (Stage 1 and full development), such as additional lanes on the north approach and right turn lanes on the east approach etc (refer to **Figure 4-2** and **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 Transport Impact Assessment will be prepared for each Stage subsequent to Stage 1 to fully consider the impacts of actual traffic growth at that time.

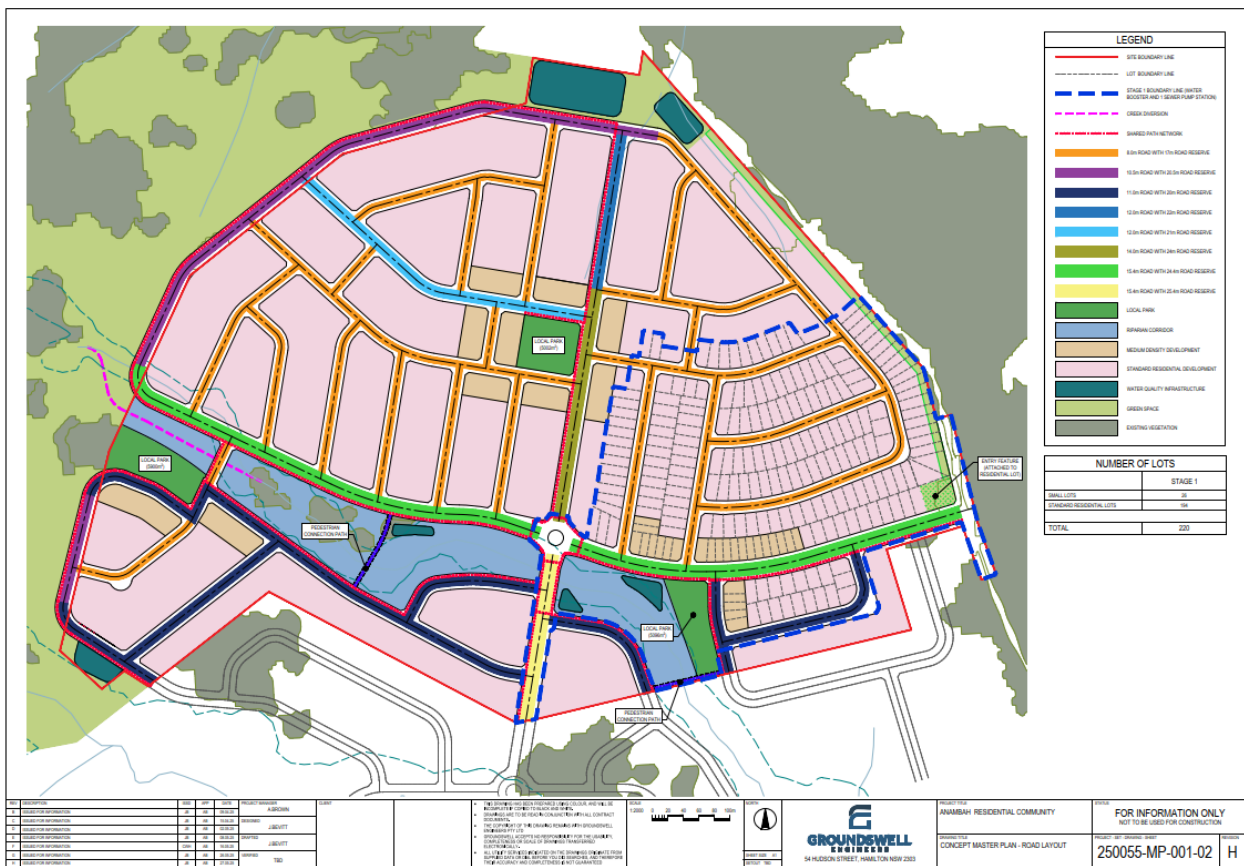
1.0 Introduction

1.1 Background

SCT Consulting has been engaged by Thirdi Anambah Pty Ltd to prepare a Transport Impact Assessment for a proposed subdivision development application (DA) at 559 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 blue lines) is expected to deliver 220 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 (900 lots) and the Stage 1 works (220 lots).

Figure 1-1 Proposed master plan and staging



Source: Groundswell, 2025

1.2 Purpose of this report

SCT Consulting has assessed transport 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 Response to submissions

This document has been revised to address the authorities' comments, as shown in **Table 1-1**. These responses to submissions have been included in **Appendix A**. This document has reflected the final layout, yield and associated modelling results as a result of the proposal, however, it should be read in conjunction with the Responses to Submissions.

Table 1-1 List of Response to submissions

Date	Comments	Name of the document
8/11/2024	Preliminary comments from Council	SCT_00581_559 Anambah Road Gosforth DA_LTR_Response to RFI_v1.0
28/05/2025	Comments from Council and TfNSW	SCT_00581_559 Anambah Road Gosforth DA_LTR_Response to RFI_v5.0
12/08/2025	Further comments from TfNSW	SCT_00581_559 Anambah Road Gosforth DA_LTR_Response to RFI_v6.0
30/10/2025	20251028 - WR 1398 - SIDRA Review of Roundabout - Anambah - Stage 1	20251028 - WR 1398 - SIDRA Review of Roundabout - Anambah - Stage 1_SCT responses

In addition, this document should also be read in conjunction with the Emergency Access Strategy, which is prepared to accompany the application and this Transport Impact Assessment.

1.4 Report structure

The report comprises the following sections:

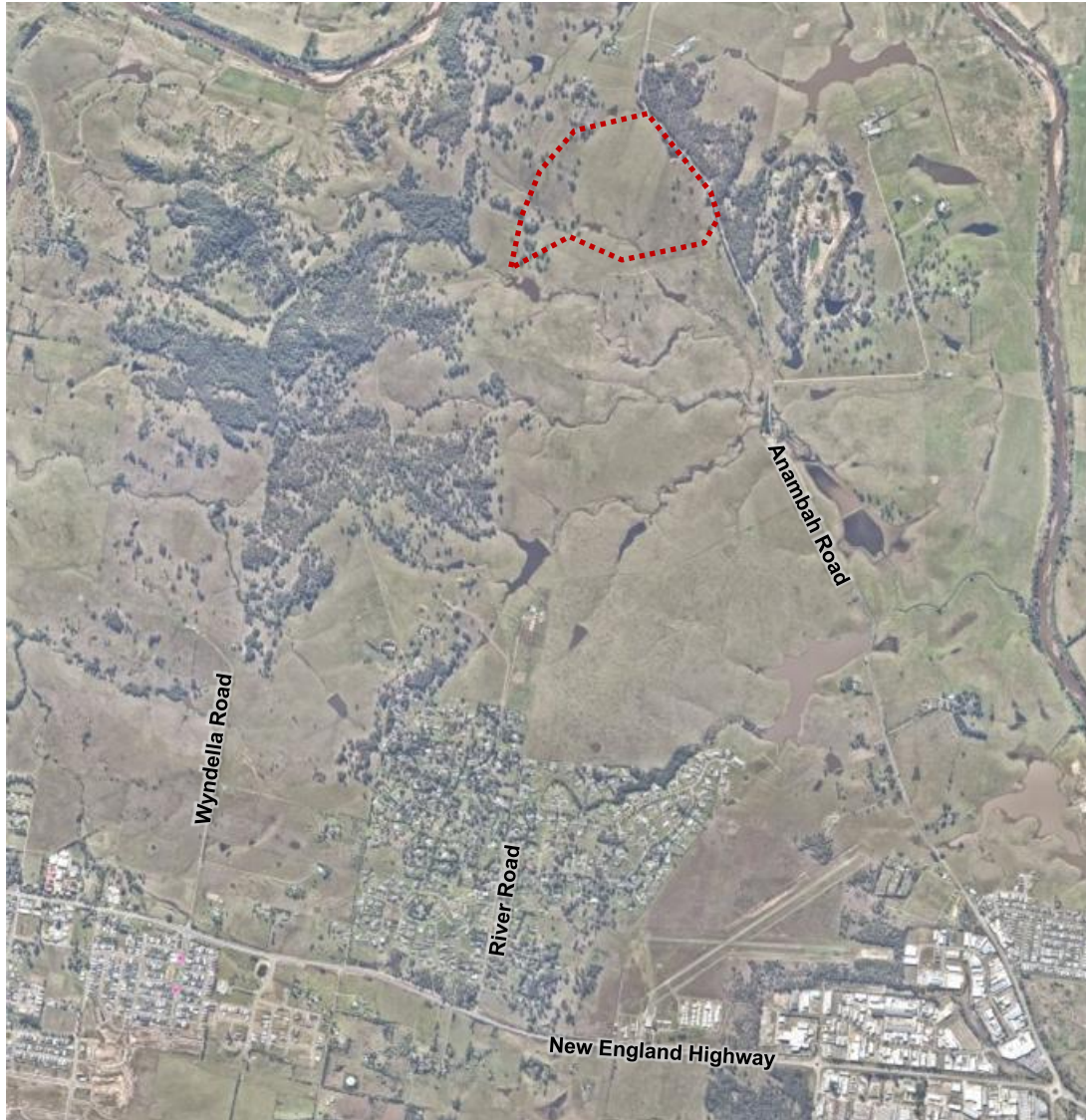
- **Section 2** describes the existing transport conditions for all modes of transport
- **Section 3** describes the proposed development, including its access strategy and proposed road network
- **Section 4** assesses the estimated trips generated, their distribution based on the preferred access strategy, 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

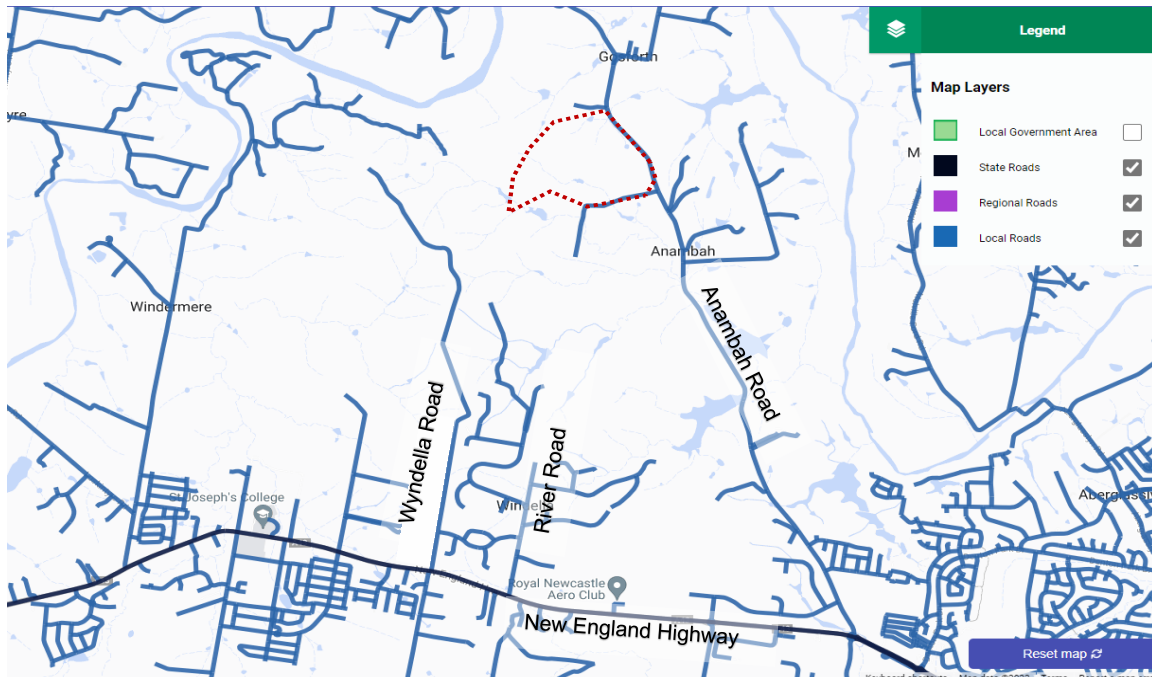


Source: Nearmap, 2024

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



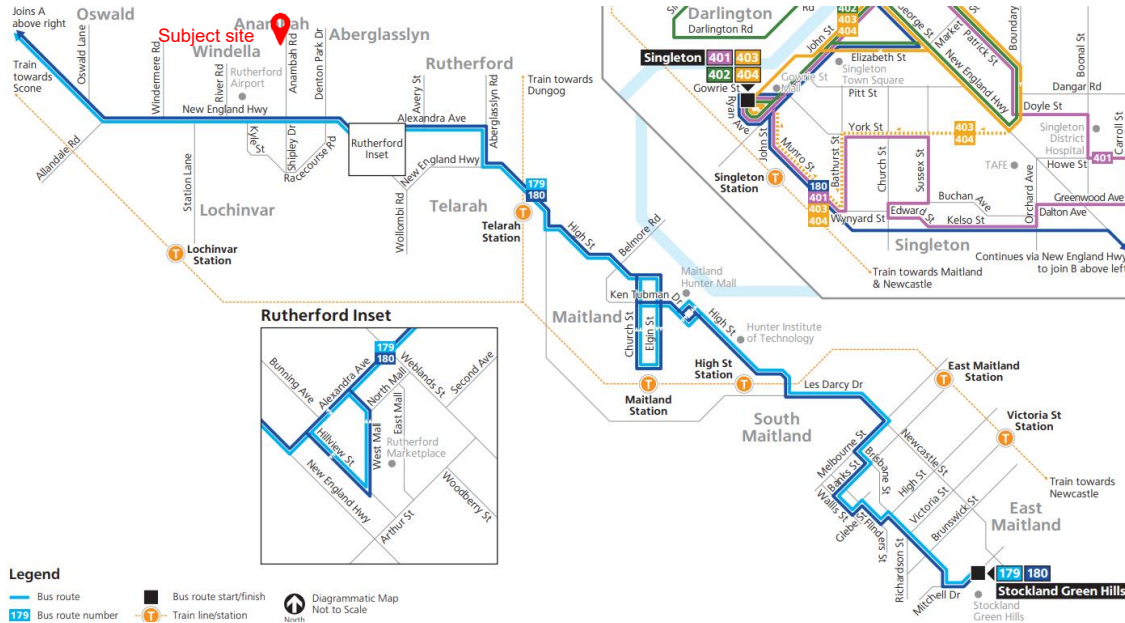
Source: Transport for NSW, 2024

- **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 overleaf**). Two school bus routes (2481 and 2482) are provided along Anambah Road.

Figure 2-3 Public transport network



Source: Transport for NSW, 2023

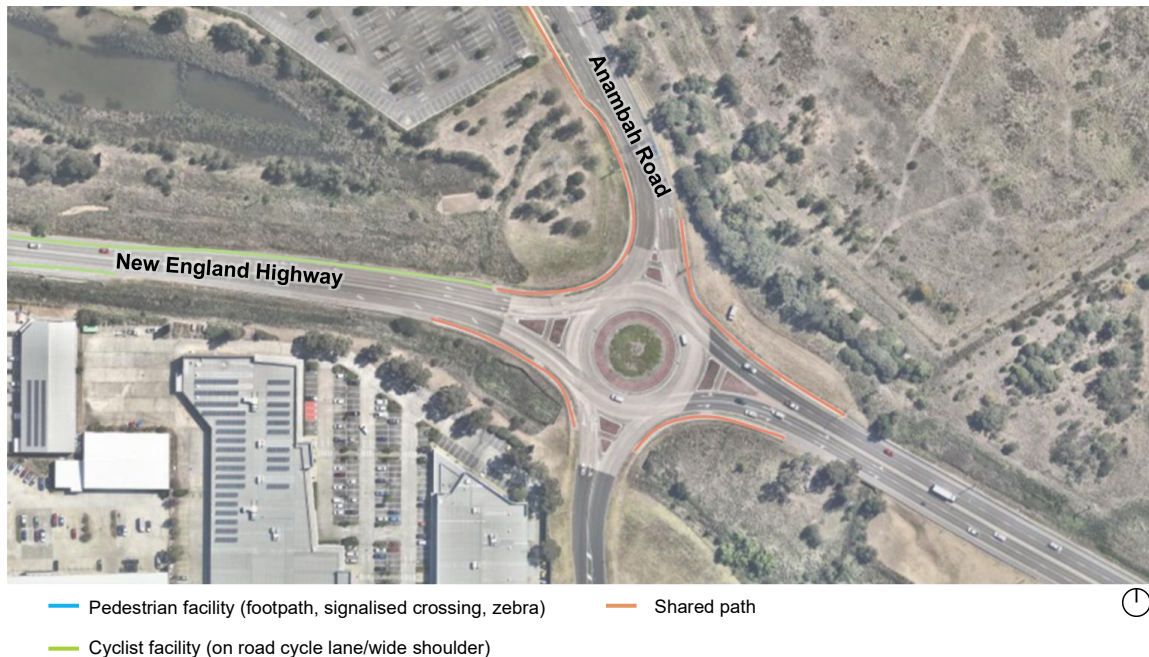
Lochinvar Station is 7km to the southwest of the site. There are no feeder bus routes to this station. Lochinvar Station is served by the Hunter Line, which has an approximately hourly frequency from 7am to 10pm. The Hunter Line connects Lochinvar to Newcastle Interchange and Scenic Rim.

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** overleaf.

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, Degree of Saturation (DoS) is included to complement the Level of Service measure which is 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	18.9s	B	0.45	16.5s	B	0.51

Note that the U-turn movement, where the traffic volume is one car, is considered to be negligible from an overall performance perspective.

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.

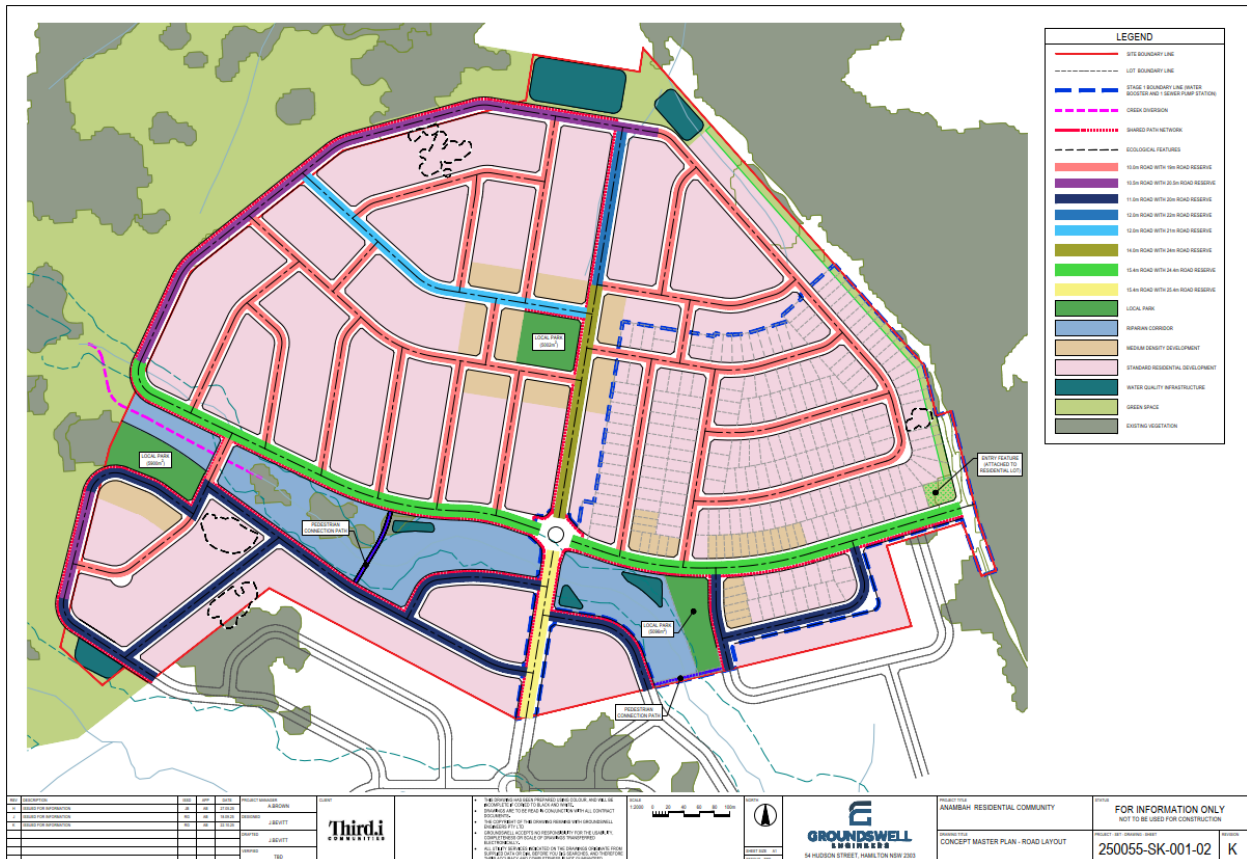
SIDRA output summaries are documented in **Appendix B**.

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 220 residential lots in Stage 1 (labelled in blue 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: Groundswell, 2025

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

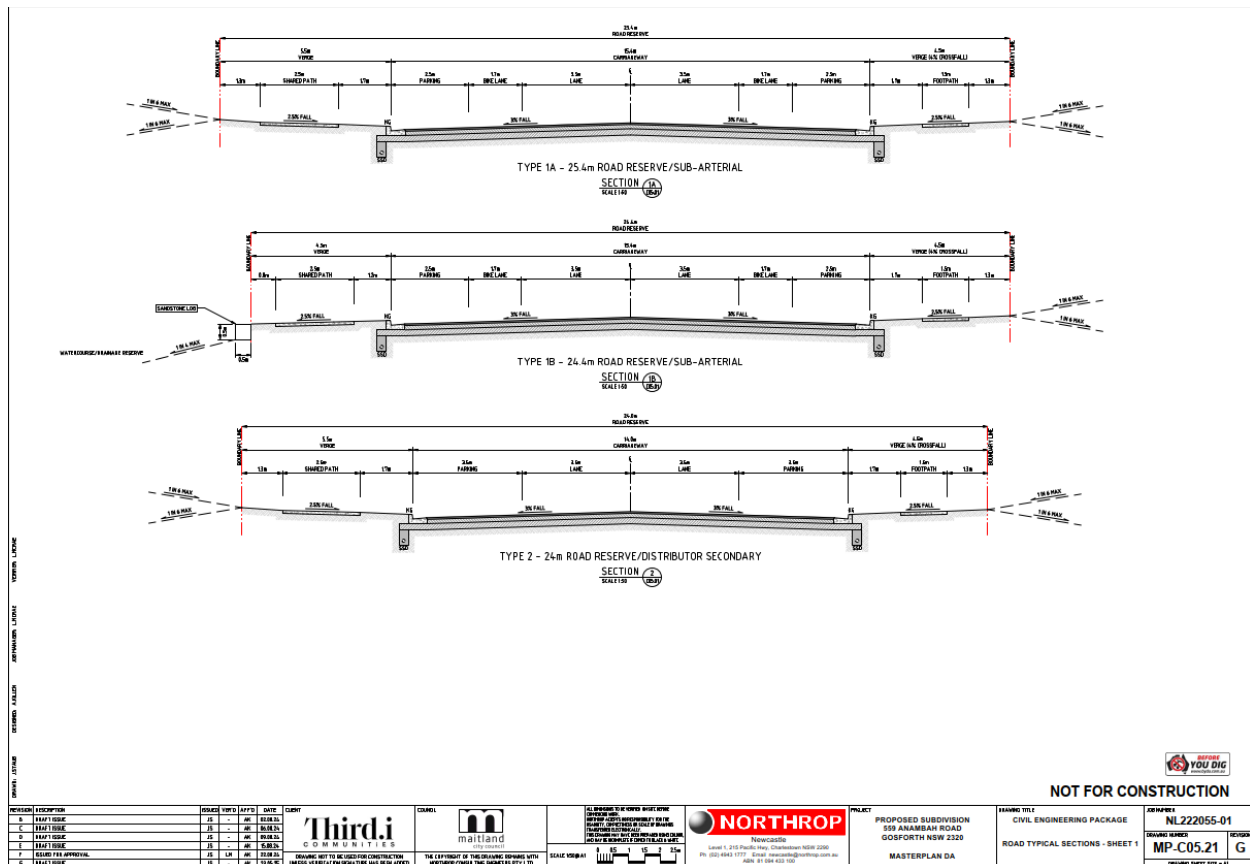
ROAD TYPE	MAX NO. LOTS	RESERVE WIDTH (m) ^a	CARRIAGEWAY / KERB-KERB (m) ^b	ON-ROAD BICYCLE FACILITY	FOOTWAY VERGE (m) ^c	KERB ^d	FOOTPATH (1.5m WIDE) ^e	DESIGN ESA ^f
Local - Place ¹	10	17	8	Mixed	4.5	Rolled	As Required	1 x10 ⁵
Local - Access ¹	20	17	8	Mixed	4.5	Rolled	One side	1 x10 ⁵
Local - Secondary ¹	50	17	8	Mixed	4.5	Rolled	One side	2 x10 ⁵
Local - Primary ¹	100	17	8	Mixed	4.5	Rolled	One side	5 x10 ⁵
Collector - Secondary ¹	200	17	8	Mixed (Parking)	4.5	Upright	One side	1 x10 ⁶
Collector - Primary ^{1v}	300	20	11	Mixed (Parking) ^p	4.5	Upright	One side	1.5 x10 ⁶
Distributor - Secondary ^v	400	23	14	Mixed (Parking) ^p	4.5	Upright	Both sides	2 x10 ⁶
Distributor - Primary ^{m v}	500	24	15 ^q	1.5m Lane	4.5	Upright	Both sides	5 x10 ⁶
Sub-Arterial ⁿ	3500	24.4	15.4 ^r	1.7m Lane ^s	4.5	Upright	Both sides	1 x10 ⁷ min
Industrial - Secondary	10 ⁶	22	13	Mixed	4.5	Upright	As Required	5 x10 ⁷
Industrial - Primary	> 10	22	13	Mixed	4.5	Upright	As Required	1x10 ⁷
School Bus/Public Route ^o			9min / 12min					2/5 x10 ⁶ min
Business / School Precinct			15.4	1.7m Lane	5.5 min ^h	Upright		1 x10 ⁷ min

Source: Maitland City Council, 2024

The proposed road sections as shown in **Figure 3-3** to **Figure 3-5** generally follow MOES, including:

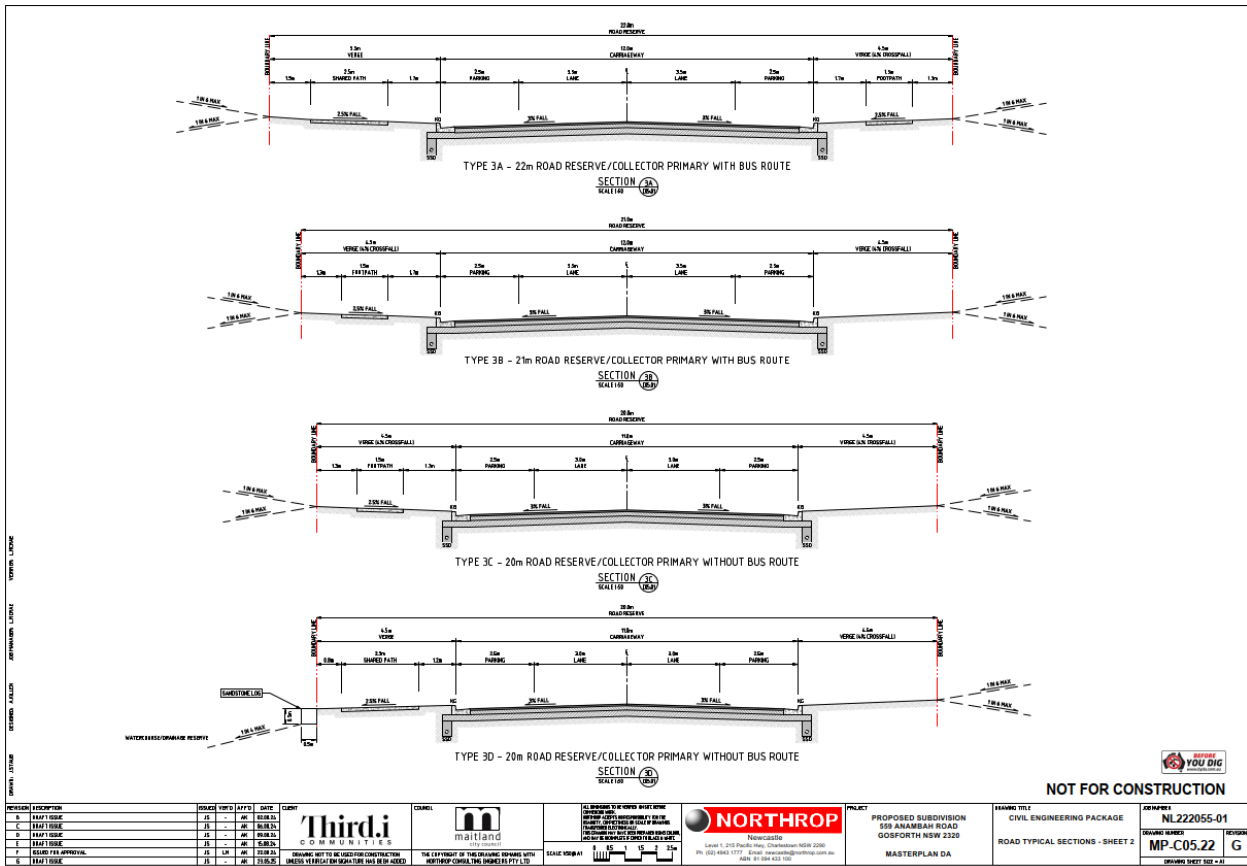
- Type 1A: Sub-arterial road (25.4m wide)
- Type 1B: Sub-arterial road (24.4m wide)
- Type 2: Distributor – secondary (24m wide)
- Type 3A: Collector – primary with bus (22m wide)
- Type 3B: Collector - primary with bus (21m wide)
- Type 3C: Collector – primary without bus (20m wide)
- Type 3D: Collector - primary without bus (20m wide)
- Type 4: Perimeter road (20.5m wide)
- Type 5A: Road reserve (19m wide)
- Type 5B: Road reserve (19m wide)

Figure 3-3 Road cross-sections – Type 1 and 2



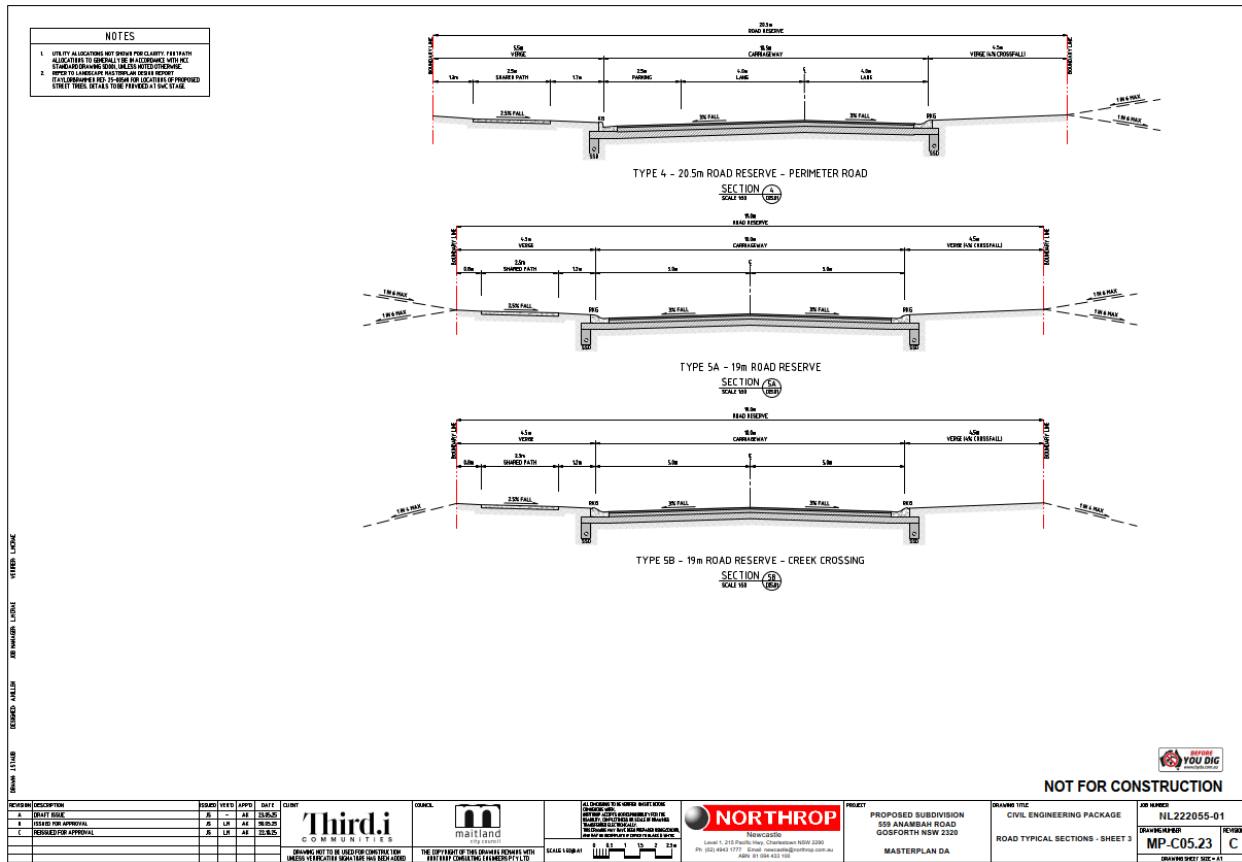
Source: Northrop, 2025

Figure 3-4 Road cross-sections - Type 3



Source: Northrop, 2025

Figure 3-5 Road cross-sections - Type 4 and 5



Source: Northrop, 2025

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

- **25.4m Type 1A 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.
- **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.
- **22m Type 3A 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. The verge 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.
- **20.5m Type 4 Perimeter Road** (from 17m): Parking is allowed on one side only which leaves the space for two-way movements with a carriageway width of 8m (from 6m) including bus allowance. The verge is widened by 1m to accommodate a shared path per local examples.
- **19m Type 5A and 5B Local Road** (from 17m): Parking is provided on both sides, which leaves the space for two-way movements with a total carriageway width of 10.0m (including 5.5m wide travel lanes). This exceeds MOES and PBP2019 requirements for non-perimeter roads.

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 900 dwellings	25.4m	15.4m	1.7m	One side with shared path	See justification above
1B Sub-Arterial	Up to 900 dwellings	24.4m	15.4m	1.7m	One side with shared path	Yes
2 Distributor - Secondary	Up to 400 dwellings	24m	14m	Mixed (Parking)	One side with shared path	See justification above
3A Collector – Primary with bus route	Up to 300 dwellings	22m	12m	Mixed (Parking)	One side with shared path	See justification above
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
3D Collector – Primary without bus route	Up to 300 dwellings	20m	11m	Mixed (Parking)	Shared path only	Yes
4 Parking on one side only	Up to 100 dwellings	20.5m	10.5m	Mixed	Shared path only	See justification above
5A road reserve and 5B creek crossing	Up to 100 dwellings	19m	10m	Mixed	Footpath or shared path	See justification above

3.3 Proposed active transport

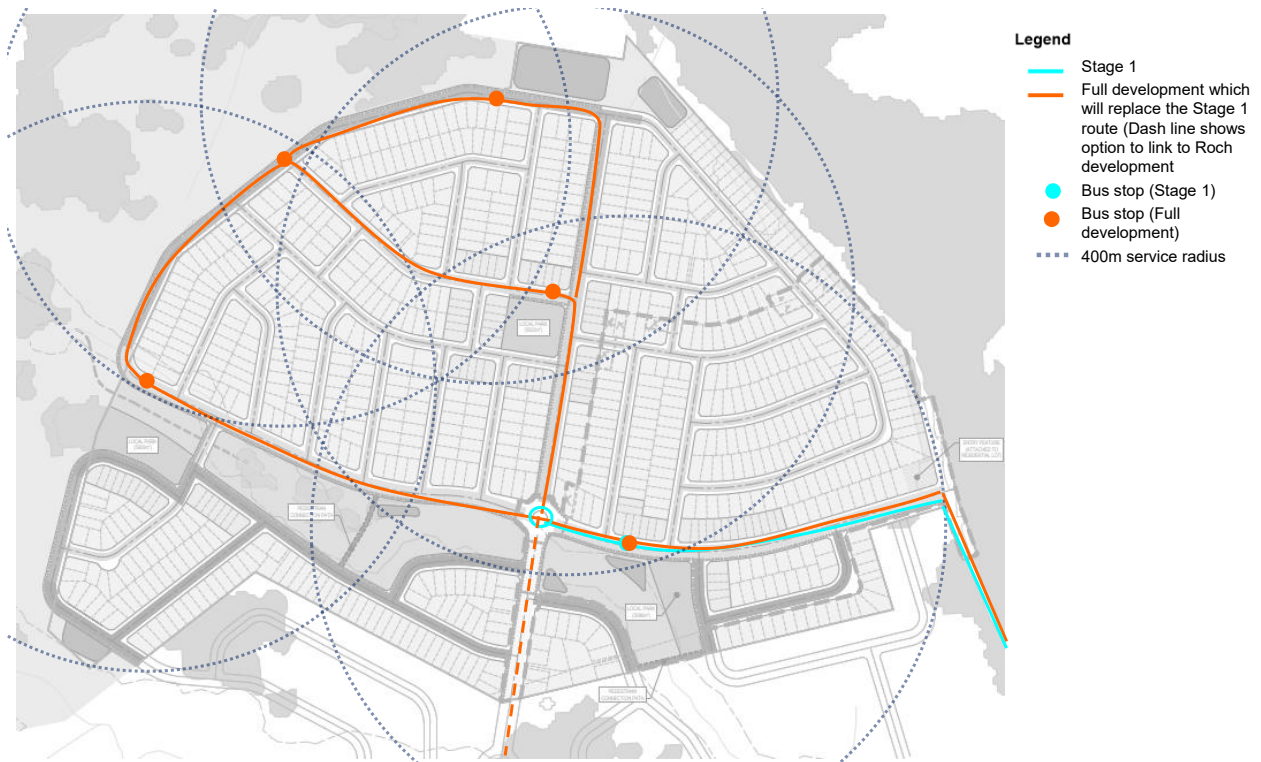
On-road bicycle lanes are provided on the sub-arterial. 2.5m shared paths are also available around the proposed park. The verges will accommodate a 2.5m shared path when it faces with watercourse or on the edge of the site, which provides further opportunity for safe cycling within the subdivision.

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 3-6**. It is evident that the majority of the properties are within a 400m radial distance of the bus route.

Figure 3-6 Bus route



Source: SCT annotation based on Northrop, 2025

4.0 Traffic impact assessment

4.1 Trip generation and distribution

According to correspondence with TfNSW dated on 31 May 2024 (**Appendix C**), 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 2033, 2034 and 2038 (This will be carried out for 220 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.
- Zero growth will occur on local roads such as Anambah Road and Shipley Drive, apart from the Anambah URA itself.

The trip generation from Lochinvar and the proposal is 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	0.71/0.78 veh/dwg for AM and PM peak hour	+2,982 trips	+3,276 trips
Development traffic	Stage 1	220 dwellings		+156 trips	+172 trips
	Full development	900 dwellings		+639 trips	+702 trips
Total		4,420 – 5,100 dwellings			+3,138 – 3,621 trips

4.2 Road network impact

4.2.1 Intersection at New England Highway / Anambah Road

SIDRA 9.1 modelling was undertaken for the intersection of New England Highway / Anambah Road / Shipley Drive given that 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

Scenario	Without background traffic growth		2028 with background growth		2038 with background growth	
	Yes (70%:30%)	Yes (50%:50%)	Yes (70%:30%)	Yes (50%:50%)	Yes (70%:30%)	Yes (50%:50%)
Future year base	-		Yes		Yes	
Stage 1 (220 dwellings)	Yes (70%:30%)	Yes (50%:50%)	Yes (70%:30%)	Yes (50%:50%)	Yes (70%:30%)	Yes (50%:50%)
Full development (900 dwellings)	Yes (70%:30%)	Yes (50%:50%)	Yes (70%:30%)	Yes (50%:50%)	Yes (70%:30%)	Yes (50%:50%)

Note that 2033 and 2034 will be discussed separately in Section 4.2.2.

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

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

Without background growth						2028						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																	
-			-			19.1s	B	0.51	17.8s	B	0.60	54.1s	D	0.97	53.0s	D	0.99
With Stage 1 (220 dwellings) – 70%:30% distribution																	
19.2s	B	0.49	17.9s	B	0.59	26.3s	B	0.54	19.4s	B	0.68	53.0s	D	0.97	48.3s	D	0.99
With Stage 1 (220 dwellings) – 50%:50% distribution																	
18.8s	B	0.48	18.1s	B	0.58	25.8s	B	0.54	19.7s	B	0.68	53.8s	D	0.97	48.5s	D	0.99
Full development (900 dwellings) – 70%:30% distribution																	
37.8s	C	0.61	29.5s	C	0.87	47.8s	D	0.69	48.3s	D	0.97	55.1s	D	0.96	55.3s	D	0.93
Full development (900 dwellings) – 50%:50% distribution																	
31.1s	C	0.57	33.7s	C	0.87	44.2s	D[^]	0.76	53.1s	D[*]	1.00	54.3s	D	0.96	53.1s	D	0.99

Note that the U turn movement, where the traffic volume is one car, is considered to be negligible from an overall performance perspective.

[^]Note that the right turn movement from the south approach records a LoS E with up to 57s delay. However, this only represents less than 2% of the traffic. Hence, it is considered to be negligible from an overall performance perspective.

^{*}Note that the right turn and U turn movement from the west approach records a LoS E with up to 65s delay. However, this only represents less than 2% of the traffic. Hence, it is considered to be negligible from an overall performance perspective.

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 (220 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 (220 lots) and the full development (900 lots) in 2028, including background growth. No infrastructure upgrade is required.

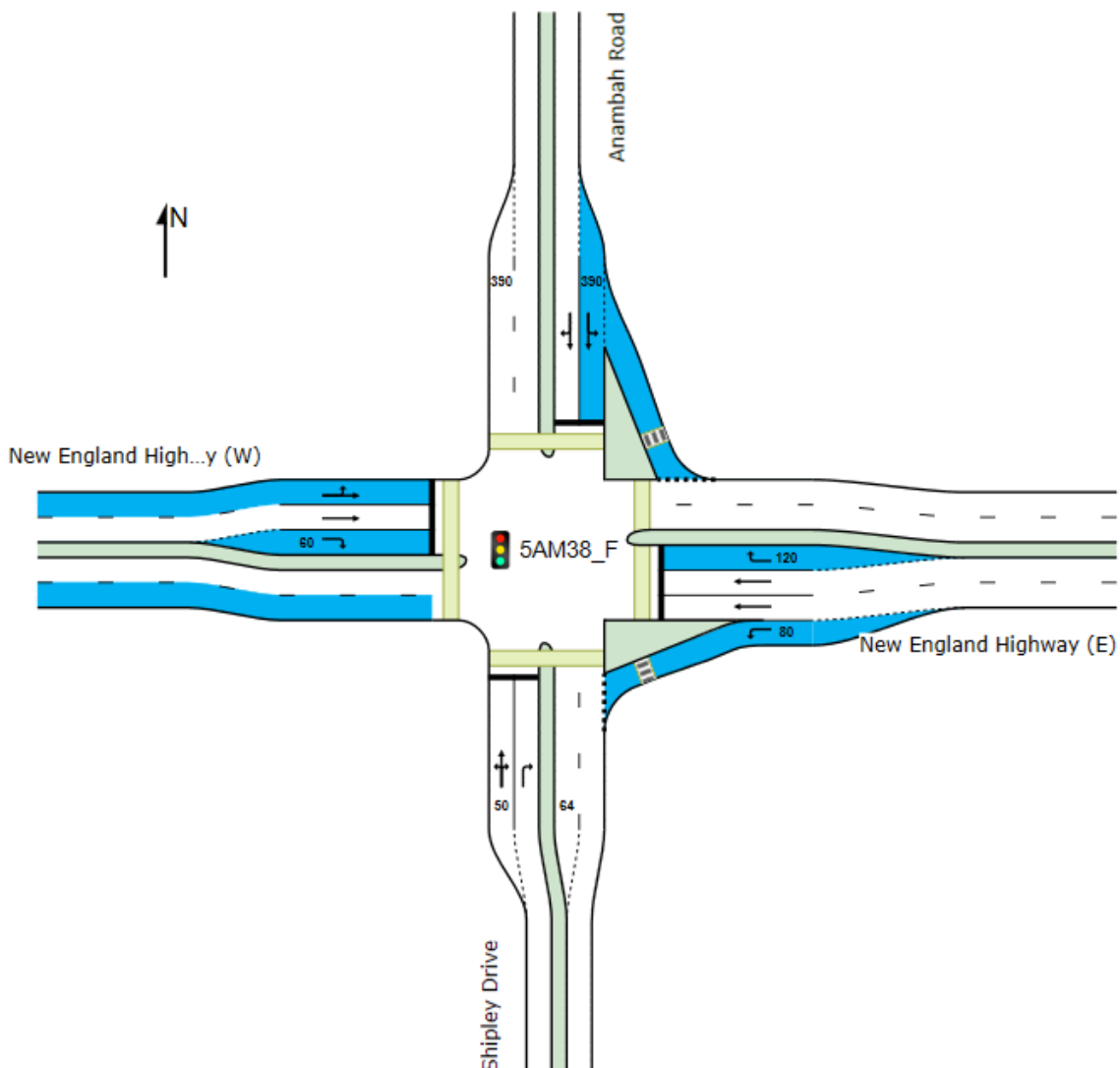
4.2.1.3 Future 2038

Future year base 2038 without development

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 1.35 for the Anambah Road roundabout in the PM peak.

Hence, the roundabout needs to be upgraded by 2038 even if there was no development occurring in the subject site to respond to the significant background traffic growth on New England Highway (Figure 4-1):

Figure 4-1 Intersection upgrade for future base case 2038



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

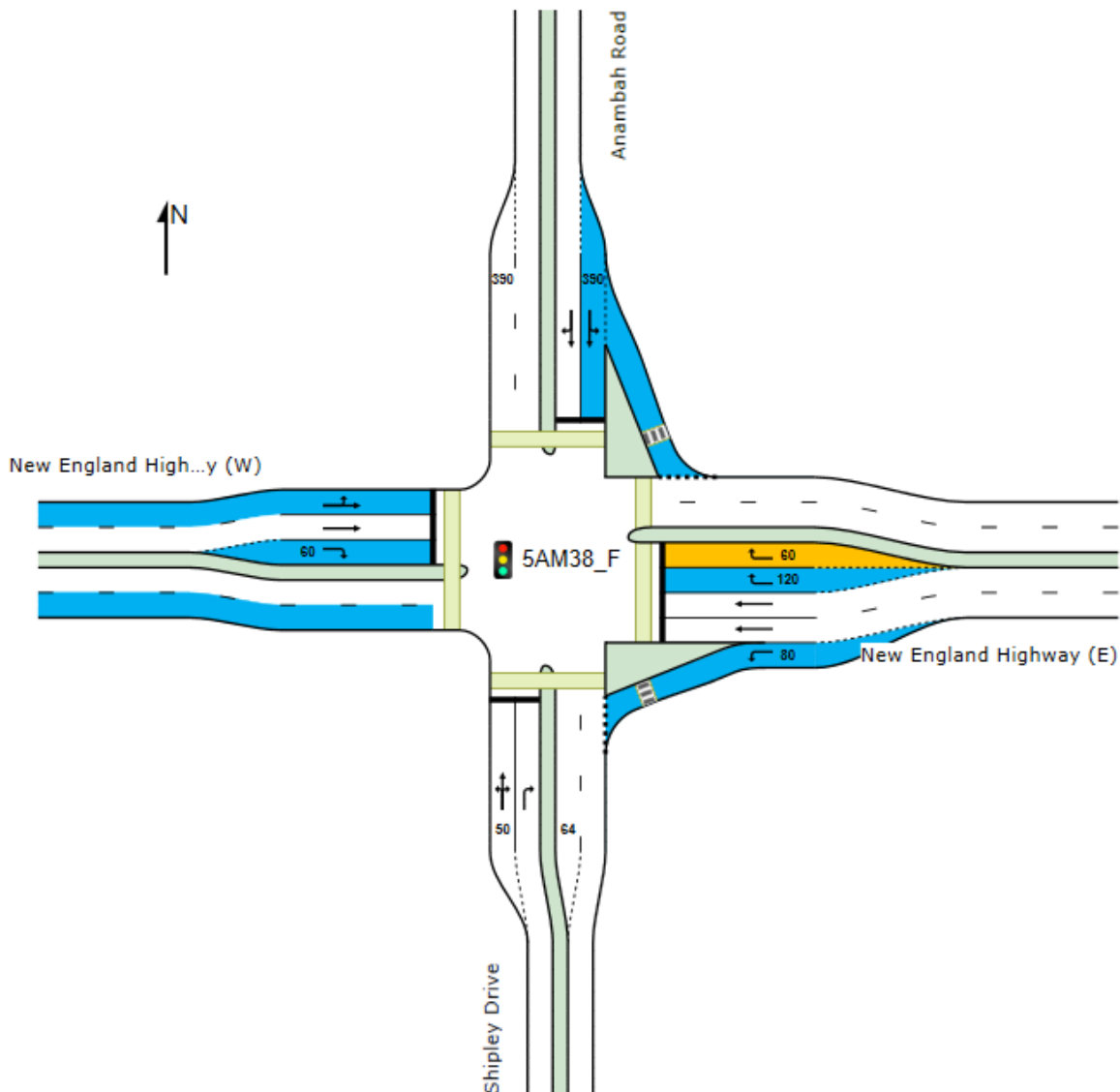
- Signalisation of the intersection
- Duplication of the west approach and exit
- High angle slip lane for left turners on the westbound approach of the New England Highway
- High angle slip lane for left turners on the southbound approach of Anambah Road
- Additional westbound right turn bay of the New England Highway
- Additional eastbound right turn bay of the New England Highway.

The proposed infrastructure upgrade is considered a minimum requirement to cater for background traffic growth and would result in a satisfactory intersection performance with a degree of saturation up to 0.99 in the AM and PM peak.

Future year 2038 with development

For Stage 1 development, an additional right-turn lane (60m long westbound) may be required at the Anambah Road intersection due to the increased development traffic in both peak hours (**Figure 4-2**).

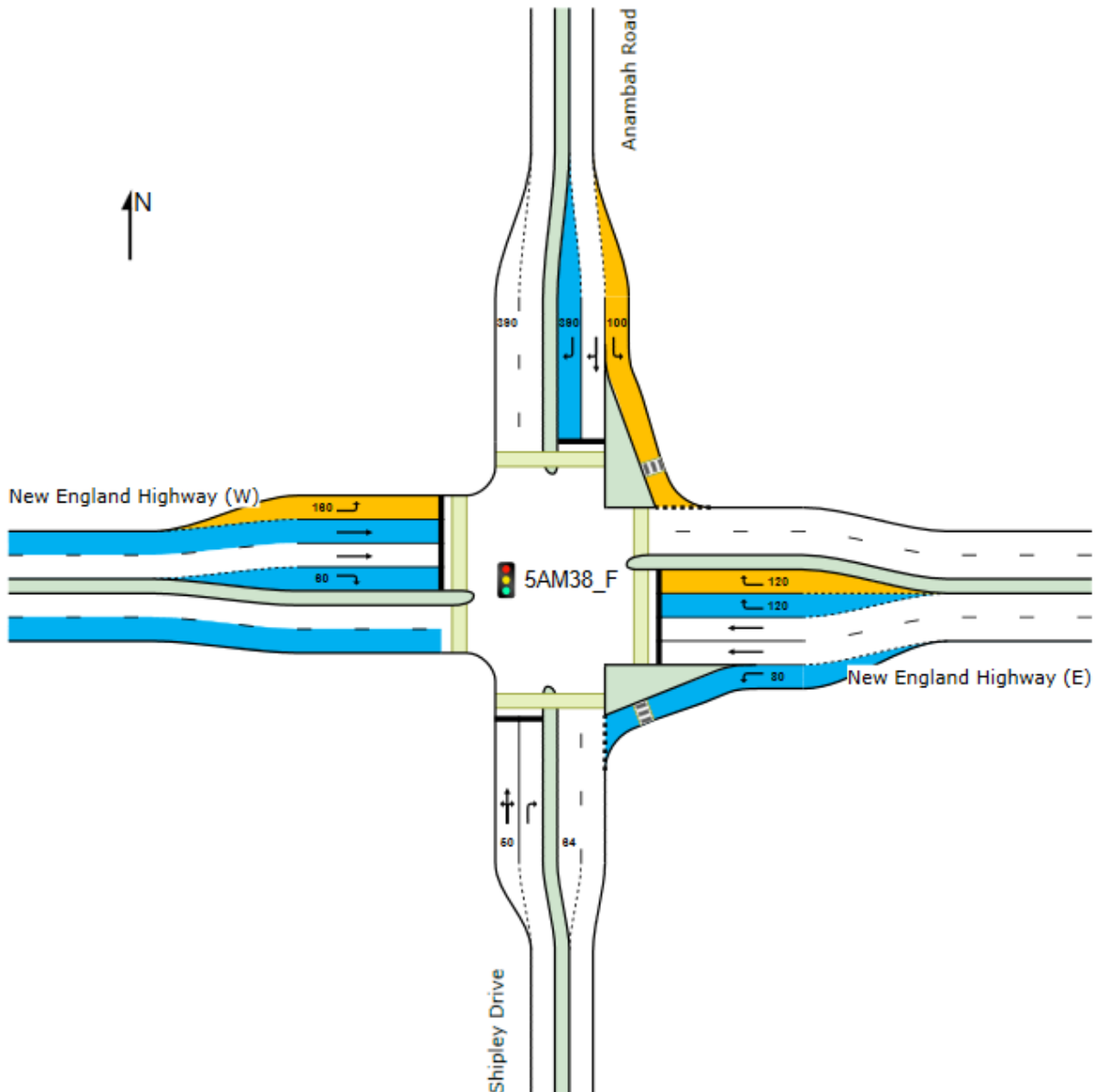
Figure 4-2 Intersection upgrade for Stage 1 development by 2038



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

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

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:

- Short lane for left turners on the southbound Anambah Road
- Additional eastbound left turn bay of the New England Highway
- Extension of 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 Sensitivity test

Anambah Road / New England Highway roundabout

The sensitivity test informs the latest year that the existing roundabout would perform satisfactorily, considering the background traffic growth and Stage 1 only. It is confirmed that by 2033, the roundabout would still perform at LoS C

whereas it would fail in 2034 given a LoS E (57.5-second delay for over 300 vehicles) occurred in the PM peak hour (**Table 4-4**).

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

Scenarios	Delay	LoS	DoS	Delay	LoS	DoS
	Weekday AM peak			Weekday PM peak		
2033 With Stage 1 (220 dwellings)						
70%:30% distribution	27.0s	B	0.69	40.6s	C	0.82
50%:50% distribution	25.5s	B	0.68	44.6s	D	0.84
2034 With Stage 1 (220 dwellings)						
70%:30% distribution	32.0s	C	0.72	59.5s	E	0.90
50%:50% distribution	30.5s	C	0.72	68.6s	E	0.93

Note that the U turn movement, where the traffic volume is one car, is considered to be negligible from an overall performance perspective.

River Road / New England Highway priority intersection

The sensitivity test was conducted for the intersection of New England Highway and River Road in the event of an emergency, such as a flooding, River Road would be used instead of Anambah Road to access the development. The analysis shows that (**Table 4-5**):

- The existing LoS is B in both peak hours with about 50 per cent remaining capacity. The intersection would continue to operate satisfactorily with background traffic growth and LURA traffic (consistent with TfNSW assumptions) until 2028.
- After 2028, with the background growth and LURA traffic (consistent with TfNSW assumptions), the intersection fails before any Anambah traffic.
- The current priority intersection (RIRO) allows for up to 530 lots from Anambah before it fails, which is more than what is required for the first stage of the development.
- If the right turn out from River Road is banned and implementing left turn out only (i.e. retaining right turn in from NEH to River Road), up to 330 lots from Anambah can be allowed without any further infrastructure upgrade, which is still more than what is required for the first stage of the development.

Table 4-5 Intersection performances – River Road / New England Highway

Scenarios	Delay	LoS	DoS	Delay	LoS	DoS
	Weekday AM peak			Weekday PM peak		
Base case	16.8s	B	0.49	16.3s	A	0.46
2028 background traffic only	56.3s	D	0.68	25.7s	A	0.67
Base case with 530 lots (right in right out)	48.4s	D	0.92	23.7s	B	0.58
Base case with 330 lots (left out only no right out from River Road)	52.7s	D	0.97	17.9s	B	0.48

It is noted that LoS D is considered an appropriate service target for tolerance for day-to-day traffic. Please refer to Emergency access/ traffic management strategy for supplementary assessment. The key conclusions for River Road analysis are that:

- River Road is only likely to be used in emergency on average, less than 1 day per year.
- River Road will only be utilised in this manner until the Western Link Road (via Windella Road) is delivered. Note that Council is preparing design documentation and REF for the delivery of this link.

- The LOS is considered acceptable during, for example, a flood emergency, when the overall transport network activity is reduced.

4.2.3 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 and internal roundabout (where the two proposed sub-arterial roads intersect) to ensure there is no capacity issue at the proposed access road based on full development. The modelling result indicates that there is no capacity issue at the proposed Anambah Road access point or internal roundabout (**Table 4-6**).

Table 4-6 Intersection performances – Proposed access road

Scenarios	Delay	LoS	DoS	Delay	LoS	DoS
	Weekday AM peak			Weekday PM peak		
Site Entry Road / Anambah Road	5.7s	A	0.41	7.8s	A	0.38
Internal roundabout	8.9s	A	0.21	8.7s	A	0.21

4.2.4 Traffic volumes allocation

Table 4-7 documents all traffic volumes that are input into model in each scenario and also the volumes contributed by Anambah and Lochinvar development at the New England Highway and Anambah Road.

Table 4-7 Traffic volumes in the modelling (New England Highway / Anambah Road)

Scenario	Total throughput		3% growth p.a. of NEH		Lochinvar demand		Development demand	
	AM	PM	AM	PM	AM	PM	AM	PM
Base Year	2,305	2,764	-	-	-	-	-	-
Base Year with Stage 1	2,461	2,936	-	-	-	-	156	172
Base Year with full development	2,944	3,466	-	-	-	-	639	702
Future Year 2028	2,772	3,257	212	212	256	282	-	-
Future Year 2028 with Stage 1	2,928	3,429	212	212	256	282	156	172
Future Year 2028 with full development	3,411	3,959	212	212	256	282	639	702
Future Year 2033 with Stage 1	3,462	3,992	426	425	575	632	156	172
Future Year 2034 with Stage 1	3,567	4,104	467	466	639	702	156	172
Future Year 2038	3,833	4,382	635	635	896	984	-	-
Future Year 2038 with Stage 1	3,989	4,554	635	635	896	984	156	172
Future Year 2038 with full development	4,472	5,084	635	635	896	984	639	702

Table 4-8 documents all traffic volumes that are input into model in each scenario and also the volumes contributed by Anambah and Lochinvar development at the New England Highway and River Road.

Table 4-8 Traffic volumes in the modelling (New England Highway / River Road)

Scenario	Total throughput		3% growth p.a. of NEH		Lochinvar demand		Development demand	
	AM	PM	AM	PM	AM	PM	AM	PM
Base Year	1,692	1,730	-	-	-	-	-	-
Future Year 2028	2,177	2,245	229	233	256	282	0	0
Base Year trigger test (RIRO)	2,068	2,143	-	-	-	-	376	413
Base Year trigger test (LILO)*	2,125	2,022	-	-	-	-	382	275

*Note that the right turners of the development traffic are double counted due to the right turn ban out (from River Road) at the intersection.

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

The proposal would deliver 220 lots for Stage 1 and 900 lots for the full development in Anambah URA.

This document has been revised to address the authorities' comments, and reflected the final layout, yield and associated modelling results as a result of the proposal, however, it should be read in conjunction with the Responses to Submissions and Emergency Access Strategy. This transport 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 would perform at a satisfactory level,
 - With background traffic growth up to 2028 with Stage 1 and full development
 - With background traffic growth up to 2033 with Stage 1

The roundabout would fail in 2034 with background traffic growth and Stage 1.

- 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.
- Additional development traffic as the result of Stage 1 and the full development in 2038 (with background growth) indicates that the development does trigger the need for further upgrades at the Anambah Road intersection.

APPENDIX A

RESPONSE TO SUBMISSIONS

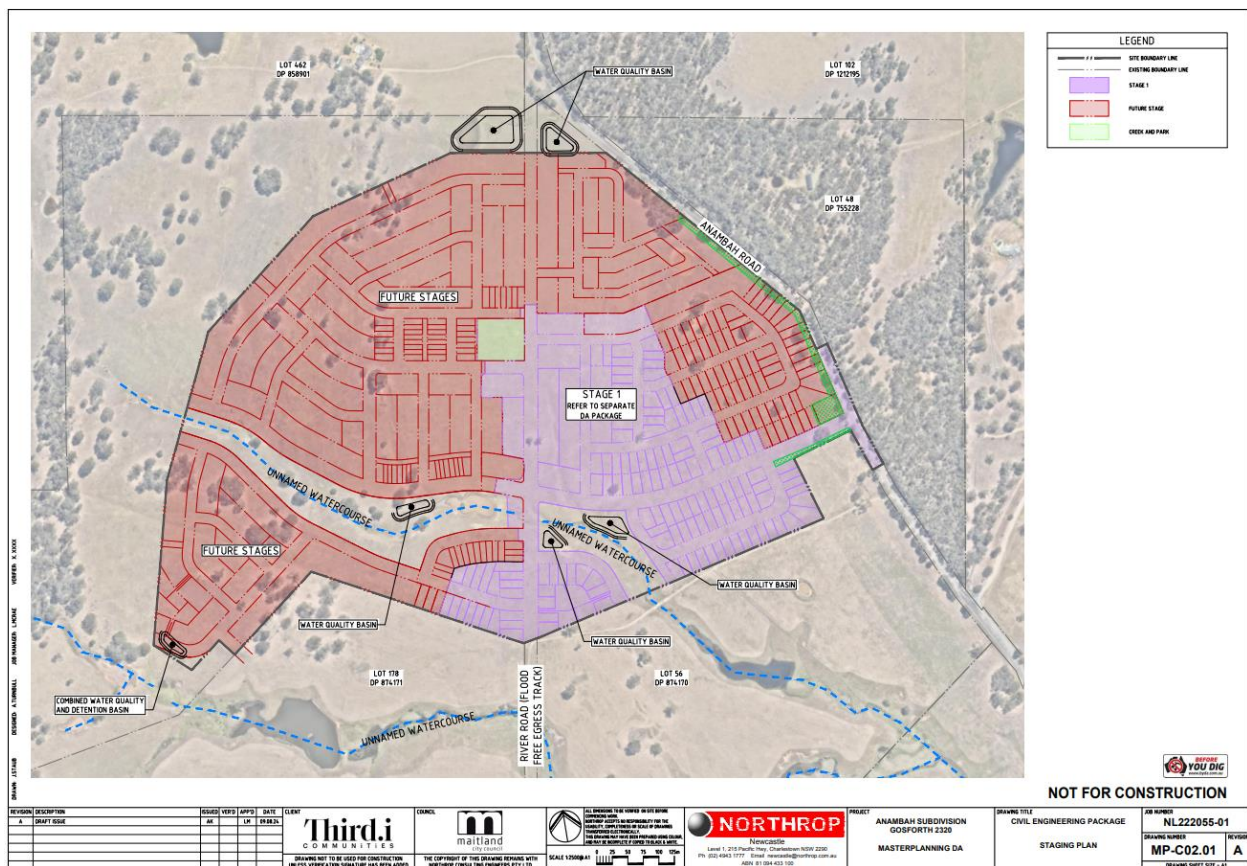
08 November 2024

Emilia Marshall
 Senior Development Planner, Principal Planner
 Maitland City Council
 263 High Street
 Maitland NSW 2320

Dear Emilia

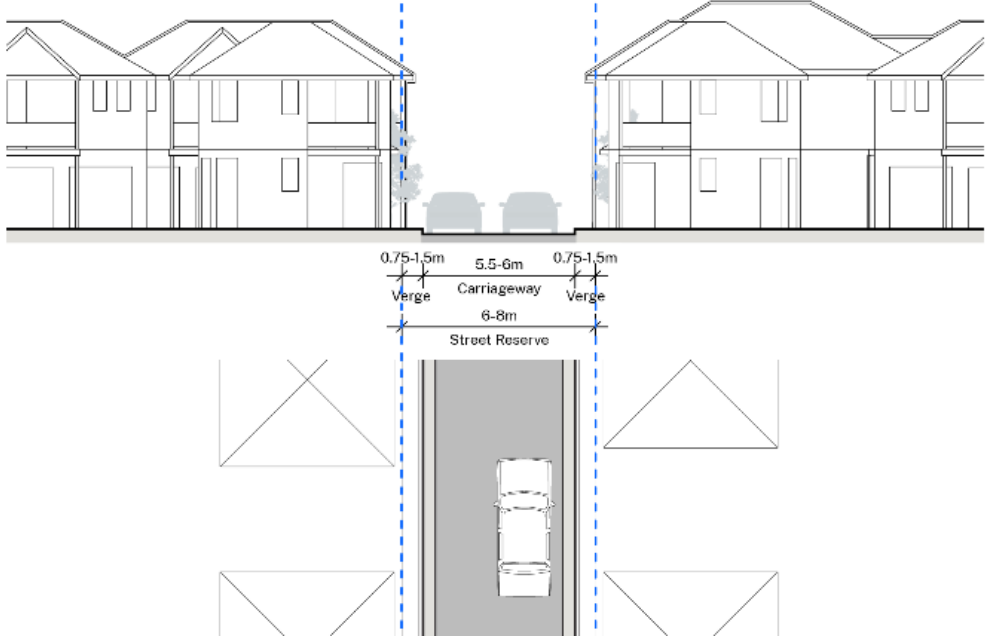
Request for Additional Information DA/2024/763 - Concept Development Application for Two (2) into Nine Hundred (900) Lot Staged Torrens Title Subdivision, and Stage 1 Torrens Title Subdivision of Two Hundred and Forty One 177/874171, 55/874170 559 Anambah Road GOSFORTH NSW 2320

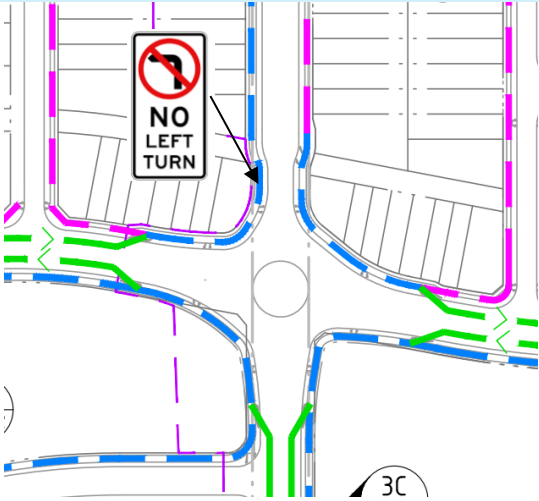
SCT Consulting has been engaged by Thirdi Anambah Pty Ltd to prepare a Traffic Impact Assessment for a proposed residential subdivision development application (DA) at 599 Anambah Road in the suburb of Gosforth, within the Maitland City Local Government Area (see master plan below).



Council staff have reviewed relevant supporting technical studies and provided preliminary review of the DA for the proponent's consideration.

This letter provides a response to some of the civil design and transport planning matters included in RFI letter issued by Council to the proponent on 11 October 2024.

Item No.	Transport planning matters included in RFI letter dated 11 October 2024	Proponent responses
6(a) (i)	Council currently has no guidelines or standards for the use of laneways in new developments.	<p>TfNSW's <i>Design of Roads and Streets Manual</i> (Oct 2024) recommends 6-8m for road reserve of residential lane. With the proposed 8m laneway, the cross section can include a 5.5-6m wide carriageway for two-way traffic. Verges on both sides can be 0.75-1.5m (see example below).</p>  <p>The diagram illustrates a cross-section of a residential lane. At the top, two residential buildings are shown on either side of the lane. Below them, a central carriageway is flanked by verges. The dimensions are labeled as follows: 0.75-1.5m for each verge, 5.5-6m for the carriageway, and a total of 6-8m for the street reserve. A top-down view below shows a car in the center of the lane, with dashed lines indicating the lane boundaries.</p> <p>The configuration as above supports quiet, narrow streets aligned to the rear of residential properties for service accesses and walking and cycling.</p> <p>It should be noted that <i>Design of Roads and Streets Manual</i> discourages overly wide lanes that encourage inappropriate speeds and car parking</p>
6(a) (ii)	Laneways shall not access main collector roads or intersections, especially within close proximity to the proposed roundabout and opposite the intersection near the park.	<p>We will propose left in/left out for these laneways when intersecting the main collectors to reduce conflicts.</p> <p>The exception is the below movement, where a left in is not favourable, i.e. traffic leaving the roundabout need accelerating, while this laneway could slow down the departure, resulting in further delays. Hence, this laneway can only be a left out (west to north).</p>

Item No.	Transport planning matters included in RFI letter dated 11 October 2024	Proponent responses
		 <p>The diagram is a site plan showing a road network. A central road runs vertically. To its left, a road branches off to the west. To its right, a road branches off to the east. Further west, another road branches off to the south. A 'NO LEFT TURN' sign is placed at the intersection of the central road and the westward branch. A speed limit sign for 30 km/h is located at the bottom right of the plan. Various road segments are highlighted in green, blue, and purple.</p>
6(a) (iv)	<p>There are several roads that connect to the outer boundaries of the development. Please advise the purpose of these road. Where are they connecting too? Are they of suitable width?</p>	<p>This current layout is considered as “future proofing” for potential future development on land to the west. The lead-in road (proposed access road) from Anambah Road can serve 3,500 lots whereas the other two connections can serve 300 lots each.</p> <p>Based on the assumption that the lead-in road will service development to the west of Anambah Road, it provides sufficient capacity for future development west of the proposed DA up to 2,600 lots, in equivalent to over 2,200 cars per hour. Based on the current land zoning to the west of the site i.e., RU1+RU2, it is considered that the current width sufficient and suitable. The ‘future’ western development land controlled by the proponent is <60Ha, meaning it is highly unlikely that the number of lots would exceed 2,600 (this would need to be more than 40 dwellings per hectare).</p>
6(a) (v)	<p>Only one watercourse vehicle crossing is proposed. A second crossing shall be provided near the western side of the development for greater connectivity, circulation and facilitate more efficient emergency services access.</p>	<p>The LoS is acceptable (better than D) based on the current yield.</p> <p>The current connection provides a total capacity of up to 2,900 cars/hour based on a width of 25.4m, which has sufficient capacity to service the subdivision.</p> <p>The proposed crossing (River Road) is designed for 1/100 AEP for local and Hunter River flood. It also satisfies RFS’s fire truck requirement.</p> <p>Adding a secondary crossing does not have major benefits to increase level of service and reduce travel time.</p>
6(a)	<p>No detail has been provided around the suitability of the intersection selected off Anambah Road. Including</p>	<p>The civil engineers have supplemented with further information with the intersection design including concept design, sight distance assessment. SCT Consulting evaluated the intersection LoS in</p>

Item No.	Transport planning matters included in RFI letter dated 11 October 2024	Proponent responses
(vii)	design, Level of Service, Safety assessment, etc. Noting the posted speed limit in the area is 100km/h, meaning a 110km/h design speed poses a major safety concern having an urban environment access this road with an inadequate intersection.	<p>Section 4.2.2 of the submitted SCT_00581_559 Anambah Road Gosforth DA_RPT_TIA_v4.0. The proponent intends to lodge an application with TfNSW to reduce the sign posted speed limit along Anambah Road to support the proposed design and achieve safety requirements.</p> <p>The reduced speed limit is considered appropriate given:</p> <ul style="list-style-type: none"> - The number of people impacted by slower speed is limited given the residents in the north of the proposed site. - It is more consistent with the signposting and road geometry on approach to 90 degree bends north of the site - The need for lower speed can be justified given housing density, which is hopefully supported by Local traffic committee and Council.
6(a) (ix)	River Road flood egress route, what design speed and width is necessary? The road design needs to consider efficient emergency services access, bus and truck access. The existing corridor may be inadequate to support the proposal. Greater detailed cross sections shall also be provided at critical locations to demonstrate construction remains wholly within the corridor.	Currently we are proposing to signpost River Road as 40km/hr. The majority of the alignment satisfies a design speed of 50km/hr. River Road will be a two-way two-lane road in its length. More details are to be provided by civil designers.

Yours sincerely

A handwritten signature in black ink that reads "Shawn Cen". The signature is written in a cursive, flowing style.

Shawn Cen

Principal Consultant

shawn.cen@sctconsulting.com.au

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Suite 4.03, Level 4, 157 Walker Street, North Sydney NSW 2060

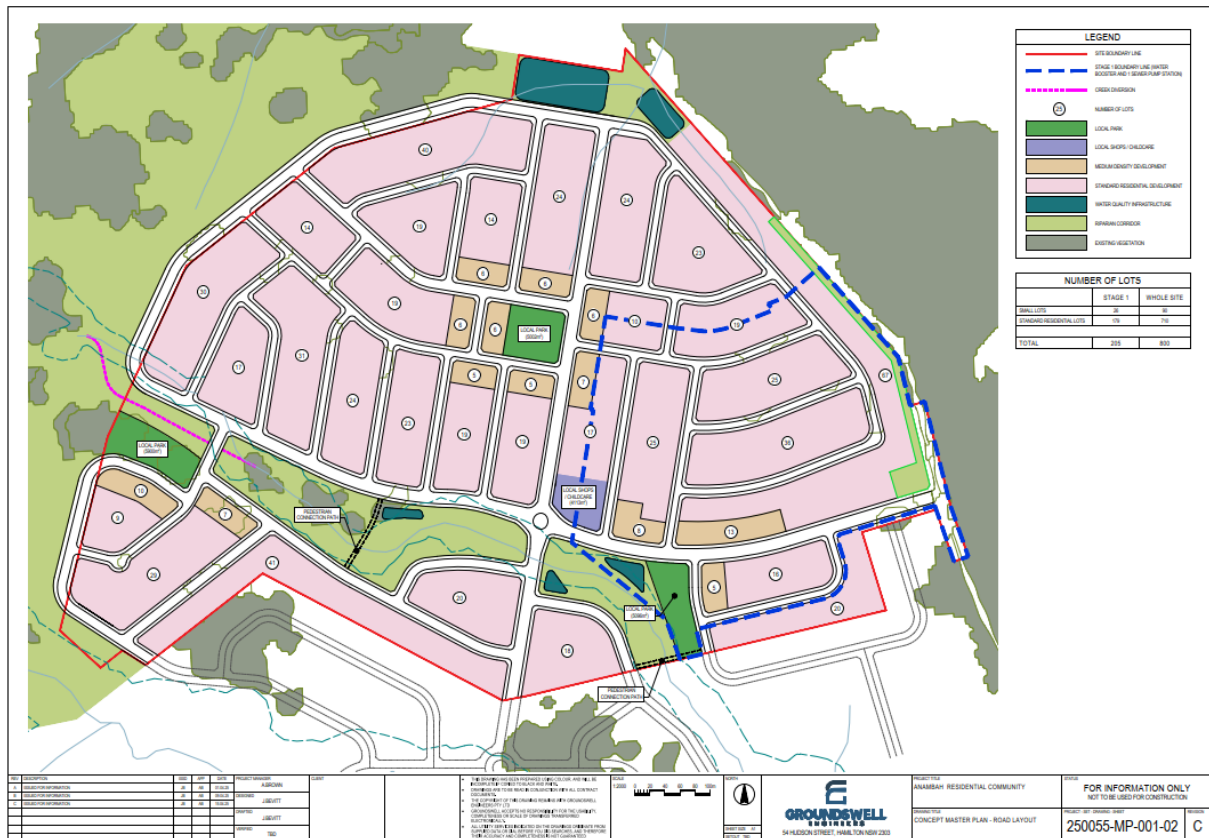
30 April 2025

Emmilia Marshall
 Senior Development Planner, Principal Planner
 Maitland City Council
 263 High Street
 Maitland NSW 2320

Dear Emmilia

Request for Additional Information DA/2024/763 - Concept Development Application for Two (2) into Nine Hundred (900) Lot Staged Torrens Title Subdivision, and Stage 1 Torrens Title Subdivision of Two Hundred and Five 177/874171, 55/874170 559 Anambah Road GOSFORTH NSW 2320

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 (see master plan below).



Council have reviewed relevant supporting technical studies and provided preliminary review of the DA for the proponent's consideration.

A previous letter was provided addressing some of the civil design and transport planning matters included in the RFI letter issued by the Council to the proponent on 11 October 2024.

This letter responds to additional civil design and transport planning matters included in the subsequent RFI letter issued by the Council on 6 February 2025.

No.	Transport planning matters included in RFI letter dated 06 February 2025	Proponent responses
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1f) The Panel seek clarification on the status of River Road, and the practical and legal arrangements for restricting access as proposed. (Refer to point 9(a) below).

River Road between the northern extent of Third.i landholding to the southern existing form is deemed to be a Council public road, though it used to be a Crown Road abutting Portions 46, 49, 50, 53, 54, 57 and 58 (see **Appendix A**)

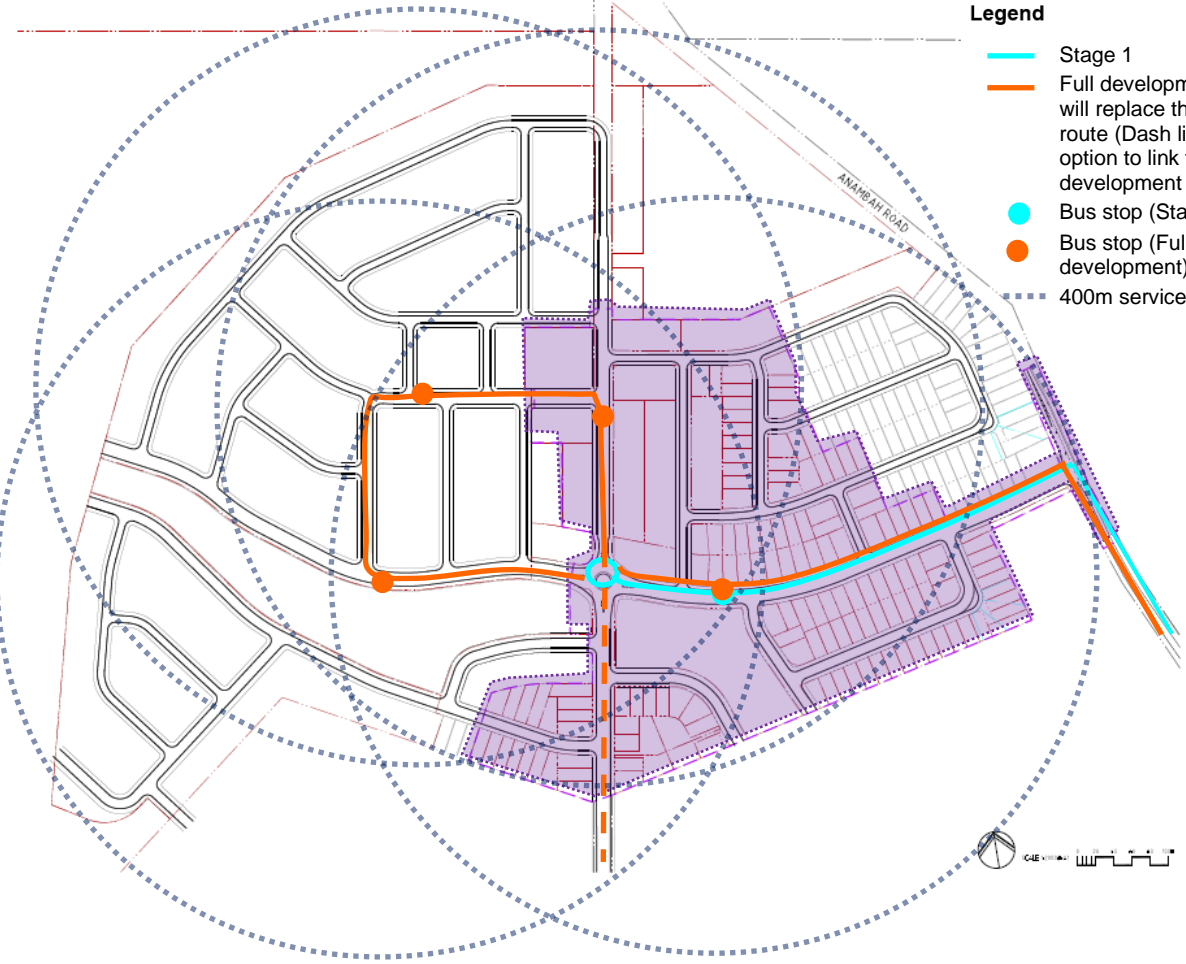


3a) Analysis of the River Road and New England Highway (NEH) intersection in the event of an emergency (bushfire or flooding).

SIDRA 9.1 modelling was conducted for the intersection of New England Highway and River Road. This modelling tested the scenario where, in the event of an emergency such as a bushfire or flooding, River Road would be used instead of Anambah Road to access the development. The analysis shows that:

- The existing LoS is B in both peak hours with 50% remaining capacity.
- In 2028 with the background growth and LURA traffic (consistent with TfNSW assumptions), the intersection fails before any Anambah traffic.

No.	Transport planning matters included in RFI letter dated 06 February 2025	Proponent responses
		<ul style="list-style-type: none"> – The current priority intersection (RIRO) allows for up to 249 lots from Anambah before it fails, which is more than that is required for the first stage of the development. – If the right turn out from River Road is banned and implementing left turn out only (i.e. retaining right turn in from NEH to River Road), up to 560 lots from Anambah can be allowed without any further infrastructure upgrade, which is a consideration for future stages of the development. <p>It is noted that LoS D is considered an appropriate service target for tolerance, whereas in the event of emergency, even worse network efficiency can be accepted, i.e. LoS E.</p> <p>The related SIDRA models are named under folders “Base Year (River Road)”, “Base Year (River Road)_Trigger Test” and “Base Year (River Road)_LO Trigger Test”. The results are in Appendix D.</p>
3b)	A revised SIDRA model addressing all matters raised in the supporting spreadsheet.	Refer to Appendix B .
3d)	There has also been limited consideration given to public transport beyond noting existing routes/stops on the New England Highway. Bus stops to support the proposed 262 lots have not been included within the proposed development. The proposed development should be considered in accordance with the Guidelines for Public Transport Capable Infrastructure in Greenfield Sites, the State Transit Bus Infrastructure Guide and Integrated Public Transport Service Planning Guidelines. This includes ensuring that the roads are capable to support standard buses and that there is adequate pedestrian access to the existing bus stops.	<p>The proposed development includes new bus routes that ensure all lots have access to public transportation within 400 meters. The bus route will occur on Type 1C Sub-arterial Road, Type 2 Distributor Road and Type 3B Collector. All carriageways are greater than 12m, which satisfies bus passage (see 15b).</p> <p>The proposed bus routes and coverage area is shown in Figure 3-5 of the TIA report. We have added proposed bus stop locations in the image below.</p>
15b)	Bus stops shall be provided generally at 400m spacings along the proposed bus route and facilitate maximum 400m walking distances	

No.	Transport planning matters included in RFI letter dated 06 February 2025	Proponent responses
	<p>from surroundings lots. These locations are to be accompanied by pedestrian refuges with kerb extensions and kerb indents for bus bay/lay down (minimum 13m pavement width).</p>	
9d)	Anambah Road Upgrade – To facilitate regular access/egress from	In accordance with Div 4.4 of the EPA Act, the consent authority "does not need to consider the likely impact of the carrying out of development that may be the subject of subsequent development applications". Regardless, based on the

No.	Transport planning matters included in RFI letter dated 06 February 2025	Proponent responses
	<p>the site, Anambah Road shall be upgraded to be above the local 1%AEP storm event (equivalent to 5%AEP Hunter River Flood level), to avoid frequent isolation of the new community. The upgrade shall also incorporate safety improvements, road widening and road reconstruction along the corridor to support the increase in traffic along Anambah Road.</p>	<p>900 dwellings in the full development, it is estimated that there will be 800 (southbound) and 865 (northbound) vehicles on Anambah Road during the peak hour. This is considered to be accommodated by one lane, assuming the capacity for each lane of a major collector road is 1,200 vehicles per hour. No widening of Anambah Road is required.</p> <p>When it comes to the 205 lots for Stage 1, the estimated demand is even lower at 358 (southbound) and 375 (northbound) vehicles per hour. Hence, the current infrastructure is sufficient to satisfy the demand.</p> <p>Flood appropriateness is addressed in the LEP (i.e. requirement for flood-free egress via Western Link Road) at 1,200 lots</p> <p>Anambah Road need not be upgraded to be above the 1%AEP storm event (equivalent to 5%AEP Hunter River Flood level), as an appropriate evacuation route can be provided via the River Road.</p> <p>The civil design includes intersection safety improvements at the access road/entry.</p>
9g)	<p>Upgrades of the New England Hwy/Anambah Road Intersection will be required for full development (900 lots) as identified in the TIA. TfNSW are to comment on the upgrade requirements.</p>	<p>See comments addressed in item 3b and Appendix B.</p> <p>Noted.</p> <p>Stage 1 development only will not trigger any upgrade.</p> <p>Upgrades may be required prior to 900 lots, however, as confirmed in the TIA, this is not a result of the development alone but due to background growth in the NEH corridor. This would be confirmed with the subsequent DA.</p> <p>TfNSW to determine appropriate contributions for this intersection.</p>
9j)	<p>Long road lengths shall include Local Area Traffic Management (LATM) devices at regular intervals to control vehicle speeds. This may include kerb extension/blisters at intersections, raised intersection thresholds, etc.</p>	<p>Agree – civil engineer to provide.</p>
9k)	<p>Incorporate second watercourse road crossing near the western side of the development for greater connectivity, circulation, evacuation needs and facilitate more efficient emergency services access.</p>	<p>This has been added.</p>
9o)	<p>The traffic report only considers external trip distributions and impacts to intersections outside of the development. The report shall model internal trip</p>	<p>We have carried out a SIDRA assessment for the intersection of the site access road and Anambah Road and the internal roundabout based on full development (900 dwellings).</p> <p>The related SIDRA models are named under the folder “Access Road”. The results are in Appendix D. It is confirmed that LoS are As at the proposed intersection during the peak hours.</p>

No.	Transport planning matters included in RFI letter dated 06 February 2025	Proponent responses
	generation/distribution to demonstrate the proposed road network is suitable and detail the volume of traffic expected on the main collector roads, including Anambah Road.	
15d)	Minimal detail has been provided around the suitability of the intersection selected off Anambah Road. Including design, Level of Service, Safety assessment, etc. Noting the posted speed limit in the area is 100km/h, meaning a 110km/h design speed poses a major safety concern having an urban environment access this road with an inadequate intersection.	<p>The LoS has been included in the submitted TIA and the response in 9o), which confirms there is no capacity issue at the proposed access.</p> <p>Civil engineer to provide details on safety assessment.</p> <p>We have discussed with Jamie Smoother and Nicholas Trajcevski at TfNSW regarding speed reduction on Anambah Road. The proposal is in principle supported. According to TfNSW, the proponent should inform TfNSW four months prior to development construction, such that they can undertake a comprehensive speed zone review. Based on Speed Zoning Standards, the entire length of Anambah Road would be required to reduce to 80km/h.</p>

Yours sincerely

A handwritten signature in black ink that reads "Shawn Cen". The signature is written in a cursive, flowing style.

Shawn Cen

Principal Consultant

shawn.cen@sctconsulting.com.au

0416 292 374 | (02) 9060 7222

Suite 4.03, Level 4, 157 Walker Street, North Sydney NSW 2060

APPENDIX A

RIVER ROAD STATUS REPORT

Report

Re: - River Road, Anambah

Summary information

<u>Parcel Description</u>	<u>Details</u>	<u>Title Reference</u>
<u>As regards the part of River Road tinted yellow on the attached Cadastral Records Enquiry Report</u>	Council Public Road (Section 8 of the Local Government Amending Act of 1908)	Not under the act

Detailed information.

As regards the part of River Road tinted yellow on the attached Cadastral Records Enquiry Report

This part of River Road was originally a Crown Road abutting Portions 46, 49, 50, 53, 54, 57 & 58 in the Parish of Gosforth.

No evidence could be found of a gazette dedication or transfer to the local council.

The roads Branch Edition of the Parish Map of Gosforth shows the subject part of River Road to be affected by Roads Branch File Rds 1909.966/4 Cessnock, 3rd November 1910 Section 8.

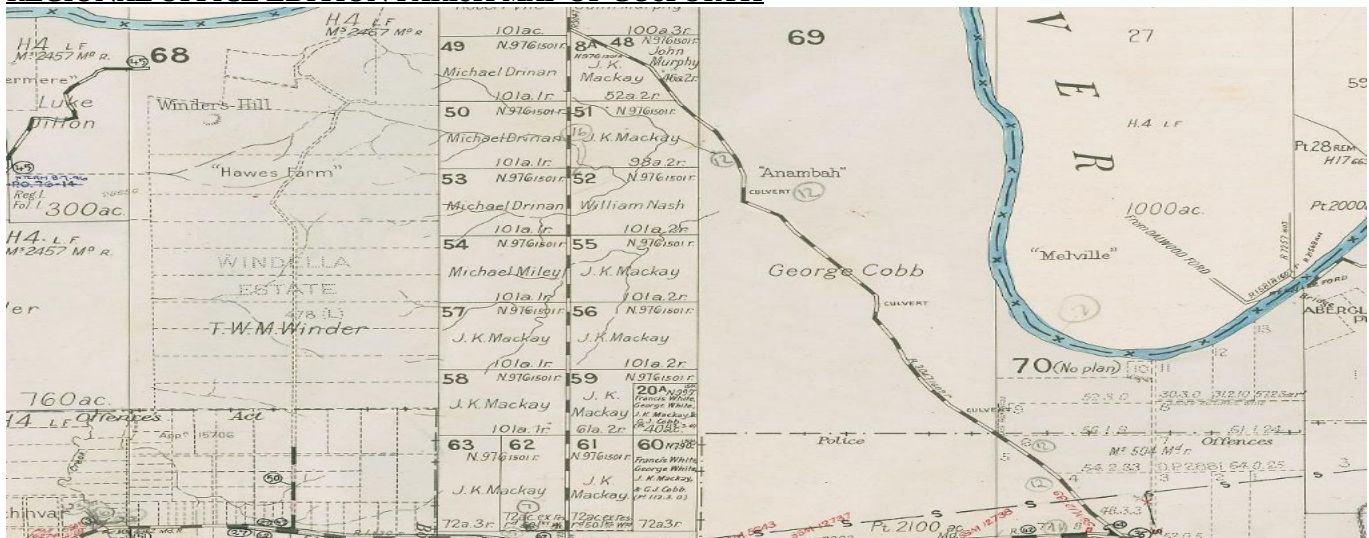
In view of my findings and in view of Section 8 of the Local Government Amending Act of 1908, this part of River Road is no longer a Crown Road, but now deemed to be a Council Public Road.

- It is noted that this part of River Road has never been deemed to be a private road.

Documentary title.

The title to this part of River Road has never been held in a Real Property Act Title.

REGIONAL OFFICE EDITION PARISH MAP OF GOSFORTH



Yours sincerely
 Mark Groll
 24 July 2024

Chartered to date J. Murray
Examined by J. Murray
Put into Branch use
27.4.71.

Sec 8.3.1110-R⁴ 09 7/8 (Cessnock)

PARISH OF GOSFORTH COUNTY OF NORTHUMBERLAND

LAND DISTRICT: KAITLAND
CITY: KAITLAND
PASTURES PROTECTION DISTRICT: KAITLAND
EDITION: SEVENTH
DATE OF MAP: 19th NOVEMBER 1965
AIR PHOTO AVAILABLE

Scale: 1 inch = 1 mile
Notes on map purchase and land use regulations.

WITHIN
District: Eastern N.E.S.
Planning Scheme: Northumberland County District
Gen. 18th December 1965, No. 203 M.R.
Brid and Annual Secretary: 15th October 1970.

DISTINCTIVE BOUNDARIES ETC.

Legend for distinctive boundaries including Territorial Division, Parish, Land District, and various planning schemes.

REFERENCE NOTES

Table with columns: No., Loc., Details. Lists various planning and survey notes.

PARISH NUMBERS USED

Table with columns: Por, Plan, Loc, Vol, Fol, Por, Plan, Loc, Vol, Fol. Lists parish numbers and their details.

MINING SURVEYS

Table with columns: No., Plan, Area, To Mine for, No., On, Plan, Area, To Mine for. Lists mining survey details.



PLAN

OF A ROAD

from Hudson's Crossing of the Hunter River, to the Main North Road

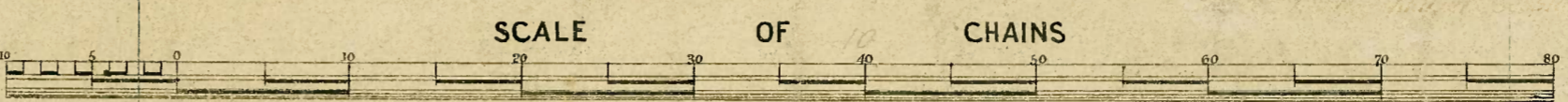
Parish of Gosforth

COUNTY OF NORTHUMBERLAND

proposed to be opened as a Parish Road under Act of Council 4 William IV. N.º II

Road to be opened, One Chain wide, shown in Red

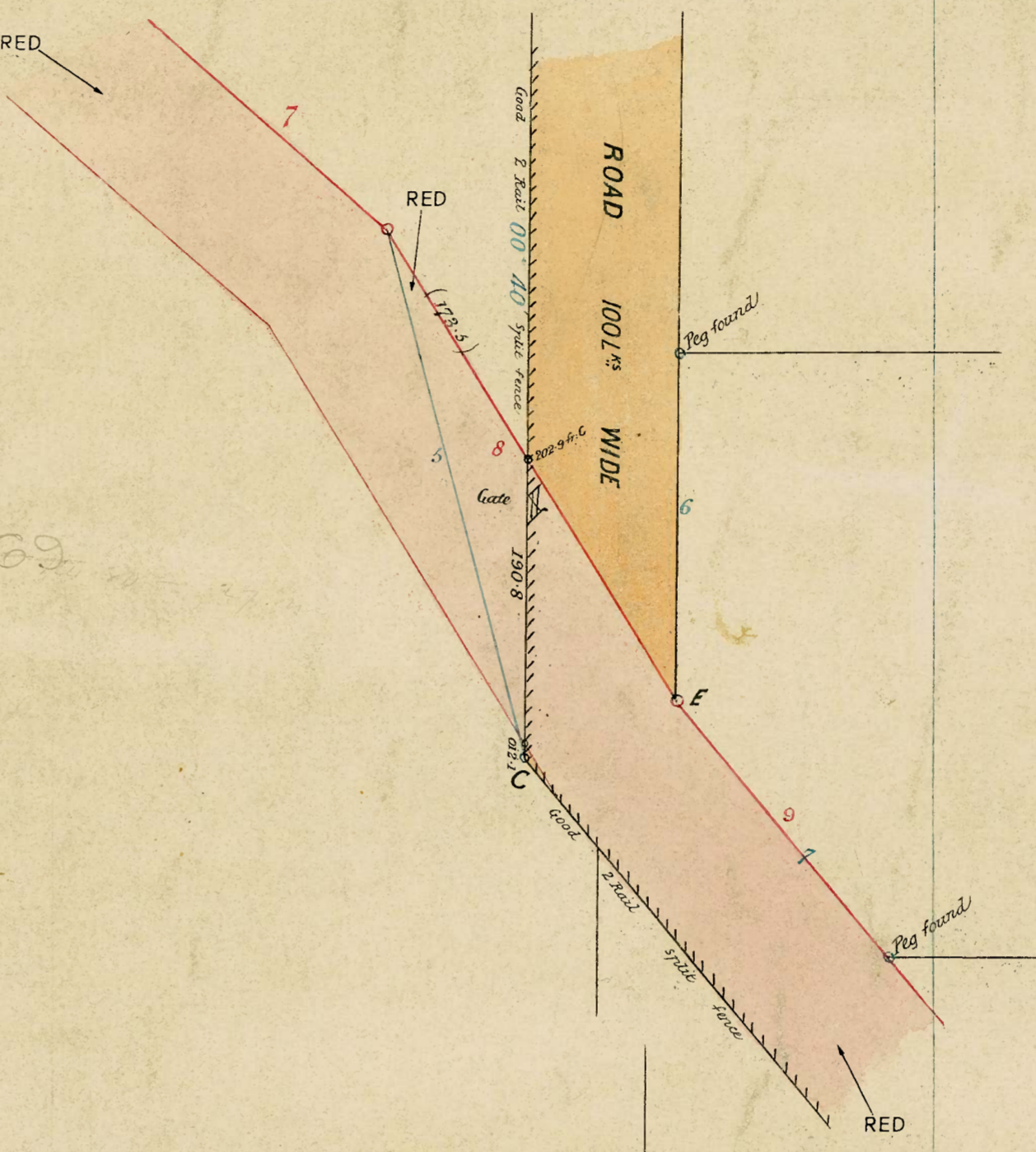
fully shown as part of road road 2044 wide shown in Blue



Preliminary Notd in the Govt Gazette of 30th Aug 87 folio 5753
 Confirmed in the Government Gazette of 23rd Jan 1888 folio 612
 Opened do do 10th Aug. 1888 folio 5522

*Hand before the Executive Council
 on the 16th August 1887
 Wey & Sons
 Clerk of the Council*

Diagram
 Scale One Chain to an Inch



Scale: 10 Chains to an Inch.

Surveyed in accordance with Circular R.º 80-51
 Azimuth obtained from Magnetic at A
 Instrument used in survey theodolite
 Date of completion of survey 6th July 1885
 All pegs at angles on measured side of road charred & marked A
 Length of Road limits 63 chains 94 links.

Reference to Corners

Corner	Bearing	From	Links	On Tree	Remarks
A	4 on charred stake at	edge of River			No tree near
B	353° 09'	Gum	55.4	R	365° 18' 55 site by original
C	48° 50'	Beech	56	R	No tree over numbers
D	157° 56'	Beech	5.9	R	No tree over numbers
E	66° 46'	Apple	24.5	R	65° 50' Benchmark 25 links beyond
F	252° 31'	Ironbark	25.7	I	260° 30' 27 links by original
G	At Corner	Round Post	00	R	Orig. peg, mkd A found at site
H	On post of fence			R	Old corner gone
I	245° 18'	Round Post	02.5	R	Old corner gone
K	At Corner	Gum	00	R	No tree over numbers
L	63° 20'	Gum	48	R	No tree over numbers
M	159° 40'	Gum	55	R	No tree over numbers - R on post at corner
N	147° 51'	Gum	52.7	R	
O	On Round Post at corner of fence			R	At termination of my road narrow
	Corner post at intersection of old fence				

Bearings and Lengths of Road Traverse

Line	Bearing		Distance	Bearing		Distance	Remarks		
	NORTH	SOUTH		EAST	WEST		NORTH	SOUTH	EAST
1	117° 45'		636		15	182° 12'	146.56		
2	137° 43'		643		19	128° 40'	107.2		
3	148° 21'		502		20	148° 39'	75.6		
4	123° 12'		1120		31	143° 19'	320.3		
5	124° 30'		1430		32	146° 29'	38.2		
6	101° 58'		1142		33	181° 14'	46.6		
7	131° 54'		936		34	186° 51'	45.6		
8	142° 04'		567		35	158° 12'	123.1		
9	140° 12'		802		36	162° 40'	78.2		
10	200° 28'		2053		37	153° 32'	104.9		
11	129° 50'		1823		38	149° 04'	71.7		
12	157° 26'		1056		39	144° 08'	72.1		
13	143° 51'		564		40	154° 30'	171.7		
14	148° 16'		936		51	138° 19'	187.7		
15	145° 05'		750		52	145° 13'	71.8		
16	157° 15'		1323		53	149° 37'	173.8		
17	170° 31'		820		54	141° 26'	142.8		

Reference to Connections

Line	Bearing		Distance	Bearing		Distance	Remarks		
	NORTH	SOUTH		EAST	WEST		NORTH	SOUTH	EAST
1	197° 13'		101.6		9	90° 35'	200		
2	339° 26'		1329		10	205° 15'	119.5		
3	351° 46'		619		11	193° 30'	114		
4	322° 20'		682		12	233° 08'	105		
5	166° 08'		362.2		13	239° 12'	100.4		
6	00° 24'		229.1		14	329° 12'	140.8		
7	140° 02'		220		15	268° 05'	333.2		
8	160° 02'		582		16	180° 06'	1422.6		

Star Observations

Date	Station	Star	Observation	Observed Alt.	True Altitude	Declination	Latitude	Mean
July 2 nd 1885	at end of road	α Crucis	Upper	60° 13'	60° 12' 26"	62° 27' 06"	32° 40'	
" " "	" "	β Centauri	"	62° 51'	62° 50' 30"	55° 29' 04"	32° 39' 34"	32° 40'
" " "	" "	γ Centauri	"	62° 18' 30"	62° 18'	60° 21' 24"	32° 39' 24"	
" " "	" "	δ Hydrus	Lower	30° 37'	30° 34' 30"	77° 54' 11"	32° 40' 19"	

Date	Station	Star	Observation	Observed Alt.	True Altitude	Declination	Latitude	Mean
July 3 rd 1885	at end of road	β Argus	West	195° 27' 30"	195° 28' 05"	69° 24' 06"	9° 26' 14"	9° 26' 11"
" " "	" "	α Pegasus	East	180° 25'	179° 53' 52"	57° 26' 08"		

PLAN MICROFILMED
 THE UNIVERSITY OF AUSTRALIA LIBRARY
 T. Winder 300acs

3047-1603

Transmitted to the Surveyor General with Book of Reference and my Letter of 18th July 1885

Wm. G. G. G. G.

1103-1603

R 1103-1603



PLAN of a ROAD
from the Main Northern Road
to the Church and School Estate in the Parish of Gosforth and
County of Northumberland

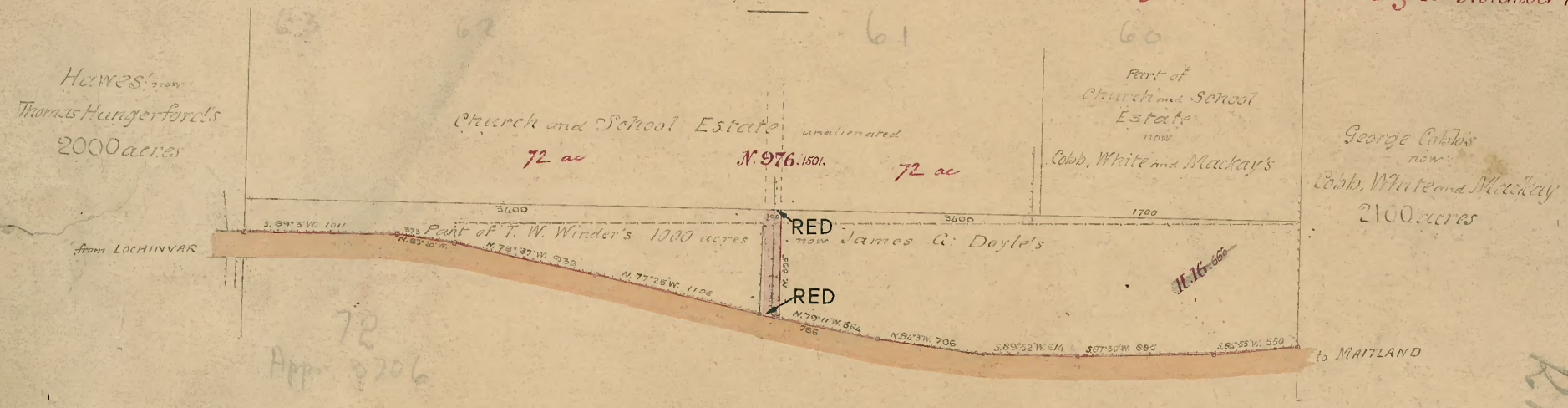
proposed to be opened as a PARISH ROAD under the
ACT IN COUNCIL 4 Wth IV. N^o II.

The Road is shown on Plan by a Red Border.

Scale: 10 chains to Inch.

Given before the Executive Council
on 27th May 1872. (Min: 79/33)
Alfred B. 1872
Chair of the Council

Preliminary notified in Gov. Gaz: 25th June 72 fol 1636
Confirmed in Gov. Gaz: 25th Oct. 72 fol 2773.
Opened in Gov. Gaz: 28th November 73 fol 3344.



72
App: 3706

(By 60 July Deed.) Part of T. W. Winder's 1000 acres, now James & Doyle.

R 1103-1603

PLAN MICROFILMED

NO ADDITIONS OR AMENDMENTS TO BE MADE

Standard Traces
Prepared

Instructions verified arising out of No. 71/127

Surveyed January 2, 1872
Theodolite used

TRACING AVAILABLE

Transmitted to the Surveyor General
with Letter 22nd January 1872/11

Handwritten signature

Opening Nov: 18 Nov 75
Foundry 79
27th May 72

APPENDIX B

TFNSW RFI FOR SIDRA MODELLING

Item No.	Comment from Transport for NSW RFI on 30 October 2024	Proponent responses																																																																																																		
3(b) (i)	<p>Please provide the Traffic survey data in the report.</p> <p>Please document volume that went into model in each scenario and also volume contributed by Anambah and Lochinvar development.</p>	<p>The survey data will be attached in Appendix C.</p> <p>Volumes for New England Highway Anambah Road that went into each scenario and volume contributed by Anambah and Lochinvar developments are documented below. It should be noted that the volumes with infrastructure upgrade (_Mod) will be the same as the volume without infrastructure upgrade.</p> <table border="1"> <thead> <tr> <th rowspan="2">Scenario</th> <th colspan="2">Total throughput</th> <th colspan="2">3% growth p.a. of NEH</th> <th colspan="2">Lochinvar demand</th> <th colspan="2">Development demand</th> </tr> <tr> <th>AM</th> <th>PM</th> <th>AM</th> <th>PM</th> <th>AM</th> <th>PM</th> <th>AM</th> <th>PM</th> </tr> </thead> <tbody> <tr> <td>Base Year</td> <td>2,266</td> <td>2,657</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Base Year with Stage 1</td> <td>2,412</td> <td>2,818</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>146</td> <td>160</td> </tr> <tr> <td>Base Year with full development</td> <td>2,905</td> <td>3,360</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>639</td> <td>702</td> </tr> <tr> <td>Future Year 2028</td> <td>2,733</td> <td>3,150</td> <td>212</td> <td>212</td> <td>256</td> <td>282</td> <td>0</td> <td>0</td> </tr> <tr> <td>Future Year 2028 with Stage 1</td> <td>2,878</td> <td>3,310</td> <td>212</td> <td>212</td> <td>256</td> <td>282</td> <td>146</td> <td>160</td> </tr> <tr> <td>Future Year 2028 with full development</td> <td>3,372</td> <td>3,852</td> <td>212</td> <td>212</td> <td>256</td> <td>282</td> <td>639</td> <td>702</td> </tr> <tr> <td>Future Year 2038</td> <td>3,796</td> <td>4,276</td> <td>635</td> <td>635</td> <td>896</td> <td>984</td> <td>0</td> <td>0</td> </tr> <tr> <td>Future Year 2038 with Stage 1</td> <td>3,941</td> <td>4,436</td> <td>635</td> <td>635</td> <td>896</td> <td>984</td> <td>146</td> <td>160</td> </tr> <tr> <td>Future Year 2038 with full development</td> <td>4,435</td> <td>4,978</td> <td>635</td> <td>635</td> <td>896</td> <td>984</td> <td>639</td> <td>702</td> </tr> </tbody> </table>	Scenario	Total throughput		3% growth p.a. of NEH		Lochinvar demand		Development demand		AM	PM	AM	PM	AM	PM	AM	PM	Base Year	2,266	2,657	0	0	0	0	0	0	Base Year with Stage 1	2,412	2,818	0	0	0	0	146	160	Base Year with full development	2,905	3,360	0	0	0	0	639	702	Future Year 2028	2,733	3,150	212	212	256	282	0	0	Future Year 2028 with Stage 1	2,878	3,310	212	212	256	282	146	160	Future Year 2028 with full development	3,372	3,852	212	212	256	282	639	702	Future Year 2038	3,796	4,276	635	635	896	984	0	0	Future Year 2038 with Stage 1	3,941	4,436	635	635	896	984	146	160	Future Year 2038 with full development	4,435	4,978	635	635	896	984	639	702
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3(b) (ii)	<p>It is recommended to apply consistent input for 'Volume Data Method'(i.e. 'Separate' or 'Total & %')</p>	<p>Consistent input for Data Method applied to all Scenarios and Sites (Separate)</p>																																																																																																		
3(b) (iii)	<p>It is noted that Environmental Factor has been adjusted in the model, please</p>	<p>The Environmental Factor is a parameter used to validate the observed and obtained 95th percentile queue length from traffic count data.</p> <p>For the AM peak scenario, the Environmental Factor involved modifying the south approach to 2.0.</p>																																																																																																		

include in the report how the model has been calibrated.

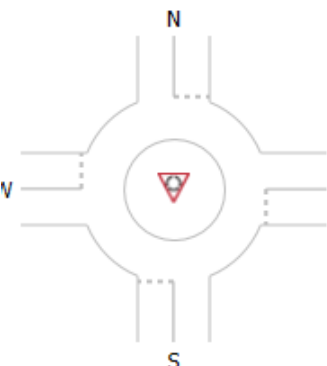
For the PM peak scenario, it involved modifying the south and west approaches to 1.2 and 1.1, respectively.

3(b)
(iv)

Roundabout geometry parameters like entry radius and entry angle has been left default. Please adjust these parameters to reflect existing roundabout geometry.

Roundabout geometry parameters for entry radius have been adjusted to reflect the existing roundabout geometry.

Site Display



Geometry

Approach:	S	E	N	W
Number of Circ Lanes	2	2	2	2
Circulating Width	11.0 m	11.0 m	11.0 m	11.0 m
Island Diameter	38.0 m	38.0 m	38.0 m	38.0 m
Inscribed Diameter	Program ▾	Program ▾	Program ▾	Program ▾
Entry Radius	18.0 m	27.0 m	26.0 m	29.0 m
Entry Angle	23.0 °	12.0 °	21.0 °	22.0 °
Raindrop Design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Circulating Transition Line	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of Downstream Circ Lanes	Program ▾	Program ▾	Program ▾	Program ▾

Current Roundabout Capacity Model: SIDRA Standard

3(b)
(v)

The report does not detail the upgrades to the intersection found in the model.

Report details the upgrades found in the model, including the upgrade staging:

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 (205 lots) and the full development (900 lots) scenarios without any background traffic growth applied. No infrastructure upgrade is required.

Future 2028

The modelling confirms that the existing infrastructure will accommodate traffic growth generated by Stage 1 and the full development by 2028, including background growth.

Future year base 2038

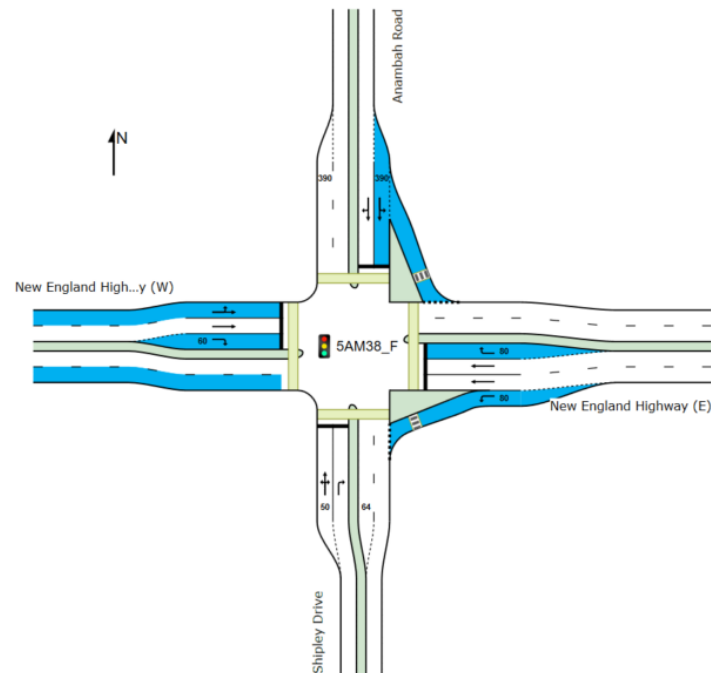
Traffic modelling confirms that without any infrastructure upgrade, the roundabout will fail in 2038 based on background growth alone (i.e. before the introduction of any additional traffic from the proposal). The modelling shows a LoS F (worst delay of 580s) with a degree of saturation of 1.03 for the 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:

- 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
- High angle slip lane for left turners on the southbound approach of Anambah Road
- Additional eastbound right turn bay of the New England Highway.

Figure 1 Intersection upgrade for future base case 2038



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

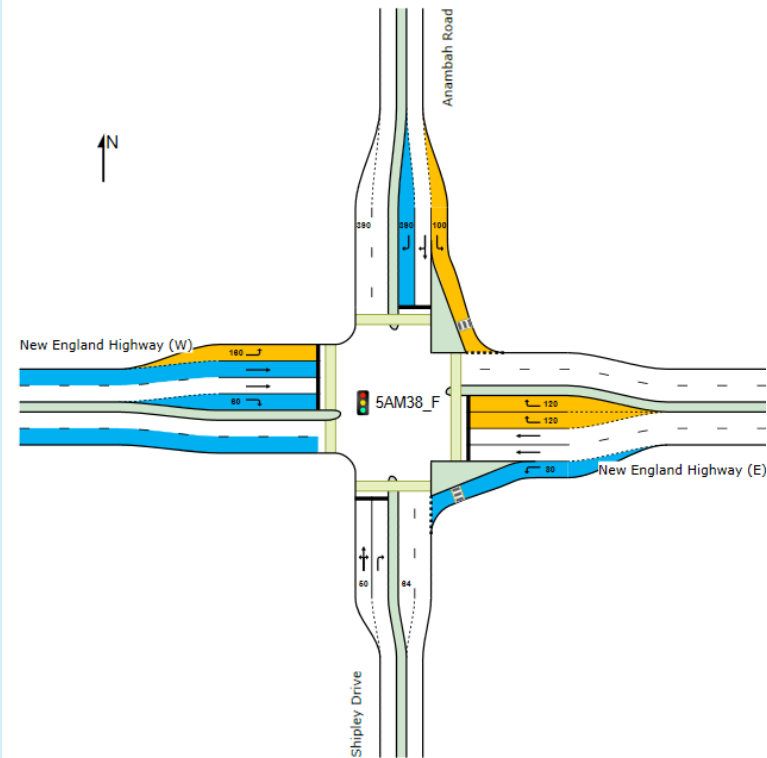
The proposed infrastructure upgrade is considered a minimum requirement to cater for background traffic growth and would result in satisfactory intersection performance.

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 2**).

Figure 2 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 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.

3(b)
(vi) Please provide reasoning for using free queue distance of 20m for Lane 1 on the northern approach.

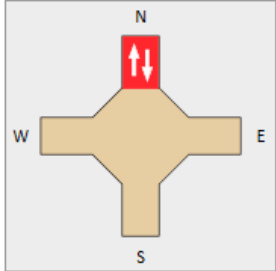
In the 2038 future year base scenario, Lane 1 on the northern approach has been adjusted to be a high-angle slip lane for left turners. Free queue distance for this lane approach has been changed to 6m and 6m for left and through movements respectively. This is considered reasonable given the slip lane configuration.

LANE GEOMETRY - NEW_ANA_38_AM_F (Site Folder: Future Year 2038)

Lane Configuration | Lane Disciplines | Lane Data

Quick Input | View Display

Approach Selector



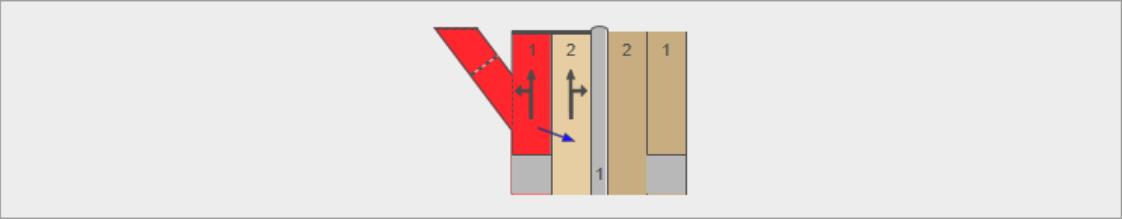
Anambah Road

Legend: Lane Editor

- Approach Lane
- Exit Lane
- Selected Lane/Island
- Strip Island/Short Lane
- Selected Movement Class
- Other Movement Class

Show Lane Disciplines by:
All Movement Classes

Lane Editor



North Approach Lane 1

App Lane | Exit Lane | Strip Island | Delete

Lane Disciplines

Short Lane	E	S	W
From North to Exit:			
	↶ L2 ▼	↕ T1 ▼	↷ R2 ▼
Light Vehicles (LV)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Heavy Vehicles (HV)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Free Queues			
Free Queue Distance	6.0 m	6.0 m	

Free Queue values apply to all Movement Classes for a movement in the shared lane.

Dialog Tips

Help | OK | Cancel | Apply | Process Site

3(b) (vii)	Please provide reasoning for adjusting Gap Acceptance / Follow up headway values	Gap acceptance and follow-up headway values are calibration parameters used to validate the observed and obtained 95th percentile queue length from traffic count data. For all signalised scenarios, these values fall within the recommended ranges for use in SIDRA.
3(b) (viii)	<p>Please document signal phasing plan adopted for the model.</p> <p>It was observed that some phases do not have any name assigned to it. Please provide appropriate phase names.</p> <p>It was observed that Anambah Road approach was reference phase. Looking at traffic volume, we recommend making New England Highway the reference phase.</p> <p>It was observed that some scenarios were modelled with Optimum Cycle Time. The use of Optimum Cycle time in this model is not supported.</p> <p>Please seek concurrence from TfNSW NOPS team for signal timing and phases and document it's approval.</p>	<p>Phases now all have appropriately assigned names.</p> <p>New England Highway is now the reference phase for all scenarios</p> <p>The signalisation of Anambah Road will be triggered in 2038. The signal phasing plan will be addressed as part of the future subsequent DAs.</p> <p>The SIDRA Phase Summary is found in Appendix E.</p>

3(b) (ix)	It was observed that NEW_ANA_38_PM_O1_50%_No Wyndella has different intersection layout than other scenarios. Please update the model to match geometry or provide reasoning and document the changes for the scenario.	The geometry has been shown in 3(b)(v).
3(b) (x)	Please ensure appropriate priority is applied for pedestrian movements in all scenarios and also apply corresponding Gap Acceptance values.	Priorities have been updated with corresponding Gap acceptance values to the appropriate priority for pedestrian movements in all scenarios.
3(b) (xi)	<p>Please clarify scenarios corresponding to model in table 4-3 of the report and also document output for all the scenarios in the model or remove scenario that is not required.</p> <p>It was observed that movement summary from the model does not match movement summary provided in the Appendix. Please document movement summary corresponding to model output.</p>	The SIDRA Outputs and Summary Table found in Appendix D .

	<p>Please update folder name to match model and output in Appendix.</p> <p>Please ensure movement summary for all scenarios are documented in Appendix.</p>	
3(b) (xii)	<p>Since access road is on local road, this scenario has not been reviewed</p>	<p>Noted.</p>

APPENDIX C

TRAFFIC SURVEY

TRANS TRAFFIC SURVEY

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TURNING MOVEMENT SURVEY

Intersection of New England Hwy and River Rd, Windella

GPS -32.704501, 151.479402

Date:	Wed 11/10/23
Weather:	Fine
Suburban:	Windella
Customer:	SCT

North:	River Rd
East:	New England Hwy
South:	N/A
West:	New England Hwy

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	3:00 PM-5:00 PM
Traffic Peak	AM:	8:00 AM-9:00 AM
	PM:	3:30 PM-4:30 PM

All Vehicles

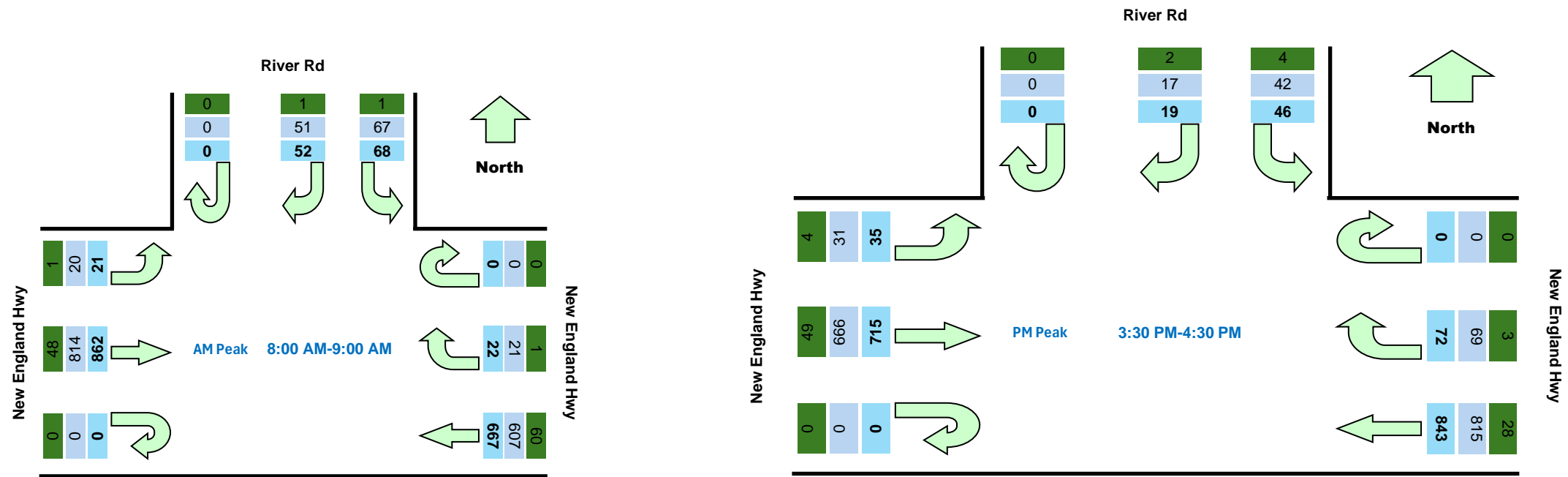
Time		North Approach River Rd			East Approach New England Hwy			West Approach New England Hwy			Hourly Total	
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	Hour	Peak
7:00	7:15	0	6	14	0	6	117	0	143	3	1323	
7:15	7:30	0	8	12	0	4	120	0	162	2	1406	
7:30	7:45	1	8	16	0	6	143	0	176	1	1517	
7:45	8:00	0	8	23	0	5	133	0	198	8	1670	
8:00	8:15	0	14	21	0	4	159	0	172	2	1692	Peak
8:15	8:30	0	9	18	0	5	195	0	187	5		
8:30	8:45	0	19	15	0	5	202	0	255	8		
8:45	9:00	0	10	14	0	8	111	0	248	6		
15:00	15:15	0	11	7	0	16	204	0	205	13		
15:15	15:30	0	9	12	0	25	151	0	190	20		
15:30	15:45	0	7	14	0	18	234	0	212	13	1730	Peak
15:45	16:00	0	3	3	0	22	183	0	156	12	1672	
16:00	16:15	0	4	18	0	19	231	0	177	7	1720	
16:15	16:30	0	5	11	0	13	195	0	170	3		
16:30	16:45	0	4	13	0	20	233	0	166	4		
16:45	17:00	0	2	9	0	25	213	0	171	7		

Peak Time		North Approach River Rd			East Approach New England Hwy			West Approach New England Hwy			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
8:00	9:00	0	52	68	0	22	667	0	862	21	1692
15:30	16:30	0	19	46	0	72	843	0	715	35	1730

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

Graphic

Total
Light
Heavy



Light Vehicles

Time		North Approach River Rd			East Approach New England Hwy			West Approach New England Hwy		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
7:00	7:15	0	6	13	0	5	102	0	134	2
7:15	7:30	0	8	12	0	4	105	0	156	2
7:30	7:45	1	8	16	0	6	130	0	170	1
7:45	8:00	0	7	23	0	4	123	0	187	8
8:00	8:15	0	14	21	0	4	140	0	158	2
8:15	8:30	0	9	18	0	4	177	0	177	4
8:30	8:45	0	18	14	0	5	187	0	247	8
8:45	9:00	0	10	14	0	8	103	0	232	6
15:00	15:15	0	11	7	0	16	192	0	186	13
15:15	15:30	0	9	11	0	24	142	0	177	18
15:30	15:45	0	6	13	0	16	228	0	194	13
15:45	16:00	0	2	2	0	21	175	0	149	11
16:00	16:15	0	4	17	0	19	220	0	164	5
16:15	16:30	0	5	10	0	13	192	0	159	2
16:30	16:45	0	3	13	0	19	225	0	157	4
16:45	17:00	0	2	9	0	25	202	0	157	7

Peak Time		North Approach River Rd			East Approach New England Hwy			West Approach New England Hwy			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
8:00	9:00	0	51	67	0	21	607	0	814	20	1580
15:30	16:30	0	17	42	0	69	815	0	666	31	1640

Heavy Vehicles

Time		North Approach River Rd			East Approach New England Hwy			West Approach New England Hwy		
Period Start	Period End	U	R	L	U	R	WB	U	EB	L
7:00	7:15	0	0	1	0	1	15	0	9	1
7:15	7:30	0	0	0	0	0	15	0	6	0
7:30	7:45	0	0	0	0	0	13	0	6	0
7:45	8:00	0	1	0	0	1	10	0	11	0
8:00	8:15	0	0	0	0	0	19	0	14	0
8:15	8:30	0	0	0	0	1	18	0	10	1
8:30	8:45	0	1	1	0	0	15	0	8	0
8:45	9:00	0	0	0	0	0	8	0	16	0
15:00	15:15	0	0	0	0	0	12	0	19	0
15:15	15:30	0	0	1	0	1	9	0	13	2
15:30	15:45	0	1	1	0	2	6	0	18	0
15:45	16:00	0	1	1	0	1	8	0	7	1
16:00	16:15	0	0	1	0	0	11	0	13	2
16:15	16:30	0	0	1	0	0	3	0	11	1
16:30	16:45	0	1	0	0	1	8	0	9	0
16:45	17:00	0	0	0	0	0	11	0	14	0

Peak Time		North Approach River Rd			East Approach New England Hwy			West Approach New England Hwy			Peak total
Period Start	Period End	U	R	L	U	R	WB	U	EB	L	
8:00	9:00	0	1	1	0	1	60	0	48	1	112
15:30	16:30	0	2	4	0	3	28	0	49	4	90

Queue

Time Per 5 Min		Queue Length on North Approach		Queue Length on East Approach		Queue Length on West Approach	
Period Start	Period End	Kerb Lane	Right Lane	Kerb Lane	Right Lane	Kerb Lane	Right Lane
7:00	7:05	1	0	2	0	0	0
7:05	7:10	3	0	0	0	0	0
7:10	7:15	2	1	1	0	0	0
7:15	7:20	1	1	0	0	0	0
7:20	7:25	1	1	0	0	0	0
7:25	7:30	1	1	0	0	0	0
7:30	7:35	1	1	1	0	0	0
7:35	7:40	3	1	1	0	0	0
7:40	7:45	1	1	0	0	0	0
7:45	7:50	1	1	2	0	0	0
7:50	7:55	3	1	0	0	0	0
7:55	8:00	2	2	0	0	0	0
8:00	8:05	1	1	1	0	0	0
8:05	8:10	2	1	0	0	0	0
8:10	8:15	1	2	0	0	0	0
8:15	8:20	1	1	0	0	0	0
8:20	8:25	2	1	1	0	0	0
8:25	8:30	1	2	1	0	0	0
8:30	8:35	3	4	0	0	0	0
8:35	8:40	1	2	1	0	0	0
8:40	8:45	2	2	1	0	0	0
8:45	8:50	2	1	1	0	0	0
8:50	8:55	1	1	1	0	0	0
8:55	9:00	1	3	0	0	0	0
15:00	15:05	1	2	1	0	0	0
15:05	15:10	2	1	2	0	0	0
15:10	15:15	1	1	1	0	0	0
15:15	15:20	1	1	5	0	0	0
15:20	15:25	1	1	1	0	0	0
15:25	15:30	1	1	2	0	0	0
15:30	15:35	2	2	2	0	0	0
15:35	15:40	2	1	2	0	0	0
15:40	15:45	1	2	1	0	0	0
15:45	15:50	1	2	1	0	0	0
15:50	15:55	0	0	0	0	0	0
15:55	16:00	0	0	1	0	0	0

16:00	16:05	3	1	1	0	0	0
16:05	16:10	3	2	2	0	0	0
16:10	16:15	2	1	1	0	0	0
16:15	16:20	2	2	1	0	0	0
16:20	16:25	1	1	0	0	0	0
16:25	16:30	1	0	1	0	0	0
16:30	16:35	1	1	1	0	0	0
16:35	16:40	1	2	1	0	0	0
16:40	16:45	2	1	1	0	0	0
16:45	16:50	1	0	2	0	0	0
16:50	16:55	1	0	1	0	0	0
16:55	17:00	2	1	2	0	0	0

TRANS TRAFFIC SURVEY

trafficsurvey.com.au



TURNING MOVEMENT SURVEY

Intersection of New England Hwy and Anambah Rd, Rutherford

GPS -32.707990, 151.510599

Date:	Wed 11/10/23
Weather:	Fine
Suburban:	Rutherford
Customer:	SCT

North:	Anambah Rd
East:	New England Hwy
South:	Shiplely Dr
West:	New England Hwy

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	3:00 PM-5:00 PM
Traffic Peak	AM:	8:00 AM-9:00 AM
	PM:	3:30 PM-4:30 PM

All Vehicles

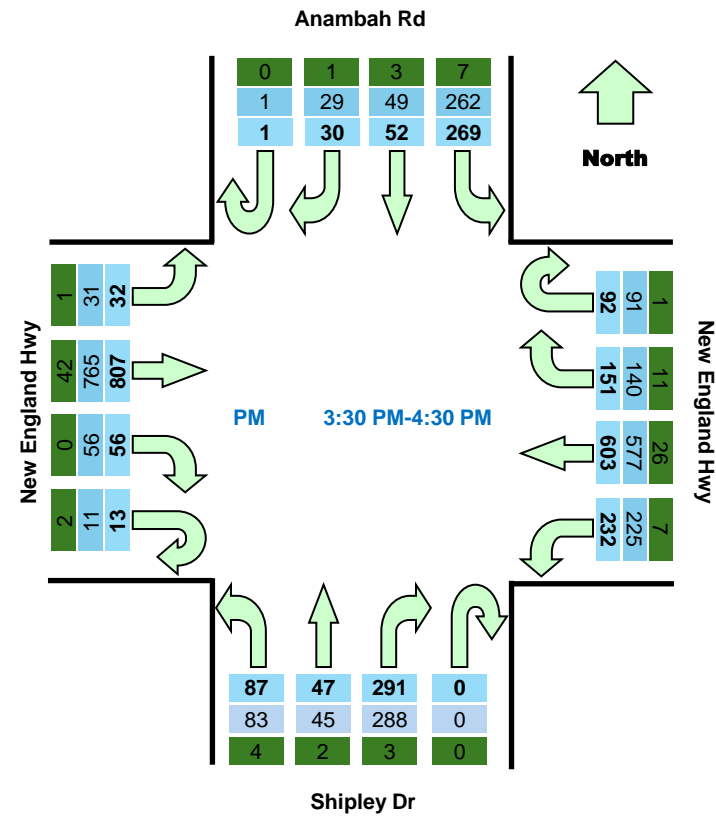
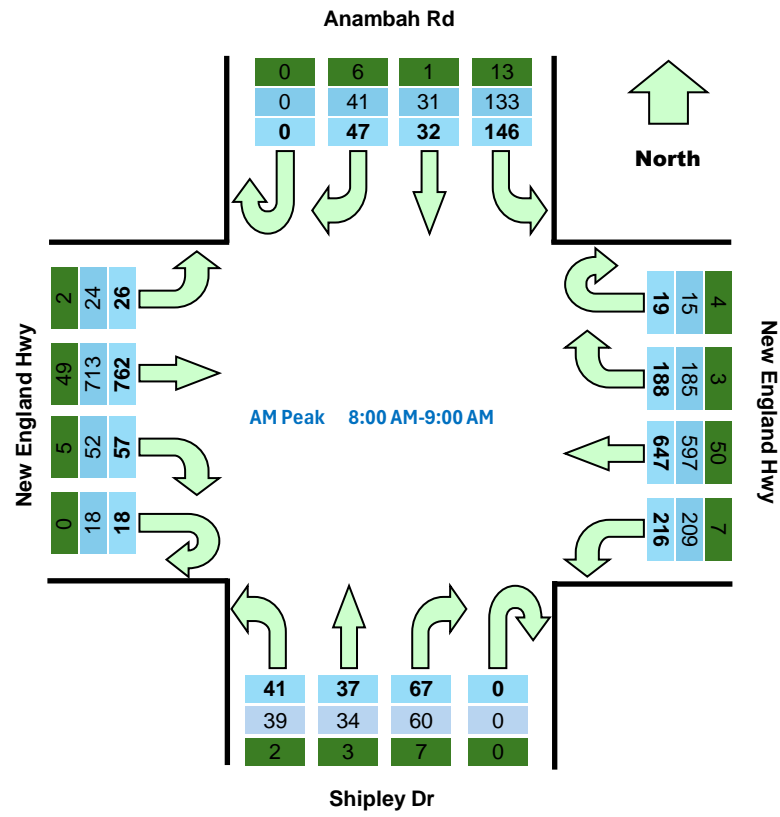
Time		North Approach Anambah Rd				East Approach New England Hwy				South Approach Shiplely Dr				West Approach New England Hwy				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	6	3	22	8	27	133	39	0	10	4	7	0	10	115	5	1809	
7:15	7:30	0	3	3	22	2	62	136	30	0	18	10	10	4	5	127	2	1947	
7:30	7:45	0	7	7	33	5	44	138	35	0	17	13	8	1	6	129	4	2057	
7:45	8:00	0	8	10	33	1	59	169	33	0	13	10	10	6	8	173	6	2231	
8:00	8:15	0	7	12	36	2	47	172	37	0	14	10	7	1	13	163	6	2303	Peak
8:15	8:30	0	13	3	31	4	51	182	40	0	17	10	12	4	10	161	6		
8:30	8:45	0	18	9	41	3	34	165	60	0	16	9	14	5	14	229	4		
8:45	9:00	0	9	8	38	10	56	128	79	0	20	8	8	8	20	209	10		
15:00	15:15	0	7	7	53	21	30	130	40	0	96	4	26	3	13	202	15	2605	
15:15	15:30	0	11	5	37	18	35	156	53	0	41	11	9	6	10	174	11	2687	
15:30	15:45	0	7	18	79	24	37	130	49	0	72	7	25	2	12	241	9	2763	Peak
15:45	16:00	0	3	17	56	16	34	164	80	0	82	12	18	4	11	169	3	2756	
16:00	16:15	1	11	9	78	26	45	148	50	0	82	17	28	1	16	207	10	2737	
16:15	16:30	0	9	8	56	26	35	161	53	0	55	11	16	6	17	190	10		
16:30	16:45	0	8	16	69	16	37	189	55	0	61	14	22	2	12	196	8		
16:45	17:00	0	3	8	46	20	42	175	49	0	78	16	20	0	19	165	9		

Peak Time		North Approach Anambah Rd				East Approach New England Hwy				South Approach Shiplely Dr				West Approach New England Hwy				Peak total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L		
8:00	9:00	0	47	32	146	19	188	647	216	0	67	37	41	18	57	762	26	2303	
15:30	16:30	1	30	52	269	92	151	603	232	0	291	47	87	13	56	807	32	2763	

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

Graphic

Total
Light
Heavy



Light Vehicles

Time		North Approach Anambah Rd				East Approach New England Hwy				South Approach Shipley Dr				West Approach New England Hwy			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	6	3	19	7	24	120	36	0	10	3	7	0	9	108	5
7:15	7:30	0	3	3	20	1	57	119	28	0	15	10	9	4	4	117	2
7:30	7:45	0	6	6	29	5	42	126	25	0	13	12	7	1	6	125	4
7:45	8:00	0	8	10	28	0	54	156	31	0	10	10	8	6	8	163	6
8:00	8:15	0	5	12	31	2	47	157	37	0	14	9	7	1	12	148	6
8:15	8:30	0	11	2	29	3	50	169	37	0	15	10	11	4	9	149	5
8:30	8:45	0	18	9	39	2	33	151	59	0	14	8	14	5	12	218	4
8:45	9:00	0	7	8	34	8	55	120	76	0	17	7	7	8	19	198	9
15:00	15:15	0	6	7	48	21	30	119	38	0	94	4	26	3	13	190	15
15:15	15:30	0	9	5	37	18	31	150	51	0	40	9	8	6	9	163	10
15:30	15:45	0	7	16	78	24	34	124	47	0	72	7	23	1	12	230	9
15:45	16:00	0	3	16	55	15	33	154	77	0	80	10	17	3	11	159	3
16:00	16:15	1	10	9	76	26	40	142	48	0	81	17	28	1	16	196	10
16:15	16:30	0	9	8	53	26	33	157	53	0	55	11	15	6	17	180	9
16:30	16:45	0	8	15	68	15	32	180	54	0	61	13	19	2	10	187	8
16:45	17:00	0	2	8	44	20	40	171	48	0	78	15	20	0	18	156	9

Peak Time		North Approach Anambah Rd				East Approach New England Hwy				South Approach Shipley Dr				West Approach New England Hwy				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
8:00	9:00	0	41	31	133	15	185	597	209	0	60	34	39	18	52	713	24	2151
15:30	16:30	1	29	49	262	91	140	577	225	0	288	45	83	11	56	765	31	2653

Heavy Vehicles

Time		North Approach Anambah Rd				East Approach New England Hwy				South Approach Shipley Dr				West Approach New England Hwy			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	0	0	3	1	3	13	3	0	0	1	0	0	1	7	0
7:15	7:30	0	0	0	2	1	5	17	2	0	3	0	1	0	1	10	0
7:30	7:45	0	1	1	4	0	2	12	10	0	4	1	1	0	0	4	0
7:45	8:00	0	0	0	5	1	5	13	2	0	3	0	2	0	0	10	0
8:00	8:15	0	2	0	5	0	0	15	0	0	0	1	0	0	1	15	0
8:15	8:30	0	2	1	2	1	1	13	3	0	2	0	1	0	1	12	1
8:30	8:45	0	0	0	2	1	1	14	1	0	2	1	0	0	2	11	0
8:45	9:00	0	2	0	4	2	1	8	3	0	3	1	1	0	1	11	1
15:00	15:15	0	1	0	5	0	0	11	2	0	2	0	0	0	0	12	0
15:15	15:30	0	2	0	0	0	4	6	2	0	1	2	1	0	1	11	1
15:30	15:45	0	0	2	1	0	3	6	2	0	0	0	2	1	0	11	0
15:45	16:00	0	0	1	1	1	1	10	3	0	2	2	1	1	0	10	0
16:00	16:15	0	1	0	2	0	5	6	2	0	1	0	0	0	0	11	0
16:15	16:30	0	0	0	3	0	2	4	0	0	0	0	1	0	0	10	1
16:30	16:45	0	0	1	1	1	5	9	1	0	0	1	3	0	2	9	0
16:45	17:00	0	1	0	2	0	2	4	1	0	0	1	0	0	1	9	0

Peak Time		North Approach Anambah Rd				East Approach New England Hwy				South Approach Shipley Dr				West Approach New England Hwy				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
8:00	9:00	0	6	1	13	4	3	50	7	0	7	3	2	0	5	49	2	152
15:30	16:30	0	1	3	7	1	11	26	7	0	3	2	4	2	0	42	1	110

Queue

Time Per 5 Min		Queue Length on North Approach		Queue Length on East Approach		Queue Length on South Approach		Queue Length on West Approach	
Period Start	Period End	Kerb Lane	Right Lane	Kerb Lane	Right Lane	Kerb Lane	Right Lane	Kerb Lane	Middle Lane
7:00	7:05	0	0	0	0	1	1	2	0
7:05	7:10	0	0	3	0	0	1	0	0
7:10	7:15	0	0	0	0	2	1	0	0
7:15	7:20	0	0	0	0	0	0	0	2
7:20	7:25	0	0	0	0	1	1	0	5
7:25	7:30	2	0	0	0	2	2	1	1
7:30	7:35	0	0	0	0	1	2	0	2
7:35	7:40	2	0	0	0	1	1	0	0
7:40	7:45	3	0	0	0	1	1	2	1
7:45	7:50	1	0	0	0	1	2	3	2
7:50	7:55	3	0	0	0	1	1	0	0
7:55	8:00	1	0	0	0	1	2	2	1
8:00	8:05	2	1	0	0	1	1	3	0
8:05	8:10	1	0	0	0	2	1	0	1
8:10	8:15	0	1	0	0	2	1	0	1
8:15	8:20	1	0	0	0	2	3	1	2
8:20	8:25	1	1	0	0	1	2	2	2
8:25	8:30	2	1	0	0	1	2	0	1
8:30	8:35	2	1	0	0	2	3	0	2
8:35	8:40	3	2	0	0	1	2	1	2
8:40	8:45	2	1	0	0	1	1	1	0
8:45	8:50	2	1	0	0	2	4	1	3
8:50	8:55	4	2	0	0	2	4	0	4
8:55	9:00	0	1	0	0	1	2	2	4
15:00	15:05	4	0	0	0	1	4	0	3
15:05	15:10	2	2	0	0	1	4	7	4
15:10	15:15	0	1	0	0	3	2	2	2
15:15	15:20	2	1	0	0	1	2	0	1
15:20	15:25	0	1	0	0	2	1	0	0
15:25	15:30	1	3	0	0	2	3	3	3
15:30	15:35	3	2	0	0	3	4	0	2
15:35	15:40	3	4	2	3	2	3	1	2
15:40	15:45	3	3	0	0	2	3	2	5
15:45	15:50	0	3	0	0	3	5	0	8
15:50	15:55	0	2	0	0	1	6	4	4

15:55	16:00	0	2	0	0	2	2	2	3
16:00	16:05	1	2	0	0	1	3	2	5
16:05	16:10	3	2	2	2	3	4	1	5
16:10	16:15	2	2	0	2	1	4	2	3
16:15	16:20	4	1	0	0	1	2	1	2
16:20	16:25	0	3	0	0	1	3	2	0
16:25	16:30	0	1	1	0	1	3	1	5
16:30	16:35	2	3	1	2	3	4	1	2
16:35	16:40	4	1	0	0	3	3	2	3
16:40	16:45	2	1	0	0	1	2	2	4
16:45	16:50	1	1	3	0	1	5	2	1
16:50	16:55	2	1	0	0	2	4	2	5
16:55	17:00	2	1	0	1	2	2	2	4

APPENDIX D

**MOVEMENT
OUTPUTS**
(Super-
seded)

APPENDIX E

**PHASE
SUMMARY**
(Super-
seded)

12 August 2025

Emmilia Marshall
Senior Development Planner, Principal Planner
Maitland City Council
263 High Street
Maitland NSW 2320

Dear Emmilia

Request for Additional Information DA/2024/763 - Concept Development Application for Two (2) into Nine Hundred (900) Lot Staged Torrens Title Subdivision, and Stage 1 Torrens Title Subdivision of Two Hundred and Twenty 177/874171, 55/874170 559 Anambah Road GOSFORTH NSW 2320

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.

Council have reviewed relevant supporting technical studies and provided a preliminary review of the DA for the proponent's consideration. SCT Consulting responded as follows:

- A letter (dated 28 March) was provided addressing some of the civil design and transport planning matters included in the RFI letter issued by the Council to the proponent on 11 October 2024.
- A letter (dated 28 May) responded to additional civil design and transport planning matters included in the subsequent RFI letter issued by the Council on 6 February 2025.

TfNSW has reviewed the additional information provided and said they were unable to properly assess the potential impacts on the transport network due to insufficient information. This letter responds to Transport for NSW's comments on 26 June 2025.

No.	Transport for NSW's further comments on 26 June 2025	Proponent responses
a	Trip Generation rates – TIA based on 240 lots, Traffic Note calculations equate to 205 lots & traffic model calculations equate to 215 lots	<p>For Anambah Road / NEH:</p> <ul style="list-style-type: none"> – The original TIA assumed 240 lots for Stage 1, which is the worst case and maximum allowable development yield for Stage 1. – The traffic addendum (dated 28 May) tested 205 lots in the modelling, whereas we quoted 220 lots in the heading of the addendum. – Since Stage 1 of 240 lots has already been tested in the original TIA, it should have covered the impact of any yield smaller than that. – The difference between the tested 205 lots and 220 lots in the addendum (heading) is very small in terms of traffic generation volumes. It is a difference of up to 12 cars during the peak hour, which has no material change to the modelling results. <p>For River Road / NEH:</p> <ul style="list-style-type: none"> – The modelling reflects 249 lots, which is the maximum number before the intersection fails. – It should be noted that River Road is only proposed to be utilised during periods of flooding. The nature of the flooding means that Westbound and Eastbound traffic along NEH is severely reduced due to flood impacts to roads in the broader Maitland LGA.
b	Clarification of where eastbound trips reduce between River Road and Anambah Road is required	<ul style="list-style-type: none"> – There are 3km between River Road and Anambah Road. There is industrial development that gains access at the Kyle Street and Mirage Road roundabout. This will result in traffic demand variation.
c	U-Turn movements have not been accounted for in the model, noting restricted accesses on New England Highway	<ul style="list-style-type: none"> – For clarity, this section relates to a U-turn at the Anambah Road / New England Highway Roundabout. We have tested the addition of the U-turn demand. The changes are limited to: <ul style="list-style-type: none"> • Up to 8 per cent increase in the Degree of satisfaction • Up to 11 seconds increase in delay • All levels of service, including the U-turn traffic volume, are still D or better, which is satisfactory. – The roundabout can last till 2028 with the opening of the full development (900 lots). – It is noted that in the 2038 scenario, the roundabout will not work with background traffic only. Hence, the signalisation should be considered independent of any development traffic from Anambah. The traffic addendum report has tested the infrastructure where it is assumed the U-turn traffic is re-routed elsewhere since they cannot make U U-turn at a signal intersection. The detailed assessment should be undertaken in subsequent DAs.
d	No background growth rate has been applied to any local roads (e.g. Anambah Rd or Shipley Dr). A background growth rate as agreed by Council should be applied to these legs of the roundabout.	<ul style="list-style-type: none"> – Background growth on Anambah Road wasn't required in the initial consultation with TfNSW. – There is no background growth on Anambah Road, especially in relation to Stage 1 of the application. We note that a development application has been recently submitted by a neighbouring developer, which does not propose a connection onto Anambah Road.

No.	Transport for NSW's further comments on 26 June 2025	Proponent responses
e	Evidence should be provided that Councils supports River Road to be used as an emergency access	<ul style="list-style-type: none"> - Council's view on River Road is based on SES and RFS previously not supporting the gated use of River Road. These issues have now been resolved.
f	Clarification, and justification, required regarding if right turn movement from River Rd is to be permanently banned or only during flood events	<ul style="list-style-type: none"> - The modelling assumes that daily traffic will rely on Anambah Road only for access, rather than River Road. - River Road use is only during the emergency scenario, which could take 2-3 days (TBC). The peak hour demand will be small during evacuation, given restricted access. <ul style="list-style-type: none"> • Based on a RIRO (current geometry and no background growth) at River Road, the allowable number of lots is 249. • If the right turn out from River Road is banned and implementing left turn out only (i.e. retaining right turn in from NEH to River Road also with current geometry and no background growth), up to 560 lots from Anambah can be allowed without any further infrastructure upgrade, which is a consideration for future stages of the development.
g	River Rd and New England Highway intersection should be assessed with the current intersection configuration	<ul style="list-style-type: none"> - The current assessment is based on the current configuration.
h	River Rd and New England Highway intersection analysis base case should be 2028 model, with additional scenarios: <ul style="list-style-type: none"> - 2028 Base Case - 2028 Base Case + Development Traffic (Stage 1) - 2038 Base Case (Design Horizon) - 2038 Base Case + Development Traffic (Stage 1) - 2038 Base Case + Development Traffic (Stage 1 + any additional lots approved) 	<ul style="list-style-type: none"> - Daily traffic will rely on Anambah Road only. - River Road use is only during the emergency scenario. - It is not applicable and necessary to run those scenarios for River Road/ NEH.
i	River Rd/NEH 2028 AM without development traffic shows the intersection fails based on limited gap acceptance. Mitigation measures will be required if this intersection is to be approved as emergency access.	<ul style="list-style-type: none"> - River Road/NEH will fail in 2028 with background traffic only (including 3% annual growth on NEH and Lochinvar URA) even without any development traffic from Anambah. - During the emergency, a left in left out could assist in mitigating any impacts, however this may not be necessary. The "emergency" is infrequent and short in duration. The nature of the flooding means that Westbound and Eastbound traffic along NEH is severely reduced due to flood impacts to roads in the broader Maitland LGA. We also expect a lower level of service can be acceptable during the emergency.

Yours sincerely

A handwritten signature in black ink that reads "Shawn Cen". The signature is written in a cursive, flowing style.

Shawn Cen

Principal Consultant

shawn.cen@sctconsulting.com.au

0416 292 374 | (02) 9060 7222

Suite 4.03, Level 4, 157 Walker Street, North Sydney NSW 2060

WR 1398_previous WR 1344 & 1231
SIDRA Model Review
Review findings

Status	SIDRA file (sip)	Scenario ID / Intersection	Category	Review comment	Review of Model developers response	Review of Model developers resp	Model developer response
Medium	SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v1.0 for TINSW.sip9	All	NEW_ANA	Volume	In Future Year 2028 wDev scenario, please ensure total volume is consistent for 70/30 and 50/50 split in each scenario and also update the output where relevant. RFI refers to 220 lots in Stage 1 but the development demand provided in table (item No. 3 (b) (i)) does not correspond to demand from 220 lots when considering 0.71/0.78 am/pm traffic generation rate as mentioned in the report. Please provide the Traffic survey data in the report. Please document volume that went into model in each scenario and also volume contributed by Anambah and Lochinvar development.	Please address the comment : In Future Year 2028 wDev scenario, please ensure total volume is consistent for 70/30 and 50/50 split in each scenario and also update the output where relevant. This relates to total volume not being equal between 70/30 and 50/50 scenario.	The inconsistency is minimal and under 2 vehicles, due to the rounding in the input. However, they have been all corrected to ensure the consistency. The table in No. 3 (b)(i) was based on 205 lots. An updated table has been created in Table 4-7 of the report v7.0 based on 220 lots. This is in line with the latest development yield in report v7.0. U turns volumes have been added at all roundabouts in the latest model (v4.0).
Closed	SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v1.0 for TINSW.sip9	All	NEW_ANA	Volume	It is recommended to apply consistent input for 'Volume Data Method'(i.e. 'Separate' or 'Total & %')		
Closed	SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v1.0 for TINSW.sip9	All	NEW_ANA	Calibration	It is noted that Environmental Factor has been adjusted in the model, please include in the report how the model has been calibrated.		
Minor	SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v1.0 for TINSW.sip9	All	NEW_ANA	Roundabout Geometry	Roundabout geometry parameters like entry radius and entry angle has been left default. Please adjust these parameters to reflect existing roundabout geometry. Please review entry radius and angle for Southern Approach Note:		We have modified the angle from 23 to 30 degree for southern approach in all roundabout models.
Closed	SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v1.0 for TINSW.sip9	Future Year 2028 w Sage 1 Future Year 2028 wDev	NEW_ANA	Lane Geometry	The report does not detail the upgrades to the intersection found in the model.	This comment was related to approach / departure lane modelled as full lane instead of short unlike other scenarios and the changes not been discussed in the report. However, the model has been updated and they are consistent across scenarios now. This comment can be closed. Note:	
Closed	SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v1.0 for TINSW.sip9	All Signalised Scenario	NEW_ANA	Lane Discipline	Please provide reasoning for using free queue distance of 20m for Lane 1 on the northern approach.	Intersection layout has been changed by adding a high angle slip lane and free queue distance has been revised. This comment can be closed.	
Major	SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v1.0 for TINSW.sip9	All Signalised Scenario	NEW_ANA	Gap Acceptanc	Please provide reasoning for adjusting Gap Acceptance / Follow up headway values. Please document signal phasing plan adopted for the model. It was observed that some phases do not have any name assigned to it. Please provide appropriate phase names.	Please address previous comment.	The Gap Acceptance / Follow up headway values were set to the previously TINSW recommended values when the application was first lodged. We understand that the latest guideline has made changes to this, i.e. to keep SIDRA default settings rather than changing the values. Regardless, I have used SIDREA default Gap Acceptance / Follow-up headway values in the modelling v4.0.
Medium	SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v1.0 for TINSW.sip9	All Signalised Scenario	NEW_ANA	Phasing & Timin	It was observed that Anambah Road approach was reference phase. Looking at traffic volume, we recommend making New England Highway the reference phase. It was observed that some scenarios were modelled with Optimum Cycle Time. The use of Optimum Cycle time in this model is not supported.		
Closed	SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v1.0 for TINSW.sip9	Future Year 2038 wDev Mod	NEW_ANA	Geometry	Please seek concurrence from TINSW NOPS team for signal timing and phases and document it's approval. It was observed that NEW_ANA_38_PM_O1_50%_No Wyndella has different intersection layout than other scenarios. Please update the model to match geometry or provide reasoning and document the changes for the scenario.	All other comment has been addressed and can be closed pending concurrence from TINSW NOPS team for signal phase and time.	
Closed	SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v1.0 for TINSW.sip9	Future Year 2038 wDev Mod	NEW_ANA	Priority	Please ensure appropriate priority is applied for pedestrian movements in all scenarios and also apply corresponding Gap Acceptance values. Please carry scenarios corresponding to model in table 4-3 of the report and also document output for all the scenarios in the model or remove scenario that is not required.		
Closed	SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v1.0 for TINSW.sip9	Future Year 2028 wDev	NEW_ANA	Report	It was observed that movement summary from the model does not match movement summary provided in the Appendix. Please document movement summary corresponding to model output.		

Not reviewed	SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v1.0 for TINSW.sip9	Access	ANA_ACC	Since access road is on local road, this scenario has not been reviewed.		
Minor	20250612 - Supporting Document - SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v2.0 (Addressing TINSW Comments).sip9	Signalised Intersection in Future Year 2038	NEW_ANA	Priority		
Medium	20250612 - Supporting Document - SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v2.0 (Addressing TINSW Comments).sip9	Base Year (River Road) future years wStage 1 Base Year (River Road) future years		Volume	Please apply only relevant opposing movement for the slip lane movement. Please document volume that went into the model in each scenario and also volume contributed by Anambah and Lochinvar development. Please also document distribution of development traffic at this intersection.	Please uncheck pedestrian movement as opposing movement for slip lane from Anambah Road. Please document directional volume at the intersection in each scenario. Table 4-8 has been created in the report v7.0 to document the traffic volumes accordingly.
Medium	20250612 - Supporting Document - SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v2.0 (Addressing TINSW Comments).sip9	Base Year (River Road)_LO Trigger Test		Lane Geometry	Please ensure appropriate lane movement are checked in lane disciplines.	Please address previous comment. Please ensure consistent lane configuration in AM / PM peak and other scenario This has been corrected in the model (v4.0).
Medium	20250612 - Supporting Document - SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v2.0 (Addressing TINSW Comments).sip9	Base Year (River Road) Base Year (River Road)_Trigg er Test Base Year (River Road)_LO Trigger Test		Gap Acceptance	It is recommended to use SIDRA default values of Gap Acceptance and Follow up Headway values based on parameter for Seagull Intersection template in SIDRA 9.1 or provide reasoning for the change. It is recommended to uncheck apply TWSC Calibration if user given Critical Gap and Follow-up Headway has been applied.	We have adopted the Seagull Intersection template in SIDRA for this intersection and the Gap Acceptance / Follow-up headway values are now set to default in modelling v4.0. The main differences from the previously TINSW- recommended values are: -Left turn (from 4.5s / 2.5s to 5s / 3s) -Right turn (from 7s / 4s to 6s / 3.4s) This significantly changes the yield triggering thresholds, given the parameters now favour more right turns than left turns, i.e. -The allowed yield for right turn out from River Road increases from 249 lots to 530 lots. -The allowed yield for left turn only from River Road reduces from 560 lots to 330 lots. Regardless, the priority intersection would be able to accommodate the access of Stage 1 (220 lots) in an emergency scenario (assuming no background growth), which is still below the new identified thresholds. The modelling also confirms that the intersection would fall after 2028 without any development traffic (i.e. the failure would be caused by background growth on NEH alone). It is proposed that if Wyndella Link is not available by then, this intersection might need to be upgraded. Please address previous comment.
Minor	SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v1.0 for TINSW.sip9	20250603 - Supporting Document - RFI 2 - Traffic Impact Assessment RFI Response_P AN- 466412.pdf		Table 3 SIDRA Output summary table - River Road / New England Highway	Difference was observed between LOS in the table and modelled output. Please update LOS in table 3 of RFI to match the output.	This has been documented in Table 4-5 in the updated report (v7.0).
Note	20250612 - Supporting Document - SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v2.0 (Addressing TINSW Comments).sip9				Future Year 2028 wDev Mod and Future Year 2038 wDev has not been modelled in the revised model.	Assuming this refers to River Road / NEH. However, this intersection does not function for the access of day to day traffic as a result of the development. Hence, there is no need to model 2028 and 2038 with development.

APPENDIX B

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 HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh 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	0.247	15.6	LOS B	1.1	7.8	0.73	0.83	0.73	48.1
2	T1	All MCs	39	8.1	39	8.1	0.247	13.0	LOS A	1.1	8.3	0.73	0.84	0.73	48.2
3	R2	All MCs	71	10.4	71	10.4	0.247	18.9	LOS B	1.1	8.3	0.74	0.90	0.74	46.0
3u	U	All MCs	1	0.0	1	0.0	0.247	20.7	LOS B	1.1	8.3	0.74	0.90	0.74	46.2
Approach			154	8.2	154	8.2	0.247	16.5	LOS B	1.1	8.3	0.74	0.86	0.74	47.1
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.354	4.0	LOS A	1.9	14.1	0.36	0.41	0.36	54.4
5	T1	All MCs	681	7.7	681	7.7	0.448	4.3	LOS A	2.8	20.5	0.36	0.45	0.36	53.8
6	R2	All MCs	198	1.6	198	1.6	0.448	10.0	LOS A	2.8	20.5	0.37	0.47	0.37	52.5
6u	U	All MCs	20	21.1	20	21.1	0.448	12.9	LOS A	2.8	20.5	0.37	0.47	0.37	52.0
Approach			1126	6.0	1126	6.0	0.448	5.4	LOS A	2.8	20.5	0.36	0.45	0.36	53.6
North: Anambah Road															
7	L2	All MCs	154	8.9	154	8.9	0.165	5.3	LOS A	0.7	5.6	0.61	0.62	0.61	53.3
8	T1	All MCs	34	3.1	34	3.1	0.165	5.6	LOS A	0.7	5.6	0.61	0.69	0.61	52.2
9	R2	All MCs	49	12.8	49	12.8	0.095	12.5	LOS A	0.4	2.9	0.60	0.75	0.60	49.9
9u	U	All MCs	1	0.0	1	0.0	0.095	14.5	LOS A	0.4	2.9	0.60	0.75	0.60	50.2
Approach			238	8.8	238	8.8	0.165	6.9	LOS A	0.7	5.6	0.61	0.66	0.61	52.4
West: New England Highway (W)															
10	L2	All MCs	27	7.7	27	7.7	0.368	4.9	LOS A	2.0	14.7	0.46	0.42	0.46	53.6
11	T1	All MCs	802	6.4	802	6.4	0.368	4.4	LOS A	2.0	14.7	0.47	0.46	0.47	53.8
12	R2	All MCs	60	8.8	60	8.8	0.368	11.5	LOS A	1.9	14.2	0.48	0.50	0.48	52.2
12u	U	All MCs	19	0.0	19	0.0	0.368	13.3	LOS A	1.9	14.2	0.48	0.50	0.48	52.5
Approach			908	6.5	908	6.5	0.368	5.0	LOS A	2.0	14.7	0.47	0.46	0.47	53.6
All Vehicles			2426	6.6	2426	6.6	0.448	6.1	LOS A	2.8	20.5	0.45	0.50	0.45	53.0

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

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

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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Project: S:\Projects\SCT_00581_559 Anambah Road Gosforth DA\4. Tech Work\1. Modelling\RTS3\SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v4.0.sip9

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.268	10.0	LOS A	1.2	8.5	0.69	0.75	0.69	51.8
2	T1	All MCs	49	4.3	49	4.3	0.268	8.7	LOS A	1.2	8.5	0.69	0.75	0.69	52.2
3	R2	All MCs	306	1.0	306	1.0	0.418	14.2	LOS A	2.4	16.6	0.73	0.85	0.82	48.2
3u	U	All MCs	1	0.0	1	0.0	0.418	17.1	LOS B	2.4	16.6	0.73	0.85	0.82	48.2
Approach			448	2.1	448	2.1	0.418	12.7	LOS A	2.4	16.6	0.72	0.82	0.78	49.3
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.353	4.0	LOS A	2.0	14.8	0.37	0.41	0.37	54.3
5	T1	All MCs	635	4.3	635	4.3	0.447	4.1	LOS A	3.0	21.7	0.38	0.46	0.38	53.6
6	R2	All MCs	159	7.3	159	7.3	0.447	10.1	LOS A	3.0	21.7	0.38	0.49	0.38	52.0
6u	U	All MCs	97	1.1	97	1.1	0.447	12.6	LOS A	3.0	21.7	0.38	0.49	0.38	52.2
Approach			1135	4.2	1135	4.2	0.447	5.7	LOS A	3.0	21.7	0.38	0.46	0.38	53.4
North: Anambah Road															
7	L2	All MCs	283	2.6	283	2.6	0.327	6.7	LOS A	1.9	13.7	0.80	0.77	0.80	52.8
8	T1	All MCs	55	5.8	55	5.8	0.143	7.8	LOS A	0.7	5.0	0.74	0.78	0.74	51.2
9	R2	All MCs	32	3.3	32	3.3	0.143	13.6	LOS A	0.7	5.0	0.74	0.78	0.74	50.4
9u	U	All MCs	1	0.0	1	0.0	0.143	16.0	LOS B	0.7	5.0	0.74	0.78	0.74	50.5
Approach			371	3.1	371	3.1	0.327	7.4	LOS A	1.9	13.7	0.78	0.77	0.78	52.3
West: New England Highway (W)															
10	L2	All MCs	34	3.1	34	3.1	0.512	6.9	LOS A	3.6	26.0	0.71	0.67	0.79	52.5
11	T1	All MCs	849	5.2	849	5.2	0.512	6.7	LOS A	3.6	26.0	0.71	0.70	0.80	52.5
12	R2	All MCs	59	0.0	59	0.0	0.512	13.8	LOS A	3.4	25.1	0.72	0.73	0.82	51.3
12u	U	All MCs	14	15.4	14	15.4	0.512	16.5	LOS B	3.4	25.1	0.72	0.73	0.82	50.9
Approach			956	5.0	956	5.0	0.512	7.3	LOS A	3.6	26.0	0.71	0.70	0.80	52.4
All Vehicles			2909	4.0	2909	4.0	0.512	7.5	LOS A	3.6	26.0	0.59	0.63	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.

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MOVEMENT SUMMARY

Site: 5AM_X [NEW_ANA_23_AM_X_S1 (Site Folder: Base Year wStage 1_220)]

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.279	18.2	LOS B	1.2	8.7	0.78	0.87	0.81	46.9
2	T1	All MCs	39	8.1	39	8.1	0.279	15.7	LOS B	1.3	10.1	0.78	0.88	0.80	47.0
3	R2	All MCs	71	10.4	71	10.4	0.279	19.2	LOS B	1.3	10.1	0.78	0.92	0.78	45.6
3u	U	All MCs	1	0.0	1	0.0	0.279	21.0	LOS B	1.3	10.1	0.78	0.92	0.78	45.9
Approach			154	8.2	154	8.2	0.279	18.0	LOS B	1.3	10.1	0.78	0.89	0.80	46.3
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.384	4.5	LOS A	2.1	15.7	0.47	0.47	0.47	53.9
5	T1	All MCs	681	7.7	681	7.7	0.486	4.8	LOS A	3.2	23.3	0.48	0.49	0.48	53.3
6	R2	All MCs	203	1.6	203	1.6	0.486	10.4	LOS A	3.2	23.3	0.49	0.50	0.49	52.0
6u	U	All MCs	20	21.1	20	21.1	0.486	13.3	LOS A	3.2	23.3	0.49	0.50	0.49	51.5
Approach			1132	6.0	1132	6.0	0.486	5.9	LOS A	3.2	23.3	0.48	0.49	0.48	53.1
North: Anambah Road															
7	L2	All MCs	198	6.9	198	6.9	0.223	5.4	LOS A	1.1	7.8	0.63	0.62	0.63	53.3
8	T1	All MCs	34	3.1	34	3.1	0.223	5.0	LOS A	1.1	7.8	0.63	0.62	0.63	53.7
9	R2	All MCs	153	4.1	153	4.1	0.197	12.2	LOS A	0.8	6.2	0.63	0.80	0.63	49.0
9u	U	All MCs	1	0.0	1	0.0	0.197	14.6	LOS B	0.8	6.2	0.63	0.80	0.63	49.1
Approach			385	5.5	385	5.5	0.223	8.1	LOS A	1.1	7.8	0.63	0.69	0.63	51.5
West: New England Highway (W)															
10	L2	All MCs	39	5.4	39	5.4	0.376	4.9	LOS A	2.1	15.5	0.47	0.43	0.47	53.6
11	T1	All MCs	802	6.4	802	6.4	0.376	4.4	LOS A	2.1	15.5	0.48	0.46	0.48	53.7
12	R2	All MCs	60	8.8	60	8.8	0.376	11.5	LOS A	2.0	14.9	0.50	0.51	0.50	52.1
12u	U	All MCs	19	0.0	19	0.0	0.376	13.3	LOS A	2.0	14.9	0.50	0.51	0.50	52.4
Approach			920	6.4	920	6.4	0.376	5.1	LOS A	2.1	15.5	0.49	0.46	0.49	53.5
All Vehicles			2591	6.2	2591	6.2	0.486	6.6	LOS A	3.2	23.3	0.52	0.53	0.52	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.

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MOVEMENT SUMMARY

Site: 5PM_X [NEW_ANA_23_PM_X_S1 (Site Folder: Base Year wStage 1_220)]

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.281	10.3	LOS A	1.2	9.0	0.71	0.77	0.71	51.6
2	T1	All MCs	49	4.3	49	4.3	0.281	9.2	LOS A	1.2	9.0	0.71	0.77	0.71	52.0
3	R2	All MCs	306	1.0	306	1.0	0.437	14.7	LOS B	2.5	17.9	0.76	0.87	0.87	47.9
3u	U	All MCs	1	0.0	1	0.0	0.437	17.7	LOS B	2.5	17.9	0.76	0.87	0.87	47.9
Approach			448	2.1	448	2.1	0.437	13.2	LOS A	2.5	17.9	0.74	0.84	0.82	49.0
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.372	4.1	LOS A	2.2	16.0	0.39	0.42	0.39	54.2
5	T1	All MCs	635	4.3	635	4.3	0.471	4.3	LOS A	3.3	23.7	0.40	0.47	0.40	53.4
6	R2	All MCs	207	5.6	207	5.6	0.471	10.2	LOS A	3.3	23.7	0.41	0.50	0.41	51.8
6u	U	All MCs	97	1.1	97	1.1	0.471	12.7	LOS A	3.3	23.7	0.41	0.50	0.41	51.9
Approach			1183	4.0	1183	4.0	0.471	6.0	LOS A	3.3	23.7	0.40	0.47	0.40	53.1
North: Anambah Road															
7	L2	All MCs	288	2.6	288	2.6	0.349	7.0	LOS A	2.1	15.3	0.82	0.78	0.83	52.7
8	T1	All MCs	55	5.8	55	5.8	0.171	8.1	LOS A	0.9	6.2	0.76	0.80	0.76	50.8
9	R2	All MCs	44	2.4	44	2.4	0.171	13.9	LOS A	0.9	6.2	0.76	0.80	0.76	50.0
9u	U	All MCs	1	0.0	1	0.0	0.171	16.3	LOS B	0.9	6.2	0.76	0.80	0.76	50.1
Approach			388	3.0	388	3.0	0.349	7.9	LOS A	2.1	15.3	0.81	0.79	0.81	52.1
West: New England Highway (W)															
10	L2	All MCs	147	0.7	147	0.7	0.590	8.1	LOS A	4.8	34.6	0.77	0.76	0.93	52.2
11	T1	All MCs	849	5.2	849	5.2	0.590	8.0	LOS A	4.8	34.6	0.77	0.78	0.94	52.2
12	R2	All MCs	59	0.0	59	0.0	0.590	15.1	LOS B	4.5	33.1	0.78	0.80	0.96	51.0
12u	U	All MCs	14	15.4	14	15.4	0.590	17.9	LOS B	4.5	33.1	0.78	0.80	0.96	50.5
Approach			1069	4.4	1069	4.4	0.590	8.5	LOS A	4.8	34.6	0.77	0.78	0.94	52.1
All Vehicles			3089	3.7	3089	3.7	0.590	8.2	LOS A	4.8	34.6	0.63	0.67	0.70	52.0

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: 5AM_X [NEW_ANA_23_AM_X_S1 50% (Site Folder: Base Year wStage 1_220)]

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.270	17.4	LOS B	1.1	8.3	0.77	0.86	0.79	47.3
2	T1	All MCs	39	8.1	39	8.1	0.270	15.2	LOS B	1.3	9.7	0.77	0.87	0.78	47.3
3	R2	All MCs	71	10.4	71	10.4	0.270	18.8	LOS B	1.3	9.7	0.77	0.91	0.77	45.9
3u	U	All MCs	1	0.0	1	0.0	0.270	20.6	LOS B	1.3	9.7	0.77	0.91	0.77	46.1
Approach			154	8.2	154	8.2	0.270	17.5	LOS B	1.3	9.7	0.77	0.89	0.78	46.6
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.377	4.4	LOS A	2.1	15.3	0.44	0.45	0.44	54.0
5	T1	All MCs	681	7.7	681	7.7	0.477	4.7	LOS A	3.1	22.6	0.45	0.48	0.45	53.4
6	R2	All MCs	206	1.5	206	1.5	0.477	10.3	LOS A	3.1	22.6	0.46	0.49	0.46	52.1
6u	U	All MCs	20	21.1	20	21.1	0.477	13.2	LOS A	3.1	22.6	0.46	0.49	0.46	51.6
Approach			1135	5.9	1135	5.9	0.477	5.8	LOS A	3.1	22.6	0.45	0.48	0.45	53.2
North: Anambah Road															
7	L2	All MCs	227	6.0	227	6.0	0.251	5.4	LOS A	1.2	8.8	0.63	0.62	0.63	53.3
8	T1	All MCs	34	3.1	34	3.1	0.251	5.1	LOS A	1.2	8.8	0.63	0.62	0.63	53.7
9	R2	All MCs	123	5.1	123	5.1	0.164	12.3	LOS A	0.7	5.0	0.62	0.79	0.62	49.0
9u	U	All MCs	1	0.0	1	0.0	0.164	14.6	LOS B	0.7	5.0	0.62	0.79	0.62	49.1
Approach			385	5.5	385	5.5	0.251	7.6	LOS A	1.2	8.8	0.63	0.68	0.63	51.8
West: New England Highway (W)															
10	L2	All MCs	36	5.9	36	5.9	0.375	4.9	LOS A	2.1	15.3	0.47	0.43	0.47	53.6
11	T1	All MCs	802	6.4	802	6.4	0.375	4.4	LOS A	2.1	15.3	0.48	0.46	0.48	53.7
12	R2	All MCs	60	8.8	60	8.8	0.375	11.5	LOS A	2.0	14.8	0.50	0.51	0.50	52.1
12u	U	All MCs	19	0.0	19	0.0	0.375	13.4	LOS A	2.0	14.8	0.50	0.51	0.50	52.4
Approach			917	6.4	917	6.4	0.375	5.1	LOS A	2.1	15.3	0.48	0.46	0.48	53.5
All Vehicles			2591	6.2	2591	6.2	0.477	6.5	LOS A	3.1	22.6	0.51	0.53	0.51	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.

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MOVEMENT SUMMARY

Site: 5PM_X [NEW_ANA_23_PM_X_S1 50% (Site Folder: Base Year wStage 1_220)]

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. Dist]				km/h	
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.285	10.5	LOS A	1.3	9.2	0.71	0.78	0.71	51.4
2	T1	All MCs	49	4.3	49	4.3	0.285	9.5	LOS A	1.3	9.2	0.71	0.78	0.71	51.8
3	R2	All MCs	306	1.0	306	1.0	0.443	14.9	LOS B	2.6	18.4	0.76	0.88	0.89	47.8
3u	U	All MCs	1	0.0	1	0.0	0.443	17.9	LOS B	2.6	18.4	0.76	0.88	0.89	47.8
Approach			448	2.1	448	2.1	0.443	13.4	LOS A	2.6	18.4	0.75	0.85	0.83	48.9
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.381	4.1	LOS A	2.3	16.5	0.39	0.42	0.39	54.2
5	T1	All MCs	635	4.3	635	4.3	0.482	4.3	LOS A	3.4	24.5	0.40	0.48	0.40	53.3
6	R2	All MCs	240	4.8	240	4.8	0.482	10.2	LOS A	3.4	24.5	0.41	0.51	0.41	51.7
6u	U	All MCs	97	1.1	97	1.1	0.482	12.7	LOS A	3.4	24.5	0.41	0.51	0.41	51.8
Approach			1216	3.9	1216	3.9	0.482	6.1	LOS A	3.4	24.5	0.40	0.47	0.40	53.0
North: Anambah Road															
7	L2	All MCs	293	2.5	293	2.5	0.353	6.9	LOS A	2.2	15.4	0.82	0.78	0.83	52.7
8	T1	All MCs	55	5.8	55	5.8	0.163	8.0	LOS A	0.8	5.9	0.76	0.79	0.76	50.9
9	R2	All MCs	40	2.6	40	2.6	0.163	13.8	LOS A	0.8	5.9	0.76	0.79	0.76	50.1
9u	U	All MCs	1	0.0	1	0.0	0.163	16.2	LOS B	0.8	5.9	0.76	0.79	0.76	50.2
Approach			388	3.0	388	3.0	0.353	7.8	LOS A	2.2	15.4	0.81	0.78	0.81	52.1
West: New England Highway (W)															
10	L2	All MCs	115	0.9	115	0.9	0.584	8.3	LOS A	4.7	34.2	0.78	0.77	0.94	52.1
11	T1	All MCs	849	5.2	849	5.2	0.584	8.2	LOS A	4.7	34.2	0.78	0.79	0.96	52.0
12	R2	All MCs	59	0.0	59	0.0	0.584	15.3	LOS B	4.5	32.6	0.78	0.81	0.98	50.8
12u	U	All MCs	14	15.4	14	15.4	0.584	18.1	LOS B	4.5	32.6	0.78	0.81	0.98	50.4
Approach			1037	4.6	1037	4.6	0.584	8.8	LOS A	4.7	34.2	0.78	0.79	0.96	52.0
All Vehicles			3089	3.7	3089	3.7	0.584	8.3	LOS A	4.7	34.2	0.63	0.67	0.70	51.9

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.

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MOVEMENT SUMMARY

Site: 5AM_X [NEW_ANA_23_AM_X_FD (Site Folder: Base Year 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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.431	28.6	LOS C	2.3	16.7	0.89	0.98	1.09	42.7
2	T1	All MCs	39	8.1	39	8.1	0.431	24.9	LOS B	2.3	16.7	0.89	0.98	1.09	42.8
3	R2	All MCs	71	10.4	71	10.4	0.431	37.8	LOS C	2.1	16.2	0.89	1.03	1.15	37.3
3u	U	All MCs	1	0.0	1	0.0	0.431	38.1	LOS C	2.1	16.2	0.89	1.03	1.15	37.5
Approach			154	8.2	154	8.2	0.431	31.9	LOS C	2.3	16.7	0.89	1.01	1.11	40.0
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.482	6.6	LOS A	3.2	23.7	0.71	0.68	0.77	52.8
5	T1	All MCs	681	7.7	681	7.7	0.610	8.1	LOS A	5.4	40.1	0.75	0.73	0.86	51.9
6	R2	All MCs	218	1.4	218	1.4	0.610	12.9	LOS A	5.4	40.1	0.77	0.75	0.89	50.6
6u	U	All MCs	20	21.1	20	21.1	0.610	16.0	LOS B	5.4	40.1	0.77	0.75	0.89	50.1
Approach			1146	5.9	1146	5.9	0.610	8.8	LOS A	5.4	40.1	0.75	0.72	0.85	51.8
North: Anambah Road															
7	L2	All MCs	335	4.1	335	4.1	0.474	7.4	LOS A	2.7	19.4	0.73	0.81	0.86	52.6
8	T1	All MCs	34	3.1	34	3.1	0.474	7.1	LOS A	2.7	19.4	0.73	0.81	0.86	53.0
9	R2	All MCs	473	1.3	473	1.3	0.445	12.1	LOS A	2.6	18.7	0.71	0.82	0.78	48.8
9u	U	All MCs	1	0.0	1	0.0	0.445	14.6	LOS B	2.6	18.7	0.71	0.82	0.78	48.9
Approach			843	2.5	843	2.5	0.474	10.0	LOS A	2.7	19.4	0.72	0.82	0.81	50.4
West: New England Highway (W)															
10	L2	All MCs	74	2.8	74	2.8	0.400	4.9	LOS A	2.4	17.8	0.52	0.44	0.52	53.4
11	T1	All MCs	802	6.4	802	6.4	0.400	4.5	LOS A	2.4	17.8	0.53	0.47	0.53	53.5
12	R2	All MCs	60	8.8	60	8.8	0.400	11.6	LOS A	2.3	17.1	0.54	0.51	0.54	52.0
12u	U	All MCs	19	0.0	19	0.0	0.400	13.5	LOS A	2.3	17.1	0.54	0.51	0.54	52.2
Approach			956	6.2	956	6.2	0.400	5.2	LOS A	2.4	17.8	0.53	0.47	0.53	53.3
All Vehicles			3099	5.2	3099	5.2	0.610	9.2	LOS A	5.4	40.1	0.68	0.69	0.75	51.1

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.

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MOVEMENT SUMMARY

Site: 5PM_X [NEW_ANA_23_PM_X_FD (Site Folder: Base Year 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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. Dist]				km/h	
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.326	12.1	LOS A	1.5	11.2	0.77	0.84	0.82	50.3
2	T1	All MCs	49	4.3	49	4.3	0.326	11.8	LOS A	1.5	11.2	0.77	0.84	0.82	50.7
3	R2	All MCs	306	1.0	306	1.0	0.501	16.8	LOS B	3.2	22.7	0.83	0.94	1.04	46.7
3u	U	All MCs	1	0.0	1	0.0	0.501	19.7	LOS B	3.2	22.7	0.83	0.94	1.04	46.7
Approach			448	2.1	448	2.1	0.501	15.3	LOS B	3.2	22.7	0.81	0.91	0.97	47.8
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.432	4.3	LOS A	2.7	19.6	0.46	0.44	0.46	53.9
5	T1	All MCs	635	4.3	635	4.3	0.546	4.6	LOS A	4.1	29.7	0.48	0.50	0.48	52.9
6	R2	All MCs	358	3.2	358	3.2	0.546	10.3	LOS A	4.1	29.7	0.49	0.55	0.49	51.1
6u	U	All MCs	97	1.1	97	1.1	0.546	12.8	LOS A	4.1	29.7	0.49	0.55	0.49	51.1
Approach			1334	3.6	1334	3.6	0.546	6.7	LOS A	4.1	29.7	0.48	0.51	0.48	52.4
North: Anambah Road															
7	L2	All MCs	305	2.4	305	2.4	0.445	9.0	LOS A	3.4	24.0	0.92	0.86	1.03	51.5
8	T1	All MCs	55	5.8	55	5.8	0.445	9.3	LOS A	3.4	24.0	0.86	0.85	0.88	49.9
9	R2	All MCs	83	1.3	83	1.3	0.257	15.0	LOS B	1.5	10.5	0.85	0.85	0.85	48.8
9u	U	All MCs	1	0.0	1	0.0	0.257	17.5	LOS B	1.5	10.5	0.85	0.85	0.85	48.8
Approach			444	2.6	444	2.6	0.445	10.2	LOS A	3.4	24.0	0.90	0.85	0.98	50.7
West: New England Highway (W)															
10	L2	All MCs	500	0.2	500	0.2	0.865	18.7	LOS B	14.0	99.8	0.99	1.23	1.89	46.1
11	T1	All MCs	849	5.2	849	5.2	0.865	19.1	LOS B	14.0	99.8	0.99	1.24	1.93	45.4
12	R2	All MCs	59	0.0	59	0.0	0.865	26.4	LOS B	12.6	92.1	0.99	1.25	1.95	44.4
12u	U	All MCs	14	15.4	14	15.4	0.865	29.5	LOS C	12.6	92.1	0.99	1.25	1.95	44.0
Approach			1422	3.3	1422	3.3	0.865	19.4	LOS B	14.0	99.8	0.99	1.24	1.92	45.6
All Vehicles			3649	3.2	3649	3.2	0.865	13.1	LOS A	14.0	99.8	0.77	0.88	1.16	48.8

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: 5AM_X [NEW_ANA_23_AM_X_FD 50% (Site Folder: Base Year 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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.371	22.2	LOS B	1.9	13.8	0.86	0.94	0.98	45.4
2	T1	All MCs	39	8.1	39	8.1	0.371	19.6	LOS B	1.9	13.8	0.86	0.94	0.98	45.5
3	R2	All MCs	71	10.4	71	10.4	0.371	31.1	LOS C	1.8	13.4	0.86	1.00	1.03	39.9
3u	U	All MCs	1	0.0	1	0.0	0.371	31.9	LOS C	1.8	13.4	0.86	1.00	1.03	40.0
Approach			154	8.2	154	8.2	0.371	25.7	LOS B	1.9	13.8	0.86	0.97	1.00	42.6
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.451	5.5	LOS A	2.8	20.2	0.64	0.58	0.64	53.1
5	T1	All MCs	681	7.7	681	7.7	0.571	6.5	LOS A	4.5	33.3	0.67	0.62	0.71	52.4
6	R2	All MCs	232	1.4	232	1.4	0.571	11.7	LOS A	4.5	33.3	0.68	0.63	0.73	51.1
6u	U	All MCs	20	21.1	20	21.1	0.571	14.8	LOS B	4.5	33.3	0.68	0.63	0.73	50.6
Approach			1160	5.8	1160	5.8	0.571	7.5	LOS A	4.5	33.3	0.67	0.61	0.70	52.2
North: Anambah Road															
7	L2	All MCs	456	3.0	456	3.0	0.466	6.1	LOS A	2.8	20.2	0.72	0.75	0.80	53.0
8	T1	All MCs	34	3.1	34	3.1	0.466	5.9	LOS A	2.8	20.2	0.72	0.75	0.80	53.4
9	R2	All MCs	352	1.8	352	1.8	0.447	13.2	LOS A	2.4	17.4	0.72	0.87	0.82	48.8
9u	U	All MCs	1	0.0	1	0.0	0.447	15.7	LOS B	2.4	17.4	0.72	0.87	0.82	48.8
Approach			843	2.5	843	2.5	0.466	9.1	LOS A	2.8	20.2	0.72	0.80	0.81	51.1
West: New England Highway (W)															
10	L2	All MCs	61	3.4	61	3.4	0.396	5.0	LOS A	2.4	17.4	0.52	0.44	0.52	53.4
11	T1	All MCs	802	6.4	802	6.4	0.396	4.5	LOS A	2.4	17.4	0.53	0.48	0.53	53.4
12	R2	All MCs	60	8.8	60	8.8	0.396	11.7	LOS A	2.3	16.7	0.54	0.52	0.54	51.9
12u	U	All MCs	19	0.0	19	0.0	0.396	13.5	LOS A	2.3	16.7	0.54	0.52	0.54	52.2
Approach			942	6.3	942	6.3	0.396	5.2	LOS A	2.4	17.4	0.53	0.48	0.53	53.3
All Vehicles			3099	5.2	3099	5.2	0.571	8.1	LOS A	4.5	33.3	0.65	0.64	0.69	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.

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MOVEMENT SUMMARY

Site: 5PM_X [NEW_ANA_23_PM_X_FD 50% (Site Folder: Base Year 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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.356	13.3	LOS A	1.7	12.6	0.79	0.88	0.89	49.4
2	T1	All MCs	49	4.3	49	4.3	0.356	13.4	LOS A	1.7	12.6	0.79	0.88	0.89	49.8
3	R2	All MCs	306	1.0	306	1.0	0.542	18.3	LOS B	3.7	25.8	0.86	0.98	1.13	45.9
3u	U	All MCs	1	0.0	1	0.0	0.542	21.3	LOS B	3.7	25.8	0.86	0.98	1.13	45.9
Approach			448	2.1	448	2.1	0.542	16.8	LOS B	3.7	25.8	0.84	0.95	1.06	46.9
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.469	4.4	LOS A	3.2	22.9	0.47	0.44	0.47	53.8
5	T1	All MCs	635	4.3	635	4.3	0.593	4.7	LOS A	4.9	35.3	0.49	0.50	0.49	52.9
6	R2	All MCs	491	2.4	491	2.4	0.593	10.4	LOS A	4.9	35.3	0.51	0.56	0.51	50.7
6u	U	All MCs	97	1.1	97	1.1	0.593	12.9	LOS A	4.9	35.3	0.51	0.56	0.51	50.7
Approach			1467	3.2	1467	3.2	0.593	7.1	LOS A	4.9	35.3	0.50	0.52	0.50	52.1
North: Anambah Road															
7	L2	All MCs	320	2.3	320	2.3	0.438	8.3	LOS A	3.2	22.7	0.91	0.85	1.00	52.0
8	T1	All MCs	55	5.8	55	5.8	0.240	8.8	LOS A	1.3	9.5	0.83	0.84	0.83	50.1
9	R2	All MCs	69	1.5	69	1.5	0.240	14.5	LOS B	1.3	9.5	0.83	0.84	0.83	49.3
9u	U	All MCs	1	0.0	1	0.0	0.240	17.0	LOS B	1.3	9.5	0.83	0.84	0.83	49.3
Approach			444	2.6	444	2.6	0.438	9.4	LOS A	3.2	22.7	0.88	0.85	0.95	51.3
West: New England Highway (W)															
10	L2	All MCs	367	0.3	367	0.3	0.866	22.8	LOS B	14.4	103.3	1.00	1.32	2.10	44.1
11	T1	All MCs	849	5.2	849	5.2	0.866	22.9	LOS B	14.4	103.3	1.00	1.32	2.12	43.4
12	R2	All MCs	59	0.0	59	0.0	0.866	30.5	LOS C	12.7	92.5	1.00	1.32	2.13	42.3
12u	U	All MCs	14	15.4	14	15.4	0.866	33.7	LOS C	12.7	92.5	1.00	1.32	2.13	42.0
Approach			1289	3.7	1289	3.7	0.866	23.3	LOS B	14.4	103.3	1.00	1.32	2.11	43.6
All Vehicles			3649	3.2	3649	3.2	0.866	14.3	LOS A	14.4	103.3	0.76	0.89	1.19	48.1

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.

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MOVEMENT SUMMARY

Site: 5AM28_X [NEW_ANA_28_AM_X (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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.277	18.2	LOS B	1.1	8.4	0.78	0.87	0.81	46.9
2	T1	All MCs	39	8.1	39	8.1	0.277	15.7	LOS B	1.3	9.8	0.78	0.88	0.80	47.0
3	R2	All MCs	71	10.4	71	10.4	0.277	19.1	LOS B	1.3	9.8	0.78	0.92	0.78	45.7
3u	U	All MCs	1	0.0	1	0.0	0.277	20.9	LOS B	1.3	9.8	0.78	0.92	0.78	45.9
Approach			154	8.2	154	8.2	0.277	18.0	LOS B	1.3	9.8	0.78	0.89	0.80	46.3
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.394	4.1	LOS A	2.3	16.7	0.38	0.41	0.38	54.3
5	T1	All MCs	810	7.5	810	7.5	0.499	4.5	LOS A	3.4	24.8	0.39	0.44	0.39	53.8
6	R2	All MCs	198	1.6	198	1.6	0.499	10.1	LOS A	3.4	24.8	0.40	0.46	0.40	52.5
6u	U	All MCs	20	21.1	20	21.1	0.499	13.0	LOS A	3.4	24.8	0.40	0.46	0.40	52.0
Approach			1255	6.0	1255	6.0	0.499	5.4	LOS A	3.4	24.8	0.39	0.44	0.39	53.6
North: Anambah Road															
7	L2	All MCs	154	8.9	154	8.9	0.192	5.9	LOS A	0.9	7.1	0.71	0.69	0.71	52.9
8	T1	All MCs	34	3.1	34	3.1	0.192	6.2	LOS A	0.9	7.1	0.70	0.75	0.70	51.8
9	R2	All MCs	49	12.8	49	12.8	0.111	13.3	LOS A	0.5	3.6	0.69	0.80	0.69	49.4
9u	U	All MCs	1	0.0	1	0.0	0.111	15.2	LOS B	0.5	3.6	0.69	0.80	0.69	49.7
Approach			238	8.8	238	8.8	0.192	7.5	LOS A	0.9	7.1	0.70	0.72	0.70	51.9
West: New England Highway (W)															
10	L2	All MCs	27	7.7	27	7.7	0.509	5.1	LOS A	3.2	23.4	0.53	0.44	0.53	53.3
11	T1	All MCs	1165	5.1	1165	5.1	0.509	4.6	LOS A	3.2	23.4	0.54	0.47	0.54	53.5
12	R2	All MCs	60	8.8	60	8.8	0.509	11.7	LOS A	3.1	22.6	0.55	0.51	0.55	52.1
12u	U	All MCs	19	0.0	19	0.0	0.509	13.6	LOS A	3.1	22.6	0.55	0.51	0.55	52.3
Approach			1271	5.2	1271	5.2	0.509	5.1	LOS A	3.2	23.4	0.54	0.47	0.54	53.4
All Vehicles			2918	6.0	2918	6.0	0.509	6.1	LOS A	3.4	24.8	0.50	0.50	0.50	52.9

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.

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MOVEMENT SUMMARY

Site: 5PM28_X [NEW_ANA_28_PM_X (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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. Dist]				km/h
			veh/h		veh/h					veh	m			
South: Shipley Drive														
1	L2	All MCs	92	4.6	92	4.6	0.345	14.7	LOS B	1.6	12.0	0.78	0.87	49.7
2	T1	All MCs	49	4.3	49	4.3	0.345	11.9	LOS A	1.6	12.0	0.78	0.87	50.0
3	R2	All MCs	306	1.0	306	1.0	0.526	17.8	LOS B	3.4	24.3	0.84	0.97	46.1
3u	U	All MCs	1	0.0	1	0.0	0.526	20.8	LOS B	3.4	24.3	0.84	0.97	46.2
Approach			448	2.1	448	2.1	0.526	16.5	LOS B	3.4	24.3	0.82	0.94	47.2
East: New England Highway (E)														
4	L2	All MCs	244	3.0	244	3.0	0.462	4.2	LOS A	3.1	22.0	0.42	0.42	54.1
5	T1	All MCs	997	3.2	997	3.2	0.586	4.9	LOS A	4.7	34.1	0.44	0.45	53.6
6	R2	All MCs	159	7.3	159	7.3	0.586	10.3	LOS A	4.7	34.1	0.45	0.47	52.1
6u	U	All MCs	97	1.1	97	1.1	0.586	12.7	LOS A	4.7	34.1	0.45	0.47	52.2
Approach			1497	3.4	1497	3.4	0.586	5.8	LOS A	4.7	34.1	0.44	0.45	53.4
North: Anambah Road														
7	L2	All MCs	283	2.6	283	2.6	0.362	7.3	LOS A	2.3	16.1	0.85	0.81	52.6
8	T1	All MCs	55	5.8	55	5.8	0.156	8.2	LOS A	0.8	5.7	0.78	0.81	51.0
9	R2	All MCs	32	3.3	32	3.3	0.156	14.1	LOS A	0.8	5.7	0.78	0.81	50.2
9u	U	All MCs	1	0.0	1	0.0	0.156	16.4	LOS B	0.8	5.7	0.78	0.81	50.2
Approach			371	3.1	371	3.1	0.362	8.1	LOS A	2.3	16.1	0.83	0.81	52.1
West: New England Highway (W)														
10	L2	All MCs	34	3.1	34	3.1	0.602	7.8	LOS A	5.0	36.3	0.77	0.75	52.1
11	T1	All MCs	1007	5.1	1007	5.1	0.602	7.7	LOS A	5.0	36.3	0.77	0.77	52.2
12	R2	All MCs	59	0.0	59	0.0	0.602	14.7	LOS B	4.8	34.7	0.78	0.79	51.0
12u	U	All MCs	14	15.4	14	15.4	0.602	17.5	LOS B	4.8	34.7	0.78	0.79	50.6
Approach			1113	4.9	1113	4.9	0.602	8.2	LOS A	5.0	36.3	0.77	0.77	52.1
All Vehicles			3429	3.7	3429	3.7	0.602	8.2	LOS A	5.0	36.3	0.64	0.66	51.9

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: 5AM28_X [NEW_ANA_28_AM_X_S1 (Site Folder: Future Year 2028 wStage 1_220)]

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.320	17.8	LOS B	1.5	11.2	0.82	0.90	0.88	47.5
2	T1	All MCs	39	8.1	39	8.1	0.320	15.9	LOS B	1.5	11.2	0.82	0.90	0.89	47.6
3	R2	All MCs	71	10.4	71	10.4	0.320	26.3	LOS B	1.4	10.9	0.82	0.96	0.92	41.9
3u	U	All MCs	1	0.0	1	0.0	0.320	27.5	LOS B	1.4	10.9	0.82	0.96	0.92	42.1
Approach			154	8.2	154	8.2	0.320	21.3	LOS B	1.5	11.2	0.82	0.93	0.90	44.7
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.429	4.6	LOS A	2.6	18.7	0.50	0.47	0.50	53.7
5	T1	All MCs	810	7.5	810	7.5	0.543	5.2	LOS A	3.8	28.3	0.52	0.49	0.52	53.2
6	R2	All MCs	203	1.6	203	1.6	0.543	10.5	LOS A	3.8	28.3	0.53	0.50	0.53	52.0
6u	U	All MCs	20	21.1	20	21.1	0.543	13.5	LOS A	3.8	28.3	0.53	0.50	0.53	51.4
Approach			1261	6.0	1261	6.0	0.543	6.0	LOS A	3.8	28.3	0.52	0.49	0.52	53.1
North: Anambah Road															
7	L2	All MCs	198	6.9	198	6.9	0.259	6.0	LOS A	1.3	9.8	0.73	0.69	0.73	52.8
8	T1	All MCs	34	3.1	34	3.1	0.259	5.6	LOS A	1.3	9.8	0.73	0.69	0.73	53.3
9	R2	All MCs	154	4.1	154	4.1	0.243	13.2	LOS A	1.1	8.0	0.73	0.86	0.73	48.7
9u	U	All MCs	1	0.0	1	0.0	0.243	15.5	LOS B	1.1	8.0	0.73	0.86	0.73	48.8
Approach			386	5.4	386	5.4	0.259	8.9	LOS A	1.3	9.8	0.73	0.76	0.73	51.1
West: New England Highway (W)															
10	L2	All MCs	39	5.4	39	5.4	0.518	5.1	LOS A	3.4	24.8	0.55	0.45	0.55	53.2
11	T1	All MCs	1165	5.1	1165	5.1	0.518	4.6	LOS A	3.4	24.8	0.56	0.48	0.56	53.4
12	R2	All MCs	60	8.8	60	8.8	0.518	11.9	LOS A	3.3	24.1	0.57	0.52	0.58	52.0
12u	U	All MCs	19	0.0	19	0.0	0.518	13.7	LOS A	3.3	24.1	0.57	0.52	0.58	52.2
Approach			1283	5.2	1283	5.2	0.518	5.1	LOS A	3.4	24.8	0.56	0.48	0.56	53.3
All Vehicles			3083	5.7	3083	5.7	0.543	6.8	LOS A	3.8	28.3	0.58	0.54	0.58	52.4

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: 5PM28_X [NEW_ANA_28_PM_X_S1 (Site Folder: Future Year 2028 wStage 1_220)]

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. Dist]				km/h	
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.365	15.6	LOS B	1.8	13.0	0.80	0.90	0.91	49.1
2	T1	All MCs	49	4.3	49	4.3	0.365	12.9	LOS A	1.8	13.0	0.80	0.90	0.91	49.4
3	R2	All MCs	306	1.0	306	1.0	0.555	18.9	LOS B	3.8	26.6	0.87	1.00	1.17	45.6
3u	U	All MCs	1	0.0	1	0.0	0.555	21.9	LOS B	3.8	26.6	0.87	1.00	1.17	45.6
Approach			448	2.1	448	2.1	0.555	17.6	LOS B	3.8	26.6	0.84	0.97	1.09	46.6
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.483	4.3	LOS A	3.3	23.7	0.45	0.43	0.45	53.9
5	T1	All MCs	997	3.2	997	3.2	0.611	5.0	LOS A	5.2	37.2	0.47	0.46	0.47	53.4
6	R2	All MCs	207	5.6	207	5.6	0.611	10.4	LOS A	5.2	37.2	0.49	0.49	0.49	51.8
6u	U	All MCs	97	1.1	97	1.1	0.611	12.8	LOS A	5.2	37.2	0.49	0.49	0.49	52.0
Approach			1545	3.3	1545	3.3	0.611	6.1	LOS A	5.2	37.2	0.47	0.46	0.47	53.1
North: Anambah Road															
7	L2	All MCs	288	2.6	288	2.6	0.389	7.9	LOS A	2.6	18.4	0.88	0.83	0.94	52.3
8	T1	All MCs	55	5.8	55	5.8	0.189	8.7	LOS A	1.0	7.1	0.81	0.84	0.81	50.5
9	R2	All MCs	44	2.4	44	2.4	0.189	14.4	LOS A	1.0	7.1	0.81	0.84	0.81	49.7
9u	U	All MCs	1	0.0	1	0.0	0.189	16.9	LOS B	1.0	7.1	0.81	0.84	0.81	49.8
Approach			388	3.0	388	3.0	0.389	8.8	LOS A	2.6	18.4	0.86	0.84	0.90	51.7
West: New England Highway (W)															
10	L2	All MCs	147	0.7	147	0.7	0.684	9.4	LOS A	6.6	48.1	0.84	0.85	1.09	51.8
11	T1	All MCs	1007	5.1	1007	5.1	0.684	9.4	LOS A	6.6	48.1	0.84	0.86	1.11	51.5
12	R2	All MCs	59	0.0	59	0.0	0.684	16.5	LOS B	6.3	45.7	0.84	0.88	1.13	50.1
12u	U	All MCs	14	15.4	14	15.4	0.684	19.4	LOS B	6.3	45.7	0.84	0.88	1.13	49.7
Approach			1227	4.4	1227	4.4	0.684	9.8	LOS A	6.6	48.1	0.84	0.86	1.11	51.4
All Vehicles			3609	3.5	3609	3.5	0.684	9.1	LOS A	6.6	48.1	0.68	0.70	0.81	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_X [NEW_ANA_28_AM_X_S1_50% (Site Folder: Future Year 2028 wStage 1_220)]

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. Dist]				km/h	
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.313	17.3	LOS B	1.5	10.9	0.81	0.89	0.87	47.8
2	T1	All MCs	39	8.1	39	8.1	0.313	15.5	LOS B	1.5	10.9	0.81	0.90	0.87	47.8
3	R2	All MCs	71	10.4	71	10.4	0.313	25.8	LOS B	1.4	10.6	0.82	0.96	0.90	42.1
3u	U	All MCs	1	0.0	1	0.0	0.313	27.0	LOS B	1.4	10.6	0.82	0.96	0.90	42.3
Approach			154	8.2	154	8.2	0.313	20.8	LOS B	1.5	10.9	0.81	0.92	0.89	44.9
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.424	4.5	LOS A	2.5	18.4	0.48	0.46	0.48	53.8
5	T1	All MCs	810	7.5	810	7.5	0.536	5.0	LOS A	3.8	27.7	0.50	0.48	0.50	53.3
6	R2	All MCs	206	1.6	206	1.6	0.536	10.4	LOS A	3.8	27.7	0.51	0.49	0.51	52.0
6u	U	All MCs	20	21.1	20	21.1	0.536	13.4	LOS A	3.8	27.7	0.51	0.49	0.51	51.5
Approach			1264	6.0	1264	6.0	0.536	5.9	LOS A	3.8	27.7	0.50	0.48	0.50	53.1
North: Anambah Road															
7	L2	All MCs	217	6.3	217	6.3	0.278	6.0	LOS A	1.4	10.6	0.74	0.70	0.74	52.8
8	T1	All MCs	34	3.1	34	3.1	0.278	5.7	LOS A	1.4	10.6	0.74	0.70	0.74	53.3
9	R2	All MCs	135	4.7	135	4.7	0.213	13.2	LOS A	1.0	7.0	0.72	0.85	0.72	48.7
9u	U	All MCs	1	0.0	1	0.0	0.213	15.5	LOS B	1.0	7.0	0.72	0.85	0.72	48.8
Approach			386	5.4	386	5.4	0.278	8.5	LOS A	1.4	10.6	0.73	0.75	0.73	51.3
West: New England Highway (W)															
10	L2	All MCs	36	5.4	36	5.4	0.517	5.1	LOS A	3.4	24.6	0.55	0.45	0.55	53.2
11	T1	All MCs	1165	5.1	1165	5.1	0.517	4.7	LOS A	3.4	24.6	0.56	0.48	0.56	53.4
12	R2	All MCs	60	8.8	60	8.8	0.517	11.9	LOS A	3.3	24.0	0.57	0.52	0.58	52.0
12u	U	All MCs	19	0.0	19	0.0	0.517	13.7	LOS A	3.3	24.0	0.57	0.52	0.58	52.2
Approach			1279	5.2	1279	5.2	0.517	5.1	LOS A	3.4	24.6	0.56	0.48	0.56	53.3
All Vehicles			3083	5.7	3083	5.7	0.536	6.7	LOS A	3.8	27.7	0.57	0.54	0.57	52.5

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: 5PM28_X [NEW_ANA_28_PM_X_S1_50% (Site Folder: Future Year 2028 wStage 1_220)]

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h	
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.373	16.0	LOS B	1.8	13.4	0.80	0.90	0.93	48.8
2	T1	All MCs	49	4.3	49	4.3	0.373	13.3	LOS A	1.8	13.4	0.80	0.90	0.93	49.2
3	R2	All MCs	306	1.0	306	1.0	0.565	19.4	LOS B	3.9	27.4	0.87	1.01	1.19	45.3
3u	U	All MCs	1	0.0	1	0.0	0.565	22.4	LOS B	3.9	27.4	0.87	1.01	1.19	45.3
Approach			448	2.1	448	2.1	0.565	18.1	LOS B	3.9	27.4	0.85	0.98	1.11	46.3
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.491	4.3	LOS A	3.4	24.4	0.45	0.43	0.45	53.9
5	T1	All MCs	997	3.2	997	3.2	0.622	5.1	LOS A	5.3	38.4	0.47	0.47	0.47	53.3
6	R2	All MCs	240	4.8	240	4.8	0.622	10.4	LOS A	5.3	38.4	0.49	0.49	0.49	51.8
6u	U	All MCs	97	1.1	97	1.1	0.622	12.8	LOS A	5.3	38.4	0.49	0.49	0.49	51.9
Approach			1578	3.3	1578	3.3	0.622	6.2	LOS A	5.3	38.4	0.47	0.47	0.47	53.1
North: Anambah Road															
7	L2	All MCs	292	2.6	292	2.6	0.391	7.8	LOS A	2.6	18.4	0.87	0.84	0.94	52.4
8	T1	All MCs	55	5.8	55	5.8	0.182	8.5	LOS A	0.9	6.8	0.80	0.83	0.80	50.6
9	R2	All MCs	41	2.4	41	2.4	0.182	14.3	LOS A	0.9	6.8	0.80	0.83	0.80	49.8
9u	U	All MCs	1	0.0	1	0.0	0.182	16.7	LOS B	0.9	6.8	0.80	0.83	0.80	49.9
Approach			388	3.0	388	3.0	0.391	8.6	LOS A	2.6	18.4	0.86	0.83	0.90	51.8
West: New England Highway (W)															
10	L2	All MCs	115	0.7	115	0.7	0.680	9.7	LOS A	6.6	47.7	0.84	0.86	1.11	51.6
11	T1	All MCs	1007	5.1	1007	5.1	0.680	9.7	LOS A	6.6	47.7	0.84	0.87	1.13	51.3
12	R2	All MCs	59	0.0	59	0.0	0.680	16.8	LOS B	6.2	45.1	0.85	0.89	1.15	49.9
12u	U	All MCs	14	15.4	14	15.4	0.680	19.7	LOS B	6.2	45.1	0.85	0.89	1.15	49.5
Approach			1194	4.5	1194	4.5	0.680	10.1	LOS A	6.6	47.7	0.84	0.87	1.13	51.2
All Vehicles			3608	3.5	3608	3.5	0.680	9.2	LOS A	6.6	47.7	0.68	0.70	0.82	51.4

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

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

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 5AM28_X [NEW_ANA_28_AM_X_FD (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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. Dist]				km/h	
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.509	36.7	LOS C	2.8	20.8	0.92	1.02	1.19	39.8
2	T1	All MCs	39	8.1	39	8.1	0.509	31.1	LOS C	2.8	20.8	0.92	1.02	1.19	40.0
3	R2	All MCs	71	10.4	71	10.4	0.527	47.8	LOS D	2.6	19.9	0.93	1.07	1.29	34.1
3u	U	All MCs	1	0.0	1	0.0	0.527	47.5	LOS D	2.6	19.9	0.93	1.07	1.29	34.2
Approach			154	8.2	154	8.2	0.527	40.4	LOS C	2.8	20.8	0.92	1.05	1.24	36.9
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.547	7.2	LOS A	4.1	30.2	0.76	0.73	0.87	52.4
5	T1	All MCs	810	7.5	810	7.5	0.692	9.5	LOS A	7.3	53.8	0.81	0.79	0.98	51.6
6	R2	All MCs	218	1.4	218	1.4	0.692	13.8	LOS A	7.3	53.8	0.84	0.82	1.04	50.3
6u	U	All MCs	20	21.1	20	21.1	0.692	17.0	LOS B	7.3	53.8	0.84	0.82	1.04	49.7
Approach			1276	5.9	1276	5.9	0.692	10.0	LOS A	7.3	53.8	0.81	0.79	0.97	51.5
North: Anambah Road															
7	L2	All MCs	335	4.1	335	4.1	0.604	10.2	LOS A	3.8	27.7	0.84	0.96	1.12	50.7
8	T1	All MCs	34	3.1	34	3.1	0.604	9.9	LOS A	3.8	27.7	0.84	0.96	1.12	51.1
9	R2	All MCs	473	1.3	473	1.3	0.529	13.5	LOS A	3.6	25.3	0.83	0.92	0.99	48.5
9u	U	All MCs	1	0.0	1	0.0	0.529	16.0	LOS B	3.6	25.3	0.83	0.92	0.99	48.5
Approach			843	2.5	843	2.5	0.604	12.0	LOS A	3.8	27.7	0.83	0.94	1.05	49.4
West: New England Highway (W)															
10	L2	All MCs	74	2.8	74	2.8	0.548	5.2	LOS A	3.9	28.6	0.61	0.47	0.61	53.0
11	T1	All MCs	1165	5.1	1165	5.1	0.548	4.9	LOS A	3.9	28.6	0.62	0.51	0.63	53.1
12	R2	All MCs	60	8.8	60	8.8	0.548	12.2	LOS A	3.9	28.6	0.63	0.56	0.66	51.7
12u	U	All MCs	19	0.0	19	0.0	0.548	14.0	LOS A	3.9	28.6	0.63	0.56	0.66	52.0
Approach			1318	5.1	1318	5.1	0.548	5.3	LOS A	3.9	28.6	0.62	0.51	0.63	53.0
All Vehicles			3591	4.9	3591	4.9	0.692	10.1	LOS A	7.3	53.8	0.75	0.73	0.88	50.6

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.

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MOVEMENT SUMMARY

Site: 5PM28_X [NEW_ANA_28_PM_X_FD (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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h	
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.442	19.6	LOS B	2.4	17.1	0.85	0.97	1.06	46.7
2	T1	All MCs	49	4.3	49	4.3	0.442	17.4	LOS B	2.4	17.1	0.85	0.97	1.06	47.1
3	R2	All MCs	306	1.0	306	1.0	0.665	24.7	LOS B	5.2	36.6	0.93	1.10	1.44	42.7
3u	U	All MCs	1	0.0	1	0.0	0.665	27.6	LOS B	5.2	36.6	0.93	1.10	1.44	42.7
Approach			448	2.1	448	2.1	0.665	22.8	LOS B	5.2	36.6	0.91	1.06	1.32	43.9
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.546	4.5	LOS A	4.0	28.5	0.53	0.45	0.53	53.5
5	T1	All MCs	997	3.2	997	3.2	0.691	5.5	LOS A	6.4	46.2	0.57	0.50	0.57	52.8
6	R2	All MCs	358	3.2	358	3.2	0.691	10.6	LOS A	6.4	46.2	0.60	0.53	0.60	51.2
6u	U	All MCs	97	1.1	97	1.1	0.691	13.1	LOS A	6.4	46.2	0.60	0.53	0.60	51.2
Approach			1696	3.0	1696	3.0	0.691	6.9	LOS A	6.4	46.2	0.57	0.50	0.57	52.4
North: Anambah Road															
7	L2	All MCs	305	2.4	305	2.4	0.499	10.8	LOS A	4.0	28.6	0.97	0.92	1.16	50.2
8	T1	All MCs	55	5.8	55	5.8	0.499	10.3	LOS A	4.0	28.6	0.90	0.88	0.93	49.3
9	R2	All MCs	83	1.3	83	1.3	0.288	15.9	LOS B	1.7	11.9	0.88	0.87	0.88	48.3
9u	U	All MCs	1	0.0	1	0.0	0.288	18.3	LOS B	1.7	11.9	0.88	0.87	0.88	48.4
Approach			444	2.6	444	2.6	0.499	11.7	LOS A	4.0	28.6	0.94	0.90	1.08	49.7
West: New England Highway (W)															
10	L2	All MCs	499	0.2	499	0.2	0.972	36.1	LOS C	28.0	199.9	1.00	1.84	3.19	38.0
11	T1	All MCs	1007	5.1	1007	5.1	0.972	37.3	LOS C	28.0	199.9	1.00	1.82	3.22	37.3
12	R2	All MCs	59	0.0	59	0.0	0.972	45.1	LOS D	24.6	179.4	1.00	1.82	3.23	36.5
12u	U	All MCs	14	15.4	14	15.4	0.972	48.3	LOS D	24.6	179.4	1.00	1.82	3.23	36.2
Approach			1578	3.4	1578	3.4	0.972	37.3	LOS C	28.0	199.9	1.00	1.83	3.21	37.5
All Vehicles			4168	3.0	4168	3.0	0.972	20.6	LOS B	28.0	199.9	0.81	1.11	1.70	44.6

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.

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MOVEMENT SUMMARY

Site: 5AM28_X [NEW_ANA_28_AM_X_FD_50% (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

Sensitivity Analysis (Critical Gap & Follow-up Headway): Results for Parameter Scale = 110.0 %

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.614	44.2	LOS D	3.1	22.8	0.94	1.07	1.34	36.1
2	T1	All MCs	39	8.1	39	8.1	0.614	40.9	LOS C	3.1	22.8	0.94	1.07	1.34	36.2
3	R2	All MCs	71	10.4	71	10.4	0.614	57.3	LOS E	2.9	22.0	0.94	1.11	1.42	31.5
3u	U	All MCs	1	0.0	1	0.0	0.614	58.4	LOS E	2.9	22.0	0.94	1.11	1.42	31.6
Approach			154	8.2	154	8.2	0.614	49.5	LOS D	3.1	22.8	0.94	1.09	1.38	33.8
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.598	8.1	LOS A	4.7	34.4	0.75	0.73	0.90	52.1
5	T1	All MCs	810	7.5	810	7.5	0.757	10.3	LOS A	9.0	66.0	0.83	0.81	1.06	51.2
6	R2	All MCs	231	1.4	231	1.4	0.757	15.2	LOS B	9.0	66.0	0.86	0.85	1.13	49.8
6u	U	All MCs	20	21.1	20	21.1	0.757	18.6	LOS B	9.0	66.0	0.86	0.85	1.13	49.3
Approach			1288	5.8	1288	5.8	0.757	10.9	LOS A	9.0	66.0	0.82	0.81	1.04	51.1
North: Anambah Road															
7	L2	All MCs	457	3.0	457	3.0	0.706	11.2	LOS A	5.3	38.4	0.90	1.02	1.31	50.0
8	T1	All MCs	34	3.1	34	3.1	0.706	10.9	LOS A	5.3	38.4	0.90	1.02	1.31	50.4
9	R2	All MCs	353	1.8	353	1.8	0.742	21.5	LOS B	5.0	35.8	0.89	1.12	1.42	44.2
9u	U	All MCs	1	0.0	1	0.0	0.742	23.9	LOS B	5.0	35.8	0.89	1.12	1.42	44.2
Approach			844	2.5	844	2.5	0.742	15.5	LOS B	5.3	38.4	0.90	1.06	1.36	47.3
West: New England Highway (W)															
10	L2	All MCs	62	3.1	62	3.1	0.638	6.9	LOS A	5.6	40.9	0.70	0.64	0.79	52.5
11	T1	All MCs	1165	5.1	1165	5.1	0.638	6.8	LOS A	5.6	40.9	0.71	0.66	0.81	52.6
12	R2	All MCs	60	8.8	60	8.8	0.638	14.4	LOS A	5.5	39.9	0.72	0.69	0.85	51.1
12u	U	All MCs	19	0.0	19	0.0	0.638	16.1	LOS B	5.5	39.9	0.72	0.69	0.85	51.4
Approach			1306	5.1	1306	5.1	0.638	7.3	LOS A	5.6	40.9	0.71	0.66	0.81	52.5
All Vehicles			3592	4.9	3592	4.9	0.757	12.3	LOS A	9.0	66.0	0.80	0.83	1.05	49.5

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

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

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 5PM28_X [NEW_ANA_28_PM_X_FD_50% (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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Dist	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	m				km/h
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.494	22.4	LOS B	2.7	19.8	0.88	1.01	1.16	45.0
2	T1	All MCs	49	4.3	49	4.3	0.494	20.8	LOS B	2.7	19.8	0.88	1.01	1.16	45.3
3	R2	All MCs	306	1.0	306	1.0	0.738	30.5	LOS C	6.3	44.8	0.96	1.18	1.67	40.2
3u	U	All MCs	1	0.0	1	0.0	0.738	33.4	LOS C	6.3	44.8	0.96	1.18	1.67	40.2
Approach			448	2.1	448	2.1	0.738	27.8	LOS B	6.3	44.8	0.94	1.12	1.51	41.6
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.581	4.6	LOS A	4.6	32.8	0.54	0.46	0.54	53.4
5	T1	All MCs	997	3.2	997	3.2	0.736	5.6	LOS A	7.7	54.9	0.59	0.51	0.59	52.6
6	R2	All MCs	492	2.4	492	2.4	0.736	10.7	LOS A	7.7	54.9	0.63	0.56	0.63	50.8
6u	U	All MCs	97	1.1	97	1.1	0.736	13.2	LOS A	7.7	54.9	0.63	0.56	0.63	50.8
Approach			1829	2.8	1829	2.8	0.736	7.3	LOS A	7.7	54.9	0.60	0.52	0.60	52.1
North: Anambah Road															
7	L2	All MCs	320	2.3	320	2.3	0.486	9.8	LOS A	3.7	26.6	0.95	0.90	1.11	50.9
8	T1	All MCs	55	5.8	55	5.8	0.265	9.5	LOS A	1.5	10.7	0.86	0.86	0.86	49.7
9	R2	All MCs	68	1.4	68	1.4	0.265	15.2	LOS B	1.5	10.7	0.86	0.86	0.86	49.0
9u	U	All MCs	1	0.0	1	0.0	0.265	17.7	LOS B	1.5	10.7	0.86	0.86	0.86	49.0
Approach			444	2.6	444	2.6	0.486	10.6	LOS A	3.7	26.6	0.92	0.89	1.04	50.5
West: New England Highway (W)															
10	L2	All MCs	366	0.2	366	0.2	0.997	52.2	LOS D	33.8	242.1	1.00	2.18	4.06	32.8
11	T1	All MCs	1007	5.1	1007	5.1	0.997	53.1	LOS D	33.8	242.1	1.00	2.13	4.02	32.3
12	R2	All MCs	59	0.0	59	0.0	0.997	61.3	LOS E	28.7	208.8	1.00	2.10	4.00	31.6
12u	U	All MCs	14	15.4	14	15.4	0.997	64.5	LOS E	28.7	208.8	1.00	2.10	4.00	31.4
Approach			1445	3.7	1445	3.7	0.997	53.3	LOS D	33.8	242.1	1.00	2.14	4.03	32.4
All Vehicles			4167	3.0	4167	3.0	0.997	25.8	LOS B	33.8	242.1	0.81	1.19	1.93	42.0

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

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

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 5AM38_X [NEW_ANA_38_AM_X (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)

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h	
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.359	21.0	LOS B	1.8	13.0	0.85	0.93	0.96	46.3
2	T1	All MCs	39	8.1	39	8.1	0.359	17.8	LOS B	1.8	13.0	0.85	0.93	0.96	46.6
3	R2	All MCs	71	10.4	71	10.4	0.370	30.7	LOS C	1.6	12.3	0.86	1.00	1.04	40.0
3u	U	All MCs	1	0.0	1	0.0	0.370	31.2	LOS C	1.6	12.3	0.86	1.00	1.04	40.2
Approach			154	8.2	154	8.2	0.370	24.7	LOS B	1.8	13.0	0.85	0.96	1.00	43.1
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.481	4.2	LOS A	3.2	23.2	0.43	0.42	0.43	54.0
5	T1	All MCs	1082	7.1	1082	7.1	0.608	5.3	LOS A	4.9	36.3	0.46	0.44	0.46	53.6
6	R2	All MCs	198	1.6	198	1.6	0.608	10.2	LOS A	4.9	36.3	0.47	0.45	0.47	52.4
6u	U	All MCs	20	21.1	20	21.1	0.608	13.1	LOS A	4.9	36.3	0.47	0.45	0.47	51.8
Approach			1527	6.0	1527	6.0	0.608	5.8	LOS A	4.9	36.3	0.46	0.44	0.46	53.5
North: Anambah Road															
7	L2	All MCs	154	8.9	154	8.9	0.356	10.7	LOS A	2.3	17.3	0.97	0.90	1.03	50.3
8	T1	All MCs	34	3.1	34	3.1	0.356	10.6	LOS A	2.3	17.3	0.92	0.91	0.95	49.2
9	R2	All MCs	49	12.8	49	12.8	0.205	17.4	LOS B	1.1	8.1	0.89	0.92	0.89	47.3
9u	U	All MCs	1	0.0	1	0.0	0.205	19.0	LOS B	1.1	8.1	0.89	0.92	0.89	47.6
Approach			238	8.8	238	8.8	0.356	12.1	LOS A	2.3	17.3	0.94	0.91	0.99	49.4
West: New England Highway (W)															
10	L2	All MCs	27	7.7	27	7.7	0.837	8.4	LOS A	12.2	88.3	0.81	0.78	1.01	51.8
11	T1	All MCs	2011	3.7	2011	3.7	0.837	8.3	LOS A	12.2	88.3	0.84	0.80	1.06	52.0
12	R2	All MCs	60	8.8	60	8.8	0.837	16.1	LOS B	12.2	88.2	0.87	0.83	1.13	50.6
12u	U	All MCs	19	0.0	19	0.0	0.837	17.9	LOS B	12.2	88.2	0.87	0.83	1.13	50.8
Approach			2118	3.9	2118	3.9	0.837	8.6	LOS A	12.2	88.3	0.84	0.80	1.06	51.9
All Vehicles			4036	5.1	4036	5.1	0.837	8.4	LOS A	12.2	88.3	0.70	0.68	0.83	51.9

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: 5PM38_X [NEW_ANA_38_PM_X (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)
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. Dist]				km/h	
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.927	638.8	LOS F	8.5	61.9	0.99	1.44	2.50	23.0
2	T1	All MCs	49	4.3	49	4.3	0.927	99.2	LOS F	8.5	61.9	0.99	1.44	2.50	23.0
3	R2	All MCs	306	1.0	306	1.0	1.349	367.2	LOS F	57.9	408.7	1.00	3.33	8.31	9.0
3u	U	All MCs	1	0.0	1	0.0	1.349	370.1	LOS F	57.9	408.7	1.00	3.33	8.31	9.0
Approach			448	2.1	448	2.1	1.349	393.1	LOS F	57.9	408.7	1.00	2.73	6.48	11.1
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.719	4.7	LOS A	7.2	51.2	0.61	0.46	0.61	53.0
5	T1	All MCs	1853	2.1	1853	2.1	0.910	203.1	LOS F	19.6	140.3	0.77	0.56	0.80	52.2
6	R2	All MCs	159	7.3	159	7.3	0.910	12.6	LOS A	19.6	140.3	0.86	0.62	0.91	50.6
6u	U	All MCs	97	1.1	97	1.1	0.910	14.9	LOS B	19.6	140.3	0.86	0.62	0.91	50.7
Approach			2353	2.5	2353	2.5	0.910	161.9	LOS F	19.6	140.3	0.76	0.56	0.80	52.1
North: Anambah Road															
7	L2	All MCs	283	2.6	283	2.6	0.434	8.8	LOS A	2.9	21.1	0.92	0.89	1.04	51.6
8	T1	All MCs	55	5.8	55	5.8	0.181	8.8	LOS A	0.9	6.9	0.84	0.85	0.84	50.7
9	R2	All MCs	32	3.3	32	3.3	0.181	14.6	LOS B	0.9	6.9	0.84	0.85	0.84	49.8
9u	U	All MCs	1	0.0	1	0.0	0.181	17.0	LOS B	0.9	6.9	0.84	0.85	0.84	49.9
Approach			371	3.1	371	3.1	0.434	9.3	LOS A	2.9	21.1	0.90	0.88	0.99	51.3
West: New England Highway (W)															
10	L2	All MCs	34	3.1	34	3.1	0.746	9.2	LOS A	8.2	59.6	0.85	0.84	1.11	51.7
11	T1	All MCs	1335	4.8	1335	4.8	0.746	9.1	LOS A	8.2	59.6	0.85	0.86	1.13	51.7
12	R2	All MCs	59	0.0	59	0.0	0.746	16.3	LOS B	7.8	57.1	0.86	0.88	1.16	50.4
12u	U	All MCs	14	15.4	14	15.4	0.746	19.1	LOS B	7.8	57.1	0.86	0.88	1.16	49.9
Approach			1442	4.7	1442	4.7	0.746	9.5	LOS A	8.2	59.6	0.85	0.86	1.14	51.6
All Vehicles			4613	3.2	4613	3.2	1.349	124.5	LOS F	57.9	408.7	0.83	0.89	1.47	38.1

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: 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 HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec			m				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	68.3	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	0.162	11.2	LOS A	3.4	24.4	0.25	0.62	0.25	50.8
5	T1	All MCs	1082	7.1	1082	7.1	0.526	21.2	LOS B	23.8	176.6	0.66	0.60	0.66	45.2
6	R2	All MCs	218	3.4	218	3.4	*0.968	103.3	LOS F	19.3	138.7	1.00	1.07	1.45	22.0
Approach			1527	6.0	1527	6.0	0.968	31.4	LOS C	23.8	176.6	0.65	0.67	0.71	39.3
North: Anambah Road															
7	L2	All MCs	154	8.9	154	8.9	0.432	38.5	LOS C	10.6	79.3	0.86	0.78	0.86	33.7
8	T1	All MCs	34	3.1	34	3.1	0.432	77.5	LOS F	10.6	79.3	0.86	0.78	0.86	34.5
9	R2	All MCs	49	12.8	49	12.8	0.383	77.4	LOS F	3.5	27.0	0.99	0.75	0.99	26.0
Approach			237	8.9	237	8.9	0.432	52.2	LOS D	10.6	79.3	0.89	0.77	0.89	31.8
West: New England Highway (W)															
10	L2	All MCs	27	7.7	27	7.7	*0.967	44.0	LOS D	86.4	624.8	1.00	1.10	1.18	30.0
11	T1	All MCs	2011	3.7	2011	3.7	*0.967	69.3	LOS E	86.4	624.8	1.00	1.10	1.18	30.8
12	R2	All MCs	79	6.7	79	6.7	0.359	92.8	LOS F	5.2	38.7	0.96	0.77	0.96	27.5
Approach			2118	3.9	2118	3.9	0.967	69.8	LOS E	86.4	624.8	1.00	1.09	1.17	28.0
All Vehicles			4034	5.1	4034	5.1	0.968	54.1	LOS D	86.4	624.8	0.86	0.90	0.98	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	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
	ped/h	ped/h	sec		ped	m			sec	m	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)												

P21 Stage 1	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
P22 Stage 2	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	263	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.

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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 HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	*0.963	97.9	LOS F	19.7	141.9	1.00	1.13	1.43	23.1
2	T1	All MCs	49	4.3	49	4.3	*0.963	108.8	LOS F	19.7	141.9	1.00	1.13	1.43	23.5
3	R2	All MCs	306	1.0	306	1.0	0.963	115.0	LOS F	19.8	141.9	1.00	1.14	1.43	22.3
Approach			447	2.1	447	2.1	0.963	110.8	LOS F	19.8	141.9	1.00	1.13	1.43	21.1
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.166	20.2	LOS B	2.8	20.4	0.18	0.59	0.18	51.8
5	T1	All MCs	1853	2.1	1853	2.1	*0.884	39.6	LOS C	59.7	425.6	0.91	0.86	0.94	41.0
6	R2	All MCs	256	4.9	256	4.9	0.885	93.1	LOS F	20.4	149.2	1.00	0.97	1.22	24.9
Approach			2353	2.5	2353	2.5	0.885	43.4	LOS D	59.7	425.6	0.84	0.84	0.89	34.9
North: Anambah Road															
7	L2	All MCs	283	2.6	283	2.6	0.876	54.8	LOS D	23.9	172.1	1.00	1.14	1.18	27.1
8	T1	All MCs	55	5.8	55	5.8	*0.876	163.4	LOS F	23.9	172.1	1.00	1.14	1.18	27.6
9	R2	All MCs	32	3.3	32	3.3	0.519	88.4	LOS F	2.5	17.7	1.00	0.74	1.03	24.2
Approach			369	3.1	369	3.1	0.876	73.8	LOS F	23.9	172.1	1.00	1.11	1.17	26.9
West: New England Highway (W)															
10	L2	All MCs	34	3.1	34	3.1	0.735	22.4	LOS B	39.4	287.2	0.85	0.79	0.85	37.4
11	T1	All MCs	1335	4.8	1335	4.8	0.735	41.0	LOS C	39.4	287.2	0.85	0.78	0.85	39.3
12	R2	All MCs	73	2.9	73	2.9	0.991	135.1	LOS F	6.8	48.4	1.00	1.04	1.66	20.3
Approach			1442	4.7	1442	4.7	0.991	45.3	LOS D	39.4	287.2	0.86	0.80	0.89	34.4
All Vehicles			4611	3.2	4611	3.2	0.991	53.0	LOS D	59.7	425.6	0.87	0.88	0.97	32.0

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.

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	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
	ped/h	ped/h	sec		ped	m			sec	m	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)												

P21 Stage 1	50	53	68.8	LOS F	0.2	0.2	0.96	0.96	222.6	200.0	0.90
P22 Stage 2	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	263	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.

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Project: S:\Projects\SCT_00581_559 Anambah Road Gosforth DA\4. Tech Work\1. Modelling\RtS3\SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v4.0.sip9

MOVEMENT SUMMARY

Site: 5AM38_F [NEW_ANA_38_AM_F_S1 (Site Folder: Future Year 2038 wStage 1_220)]

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 = 144 seconds (Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.569	44.1	LOS D	4.9	36.1	1.00	0.77	1.00	30.8
2	T1	All MCs	39	8.1	39	8.1	*0.569	67.9	LOS E	4.9	36.1	1.00	0.77	1.00	31.5
3	R2	All MCs	71	10.4	71	10.4	0.534	77.9	LOS F	5.0	38.1	1.00	0.77	1.00	26.1
Approach			153	8.3	153	8.3	0.569	65.8	LOS E	5.0	38.1	1.00	0.77	1.00	28.6
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.164	11.2	LOS A	3.5	25.4	0.26	0.62	0.26	50.7
5	T1	All MCs	1082	7.1	1082	7.1	0.521	20.6	LOS B	23.3	173.1	0.65	0.59	0.65	45.5
6	R2	All MCs	223	3.3	223	3.3	*0.521	71.6	LOS F	7.6	54.4	0.99	0.79	0.99	27.1
Approach			1532	5.9	1532	5.9	0.521	26.6	LOS B	23.3	173.1	0.64	0.62	0.64	41.5
North: Anambah Road															
7	L2	All MCs	198	6.9	198	6.9	0.492	40.8	LOS C	12.9	95.3	0.86	0.85	0.86	33.4
8	T1	All MCs	34	3.1	34	3.1	0.492	79.5	LOS F	12.9	95.3	0.86	0.85	0.86	34.2
9	R2	All MCs	154	4.1	154	4.1	0.944	97.4	LOS F	12.9	93.4	1.00	1.04	1.44	22.8
Approach			385	5.5	385	5.5	0.944	66.8	LOS E	12.9	95.3	0.92	0.93	1.09	28.3
West: New England Highway (W)															
10	L2	All MCs	39	5.4	39	5.4	*0.966	42.2	LOS C	86.0	621.4	1.00	1.10	1.17	30.4
11	T1	All MCs	2011	3.7	2011	3.7	*0.966	68.1	LOS E	86.0	621.4	1.00	1.10	1.18	31.1
12	R2	All MCs	79	6.7	79	6.7	0.377	93.0	LOS F	5.2	38.8	0.97	0.77	0.97	27.4
Approach			2129	3.9	2129	3.9	0.966	68.5	LOS E	86.0	621.4	1.00	1.09	1.17	28.3
All Vehicles			4200	4.9	4200	4.9	0.966	53.0	LOS D	86.0	621.4	0.86	0.89	0.97	32.0

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.

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	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
	ped/h	ped/h	sec		ped	m			sec	m	m/sec	
South: Shipley Drive												
P1	Full	50	53	66.3	LOS F	0.2	0.2	0.96	0.96	220.1	200.0	0.91
East: New England Highway (E)												

P21 Stage 1	50	53	66.3	LOS F	0.2	0.2	0.96	0.96	220.1	200.0	0.91
P22 Stage 2	50	53	66.3	LOS F	0.2	0.2	0.96	0.96	220.1	200.0	0.91
North: Anambah Road											
P3 Full	50	53	66.3	LOS F	0.2	0.2	0.96	0.96	220.1	200.0	0.91
West: New England Highway (W)											
P4 Full	50	53	66.3	LOS F	0.2	0.2	0.96	0.96	220.1	200.0	0.91
All Pedestrians	0	263	66.3	LOS F	0.2	0.2	0.96	0.96	220.1	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.

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MOVEMENT SUMMARY

Site: 5PM38_F [NEW_ANA_38_PM_F_S1 (Site Folder: Future Year 2038 wStage 1_220)]

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 HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	*0.985	106.3	LOS F	20.4	146.9	1.00	1.16	1.50	22.0
2	T1	All MCs	49	4.3	49	4.3	*0.985	116.1	LOS F	20.4	146.9	1.00	1.16	1.50	22.4
3	R2	All MCs	306	1.0	306	1.0	0.985	122.7	LOS F	20.5	146.9	1.00	1.18	1.50	21.3
Approach			447	2.1	447	2.1	0.985	118.6	LOS F	20.5	146.9	1.00	1.17	1.50	20.3
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.163	17.6	LOS B	2.7	19.3	0.16	0.59	0.16	51.9
5	T1	All MCs	1853	2.1	1853	2.1	*0.840	30.5	LOS C	53.1	378.6	0.84	0.77	0.84	44.6
6	R2	All MCs	304	4.2	304	4.2	0.590	74.6	LOS F	10.4	75.4	0.99	0.81	0.99	27.4
Approach			2401	2.5	2401	2.5	0.840	34.7	LOS C	53.1	378.6	0.79	0.76	0.79	38.0
North: Anambah Road															
7	L2	All MCs	288	2.6	288	2.6	0.882	57.5	LOS E	24.5	176.1	1.00	1.15	1.20	26.8
8	T1	All MCs	55	5.8	55	5.8	*0.882	159.1	LOS F	24.5	176.1	1.00	1.15	1.20	27.3
9	R2	All MCs	44	2.4	44	2.4	0.712	89.3	LOS F	3.5	24.7	1.00	0.82	1.19	24.0
Approach			387	3.0	387	3.0	0.882	75.5	LOS F	24.5	176.1	1.00	1.12	1.19	26.5
West: New England Highway (W)															
10	L2	All MCs	147	0.7	147	0.7	0.756	21.9	LOS B	41.3	299.1	0.84	0.82	0.84	38.4
11	T1	All MCs	1335	4.8	1335	4.8	0.756	39.7	LOS C	41.3	299.1	0.84	0.79	0.84	40.4
12	R2	All MCs	73	2.9	73	2.9	0.978	128.1	LOS F	6.5	46.7	1.00	1.02	1.63	21.0
Approach			1555	4.3	1555	4.3	0.978	42.2	LOS C	41.3	299.1	0.85	0.81	0.88	35.4
All Vehicles			4791	3.1	4791	3.1	0.985	48.3	LOS D	53.1	378.6	0.85	0.84	0.92	33.3

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	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
	ped/h	ped/h	sec		ped	m			sec	m	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)												

P21 Stage 1	50	53	67.8	LOS F	0.2	0.2	0.96	0.96	221.6	200.0	0.90
P22 Stage 2	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	263	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.

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MOVEMENT SUMMARY

Site: 5AM38_F [NEW_ANA_38_AM_F_S1_50% (Site Folder: Future Year 2038 wStage 1_220)]

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 HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec			m				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	69.1	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	66.3	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	0.163	11.5	LOS A	3.5	25.4	0.26	0.62	0.26	50.7
5	T1	All MCs	1082	7.1	1082	7.1	0.526	21.2	LOS B	23.8	176.6	0.66	0.59	0.66	45.2
6	R2	All MCs	226	3.3	226	3.3	*0.502	71.0	LOS F	7.6	55.0	0.98	0.79	0.98	27.2
Approach			1535	5.9	1535	5.9	0.526	27.1	LOS B	23.8	176.6	0.65	0.63	0.65	41.2
North: Anambah Road															
7	L2	All MCs	227	6.0	227	6.0	0.526	41.8	LOS C	14.5	106.7	0.86	0.88	0.86	33.3
8	T1	All MCs	34	3.1	34	3.1	0.526	81.1	LOS F	14.5	106.7	0.86	0.88	0.86	34.1
9	R2	All MCs	124	5.1	124	5.1	0.773	80.8	LOS F	9.2	67.3	1.00	0.89	1.15	25.4
Approach			385	5.5	385	5.5	0.773	57.8	LOS E	14.5	106.7	0.91	0.88	0.96	30.3
West: New England Highway (W)															
10	L2	All MCs	36	5.3	36	5.3	*0.971	44.8	LOS D	88.0	635.7	1.00	1.11	1.19	29.7
11	T1	All MCs	2011	3.7	2011	3.7	*0.971	71.2	LOS F	88.0	635.7	1.00	1.12	1.19	30.4
12	R2	All MCs	79	6.7	79	6.7	0.359	93.0	LOS F	5.2	38.7	0.96	0.77	0.96	27.5
Approach			2126	3.9	2126	3.9	0.971	71.5	LOS F	88.0	635.7	1.00	1.10	1.18	27.6
All Vehicles			4199	4.9	4199	4.9	0.971	53.8	LOS D	88.0	635.7	0.86	0.90	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	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
	ped/h	ped/h	sec		ped	m			sec	m	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)												

P21 Stage 1	50	53	66.8	LOS F	0.2	0.2	0.96	0.96	220.6	200.0	0.91
P22 Stage 2	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	263	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.

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MOVEMENT SUMMARY

Site: 5PM38_F [NEW_ANA_38_PM_F_S1_50% (Site Folder: Future Year 2038 wStage 1_220)]

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 HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.]	Dist [m]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			veh/h	%	veh/h	%	v/c	sec							
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	*0.985	106.3	LOS F	20.4	146.9	1.00	1.16	1.50	22.0
2	T1	All MCs	49	4.3	49	4.3	*0.985	116.2	LOS F	20.4	146.9	1.00	1.16	1.50	22.4
3	R2	All MCs	306	1.0	306	1.0	0.985	122.7	LOS F	20.5	146.9	1.00	1.18	1.50	21.3
Approach			447	2.1	447	2.1	0.985	118.6	LOS F	20.5	146.9	1.00	1.17	1.50	20.3
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.164	17.7	LOS B	2.7	19.3	0.16	0.59	0.16	51.9
5	T1	All MCs	1853	2.1	1853	2.1	*0.843	30.6	LOS C	53.2	379.2	0.85	0.78	0.85	44.5
6	R2	All MCs	338	4.0	338	4.0	0.655	75.5	LOS F	11.7	84.7	1.00	0.82	1.01	27.2
Approach			2434	2.5	2434	2.5	0.843	35.5	LOS C	53.2	379.2	0.80	0.76	0.80	37.7
North: Anambah Road															
7	L2	All MCs	292	2.6	292	2.6	0.885	57.1	LOS E	24.7	177.8	1.00	1.16	1.20	26.8
8	T1	All MCs	55	5.8	55	5.8	*0.885	163.3	LOS F	24.7	177.8	1.00	1.16	1.20	27.3
9	R2	All MCs	41	2.3	41	2.3	0.659	88.6	LOS F	3.2	22.7	1.00	0.79	1.13	24.1
Approach			387	3.0	387	3.0	0.885	75.5	LOS F	24.7	177.8	1.00	1.12	1.19	26.5
West: New England Highway (W)															
10	L2	All MCs	115	0.7	115	0.7	0.739	21.6	LOS B	39.9	289.3	0.83	0.80	0.83	38.5
11	T1	All MCs	1335	4.8	1335	4.8	0.739	38.7	LOS C	39.9	289.3	0.83	0.78	0.83	40.5
12	R2	All MCs	73	2.9	73	2.9	0.978	127.4	LOS F	6.5	46.7	1.00	1.02	1.63	21.0
Approach			1522	4.4	1522	4.4	0.978	41.6	LOS C	39.9	289.3	0.84	0.79	0.87	35.6
All Vehicles			4792	3.1	4792	3.1	0.985	48.5	LOS D	53.2	379.2	0.85	0.84	0.92	33.3

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	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
	ped/h	ped/h	sec		ped	m			sec	m	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)												

P21 Stage 1	50	53	67.8	LOS F	0.2	0.2	0.96	0.96	221.6	200.0	0.90
P22 Stage 2	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	263	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.

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MOVEMENT SUMMARY

Site: 5AM38_F [NEW_ANA_38_AM_F_FD_Mod (Site Folder: Future Year 2038 wDev Mod)]

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 HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.]	Dist [m]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			veh/h	%	veh/h	%	v/c	sec							
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.756	52.1	LOS D	4.6	33.9	1.00	0.91	1.19	27.8
2	T1	All MCs	39	8.1	39	8.1	*0.756	85.8	LOS F	4.6	33.9	1.00	0.91	1.19	28.5
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	0.756	74.3	LOS F	5.1	39.1	1.00	0.88	1.17	26.8
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.166	8.3	LOS A	1.6	11.2	0.14	0.59	0.14	52.5
5	T1	All MCs	1082	7.1	1082	7.1	0.514	19.6	LOS B	22.3	165.3	0.65	0.58	0.65	46.0
6	R2	All MCs	238	3.1	238	3.1	*0.916	91.2	LOS F	9.4	67.5	1.00	1.01	1.42	23.7
Approach			1547	5.9	1547	5.9	0.916	28.9	LOS C	22.3	165.3	0.63	0.65	0.69	40.4
North: Anambah Road															
7	L2	All MCs	335	4.1	335	4.1	0.584	41.8	LOS C	18.2	131.9	0.87	0.82	0.87	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	0.95	0.94	1.13	28.1
West: New England Highway (W)															
10	L2	All MCs	74	2.8	74	2.8	0.055	21.3	LOS B	1.3	9.2	0.27	0.64	0.27	49.4
11	T1	All MCs	2011	3.7	2011	3.7	*0.957	68.0	LOS E	79.6	575.1	1.00	1.08	1.17	32.4
12	R2	All MCs	79	6.7	79	6.7	0.623	99.1	LOS F	5.5	41.0	1.00	0.80	1.05	25.9
Approach			2165	3.8	2165	3.8	0.957	67.6	LOS E	79.6	575.1	0.98	1.05	1.13	28.5
All Vehicles			4707	4.4	4707	4.4	0.957	55.1	LOS D	79.6	575.1	0.86	0.90	0.99	31.4

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.

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	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
	ped/h	ped/h	sec		ped	m			sec	m	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)												

P21 Stage 1	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P22 Stage 2	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	316	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.

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MOVEMENT SUMMARY

Site: 5PM38_F [NEW_ANA_38_PM_F_FD_Mod (Site Folder: Future Year 2038 wDev Mod)]

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 HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.]	Dist [m]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			veh/h	%	veh/h	%	v/c	sec							
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	*0.930	91.5	LOS F	18.6	133.3	1.00	1.17	1.35	22.6
2	T1	All MCs	49	4.3	49	4.3	*0.930	112.0	LOS F	18.6	133.3	1.00	1.17	1.35	23.1
3	R2	All MCs	306	1.0	306	1.0	0.930	103.8	LOS F	18.6	133.3	1.00	1.12	1.37	23.6
Approach			447	2.1	447	2.1	0.930	102.2	LOS F	18.6	133.3	1.00	1.13	1.37	22.3
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.185	21.6	LOS B	2.1	15.2	0.19	0.60	0.19	52.1
5	T1	All MCs	1853	2.1	1853	2.1	*0.922	52.8	LOS D	66.5	474.0	0.97	0.98	1.08	36.3
6	R2	All MCs	456	2.8	456	2.8	0.649	68.3	LOS E	14.5	104.0	0.98	0.83	0.98	29.2
Approach			2553	2.3	2553	2.3	0.922	52.5	LOS D	66.5	474.0	0.90	0.92	0.98	32.1
North: Anambah Road															
7	L2	All MCs	305	2.4	305	2.4	0.437	36.1	LOS C	14.4	103.2	0.80	0.80	0.80	36.9
8	T1	All MCs	55	5.8	55	5.8	*0.749	77.4	LOS F	5.1	37.5	1.00	0.86	1.19	26.4
9	R2	All MCs	84	1.3	84	1.3	0.749	83.1	LOS F	5.1	37.5	1.00	0.86	1.19	25.3
Approach			444	2.6	444	2.6	0.749	50.1	LOS D	14.4	103.2	0.86	0.81	0.92	32.5
West: New England Highway (W)															
10	L2	All MCs	499	0.2	499	0.2	0.628	40.7	LOS C	26.3	184.6	0.84	0.84	0.84	35.7
11	T1	All MCs	1335	4.8	1335	4.8	0.827	48.5	LOS D	41.1	299.8	0.95	0.88	0.97	37.1
12	R2	All MCs	73	2.9	73	2.9	0.931	116.8	LOS F	5.8	41.9	1.00	0.98	1.53	23.0
Approach			1907	3.5	1907	3.5	0.931	49.1	LOS D	41.1	299.8	0.92	0.87	0.96	33.1
All Vehicles			5351	2.8	5351	2.8	0.931	55.3	LOS D	66.5	474.0	0.91	0.91	1.00	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	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
	ped/h	ped/h	sec		ped	m			sec	m	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)												

P21 Stage 1	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P22 Stage 2	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	316	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.

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MOVEMENT SUMMARY

Site: 5AM38_F [NEW_ANA_38_AM_F_FD_50%_Mod (Site Folder: Future Year 2038 wDev Mod)]

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 HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.756	52.7	LOS D	4.6	34.2	1.00	0.91	1.19	27.7
2	T1	All MCs	39	8.1	39	8.1	*0.756	86.0	LOS F	4.6	34.2	1.00	0.91	1.19	28.4
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	0.756	74.6	LOS F	5.1	39.1	1.00	0.88	1.17	26.7
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.167	8.4	LOS A	1.6	11.2	0.15	0.59	0.15	52.4
5	T1	All MCs	1082	7.1	1082	7.1	0.514	19.6	LOS B	22.3	165.3	0.65	0.58	0.65	46.0
6	R2	All MCs	251	2.9	251	2.9	*0.964	101.8	LOS F	10.6	75.8	1.00	1.07	1.54	22.2
Approach			1560	5.8	1560	5.8	0.964	31.2	LOS C	22.3	165.3	0.63	0.66	0.72	39.5
North: Anambah Road															
7	L2	All MCs	457	3.0	457	3.0	0.787	52.4	LOS D	27.1	194.8	0.96	0.92	0.99	32.9
8	T1	All MCs	34	3.1	34	3.1	*0.734	68.9	LOS E	13.2	94.0	1.00	0.87	1.07	28.2
9	R2	All MCs	352	1.8	352	1.8	0.734	72.3	LOS F	13.2	94.0	1.00	0.87	1.07	27.6
Approach			843	2.5	843	2.5	0.787	61.4	LOS E	27.1	194.8	0.98	0.90	1.03	29.5
West: New England Highway (W)															
10	L2	All MCs	62	3.4	62	3.4	0.046	21.7	LOS B	1.1	7.9	0.28	0.64	0.28	49.2
11	T1	All MCs	2011	3.7	2011	3.7	*0.955	66.9	LOS E	79.0	570.8	1.00	1.07	1.16	32.7
12	R2	All MCs	79	6.7	79	6.7	0.623	99.0	LOS F	5.5	41.0	1.00	0.80	1.05	25.9
Approach			2152	3.8	2152	3.8	0.955	66.8	LOS E	79.0	570.8	0.98	1.05	1.13	28.7
All Vehicles			4707	4.4	4707	4.4	0.964	54.3	LOS D	79.0	570.8	0.87	0.89	0.98	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	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
	ped/h	ped/h	sec		ped	m			sec	m	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)												

P21 Stage 1	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P22 Stage 2	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	316	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.

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MOVEMENT SUMMARY

Site: 5PM38_F [NEW_ANA_38_PM_F_FD_50%_Mod (Site Folder: Future Year 2038 wDev Mod)]

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 HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec			m				km/h
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	*0.952	96.7	LOS F	18.8	135.0	1.00	1.19	1.43	22.0
2	T1	All MCs	49	4.3	49	4.3	*0.952	115.5	LOS F	18.8	135.0	1.00	1.19	1.43	22.4
3	R2	All MCs	306	1.0	306	1.0	0.952	106.9	LOS F	18.8	135.0	1.00	1.14	1.44	23.0
Approach			447	2.1	447	2.1	0.952	105.8	LOS F	18.8	135.0	1.00	1.16	1.44	21.8
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.185	19.5	LOS B	2.1	15.2	0.19	0.61	0.19	52.1
5	T1	All MCs	1853	2.1	1853	2.1	*0.894	41.4	LOS C	58.0	413.6	0.93	0.90	0.99	39.9
6	R2	All MCs	588	2.1	588	2.1	0.994	112.8	LOS F	26.3	187.4	1.00	1.13	1.52	21.4
Approach			2685	2.2	2685	2.2	0.994	55.1	LOS D	58.0	413.6	0.88	0.93	1.03	31.4
North: Anambah Road															
7	L2	All MCs	320	2.4	320	2.4	0.506	39.2	LOS C	15.8	112.9	0.85	0.81	0.85	35.8
8	T1	All MCs	55	5.8	55	5.8	*0.759	76.6	LOS F	4.5	33.1	1.00	0.86	1.22	26.6
9	R2	All MCs	69	1.5	69	1.5	0.759	82.3	LOS F	4.5	33.1	1.00	0.85	1.22	25.3
Approach			444	2.7	444	2.7	0.759	50.5	LOS D	15.8	112.9	0.89	0.82	0.95	32.3
West: New England Highway (W)															
10	L2	All MCs	367	0.3	367	0.3	0.415	31.2	LOS C	15.6	109.6	0.70	0.79	0.70	39.1
11	T1	All MCs	1335	4.8	1335	4.8	0.729	35.6	LOS C	35.4	258.2	0.85	0.77	0.85	41.0
12	R2	All MCs	73	2.9	73	2.9	0.905	105.1	LOS F	5.6	39.9	1.00	0.96	1.47	23.9
Approach			1775	3.8	1775	3.8	0.905	37.5	LOS C	35.4	258.2	0.83	0.78	0.84	37.1
All Vehicles			5352	2.8	5352	2.8	0.994	53.1	LOS D	58.0	413.6	0.87	0.89	1.00	31.9

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.

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	Input Crossing	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE [Ped Dist]		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed	
	ped/h	ped/h	sec		ped	m			sec	m	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)												

P21 Stage 1	50	53	62.3	LOS F	0.2	0.2	0.96	0.96	216.1	200.0	0.93
P22 Stage 2	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	316	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.

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MOVEMENT SUMMARY

Site: 5AM33_X [NEW_ANA_33_AM_X (Site Folder: Future Year 2033wStage 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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. Dist]				km/h	
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.375	27.0	LOS B	1.7	12.6	0.86	0.96	1.03	43.0
2	T1	All MCs	39	8.1	39	8.1	0.375	23.1	LOS B	1.8	14.0	0.86	0.96	1.03	43.2
3	R2	All MCs	71	10.4	71	10.4	0.375	25.6	LOS B	1.8	14.0	0.86	0.98	0.99	42.4
3u	U	All MCs	1	0.0	1	0.0	0.375	26.9	LOS B	1.8	14.0	0.86	0.98	0.99	42.6
Approach			154	8.2	154	8.2	0.375	25.4	LOS B	1.8	14.0	0.86	0.97	1.01	42.8
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.477	4.6	LOS A	3.0	22.3	0.53	0.48	0.53	53.5
5	T1	All MCs	946	7.2	946	7.2	0.604	5.6	LOS A	4.7	34.5	0.56	0.49	0.56	53.1
6	R2	All MCs	203	1.6	203	1.6	0.604	10.6	LOS A	4.7	34.5	0.58	0.50	0.58	51.9
6u	U	All MCs	20	21.1	20	21.1	0.604	13.6	LOS A	4.7	34.5	0.58	0.50	0.58	51.3
Approach			1397	6.0	1397	6.0	0.604	6.3	LOS A	4.7	34.5	0.56	0.49	0.56	52.9
North: Anambah Road															
7	L2	All MCs	198	6.9	198	6.9	0.327	7.2	LOS A	1.9	14.0	0.85	0.81	0.87	52.3
8	T1	All MCs	34	3.1	34	3.1	0.327	6.9	LOS A	1.9	14.0	0.85	0.81	0.87	52.8
9	R2	All MCs	154	4.1	154	4.1	0.329	15.4	LOS B	1.7	12.0	0.83	0.93	0.88	47.5
9u	U	All MCs	1	0.0	1	0.0	0.329	17.6	LOS B	1.7	12.0	0.83	0.93	0.88	47.6
Approach			386	5.4	386	5.4	0.329	10.5	LOS A	1.9	14.0	0.84	0.86	0.87	50.2
West: New England Highway (W)															
10	L2	All MCs	39	5.4	39	5.4	0.685	6.1	LOS A	6.4	46.4	0.66	0.58	0.73	52.6
11	T1	All MCs	1589	4.2	1589	4.2	0.685	5.8	LOS A	6.4	46.5	0.68	0.61	0.76	52.8
12	R2	All MCs	60	8.8	60	8.8	0.685	13.3	LOS A	6.4	46.5	0.70	0.66	0.80	51.4
12u	U	All MCs	19	0.0	19	0.0	0.685	15.1	LOS B	6.4	46.5	0.70	0.66	0.80	51.7
Approach			1707	4.4	1707	4.4	0.685	6.2	LOS A	6.4	46.5	0.68	0.62	0.76	52.7
All Vehicles			3644	5.3	3644	5.3	0.685	7.5	LOS A	6.4	46.5	0.66	0.61	0.71	52.0

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

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

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 5PM33_X [NEW_ANA_33_PM_X (Site Folder: Future Year 2033wStage 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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. Dist]				km/h	
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.550	32.9	LOS C	3.1	22.9	0.91	1.05	1.27	42.8
2	T1	All MCs	49	4.3	49	4.3	0.550	24.0	LOS B	3.1	22.9	0.91	1.05	1.27	43.1
3	R2	All MCs	306	1.0	306	1.0	0.816	40.6	LOS C	8.0	56.6	0.98	1.30	2.03	36.4
3u	U	All MCs	1	0.0	1	0.0	0.816	43.5	LOS D	8.0	56.6	0.98	1.30	2.03	36.4
Approach			448	2.1	448	2.1	0.816	37.2	LOS C	8.0	56.6	0.96	1.22	1.79	38.2
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.613	4.5	LOS A	5.1	36.3	0.53	0.44	0.53	53.5
5	T1	All MCs	1425	2.5	1425	2.5	0.776	7.7	LOS A	9.1	65.0	0.60	0.48	0.60	53.0
6	R2	All MCs	207	5.6	207	5.6	0.776	10.8	LOS A	9.1	65.0	0.64	0.50	0.64	51.4
6u	U	All MCs	97	1.1	97	1.1	0.776	13.2	LOS A	9.1	65.0	0.64	0.50	0.64	51.6
Approach			1974	2.8	1974	2.8	0.776	7.9	LOS A	9.1	65.0	0.60	0.48	0.60	52.8
North: Anambah Road															
7	L2	All MCs	288	2.6	288	2.6	0.444	9.3	LOS A	3.2	22.7	0.93	0.89	1.06	51.3
8	T1	All MCs	55	5.8	55	5.8	0.214	9.4	LOS A	1.2	8.4	0.85	0.86	0.85	50.2
9	R2	All MCs	44	2.4	44	2.4	0.214	15.1	LOS B	1.2	8.4	0.85	0.86	0.85	49.4
9u	U	All MCs	1	0.0	1	0.0	0.214	17.5	LOS B	1.2	8.4	0.85	0.86	0.85	49.5
Approach			388	3.0	388	3.0	0.444	10.0	LOS A	3.2	22.7	0.91	0.89	1.01	50.9
West: New England Highway (W)															
10	L2	All MCs	147	0.7	147	0.7	0.786	11.6	LOS A	9.6	69.8	0.92	0.97	1.35	50.3
11	T1	All MCs	1172	4.9	1172	4.9	0.786	11.8	LOS A	9.6	69.8	0.92	0.99	1.37	49.9
12	R2	All MCs	59	0.0	59	0.0	0.786	19.0	LOS B	9.0	65.8	0.92	1.00	1.39	48.6
12u	U	All MCs	14	15.4	14	15.4	0.786	22.0	LOS B	9.0	65.8	0.92	1.00	1.39	48.2
Approach			1392	4.4	1392	4.4	0.786	12.2	LOS A	9.6	69.8	0.92	0.99	1.37	49.9
All Vehicles			4202	3.3	4202	3.3	0.816	12.6	LOS A	9.6	69.8	0.77	0.76	1.02	49.6

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.

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MOVEMENT SUMMARY

Site: 5AM33_X [NEW_ANA_33_AM_X_50% (Site Folder: Future Year 2033wStage 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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.360	25.5	LOS B	1.6	11.9	0.85	0.95	1.00	43.6
2	T1	All MCs	39	8.1	39	8.1	0.360	21.9	LOS B	1.7	13.2	0.85	0.95	1.00	43.8
3	R2	All MCs	71	10.4	71	10.4	0.360	24.6	LOS B	1.7	13.2	0.85	0.98	0.97	42.9
3u	U	All MCs	1	0.0	1	0.0	0.360	26.0	LOS B	1.7	13.2	0.85	0.98	0.97	43.1
Approach			154	8.2	154	8.2	0.360	24.2	LOS B	1.7	13.2	0.85	0.96	0.99	43.3
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.467	4.5	LOS A	2.9	21.6	0.50	0.46	0.50	53.7
5	T1	All MCs	946	7.2	946	7.2	0.591	5.4	LOS A	4.5	33.4	0.53	0.48	0.53	53.2
6	R2	All MCs	206	1.6	206	1.6	0.591	10.5	LOS A	4.5	33.4	0.54	0.49	0.54	52.0
6u	U	All MCs	20	21.1	20	21.1	0.591	13.4	LOS A	4.5	33.4	0.54	0.49	0.54	51.4
Approach			1400	5.9	1400	5.9	0.591	6.1	LOS A	4.5	33.4	0.52	0.48	0.52	53.1
North: Anambah Road															
7	L2	All MCs	227	6.0	227	6.0	0.366	7.6	LOS A	2.2	16.2	0.86	0.84	0.92	52.3
8	T1	All MCs	34	3.1	34	3.1	0.366	7.2	LOS A	2.2	16.2	0.86	0.84	0.92	52.8
9	R2	All MCs	124	5.1	124	5.1	0.256	14.6	LOS B	1.3	9.1	0.81	0.90	0.81	47.9
9u	U	All MCs	1	0.0	1	0.0	0.256	16.9	LOS B	1.3	9.1	0.81	0.90	0.81	48.0
Approach			386	5.4	386	5.4	0.366	9.8	LOS A	2.2	16.2	0.85	0.86	0.88	50.8
West: New England Highway (W)															
10	L2	All MCs	36	5.9	36	5.9	0.684	6.2	LOS A	6.4	46.1	0.66	0.58	0.73	52.6
11	T1	All MCs	1589	4.2	1589	4.2	0.684	5.9	LOS A	6.4	46.2	0.68	0.62	0.76	52.8
12	R2	All MCs	60	8.8	60	8.8	0.684	13.4	LOS A	6.4	46.2	0.70	0.66	0.80	51.4
12u	U	All MCs	19	0.0	19	0.0	0.684	15.1	LOS B	6.4	46.2	0.70	0.66	0.80	51.7
Approach			1704	4.4	1704	4.4	0.684	6.2	LOS A	6.4	46.2	0.68	0.62	0.76	52.8
All Vehicles			3644	5.3	3644	5.3	0.684	7.3	LOS A	6.4	46.2	0.64	0.60	0.69	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.

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MOVEMENT SUMMARY

Site: 5PM33_X [NEW_ANA_33_PM_X_50% (Site Folder: Future Year 2033wStage 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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. Dist]				km/h	
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.566	34.0	LOS C	3.3	23.8	0.91	1.06	1.30	42.2
2	T1	All MCs	49	4.3	49	4.3	0.566	25.4	LOS B	3.3	23.8	0.91	1.06	1.30	42.4
3	R2	All MCs	306	1.0	306	1.0	0.839	44.6	LOS D	8.6	61.0	0.99	1.34	2.16	35.1
3u	U	All MCs	1	0.0	1	0.0	0.839	47.5	LOS D	8.6	61.0	0.99	1.34	2.16	35.1
Approach			448	2.1	448	2.1	0.839	40.3	LOS C	8.6	61.0	0.97	1.25	1.89	37.0
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.621	4.5	LOS A	5.2	37.2	0.54	0.44	0.54	53.5
5	T1	All MCs	1425	2.5	1425	2.5	0.786	7.7	LOS A	9.4	67.7	0.61	0.48	0.61	52.9
6	R2	All MCs	239	4.8	239	4.8	0.786	10.8	LOS A	9.4	67.7	0.65	0.50	0.65	51.4
6u	U	All MCs	97	1.1	97	1.1	0.786	13.2	LOS A	9.4	67.7	0.65	0.50	0.65	51.5
Approach			2005	2.8	2005	2.8	0.786	7.9	LOS A	9.4	67.7	0.61	0.48	0.61	52.7
North: Anambah Road															
7	L2	All MCs	292	2.6	292	2.6	0.446	9.2	LOS A	3.2	22.7	0.93	0.89	1.06	51.4
8	T1	All MCs	55	5.8	55	5.8	0.205	9.2	LOS A	1.1	8.0	0.85	0.86	0.85	50.3
9	R2	All MCs	41	2.6	41	2.6	0.205	15.0	LOS B	1.1	8.0	0.85	0.86	0.85	49.5
9u	U	All MCs	1	0.0	1	0.0	0.205	17.4	LOS B	1.1	8.0	0.85	0.86	0.85	49.6
Approach			389	3.0	389	3.0	0.446	9.8	LOS A	3.2	22.7	0.91	0.89	1.01	51.0
West: New England Highway (W)															
10	L2	All MCs	116	0.7	116	0.7	0.784	12.0	LOS A	9.6	69.6	0.92	0.99	1.38	50.0
11	T1	All MCs	1172	4.9	1172	4.9	0.784	12.2	LOS A	9.6	69.6	0.92	1.00	1.40	49.7
12	R2	All MCs	59	0.0	59	0.0	0.784	19.5	LOS B	9.0	65.3	0.92	1.02	1.42	48.3
12u	U	All MCs	14	15.4	14	15.4	0.784	22.4	LOS B	9.0	65.3	0.92	1.02	1.42	47.9
Approach			1360	4.5	1360	4.5	0.784	12.6	LOS A	9.6	69.6	0.92	1.00	1.40	49.6
All Vehicles			4202	3.3	4202	3.3	0.839	13.1	LOS A	9.6	69.6	0.77	0.77	1.04	49.3

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

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

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 5AM34_X [NEW_ANA_34_AM_X (Site Folder: Future Year 2034wStage 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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h	
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.379	22.2	LOS B	1.9	14.1	0.86	0.95	0.99	45.7
2	T1	All MCs	39	8.1	39	8.1	0.379	18.9	LOS B	1.9	14.1	0.86	0.95	0.99	46.0
3	R2	All MCs	71	10.4	71	10.4	0.391	32.0	LOS C	1.8	13.4	0.87	1.01	1.07	39.5
3u	U	All MCs	1	0.0	1	0.0	0.391	32.5	LOS C	1.8	13.4	0.87	1.01	1.07	39.6
Approach			154	8.2	154	8.2	0.391	25.9	LOS B	1.9	14.1	0.87	0.98	1.03	42.5
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.487	4.6	LOS A	3.1	23.1	0.54	0.48	0.54	53.5
5	T1	All MCs	974	7.2	974	7.2	0.617	5.7	LOS A	4.9	36.0	0.57	0.49	0.57	53.0
6	R2	All MCs	203	1.6	203	1.6	0.617	10.6	LOS A	4.9	36.0	0.59	0.50	0.59	51.8
6u	U	All MCs	20	21.1	20	21.1	0.617	13.6	LOS A	4.9	36.0	0.59	0.50	0.59	51.3
Approach			1424	6.0	1424	6.0	0.617	6.4	LOS A	4.9	36.0	0.57	0.49	0.57	52.9
North: Anambah Road															
7	L2	All MCs	198	6.9	198	6.9	0.353	7.9	LOS A	2.1	15.5	0.88	0.85	0.93	52.1
8	T1	All MCs	34	3.1	34	3.1	0.353	7.6	LOS A	2.1	15.5	0.88	0.85	0.93	52.6
9	R2	All MCs	154	4.1	154	4.1	0.356	16.2	LOS B	1.8	13.3	0.85	0.95	0.93	47.0
9u	U	All MCs	1	0.0	1	0.0	0.356	18.4	LOS B	1.8	13.3	0.85	0.95	0.93	47.1
Approach			386	5.4	386	5.4	0.356	11.2	LOS A	2.1	15.5	0.87	0.89	0.93	49.9
West: New England Highway (W)															
10	L2	All MCs	39	5.4	39	5.4	0.718	6.5	LOS A	7.3	53.2	0.69	0.62	0.78	52.5
11	T1	All MCs	1673	4.1	1673	4.1	0.718	6.2	LOS A	7.3	53.2	0.71	0.65	0.81	52.6
12	R2	All MCs	60	8.8	60	8.8	0.718	13.8	LOS A	7.3	53.2	0.73	0.69	0.86	51.3
12u	U	All MCs	19	0.0	19	0.0	0.718	15.5	LOS B	7.3	53.2	0.73	0.69	0.86	51.5
Approach			1791	4.2	1791	4.2	0.718	6.6	LOS A	7.3	53.2	0.71	0.65	0.82	52.6
All Vehicles			3755	5.2	3755	5.2	0.718	7.8	LOS A	7.3	53.2	0.68	0.63	0.74	51.9

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.

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MOVEMENT SUMMARY

Site: 5PM34_X [NEW_ANA_34_PM_X (Site Folder: Future Year 2034wStage 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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. Dist]				km/h	
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.610	45.8	LOS D	3.7	26.5	0.93	1.09	1.38	40.4
2	T1	All MCs	49	4.3	49	4.3	0.610	29.2	LOS C	3.7	26.5	0.93	1.09	1.38	40.6
3	R2	All MCs	306	1.0	306	1.0	0.902	59.5	LOS E	11.1	78.3	1.00	1.50	2.63	31.0
3u	U	All MCs	1	0.0	1	0.0	0.902	62.4	LOS E	11.1	78.3	1.00	1.50	2.63	31.0
Approach			448	2.1	448	2.1	0.902	53.4	LOS D	11.1	78.3	0.98	1.37	2.24	33.4
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.639	4.5	LOS A	5.5	39.4	0.56	0.45	0.56	53.3
5	T1	All MCs	1511	2.4	1511	2.4	0.809	10.7	LOS A	10.7	76.4	0.64	0.49	0.64	52.8
6	R2	All MCs	207	5.6	207	5.6	0.809	11.1	LOS A	10.7	76.4	0.69	0.52	0.70	51.3
6u	U	All MCs	97	1.1	97	1.1	0.809	13.5	LOS A	10.7	76.4	0.69	0.52	0.70	51.4
Approach			2059	2.8	2059	2.8	0.809	10.1	LOS A	10.7	76.4	0.64	0.49	0.64	52.6
North: Anambah Road															
7	L2	All MCs	288	2.6	288	2.6	0.457	9.7	LOS A	3.3	23.7	0.94	0.91	1.09	51.0
8	T1	All MCs	55	5.8	55	5.8	0.220	9.6	LOS A	1.2	8.7	0.86	0.87	0.86	50.1
9	R2	All MCs	44	2.4	44	2.4	0.220	15.3	LOS B	1.2	8.7	0.86	0.87	0.86	49.3
9u	U	All MCs	1	0.0	1	0.0	0.220	17.7	LOS B	1.2	8.7	0.86	0.87	0.86	49.4
Approach			388	3.0	388	3.0	0.457	10.3	LOS A	3.3	23.7	0.92	0.90	1.03	50.7
West: New England Highway (W)															
10	L2	All MCs	147	0.7	147	0.7	0.806	12.2	LOS A	10.4	75.5	0.94	1.01	1.41	49.8
11	T1	All MCs	1204	4.9	1204	4.9	0.806	12.5	LOS A	10.4	75.5	0.94	1.02	1.44	49.5
12	R2	All MCs	59	0.0	59	0.0	0.806	19.8	LOS B	9.8	71.1	0.94	1.03	1.46	48.1
12u	U	All MCs	14	15.4	14	15.4	0.806	22.7	LOS B	9.8	71.1	0.94	1.03	1.46	47.7
Approach			1424	4.4	1424	4.4	0.806	12.8	LOS A	10.4	75.5	0.94	1.02	1.44	49.4
All Vehicles			4320	3.2	4320	3.2	0.902	15.5	LOS B	11.1	78.3	0.80	0.79	1.10	48.5

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

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

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 5AM34_X [NEW_ANA_34_AM_X_50% (Site Folder: Future Year 2034wStage 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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. Dist]				km/h	
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	43	4.9	43	4.9	0.368	21.3	LOS B	1.8	13.4	0.86	0.94	0.98	46.0
2	T1	All MCs	39	8.1	39	8.1	0.368	18.3	LOS B	1.8	13.4	0.86	0.94	0.98	46.3
3	R2	All MCs	71	10.4	71	10.4	0.369	30.5	LOS C	1.7	12.6	0.86	1.00	1.03	40.1
3u	U	All MCs	1	0.0	1	0.0	0.369	31.2	LOS C	1.7	12.6	0.86	1.00	1.03	40.2
Approach			154	8.2	154	8.2	0.369	24.8	LOS B	1.8	13.4	0.86	0.97	1.00	43.0
East: New England Highway (E)															
4	L2	All MCs	227	3.2	227	3.2	0.477	4.5	LOS A	3.1	22.4	0.51	0.46	0.51	53.6
5	T1	All MCs	974	7.2	974	7.2	0.604	5.5	LOS A	4.7	34.7	0.54	0.48	0.54	53.2
6	R2	All MCs	206	1.5	206	1.5	0.604	10.5	LOS A	4.7	34.7	0.55	0.49	0.55	52.0
6u	U	All MCs	20	21.1	20	21.1	0.604	13.4	LOS A	4.7	34.7	0.55	0.49	0.55	51.4
Approach			1427	6.0	1427	6.0	0.604	6.2	LOS A	4.7	34.7	0.53	0.48	0.53	53.1
North: Anambah Road															
7	L2	All MCs	227	6.0	227	6.0	0.393	8.3	LOS A	2.4	17.9	0.89	0.87	0.98	51.9
8	T1	All MCs	34	3.1	34	3.1	0.393	8.0	LOS A	2.4	17.9	0.89	0.87	0.98	52.4
9	R2	All MCs	124	5.1	124	5.1	0.273	15.0	LOS B	1.4	9.9	0.83	0.91	0.83	47.6
9u	U	All MCs	1	0.0	1	0.0	0.273	17.3	LOS B	1.4	9.9	0.83	0.91	0.83	47.8
Approach			386	5.4	386	5.4	0.393	10.5	LOS A	2.4	17.9	0.87	0.89	0.93	50.4
West: New England Highway (W)															
10	L2	All MCs	36	5.9	36	5.9	0.717	6.5	LOS A	7.3	52.9	0.69	0.63	0.78	52.5
11	T1	All MCs	1673	4.1	1673	4.1	0.717	6.2	LOS A	7.3	52.9	0.71	0.65	0.81	52.7
12	R2	All MCs	60	8.8	60	8.8	0.717	13.8	LOS A	7.3	52.9	0.73	0.69	0.86	51.3
12u	U	All MCs	19	0.0	19	0.0	0.717	15.5	LOS B	7.3	52.9	0.73	0.69	0.86	51.5
Approach			1787	4.2	1787	4.2	0.717	6.6	LOS A	7.3	52.9	0.71	0.66	0.81	52.6
All Vehicles			3755	5.2	3755	5.2	0.717	7.6	LOS A	7.3	52.9	0.67	0.62	0.73	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.

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MOVEMENT SUMMARY

Site: 5PM34_X [NEW_ANA_34_PM_X_50% (Site Folder: Future Year 2034wStage 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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Shipley Drive															
1	L2	All MCs	92	4.6	92	4.6	0.630	47.0	LOS D	3.8	27.8	0.93	1.10	1.42	39.5
2	T1	All MCs	49	4.3	49	4.3	0.630	31.4	LOS C	3.8	27.8	0.93	1.10	1.42	39.7
3	R2	All MCs	306	1.0	306	1.0	0.929	68.6	LOS E	12.6	89.0	1.00	1.60	2.91	28.9
3u	U	All MCs	1	0.0	1	0.0	0.929	71.4	LOS F	12.6	89.0	1.00	1.60	2.91	28.9
Approach			448	2.1	448	2.1	0.929	60.0	LOS E	12.6	89.0	0.98	1.44	2.44	31.5
East: New England Highway (E)															
4	L2	All MCs	244	3.0	244	3.0	0.646	4.5	LOS A	5.6	40.4	0.56	0.45	0.56	53.3
5	T1	All MCs	1511	2.4	1511	2.4	0.818	10.5	LOS A	11.2	80.1	0.64	0.49	0.65	52.8
6	R2	All MCs	239	4.8	239	4.8	0.818	11.1	LOS A	11.2	80.1	0.70	0.52	0.70	51.2
6u	U	All MCs	97	1.1	97	1.1	0.818	13.5	LOS A	11.2	80.1	0.70	0.52	0.70	51.3
Approach			2091	2.7	2091	2.7	0.818	10.0	LOS A	11.2	80.1	0.64	0.49	0.65	52.6
North: Anambah Road															
7	L2	All MCs	292	2.5	292	2.5	0.458	9.5	LOS A	3.3	23.6	0.94	0.91	1.08	51.1
8	T1	All MCs	55	5.8	55	5.8	0.210	9.3	LOS A	1.1	8.3	0.86	0.86	0.86	50.3
9	R2	All MCs	41	2.6	41	2.6	0.210	15.1	LOS B	1.1	8.3	0.86	0.86	0.86	49.5
9u	U	All MCs	1	0.0	1	0.0	0.210	17.5	LOS B	1.1	8.3	0.86	0.86	0.86	49.5
Approach			388	3.0	388	3.0	0.458	10.1	LOS A	3.3	23.6	0.92	0.89	1.03	50.8
West: New England Highway (W)															
10	L2	All MCs	116	0.9	116	0.9	0.805	12.7	LOS A	10.4	75.4	0.94	1.02	1.45	49.6
11	T1	All MCs	1204	4.9	1204	4.9	0.805	12.9	LOS A	10.4	75.4	0.94	1.03	1.47	49.2
12	R2	All MCs	59	0.0	59	0.0	0.805	20.2	LOS B	9.7	70.6	0.94	1.05	1.49	47.8
12u	U	All MCs	14	15.4	14	15.4	0.805	23.2	LOS B	9.7	70.6	0.94	1.05	1.49	47.4
Approach			1393	4.5	1393	4.5	0.805	13.3	LOS A	10.4	75.4	0.94	1.03	1.47	49.2
All Vehicles			4320	3.2	4320	3.2	0.929	16.3	LOS B	12.6	89.0	0.80	0.80	1.13	48.0

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

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

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 4AM [NEW_RIV_23_AM_X - Temp (Site Folder: Base Year (River Road))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Three-way intersection with 5-lane major road (Stop control)

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
East: NEH (e)															
5	T1	All MCs	702	9.0	702	9.0	0.377	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
6	R2	All MCs	23	4.5	23	4.5	0.065	15.9	LOS B	0.2	1.5	0.75	0.91	0.75	47.3
Approach			725	8.9	725	8.9	0.377	0.6	NA	0.2	1.5	0.02	0.03	0.02	78.0
North: River Road															
1	L2	All MCs	72	1.5	72	1.5	0.203	14.1	LOS A	0.7	4.7	0.77	0.91	0.82	46.8
2	R2	All MCs	55	1.9	55	1.9	0.166	16.8	LOS B	0.6	3.9	0.78	0.90	0.78	46.1
Approach			126	1.7	126	1.7	0.203	15.2	LOS B	0.7	4.7	0.78	0.90	0.80	46.5
West: NEH (w)															
3	L2	All MCs	22	4.8	22	4.8	0.013	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.0
4	T1	All MCs	907	5.6	907	5.6	0.485	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach			929	5.5	929	5.5	0.485	0.3	NA	0.0	0.0	0.00	0.01	0.00	79.0
All Vehicles			1781	6.6	1781	6.6	0.485	1.5	NA	0.7	4.7	0.06	0.08	0.07	74.9

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 4AM [NEW_RIV_28_AM_X - Temp (Site Folder: Base Year (River Road))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Three-way intersection with 5-lane major road (Stop control)

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
East: NEH (e)															
5	T1	All MCs	835	8.7	835	8.7	0.448	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
6	R2	All MCs	23	4.5	23	4.5	0.207	39.7	LOS C	0.5	3.9	0.93	0.98	0.98	36.1
Approach			858	8.6	858	8.6	0.448	1.2	NA	0.5	3.9	0.03	0.03	0.03	77.1
North: River Road															
1	L2	All MCs	72	1.5	72	1.5	0.665	56.3	LOS D	2.2	15.3	0.97	1.11	1.44	30.4
2	R2	All MCs	55	1.9	55	1.9	0.464	47.6	LOS D	1.5	10.6	0.95	1.04	1.20	33.4
Approach			126	1.7	126	1.7	0.665	52.5	LOS D	2.2	15.3	0.96	1.08	1.33	31.6
West: NEH (w)															
3	L2	All MCs	22	4.8	22	4.8	0.013	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.0
4	T1	All MCs	1285	4.5	1285	4.5	0.682	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	78.9
Approach			1307	4.5	1307	4.5	0.682	0.4	NA	0.0	0.0	0.00	0.01	0.00	78.6
All Vehicles			2292	5.9	2292	5.9	0.682	3.6	NA	2.2	15.3	0.06	0.08	0.08	72.2

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 4AM [NEW_RIV_23_PM_X - Temp (Site Folder: Base Year (River Road))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Three-way intersection with 5-lane major road (Stop control)

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
East: NEH (e)															
5	T1	All MCs	887	3.3	887	3.3	0.460	0.1	LOSA	0.0	0.0	0.00	0.00	0.00	79.6
6	R2	All MCs	76	4.2	76	4.2	0.157	13.4	LOSA	0.5	4.0	0.69	0.89	0.69	48.9
Approach			963	3.4	963	3.4	0.460	1.2	NA	0.5	4.0	0.05	0.07	0.05	75.8
North: River Road															
1	L2	All MCs	48	8.7	48	8.7	0.111	11.4	LOSA	0.3	2.6	0.67	0.84	0.67	47.2
2	R2	All MCs	20	10.5	20	10.5	0.056	16.3	LOS B	0.2	1.4	0.71	0.87	0.71	45.6
Approach			68	9.2	68	9.2	0.111	12.8	LOSA	0.3	2.6	0.68	0.85	0.68	46.7
West: NEH (w)															
3	L2	All MCs	37	11.4	37	11.4	0.022	7.2	LOSA	0.0	0.0	0.00	0.63	0.00	60.9
4	T1	All MCs	753	6.9	753	6.9	0.405	0.1	LOSA	0.0	0.0	0.00	0.00	0.00	79.7
Approach			789	7.1	789	7.1	0.405	0.4	NA	0.0	0.0	0.00	0.03	0.00	78.5
All Vehicles			1821	5.2	1821	5.2	0.460	1.3	NA	0.5	4.0	0.05	0.08	0.05	75.2

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 4AM [NEW_RIV_28_PM_X - Temp (Site Folder: Base Year (River Road))]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Three-way intersection with 5-lane major road (Stop control)

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
East: NEH (e)															
5	T1	All MCs	1287	2.6	1287	2.6	0.665	0.3	LOS A	0.0	0.0	0.00	0.00	0.00	79.1
6	R2	All MCs	76	4.2	76	4.2	0.213	16.9	LOS B	0.7	5.3	0.78	0.93	0.83	46.7
Approach			1363	2.7	1363	2.7	0.665	1.2	NA	0.7	5.3	0.04	0.05	0.05	76.1
North: River Road															
1	L2	All MCs	48	8.7	48	8.7	0.156	15.0	LOS B	0.5	3.4	0.77	0.89	0.77	45.1
2	R2	All MCs	20	10.5	20	10.5	0.077	25.7	LOS B	0.2	1.8	0.79	0.90	0.79	43.3
Approach			68	9.2	68	9.2	0.156	18.1	LOS B	0.5	3.4	0.78	0.90	0.78	44.6
West: NEH (w)															
3	L2	All MCs	37	11.4	37	11.4	0.022	7.2	LOS A	0.0	0.0	0.00	0.63	0.00	60.9
4	T1	All MCs	895	6.6	895	6.6	0.481	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach			932	6.8	932	6.8	0.481	0.4	NA	0.0	0.0	0.00	0.02	0.00	78.6
All Vehicles			2363	4.5	2363	4.5	0.665	1.4	NA	0.7	5.3	0.05	0.07	0.05	75.5

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 4AM [NEW_RIV_23_AM_X - Temp (Site Folder: Base Year (River Road)_Trigger Test)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Three-way intersection with 5-lane major road (Stop control)

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.	Dist]				km/h
			veh/h		veh/h					veh	m				
East: NEH (e)															
5	T1	All MCs	702	9.0	702	9.0	0.377	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
6	R2	All MCs	35	3.0	35	3.0	0.098	16.1	LOS B	0.3	2.3	0.76	0.92	0.76	47.2
Approach			737	8.7	737	8.7	0.377	0.8	NA	0.3	2.3	0.04	0.04	0.04	77.2
North: River Road															
1	L2	All MCs	179	0.6	179	0.6	0.499	17.5	LOS B	2.1	14.9	0.84	1.04	1.23	45.0
2	R2	All MCs	304	0.3	304	0.3	0.921	48.4	LOS D	9.7	68.1	0.97	1.80	3.59	33.3
Approach			483	0.4	483	0.4	0.921	36.9	LOS C	9.7	68.1	0.93	1.52	2.72	36.8
West: NEH (w)															
3	L2	All MCs	49	2.1	49	2.1	0.027	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.9
4	T1	All MCs	907	5.6	907	5.6	0.485	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach			957	5.4	957	5.4	0.485	0.5	NA	0.0	0.0	0.00	0.03	0.00	78.5
All Vehicles			2177	5.4	2177	5.4	0.921	8.7	NA	9.7	68.1	0.22	0.37	0.62	62.4

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 4AM [NEW_RIV_23_PM_X - Temp (Site Folder: Base Year (River Road)_Trigger Test)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Three-way intersection with 5-lane major road (Stop control)
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.	Dist]				km/h
			veh/h		veh/h					veh	m				
East: NEH (e)															
5	T1	All MCs	887	3.3	887	3.3	0.460	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
6	R2	All MCs	194	1.6	194	1.6	0.580	23.7	LOS B	2.8	20.0	0.88	1.07	1.43	43.0
Approach			1081	3.0	1081	3.0	0.580	4.3	NA	2.8	20.0	0.16	0.19	0.26	69.0
North: River Road															
1	L2	All MCs	61	6.9	61	6.9	0.137	11.2	LOS A	0.4	3.2	0.67	0.85	0.67	47.6
2	R2	All MCs	51	4.2	51	4.2	0.186	20.6	LOS B	0.6	4.4	0.82	0.92	0.84	44.1
Approach			112	5.7	112	5.7	0.186	15.5	LOS B	0.6	4.4	0.74	0.88	0.75	46.0
West: NEH (w)															
3	L2	All MCs	311	1.4	311	1.4	0.171	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	64.1
4	T1	All MCs	753	6.9	753	6.9	0.405	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
Approach			1063	5.2	1063	5.2	0.405	2.1	NA	0.0	0.0	0.00	0.18	0.00	74.4
All Vehicles			2256	4.2	2256	4.2	0.580	3.8	NA	2.8	20.0	0.11	0.22	0.16	69.7

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 4AM [NEW_RIV_23_AM_X - Temp (Site Folder: Base Year (River Road)_LO Trigger Test)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Three-way intersection with 5-lane major road (Stop control)

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
East: NEH (e)															
5	T1	All MCs	912	6.9	912	6.9	0.484	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
6	R2	All MCs	31	3.4	31	3.4	0.086	15.9	LOS B	0.3	2.0	0.76	0.92	0.76	47.1
Approach			942	6.8	942	6.8	0.484	0.6	NA	0.3	2.0	0.02	0.03	0.02	77.8
North: River Road															
1	L2	All MCs	348	0.6	348	0.6	0.972	52.7	LOS D	12.8	89.9	0.99	2.13	4.72	31.4
Approach			348	0.6	348	0.6	0.972	52.7	LOS D	12.8	89.9	0.99	2.13	4.72	31.4
West: NEH (w)															
3	L2	All MCs	39	2.7	39	2.7	0.022	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.7
4	T1	All MCs	907	5.6	907	5.6	0.485	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach			946	5.5	946	5.5	0.485	0.4	NA	0.0	0.0	0.00	0.03	0.00	78.7
All Vehicles			2237	5.3	2237	5.3	0.972	8.7	NA	12.8	89.9	0.16	0.36	0.74	63.4

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 4AM [NEW_RIV_23_PM_X - Temp (Site Folder: Base Year (River Road)_LO Trigger Test)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Three-way intersection with 5-lane major road (Stop control)
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
East: NEH (e)															
5	T1	All MCs	924	3.2	924	3.2	0.479	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
6	R2	All MCs	148	2.1	148	2.1	0.382	17.9	LOS B	1.6	11.5	0.81	0.99	1.05	45.9
Approach			1073	3.0	1073	3.0	0.479	2.6	NA	1.6	11.5	0.11	0.14	0.15	72.2
North: River Road															
1	L2	All MCs	96	6.6	96	6.6	0.214	11.7	LOS A	0.7	5.3	0.69	0.87	0.74	47.4
Approach			96	6.6	96	6.6	0.214	11.7	LOS A	0.7	5.3	0.69	0.87	0.74	47.4
West: NEH (w)															
3	L2	All MCs	207	2.0	207	2.0	0.115	7.0	LOS A	0.0	0.0	0.00	0.63	0.00	63.9
4	T1	All MCs	753	6.9	753	6.9	0.405	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
Approach			960	5.8	960	5.8	0.405	1.6	NA	0.0	0.0	0.00	0.14	0.00	75.6
All Vehicles			2128	4.5	2128	4.5	0.479	2.5	NA	1.6	11.5	0.09	0.17	0.11	72.0

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

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

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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MOVEMENT SUMMARY

Site: 4AM_X [ANA_ACC_AM_F (Site Folder: Access Road)]

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
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.

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MOVEMENT SUMMARY

Site: 4AM_X [ANA_ACC_PM_F (Site Folder: Access Road)]

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
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.

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Project: S:\Projects\SCT_00581_559 Anambah Road Gosforth DA\4. Tech Work\1. Modelling\RTS3\SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v4.0.sip9

MOVEMENT SUMMARY

Site: 1AM [INT_INT_AM_F (Site Folder: Access Road)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Site Internal Roundabout
 Site Category: Proposed Design 1
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Road MC02															
1	L2	All MCs	1	0.0	1	0.0	0.002	3.3	LOS A	0.0	0.1	0.16	0.34	0.16	47.0
2	T1	All MCs	1	0.0	1	0.0	0.002	3.1	LOS A	0.0	0.1	0.16	0.34	0.16	47.3
3	R2	All MCs	119	0.0	119	0.0	0.085	7.5	LOS A	0.4	2.6	0.13	0.58	0.13	44.6
Approach			121	0.0	121	0.0	0.085	7.4	LOS A	0.4	2.6	0.13	0.57	0.13	44.6
East: Road MC01 East															
4	L2	All MCs	14	0.0	14	0.0	0.012	3.0	LOS A	0.1	0.4	0.03	0.39	0.03	47.4
5	T1	All MCs	16	0.0	16	0.0	0.025	2.8	LOS A	0.1	0.8	0.03	0.51	0.03	46.3
6	R2	All MCs	22	0.0	22	0.0	0.025	7.4	LOS A	0.1	0.8	0.03	0.51	0.03	45.8
Approach			52	0.0	52	0.0	0.025	4.8	LOS A	0.1	0.8	0.03	0.48	0.03	46.3
North: Road MC03															
7	L2	All MCs	200	0.0	200	0.0	0.209	4.7	LOS A	1.0	7.1	0.43	0.50	0.43	46.5
8	T1	All MCs	1	0.0	1	0.0	0.209	4.3	LOS A	1.0	7.1	0.43	0.50	0.43	46.6
9	R2	All MCs	1	0.0	1	0.0	0.209	8.9	LOS A	1.0	7.1	0.43	0.50	0.43	46.1
Approach			202	0.0	202	0.0	0.209	4.8	LOS A	1.0	7.1	0.43	0.50	0.43	46.5
West: Road MC01 West															
10	L2	All MCs	1	0.0	1	0.0	0.036	4.3	LOS A	0.2	1.1	0.33	0.40	0.33	46.4
11	T1	All MCs	144	0.0	144	0.0	0.099	3.6	LOS A	0.4	3.1	0.29	0.37	0.29	46.9
12	R2	All MCs	1	0.0	1	0.0	0.099	8.0	LOS A	0.4	3.1	0.28	0.37	0.28	46.3
Approach			146	0.0	146	0.0	0.099	3.7	LOS A	0.4	3.1	0.29	0.37	0.29	46.8
All Vehicles			521	0.0	521	0.0	0.209	5.1	LOS A	1.0	7.1	0.28	0.48	0.28	46.1

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.

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Project: S:\Projects\SCT_00581_559 Anambah Road Gosforth DA\4. Tech Work\1. Modelling\RtS3\SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v4.0.sip9

MOVEMENT SUMMARY

Site: 1PM [INT_INT_PM_F (Site Folder: Access Road)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Site Internal Roundabout
 Site Category: Proposed Design 1
 Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Road MC02															
1	L2	All MCs	1	0.0	1	0.0	0.003	5.8	LOSA	0.0	0.1	0.47	0.46	0.47	45.8
2	T1	All MCs	1	0.0	1	0.0	0.013	5.3	LOSA	0.1	0.4	0.46	0.49	0.46	45.6
3	R2	All MCs	14	0.0	14	0.0	0.013	8.7	LOSA	0.1	0.4	0.41	0.59	0.41	44.0
Approach			16	0.0	16	0.0	0.013	8.3	LOSA	0.1	0.4	0.42	0.58	0.42	44.2
East: Road MC01 East															
4	L2	All MCs	120	0.0	120	0.0	0.097	3.0	LOSA	0.4	3.1	0.03	0.39	0.03	47.4
5	T1	All MCs	146	0.0	146	0.0	0.206	2.8	LOSA	1.1	7.4	0.03	0.51	0.03	46.3
6	R2	All MCs	202	0.0	202	0.0	0.206	7.4	LOSA	1.1	7.4	0.03	0.51	0.03	45.8
Approach			468	0.0	468	0.0	0.206	4.8	LOSA	1.1	7.4	0.03	0.48	0.03	46.3
North: Road MC03															
7	L2	All MCs	22	0.0	22	0.0	0.020	3.0	LOSA	0.1	0.6	0.12	0.38	0.12	47.2
8	T1	All MCs	1	0.0	1	0.0	0.020	3.0	LOSA	0.1	0.6	0.12	0.38	0.12	47.4
9	R2	All MCs	1	0.0	1	0.0	0.020	7.5	LOSA	0.1	0.6	0.12	0.38	0.12	46.8
Approach			24	0.0	24	0.0	0.020	3.2	LOSA	0.1	0.6	0.12	0.38	0.12	47.2
West: Road MC01 West															
10	L2	All MCs	1	0.0	1	0.0	0.005	4.8	LOSA	0.0	0.1	0.38	0.41	0.38	46.2
11	T1	All MCs	16	0.0	16	0.0	0.013	3.8	LOSA	0.1	0.4	0.33	0.39	0.33	46.6
12	R2	All MCs	1	0.0	1	0.0	0.013	8.2	LOSA	0.1	0.4	0.32	0.39	0.32	46.0
Approach			18	0.0	18	0.0	0.013	4.1	LOSA	0.1	0.4	0.33	0.40	0.33	46.6
All Vehicles			526	0.0	526	0.0	0.206	4.8	LOSA	1.1	7.4	0.06	0.48	0.06	46.3

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

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

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

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

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

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

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

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

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Project: S:\Projects\SCT_00581_559 Anambah Road Gosforth DA\4. Tech Work\1. Modelling\RtS3\SCT_00581_559 Anambah Road Gosforth DA_SIDRA_v4.0.sip9

PHASING 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)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default - Copy - Import

Input Phase Sequence: D, A, B, C

Output Phase Sequence: D, A, B, C

Reference Phase: Phase A

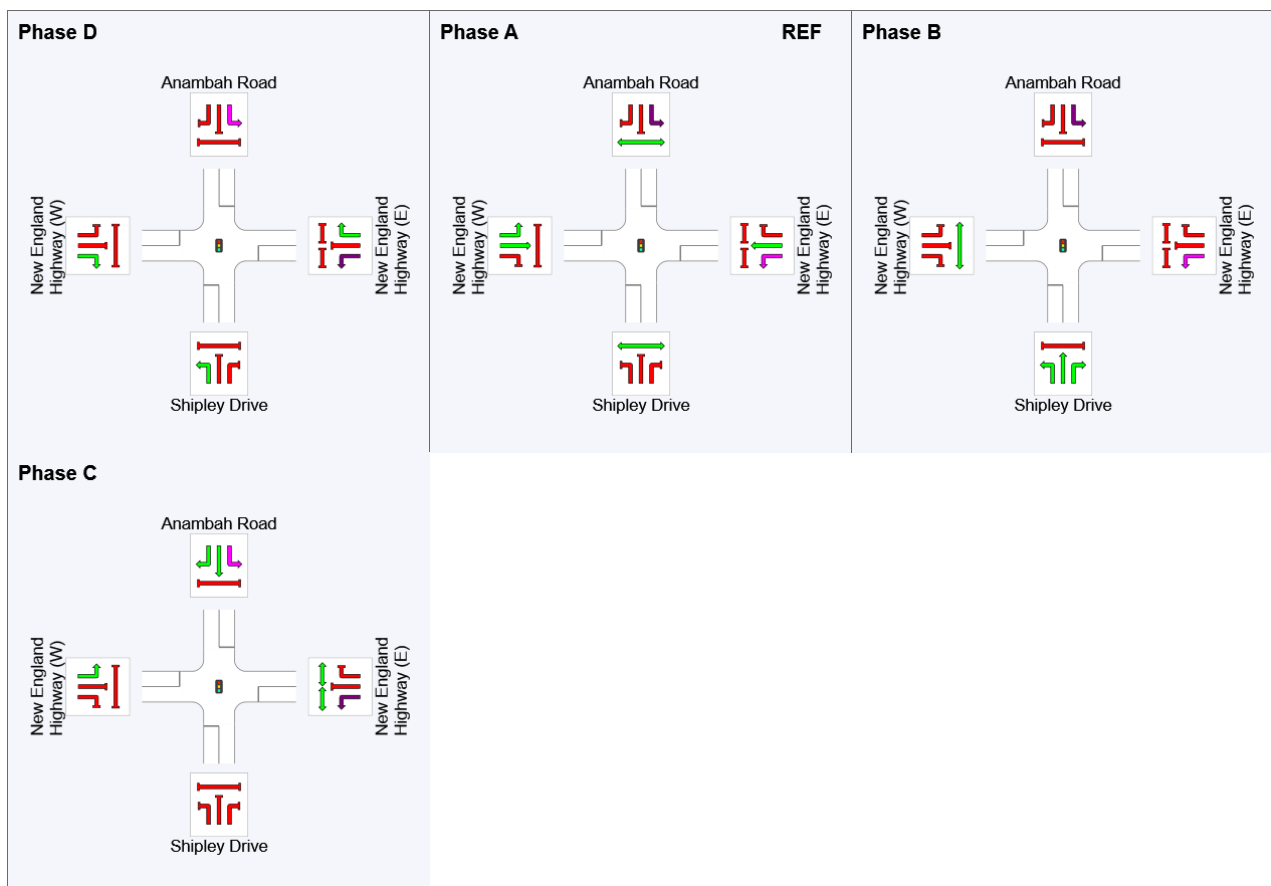
Phase Timing Summary

Phase	D	A	B	C
Phase Change Time (sec)	122	0	89	107
Green Time (sec)	18	83	12	11
Phase Time (sec)	24	89	16	16
Phase Split	17%	61%	11%	11%
Phase Frequency (%)	100.0	100.0	59.3 ²	84.2 ²













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

² Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING 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)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default - Import

Input Phase Sequence: D, E, A, B, C

Output Phase Sequence: D, E, A, B, C

Reference Phase: Phase A

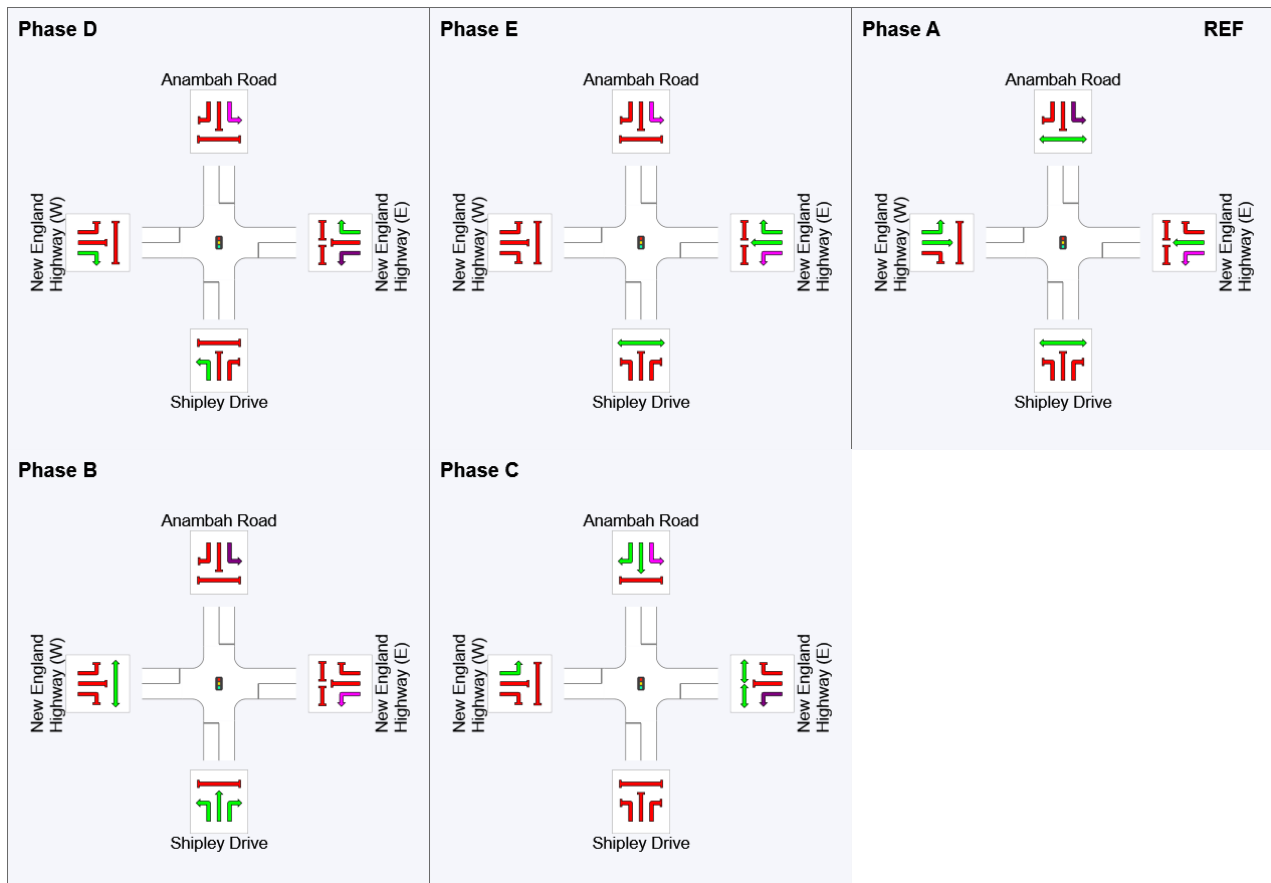
Phase Timing Summary

Phase	D	E	A	B	C
Phase Change Time (sec)	122	131	0	82	111
Green Time (sec)	6	12	76	23	5
Phase Time (sec)	12	18	82	29	8
Phase Split	8%	12%	55%	19%	5%
Phase Frequency (%)	100.0	100.0	100.0	100.0	42.1 ²













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

² Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.


Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

 Site: 5AM38_F [NEW_ANA_38_AM_F_S1 (Site Folder: Future Year 2038 wStage 1_220)]

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 = 144 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default - Copy - Import

Input Phase Sequence: D, A, B, C

Output Phase Sequence: D, A, B, C

Reference Phase: Phase A

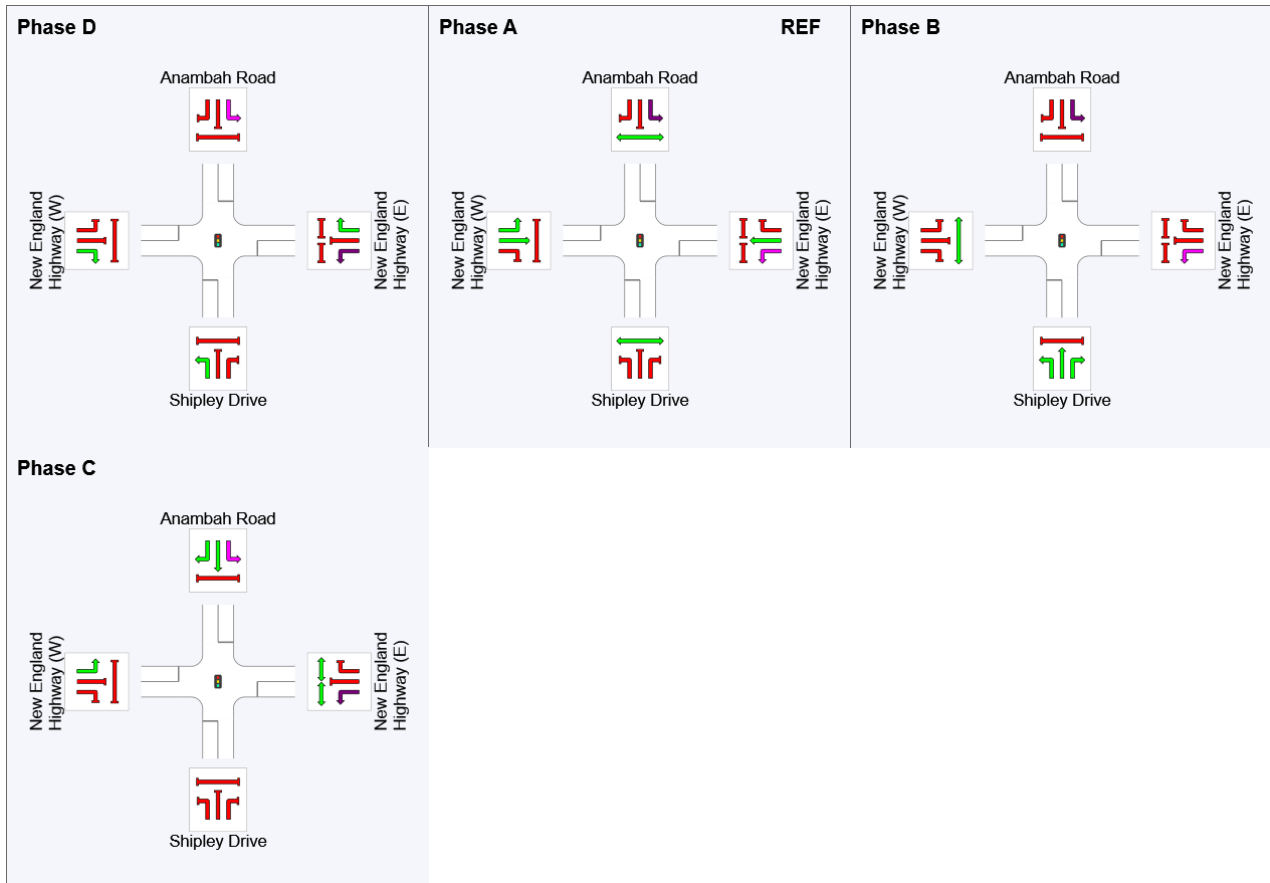
Phase Timing Summary

Phase	D	A	B	C
Phase Change Time (sec)	122	0	89	106
Green Time (sec)	17	83	11	13
Phase Time (sec)	23	89	14	18
Phase Split	16%	62%	10%	13%
Phase Frequency (%)	100.0	100.0	51.9 ²	85.7 ²



See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

² Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

Site: 5PM38_F [NEW_ANA_38_PM_F_S1 (Site Folder: Future Year 2038 wStage 1_220)]

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)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default - Import

Input Phase Sequence: D, E, A, B, C

Output Phase Sequence: D, E, A, B, C

Reference Phase: Phase A

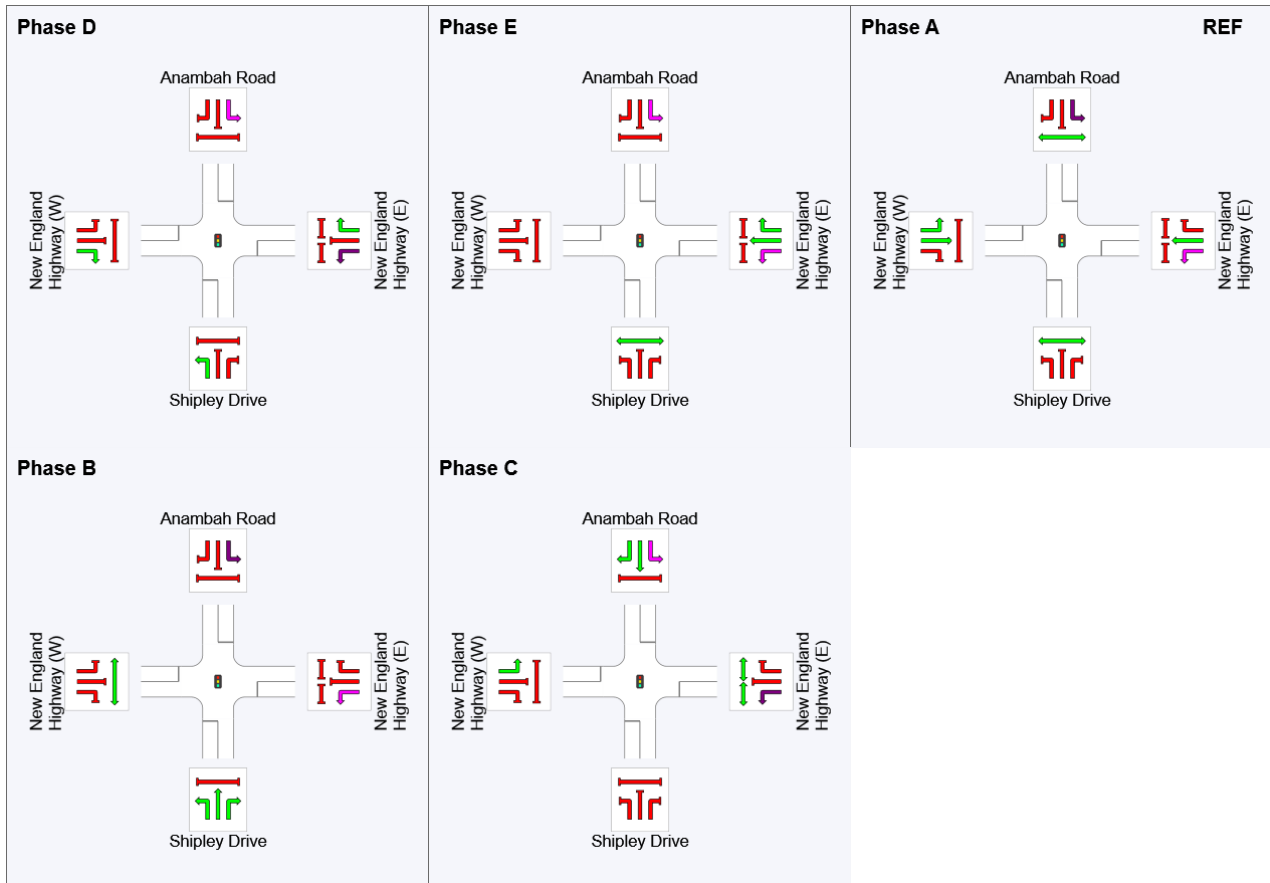
Phase Timing Summary

Phase	D	E	A	B	C
Phase Change Time (sec)	124	132	0	85	113
Green Time (sec)	6	10	79	22	5
Phase Time (sec)	11	16	85	28	7
Phase Split	7%	11%	58%	19%	5%
Phase Frequency (%)	91.7 ²	100.0	100.0	100.0	33.3 ²













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

² Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

Site: 5AM38_F [NEW_ANA_38_AM_F_S1_50% (Site Folder: Future Year 2038 wStage 1_220)]

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)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default - Copy - Import

Input Phase Sequence: D, A, B, C

Output Phase Sequence: D, A, B, C

Reference Phase: Phase A

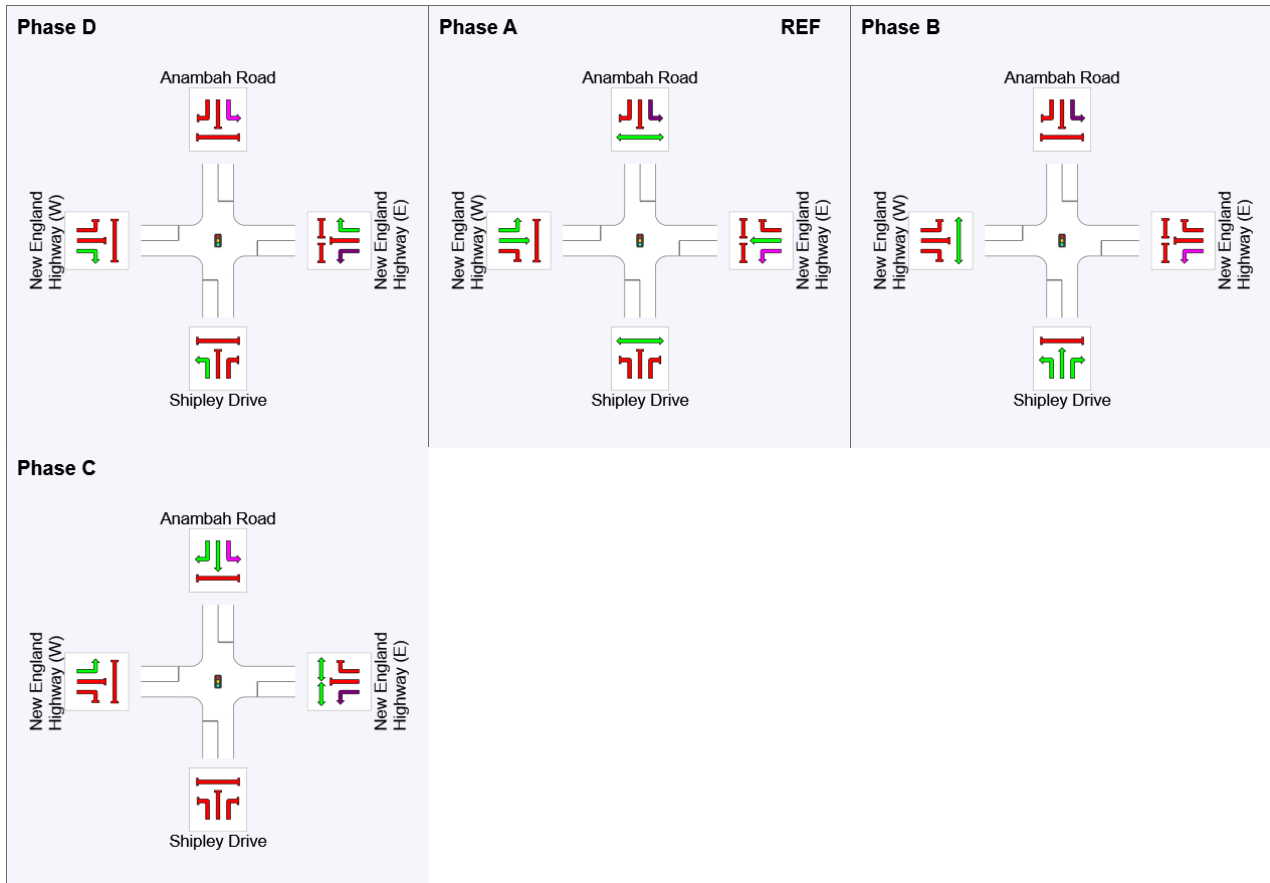
Phase Timing Summary

Phase	D	A	B	C
Phase Change Time (sec)	122	0	89	106
Green Time (sec)	18	83	11	13
Phase Time (sec)	24	89	14	18
Phase Split	17%	61%	10%	12%
Phase Frequency (%)	100.0	100.0	51.9 ²	85.7 ²











See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

² Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

Site: 5PM38_F [NEW_ANA_38_PM_F_S1_50% (Site Folder: Future Year 2038 wStage 1_220)]

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)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default - Import

Input Phase Sequence: D, E, A, B, C

Output Phase Sequence: D, E, A, B, C

Reference Phase: Phase A

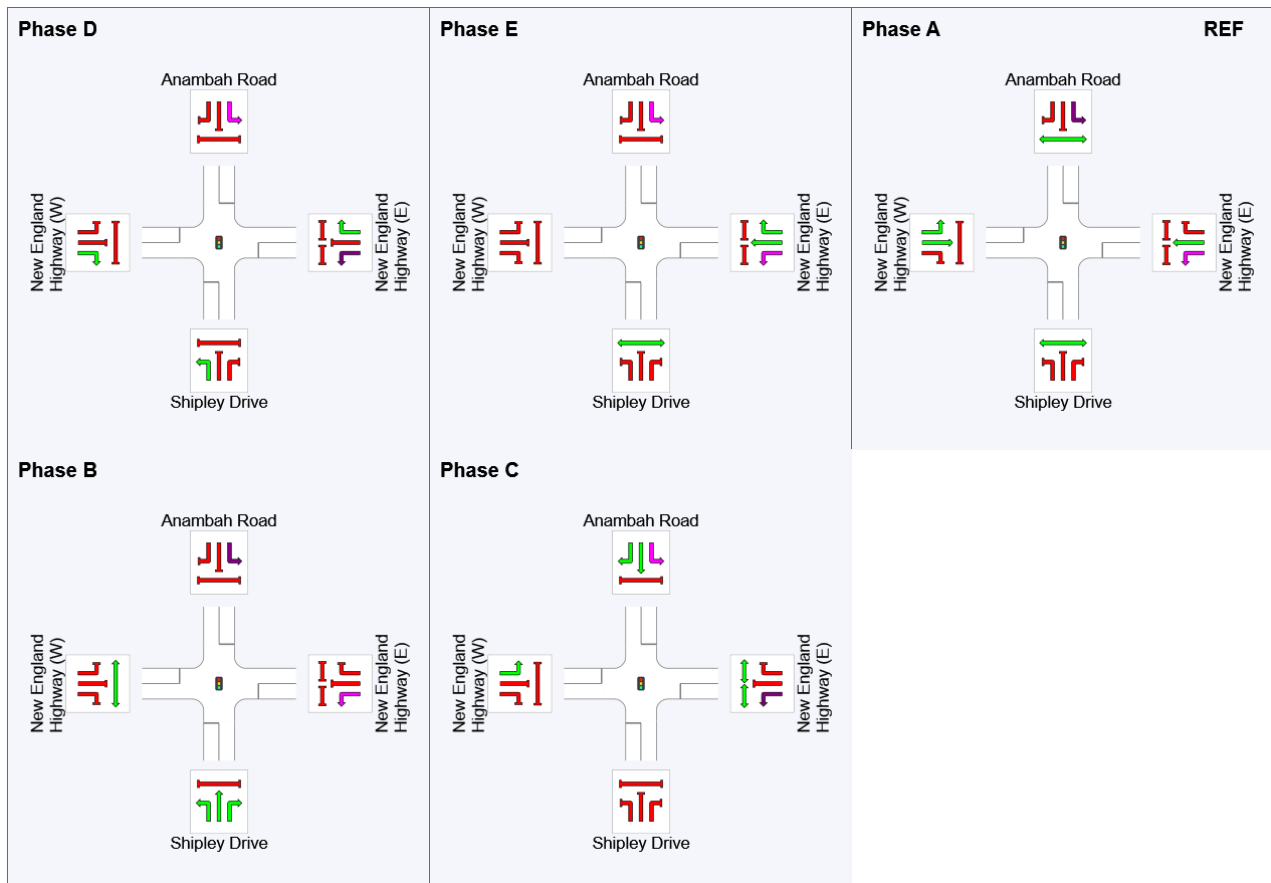
Phase Timing Summary

Phase	D	E	A	B	C
Phase Change Time (sec)	124	132	0	85	113
Green Time (sec)	6	10	79	22	5
Phase Time (sec)	11	16	85	28	7
Phase Split	7%	11%	58%	19%	5%
Phase Frequency (%)	91.7 ²	100.0	100.0	100.0	33.3 ²



See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

² Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

Site: 5AM38_F [NEW_ANA_38_AM_F_FD_Mod (Site Folder: Future Year 2038 wDev Mod)]

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)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default - Copy - Import

Input Phase Sequence: A, E, B, C, D

Output Phase Sequence: A, E, B, C, D

Reference Phase: Phase A

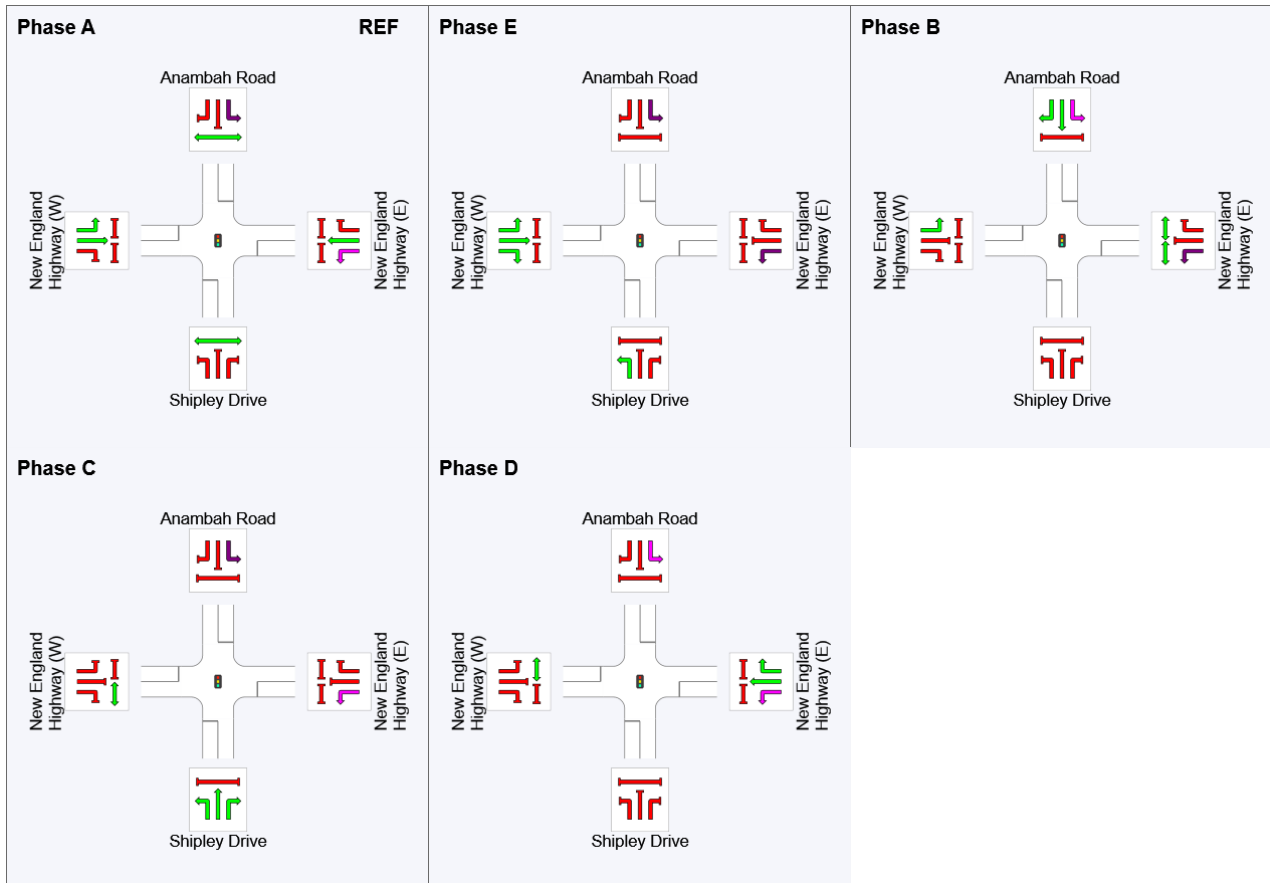
Phase Timing Summary

Phase	A	E	B	C	D
Phase Change Time (sec)	0	69	85	112	126
Green Time (sec)	65	10	21	8	10
Phase Time (sec)	71	16	27	12	14
Phase Split	51%	11%	19%	9%	10%
Phase Frequency (%)	98.1 ²	100.0	100.0	75.0 ²	66.7 ²












See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

² Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

Site: 5PM38_F [NEW_ANA_38_PM_F_FD_Mod (Site Folder: Future Year 2038 wDev Mod)]

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)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default - Import

Input Phase Sequence: A, E, B, C, D

Output Phase Sequence: A, E, B, C, D

Reference Phase: Phase A

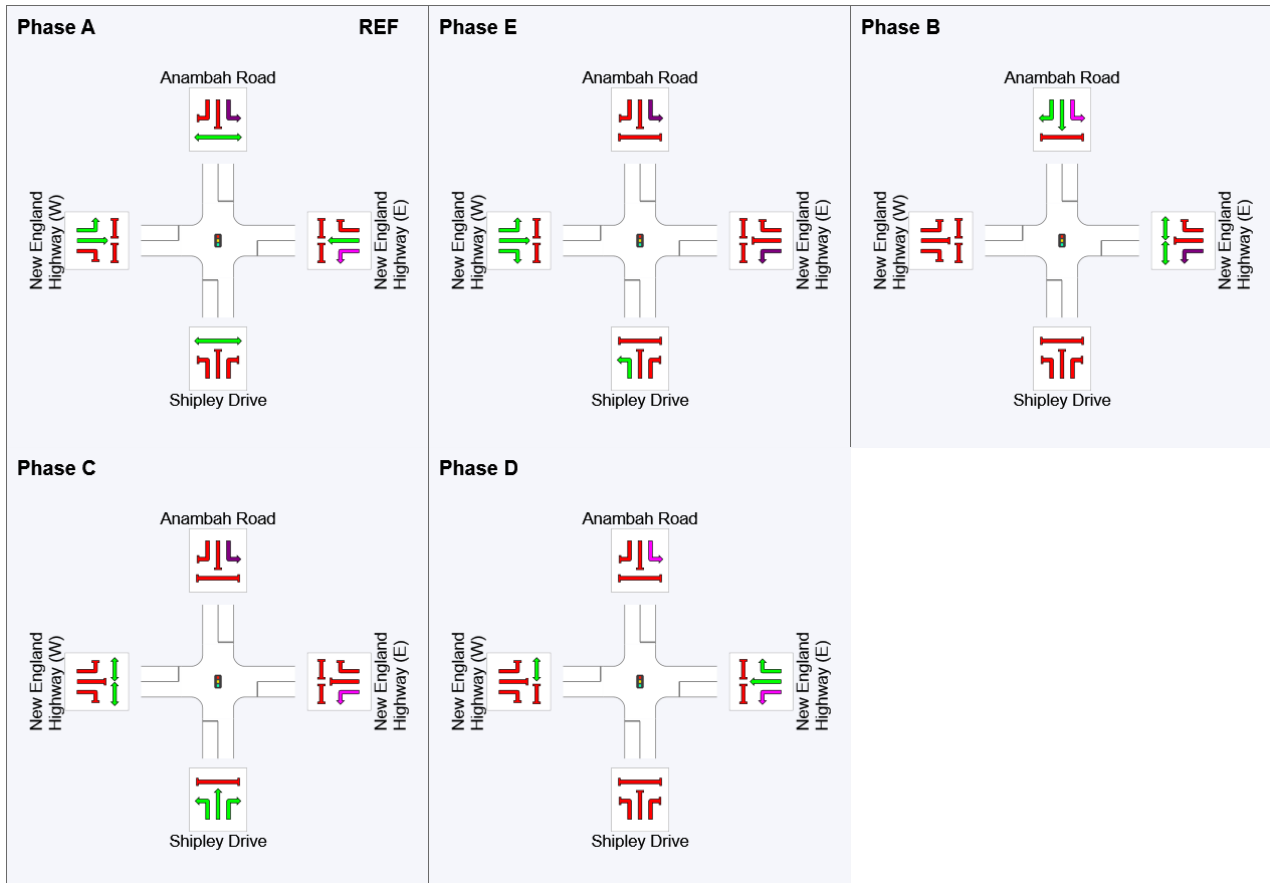
Phase Timing Summary

Phase	A	E	B	C	D
Phase Change Time (sec)	0	57	69	81	107
Green Time (sec)	51	6	7	23	27
Phase Time (sec)	57	11	10	29	33
Phase Split	41%	8%	7%	21%	24%
Phase Frequency (%)	98.1 ²	91.7 ²	47.6 ²	100.0	100.0













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

² Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

Site: 5AM38_F [NEW_ANA_38_AM_F_FD_50%_Mod (Site Folder: Future Year 2038 wDev Mod)]

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)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default - Copy - Import

Input Phase Sequence: A, E, B, C, D

Output Phase Sequence: A, E, B, C, D

Reference Phase: Phase A

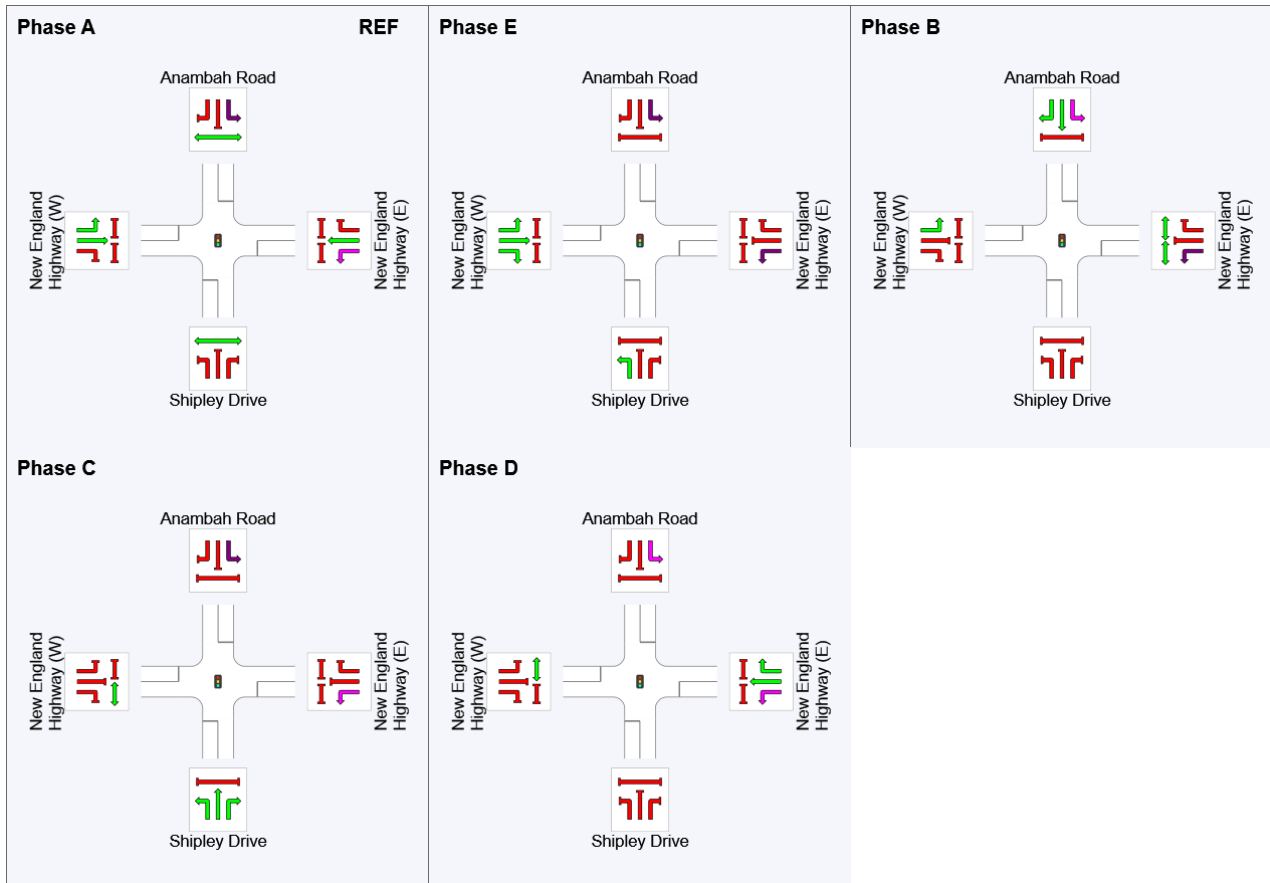
Phase Timing Summary

Phase	A	E	B	C	D
Phase Change Time (sec)	0	69	85	111	125
Green Time (sec)	65	10	20	8	10
Phase Time (sec)	71	16	26	13	14
Phase Split	51%	11%	19%	9%	10%
Phase Frequency (%)	98.1 ²	100.0	100.0	81.3 ²	66.7 ²













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

² Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

PHASING SUMMARY

Site: 5PM38_F [NEW_ANA_38_PM_F_FD_50%_Mod (Site Folder: Future Year 2038 wDev Mod)]

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)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user

Phase Sequence: Convert Function Default - Import

Input Phase Sequence: A, E, B, C, D

Output Phase Sequence: A, E, B, C, D

Reference Phase: Phase A

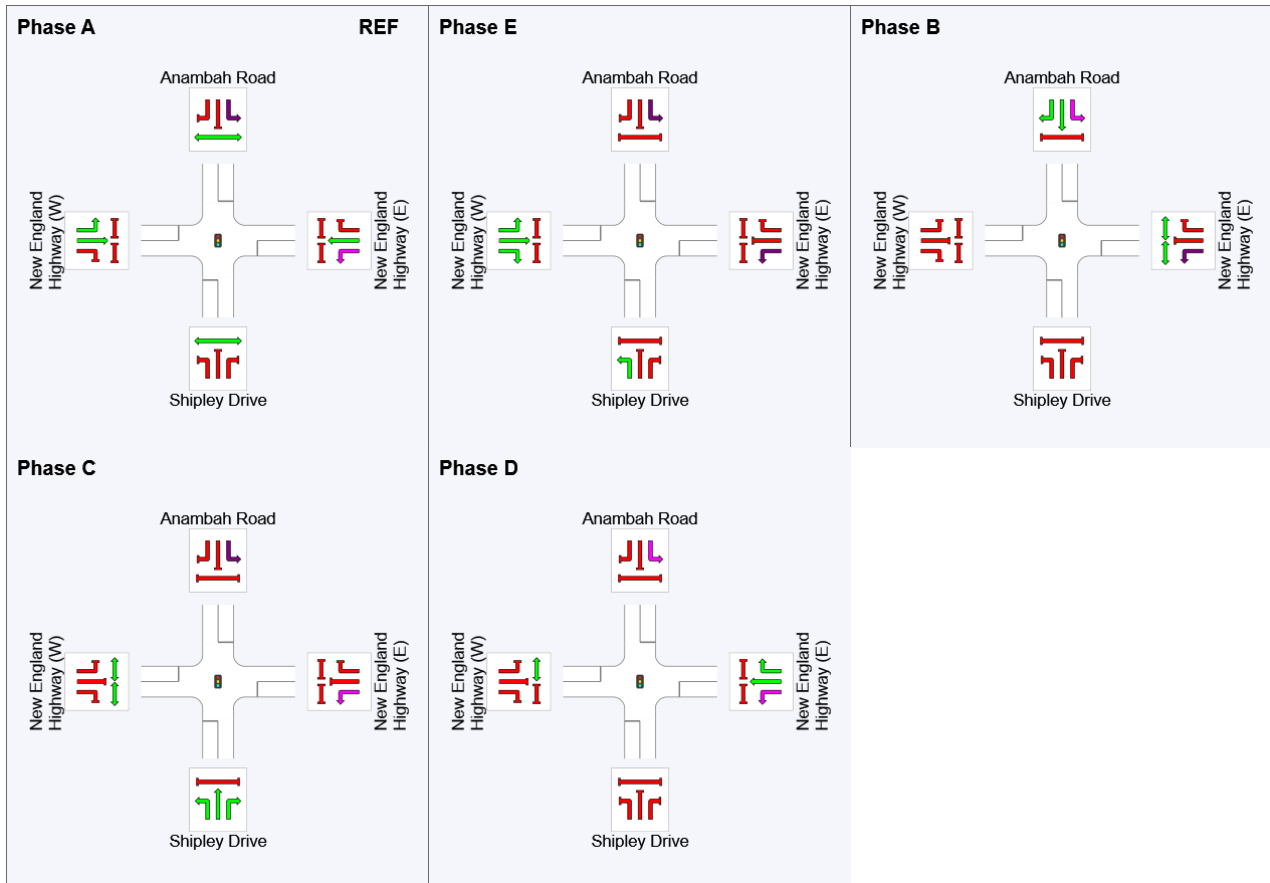
Phase Timing Summary

Phase	A	E	B	C	D
Phase Change Time (sec)	0	62	74	85	108
Green Time (sec)	56	6	6	21	22
Phase Time (sec)	62	11	8	27	28
Phase Split	46%	8%	6%	20%	21%
Phase Frequency (%)	97.8 ²	91.7 ²	38.1 ²	100.0	100.0













See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

² Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase

	Normal Movement		Permitted/Opposed
	Slip/Bypass-Lane Movement		Opposed Slip/Bypass-Lane
	Stopped Movement		Turn On Red
	Other Movement Class (MC) Running		Undetected Movement
	Mixed Running & Stopped MCs		Continuous Movement
	Other Movement Class (MC) Stopped		Phase Transition Applied

APPENDIX C

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**

Please consider the environment before printing this email.

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

05 January 2026

Holly Taylor
A/ Team Leader Development Services
Transport for NSW
6 Stewart Avenue (Locked Bag 2030)
Newcastle West NSW 2302

Dear Holly,

Re: DA/2024/763 – Response to TfNSW Comments on Additional Traffic Information (559 Anambah Road, Gosforth)

We refer to Transport for NSW's correspondence dated 24 December 2025 regarding the above development application and the additional traffic information submitted in November 2025.

At the outset, we note that the application has been lodged as a concept development application under Division 4.4 of the Environmental Planning and Assessment Act 1979, seeking approval for the overarching development concept and staging framework for the site, with detailed design, infrastructure delivery and timing matters to be addressed through subsequent development applications.

We acknowledge TfNSW's review and its interest in ensuring the safe and efficient operation of the State Road network. Having considered the comments raised, we consider it appropriate to clarify a number of matters where TfNSW's position appears to extend beyond what is reasonably supported by the statutory framework applicable to the assessment of the application, or beyond the scope of TfNSW's role in the development assessment process.

Our comments below are provided to assist Council and TfNSW in progressing a clear, proportionate and robust assessment of the proposal.

1. Reliance on the draft Anambah URA DCP and staging plan

TfNSW's correspondence places significant weight on the draft Anambah Urban Release Area Development Control Plan (DCP), including the conclusion that the proposed Stage 1 development is "out of sequence" when measured against the draft staging plan.

As noted above, the application has been lodged as a concept development application under Division 4.4 of the Act, seeking approval for the overarching development and staging framework rather than detailed infrastructure sequencing or design outcomes.

In this context, we note the following:

- The development application was lodged approximately 15 months prior to the public exhibition of the draft Anambah URA DCP.
- The draft DCP has not been adopted and does not form part of the statutory planning controls applicable to the assessment of the application.
- Even where adopted, a DCP does not have the same legal status as an environmental planning instrument and is intended to provide guidance, rather than to mandate rigid or determinative outcomes.

Further, section 4.22(2) of the Act expressly contemplates that where an environmental planning instrument requires the preparation of a development control plan prior to development being carried out, that requirement may be satisfied by the making and approval of a concept development application.

The clear intent of this provision is to enable concept approvals to establish the overarching development and staging framework in advance of, and without being constrained by, detailed development controls.

It is also a well-established planning principle that development applications are assessed against the planning controls in force at the time of lodgement, with draft instruments carrying, at most, limited contextual weight.

In this context, reliance on the draft Anambah URA DCP staging plan as a basis to challenge the sequencing or viability of the proposed Stage 1 development is not considered appropriate or consistent with the statutory assessment framework for concept development applications.

2. Scope of TfNSW commentary on local road function and upgrades (River Road)

TfNSW's correspondence also comments on the intended function of River Road, including recommending that it be upgraded to a full public local road connection at the developer's cost.

We note that:

- TfNSW acknowledges that River Road is a local road, for which Maitland City Council is the roads authority under the Roads Act 1993.
- There is no adopted planning control requiring River Road to operate as a full public local road connection.
- The proposed role of River Road has been assessed in the Traffic Impact Assessment having regard to its existing function, operational characteristics and interface with the broader road network.

While TfNSW's interest in the broader traffic implications of the proposal is understood, the determination of local road function, access arrangements and upgrade scope sits within Council's remit as the relevant roads authority. In this regard, commentary seeking to prescribe a particular outcome for River Road extends beyond an assessment of impacts on the State Road network.

We consider that clearer delineation is required between TfNSW's role in assessing State Road impacts and Council's role in determining local road outcomes.

3. State road upgrade expectations and longer-term modelling outcomes

TfNSW also raises the prospect of upgrading the New England Highway / Anambah Road intersection based on modelling outcomes further into the planning horizon.

In response, we note that:

- The sensitivity analysis identifies capacity constraints beyond the immediate scope of Stage 1. However, as noted above, the concept development application is for subdivision approval of the Stage 1 (220 lots) only. The balance of the site is a concept approval only, akin to a DCP.
- As demonstrated in the submitted traffic assessment, the trigger for upgrade of the New England Highway / Anambah Road intersection is driven primarily by background traffic growth, rather than traffic generated by the proposed Stage 1 development.
- TfNSW has confirmed that there is no committed funding or approved project for the relevant State Road upgrades.

In this context, conditioning Stage 1 to deliver upgrades that address longer-term, network-wide growth would not represent a proportionate or reasonable response to the impacts of the proposed development.

4. Ongoing engagement

The Applicant remains committed to working constructively with TfNSW and Council to ensure that the proposal appropriately addresses its impacts on the State Road network.

Given the significance of the matters raised in TfNSW's correspondence, and the fundamental differences in interpretation of the applicable statutory framework and the intended role of a concept development application, we consider that these issues would be best progressed through a face-to-face meeting with TfNSW personnel.

Accordingly, we formally request a meeting with TfNSW (in person) at the earliest convenient opportunity to:

- clarify TfNSW's position on the role of draft planning controls in the assessment of this application;
- clearly delineate TfNSW's assessment remit in relation to State Roads versus Council-controlled local roads; and
- identify a practical and proportionate pathway to resolve the traffic-related matters and allow the application to progress.

We consider that a direct discussion will assist in avoiding ongoing misalignment and will support a timely, robust and defensible assessment outcome.

Should you require any additional clarification or wish to discuss the above commitments in further detail, please do not hesitate to contact me on 0407 094 925 or at brian@thirdigroup.com.au.

Kind Regards,



BRIAN SWAINE

HEAD OF THIRD.I COMMUNITIES