

APPENDIX 9

January 2026

Wingham Urban Release Area 1



ADDENDUM LETTER – TRAFFIC IMPACT ASSESSMENT

Ref: 24/002

26th January 2026

General Manager
MidCoast Council
2 Biribi Way
TAREE NSW 2430

Dear Sir,

RE: Traffic Impact Assessment Report – Residential Planning Proposal – Lot 92 DP1285477 – Wingham Road, Wingham.

Intersect Traffic Pty Ltd (Intersect Traffic) was engaged by Hampstead Property to prepare a traffic impact assessment (TIA) for a residential planning proposal for Lot 92 DP1285477 Wingham Road, Wingham to allow the creation of a total of up to 294 residential lots. Issue D of the TIA was the final version of the report dated 25 May 2024 and involved consultation with MidCoast Council and Transport for NSW.

The TIA concluded that, subject to a single lane roundabout access from Wingham Road being constructed to provide vehicular access to proposed residential estate, the local and state road network would have sufficient spare capacity to cater for the additional traffic generated by up to 294 residential lots under the planning proposal.

Intersect Traffic is informed that the proposed development area has reduced per the attached Precinct Plan in the current version of the planning proposal and will now accommodate approximately 240 residential lots.

As the development will now generate a lower volume of traffic, up to 204 vtpm instead of the original proposals 250 vtpm, it can still be concluded that a single lane roundabout would provide a suitable and safe vehicular access to the site and that there is sufficient spare capacity within the existing state and local road network to cater for the proposed future development of the site. Therefore, the assessment within the TIA remains valid as a conservative assessment and the conclusions and recommendation within the report is still valid. The revised Precinct Plan is considered acceptable from a traffic impact perspective.

Should you require further information or clarification please do not hesitate to contact me on 0423 324 188.

Yours sincerely



Jeff Garry
Director
Intersect Traffic
Encl.

[illegible]

TRAFFIC IMPACT ASSESSMENT

A wide-angle photograph of a grassy field under a blue sky with scattered white clouds. In the background, there are trees and a distant hill. A wooden fence and a house are visible on the right side of the image.

TRAFFIC IMPACT ASSESSMENT

RESIDENTIAL PLANNING PROPOSAL

LOT 92 DP1285477
WINGHAM ROAD, WINGHAM

PREPARED FOR: HAMPSTEAD PROPERTY

MAY 2024

REF: 24/002

**TRAFFIC IMPACT ASSESSMENT
RESIDENTIAL PLANNING PROPOSAL****HAMPSTEAD PROPERTY****LOT 92 DP1285477
WINGHAM ROAD, WINGHAM**

Intersect Traffic Pty Ltd (ABN: 43 112 606 952)

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

Issue	Date	Description	By
A	08/04/24	Draft	JG
B	11/04/24	Edit	JG
C	26/04/24	Final Proof	JG
D	25/05/24	Final Amendments / Approved	JG

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This document has been authorised by

Date 25th May 2024**Disclaimer**

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1. INTRODUCTION

Intersect Traffic Pty Ltd (Intersect Traffic) was engaged by Hampstead Property to prepare a traffic impact assessment (TIA) for a planning proposal for Lot 92 DP1285477 Wingham Road, Wingham to allow the creation of a total of up to 294 residential lots. The current concept subdivision plan for the site is provided within **Appendix 1**. It is understood this land has been identified as the Wingham Urban Release Area 1 (Wingham URA 1). Council has issued traffic comments within the minutes to the pre-lodgement meeting held on 28 September 2023 which have been incorporated into this assessment. The scope of work for this assessment was also agreed to with TfNSW prior to commencing the assessment. On 17 April 2024, the Sidra files and details of the proposed change to speed limits was issued to the Region North team of Transport for NSW (TfNSW). Further, a draft TIA was provided to TfNSW on 26 April 2024 and a response was received on 15 May 2024. TfNSW's response has been incorporated in the TIA.

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

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

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

2. SITE DESCRIPTION

The subject development site is located on the north-eastern fringe of Wingham. The site is approximately 600 metres north-east of the Wingham CBD area and 9.7 km north-west of the Taree CBD. The site has road frontage to both Wingham Road and Youngs Road and is immediately behind the existing residential dwellings on Wingham Road on the northern approach to town. The development site is currently vacant mainly cleared rural land used for agricultural purposes (grazing). **Figure 1** below shows the location of the land proposed for rezoning.



Figure 1 - Site Location Plan

The site contains the following property descriptors:

- ◆ Formal land title of Lot 92 DP 1285477.
- ◆ Street address Lot 92 Wingham Road, Wingham,
- ◆ Lot area of approximately 61.5 hectares, and
- ◆ Land zoning of RU1 – Primary Production within the Greater Taree LEP (2010).

The site currently has a formed rural vehicular access to Wingham Road approximately 230 metres south-west of Youngs Road. **Photograph 1** below shows the site from Wingham Road whilst **Photograph 2** shows the existing vehicular access crossing off Wingham Road.



Photograph 1 Existing Site from Wingham Road



Photograph 2 Existing site access off Wingham Road.

3. EXISTING ROAD NETWORK

3.1 Wingham Road

Wingham Road near the site is a sub-arterial road and is known as Regional Road 192 (RR 192). It is therefore under the care and control of Mid-Coast Council which receives some contributory funding from TfNSW for maintenance. Its main function is to provide a connection for Wingham and surrounding areas to the arterial and sub-arterial road network at Taree but also provides vehicular access to properties along its length. Near the site it is a sealed two-way two-lane rural road approximately 9 metres wide with 3.5-metre-wide travel lanes and 1-metre-wide sealed shoulders. The road is both centre-line and edge-line marked along the site frontage. Widening of the road occurs at some intersections as additional turning lanes are provided at these intersections such as the Youngs Road intersection immediately north of the site.

An at grade rail crossing of the North Coast Railway line exists on Wingham Road immediately south of the site. The crossing has warning signs and gates as shown in **Photograph 3** below.

As a rural road Wingham Road has sealed shoulders and table drains and no constructed pedestrian footpaths or cycleways (on or off-road) along its length. Near the site a 60 km/h speed zoning exists from Wingham to a point approximately 325 metres south of Young Road where the speed zoning changes to 90 km/h. At the time of inspection, Wingham Road was observed to be in good condition. **Photograph 4** below shows Wingham Road along the site frontage at the northern end of the site near the existing site access.



Photograph 3 – Wingham Road rail crossing at southern end of site.

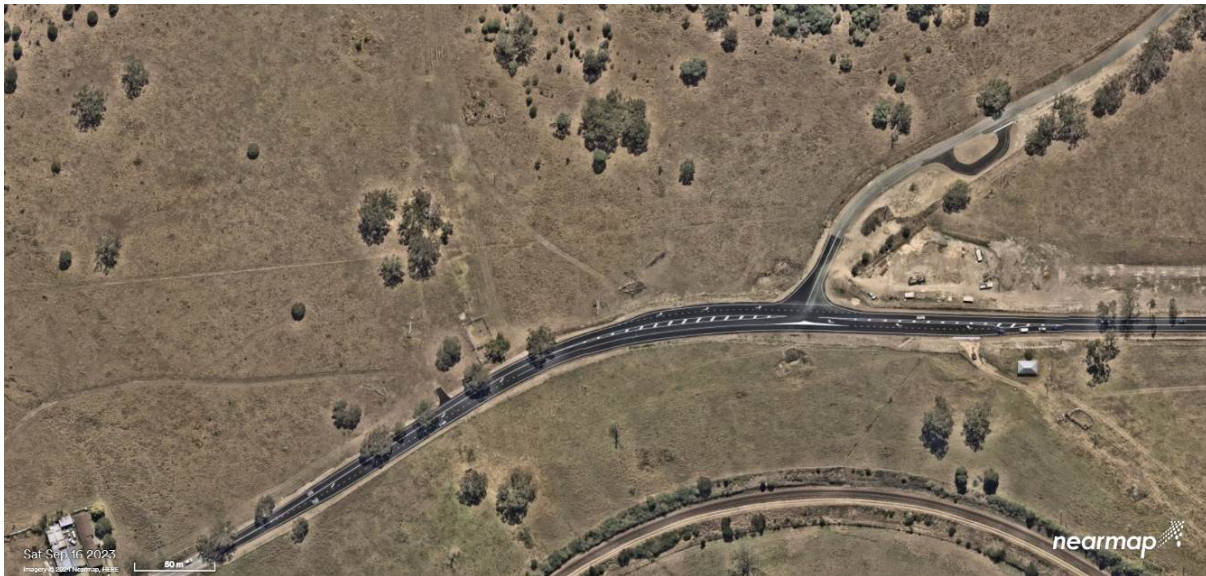


Photograph 4 – Wingham Road near existing site access

3.2 Youngs Road

Youngs Road near the site is a local rural collector road that collects and distributes traffic from the rural areas north of Wingham to the sub-arterial road network at Wingham Road as well as provide vehicular access to properties along its length. As a local road it is under the care and control of Mid-Coast Council. Near the site Youngs Road is a two lane two way sealed rural road approximately 6.5 metres wide providing 3.2-metre-wide travel lanes and unsealed shoulders and table drains along its length. A bus U-turn Bay is located approximately 60 metres north of Wingham Road on the eastern side of Youngs Road. A 90 km/h speed zoning applies to Youngs Road and at the time of inspection, Youngs Road was observed to be in fair to good condition.

A rural seagull intersection has recently been constructed at the Wingham Road / Youngs Road intersection with protected right and left turn lanes provided on Wingham Road and a protected acceleration lane being provided on Wingham Road for vehicles turning right out of Youngs Road which extends some 325 metres down Wingham Road to the point where the speed zone changes from 90 km/h to 60 km/h on Wingham Road as shown in the aerial photograph (**Photograph 5** below).



Photograph 5 – Wingham Road / Youngs Road rural seagull intersection.

4. TRANSPORT NETWORK IMPROVEMENTS

Advice from Mid-Coast Council is that upgrade works for the Cedar Party Creek Bridge on Wingham Road and the construction of a single lane roundabout intersection at the Wingham Road / Wynter Street / Combined Street intersection immediately south of the bridge were imminent. At the time of drafting this report preliminary works had commenced and the proposed roundabout construction plans for the Wingham Road / Wynter Street / Combined Street intersection have been reviewed as part of this TIA.

These works would provide safety upgrades for the bridge and intersection as well as increase the level of control and capacity for the intersection. This assessment assumes that these works are completed prior to any significant works occurring on the site.

5. TRAFFIC VOLUMES

In sourcing traffic data for this assessment, the client Hampstead Property were provided data from Mid-Coast Council while Intersect Traffic undertook additional counts to supplement this data. The Council data included the following;

- ◆ Traffic classifier count – Combined Street west of Wynter Street dated August 2015.
- ◆ Traffic Classifier count – Wingham Road south of railway crossing dated March 2016.
- ◆ Traffic Classifier count - Wingham Road south of railway crossing dated April – May 2023.
- ◆ Traffic Classifier count – Wynter Street north of Combined Street dated February 2017.
- ◆ Traffic Classifier count – Wynter Street south of Combined Street dated February 2017; and
- ◆ Traffic Classifier count – Combined Street east of Combined Street dated February 2017.

Intersect Traffic and Northern Transport Planning and Engineering on behalf of Intersect Traffic also undertook the following supplementary counts;

- ◆ Traffic Classifier count – Wingham Road north of railway crossing dated March 2024.
- ◆ Intersection Count – Wynter Street / Combined Street / Wingham Road – March 2024; and
- ◆ Intersection Count – Wynter Street / Isabella Street – March 2024.
- ◆ Intersection Count – Wingham Road / Youngs Road – April 2024.

The count sheets for these counts are provided in **Appendix 2**.

The relevant two-way mid-block traffic volume data extracted from the 2024 counts is shown below in **Table 1** along with predicted traffic volumes with just background traffic growth for 2029 (expected Stage 1 subdivision completion), 2034 (10-year horizon) and 2040 (development completion).

Background traffic growth has been estimated using the historical traffic data provided by Council. The only hourly data available was on Wingham Road and based on the 2016 and 2024 data the background traffic growth was calculated as 1.7 % per annum. Therefore 1.7 % per annum compounded rate has been adopted as the background traffic growth in this report.

Table 1 – 2024, 2029, 2034 & 2040 peak hour mid-block traffic volumes

Road	Section	2024		2029 @ 1.7% p.a.		2034 @ 1.7% p.a.		2040 @ 1.7% p.a.	
		AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)
Wingham Road	near railway crossing	967	1062	1052	1155	1245	1368	1631	1791
Wynter Street	north of Combined Street	326	340	355	370	420	438	550	573
Wynter Street	south of Combined Street	939	972	1022	1057	1209	1252	1583	1639
Combined Street	east of Wynter Street	198	213	215	232	255	274	334	359
Combined Street	west of Wynter Street	671	725	730	789	864	934	1132	1223
Wynter Street	south of Isabella Street	317	336	345	366	408	433	535	567
Wynter Street	north of Isabella Street	303	307	330	334	390	395	511	518
Isabella Street	west of Wynter Street	241	221	262	240	310	285	406	373
Isabella Street	east of Wynter Street	201	194	219	211	259	250	339	327
Youngs Road	north of Wingham Road	49	47	53	51	63	61	83	79

The above table of volumes are considered relevant for the analysis and has been adopted for this assessment.

6. ROAD CAPACITIES

As with the development all roads in this section of Wingham are or will become urban roads *Table 4.3 of the RTA's Guide to Traffic Generating Developments*, reproduced below, is utilised to determine their mid-block capacities.

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

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

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

Noting the one-way mid-block capacity from the above table for an undivided inner lane or outer lane or kerb lane with adjacent parking is 900 vtph, a one-way one-lane mid-block peak hour

capacity of 900 vtpd and a two-way two-lane mid-block peak hour capacity of 1,800 vtpd for a LoS C would apply. Therefore, the two-way two-lane mid-block peak hour capacity for Wingham Road Wynter Street, Combined Street and Isabella Street will be 1,800 vtpd. It is noted however that as a classified regional road a LoS D would still be acceptable on Wingham Road with one lane capacities of 1,100 vtpd and a two-way mid-block capacity of 2,200 vtpd. Therefore, the adopted two-way mid-block capacities adopted in this assessment are as follows;

- ◆ Wingham Road – 2,200 vtpd
- ◆ Wynter Street, Combined Street and Isabella Street – 1,800 vtpd.

From the traffic volumes observed in **Section 5** and noting the likely technical two-way mid-block road capacity of the road network are all in excess of their predicted 2024, 2029, 2034 and 2040 traffic volumes, it is concluded that the adjacent road network is operating within its technical road capacities and has scope to cater for additional traffic from future developments.

7. ALTERNATE TRANSPORT MODES

Eggins Comfort Coaches operates public bus services in the region with Regional Route 319 (Taree – Wingham) servicing the site (see **Figure 2** below).



Figure 2 - Eggins Comfort Coaches Regional Bus Route Map

This route runs along Wingham Road past the site with the nearest bus stops being on Wingham Road along the site frontage (near 1044 Wingham Road) before doing a loop service in town as shown in **Figure 3** below. The timetable indicates a frequent bus service is available during weekdays only with two AM and three PM services operating.

School bus services also already service the site and as part of the recent Wingham Road / Youngs Road intersection upgrade the school bus stop in Wingham Road was relocated to a more suitable site and facility in Youngs Road.



Figure 3 - Eggrins Comfort Coaches Route 319 Bus Route Map & Timetable

As the existing area is rural in nature there is no pedestrian or bicycle infrastructure in the area and all pedestrian and bicycle traffic would need to use the grassed verges, the road shoulder or share the travel lanes with other vehicles.

Note the site masterplan includes the provision of pedestrian footpaths and cycleways within the proposed residential estate which will connect to Wingham Road immediately north of the existing at grade level railway crossing on Wingham Road.

8. PROPOSED DEVELOPMENT

The planning proposal involves the rezoning of part of the site to enable the subdivision into low density residential allotments. The concept subdivision plan is provided in **Appendix 1**. The specific details of the development are:

- ◆ Subdivision of the site into approximately up to 294 residential lots with a general minimum lot size of 450 m²,
- ◆ Construction of new public road access intersections connecting to Wingham Road as a roundabout:
- ◆ Construction of new circulating style public roads providing vehicular access to the new residential lots,
- ◆ Drainage, services, and landscape works, and
- ◆ Construction to Mid Coast Council AUS-SPEC standards, AUSTROADS and TfNSW requirements as relevant.

The Lot Layout in **Appendix 1** shows an estimated yield of 294 lots for the property. The proponent has indicated a willingness to consider a higher minimum lot size if acceptable to Council and the Department of Planning, Housing & Infrastructure.

9. TRAFFIC GENERATION

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

Rates:

Daily vehicle trips = Average 7.4 per dwelling in regional areas.

PM peak (1) hour = Maximum 0.90 per dwelling in regional areas.

AM peak (1) hour = Average 0.85 per dwelling in regional areas.

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

Daily trips	= 294 x 7.4 vtpd = 2,176 vtpd.
PM peak hour trips	= 294 x 0.90 vtpd = 265 vtpd.
AM peak hour trips	= 294 x 0.85 vtpd = 250 vtpd.

10. TRIP DISTRIBUTION

Before carrying out any traffic assessment the additional peak hour traffic generated by the subject development, needs to be distributed through the adjoining road network.

Based on the distribution of existing traffic volumes at the intersections counted for this assessment, the likely origin / destinations of traffic are as follows:

- ◆ In the AM 80% of traffic will be outbound and in the PM 70% of traffic will be inbound,

- ◆ In both the AM and PM peak origin / destinations from the site will be 65% east to and from Taree and 35% west to and from Wingham.
- ◆ At the Wynter Street / Combined Street / Wingham Road future roundabout and the Wynter Street / Isabella Street give way intersection development traffic will be distributed as per current traffic distribution at these intersections.

There may be some minor variations to the assumptions made however their impact is considered insignificant. Therefore, the adopted development traffic trip distribution of the planning proposal for this assessment for 2040 (full development of the site), is shown in **Figure 4**, below. When undertaking capacity analysis, it will be assumed 25% of the development is occupied by 2029, 50% by 2034 and 100% by 2040.

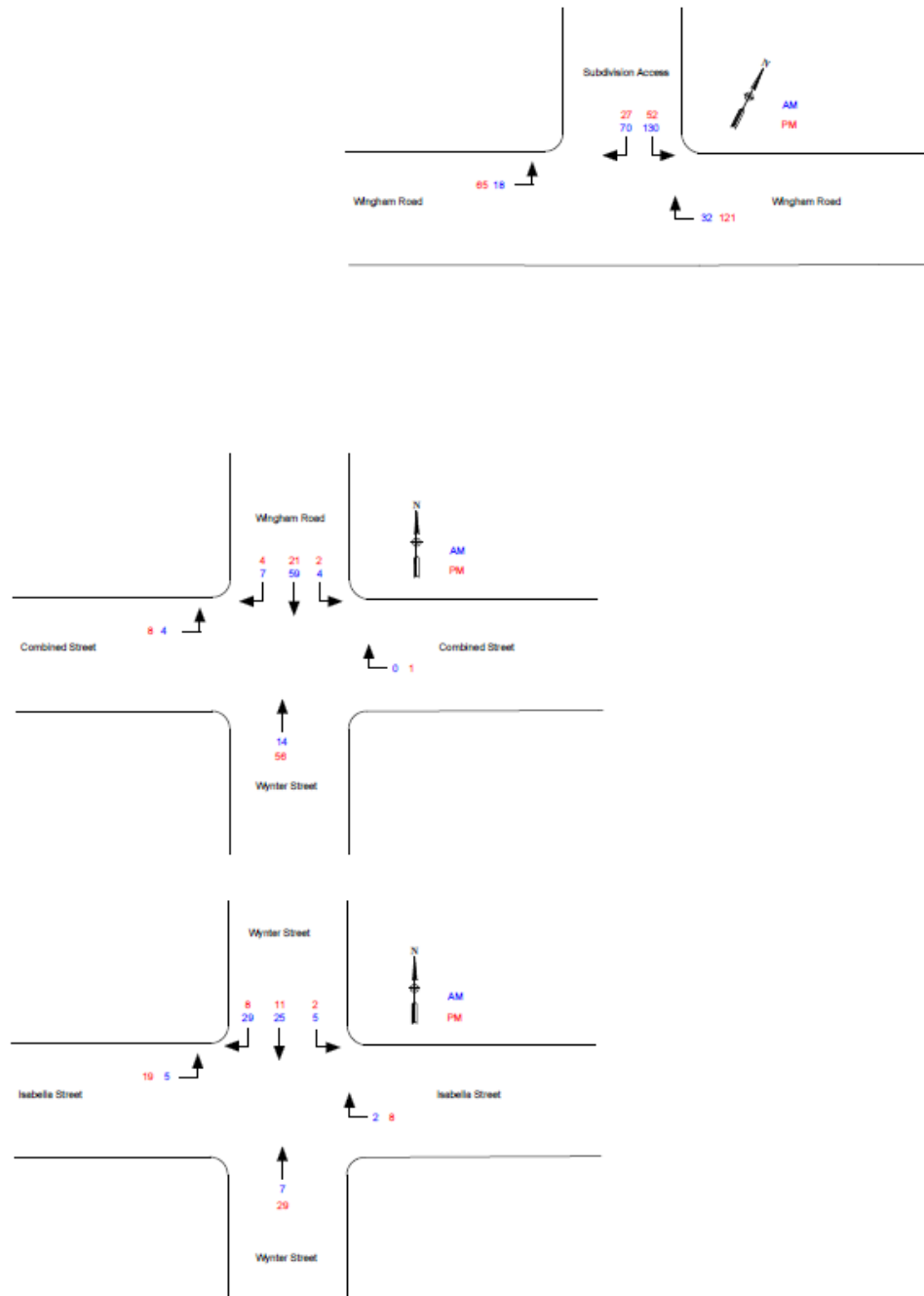


Figure 4 -Development Traffic Trip Distribution

11. TRAFFIC IMPACT ASSESSMENT

12.1 Road Network Capacity

This assessment (**Sections 5 and 6**) has determined that the local and state road network is operating within its two-way mid-block technical capacity. **Section 10** has determined that the additional traffic generated by this development will be 255 vtpm in the AM peak and 270 vtpm in the PM peak and when distributed as per **Figure 4** in **Section 11** results in an increase in the two-way mid-block peak hour traffic volumes by a maximum number of trips per hour on the road network as follows:

- ◆ Wingham Road east of subdivision access – 162 vtpm AM peak and 173 vtpm PM peak,
- ◆ Wingham Road west of subdivision access – 88 vtpm AM peak and 92 vtpm PM peak,
- ◆ Combined Street east of Wynter Street – 4 vtpm AM peak and 3 vtpm PM peak,
- ◆ Combined Street west of Wynter Street – 11 vtpm AM peak and 12 vtpm PM peak,
- ◆ Wynter Street north of Isabella Street – 73 vtpm AM peak and 77 vtpm PM peak,
- ◆ Wynter Street south of Isabella Street – 32 vtpm AM peak and 40 vtpm PM peak.
- ◆ Isabella Street east of Wynter Street – 7 vtpm AM peak and 10 vtpm PM peak; and
- ◆ Isabella Street west of Wynter Street – 34 vtpm AM peak and 27 vtpm PM peak.

The addition of this traffic onto the future traffic volumes determined in **Section 5**, including the 1.7% annual background traffic growth will not result in the peak two-way mid-block capacity thresholds for all roads to be reached as demonstrated in **Table 2**, below.

Table 2 – Road Capacity Assessment –post development.

Road	Section	Capacity	2029 @ 1.7% p.a.		2034 @ 1.7% p.a.		2040 @ 1.7% p.a.		Development traffic	
		vtpm	AM (vtpm)	PM (vtpm)	AM (vtpm)	PM (vtpm)	AM (vtpm)	PM (vtpm)	AM	PM
Wingham Road	east of subdivision access	2200	1093	1199	1326	1454	1793	1964	162	173
Wingham Road	near railway crossing	2200	1074	1178	1289	1414	1719	1883	88	92
Wynter Street	north of Combined Street	1800	377	393	464	484	638	665	88	92
Wynter Street	south of Combined Street	1800	1040	1077	1246	1290	1656	1716	73	77
Combined Street	east of Wynter Street	1800	216	232	257	276	338	362	4	3
Combined Street	west of Wynter Street	1800	733	792	870	940	1143	1235	11	12
Wynter Street	south of Isabella Street	1800	353	376	424	453	567	607	32	40
Wynter Street	north of Isabella Street	1800	348	353	427	434	584	595	73	77
Isabella Street	west of Wynter Street	1800	271	247	327	298	440	400	34	27
Isabella Street	east of Wynter Street	1800	220	214	262	255	346	337	7	10
Youngs Road	north of Wingham Road	1400	53	51	63	61	83	79	0	0

12.2 Intersection Capacity

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

Near the development site the intersections most likely to be impacted by the development are the Wingham Road / Youngs Road rural seagull (give way), Wynter Street / Combined Street / Wingham Road future roundabout intersection and the Wynter Street / Isabella Street give way intersection. The development traffic will also impact on queuing at the existing railway crossing on Wingham Road and the subdivision access intersection and these are addressed separately later in this report. Assumptions made for the modelling were:

Table 4.2
Level of service criteria for intersections

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

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

- ◆ The Wingham Road / Youngs Road rural seagull was modelled as per current layout.
- ◆ The Wynter Street / Isabella Street intersection was modelled as per current layout.
- ◆ The Wynter Street / Combined Street / Wingham Road future roundabout was modelled as per the concept layout provided by Council shown in Appendix 2.
- ◆ Traffic count data used is as collected by Intersect Traffic as shown in **Appendix 2**.
- ◆ Future traffic growth is calculated at a 1.7% background traffic growth rate per annum for all existing roads.
- ◆ Traffic generated by the development is distributed as per trip distributions **Figure 4**.

The results of the modelling for the 'all vehicles' case at these intersections and noting the worst movement average delay, level of service (LoS) and 95% back of queue (vehicles) delay are summarised. **Table 3** displays the results for the Wingham Road / Youngs Road rural seagull intersection, **Table 4** displays the results for the future Wynter Street / Combined Street / Wingham Road roundabout intersection and **Table 5** displays the results for the Wynter Street / Isabella Street give way intersection. The Sidra Movement Summary Tables are provided in **Appendix 3**.

Table 3 – Sidra Results – Wingham Road / Youngs Road rural seagull intersection.

Modelled Peak	Degree of Saturation (v/c)	Worst Average Delay (s)	Worst Level of Service	Worst 95% back of queue length (cars)
2024AM	0.321	15.3	B	0.1
2024PM	0.229	10.2	A	0.1
2029AM + dev	0.368	18.3	B	0.2
2029PM + dev	0.256	10.9	A	0.1
2034AM + dev	0.422	23.0	B	0.2
2034PM + dev	0.287	11.9	A	0.1
2040AM + dev	0.513	39.4	C	0.4
2040PM + dev	0.336	13.8	A	0.1

The modelling shows the Wingham Road / Youngs Road rural seagull intersection will operate satisfactorily in both the AM and PM peak periods post development and will continue to do so through to 2040 with the additional development traffic. All critical performance indicators are less than the recommended TfNSW criteria for satisfactory operation.

Table 4 – Sidra Results - Wynter St / Combined St / Wingham Rd Roundabout.

Modelled Peak	Degree of Saturation (v/c)	Worst Average Delay (s)	Worst Level of Service	Worst 95% back of queue length (cars)
2024AM	0.426	10.3	A	3.0
2024PM	0.392	11.7	A	2.8
2029AM + dev	0.476	10.5	A	3.5
2029PM + dev	0.435	12.1	A	3.3
2034AM + dev	0.531	10.9	A	4.2
2034PM + dev	0.482	12.7	A	3.9
2040AM + dev	0.615	12.1	A	5.8
2040PM + dev	0.550	13.6	A	5.0

The modelling shows that the future Wynter Street / Combined Street / Wingham Road roundabout intersection will operate satisfactorily in both the AM and PM peak periods post development and will continue to do so through to 2040 with the additional development traffic. All critical performance indicators are less than the recommended TfNSW criteria for satisfactory operation.

Table 5 – Sidra Results – Wynter Street / Isabella Street give way intersection.

Modelled Peak	Degree of Saturation (v/c)	Worst Average Delay (s)	Worst Level of Service	Worst 95% back of queue length (cars)
2024AM	0.131	8.5	A	0.5
2024PM	0.102	7.9	A	0.4
2029AM + dev	0.152	9.2	A	0.6
2029PM + dev	0.122	8.5	A	0.5
2034AM+ dev	0.179	10.1	A	0.7
2034PM + dev	0.147	9.2	A	0.6
2040AM + dev	0.222	11.8	A	0.9
2040PM + dev	0.195	10.7	A	0.8

The modelling shows that the Wynter Street / Isabella Street give way intersection is currently operating satisfactorily and will continue to do so post development through to 2040 with background traffic growth. All critical performance indicators are less than the recommended TfNSW criteria for a LoS A operation, which demonstrates that the intersection will perform satisfactorily in the future without the need for upgrading.

12.3 At Grade Rail Crossing - Wingham Road.

The development is likely to increase queuing at the existing at grade rail crossing on Wingham Road south of site. To determine the impact of the development on this rail crossing it has been modelled using the SIDRA INTERSECTION model based on a 5-minute road closure. The Sidra movement tables for the AM and PM peak periods are provided in **Appendix 4**. Traffic data used was the traffic classifier count undertaken by NTPE on behalf of Intersect Traffic in March 2024 (**Appendix 2**).

The modelling results are summarised as below.

- ◆ AM peak 95% back of queue length will increase from 27 vehicles to 29 vehicles in 2040 i.e. the development only increases queuing by 2 vehicles; and
- ◆ PM peak 95% back of queue length will increase from 25 vehicles to 28 vehicles in 2040 i.e. the development only increases queuing by 3 vehicles.

A full assessment of the rail crossing will need to be undertaken by ARTC based on the traffic data, traffic generation calculations and SIDRA INTERSECTION modelling results detailed in this report. Further consultation will be required with ARTC once the concept plan is finalised to determine the impact of the development on the at grade level railway crossing and any upgrading required by ARTC to meet their, and the relevant Australian Standards applying to the railway crossing.

Hampstead Property has advised Intersect Traffic that they called ARTC twice in April 2024 and sent emails on 12th and 18th April 2024 although did not receive a response.

12.4 On-Site Car Parking

The development as a residential subdivision does not generate an immediate on-site parking demand however future development of the individual allotments will generate such a demand. The allotments with a general minimum size of 450 m² are large enough to ensure that the on-site parking provisions can be accommodated within the lots. Future development on the individual allotments will need to be compliant with the Mid Coast Council DCP which is the provision of one covered parking space for a dwelling with a floor area less than 125 m² or two parking spaces for dwellings with a floor area greater than 125 m² of which one must be covered.

12.5 Alternative Transport Modes

It has been determined in **Section 7** that the site is suitably serviced by public transport but there is no pedestrian or bicycle infrastructure in the area. The masterplan for the site will include pedestrian footpaths and cycleways in the site connecting to Wingham Road immediately north of the existing railway crossing of Wingham Road and then connected to the upgraded Cedar Creek Bridge. This would also require modification to the Wingham Road rail crossing to include suitable pedestrian facilities to ARTC requirements.

A loop bus route road will be provided within the Estate that would be designed to cater for buses in the future once a demand for such a service is established and suitable bus stop facilities provided within the Estate.

12.6 Subdivision Design

The current subdivision concept road layout is provided in **Appendix 1**. This includes a major entry off Wingham Road approximately 380 metres south-west of Youngs Road. By observation on site the location of the subdivision entry intersection provides suitable safe intersection sight distance well in excess of the Austroad standard of 150 metres for a 70 km/h speed zoning.

With a number of lots having direct access to Wingham Road and Youngs Road it is likely that the proposal will result in the access environment along these roads to be such that an extension of the 60 km/h speed zoning east past the Youngs Road intersection in the case of Wingham Road as well as a short length along Youngs Road could be justified. TfNSW could support the provision of direct access to Wingham Road with the extension of the 60km/h speed zoning particularly given there are already residential dwellings adjacent to the site with direct access to Wingham Road thus the road safety environment along this section of Wingham Road has already been compromised. However, the 60 km/h speed zone extension would need to be approved by TfNSW who control speed zoning on NSW roads and consultation with TfNSW on this matter has been undertaken.

Following consultation with Council and Transport for NSW, a secondary access off Wingham Road near the railway crossing was reconfigured to cater for pedestrians and cyclists only.

As the concept plan does not show the internal road layout and physical characteristics of the proposed internal road network there is currently insufficient detail to assess compliance of the proposed road network with the physical requirements of Mid Coast Council's DCP / AUSSPEC

standards. This will be undertaken within a traffic impact assessment supporting the development application for each individual stage of the subdivision should it proceed past the planning proposal stage when road design work is completed. The masterplan will be designed in accordance with the requirements of the Mid Coast Council's DCP / AUSSPEC standards, and the proposed road layout will avoid cross intersections providing staggered T-intersections and will only provide short length cul-de-sacs which is considered best practice subdivision advice.

In assessing the performance of the subdivision access the main access has been analysed as it will carry the majority of site traffic. Again, this has been assessed using the SIDRA INTERSECTION modelling program with the following assumptions made;

- ◆ Due to the turning volumes generated by the development a protected right turn deceleration lane and a left turn deceleration lane will be required i.e. CHR / AUL has been modelled.
- ◆ It is assumed the main access will carry up to 100 % of traffic generated by the development.
- ◆ Traffic data used is based on the NTPE 2024 classifier counts (**Appendix 2**) and the development traffic trip distribution for full development (**Figure 4**) with the modelling being undertaken for 2040 i.e. full development of the site.
- ◆ A background traffic growth rate on Wingham Road of 1.7% has been assumed.

The results of the modelling for the worst movement delay and LoS is shown below in **Table 5** while the Sidra Movement Summary Tables are provided in **Appendix 5**.

The modelling shows that there is excessive delay for vehicles turning right out of the site and as a green fields intersection it should be constructed such that a satisfactory level of service exists for all movements at completion of the development. Therefore, it is recommended the main access be constructed as a single lane roundabout which allows a satisfactory level of service for all movements as shown in **Table 6**.

Table 6 – Sidra Results – Cedar Creek Estate Main Access.

Modelled Peak	Degree of Saturation (v/c)	Worst Average Delay (s)	Worst Level of Service	Worst 95% back of queue length (cars)
2040AM – CHR/AUL	1.050	201.6	F	7.4
2040PM – CHR/AUL	0.596	111.7	F	1.7
2040AM - roundabout	0.542	16.3	B	4.8
2040PM - roundabout	0.514	12.9	A	5.0

13. CONCLUSIONS

This traffic impact assessment for the proposed planning proposal for Lot 92 DP1285477 Wingham Road, Wingham to allow the creation of a total of up to 294 residential lots has concluded the following:

- ◆ The existing road network around the site is operating below its two-way mid-block technical capacity thresholds and has capacity to accommodate additional traffic from the planning proposal subdivision.
- ◆ Using rates contained within the TfNSW's RMS *TDT 2013/04* it is estimated that the development will generate an additional 2,176 vtpd or 250 vtpm in the AM peak and 265 vtpm in the PM peak on the road network.
- ◆ There is sufficient spare capacity within the immediate road network to cater for the proposed residential subdivision without the need to upgrade the adjoining local and state road network.
- ◆ Sidra modelling of the Wingham Road / Youngs Road rural seagull intersection, the future Wynter Street / Combined Street / Wingham Road roundabout and the existing Wynter Street / Isabella Street give way intersection has shown that the intersections will continue to operate satisfactorily through to and beyond 2040 with the subject development traffic and background traffic growth.
- ◆ Sidra modelling of the Wingham Road railway crossing indicates that the impact of the development on the railway crossing is to increase queuing during peak hours by up to 3 vehicles.
- ◆ With a minimum lot size of 450 m² the lots are large enough to provide on-site car parking for future development on each lot to Mid Coast Council requirements.
- ◆ The masterplan for the site will include pedestrian footpaths and cycleways in the site connecting to Wingham Road immediately north of the existing railway crossing of Wingham Road and then connected to the upgraded Cedar Creek Bridge. This would also require modification to the Wingham Road rail crossing to include suitable pedestrian facilities to ARTC requirements.
- ◆ The internal concept road layout and subdivision design is satisfactory and compliant with Mid Coast Council and current best practice. By observation the proposed subdivision access roundabout intersection location is considered suitable with satisfactory safe sight distance in accordance with Austroad requirements available at the proposed location.
- ◆ With a number of lots having direct access to Wingham Road it is likely that the proposal will result in the access environment along these roads to be such that an extension of the 60 km/h speed zoning east past the Youngs Road intersection in the case of Wingham Road as well as a short length along Youngs Road could be justified on the basis the road safety environment in the area is already compromised by the existing dwellings on Wingham Road with direct access to Wingham Road. However, this would need to be approved by TfNSW who control speed zoning on NSW roads and consultation with TfNSW on this matter has been undertaken.
- ◆ There is currently insufficient detail to assess compliance of the proposed road network with the physical requirements of the Mid Coast Council DCP / AUSSPEC standards. This will be undertaken within a traffic impact assessment supporting the development application for each individual stage of the subdivision should it proceed past the planning proposal stage when road design is completed. It is noted however the proposed road layout avoids cross intersections providing staggered T-intersections and only provides short length cul-de-sacs which is considered best practice subdivision advice.
- ◆ A SIDRA INTERSECTION analysis of the main access to the Estate has determined that for full development of the site a single lane roundabout access is required.

14. RECOMMENDATION

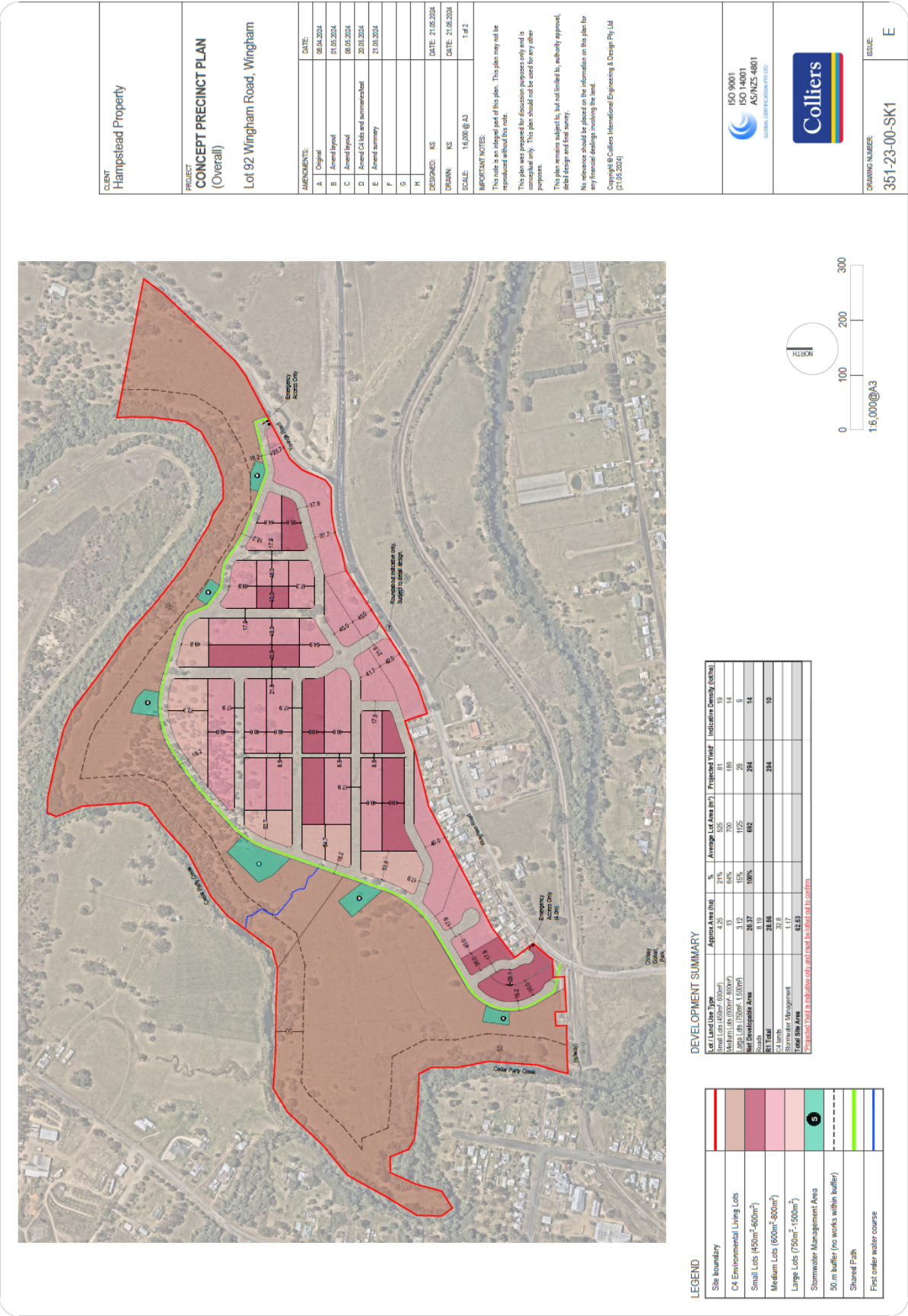
Having carried out this traffic impact assessment for a residential planning proposal for Lot 92 DP1285477 Wingham Road, Wingham to allow the creation of a total of up to 294 residential lots, it is recommended that the proposed rezoning can be supported from a traffic impact perspective as subject to the development being constructed to the requirements of Mid Coast Council and TfNSW as well as the provision of a single lane roundabout access off Wingham Road, the local and state road network has sufficient capacity to cater for the additional traffic generated by the planning proposal. Therefore, the proposal will not adversely impact on the local and state road network and would comply with the relevant requirements of Mid Coast Council, Austroads and TfNSW.

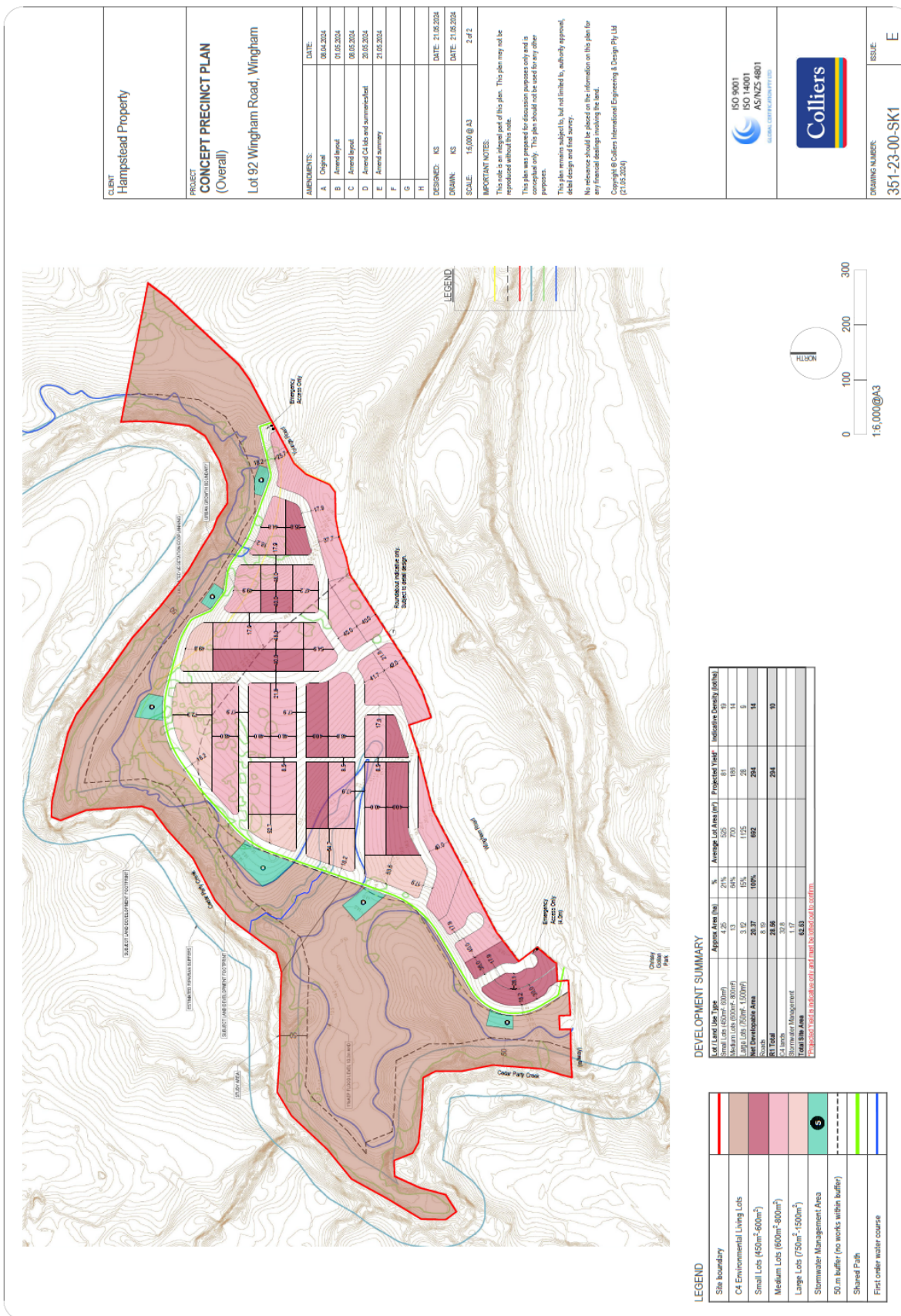


JR Garry BE (Civil), Masters of Traffic
Director
Intersect Traffic Pty Ltd

APPENDIX 1

DEVELOPMENT PLANS





APPENDIX 2

TRAFFIC COUNT DATA

Weekly Vehicle Counts**WeeklyVehicle-731**

Site: 16350004.0.0E
Description: Combined St @ Wingham - Wynter St to Primrose St
Filter time: 0:00 Friday, 14 August 2015 => 0:00 Friday, 21 August 2015
Scheme: Vehicle classification (ARX)
Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12) Dir(NESW) Sp(10,160) Headway(>0)

	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Averages	
	14 Aug	15 Aug	16 Aug	17 Aug	18 Aug	19 Aug	20 Aug	1 - 5	1 - 7
Hour									
0000-0100	15	24	28	7	15	16	15	13.6	17.1
0100-0200	6	10	17	5	3	7	7	5.6	7.9
0200-0300	13	13	11	5	7	8	10	8.6	9.6
0300-0400	25	7	11	25	16	16	13	19.0	16.1
0400-0500	79	16	19	35	39	44	40	47.4	38.9
0500-0600	117	56	36	113	119	112	111	114.4	94.9
0600-0700	231	82	61	232	242	255	250	242.0	193.3
0700-0800	337	202	94	369	384	390	367	369.4	306.1
0800-0900	618<	344	171	570<	589<	581<	506<	572.8<	482.7<
0900-1000	438	454	265	450	435	486	426	447.0	422.0
1000-1100	373	504	332	413	395	342	373	379.2	390.3
1100-1200	409	513<	345<	360	354	346	362	366.2	384.1
1200-1300	423	467<	331	374	348	381	352	375.6	382.3
1300-1400	470	398	300	396	383	382	379	402.0	386.9
1400-1500	515	400	375<	430	424	408	425	440.4	425.3
1500-1600	650<	337	332	594<	609<	636<	597<	617.2<	536.4<
1600-1700	498	322	274	454	470	485	472	475.8	425.0
1700-1800	509	275	238	470	506	488	482	491.0	424.0
1800-1900	264	206	192	267	220	254	268	254.6	238.7
1900-2000	180	124	101	162	142	184	184	170.4	153.9
2000-2100	137	94	77	96	98	82	122	107.0	100.9
2100-2200	118	87	54	89	63	105	92	93.4	86.9
2200-2300	65	67	21	48	34	47	40	46.8	46.0
2300-2400	36	46	20	17	30	28	21	26.4	28.3
Totals									
0700-1900	5504	4422	3249	5147	5117	5179	5009	5191.2	4803.9
0600-2200	6170	4809	3542	5726	5662	5805	5657	5804.0	5338.7
0600-0000	6271	4922	3583	5791	5726	5880	5718	5877.2	5413.0
0000-0000	6526	5048	3705	5981	5925	6083	5914	6085.8	5597.4
AM Peak	0800	1100	1100	0800	0800	0800	0800		
	618	513	345	570	589	581	506		
PM Peak	1500	1200	1400	1500	1500	1500	1500		
	650	467	375	594	609	636	597		

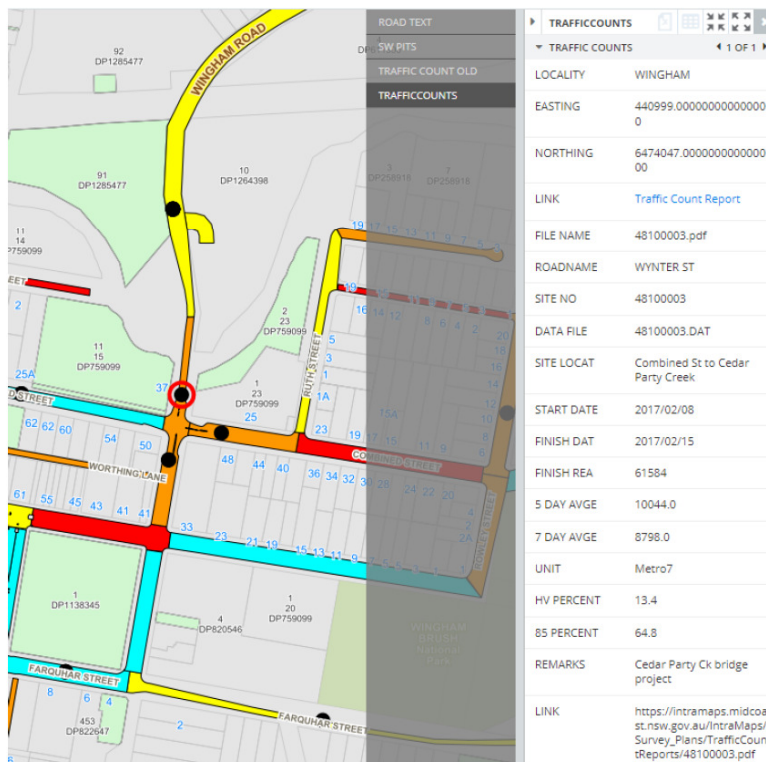
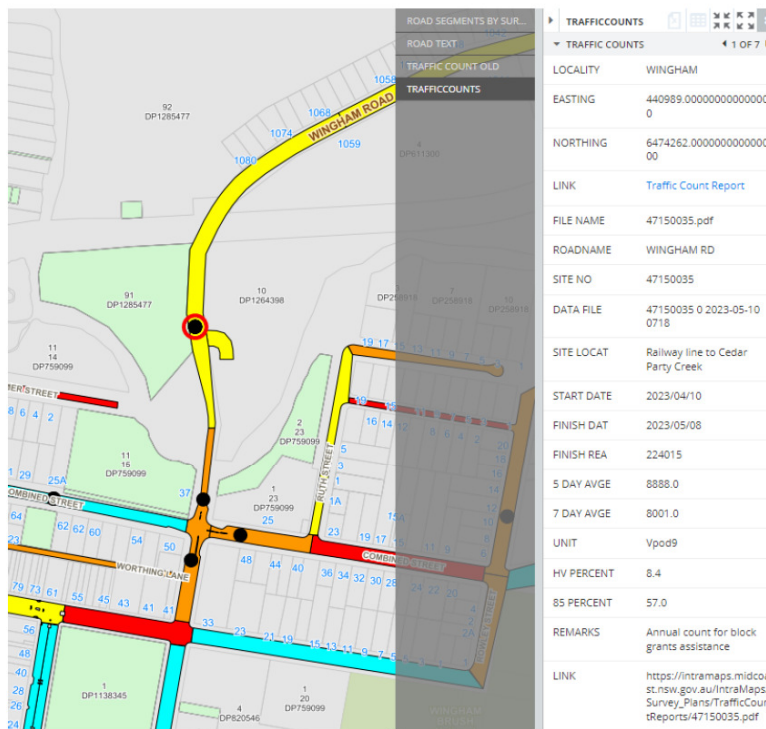
* - No data.

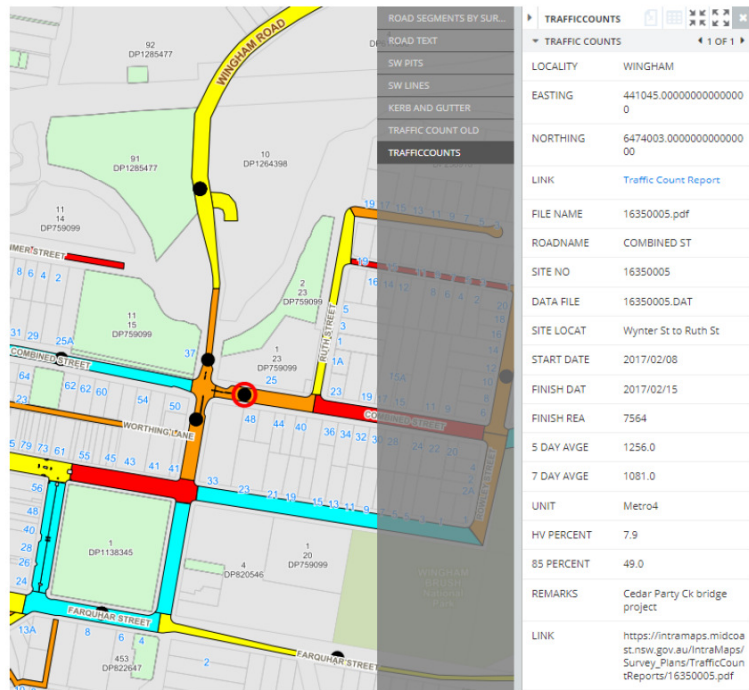
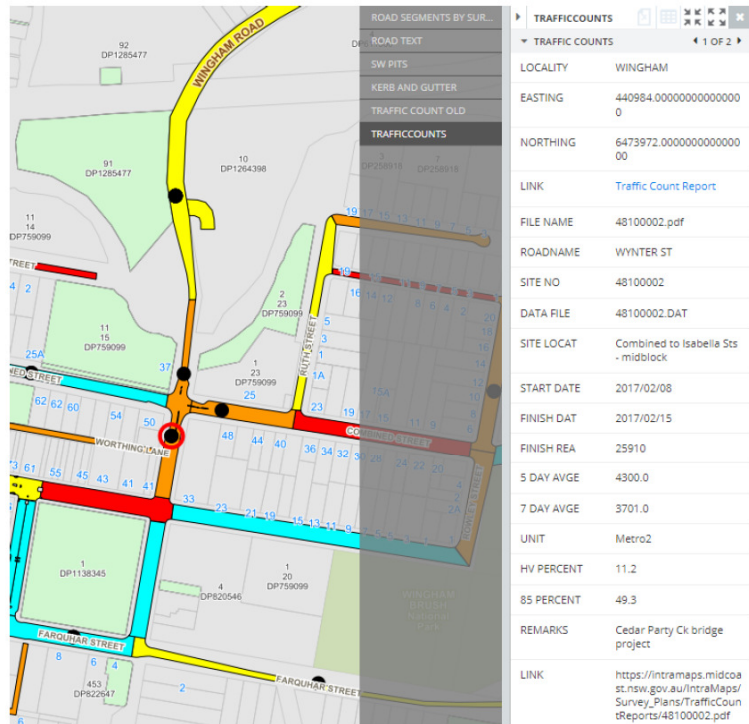
Weekly Vehicle Counts**WeeklyVehicle-724**

Site: 47150027.0.0N
 Description: Wingham Rd @ Wingham - Cedar Party Ck bridge to railway x-ing
 Filter time: 0:00 Tuesday, 1 March 2016 => 0:00 Tuesday, 8 March 2016
 Scheme: Vehicle classification (ARX)
 Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12) Dir(NESW) Sp(10,160) Headway(>0)

	Tue 01 Mar	Wed 02 Mar	Thu 03 Mar	Fri 04 Mar	Sat 05 Mar	Sun 06 Mar	Mon 07 Mar	Averages 1 - 5	1 - 7
Hour									
0000-0100	27	33	30	37	48	40	16	28.6	33.0
0100-0200	10	10	13	24	51	29	8	13.0	20.7
0200-0300	17	15	14	26	16	29	21	18.6	19.7
0300-0400	26	31	26	24	22	22	32	27.8	26.1
0400-0500	105	109	101	98	25	30	103	103.2	81.6
0500-0600	218	221	219	211	79	62	197	213.2	172.4
0600-0700	368	367	355	354	171	114	358	360.4	298.1
0700-0800	580	532	580	532	347	211	528	550.4	472.9
0800-0900	853<	853<	888<	822<	423	321	819<	847.0<	711.3<
0900-1000	694	746	775	782	667	450	704	740.2	688.3
1000-1100	652	691	685	715	743	523	605	669.6	659.1
1100-1200	604	685	662	699	771<	623<	637	657.4	668.7
1200-1300	642	675	642	713	813<	587<	634	661.2	672.3
1300-1400	608	668	651	711	624	477	601	647.8	620.0
1400-1500	748	801	753	937<	585	532	718	791.4	724.9
1500-1600	915<	970<	932<	877	531	524	951<	929.0<	814.3<
1600-1700	835	896	857	879	555	385	784	850.2	741.6
1700-1800	704	767	798	780	405	371	710	751.8	647.9
1800-1900	349	371	443	497	402	312	401	412.2	396.4
1900-2000	262	306	313	334	309	207	263	295.6	284.9
2000-2100	188	214	252	261	287	173	195	222.0	224.3
2100-2200	154	120	148	281	162	105	162	173.0	161.7
2200-2300	70	76	89	185	121	63	65	97.0	95.6
2300-2400	47	44	58	84	83	30	41	54.8	55.3
Totals									
0700-1900	8184	8655	8666	8944	6866	5316	8092	8508.2	7817.6
0600-2200	9156	9662	9734	10174	7795	5915	9070	9559.2	8786.6
0600-0000	9273	9782	9881	10443	7999	6008	9176	9711.0	8937.4
0000-0000	9676	10201	10284	10863	8240	6220	9553	10115.4	9291.0
AM Peak	0800 853	0800 853	0800 888	0800 822	1100 771	1100 623	0800 819		
PM Peak	1500 915	1500 970	1500 932	1400 937	1200 813	1200 587	1500 951		

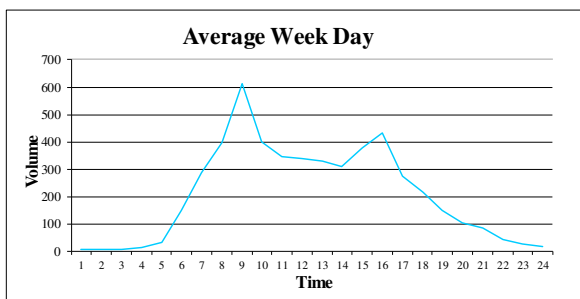
CPCB INTERSECTION TRAFFIC COUNTS 240122





Site 1 WINGHAM RD, NORTH OF RAILWAY CROSSING [60]
Eastbound

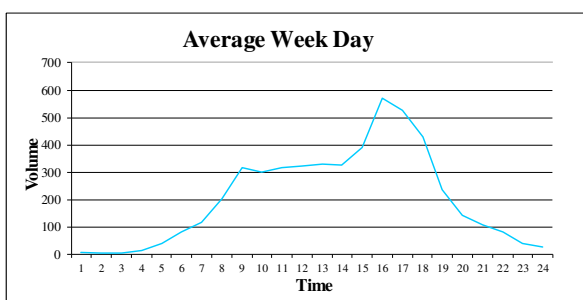
Day Time	Tue 12/03/24	Wed 13/03/2024	Thu 14/03/2024	Fri 15/03/2024	Sat 16/03/2024	Sun 17/03/2024	Mon 18/03/2024	W/Day Ave.	W/End Ave.	7 Day Ave
0:00	5	5	7	6	15	6	8	6	11	7
1:00	6	8	7	9	7	7	4	7	7	7
2:00	5	10	5	8	5	4	7	7	5	6
3:00	9	12	15	18	10	12	18	14	11	13
4:00	37	33	29	35	8	8	31	33	8	26
5:00	154	146	168	144	44	41	139	150	43	119
6:00	303	297	309	256	76	55	274	288	66	224
7:00	396	400	423	356	158	61	411	397	110	315
8:00	620	652	616	567	273	164	609	613	219	500
9:00	404	377	405	434	293	275	382	400	284	367
10:00	308	338	346	390	341	255	342	345	298	331
11:00	363	346	373	326	386	293	286	339	340	339
12:00	309	324	318	407	337	243	298	331	290	319
13:00	311	334	312	332	285	245	268	311	265	298
14:00	356	368	402	415	250	203	345	377	227	334
15:00	440	430	456	423	292	210	411	432	251	380
16:00	298	289	257	278	224	174	256	276	199	254
17:00	211	249	246	186	251	156	194	217	204	213
18:00	155	141	163	153	163	80	137	150	122	142
19:00	101	113	115	119	115	69	71	104	92	100
20:00	80	89	87	103	67	43	59	84	55	75
21:00	44	40	40	64	59	35	28	43	47	44
22:00	29	27	26	29	35	13	20	26	24	26
23:00	14	19	16	22	12	6	16	17	9	15
Total	4958	5047	5141	5080	3706	2658	4614	4968	3182	4458



Summary			
	from	to	
AM Peak	8:00 AM	9:00 AM	652
PM Peak	3:00 PM	4:00 PM	456
Week Day Average			4968
Weekend Day Average			3182
7 Day Average			4458

Site 1 WINGHAM RD, NORTH OF RAILWAY CROSSING [60]
Westbound

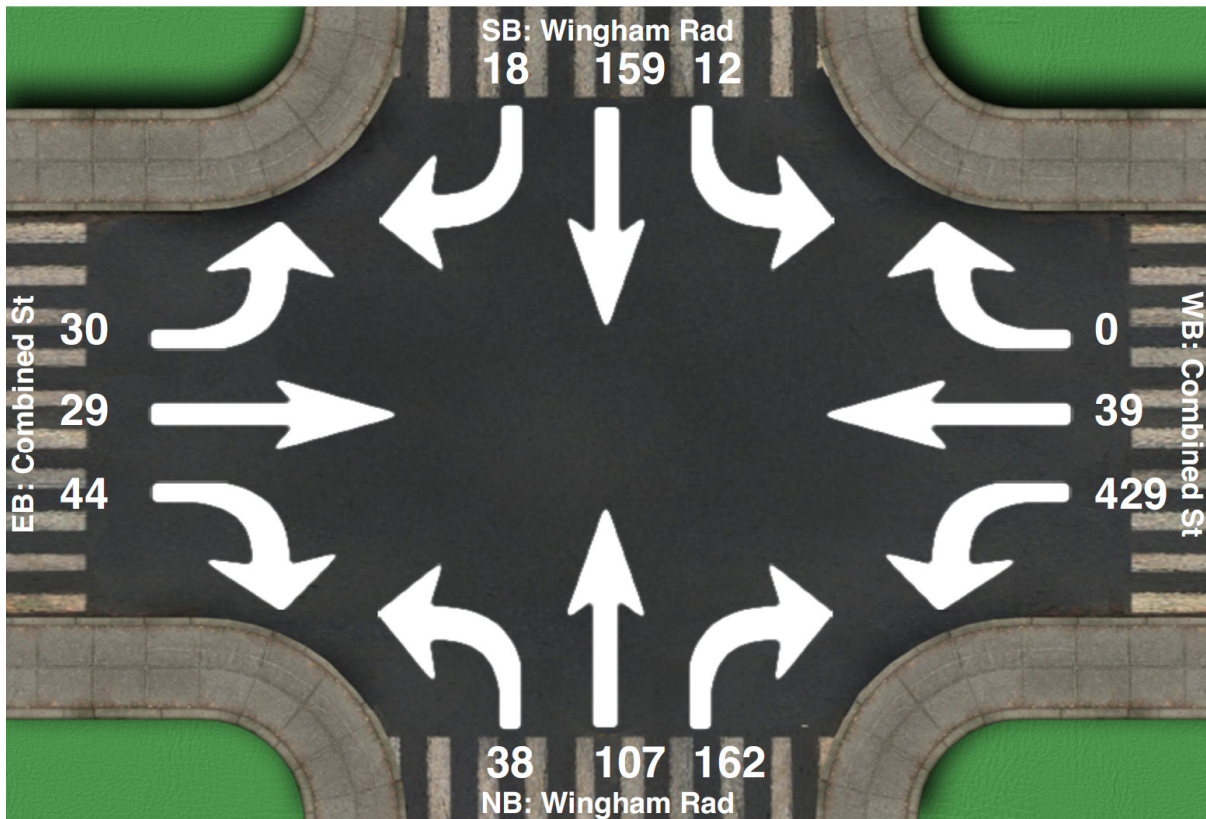
Day Time	Tue 12/03/24	Wed 13/03/2024	Thu 14/03/2024	Fri 15/03/2024	Sat 16/03/2024	Sun 17/03/2024	Mon 18/03/2024	W/Day Ave.	W/End Ave.	7 Day Ave
0:00	8	10	9	11	19	10	4	8	15	10
1:00	4	6	5	7	7	8	4	5	8	6
2:00	7	5	4	4	5	5	5	5	5	5
3:00	16	18	19	14	3	9	10	15	6	13
4:00	39	42	36	44	13	10	42	41	12	32
5:00	98	74	92	75	31	13	70	82	22	65
6:00	119	122	121	122	91	51	102	117	71	104
7:00	201	233	221	197	106	76	172	205	91	172
8:00	308	315	329	340	186	133	300	318	160	273
9:00	308	276	327	306	289	202	294	302	246	286
10:00	301	268	324	352	379	168	347	318	274	306
11:00	321	278	336	373	370	239	302	322	305	317
12:00	321	303	338	377	349	237	314	331	293	320
13:00	321	298	351	344	267	224	326	328	246	304
14:00	410	357	388	445	317	276	362	392	297	365
15:00	622	589	571	530	280	233	548	572	257	482
16:00	569	526	537	490	290	208	501	525	249	446
17:00	423	428	471	392	196	163	441	431	180	359
18:00	233	270	217	269	161	106	193	236	134	207
19:00	144	165	152	135	107	90	126	144	99	131
20:00	77	103	133	131	102	55	88	106	79	98
21:00	94	82	92	85	62	42	49	80	52	72
22:00	33	32	38	58	69	25	31	38	47	41
23:00	25	32	24	31	37	14	20	26	26	26
Total	5002	4832	5135	5132	3736	2597	4651	4950	3167	4441


Summary

	from	to	
AM Peak	11:00 AM	12:00 PM	373
PM Peak	3:00 PM	4:00 PM	622
Week Day Average			4950
Weekend Day Average			3167
7 Day Average			4441

Intersection Peak Hour

Location: Wingham Rad at Combined St, Wingham
GPS Coordinates: Lat=-31.868233, Lon=152.376144
Date: 2024-03-12
Day of week: Tuesday
Weather:
Analyst: Peter



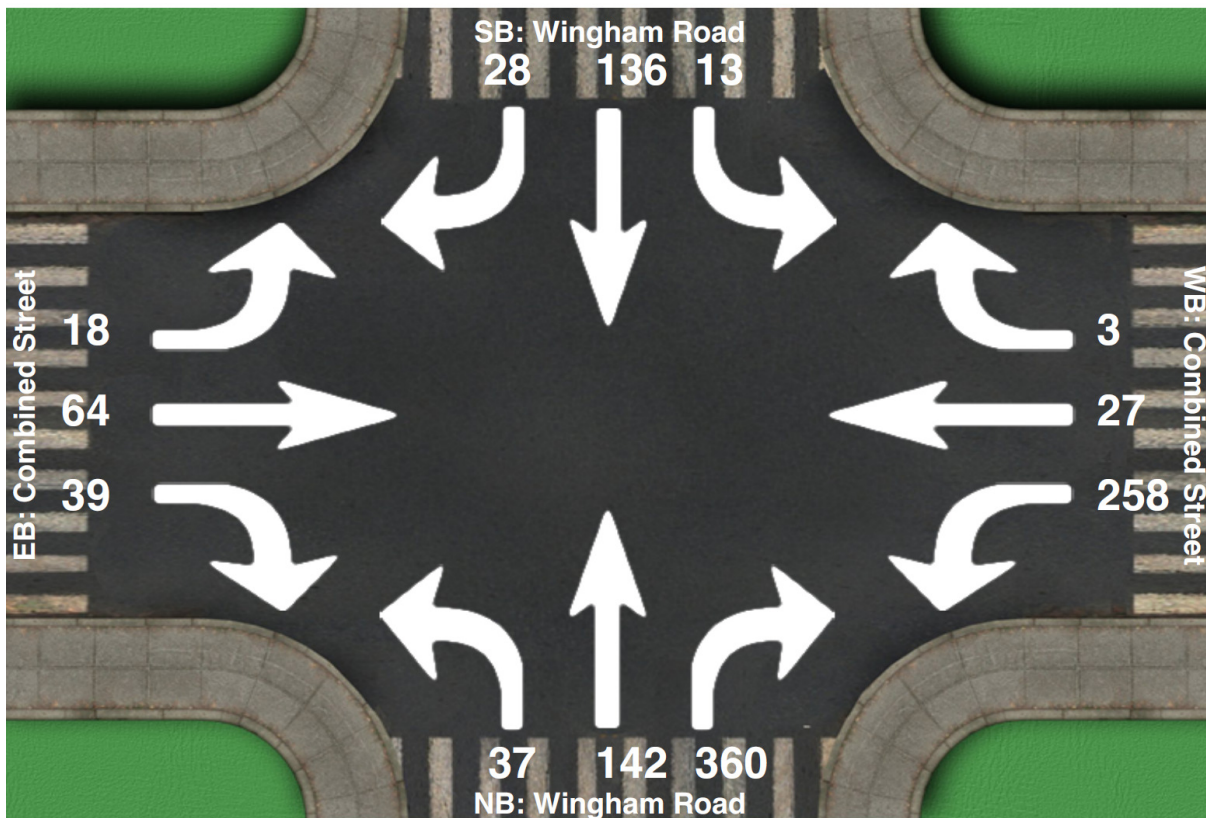
Intersection Peak Hour

08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	12	159	18	429	39	0	38	107	162	30	29	44	1067
Factor	0.75	0.74	0.64	0.92	0.44	0.00	0.86	0.76	0.86	0.62	0.60	0.69	0.89
Approach Factor	0.74			0.91			0.83			0.70			

Intersection Peak Hour

Location: Wingham Road at Combined Street, Wingham
GPS Coordinates: Lat=-31.870756, Lon=152.351773
Date: 2024-03-11
Day of week: Monday
Weather:
Analyst: Peter



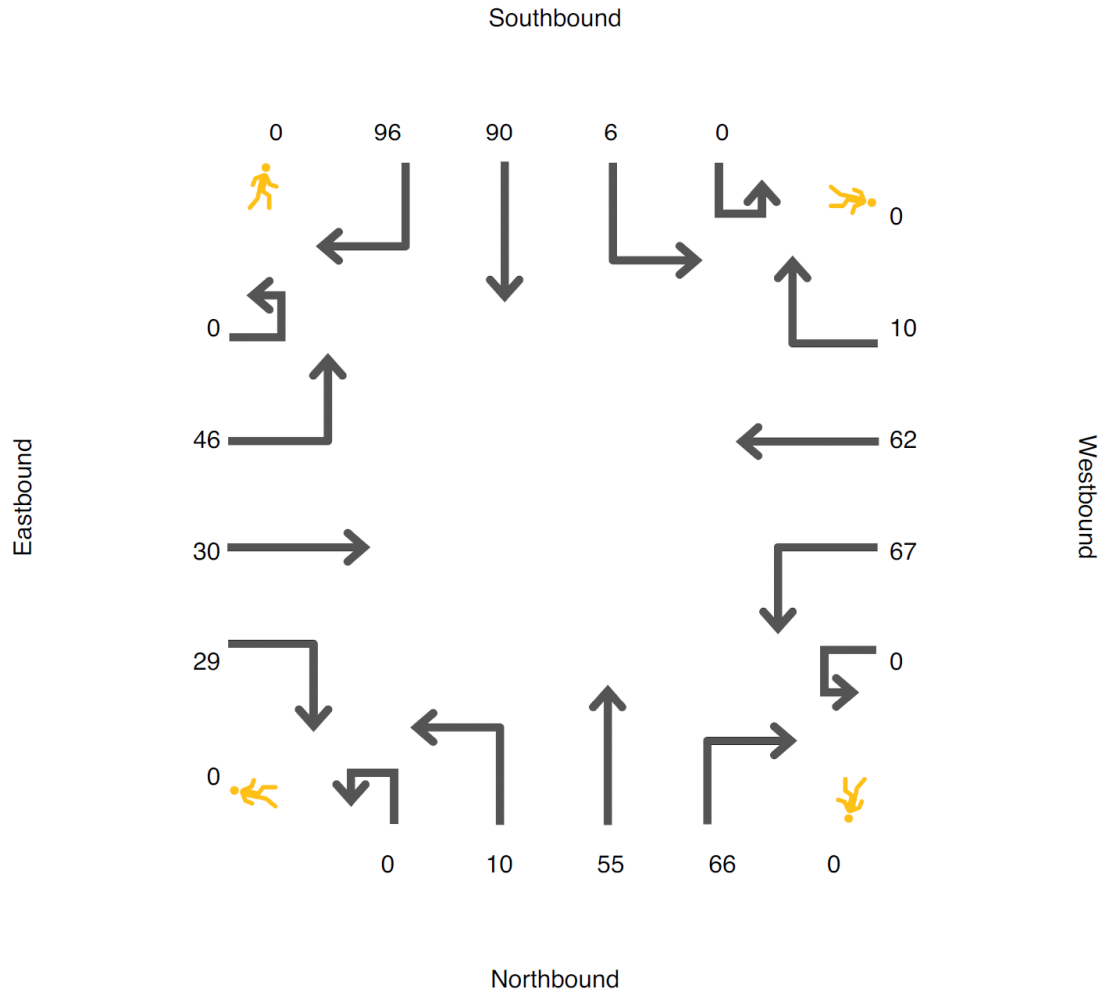
Intersection Peak Hour

15:00 - 16:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	13	136	28	258	27	3	37	142	360	18	64	39	1125
Factor	0.65	0.85	0.41	0.92	0.52	0.75	0.62	0.87	0.87	0.50	0.41	0.38	0.82
Approach Factor	0.73			0.86			0.90			0.41			

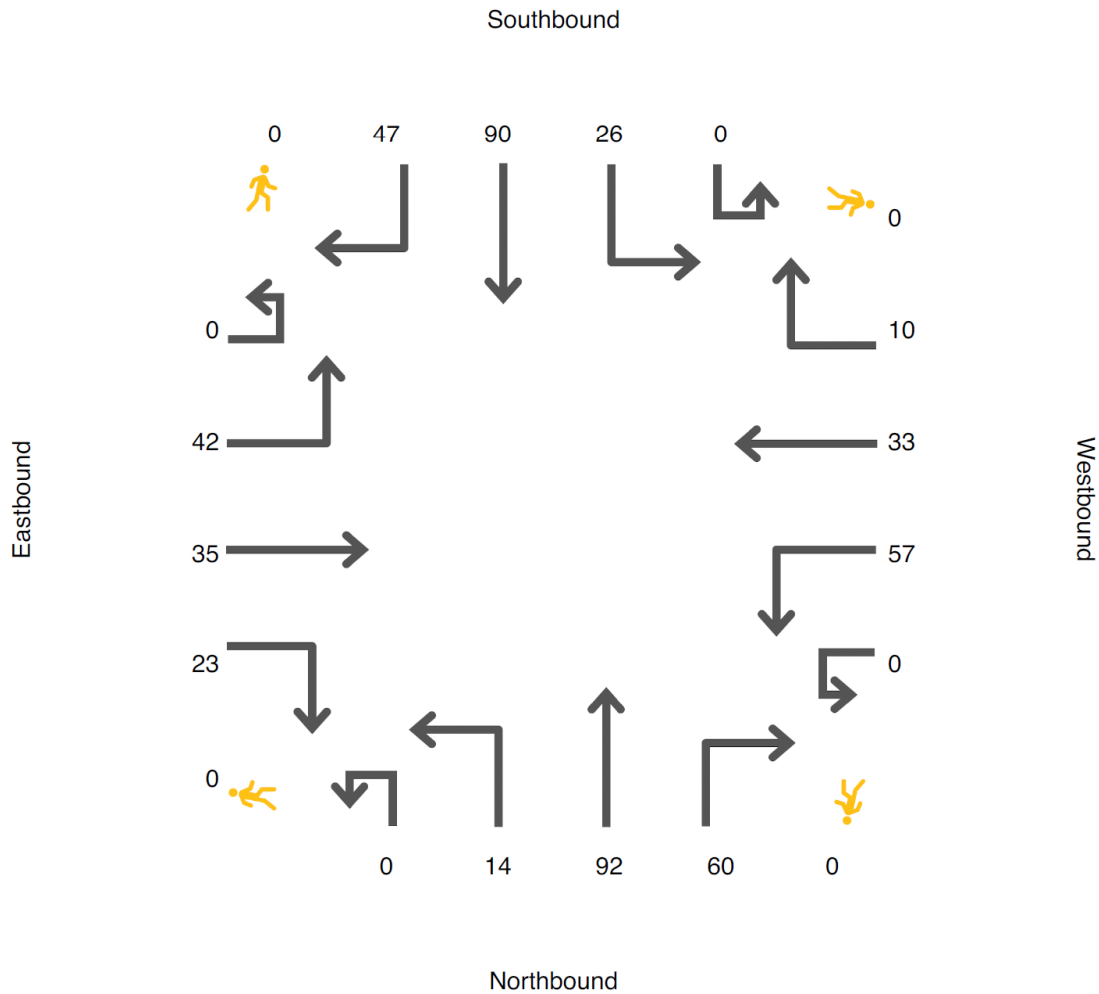
Turning Movement Count

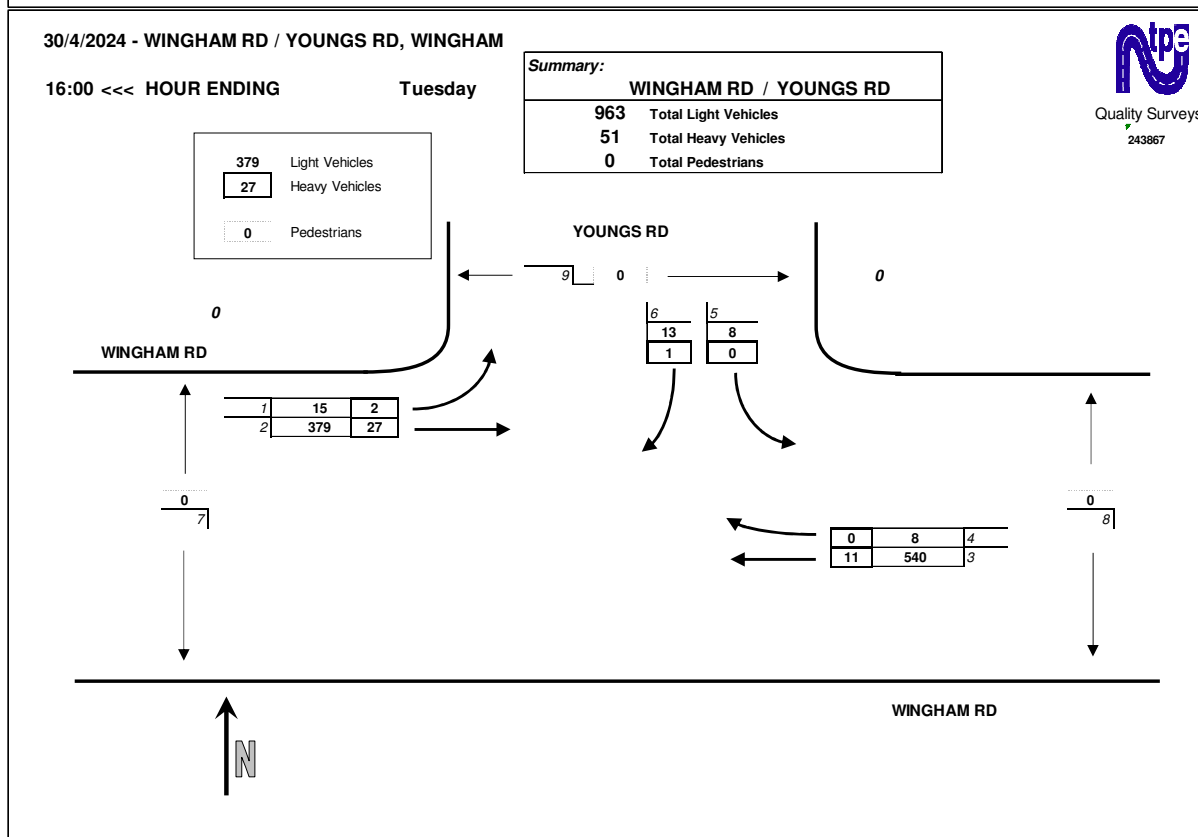
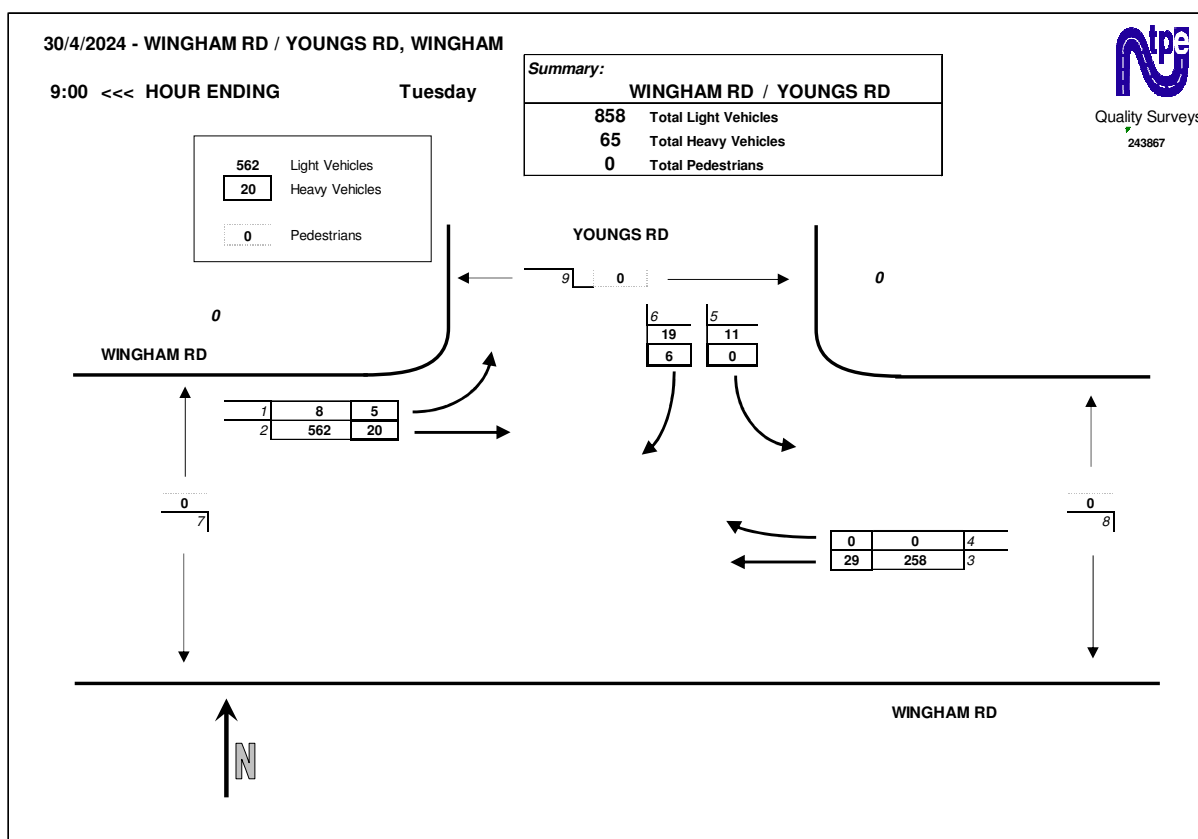
Study Name: Wingham Pp
Date: Tuesday, Mar 12 2024
Location: Wynter / Isabella 120324 AM
Observer: Jeff
Weather:
Comments: ""



Turning Movement Count

Study Name: Wingham PP
 Date: Monday, Mar 11 2024
 Location: Wynter St / Isabella Street 3 pm to 4 pm 110324
 Observer: Jeff
 Weather:
 Comments: ""





APPENDIX 3

SIDRA MOVEMENT TABLES

MOVEMENT SUMMARY

 Site: 101 [2024 AM Combined (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Future Wynter Street / Combined Street / Wingham Road roundabout

March 2024 counts

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: Wynter Street															
1	L2	All MCs	13	2.0	13	2.0	0.179	5.2	LOS A	1.0	6.8	0.43	0.51	0.43	52.7
2	T1	All MCs	167	2.0	167	2.0	0.179	5.4	LOS A	1.0	6.8	0.43	0.51	0.43	53.0
3	R2	All MCs	19	2.0	19	2.0	0.179	10.0	LOS A	1.0	6.8	0.43	0.51	0.43	52.1
Approach			199	2.0	199	2.0	0.179	5.8	LOS A	1.0	6.8	0.43	0.51	0.43	52.9
East: Combined Street															
4	L2	All MCs	32	2.0	32	2.0	0.100	5.3	LOS A	0.5	3.7	0.44	0.59	0.44	51.9
5	T1	All MCs	31	2.0	31	2.0	0.100	5.5	LOS A	0.5	3.7	0.44	0.59	0.44	52.3
6	R2	All MCs	46	2.0	46	2.0	0.100	10.1	LOS A	0.5	3.7	0.44	0.59	0.44	51.4
Approach			108	2.0	108	2.0	0.100	7.4	LOS A	0.5	3.7	0.44	0.59	0.44	51.8
North: Wynter Sreet / Wingham Road															
7	L2	All MCs	40	2.0	40	2.0	0.230	4.2	LOS A	1.4	10.0	0.22	0.53	0.22	52.3
8	T1	All MCs	113	2.0	113	2.0	0.230	4.4	LOS A	1.4	10.0	0.22	0.53	0.22	52.6
9	R2	All MCs	171	2.0	171	2.0	0.230	9.0	LOS A	1.4	10.0	0.22	0.53	0.22	51.7
Approach			323	2.0	323	2.0	0.230	6.8	LOS A	1.4	10.0	0.22	0.53	0.22	52.1
West: Combined Street															
10	L2	All MCs	452	2.0	452	2.0	0.426	5.5	LOS A	3.0	21.5	0.53	0.55	0.53	53.1
11	T1	All MCs	41	2.0	41	2.0	0.426	5.7	LOS A	3.0	21.5	0.53	0.55	0.53	53.5
12	R2	All MCs	1	2.0	1	2.0	0.426	10.3	LOS A	3.0	21.5	0.53	0.55	0.53	52.5
Approach			494	2.0	494	2.0	0.426	5.5	LOS A	3.0	21.5	0.53	0.55	0.53	53.1
All Vehicles			1124	2.0	1124	2.0	0.426	6.1	LOS A	3.0	21.5	0.42	0.54	0.42	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: 101 [2024 PM Combined (Site Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Future Wynter Street / Combined Street / Wingham Road roundabout
March 2024 counts
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: Wynter Street															
1	L2	All MCs	14	2.0	14	2.0	0.191	6.7	LOS A	1.1	7.7	0.60	0.62	0.60	51.7
2	T1	All MCs	133	2.0	133	2.0	0.191	6.9	LOS A	1.1	7.7	0.60	0.62	0.60	52.1
3	R2	All MCs	29	2.0	29	2.0	0.191	11.5	LOS A	1.1	7.7	0.60	0.62	0.60	51.2
Approach			176	2.0	176	2.0	0.191	7.6	LOS A	1.1	7.7	0.60	0.62	0.60	51.9
East: Combined Street															
4	L2	All MCs	19	2.0	19	2.0	0.144	6.9	LOS A	0.8	5.8	0.61	0.65	0.61	51.2
5	T1	All MCs	67	2.0	67	2.0	0.144	7.1	LOS A	0.8	5.8	0.61	0.65	0.61	51.6
6	R2	All MCs	41	2.0	41	2.0	0.144	11.7	LOS A	0.8	5.8	0.61	0.65	0.61	50.7
Approach			127	2.0	127	2.0	0.144	8.5	LOS A	0.8	5.8	0.61	0.65	0.61	51.3
North: Wynter Sreet / Wingham Road															
7	L2	All MCs	39	2.0	39	2.0	0.392	4.2	LOS A	2.8	20.1	0.26	0.55	0.26	51.7
8	T1	All MCs	149	2.0	149	2.0	0.392	4.4	LOS A	2.8	20.1	0.26	0.55	0.26	52.1
9	R2	All MCs	379	2.0	379	2.0	0.392	9.1	LOS A	2.8	20.1	0.26	0.55	0.26	51.2
Approach			567	2.0	567	2.0	0.392	7.5	LOS A	2.8	20.1	0.26	0.55	0.26	51.5
West: Combined Street															
10	L2	All MCs	272	2.0	272	2.0	0.264	5.1	LOS A	1.6	11.7	0.45	0.52	0.45	53.3
11	T1	All MCs	28	2.0	28	2.0	0.264	5.2	LOS A	1.6	11.7	0.45	0.52	0.45	53.7
12	R2	All MCs	3	2.0	3	2.0	0.264	9.9	LOS A	1.6	11.7	0.45	0.52	0.45	52.8
Approach			303	2.0	303	2.0	0.264	5.1	LOS A	1.6	11.7	0.45	0.52	0.45	53.3
All Vehicles			1174	2.0	1174	2.0	0.392	7.0	LOS A	2.8	20.1	0.40	0.56	0.40	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: 101 [2029 AM Combined + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Future Wynter Street / Combined Street / Wingham Road roundabout

March 2024 counts

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 5 years

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. veh Dist] m		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wynter Street															
1	L2	All MCs	14	2.0	14	2.0	0.200	5.4	LOS A	1.1	7.8	0.46	0.52	0.46	52.5
2	T1	All MCs	183	2.0	183	2.0	0.200	5.6	LOS A	1.1	7.8	0.46	0.52	0.46	52.9
3	R2	All MCs	21	2.0	21	2.0	0.200	10.2	LOS A	1.1	7.8	0.46	0.52	0.46	52.0
Approach			218	2.0	218	2.0	0.200	6.0	LOS A	1.1	7.8	0.46	0.52	0.46	52.8
East: Combined Street															
4	L2	All MCs	34	2.0	34	2.0	0.113	5.6	LOS A	0.6	4.3	0.48	0.60	0.48	51.8
5	T1	All MCs	33	2.0	33	2.0	0.113	5.7	LOS A	0.6	4.3	0.48	0.60	0.48	52.1
6	R2	All MCs	50	2.0	50	2.0	0.113	10.4	LOS A	0.6	4.3	0.48	0.60	0.48	51.3
Approach			118	2.0	118	2.0	0.113	7.7	LOS A	0.6	4.3	0.48	0.60	0.48	51.7
North: Wynter Sreet / Wingham Road															
7	L2	All MCs	45	2.0	45	2.0	0.266	4.2	LOS A	1.7	12.1	0.25	0.53	0.25	52.2
8	T1	All MCs	140	2.0	140	2.0	0.266	4.4	LOS A	1.7	12.1	0.25	0.53	0.25	52.6
9	R2	All MCs	188	2.0	188	2.0	0.266	9.0	LOS A	1.7	12.1	0.25	0.53	0.25	51.7
Approach			372	2.0	372	2.0	0.266	6.7	LOS A	1.7	12.1	0.25	0.53	0.25	52.1
West: Combined Street															
10	L2	All MCs	492	2.0	492	2.0	0.476	5.7	LOS A	3.5	25.2	0.58	0.57	0.58	52.9
11	T1	All MCs	45	2.0	45	2.0	0.476	5.9	LOS A	3.5	25.2	0.58	0.57	0.58	53.3
12	R2	All MCs	1	2.0	1	2.0	0.476	10.5	LOS A	3.5	25.2	0.58	0.57	0.58	52.4
Approach			538	2.0	538	2.0	0.476	5.7	LOS A	3.5	25.2	0.58	0.57	0.58	52.9
All Vehicles			1246	2.0	1246	2.0	0.476	6.3	LOS A	3.5	25.2	0.45	0.55	0.45	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.

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MOVEMENT SUMMARY

 Site: 101 [2029 PM Combined + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Future Wynter Street / Combined Street / Wingham Road roundabout

March 2024 counts

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 5 years

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: Wynter Street															
1	L2	All MCs	15	2.0	15	2.0	0.235	7.1	LOS A	1.4	9.8	0.64	0.64	0.64	51.5
2	T1	All MCs	161	2.0	161	2.0	0.235	7.3	LOS A	1.4	9.8	0.64	0.64	0.64	51.9
3	R2	All MCs	32	2.0	32	2.0	0.235	11.9	LOS A	1.4	9.8	0.64	0.64	0.64	51.0
Approach			208	2.0	208	2.0	0.235	8.0	LOS A	1.4	9.8	0.64	0.64	0.64	51.7
East: Combined Street															
4	L2	All MCs	21	2.0	21	2.0	0.165	7.3	LOS A	1.0	6.8	0.65	0.67	0.65	51.0
5	T1	All MCs	73	2.0	73	2.0	0.165	7.5	LOS A	1.0	6.8	0.65	0.67	0.65	51.3
6	R2	All MCs	45	2.0	45	2.0	0.165	12.1	LOS A	1.0	6.8	0.65	0.67	0.65	50.5
Approach			139	2.0	139	2.0	0.165	9.0	LOS A	1.0	6.8	0.65	0.67	0.65	51.0
North: Wynter Sreet / Wingham Road															
7	L2	All MCs	44	2.0	44	2.0	0.435	4.3	LOS A	3.3	23.7	0.29	0.55	0.29	51.6
8	T1	All MCs	168	2.0	168	2.0	0.435	4.5	LOS A	3.3	23.7	0.29	0.55	0.29	52.0
9	R2	All MCs	415	2.0	415	2.0	0.435	9.1	LOS A	3.3	23.7	0.29	0.55	0.29	51.1
Approach			626	2.0	626	2.0	0.435	7.5	LOS A	3.3	23.7	0.29	0.55	0.29	51.4
West: Combined Street															
10	L2	All MCs	298	2.0	298	2.0	0.300	5.3	LOS A	1.9	13.8	0.50	0.54	0.50	53.1
11	T1	All MCs	31	2.0	31	2.0	0.300	5.5	LOS A	1.9	13.8	0.50	0.54	0.50	53.5
12	R2	All MCs	3	2.0	3	2.0	0.300	10.1	LOS A	1.9	13.8	0.50	0.54	0.50	52.6
Approach			332	2.0	332	2.0	0.300	5.4	LOS A	1.9	13.8	0.50	0.54	0.50	53.2
All Vehicles			1306	2.0	1306	2.0	0.435	7.2	LOS A	3.3	23.7	0.44	0.57	0.44	51.8

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

 Site: 101 [2034 AM Combined + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Future Wynter Street / Combined Street / Wingham Road roundabout

March 2024 counts

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 10 years

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. veh]	Dist m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wynter Street															
1	L2	All MCs	15	2.0	15	2.0	0.225	5.6	LOS A	1.3	9.0	0.49	0.54	0.49	52.4
2	T1	All MCs	203	2.0	203	2.0	0.225	5.8	LOS A	1.3	9.0	0.49	0.54	0.49	52.8
3	R2	All MCs	22	2.0	22	2.0	0.225	10.4	LOS A	1.3	9.0	0.49	0.54	0.49	51.9
Approach			240	2.0	240	2.0	0.225	6.2	LOS A	1.3	9.0	0.49	0.54	0.49	52.7
East: Combined Street															
4	L2	All MCs	37	2.0	37	2.0	0.128	5.9	LOS A	0.7	5.0	0.52	0.62	0.52	51.6
5	T1	All MCs	36	2.0	36	2.0	0.128	6.0	LOS A	0.7	5.0	0.52	0.62	0.52	52.0
6	R2	All MCs	55	2.0	55	2.0	0.128	10.7	LOS A	0.7	5.0	0.52	0.62	0.52	51.1
Approach			128	2.0	128	2.0	0.128	8.0	LOS A	0.7	5.0	0.52	0.62	0.52	51.5
North: Wynter Sreet / Wingham Road															
7	L2	All MCs	50	2.0	50	2.0	0.306	4.3	LOS A	2.1	14.7	0.27	0.52	0.27	52.2
8	T1	All MCs	171	2.0	171	2.0	0.306	4.5	LOS A	2.1	14.7	0.27	0.52	0.27	52.6
9	R2	All MCs	207	2.0	207	2.0	0.306	9.1	LOS A	2.1	14.7	0.27	0.52	0.27	51.7
Approach			427	2.0	427	2.0	0.306	6.7	LOS A	2.1	14.7	0.27	0.52	0.27	52.1
West: Combined Street															
10	L2	All MCs	537	2.0	537	2.0	0.531	6.0	LOS A	4.2	29.7	0.64	0.59	0.64	52.7
11	T1	All MCs	49	2.0	49	2.0	0.531	6.2	LOS A	4.2	29.7	0.64	0.59	0.64	53.1
12	R2	All MCs	1	2.0	1	2.0	0.531	10.9	LOS A	4.2	29.7	0.64	0.59	0.64	52.2
Approach			587	2.0	587	2.0	0.531	6.1	LOS A	4.2	29.7	0.64	0.59	0.64	52.7
All Vehicles			1383	2.0	1383	2.0	0.531	6.5	LOS A	4.2	29.7	0.49	0.56	0.49	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.

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MOVEMENT SUMMARY

 Site: 101 [2034 PM Combined + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Future Wynter Street / Combined Street / Wingham Road roundabout

March 2024 counts

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 10 years

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: Wynter Street															
1	L2	All MCs	16	2.0	16	2.0	0.287	7.6	LOS A	1.8	12.6	0.69	0.66	0.69	51.3
2	T1	All MCs	193	2.0	193	2.0	0.287	7.8	LOS A	1.8	12.6	0.69	0.66	0.69	51.7
3	R2	All MCs	35	2.0	35	2.0	0.287	12.5	LOS A	1.8	12.6	0.69	0.66	0.69	50.8
Approach			244	2.0	244	2.0	0.287	8.5	LOS A	1.8	12.6	0.69	0.66	0.69	51.5
East: Combined Street															
4	L2	All MCs	22	2.0	22	2.0	0.190	7.9	LOS A	1.1	8.1	0.70	0.69	0.70	50.7
5	T1	All MCs	80	2.0	80	2.0	0.190	8.1	LOS A	1.1	8.1	0.70	0.69	0.70	51.1
6	R2	All MCs	49	2.0	49	2.0	0.190	12.7	LOS A	1.1	8.1	0.70	0.69	0.70	50.2
Approach			151	2.0	151	2.0	0.190	9.5	LOS A	1.1	8.1	0.70	0.69	0.70	50.7
North: Wynter Sreet / Wingham Road															
7	L2	All MCs	47	2.0	47	2.0	0.482	4.4	LOS A	3.9	28.1	0.32	0.54	0.32	51.6
8	T1	All MCs	191	2.0	191	2.0	0.482	4.6	LOS A	3.9	28.1	0.32	0.54	0.32	51.9
9	R2	All MCs	452	2.0	452	2.0	0.482	9.2	LOS A	3.9	28.1	0.32	0.54	0.32	51.1
Approach			690	2.0	690	2.0	0.482	7.6	LOS A	3.9	28.1	0.32	0.54	0.32	51.3
West: Combined Street															
10	L2	All MCs	326	2.0	326	2.0	0.342	5.6	LOS A	2.3	16.3	0.56	0.56	0.56	53.0
11	T1	All MCs	34	2.0	34	2.0	0.342	5.8	LOS A	2.3	16.3	0.56	0.56	0.56	53.3
12	R2	All MCs	4	2.0	4	2.0	0.342	10.5	LOS A	2.3	16.3	0.56	0.56	0.56	52.4
Approach			364	2.0	364	2.0	0.342	5.7	LOS A	2.3	16.3	0.56	0.56	0.56	53.0
All Vehicles			1449	2.0	1449	2.0	0.482	7.5	LOS A	3.9	28.1	0.48	0.58	0.48	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: 101 [2040 AM Combined + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Future Wynter Street / Combined Street / Wingham Road roundabout

March 2024 counts

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 16 years

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: Wynter Street															
1	L2	All MCs	17	2.0	17	2.0	0.267	5.9	LOS A	1.6	11.1	0.53	0.56	0.53	52.2
2	T1	All MCs	234	2.0	234	2.0	0.267	6.1	LOS A	1.6	11.1	0.53	0.56	0.53	52.6
3	R2	All MCs	25	2.0	25	2.0	0.267	10.7	LOS A	1.6	11.1	0.53	0.56	0.53	51.7
Approach			276	2.0	276	2.0	0.267	6.5	LOS A	1.6	11.1	0.53	0.56	0.53	52.5
East: Combined Street															
4	L2	All MCs	41	2.0	41	2.0	0.153	6.4	LOS A	0.9	6.1	0.58	0.65	0.58	51.3
5	T1	All MCs	40	2.0	40	2.0	0.153	6.6	LOS A	0.9	6.1	0.58	0.65	0.58	51.6
6	R2	All MCs	61	2.0	61	2.0	0.153	11.3	LOS A	0.9	6.1	0.58	0.65	0.58	50.8
Approach			142	2.0	142	2.0	0.153	8.6	LOS A	0.9	6.1	0.58	0.65	0.58	51.1
North: Wynter Sreet / Wingham Road															
7	L2	All MCs	58	2.0	58	2.0	0.375	4.4	LOS A	2.8	19.8	0.31	0.51	0.31	52.2
8	T1	All MCs	230	2.0	230	2.0	0.375	4.5	LOS A	2.8	19.8	0.31	0.51	0.31	52.6
9	R2	All MCs	233	2.0	233	2.0	0.375	9.2	LOS A	2.8	19.8	0.31	0.51	0.31	51.7
Approach			521	2.0	521	2.0	0.375	6.6	LOS A	2.8	19.8	0.31	0.51	0.31	52.1
West: Combined Street															
10	L2	All MCs	597	2.0	597	2.0	0.615	7.3	LOS A	5.8	41.6	0.74	0.66	0.80	52.1
11	T1	All MCs	54	2.0	54	2.0	0.615	7.5	LOS A	5.8	41.6	0.74	0.66	0.80	52.5
12	R2	All MCs	1	2.0	1	2.0	0.615	12.1	LOS A	5.8	41.6	0.74	0.66	0.80	51.6
Approach			652	2.0	652	2.0	0.615	7.3	LOS A	5.8	41.6	0.74	0.66	0.80	52.2
All Vehicles			1591	2.0	1591	2.0	0.615	7.0	LOS A	5.8	41.6	0.55	0.59	0.57	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: 101 [2040 PM Combined + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Future Wynter Street / Combined Street / Wingham Road roundabout

March 2024 counts

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 16 years

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: Wynter Street															
1	L2	All MCs	18	2.0	18	2.0	0.388	8.5	LOS A	2.6	18.3	0.77	0.70	0.77	50.9
2	T1	All MCs	252	2.0	252	2.0	0.388	8.7	LOS A	2.6	18.3	0.77	0.70	0.77	51.3
3	R2	All MCs	39	2.0	39	2.0	0.388	13.3	LOS A	2.6	18.3	0.77	0.70	0.77	50.4
Approach			309	2.0	309	2.0	0.388	9.3	LOS A	2.6	18.3	0.77	0.70	0.77	51.1
East: Combined Street															
4	L2	All MCs	25	2.0	25	2.0	0.232	8.8	LOS A	1.5	10.5	0.76	0.72	0.76	50.1
5	T1	All MCs	88	2.0	88	2.0	0.232	9.0	LOS A	1.5	10.5	0.76	0.72	0.76	50.5
6	R2	All MCs	54	2.0	54	2.0	0.232	13.6	LOS A	1.5	10.5	0.76	0.72	0.76	49.6
Approach			167	2.0	167	2.0	0.232	10.5	LOS A	1.5	10.5	0.76	0.72	0.76	50.1
North: Wynter Sreet / Wingham Road															
7	L2	All MCs	54	2.0	54	2.0	0.550	4.5	LOS A	5.0	35.7	0.38	0.54	0.38	51.4
8	T1	All MCs	226	2.0	226	2.0	0.550	4.7	LOS A	5.0	35.7	0.38	0.54	0.38	51.8
9	R2	All MCs	503	2.0	503	2.0	0.550	9.3	LOS A	5.0	35.7	0.38	0.54	0.38	50.9
Approach			783	2.0	783	2.0	0.550	7.7	LOS A	5.0	35.7	0.38	0.54	0.38	51.2
West: Combined Street															
10	L2	All MCs	367	2.0	367	2.0	0.412	6.2	LOS A	2.9	21.0	0.65	0.61	0.65	52.6
11	T1	All MCs	37	2.0	37	2.0	0.412	6.4	LOS A	2.9	21.0	0.65	0.61	0.65	53.0
12	R2	All MCs	4	2.0	4	2.0	0.412	11.0	LOS A	2.9	21.0	0.65	0.61	0.65	52.1
Approach			408	2.0	408	2.0	0.412	6.3	LOS A	2.9	21.0	0.65	0.61	0.65	52.7
All Vehicles			1667	2.0	1667	2.0	0.550	7.9	LOS A	5.0	35.7	0.56	0.61	0.56	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: 101 [2024AM Isabella (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Wynter Street / Isabella Street give way
March 2024
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
South: Wynter Street															
1	L2	All MCs	6	22.0	6	22.0	0.114	6.0	LOS A	0.5	3.7	0.15	0.32	0.15	53.5
2	T1	All MCs	95	2.0	95	2.0	0.114	0.2	LOS A	0.5	3.7	0.15	0.32	0.15	56.7
3	R2	All MCs	101	2.0	101	2.0	0.114	5.7	LOS A	0.5	3.7	0.15	0.32	0.15	54.1
Approach			202	2.6	202	2.6	0.114	3.1	NA	0.5	3.7	0.15	0.32	0.15	55.3
East: Isabella Street															
4	L2	All MCs	48	2.0	48	2.0	0.110	5.7	LOS A	0.4	3.0	0.25	0.55	0.25	52.1
5	T1	All MCs	32	2.0	32	2.0	0.110	5.8	LOS A	0.4	3.0	0.25	0.55	0.25	52.5
6	R2	All MCs	31	2.0	31	2.0	0.110	8.5	LOS A	0.4	3.0	0.25	0.55	0.25	51.8
Approach			111	2.0	111	2.0	0.110	6.5	LOS A	0.4	3.0	0.25	0.55	0.25	52.1
North: Wynter Street															
7	L2	All MCs	11	2.0	11	2.0	0.079	5.9	LOS A	0.4	2.5	0.19	0.36	0.19	54.0
8	T1	All MCs	58	2.0	58	2.0	0.079	0.2	LOS A	0.4	2.5	0.19	0.36	0.19	56.3
9	R2	All MCs	69	2.0	69	2.0	0.079	5.8	LOS A	0.4	2.5	0.19	0.36	0.19	53.8
Approach			138	2.0	138	2.0	0.079	3.5	NA	0.4	2.5	0.19	0.36	0.19	54.8
West: Isabella Street															
10	L2	All MCs	71	2.0	71	2.0	0.131	5.9	LOS A	0.5	3.7	0.29	0.56	0.29	52.4
11	T1	All MCs	65	2.0	65	2.0	0.131	5.8	LOS A	0.5	3.7	0.29	0.56	0.29	52.9
12	R2	All MCs	11	2.0	11	2.0	0.131	8.1	LOS A	0.5	3.7	0.29	0.56	0.29	52.2
Approach			146	2.0	146	2.0	0.131	6.0	LOS A	0.5	3.7	0.29	0.56	0.29	52.6
All Vehicles			597	2.2	597	2.2	0.131	4.5	NA	0.5	3.7	0.21	0.43	0.21	53.9

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 (Akcelik M3D).

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

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

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MOVEMENT SUMMARY

▽ Site: 101 [2024PM Isabella (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Wynter Street / Isabella Street give way

March 2024

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
South: Wynter Street															
1	L2	All MCs	27	22.0	27	22.0	0.096	6.1	LOS A	0.3	2.4	0.15	0.29	0.15	53.9
2	T1	All MCs	95	2.0	95	2.0	0.096	0.2	LOS A	0.3	2.4	0.15	0.29	0.15	57.2
3	R2	All MCs	48	2.0	48	2.0	0.096	5.8	LOS A	0.3	2.4	0.15	0.29	0.15	54.5
Approach			171	5.2	171	5.2	0.096	2.7	NA	0.3	2.4	0.15	0.29	0.15	55.9
East: Isabella Street															
4	L2	All MCs	44	2.0	44	2.0	0.102	5.9	LOS A	0.4	2.7	0.30	0.57	0.30	52.2
5	T1	All MCs	37	2.0	37	2.0	0.102	5.8	LOS A	0.4	2.7	0.30	0.57	0.30	52.7
6	R2	All MCs	24	2.0	24	2.0	0.102	7.9	LOS A	0.4	2.7	0.30	0.57	0.30	52.0
Approach			105	2.0	105	2.0	0.102	6.3	LOS A	0.4	2.7	0.30	0.57	0.30	52.3
North: Wynter Street															
7	L2	All MCs	15	2.0	15	2.0	0.099	5.9	LOS A	0.4	2.8	0.19	0.30	0.19	54.6
8	T1	All MCs	97	2.0	97	2.0	0.099	0.2	LOS A	0.4	2.8	0.19	0.30	0.19	57.0
9	R2	All MCs	63	2.0	63	2.0	0.099	5.9	LOS A	0.4	2.8	0.19	0.30	0.19	54.3
Approach			175	2.0	175	2.0	0.099	2.8	NA	0.4	2.8	0.19	0.30	0.19	55.8
West: Isabella Street															
10	L2	All MCs	60	2.0	60	2.0	0.091	5.9	LOS A	0.4	2.5	0.26	0.55	0.26	52.4
11	T1	All MCs	35	2.0	35	2.0	0.091	5.7	LOS A	0.4	2.5	0.26	0.55	0.26	52.8
12	R2	All MCs	11	2.0	11	2.0	0.091	7.9	LOS A	0.4	2.5	0.26	0.55	0.26	52.1
Approach			105	2.0	105	2.0	0.091	6.0	LOS A	0.4	2.5	0.26	0.55	0.26	52.5
All Vehicles			556	3.0	556	3.0	0.102	4.0	NA	0.4	2.8	0.21	0.39	0.21	54.5

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 (Akcelik M3D).

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

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

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MOVEMENT SUMMARY

▼ Site: 101 [2029AM Isabella + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Wynter Street / Isabella Street give way

March 2024

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh Dist] veh m		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wynter Street															
1	L2	All MCs	7	22.0	7	22.0	0.129	6.1	LOS A	0.6	4.2	0.18	0.33	0.18	53.5
2	T1	All MCs	107	2.0	107	2.0	0.129	0.2	LOS A	0.6	4.2	0.18	0.33	0.18	56.7
3	R2	All MCs	112	2.0	112	2.0	0.129	5.8	LOS A	0.6	4.2	0.18	0.33	0.18	54.0
Approach			225	2.6	225	2.6	0.129	3.1	NA	0.6	4.2	0.18	0.33	0.18	55.2
East: Isabella Street															
4	L2	All MCs	53	2.0	53	2.0	0.129	5.8	LOS A	0.5	3.5	0.30	0.56	0.30	51.8
5	T1	All MCs	35	2.0	35	2.0	0.129	6.1	LOS A	0.5	3.5	0.30	0.56	0.30	52.3
6	R2	All MCs	34	2.0	34	2.0	0.129	9.2	LOS A	0.5	3.5	0.30	0.56	0.30	51.6
Approach			122	2.0	122	2.0	0.129	6.8	LOS A	0.5	3.5	0.30	0.56	0.30	51.9
North: Wynter Street															
7	L2	All MCs	14	2.0	14	2.0	0.099	5.9	LOS A	0.5	3.2	0.21	0.36	0.21	54.0
8	T1	All MCs	72	2.0	72	2.0	0.099	0.3	LOS A	0.5	3.2	0.21	0.36	0.21	56.3
9	R2	All MCs	86	2.0	86	2.0	0.099	5.8	LOS A	0.5	3.2	0.21	0.36	0.21	53.7
Approach			172	2.0	172	2.0	0.099	3.5	NA	0.5	3.2	0.21	0.36	0.21	54.8
West: Isabella Street															
10	L2	All MCs	79	2.0	79	2.0	0.152	5.9	LOS A	0.6	4.3	0.32	0.57	0.32	52.3
11	T1	All MCs	72	2.0	72	2.0	0.152	6.2	LOS A	0.6	4.3	0.32	0.57	0.32	52.7
12	R2	All MCs	12	2.0	12	2.0	0.152	8.7	LOS A	0.6	4.3	0.32	0.57	0.32	52.0
Approach			163	2.0	163	2.0	0.152	6.2	LOS A	0.6	4.3	0.32	0.57	0.32	52.4
All Vehicles			682	2.2	682	2.2	0.152	4.6	NA	0.6	4.3	0.24	0.44	0.24	53.8

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

▼ Site: 101 [2029PM Isabella + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Wynter Street / Isabella Street give way

March 2024

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh Dist] m		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wynter Street															
1	L2	All MCs	30	22.0	30	22.0	0.112	6.1	LOS A	0.4	2.8	0.16	0.28	0.16	54.0
2	T1	All MCs	114	2.0	114	2.0	0.112	0.2	LOS A	0.4	2.8	0.16	0.28	0.16	57.3
3	R2	All MCs	53	2.0	53	2.0	0.112	5.9	LOS A	0.4	2.8	0.16	0.28	0.16	54.6
Approach			198	5.1	198	5.1	0.112	2.6	NA	0.4	2.8	0.16	0.28	0.16	56.0
East: Isabella Street															
4	L2	All MCs	49	2.0	49	2.0	0.122	5.9	LOS A	0.5	3.3	0.34	0.58	0.34	52.0
5	T1	All MCs	41	2.0	41	2.0	0.122	6.1	LOS A	0.5	3.3	0.34	0.58	0.34	52.4
6	R2	All MCs	29	2.0	29	2.0	0.122	8.5	LOS A	0.5	3.3	0.34	0.58	0.34	51.7
Approach			119	2.0	119	2.0	0.122	6.6	LOS A	0.5	3.3	0.34	0.58	0.34	52.1
North: Wynter Street															
7	L2	All MCs	16	2.0	16	2.0	0.113	6.0	LOS A	0.5	3.3	0.21	0.31	0.21	54.6
8	T1	All MCs	110	2.0	110	2.0	0.113	0.3	LOS A	0.5	3.3	0.21	0.31	0.21	56.9
9	R2	All MCs	72	2.0	72	2.0	0.113	6.0	LOS A	0.5	3.3	0.21	0.31	0.21	54.3
Approach			199	2.0	199	2.0	0.113	2.8	NA	0.5	3.3	0.21	0.31	0.21	55.7
West: Isabella Street															
10	L2	All MCs	72	2.0	72	2.0	0.109	5.9	LOS A	0.4	3.0	0.29	0.56	0.29	52.3
11	T1	All MCs	38	2.0	38	2.0	0.109	6.0	LOS A	0.4	3.0	0.29	0.56	0.29	52.7
12	R2	All MCs	12	2.0	12	2.0	0.109	8.4	LOS A	0.4	3.0	0.29	0.56	0.29	52.0
Approach			122	2.0	122	2.0	0.109	6.2	LOS A	0.4	3.0	0.29	0.56	0.29	52.4
All Vehicles			637	2.9	637	2.9	0.122	4.1	NA	0.5	3.3	0.23	0.40	0.23	54.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

▼ Site: 101 [2034AM Isabella + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Wynter Street / Isabella Street give way

March 2024

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh Dist] m		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Wynter Street															
1	L2	All MCs	8	22.0	8	22.0	0.145	6.1	LOS A	0.7	4.8	0.20	0.33	0.20	53.4
2	T1	All MCs	121	2.0	121	2.0	0.145	0.3	LOS A	0.7	4.8	0.20	0.33	0.20	56.6
3	R2	All MCs	123	2.0	123	2.0	0.145	5.8	LOS A	0.7	4.8	0.20	0.33	0.20	54.0
Approach			251	2.6	251	2.6	0.145	3.2	NA	0.7	4.8	0.20	0.33	0.20	55.2
East: Isabella Street															
4	L2	All MCs	59	2.0	59	2.0	0.154	5.9	LOS A	0.6	4.2	0.35	0.57	0.35	51.5
5	T1	All MCs	38	2.0	38	2.0	0.154	6.6	LOS A	0.6	4.2	0.35	0.57	0.35	51.9
6	R2	All MCs	38	2.0	38	2.0	0.154	10.1	LOS A	0.6	4.2	0.35	0.57	0.35	51.3
Approach			136	2.0	136	2.0	0.154	7.3	LOS A	0.6	4.2	0.35	0.57	0.35	51.6
North: Wynter Street															
7	L2	All MCs	18	2.0	18	2.0	0.122	6.0	LOS A	0.6	4.1	0.23	0.37	0.23	53.9
8	T1	All MCs	87	2.0	87	2.0	0.122	0.3	LOS A	0.6	4.1	0.23	0.37	0.23	56.2
9	R2	All MCs	104	2.0	104	2.0	0.122	5.9	LOS A	0.6	4.1	0.23	0.37	0.23	53.6
Approach			209	2.0	209	2.0	0.122	3.6	NA	0.6	4.1	0.23	0.37	0.23	54.7
West: Isabella Street															
10	L2	All MCs	90	2.0	90	2.0	0.179	6.0	LOS A	0.7	5.2	0.35	0.58	0.35	52.1
11	T1	All MCs	80	2.0	80	2.0	0.179	6.7	LOS A	0.7	5.2	0.35	0.58	0.35	52.5
12	R2	All MCs	13	2.0	13	2.0	0.179	9.4	LOS A	0.7	5.2	0.35	0.58	0.35	51.8
Approach			182	2.0	182	2.0	0.179	6.5	LOS A	0.7	5.2	0.35	0.58	0.35	52.2
All Vehicles			779	2.2	779	2.2	0.179	4.8	NA	0.7	5.2	0.27	0.44	0.27	53.7

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

▼ Site: 101 [2034PM Isabella + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Wynter Street / Isabella Street give way

March 2024

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		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: Wynter Street															
1	L2	All MCs	33	22.0	33	22.0	0.129	6.2	LOS A	0.4	3.2	0.17	0.28	0.17	54.0
2	T1	All MCs	135	2.0	135	2.0	0.129	0.2	LOS A	0.4	3.2	0.17	0.28	0.17	57.3
3	R2	All MCs	59	2.0	59	2.0	0.129	6.0	LOS A	0.4	3.2	0.17	0.28	0.17	54.6
Approach			227	4.9	227	4.9	0.129	2.6	NA	0.4	3.2	0.17	0.28	0.17	56.1
East: Isabella Street															
4	L2	All MCs	54	2.0	54	2.0	0.147	6.0	LOS A	0.6	4.0	0.38	0.60	0.38	51.7
5	T1	All MCs	45	2.0	45	2.0	0.147	6.5	LOS A	0.6	4.0	0.38	0.60	0.38	52.1
6	R2	All MCs	35	2.0	35	2.0	0.147	9.2	LOS A	0.6	4.0	0.38	0.60	0.38	51.4
Approach			133	2.0	133	2.0	0.147	7.0	LOS A	0.6	4.0	0.38	0.60	0.38	51.8
North: Wynter Street															
7	L2	All MCs	19	2.0	19	2.0	0.131	6.1	LOS A	0.5	3.9	0.23	0.32	0.23	54.5
8	T1	All MCs	126	2.0	126	2.0	0.131	0.4	LOS A	0.5	3.9	0.23	0.32	0.23	56.8
9	R2	All MCs	82	2.0	82	2.0	0.131	6.1	LOS A	0.5	3.9	0.23	0.32	0.23	54.2
Approach			227	2.0	227	2.0	0.131	2.9	NA	0.5	3.9	0.23	0.32	0.23	55.7
West: Isabella Street															
10	L2	All MCs	86	2.0	86	2.0	0.130	6.0	LOS A	0.5	3.7	0.32	0.57	0.32	52.1
11	T1	All MCs	42	2.0	42	2.0	0.130	6.4	LOS A	0.5	3.7	0.32	0.57	0.32	52.6
12	R2	All MCs	13	2.0	13	2.0	0.130	9.0	LOS A	0.5	3.7	0.32	0.57	0.32	51.9
Approach			141	2.0	141	2.0	0.130	6.4	LOS A	0.5	3.7	0.32	0.57	0.32	52.2
All Vehicles			729	2.9	729	2.9	0.147	4.2	NA	0.6	4.0	0.26	0.41	0.26	54.4

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 (Akcelik M3D).

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

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

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MOVEMENT SUMMARY

▼ Site: 101 [2040AM Isabella + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Wynter Street / Isabella Street give way

March 2024

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 16 years

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]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	Dist]				km/h
South: Wynter Street															
1	L2	All MCs	9	22.0	9	22.0	0.168	6.3	LOS A	0.8	5.7	0.24	0.35	0.24	53.3
2	T1	All MCs	140	2.0	140	2.0	0.168	0.4	LOS A	0.8	5.7	0.24	0.35	0.24	56.5
3	R2	All MCs	139	2.0	139	2.0	0.168	6.0	LOS A	0.8	5.7	0.24	0.35	0.24	53.9
Approach			288	2.6	288	2.6	0.168	3.2	NA	0.8	5.7	0.24	0.35	0.24	55.1
East: Isabella Street															
4	L2	All MCs	66	2.0	66	2.0	0.198	6.0	LOS A	0.8	5.5	0.43	0.60	0.43	50.9
5	T1	All MCs	43	2.0	43	2.0	0.198	7.5	LOS A	0.8	5.5	0.43	0.60	0.43	51.3
6	R2	All MCs	45	2.0	45	2.0	0.198	11.8	LOS A	0.8	5.5	0.43	0.60	0.43	50.7
Approach			155	2.0	155	2.0	0.198	8.1	LOS A	0.8	5.5	0.43	0.60	0.43	51.0
North: Wynter Street															
7	L2	All MCs	23	2.0	23	2.0	0.163	6.1	LOS A	0.8	5.7	0.26	0.38	0.26	53.8
8	T1	All MCs	116	2.0	116	2.0	0.163	0.4	LOS A	0.8	5.7	0.26	0.38	0.26	56.1
9	R2	All MCs	139	2.0	139	2.0	0.163	6.0	LOS A	0.8	5.7	0.26	0.38	0.26	53.5
Approach			277	2.0	277	2.0	0.163	3.7	NA	0.8	5.7	0.26	0.38	0.26	54.6
West: Isabella Street															
10	L2	All MCs	104	2.0	104	2.0	0.222	6.1	LOS A	0.9	6.6	0.41	0.60	0.41	51.6
11	T1	All MCs	90	2.0	90	2.0	0.222	7.7	LOS A	0.9	6.6	0.41	0.60	0.41	52.1
12	R2	All MCs	14	2.0	14	2.0	0.222	10.9	LOS A	0.9	6.6	0.41	0.60	0.41	51.4
Approach			208	2.0	208	2.0	0.222	7.1	LOS A	0.9	6.6	0.41	0.60	0.41	51.8
All Vehicles			928	2.2	928	2.2	0.222	5.0	NA	0.9	6.6	0.31	0.46	0.31	53.5

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 (Akcelik M3D).

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

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

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MOVEMENT SUMMARY

▼ Site: 101 [2040PM Isabella + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Wynter Street / Isabella Street give way

March 2024

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 16 years

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: Wynter Street															
1	L2	All MCs	38	22.0	38	22.0	0.158	6.3	LOS A	0.5	3.8	0.18	0.27	0.18	54.1
2	T1	All MCs	173	2.0	173	2.0	0.158	0.3	LOS A	0.5	3.8	0.18	0.27	0.18	57.4
3	R2	All MCs	66	2.0	66	2.0	0.158	6.1	LOS A	0.5	3.8	0.18	0.27	0.18	54.7
Approach			277	4.7	277	4.7	0.158	2.5	NA	0.5	3.8	0.18	0.27	0.18	56.3
East: Isabella Street															
4	L2	All MCs	61	2.0	61	2.0	0.195	6.1	LOS A	0.8	5.4	0.45	0.63	0.45	51.1
5	T1	All MCs	51	2.0	51	2.0	0.195	7.4	LOS A	0.8	5.4	0.45	0.63	0.45	51.5
6	R2	All MCs	45	2.0	45	2.0	0.195	10.7	LOS A	0.8	5.4	0.45	0.63	0.45	50.9
Approach			156	2.0	156	2.0	0.195	7.8	LOS A	0.8	5.4	0.45	0.63	0.45	51.2
North: Wynter Street															
7	L2	All MCs	23	2.0	23	2.0	0.159	6.3	LOS A	0.7	4.9	0.27	0.34	0.27	54.4
8	T1	All MCs	150	2.0	150	2.0	0.159	0.5	LOS A	0.7	4.9	0.27	0.34	0.27	56.7
9	R2	All MCs	98	2.0	98	2.0	0.159	6.3	LOS A	0.7	4.9	0.27	0.34	0.27	54.1
Approach			272	2.0	272	2.0	0.159	3.1	NA	0.7	4.9	0.27	0.34	0.27	55.5
West: Isabella Street															
10	L2	All MCs	110	2.0	110	2.0	0.168	6.2	LOS A	0.7	4.8	0.38	0.60	0.38	51.9
11	T1	All MCs	48	2.0	48	2.0	0.168	7.2	LOS A	0.7	4.8	0.38	0.60	0.38	52.3
12	R2	All MCs	14	2.0	14	2.0	0.168	10.2	LOS A	0.7	4.8	0.38	0.60	0.38	51.6
Approach			172	2.0	172	2.0	0.168	6.8	LOS A	0.7	4.8	0.38	0.60	0.38	52.0
All Vehicles			877	2.9	877	2.9	0.195	4.5	NA	0.8	5.4	0.30	0.42	0.30	54.2

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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Project: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham intersections.sip9

MOVEMENT SUMMARY

Site: 101 [2024AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2024AM
(Network Folder: General)]

Wingham Road / Youngs Road rural seagull
March 2024 counts
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	Aver. 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: Wingham Road															
6	R2	All MCs	1	0.0	1	0.0	0.002	8.4	LOS A	0.0	0.0	0.55	0.63	0.55	59.4
Approach			1	0.0	1	0.0	0.002	8.4	NA	0.0	0.0	0.55	0.63	0.55	59.4
North: Youngs Road															
7	L2	All MCs	12	0.0	12	0.0	0.085	10.2	LOS A	0.1	1.0	0.63	0.85	0.63	52.3
8	T1	All MCs	26	24.0	26	24.0	0.085	15.3	LOS B	0.1	1.0	0.63	0.85	0.63	54.2
Approach			38	16.7	38	16.7	0.085	13.8	LOS A	0.1	1.0	0.63	0.85	0.63	53.6
West: Wingham Road															
10	L2	All MCs	14	38.5	14	38.5	0.009	8.3	LOS A	0.0	0.0	0.00	0.65	0.00	57.8
11	T1	All MCs	613	3.4	613	3.4	0.321	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	89.8
Approach			626	4.2	626	4.2	0.321	0.2	NA	0.0	0.0	0.00	0.01	0.00	88.1
All Vehicles			665	4.9	665	4.9	0.321	1.0	NA	0.1	1.0	0.04	0.06	0.04	85.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

Site: 101 [2024PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2024PM
(Network Folder: General)]

Wingham Road / Youngs Road rural seagull

March 2024 counts

Site Category: (None)

Give-Way (Two-Way)

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	Aver. Back Of Queue [Veh. veh	Prop. Queue Dist] m	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
East: Wingham Road															
6	R2	All MCs	8	0.0	8	0.0	0.010	7.1	LOS A	0.0	0.1	0.46	0.64	0.46	61.4
Approach			8	0.0	8	0.0	0.010	7.1	NA	0.0	0.1	0.46	0.64	0.46	61.4
North: Youngs Road															
7	L2	All MCs	19	0.0	19	0.0	0.041	9.0	LOS A	0.1	0.5	0.49	0.70	0.49	57.7
8	T1	All MCs	15	7.1	15	7.1	0.041	10.2	LOS A	0.1	0.5	0.49	0.70	0.49	61.6
Approach			34	3.1	34	3.1	0.041	9.5	LOS A	0.1	0.5	0.49	0.70	0.49	59.2
West: Wingham Road															
10	L2	All MCs	18	11.8	18	11.8	0.010	7.7	LOS A	0.0	0.0	0.00	0.65	0.00	65.6
11	T1	All MCs	427	6.7	427	6.7	0.229	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	89.9
Approach			445	6.9	445	6.9	0.229	0.3	NA	0.0	0.0	0.00	0.03	0.00	87.8
All Vehicles			487	6.5	487	6.5	0.229	1.1	NA	0.1	0.5	0.04	0.08	0.04	84.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

▼ Site: 101 [2029AM + dev (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

■ Network: N101 [2029AM+dev
(Network Folder: General)]

Wingham Road / Youngs Road rural seagull
March 2024 counts
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Prop. Que Dist] m	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
East: Wingham Road															
6	R2	All MCs	1	0.0	1	0.0	0.002	9.3	LOS A	0.0	0.0	0.59	0.66	0.59	58.0
Approach			1	0.0	1	0.0	0.002	9.3	NA	0.0	0.0	0.59	0.66	0.59	58.0
North: Youngs Road															
7	L2	All MCs	13	0.0	13	0.0	0.113	10.9	LOS A	0.2	1.2	0.70	0.89	0.70	49.7
8	T1	All MCs	29	24.0	29	24.0	0.113	18.3	LOS B	0.2	1.2	0.70	0.89	0.70	50.8
Approach			41	16.7	41	16.7	0.113	16.1	LOS B	0.2	1.2	0.70	0.89	0.70	50.4
West: Wingham Road															
10	L2	All MCs	15	38.5	15	38.5	0.010	8.3	LOS A	0.0	0.0	0.00	0.65	0.00	57.8
11	T1	All MCs	703	3.3	703	3.3	0.368	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	89.7
Approach			718	4.0	718	4.0	0.368	0.2	NA	0.0	0.0	0.00	0.01	0.00	88.1
All Vehicles			760	4.7	760	4.7	0.368	1.1	NA	0.2	1.2	0.04	0.06	0.04	85.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

Site: 101 [2029PM + dev (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2029PM+dev
(Network Folder: General)]

Wingham Road / Youngs Road rural seagull
March 2024 counts
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Prop. Que Dist] m	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
East: Wingham Road															
6	R2	All MCs	9	0.0	9	0.0	0.011	7.5	LOS A	0.0	0.1	0.49	0.66	0.49	60.8
Approach			9	0.0	9	0.0	0.011	7.5	NA	0.0	0.1	0.49	0.66	0.49	60.8
North: Youngs Road															
7	L2	All MCs	21	0.0	21	0.0	0.049	9.3	LOS A	0.1	0.5	0.52	0.73	0.52	57.0
8	T1	All MCs	16	7.1	16	7.1	0.049	10.9	LOS A	0.1	0.5	0.52	0.73	0.52	60.5
Approach			37	3.1	37	3.1	0.049	10.0	LOS A	0.1	0.5	0.52	0.73	0.52	58.3
West: Wingham Road															
10	L2	All MCs	19	11.8	19	11.8	0.011	7.7	LOS A	0.0	0.0	0.00	0.65	0.00	65.6
11	T1	All MCs	480	6.4	480	6.4	0.256	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	89.8
Approach			499	6.7	499	6.7	0.256	0.3	NA	0.0	0.0	0.00	0.03	0.00	87.8
All Vehicles			545	6.3	545	6.3	0.256	1.1	NA	0.1	0.5	0.04	0.08	0.04	84.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

▼ Site: 101 [2034AM + dev (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

■ Network: N101 [2034AM+dev
(Network Folder: General)]

Wingham Road / Youngs Road rural seagull
March 2024 counts
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. 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: Wingham Road														
6	R2	All MCs	1	0.0	1	0.0	0.003	10.6	LOS A	0.0	0.0	0.66	0.66	56.0
Approach			1	0.0	1	0.0	0.003	10.6	NA	0.0	0.0	0.66	0.66	56.0
North: Youngs Road														
7	L2	All MCs	14	0.0	14	0.0	0.161	12.0	LOS A	0.2	1.7	0.78	0.78	46.0
8	T1	All MCs	31	24.0	31	24.0	0.161	23.0	LOS B	0.2	1.7	0.78	0.78	46.2
Approach			45	16.7	45	16.7	0.161	19.7	LOS B	0.2	1.7	0.78	0.78	46.1
West: Wingham Road														
10	L2	All MCs	16	38.5	16	38.5	0.011	8.3	LOS A	0.0	0.0	0.00	0.00	57.8
11	T1	All MCs	806	3.1	806	3.1	0.422	0.1	LOS A	0.0	0.0	0.00	0.00	89.7
Approach			822	3.8	822	3.8	0.422	0.2	NA	0.0	0.0	0.00	0.01	88.1
All Vehicles			868	4.4	868	4.4	0.422	1.3	NA	0.2	1.7	0.04	0.04	84.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

Site: 101 [2034PM + dev (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2034PM+dev
(Network Folder: General)]

Wingham Road / Youngs Road rural seagull
March 2024 counts
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. 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: Wingham Road														
6	R2	All MCs	10	0.0	10	0.0	0.013	8.0	LOS A	0.0	0.1	0.52	0.69	60.0
Approach			10	0.0	10	0.0	0.013	8.0	NA	0.0	0.1	0.52	0.69	60.0
North: Youngs Road														
7	L2	All MCs	22	0.0	22	0.0	0.058	9.7	LOS A	0.1	0.6	0.56	0.76	56.1
8	T1	All MCs	17	7.1	17	7.1	0.058	11.9	LOS A	0.1	0.6	0.56	0.76	59.3
Approach			40	3.1	40	3.1	0.058	10.7	LOS A	0.1	0.6	0.56	0.76	57.3
West: Wingham Road														
10	L2	All MCs	21	11.8	21	11.8	0.012	7.7	LOS A	0.0	0.0	0.00	0.65	65.6
11	T1	All MCs	538	6.3	538	6.3	0.287	0.0	LOS A	0.0	0.0	0.00	0.00	89.8
Approach			559	6.5	559	6.5	0.287	0.3	NA	0.0	0.0	0.00	0.00	87.9
All Vehicles			609	6.1	609	6.1	0.287	1.1	NA	0.1	0.6	0.04	0.08	84.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

Site: 101 [2040AM + dev (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2040AM+dev
(Network Folder: General)]

Wingham Road / Youngs Road rural seagull
March 2024 counts
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 16 years

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	Dist]			
			veh/h	%	veh/h	%	v/c	sec		m				km/h
East: Wingham Road														
6	R2	All MCs	1	0.0	1	0.0	0.004	14.0	LOS A	0.0	0.0	0.77	0.78	51.7
Approach			1	0.0	1	0.0	0.004	14.0	NA	0.0	0.0	0.77	0.78	51.7
North: Youngs Road														
7	L2	All MCs	15	0.0	15	0.0	0.303	17.4	LOS B	0.4	3.0	0.88	0.99	36.4
8	T1	All MCs	34	24.0	34	24.0	0.303	39.4	LOS C	0.4	3.0	0.88	0.99	34.8
Approach			50	16.7	50	16.7	0.303	32.7	LOS C	0.4	3.0	0.88	0.99	35.4
West: Wingham Road														
10	L2	All MCs	18	38.5	18	38.5	0.012	8.3	LOS A	0.0	0.0	0.00	0.65	57.8
11	T1	All MCs	982	2.8	982	2.8	0.513	0.1	LOS A	0.0	0.0	0.00	0.00	89.5
Approach			999	3.4	999	3.4	0.513	0.3	NA	0.0	0.0	0.00	0.01	88.1
All Vehicles			1050	4.1	1050	4.1	0.513	1.8	NA	0.4	3.0	0.04	0.06	82.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

▼ Site: 101 [2040PM + dev (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

■ Network: N101 [2040PM+dev
(Network Folder: General)]

Wingham Road / Youngs Road rural seagull

March 2024 counts

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 16 years

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. 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: Wingham Road														
6	R2	All MCs	11	0.0	11	0.0	0.017	8.8	LOS A	0.0	0.2	0.56	0.73	58.6
Approach			11	0.0	11	0.0	0.017	8.8	NA	0.0	0.2	0.56	0.73	58.6
North: Youngs Road														
7	L2	All MCs	25	0.0	25	0.0	0.076	10.4	LOS A	0.1	0.8	0.60	0.82	54.5
8	T1	All MCs	19	7.1	19	7.1	0.076	13.8	LOS A	0.1	0.8	0.60	0.82	57.1
Approach			44	3.1	44	3.1	0.076	11.9	LOS A	0.1	0.8	0.60	0.82	55.5
West: Wingham Road														
10	L2	All MCs	23	11.8	23	11.8	0.014	7.7	LOS A	0.0	0.0	0.00	0.65	65.6
11	T1	All MCs	631	5.9	631	5.9	0.336	0.1	LOS A	0.0	0.0	0.00	0.00	89.8
Approach			655	6.1	655	6.1	0.336	0.3	NA	0.0	0.0	0.00	0.02	87.9
All Vehicles			710	5.8	710	5.8	0.336	1.2	NA	0.1	0.8	0.05	0.08	84.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Akcelik M3D).

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

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

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Organisation: INTERSECT TRAFFIC PTY LTD | Licence: NETWORK / 1PC | Processed: Saturday, 25 May 2024 9:09:51 AM

Project: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

Site: 1 [2024 AM Merge From Right NSW (Site Folder: General)]

Network: N101 [2024AM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Merge From Right
Site Category: (None)
Give-Way (Two-Way)

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	Aver. Back Of Queue [Veh. veh]	Dist m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
West: Major Road															
1	T1	All MCs	302	10.1	302	10.1	0.165	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	89.9
Approach			302	10.1	302	10.1	0.165	0.0	NA	0.0	0.0	0.00	0.00	0.00	89.9
SouthWest: Merge from Youngs Road															
2	R1	All MCs	26	24.0	26	24.0	0.021	0.7	LOS A	0.0	0.2	0.29	0.17	0.29	59.6
Approach			26	24.0	26	24.0	0.021	0.7	LOS A	0.0	0.2	0.29	0.17	0.29	59.6
All Vehicles			328	11.2	328	11.2	0.165	0.1	NA	0.0	0.2	0.02	0.01	0.02	87.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Akcelik M3D).

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

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

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Organisation: INTERSECT TRAFFIC PTY LTD | Licence: NETWORK / 1PC | Processed: Saturday, 25 May 2024 9:08:28 AM

Project: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

▼ Site: 1 [2024 PM Merge From Right NSW (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

■ Network: N101 [2024PM (Network Folder: General)]

Merge From Right
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	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]			km/h
West: Major Road														
1	T1	All MCs	580	2.0	580	2.0	0.301	0.0	LOS A	0.0	0.0	0.00	0.00	89.8
Approach			580	2.0	580	2.0	0.301	0.0	NA	0.0	0.0	0.00	0.00	89.8
SouthWest: Merge from Youngs Road														
2	R1	All MCs	15	7.1	15	7.1	0.013	1.3	LOS A	0.0	0.1	0.39	0.28	63.8
Approach			15	7.1	15	7.1	0.013	1.3	LOS A	0.0	0.1	0.39	0.28	63.8
All Vehicles			595	2.1	595	2.1	0.301	0.1	NA	0.0	0.1	0.01	0.01	89.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Akcelik M3D).

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

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

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Organisation: INTERSECT TRAFFIC PTY LTD | Licence: NETWORK / 1PC | Processed: Saturday, 25 May 2024 9:08:30 AM

Project: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

Site: 1 [2029 AM + dev Merge From Right NSW (Site Folder: General)]

Network: N101 [2029AM+dev
(Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Merge From Right

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h		veh/h		v/c	sec		m				km/h	
West: Major Road															
1	T1	All MCs	338	9.8	338	9.8	0.184	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	89.9
Approach			338	9.8	338	9.8	0.184	0.0	NA	0.0	0.0	0.00	0.00	0.00	89.9
SouthWest: Merge from Youngs Road															
2	R1	All MCs	29	24.0	29	24.0	0.023	0.8	LOS A	0.0	0.2	0.31	0.19	0.31	59.5
Approach			29	24.0	29	24.0	0.023	0.8	LOS A	0.0	0.2	0.31	0.19	0.31	59.5
All Vehicles			366	10.9	366	10.9	0.184	0.1	NA	0.0	0.2	0.02	0.02	0.02	87.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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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Organisation: INTERSECT TRAFFIC PTY LTD | Licence: NETWORK / 1PC | Processed: Saturday, 25 May 2024 9:08:39 AM

Project: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

▼ Site: 1 [2029PM + dev Merge From Right NSW (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

■ Network: N101 [2029PM+dev (Network Folder: General)]

Merge From Right

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	Dist]			km/h
West: Major Road														
1	T1	All MCs	665	1.9	665	1.9	0.345	0.1	LOS A	0.0	0.0	0.00	0.00	89.8
Approach			665	1.9	665	1.9	0.345	0.1	NA	0.0	0.0	0.00	0.00	89.8
SouthWest: Merge from Youngs Road														
2	R1	All MCs	16	7.1	16	7.1	0.016	1.6	LOS A	0.0	0.1	0.43	0.33	63.6
Approach			16	7.1	16	7.1	0.016	1.6	LOS A	0.0	0.1	0.43	0.33	63.6
All Vehicles			681	2.0	681	2.0	0.345	0.1	NA	0.0	0.1	0.01	0.01	89.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (Akcelik M3D).

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

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

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Organisation: INTERSECT TRAFFIC PTY LTD | Licence: NETWORK / 1PC | Processed: Saturday, 25 May 2024 9:08:50 AM

Project: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

Site: 1 [2034 AM + dev Merge From Right NSW (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2034AM+dev (Network Folder: General)]

Merge From Right

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. 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
West: Major Road															
1	T1	All MCs	378	9.6	378	9.6	0.206	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	89.9
Approach			378	9.6	378	9.6	0.206	0.0	NA	0.0	0.0	0.00	0.00	0.00	89.9
SouthWest: Merge from Youngs Road															
2	R1	All MCs	31	24.0	31	24.0	0.026	1.0	LOS A	0.0	0.3	0.33	0.22	0.33	59.3
Approach			31	24.0	31	24.0	0.026	1.0	LOS A	0.0	0.3	0.33	0.22	0.33	59.3
All Vehicles			409	10.7	409	10.7	0.206	0.1	NA	0.0	0.3	0.03	0.02	0.03	87.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

▼ Site: 1 [2034PM + dev Merge From Right NSW (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

■ ■ Network: N101 [2034PM+dev (Network Folder: General)]

Merge From Right

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. 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
West: Major Road														
1	T1	All MCs	761	1.8	761	1.8	0.395	0.1	LOS A	0.0	0.0	0.00	0.00	89.7
Approach			761	1.8	761	1.8	0.395	0.1	NA	0.0	0.0	0.00	0.00	89.7
SouthWest: Merge from Youngs Road														
2	R1	All MCs	17	7.1	17	7.1	0.019	2.0	LOS A	0.0	0.2	0.46	0.38	63.2
Approach			17	7.1	17	7.1	0.019	2.0	LOS A	0.0	0.2	0.46	0.38	63.2
All Vehicles			779	1.9	779	1.9	0.395	0.1	NA	0.0	0.2	0.01	0.01	89.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

Site: 1 [2040 AM + dev Merge From Right NSW (Site Folder: General)]

Network: N101 [2040AM+dev
(Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Merge From Right

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 16 years

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. 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
West: Major Road														
1	T1	All MCs	440	9.1	440	9.1	0.239	0.0	LOS A	0.0	0.0	0.00	0.00	89.8
Approach			440	9.1	440	9.1	0.239	0.0	NA	0.0	0.0	0.00	0.00	89.8
SouthWest: Merge from Youngs Road														
2	R1	All MCs	34	24.0	34	24.0	0.031	1.2	LOS A	0.0	0.3	0.36	0.26	59.2
Approach			34	24.0	34	24.0	0.031	1.2	LOS A	0.0	0.3	0.36	0.26	59.2
All Vehicles			474	10.2	474	10.2	0.239	0.1	NA	0.0	0.3	0.03	0.02	87.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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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Organisation: INTERSECT TRAFFIC PTY LTD | Licence: NETWORK / 1PC | Processed: Saturday, 25 May 2024 9:09:33 AM

Project: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

MOVEMENT SUMMARY

Site: 1 [2040PM + dev Merge From Right (Site Folder: General)]

Network: N101 [2040PM+dev (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Merge From Right

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 16 years

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]			km/h
West: Major Road														
1	T1	All MCs	926	1.6	926	1.6	0.480	0.1	LOS A	0.0	0.0	0.00	0.00	89.6
Approach			926	1.6	926	1.6	0.480	0.1	NA	0.0	0.0	0.00	0.00	89.6
SouthWest: Merge from Youngs Road														
2	R1	All MCs	19	7.1	19	7.1	0.026	3.0	LOS A	0.0	0.2	0.56	0.53	61.7
Approach			19	7.1	19	7.1	0.026	3.0	LOS A	0.0	0.2	0.56	0.53	61.7
All Vehicles			946	1.7	946	1.7	0.480	0.2	NA	0.0	0.2	0.01	0.01	89.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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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Organisation: INTERSECT TRAFFIC PTY LTD | Licence: NETWORK / 1PC | Processed: Saturday, 25 May 2024 9:09:51 AM

Project: D:\Work\2024\24.002 - Wingham Road, Wingham Residential Planning Proposal\sidra\Wingham_Youngs Rd seagull.sip9

APPENDIX 4

RAIL CROSSING SIDRA MOVEMENT TABLES

MOVEMENT SUMMARY

 **Site: 101 [2040AM (Site Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Wingham Road rail crossing Wingham

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 300 seconds (Site User-Given Phase Times)

Design Life Analysis (Final Year): Results for 16 years

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: Wingham Road															
2	T1	All MCs	76	2.0	76	2.0	* 3.939	2824.0	LOS F ¹¹	26.2	186.8	1.00	1.34	3.25	1.3
Approach			76	2.0	76	2.0	3.939	2824.0	LOS F ¹¹	26.2	186.8	1.00	1.34	3.25	1.3
North: Wingham Road															
8	T1	All MCs	43	2.0	43	2.0	2.220	1277.6	LOS F ¹¹	12.7	90.7	1.00	1.19	2.69	2.7
Approach			43	2.0	43	2.0	2.220	1277.6	LOS F ¹¹	12.7	90.7	1.00	1.19	2.69	2.7
All Vehicles			119	2.0	119	2.0	3.939	2266.6	LOS F ¹¹	26.2	186.8	1.00	1.29	3.05	1.6

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.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

 **Site: 101 [2040AM + dev (Site Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Wingham Road rail crossing Wingham

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 300 seconds (Site User-Given Phase Times)

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: Wingham Road															
2	T1	All MCs	82	2.0	82	2.0	* 4.265	3117.9	LOS F	28.8	205.0	1.00	1.36	3.31	1.1
Approach			82	2.0	82	2.0	4.265	3117.9	LOS F	28.8	205.0	1.00	1.36	3.31	1.1
North: Wingham Road															
8	T1	All MCs	52	2.0	52	2.0	2.679	1690.9	LOS F	16.3	116.4	1.00	1.25	2.91	2.1
Approach			52	2.0	52	2.0	2.679	1690.9	LOS F	16.3	116.4	1.00	1.25	2.91	2.1
All Vehicles			134	2.0	134	2.0	4.265	2567.3	LOS F	28.8	205.0	1.00	1.32	3.15	1.4

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)

MOVEMENT SUMMARY

 **Site: 101 [2040PM (Site Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Wingham Road rail crossing Wingham

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 300 seconds (Site User-Given Phase Times)

Design Life Analysis (Final Year): Results for 16 years

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]					Veh.	Dist]				km/h
			veh/h	%	veh/h	%	v/c	sec		veh	m				
South: Wingham Road															
2	T1	All MCs	52	2.0	52	2.0	2.721	1728.5	LOS F ¹¹	16.7	118.7	1.00	1.25	2.92	2.0
Approach			52	2.0	52	2.0	2.721	1728.5	LOS F ¹¹	16.7	118.7	1.00	1.25	2.92	2.0
North: Wingham Road															
8	T1	All MCs	72	2.0	72	2.0	* 3.724	2630.7	LOS F ¹¹	24.5	174.7	1.00	1.33	3.21	1.4
Approach			72	2.0	72	2.0	3.724	2630.7	LOS F ¹¹	24.5	174.7	1.00	1.33	3.21	1.4
All Vehicles			124	2.0	124	2.0	3.724	2249.8	LOS F ¹¹	24.5	174.7	1.00	1.30	3.09	1.6

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.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

* Critical Movement (Signal Timing)

MOVEMENT SUMMARY

 **Site: 101 [2040PM + development (Site Folder: General)]**

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Wingham Road rail crossing Wingham

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 300 seconds (Site User-Given Phase Times)

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: Wingham Road															
2	T1	All MCs	61	2.0	61	2.0	3.172	2133.7	LOS F	20.2	143.9	1.00	1.29	3.07	1.7
Approach			61	2.0	61	2.0	3.172	2133.7	LOS F	20.2	143.9	1.00	1.29	3.07	1.7
North: Wingham Road															
8	T1	All MCs	79	2.0	79	2.0	*4.101	2970.3	LOS F	27.5	195.8	1.00	1.35	3.28	1.2
Approach			79	2.0	79	2.0	4.101	2970.3	LOS F	27.5	195.8	1.00	1.35	3.28	1.2
All Vehicles			140	2.0	140	2.0	4.101	2605.5	LOS F	27.5	195.8	1.00	1.33	3.19	1.4

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)

APPENDIX 5

ESTATE ACCESS SIDRA MOVEMENT TABLES

MOVEMENT SUMMARY

▼ Site: 101 [2040AM - Subdivision access (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Main subdivision access Cedar Creek Estate

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 16 years

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: Wingham Road															
1	L2	All MCs	19	2.0	19	2.0	0.010	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
2	T1	All MCs	899	2.0	899	2.0	0.467	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
Approach			918	2.0	918	2.0	0.467	0.3	NA	0.0	0.0	0.00	0.01	0.00	59.5
North: Wingham Road															
8	T1	All MCs	514	2.0	514	2.0	0.267	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	All MCs	34	2.0	34	2.0	0.085	13.6	LOS A	0.3	2.0	0.74	0.89	0.74	47.2
Approach			548	2.0	548	2.0	0.267	0.9	NA	0.3	2.0	0.05	0.05	0.05	58.9
West: Cedar Creek Estate main access															
10	L2	All MCs	137	2.0	137	2.0	0.372	16.4	LOS B	1.4	10.1	0.80	0.98	1.03	45.7
12	R2	All MCs	74	2.0	74	2.0	1.050	201.6	LOS F ¹¹	7.4	52.6	1.00	1.53	3.30	13.7
Approach			211	2.0	211	2.0	1.050	81.2	LOS F ¹¹	7.4	52.6	0.87	1.17	1.82	25.2
All Vehicles			1676	2.0	1676	2.0	1.050	10.7	NA	7.4	52.6	0.12	0.17	0.24	50.7

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

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

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.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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MOVEMENT SUMMARY

▼ Site: 101 [2040PM - Subdivision access (Site Folder: General)]

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Main subdivision access Cedar Creek Estate

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 16 years

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: Wingham Road															
1	L2	All MCs	68	2.0	68	2.0	0.037	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
2	T1	All MCs	629	2.0	629	2.0	0.327	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			697	2.0	697	2.0	0.327	0.6	NA	0.0	0.0	0.00	0.06	0.00	59.0
North: Wingham Road															
8	T1	All MCs	857	2.0	857	2.0	0.445	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
9	R2	All MCs	127	2.0	127	2.0	0.208	10.4	LOS A	0.8	5.6	0.62	0.84	0.62	49.3
Approach			985	2.0	985	2.0	0.445	1.5	NA	0.8	5.6	0.08	0.11	0.08	58.1
West: Cedar Creek Estate main access															
10	L2	All MCs	55	2.0	55	2.0	0.089	9.5	LOS A	0.3	2.1	0.55	0.79	0.55	49.9
12	R2	All MCs	28	2.0	28	2.0	0.596	111.7	LOS F ¹¹	1.7	12.3	0.98	1.05	1.25	20.8
Approach			83	2.0	83	2.0	0.596	44.5	LOS D ¹¹	1.7	12.3	0.70	0.88	0.79	33.8
All Vehicles			1765	2.0	1765	2.0	0.596	3.2	NA	1.7	12.3	0.08	0.12	0.08	56.5

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.

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

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MOVEMENT SUMMARY

 Site: 101v [2040AM - Subdivision access - Conversion (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Main subdivision access Cedar Creek Estate

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 16 years

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: Wingham Road															
1	L2	All MCs	19	2.0	19	2.0	0.019	3.8	LOS A	0.1	0.6	0.15	0.41	0.15	54.9
2	T1	All MCs	899	2.0	899	2.0	0.542	3.8	LOS A	4.8	34.2	0.21	0.34	0.21	54.9
Approach			918	2.0	918	2.0	0.542	3.8	LOS A	4.8	34.2	0.21	0.34	0.21	54.9
North: Wingham Road															
8	T1	All MCs	514	2.0	514	2.0	0.342	3.9	LOS A	2.6	18.6	0.30	0.36	0.30	54.5
9	R2	All MCs	34	2.0	34	2.0	0.037	9.8	LOS A	0.2	1.3	0.26	0.59	0.26	50.2
Approach			548	2.0	548	2.0	0.342	4.3	LOS A	2.6	18.6	0.29	0.37	0.29	54.2
West: Cedar Creek Estate main access															
10	L2	All MCs	137	2.0	137	2.0	0.181	9.4	LOS A	1.2	8.5	0.79	0.71	0.79	51.1
12	R2	All MCs	74	2.0	74	2.0	0.129	16.3	LOS B	0.7	5.3	0.77	0.79	0.77	46.7
Approach			211	2.0	211	2.0	0.181	11.8	LOS A	1.2	8.5	0.79	0.73	0.79	49.4
All Vehicles			1676	2.0	1676	2.0	0.542	4.9	LOS A	4.8	34.2	0.31	0.40	0.31	53.9

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: 101v [2040PM - Subdivision access - Conversion (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Main subdivision access Cedar Creek Estate

Site Category: (None)

Roundabout

Design Life Analysis (Final Year): Results for 16 years

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: Wingham Road															
1	L2	All MCs	68	2.0	68	2.0	0.078	4.6	LOS A	0.4	2.6	0.32	0.46	0.32	54.3
2	T1	All MCs	629	2.0	629	2.0	0.436	4.3	LOS A	3.1	21.7	0.37	0.40	0.37	54.1
Approach			697	2.0	697	2.0	0.436	4.3	LOS A	3.1	21.7	0.36	0.40	0.36	54.1
North: Wingham Road															
8	T1	All MCs	857	2.0	857	2.0	0.514	3.7	LOS A	5.0	35.5	0.21	0.33	0.21	55.0
9	R2	All MCs	127	2.0	127	2.0	0.121	9.4	LOS A	0.7	4.8	0.16	0.59	0.16	50.5
Approach			985	2.0	985	2.0	0.514	4.4	LOS A	5.0	35.5	0.20	0.37	0.20	54.3
West: Cedar Creek Estate main access															
10	L2	All MCs	55	2.0	55	2.0	0.059	6.5	LOS A	0.3	2.5	0.64	0.62	0.64	53.1
12	R2	All MCs	28	2.0	28	2.0	0.040	12.9	LOS A	0.2	1.5	0.64	0.71	0.64	48.7
Approach			83	2.0	83	2.0	0.059	8.7	LOS A	0.3	2.5	0.64	0.65	0.64	51.5
All Vehicles			1765	2.0	1765	2.0	0.514	4.6	LOS A	5.0	35.5	0.29	0.40	0.29	54.1

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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