West Yamba Urban Release Area

Traffic Impact Assessment

Mortons Urban Solutions

8 May 2023

Gold Coast
Suite 26, 58 Riverwalk Avenue
Robina QLD 4226
P: (07) 5562 5377

Brisbane
Level 2, 428 Upper Edward Street
Spring Hill QLD 4000
P: (07) 3831 4442

Sydney
Studio 203, 3 Gladstone Street
Newtown NSW 2042
P: (02) 9557 6202

W: www.bitziosconsulting.com.au

E: admin@bitziosconsulting.com.au

Document Issue History

Report File Name	Prepared	Reviewed	Issued	Date	Issued to
P5746.001R Wyura Subdivision TIA - DRAFT	L.Daniels / A. Payne	B. James	A. Payne	17/08/2022	John Harrison johnh@urbansolutions.net.au
P5746.001R Wyura Subdivision TIA	L.Daniels / A. Payne	B. James	A. Payne	19/08/2022	John Harrison johnh@urbansolutions.net.au
P5746.002R Wyura Subdivision TIA	Sai Girish. M / A. Payne	B. James	A. Payne	19/12/2022	John Harrison johnh@urbansolutions.net.au
P5746.003R Wyura Subdivision TIA	A. Payne	B. James	A. Payne	08/05/2022	John Harrison johnh@urbansolutions.net.au

CONTENTS

		Page
ADDENDUM: IR RESPONSE COVER LETTER		**1**
1.	**INTRODUCTION**	**3**
1.1	Background	3
1.2	Scope	3
1.3	Information Request	4
1.3.1	Overview	4
1.3.2	Information Request Response Summary - Transport Movement Hierarchy and Road Network Design and Provision	4
2.	**EXISTING CONDITIONS**	**7**
2.1	Planning Context	7
2.1.1	West Yamba Urban Release Area	7
2.1.2	Adjacent Developments	7
2.2	Existing Road Network	8
2.3	Alternate Transport	9
3.	**DEVELOPMENT DETAILS**	**10**
3.1	Proposed Development	10
4.	**EXTERNAL TRAFFIC ASSESSMENT**	**11**
4.1	Surveyed Traffic	11
4.1.1	Traffic Surveys	11
4.1.2	Traffic Growth	11
4.1.3	Seasonality	11
4.2	Adjacent Development Traffic	12
4.2.1	Adjacent Site Traffic Generation	12
4.2.2	Adjacent Site Trip Distribution	13
4.3	Background Traffic	13
4.4	Proposed Development Traffic	13
4.4.1	Proposed Development Traffic Generation	13
4.4.2	Proposed Development Trip Distribution	14
4.5	Design Traffic	15
4.6	SIDRA Assessment	15
4.6.1	Methodology	15
4.6.2	Yamba Road / Treelands Drive	16
4.6.3	Yamba Road / Carrs Drive	17
4.6.4	Yamba Road / Shores Drive	19
4.6.5	Yamba Road / Golding Street	20
4.7	SIDRA Results Summary	21
4.8	Road Infrastructure Upgrades	21
4.8.1	Golding Street Connection Trigger Points	21
4.8.2	Golding Street Connection via Deering Street	22
5.	**INTERNAL TRAFFIC ASSESSMENT**	**25**
5.1	Overview	25
5.2	Traffic Volumes	25
5.3	Turn Warrants Assessment	25
6.	**ACCESS & ROAD CAPACITY ASSESSMENT**	**28**

6.1 Road Hierarchy 28
6.1.1 Northern Rivers Road Cross-Sections 28
6.1.2 WYURA Network Planning 28
6.1.3 Proposed Cross-Sections 30
6.2 Heavy Vehicle Access 30
6.2.1 Construction Traffic 30
6.2.2 Service Vehicle Access 31
7. ALTERNATE TRANSPORT PROVISIONS 32
7.1 Public Transport 32
7.2 Active Transport Provision 32
8. SUMMARY AND CONCLUSIONS 33

Tables

Table 2.1: Surrounding Road Network
Table 2.2: Key Intersections
Table 4.1: Adjacent Development Traffic Generation
Table 4.2: Adjacent Development Traffic Directionality
Table 4.3: Proposed Development Traffic Generation
Table 4.4: Development Trip Directionality
Table 4.5: Development Trip Distribution - With Golding Street Connection
Table 4.6: Yamba Road / Treelands Drive SIDRA Results Summary
Table 4.7: Yamba Road / Carrs Drive SIDRA Results Summary
Table 4.8: Yamba Road / Shores Drive SIDRA Results Summary
Table 4.9: Yamba Road / Golding Street SIDRA Results Summary
Table 4.10: SIDRA Results Summary Yamba Road / Carrs Drive 2033 Development Thresholds
Table 6.1: Northern Rivers Design Manual Road Cross-Section Details
Table 6.2: Proposed Road Cross-Sections

Figures

Figure 1.1: Subject Site Location
Figure 2.1: West Yamba Urban Release Area
Figure 2.2: Recognised Development Applications
Figure 3.1: Proposed Development
Figure 4.1: Pacific Highway Seasonal Traffic Volumes
Figure 4.2: Yamba Road / Treelands Drive SIDRA Intersection Layout
Figure 4.3: Yamba Road / Carrs Drive SIDRA Intersection Layout
Figure 4.4: Yamba Road / Shores Drive SIDRA Intersection Layout
Figure 4.5: Yamba Road / Golding Street SIDRA Intersection Layout
Figure 4.6: Yamba Urban Bypass Plan
Figure 4.7: Yamba Urban Bypass Deering Street Connection
Figure 5.1: Carrs Drive / Miles Street Turn Warrants Assessment
Figure 5.2: Carrs Drive / Proposed Collector Road Turn Warrants Assessment
Figure 5.3: BAR Treatment Design
Figure 6.1: Northern Rivers Road Hierarchy Applicable Uses
Figure 6.2: WYURA Road Hierarchy Function

Appendices

Appendix A: Development Plans
Appendix B: Traffic Survey Data
Appendix C: Network Diagrams
Appendix D: SIDRA Outputs
Appendix E: Carrs Drive / Miles Street Traffic Volumes

ADDENDUM: IR RESPONSE COVER LETTER

This letter has been prepared in response to the Information Request (IR) issued by Clarence Valley Council (Council) dated 3rd March 2023 in relation to the proposed subdivision located within the West Yamba Urban Release Area (SUB2023/0001).

Specifically, this letter response to Transport Items 15-18 and 20-21.

Ref.	IR Item	Response Summary	Section
Transport Assessment			
15	*The Traffic Impact Assessment (TIA) states that the Yamba Road/Carrs Drive intersection cannot cater for ultimate WYURA traffic volumes if it is the only vehicular access point to the WYURA. Section 4.8.1 states that the Golding Street connection to the WYURA is required based on two maximum thresholds. Further information is required to determine at which stage the Golding Street connection is required for this development.*	Development thresholds at which the Golding Street connection are required are identified in Section 4.8.1	Section 4.8.1
16	*The applicant is requested to provide information about if the proposed development stand alone without any connection to Golding Street. It is assumed that the emergency vehicle access to Golding Street via Miles Street will be required with the first stage of the development to ensure the development has two access point (albeit limited to emergency access only). How will general traffic be restricted or managed to ensure the section of road between the future Miles Street roundabout and Golding Street is not used as the primary point of access.*	Details of proposed emergency access are outlined in Section 1.3.2.	Section 1.3.2
17	*The traffic report indicates that the new road and intersection onto Carrs Drive will function as a Collector Road. It is unclear if an assessment of this proposed intersection has been undertaken to determine its required level of treatment. The TIA shall be revised to include an assessment of the proposed new intersection into Carrs Drive to determine the appropriate intersection treatment required. Appropriate Concept Plans of the intersection treatment are to be provided.*	This traffic assessment has been revised to include assessment of the future Carrs Drive / Collector Road intersection. It has been determined that a BAR treatment is required on Carrs Drive with the intersection form as per the Carrs Drive / Miles Street intersection.	Section 5.3 **Appendix E**
18	*Section 5.3 of the Traffic Impact Assessment recognises the requirement for a BAR treatment at the Carrs Drive/Miles Street intersection. Revised plans shall be submitted which include preliminary intersection configurations for accesses to Carrs Drive/Miles Street.*	Concept plans of the proposed Carrs Drive / Miles Street intersection including a BAR treatment have been provided by MUS as a part of the Development Application	N/A

Ref.	IR Item	Response Summary	Section
20	*The updated TIA provides limited details of construction traffic impacts on the surrounding road network and the connection to Yamba Road. The development application proposes a significant change in levels and is likely to generate ongoing traffic impacts during completion of civil works and road construction throughout the construction phase of the development. The applicant is requested to provide an updated TIA to include details on traffic impacts and management during the multiple construction stages of the proposed development.*	Construction / haulage traffic associated with the proposed development will be a continuation of existing operations for the development of initial WYURA stages. Traffic surveys capture heavy vehicle movements to / from existing construction sites and as such, the traffic assessment undertaken considers ongoing impacts of construction traffic on the surrounding road network.	Section 4.6
21	*Additional details shall be provided for the Golding Street/Yamba Road roundabout upgrade in the form of concept design plans. Plans shall indicate the extent of widening required within the road reserve and its impacts on neighbouring property boundaries (if any).*	Detailed assessment of the geometric requirements of the Yamba Road / Golding Street roundabout upgrade identified that the upgrade would impact adjacent property boundaries. With consideration to this, further refinements were made to the traffic modelling. With these refinements it was determined that the Yamba Road / Golding Street intersection would only be expected to fail in the worst case 2043 AM, with seasonality factor, with development assessment scenario. By the time that this failure is forecast to occur (i.e. by 2043) it is expected that the Yamba Urban Bypass would be at least partially constructed. This bypass connection between Golding Street and Angourie Road would relieve pressure off Yamba Road and the Yamba Road / Golding Street. This connection is therefore anticipated to offset the impacts of development traffic on the Yamba Road / Golding Street intersection. As a part of the proposal, the development will provide the Golding Street / Deering Street roundabout and provide additional development contributions in accordance with Council's bypass S94 plan. The proposed development is therefore considered to contribute to the majority of the remaining bypass connection between Golding Street and Angourie Road. The proposed development is therefore considered to suitably offset development traffic impacts to the Yamba Road / Golding Street intersection without the provision of the upgrade initially identified.	Section 4.8.2

1. INTRODUCTION

1.1 Background

Bitzios Consulting (Bitzios) has been engaged by the West Yamba Landowners Consortium to prepare a Traffic Impact Assessment (TIA) for a proposed primarily residential subdivision with the West Yamba Urban Release Area (WYURA), accessed via Carrs Drive, Miles Street and Golding Street. The site location incorporates Lot 46 & 47 on DP751395, Lot 18 on DP1090409 and Lot 21 on DP1279485.

The location of the subject site is illustrated in Figure 1.1.

Source: Nearmap (edited by Bitzios)

Figure 1.1: Subject Site Location

1.2 Scope

The scope of this assessment included:

- Reviewing the existing conditions of the site and its surrounds relevant to traffic and transport
- Estimating the proposed development's traffic generation and distribution on the surrounding road network
- Detailed assessment of the development's traffic impacts on the surrounding road network
- Review the on-site road layout against Council's DCP and the Local Government (Manufactured Home Estates, Caravan Parks, Camping Grounds and Moveable Dwellings) Regulation 2021
- Review the proposed access arrangements against Council's requirements and AS2890
- Review the servicing / refuse collection arrangements Council's requirements and AS2890.

1.3 Information Request

1.3.1 Overview

A Development Application (DA) was previously submitted for a large portion of the subject site, incorporating Lot 46 & 47 DP751395 (*Application No. SUN2019/0030*). An Information Request (IR) was subsequently received from Clarence Valley Council on 28 April 2022. As such, transport related considerations of this IR are addressed as a part of this TIA report.

Transport related items and a summary of responses to these items are detailed in Section 1.3.2 below.

1.3.2 Information Request Response Summary - Transport Movement Hierarchy and Road Network Design and Provision

The justification for departure from the road hierarchy plan under C1 showing no access to Carrs Drive is not supported. Amended plans are to be submitted that show an access onto Carrs Drive that is consistent with Figure X1.2 of Part X. Similarly, emergency road access provision must be made through to Golding Street via Miles Street. This access connection must be designed in such a way that does not promote traffic movements as the preferred access to and from the development i.e. designed to accommodate minimal volumes of traffic. The road carriageway must be designed in such a way that does not inhibit the flow of water through the flood way as well as being able to maintain integrity during flood events i.e. concrete causeway.

Response:

Development plans have been amended to maintain connection to Carrs Drive through Lot 46, consistent with Figure X1.2 of Council's Residential DCP. Refer to development plans provided at **Appendix A**.

Emergency vehicle access shall be provided via Golding Street prior to the construction of the Golding Street link associated with development of the WYURA. This interim, emergency only vehicle access shall not be constructed as a typical road cross-section however shall be compliant with the minimum carriageway requirements of the NSW Government *Fire Safety Guideline: Access for Fire Brigade Vehicles and Firefighters* for a general fire appliance. Namely the following requirements shall be met:

- Emergency access carriageway width:
  - Generally minimum width: 4.5m wide
  - Minimum width at constrained locations (i.e. culvert): 3.2m wide for a max. 50m length
- Minimum inside turning circle radius: 6.5m radius
- Maximum access grade: 1.8 (12.5%) with 1:16 (6.25%) transitions.

The provided traffic impact assessments must be revised to reflect the anticipated traffic impacts based on the revised road hierarchy to reflect Figure X1.2 of Part X and incorporate the comments made above. The TIA does not consider the benefits of development traffic being able to access Yamba Road via Golding Street/future connection through Cox Street and the resulting reduction in traffic demand on Yamba Road and Miles Street between Carrs Drive and Golding Street.

Response:

Traffic assessments were undertaken as a part of this report evaluating full development of the subject site considering scenarios with only the Carrs Drive access to the WYURA and with the future connection via Golding Street. The assessment demonstrated that the Yamba Road / Carrs Drive intersection cannot cater for ultimate WYURA traffic volumes if it is the only vehicular access point to the WYURA. The Golding Street connection is required to redistribute future WYURA traffic volumes via the Yamba Road / Golding Street roundabout.

This in turn results in a reduction in traffic volumes on Yamba Road between Carrs Drive and Golding Street. Forecast traffic volumes with and without the Golding Street connection are provide at **Appendix C**. A trigger point assessment was also undertaken at Section 4.8 to determine the trigger point for this road connection based on development yield within the subject site.

It is highlighted that Yamba Road accommodates seasonal fluctuations in background traffic and will need to be accommodated within the TIA. An updated TIA is to be submitted including further modelling of forecast future traffic conditions demonstrating the development being connected to Yamba Road via both Carrs Drive and Golding Street. Such modelling must also consider sensitivity analysis for seasonal peak conditions based on survey traffic volumes for typical holiday time traffic movements. This must be demonstrated through an additional traffic volume scenario for seasonal background traffic plus applied background traffic factored up annual growth rates for traffic on Yamba Road.

Response:

Sensitivity tests were undertaken of all intersection models to assess expected impacts of seasonal fluctuations peaking during the summer periods. Based on TfNSW survey data from the permanent count site at the Clarence River, the summer peak is expected to result in approximately 11% higher traffic volumes than the July period surveyed. As such, sensitivity tests were undertaken for all intersection model years with an 11% traffic volume increase applied to all turn movements for each scenario.

Outcomes of the seasonality testing in SIDRA are outlined in Section 4.6 and detailed outputs are provided at **Appendix D**.

The updated TIA provides limited details of construction traffic impacts on the surrounding road network and the connection to Yamba Road. The development application proposes a significant change in levels and is likely to generate ongoing traffic impacts during completion of civil works and road construction throughout the construction phase of the development. The anticipated volume and frequency of construction traffic movements to and from the site must be included in the TIA as well as recommendations to reduce the impacts of construction traffic on the existing road network.

Response:

With development of adjacent sites within the WYURA currently underway, significant construction traffic volumes were surveyed with 10-15% of turns to / from Carrs Drive surveyed as heavy vehicles in the AM peak hour. As evidenced by surveys of other intersections, turning movements to primarily residential catchments would typically include 2-4% heavy vehicle movements.

This high proportion of heavy vehicle movement was carried through to future year traffic assessment scenarios to consider ongoing construction traffic impacts as development of the WYURA continues. The assessment demonstrated that key intersections would continue to operate within acceptable performance limits with expected future growth including impacts of high heavy vehicle movements.

While construction traffic is not anticipated to adversely impact intersection performance, substantial earthworks will be required and as such, earthmoving vehicles may impact local amenity during this time. As such, a number of measures are recommended to mitigate this impact as detailed in Section 6.2.1.

The TIA must also assess the capacity of the surrounding road network carriageway widths including Carrs Drive and Yamba Road. This must consider triggers for the provision of infrastructure and upgrades, including early staging of an eastern connection to the wider traffic network according to lot yields across the WYURA and/or development of land in proximity to the Carrs Drive and Miles Street intersection.

Response:

Roads internal to the WYURA shall be constructed in accordance with the *Northern Rivers Design Manual Section D1: Geometric Road Design (Urban and Rural)* and generally in accordance with the WYURA road hierarchy plan provided in the *Clarence Valley Council Residential Zones Development Control Plan*.

The assessment details a trigger point for the eastern (Golding Street) connection to / from the WYURA to reduce traffic volumes on Carrs Drive and portions of Yamba Road. The trigger point assessment for this Golding Street connection is detailed in Section 4.8.

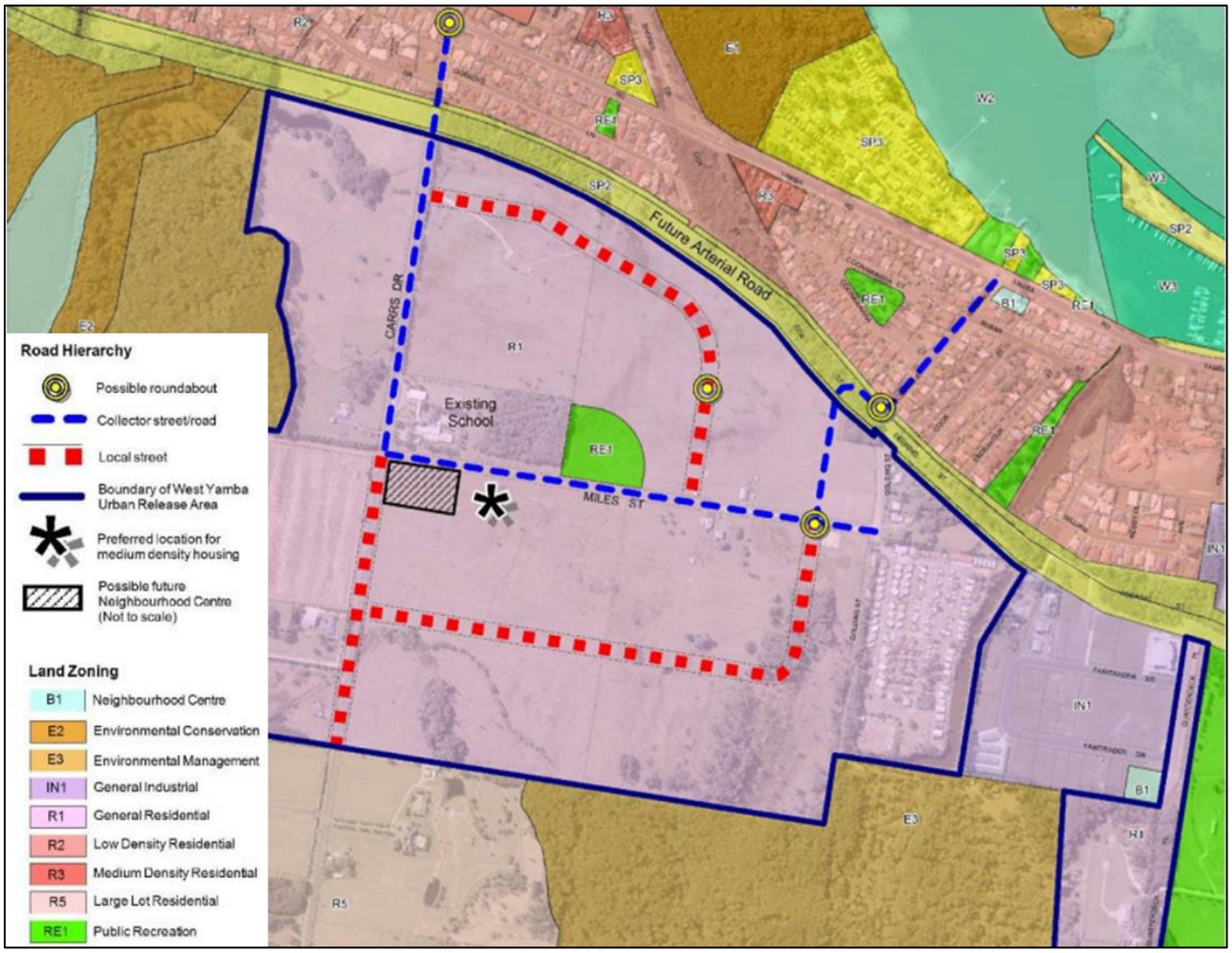
Forecast traffic volumes on Yamba Road and Carrs Drive do not exceed theoretical capacity limits for these road types as specified in the Austroad Guide to Traffic Management Part 3. Furthermore, as Yamba Road functions as a sub-arterial, there is no environmental capacity limit specified in the Northern Rivers Design Manual or Council's DCP. As such, road widening, or other similar external works are not deemed warranted as a result of the proposed development.

2. EXISTING CONDITIONS

2.1 Planning Context

2.1.1 West Yamba Urban Release Area

The proposed development site forms a part of the West Yamba Urban Release Area (WYURA). The WYURA is designated as a future residential urban growth area approximately 127ha in total size. With the exception of a small public recreation area, the WYURA is zoned as R1 'General Residential' for future urban development. The planned road hierarchy map of the WYURA, also illustrating WYURA location and land zoning is shown in Figure 2.1.



Source: Clarence Valley Council Residential Zones DCP

Figure 2.1: West Yamba Urban Release Area

2.1.2 Adjacent Developments

Development of the WYURA has commenced with construction and sales of residential sites within the adjacent, approved 161 Lot residential development at Lot 158 DP1279485. It is also understood that approvals are in place and / or applications are underway for seniors living and manufactured home sites within the WYURA.

Individual development applications recognised by Council are shown in Figure 2.2.

SOURCE: Nearmap (edited by Bitzios)

Figure 2.2: Recognised Development Applications

2.2 Existing Road Network

Details of the existing road network surrounding the subject site are detailed in Table 2.1.

Table 2.1: Surrounding Road Network

Road Name	Jurisdiction	No. of Lanes	Hierarchy	Divided	Posted Speed
Yamba Road	Council	2	Sub-Arterial	No	50km/h
Carrs Drive	Council	2	Large Lot Residential Road	No	60km/h
Golding Street	Council	2	Collector	No	50km/h

The existing key intersections in the vicinity of the subject site are outlined in Table 2.2.

Table 2.2: Key Intersections

Intersection	Jurisdiction	Type
Yamba Road / Treelands Drive	Council	Roundabout
Yamba Road / Carrs Drive	Council	Roundabout
Yamba Road / Shores Drive	Council	Roundabout
Yamba Road / Golding St	Council	Roundabout

2.3 Alternate Transport

Limited public transport accessibility is available to the current site with the bus stops located on Yamba Road to the north of the WYURA. These bus stops service local route 380 and bus stops near the Yamba Fair also service the North West NSW Intercity service.

Since development within the WYURA is currently in early stages, there is also limited active transport connectivity in the vicinity of the subject site. An off-road shared path is however present connecting St James Catholic Primary School to Yamba Road.

As will be detailed further in this report, improvements to alternate transport provisions are planned as a part of the area's urbanisation, with further WYURA development.

3. DEVELOPMENT DETAILS

3.1 Proposed Development

The proposed development area forms a large part of the WYURA incorporating a mix of primarily residential land uses. The breakdown of proposed uses and yields by Lot are as follows:

- Lot 21 DP1279485: 89 low-density residential Lots
- Lot 18 DP1090409: 161 low-density residential Lots and public recreation (park)
- Lot 46 & 47 DP751395:
  - 289 low-density residential Lots
  - 30 dwelling medium-density residential site
  - Max. 1000m^2 GFA commercial / retail site.

The proposed development area within the WYURA is illustrated in Figure 3.1.

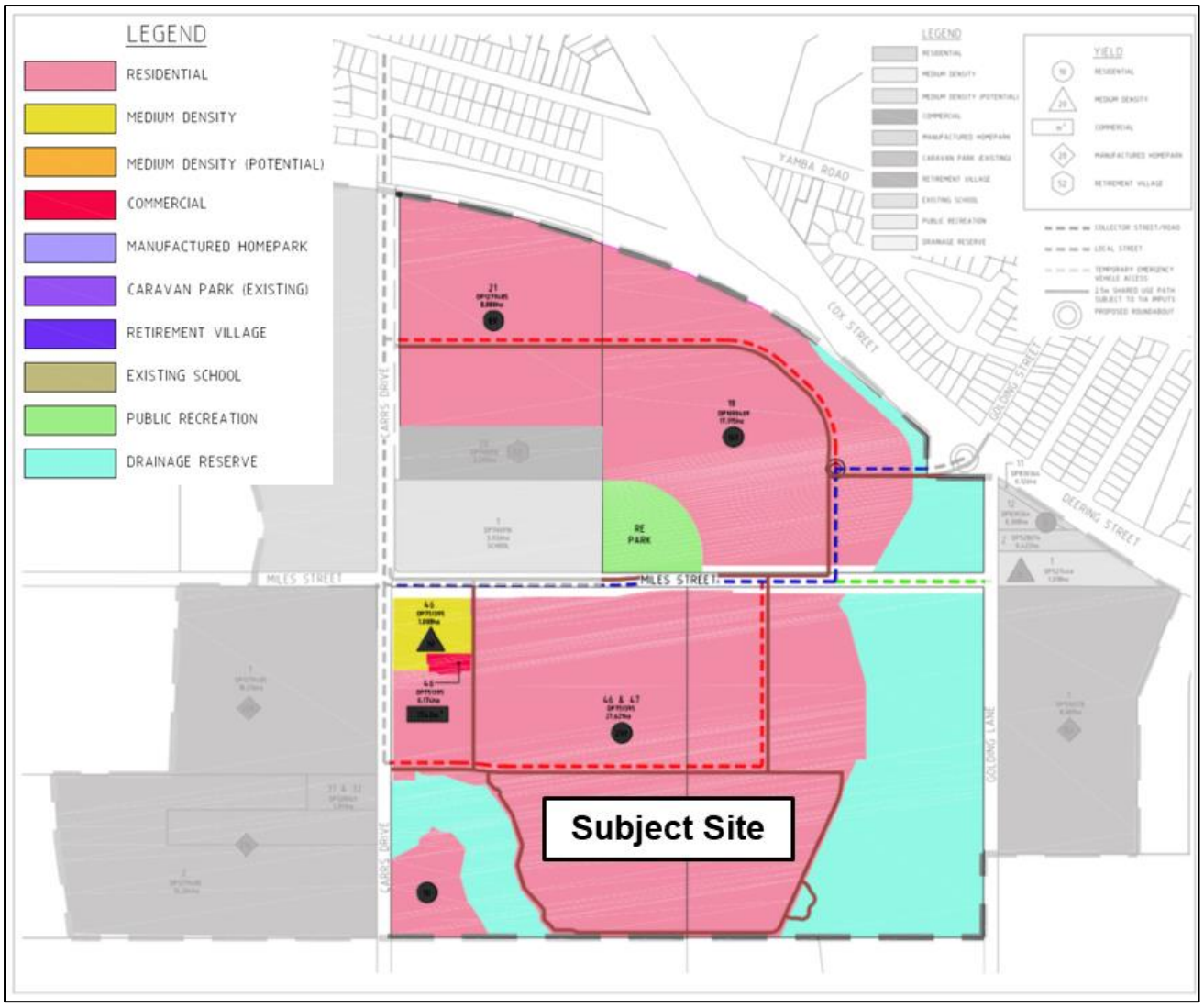


Figure 3.1: Proposed Development

As shown, proposed development land uses are consistent with WYURA planning.

4. EXTERNAL TRAFFIC ASSESSMENT

4.1 Surveyed Traffic

4.1.1 Traffic Surveys

Intersection traffic surveys were undertaken on Wednesday 20 July 2022 at the following intersections:

- Yamba Road / Carrs Drive
- Yamba Road / Treelands Drive
- Yamba Road / Shores Road
- Yamba Road / Golding Street.

In addition to the intersection surveys, 7-day automatic tube count data was also recorded on Yamba Road between 20 July and 26 July 2022. Based on the survey data collected, the following peak hours were determined:

- AM Peak hour: 08:00am-09:00am
- PM Peak hour: 03:15pm-04:15pm

Detailed traffic survey data is provided at **Appendix B**. Peak hour traffic volumes surveyed at the above intersections are also detailed at **Appendix C** (Sheet 1).

4.1.2 Traffic Growth

A compounding growth rate of 1.5% per annum was applied to surveyed through traffic volumes on Yamba Road to forecast future year traffic. This growth rate is consistent with other residential development application assessments in the region and is considered conservative as:

- This growth rate excludes traffic generated by developments within the WYURA which will be added separately, as detailed further later in this document
- This exceeds the historical population growth of 0.8% p.a. in the Yamba area as specified by *profile.id*.

As there is limited remaining development potential (excluding WYURA) via side-streets, a compounding growth rate of 0.8% per annum was applied to turn movements to and from side-streets, consistent with the historical growth rate. This caters for potential minor infill development in these existing areas.

It is forecast that full development of the development area may occur by 2033 and as such this is adopted as the 'year of opening' for the purposes of this assessment. Traffic volumes with the above growth rate applied for the estimated year of opening (2033) and 10-year design horizon (2043) are provided at **Appendix C** (Sheet 2 & 3).

4.1.3 Seasonality

It is acknowledged that coastal areas in northern New South Wales are subject to increased traffic demands during busy holiday periods, especially the summer peaks. To determine the influence of seasonality of traffic volume, data was sourced from the TfNSW traffic counter site located on the Pacific Highway at the Clarence Rive bridge (station ID HWDSTC). This site provided year-round traffic data in 2018 with average daily traffic volumes by month illustrated in Figure 4.1.

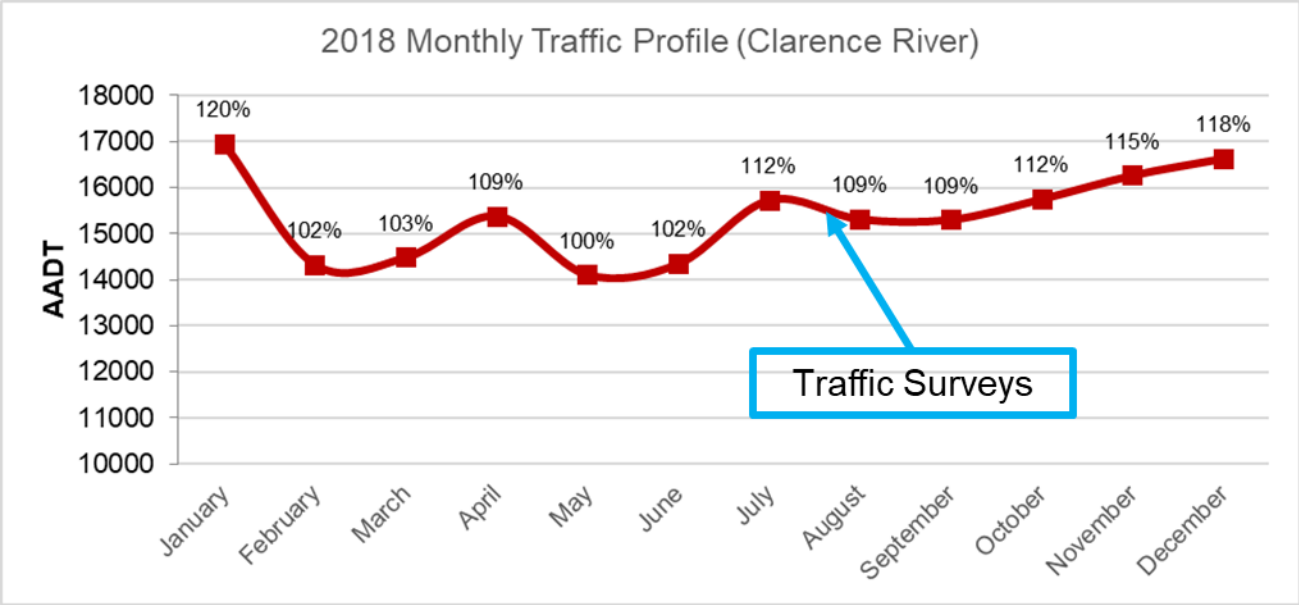


Figure 4.1: Pacific Highway Seasonal Traffic Volumes

As expected, peak traffic volumes occur in the months of December and January coinciding with summer holiday periods. Smaller increases in average daily traffic volumes were also observed in April and July corresponding with Easter and school holiday periods.

Traffic surveys were undertaken at the end of July after the school holiday period. Therefore, seasonal peak (January) traffic volumes area expected to be approximately 11% higher than surveyed. An 11% increase was applied to forecast traffic volumes (determined above) with estimated seasonal peak volumes provided at **Appendix C** (Sheet 4 & 5) for the year of opening (2033) and 10-year design horizon (2043) seasonality testing.

4.2 Adjacent Development Traffic

4.2.1 Adjacent Site Traffic Generation

To determine the cumulative impact of all WYURA developments, traffic generation associated with adjacent sites is also considered. Traffic generation rates for these developments were adopted as per the *TfNSW (formally RMS) Guide to Traffic Generating Developments Technical Direction* (2013). Expected traffic generation by recognised development applications outlined in Section 2.1.2 is detailed in Table 4.1.

Table 4.1: Adjacent Development Traffic Generation

Lot Number	Land Use	Quantity	Traffic Generation Rate		Peak Trips	
			AM	PM	AM	PM
Lot 158 DP 1279485	Low-Density Residential	161 Lots	0.71 trips / Lot	0.78 trips / Lot	114	126
Lot 20 DP700910	Seniors Living	52 Dwellings	0.4 trips / Dwelling	0.4 trips / Dwelling	21	21
Lot 1 DP1279485	Manufactured Homes	200 Lots	0.4 trips / Lot	0.4 trips / Lot	80	80
Lot 2 DP1279485	Manufactured Homes	216 Lots	0.4 trips / Lot	0.4 trips / Lot	86	86
				Total	**302**	**313**

As shown, adjacent recognised developments are expected to generate in the order of 302 peak hour vehicle trips in the AM peak hour and 313 peak hour vehicle trips in the PM peak hour.

Typical residential directionality splits were applied to this traffic generation to quantify expected trips in and out of adjacent development sites as detailed in Table 4.2.

Table 4.2: Adjacent Development Traffic Directionality

Land Use	AM Trip Split		PM Tips Split		AM Trips (veh/h)		PM Trips (veh/h)	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Residential	30%	70%	70%	30%	92	213	220	95

4.2.2 Adjacent Site Trip Distribution

Traffic distribution of adjacent WYURA developments is adopted based on surveyed traffic movement at the Yamba Road / Carrs Drive intersection.

Development traffic distribution for adjacent sites and subsequent trip assignment is provided at **Appendix C** (Sheet 6 & 7) with only the Carrs Drive connection to the WYURA.

4.3 Background Traffic

For the purposes of this assessment background traffic is considered as surveyed traffic volumes, with traffic growth rates applied, plus the above traffic generation of the adjacent development sites. Assuming all adjacent sites are fully developed, year-of-opening (2033) and 10-year design horizon (2043) background traffic volumes, with and without seasonality factors applied, are provided at **Appendix C** (Sheet 8 to Sheet 11).

4.4 Proposed Development Traffic

4.4.1 Proposed Development Traffic Generation

Traffic generation rates for the proposed low-density residential Lots were adopted as per the *TfNSW (formally RMS) Guide to Traffic Generating Developments Technical Direction* (2013). Traffic generation rates for the medium-density residential and commercial land uses proposed were adopted as per the *TfNSW (formally RMS) Guide to Traffic Generating Developments* (2002).

The commercial area proposed will comprise of a maximum of 1,000m^2 gross floor area (GFA). In accordance with TfNSW guides, gross-leasable floor area (GLFA) is on average equal to 80% of GFA. As such, traffic generation for the proposed commercial use is based on a yield of 800m^2 GLFA.

The proposed commercial area is small in scale and not a key destination like Yamba Fair. As such, a significant portion of the patronage to this site is expected to be walk-up trade from WYURA residents or 'drop-in' trips for locals with this patronage therefore not generating external vehicle trips. As such, consistent with the TfNSW *Guide to Traffic Generating Developments*, a 20% reduction is applied to external traffic generation to cater for these 'drop-in' trips.

Traffic generation rates and peak hour development trips are therefore detailed in Table 4.3.

Table 4.3: Proposed Development Traffic Generation

Lot Number	Land Use	Quantity	Traffic Generation Rate		Peak Trips	
			AM	PM	AM	PM
Lot 21 DP1279485	Low-Density Residential	89 Lots	0.71 trips / lot	0.78 trips / lot	63	69
Lot 18 DP1090409	Low-Density Residential	161 Lots	0.71 trips / lot	0.78 trips / lot	114	126
Lot 46 & 47 DP751395	Low-Density Residential	289 Lots	0.71 trips / lot	0.78 trips / lot	205	225
	Medium-Density Residential	30 Dwellings	0.5 trips / dwellings	0.5 trips / dwelling	15	15
	Commercial	800m^2 GLFA	12.3 trips per 100m^2 GLFA	12.3 trips per 100m^2 GLFA	79*	79*
				Net Existing Trips	**476**	**514**

**20% reduction applied for local 'drop-in' trips*

The proposed development is expected to generate in the order of 476 vehicle trips in the AM peak hour and 514 vehicle trips in the PM peak hour.

Typical residential and commercial directionality splits were applied to this traffic generation to quantify expected trips in and out of the proposed development as detailed in Table 4.4.

Table 4.4: Development Trip Directionality

Land Use	AM Trip Split		PM Tips Split		AM Trips (veh/h)		PM Trips (veh/h)	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Residential	30%	70%	70%	30%	120	279	306	132
Commercial	50%	50%	50%	50%	39	39	39	39

4.4.2 Proposed Development Trip Distribution

Currently, the only formal vehicle access to the proposed development area is via Carrs Drive. As such, traffic distribution for proposed development trips is as per the expected distribution for adjacent sites detailed in Section 4.2.2 and **Appendix C** (Sheet 6). Development trip assignment, assuming access via only the Carrs Drive roundabout is therefore provided at **Appendix C** (Sheet 12).

However, ultimate development traffic distribution will change substantially following the construction of the future Golding Street connection. It is expected that the majority of development trips travelling to / from the east on Yamba Road will access the development via Golding Street and most trips to / from the west via Carrs Drive.

Based on surveyed traffic volumes at the Carrs Drive, Treelands Drive and Golding Street roundabouts, the split of trips travelling to / from the east and west are outlined in Table 4.5.

Table 4.5: Development Trip Distribution - With Golding Street Connection

Peak Hour	Outbound from Development		Inbound to Development	
	West	East	West	East
AM	46%	54%	45%	55%
PM	44%	56%	55%	45%

A small number of residents may choose to use the western roundabout access to travel east or vice-versa. As such, 5% of the above trips were assumed to relocate to the utilise the alternate access point. For example, it is assumed that the Carrs Drive roundabout caters for 46% of development traffic exiting the proposed development in the AM peak, with 41% of trips travelling to the west and 5% travelling to the east.

Based on the above, expected development traffic distribution across surveyed intersections is provided at **Appendix C** (Sheet 13 & 14) for ingress and egress to / from the development. Proposed development trip assignment, assuming the construction of both WYURA access roads, is therefore provided at **Appendix C** (Sheet 15).

With the construction of the Golding Street link, it is expected that background traffic distribution for adjacent manufactured homes sites will redistribute, in line with the expected development trip distribution. As such, revised trip assignment of adjacent sites (background traffic) is provided at **Appendix C** (Sheet 16). Trips to / from the adjacent residential dwellings and seniors living site north of Miles Street are expected to all ingress / egress via Carrs Drive and as such, trip assignment for these sites is unchanged.

4.5 Design Traffic

Design traffic volumes are equal to surveyed traffic volumes with growth factors applied, plus adjacent development traffic, plus the proposed development traffic generation. Design traffic volumes are therefore provided at **Appendix C** (Sheet 17 to Sheet 22) for the following scenarios:

- Access via Carrs Drive only:
  - Year of opening (2033) design traffic volumes (Sheet 17)
  - Year of opening (2033) summer peak design traffic volumes (Sheet 18)
- Access via Carrs Drive and Golding Street
  - Year of opening (2033) design traffic volumes (Sheet 19)
  - Year of opening (2033) summer peak design traffic volumes (Sheet 20)
  - 10-year design horizon (2043) design traffic volumes (Sheet 21)
  - 10-year design horizon (2043) summer peak design traffic volumes (Sheet 22).

The Golding Street connection will ultimately be provided and as such Carrs Drive only scenarios were excluded for ultimate (2043) design scenarios.

4.6 SIDRA Assessment

4.6.1 Methodology

The key intersections outlined in Section 2.1.2 were assessed using SIDRA Intersection 9 to determine the impact of development trips on the surrounding road network. The key intersections assessed are as follows:

- Yamba Road / Treelands Drive (Roundabout)
- Yamba Road / Carrs Drive (Roundabout)

- Yamba Road / Shores Drive (Roundabout)
- Yamba Road / Godling Street (Roundabout)

The assessment was undertaken for the weekday AM and PM peak hours. Detailed SIDRA outputs for with and without development scenarios at the expected year of opening (2033) and 10-year design horizon (2043) are provided at **Appendix D**.

4.6.2 Yamba Road / Treelands Drive

The Yamba Road / Treelands Drive intersection layout as assessed in SIDRA is shown in Figure 4.2.

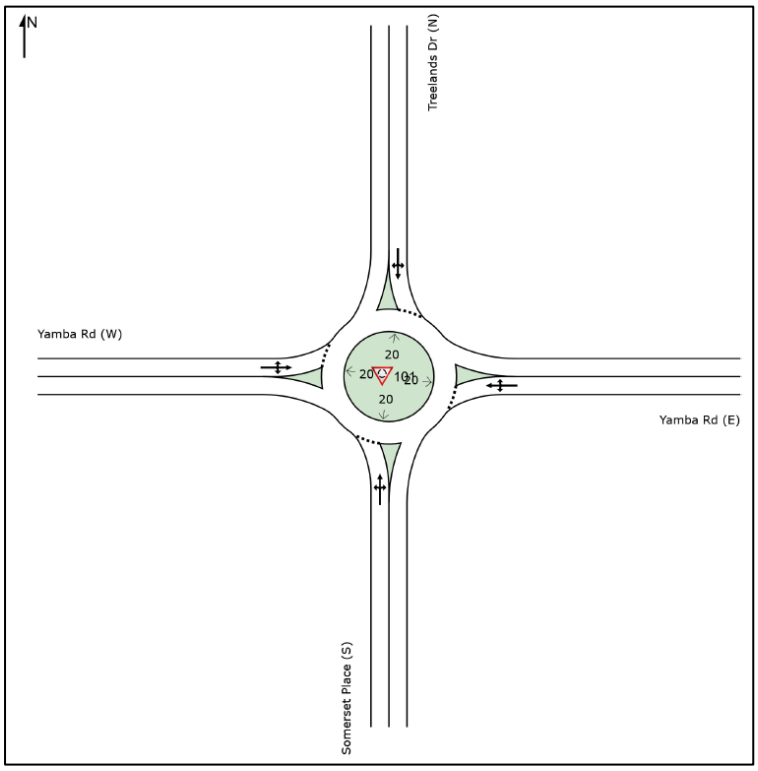


Figure 4.2: Yamba Road / Treelands Drive SIDRA Intersection Layout

Table 4.6 summarises the SIDRA results for the Yamba Road / Treelands Drive intersection for AM and PM peak hours.

Table 4.6: Yamba Road / Treelands Drive SIDRA Results Summary

Design Year	AM Peak				PM Peak			
	DOS (v/c)	Delay (sec)	LOS	Queue (m)	DOS (v/c)	Delay (sec)	LOS	Queue (m)
Background								
2033	0.54	7	A	35	0.53	8	A	31
2043	0.61	8	A	44	0.60	8	A	41
2033 Seasonal	0.61	8	A	42	0.60	8	A	40
2043 Seasonal	0.69	9	A	58	0.69	10	A	58
Design (Carrs Drive Access Only)								
2033	0.66	8	A	51	0.62	8	A	41
2033 Seasonal	0.73	9	A	68	0.69	10	A	56

Design (Carrs Drive & Golding Street)								
2033	0.68	8	A	53	0.65	9	A	48
2043	0.75	9	A	74	0.75	10	A	68
2033 Seasonal	0.74	9	A	72	0.75	10	A	68
2043 Seasonal	0.83	11	A	110	0.89	14	A	119

As shown, the Yamba Road / Treelands Drive roundabout is expected to operate within acceptable performance limits with or without the proposed development in all scenarios tested, with the exception of the 2041 PM seasonal peak. During this peak, traffic volumes exceed the theoretical maximum for a roundabout (DOS > 0.85). However, average delays during this peak are low (14 seconds) and no turn individual turn movement operates at worse the LOS C. Noting this, and that these level of traffic volumes are only expected to occur during the PM peak at the busiest summer peak periods, the intersection is considered to have suitable capacity to cater for all tested scenarios.

4.6.3 Yamba Road / Carrs Drive

The Yamba Road / Carrs Drive intersection layout as assessed in SIDRA is shown in Figure 4.3.

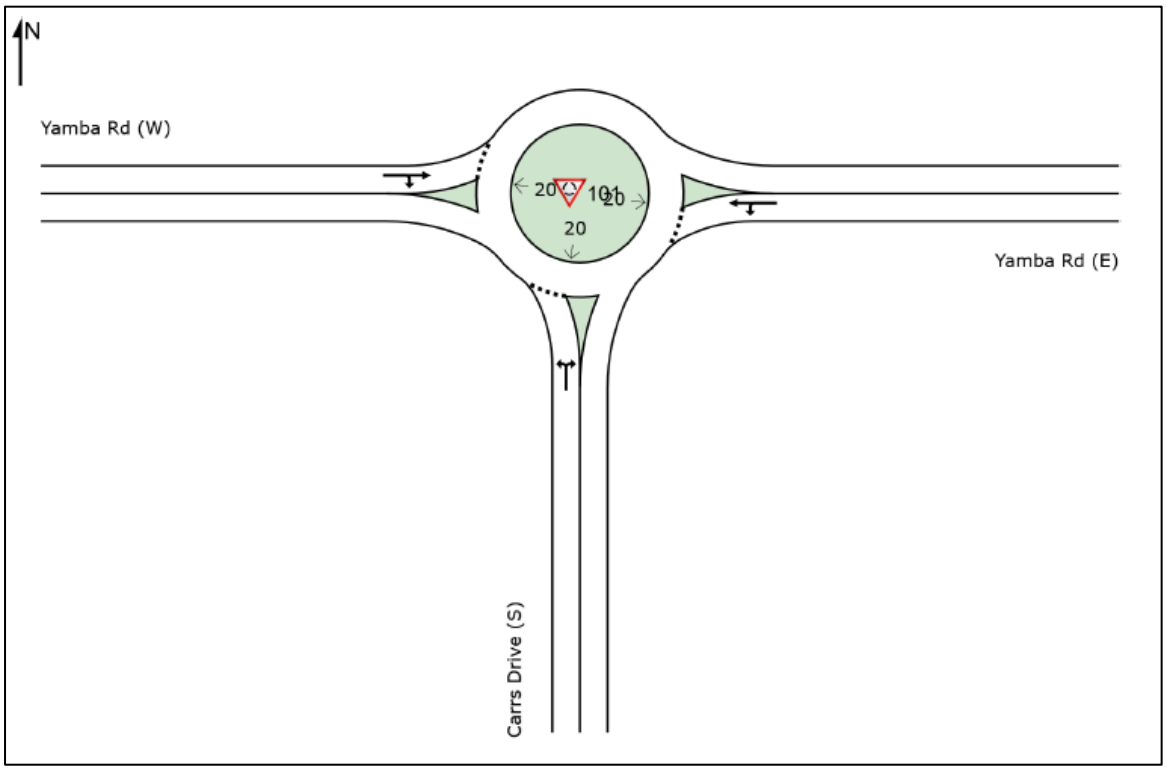


Figure 4.3: Yamba Road / Carrs Drive SIDRA Intersection Layout

Table 4.7 summarises the SIDRA results for the Yamba Road / Carrs Drive intersection for AM and PM peak hours.

Table 4.7: Yamba Road / Carrs Drive SIDRA Results Summary

Design Year	AM Peak				PM Peak			
	DOS (v/c)	Delay (sec)	LOS	Queue (m)	DOS (v/c)	Delay (sec)	LOS	Queue (m)
Background								
2033	0.55	7	A	35	0.53	6	A	34
2043	0.63	7	A	45	0.60	6	A	43
2033 Seasonal	0.61	7	A	42	0.58	6	A	40
2043 Seasonal	0.70	8	A	63	0.66	7	A	53
Design (Carrs Drive Access Only)								
2033	0.85	13	A	109	0.81	10	A	95
2033 Seasonal	0.93	19	B	167	0.87	12	A	127
Design (Carrs Drive & Golding Street)								
2033	0.58	8	A	41	0.66	7	A	55
2043	0.66	8	A	52	0.74	8	A	71
2033 Seasonal	0.64	8	A	49	0.72	8	A	66
2043 Seasonal	0.73	10	A	71	0.80	9	A	89

As shown, the Yamba Road / Carrs Drive intersection is expected to operate within acceptable performance limits to the year 2043 without the proposed development. When including the proposed development (but prior to the construction of the Golding Street link), traffic volumes will exceed the theoretical capacity of the roundabout (DOS > 0.85) by 2033. With the Golding Street link in place, the intersection will operate within acceptable limits by 2043.

Based on the above, and consistent with WYURA planning, the Golding Street connection is demonstrated to be required to facilitate efficient distribution of WYURA traffic onto the external road network. Further assessment to determine the trigger point for the Golding Street connection is provided at Section 4.8.1.

4.6.4 Yamba Road / Shores Drive

The Yamba Road / Shores Drive intersection layout as assessed in SIDRA is shown in Figure 4.4.

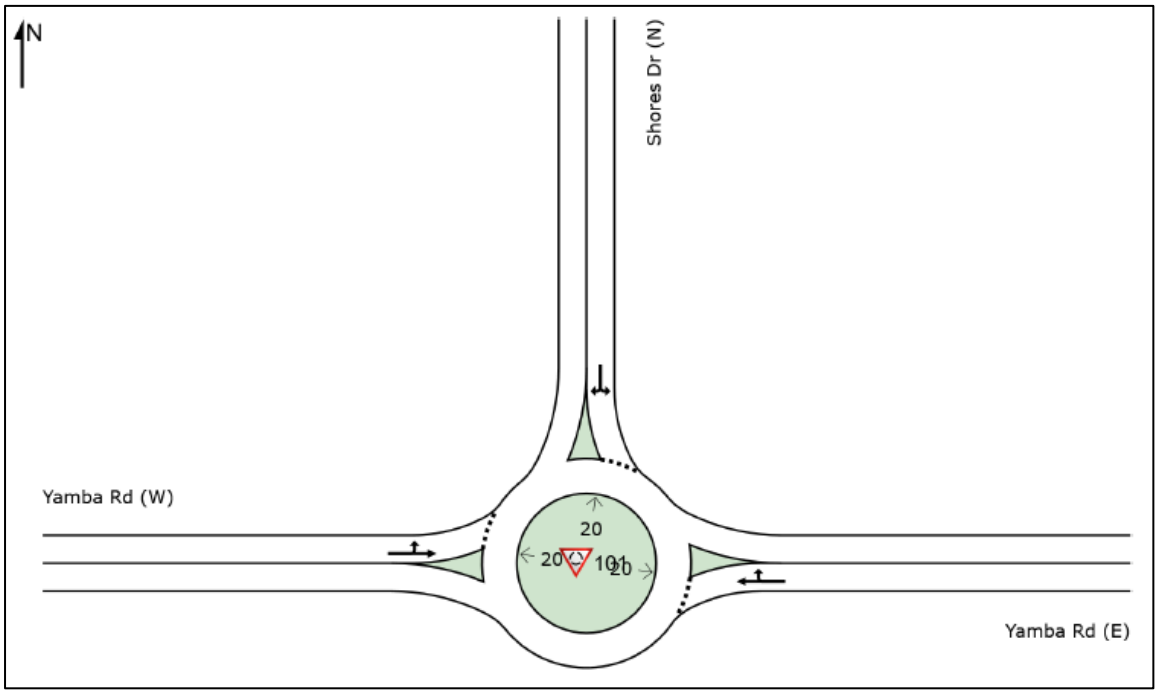


Figure 4.4: Yamba Road / Shores Drive SIDRA Intersection Layout

Table 4.8 summarises the SIDRA results for the Yamba Road / Shores Drive intersection for AM and PM peak hours.

Table 4.8: Yamba Road / Shores Drive SIDRA Results Summary

Design Year	AM Peak				PM Peak			
	DOS (v/c)	Delay (sec)	LOS	Queue (m)	DOS (v/c)	Delay (sec)	LOS	Queue (m)
Background								
2033	0.55	6	A	34	0.52	6	A	34
2043	0.63	6	A	44	0.60	6	A	42
2033 Seasonal	0.61	6	A	41	0.59	6	A	40
2043 Seasonal	0.70	7	A	55	0.68	6	A	52
Design (Carrs Drive Access Only)								
2033	0.68	6	A	53	0.63	6	A	55
2033 Seasonal	0.74	7	A	64	0.68	6	A	66
Design (Carrs Drive & Golding Street)								
2033	0.53	6	A	32	0.53	6	A	31
2043	0.61	6	A	41	0.61	6	A	39
2033 Seasonal	0.59	6	A	39	0.59	6	A	37
2043 Seasonal	0.68	7	A	51	0.68	6	A	48

As shown, the Yamba Road / Shores Drive intersection is expected to operate within acceptable performance limits for all tested scenarios. It is further noted that delivery of the Golding Street connection, significantly benefits intersection performance at the Shores Drive roundabout.

4.6.5 Yamba Road / Golding Street

The Carrs Drive / Golding Street intersection layout as assessed in SIDRA is shown in Figure 4.5.

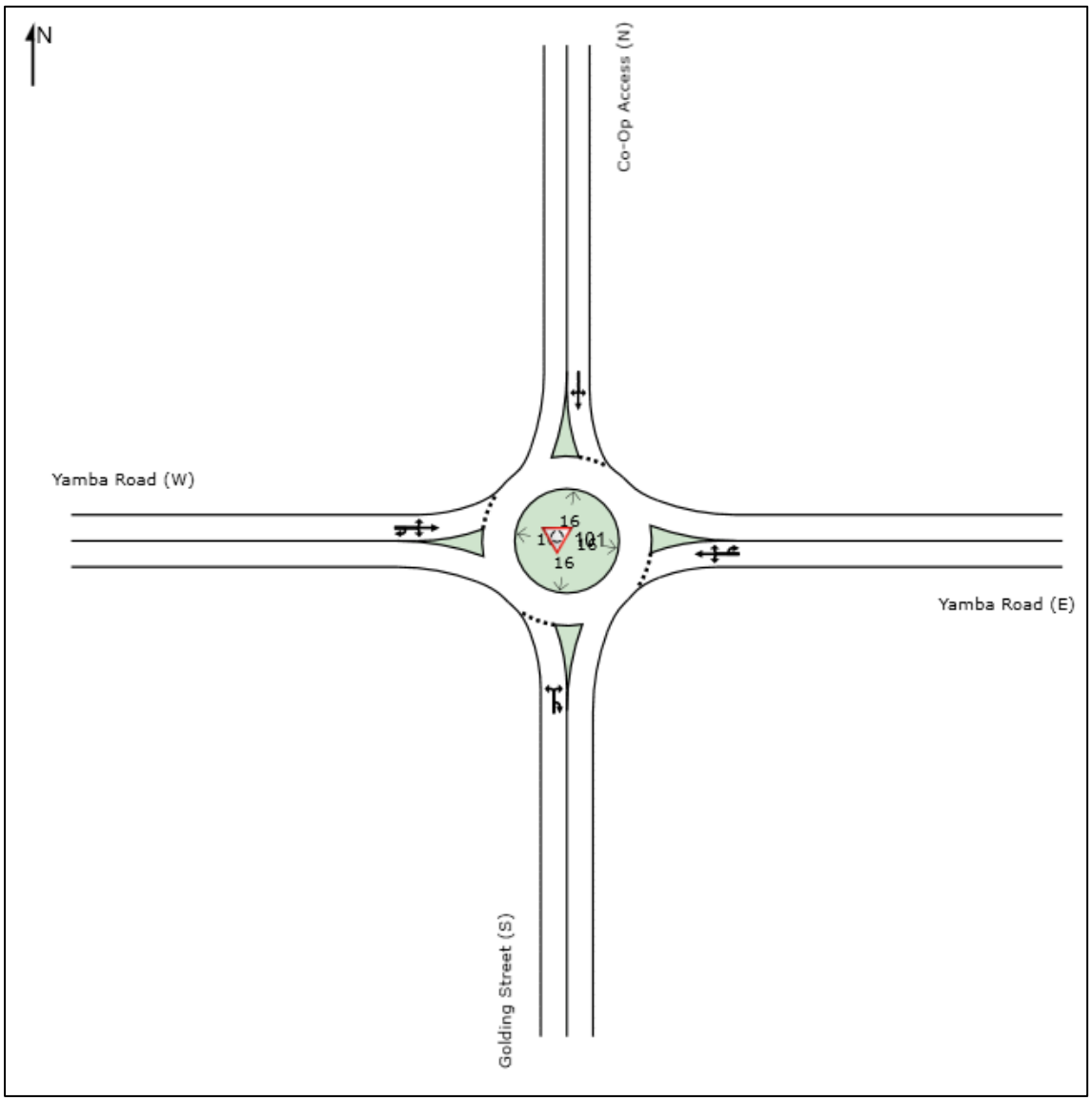


Figure 4.5: Yamba Road / Golding Street SIDRA Intersection Layout

Table 4.9 summarises the SIDRA results for the Yamba Road / Shores Drive intersection for AM and PM peak hours.

Table 4.9: Yamba Road / Golding Street SIDRA Results Summary

Design Year	AM Peak				PM Peak			
	DOS (v/c)	Delay (sec)	LOS	Queue (m)	DOS (v/c)	Delay (sec)	LOS	Queue (m)
Background								
2033	0.66	5	A	43	0.58	5	A	24
2043	0.75	6	A	63	0.66	5	A	32
2033 Seasonal	0.73	6	A	55	0.64	5	A	29
2043 Seasonal	0.84	6	A	88	0.72	5	A	41
Design (Carrs Drive Access Only)								
2033	0.72	5	A	53	0.72	5	A	41
2033 Seasonal	0.79	6	A	71	0.78	6	A	52
Design (Carrs Drive & Golding Street)								
2033	0.81	8	A	83	0.70	6	A	40
2043	0.93	11	B	166	0.78	6	A	56
2033 Seasonal	0.90	10	A	132	0.76	6	A	52
2043 Seasonal	1.04	31	C	433	0.85	7	A	11

As shown, the Yamba Road / Golding Street intersection is expected operate within acceptable performance limits by the year 2033 with or without the proposed development.

With the development, theoretical capacity limits of the roundabout (DOS>0.85) are exceeded in the 2043 AM peak. However, without the seasonality factors also applied average intersection delays remain low, with LOS C not exceeded for any movement. As such, forecast traffic volumes are only expected to result in intersection failure in the 2043 AM peak hour during peak seasonal traffic volumes.

It is however expected that potential 2043 intersection impacts will be offset by future planned network upgrades in the area as detailed in Section 4.8.2.

4.7 SIDRA Results Summary

The assessment detailed above indicates that the Yamba Road / Treelands Drive and Yamba Road / Shores Drive intersections are expected to operate within acceptable performance limits by 2043 with or without the proposed development.

With full development of the WYURA, the Yamba Road / Carrs Drive intersection will fail by 2033 if the Golding Street connection is not delivered. With the delivery of the Golding Street link this intersection will operate within acceptable limits for the until the 10-year design horizon (2043).

Traffic volumes are expected to exceed the capacity of the Yamba Road / Golding Street intersection by 2043 with or without the proposed development. The extent of the failure of this intersection is exacerbated by the proposed development and the future Golding Street connection.

4.8 Road Infrastructure Upgrades

4.8.1 Golding Street Connection Trigger Points

As previously detailed, completion of the proposed development and adjacent sites would result in the Yamba Road / Carrs Drive intersection operating over capacity by 2033 if the Golding Street

connection to the WYURA was not constructed. As such, this link shall be constructed prior to full development of the subject site. To determine the trigger point for this link, development traffic volumes were incrementally added to the 2033 background traffic volumes (with seasonality factors applied).

The threshold for construction of the new Golding Street link was determined as the point at which Yamba Road / Carrs Drive roundabout reaches theorical capacity (DOS 0.85) in the AM peak. **Maximum proposed development yields** (i.e. subject site only) at this threshold were determined to be as follows:

- Development of the commercial site, medium density site and a maximum of 350 low-density residential Lots:

  OR

- Development of a maximum of 450 low-density residential Lots.

Note that the above maximum yields for the subject site assuming all adjacent WYURA developments are online.

SIDRA results for the Yamba Road / Carrs Drive intersection at the threshold point are summarised in Table 4.10.

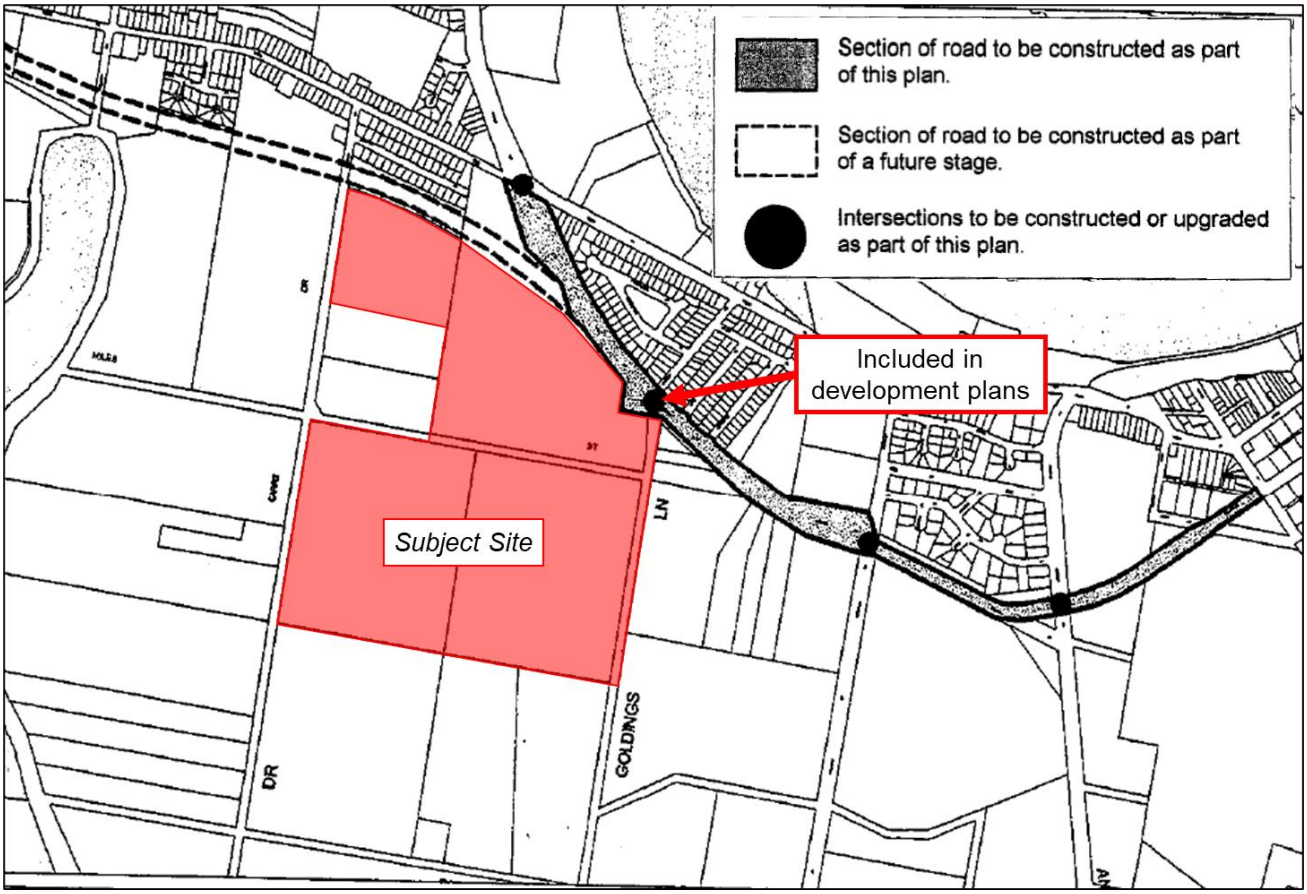
Table 4.10: SIDRA Results Summary Yamba Road / Carrs Drive 2033 Development Thresholds

Design Year	AM Peak				PM Peak			
	DOS (v/c)	Delay (sec)	LOS	Queue (m)	DOS (v/c)	Delay (sec)	LOS	Queue (m)
Commercial Site, Medium Density Residential Site and 350 Residential Lots								
2033 Seasonal	0.85	15	B	110	0.71	8	A	61
450 Residential Lots								
2033 Seasonal	0.85	15	B	109	0.76	9	A	77

At the above WYURA development thresholds, the Yamba Road / Carrs Drive roundabout is operating at theoretical maximum capacity limits (DOS 0.85) in the AM peak. It is therefore recommended that the Golding Street connection be provided prior to WYURA development proceeding beyond the abovementioned thresholds.

4.8.2 Golding Street Connection via Deering Street

The Maclean Shire Council (now Clarence Valley Council) *Section 94 Contributions Plan: Yamba Urban Bypass & Urban Intersections* (2000) outlines the planned road connection between Yamba Road and Coldstream Street as outlined in Figure 4.6.

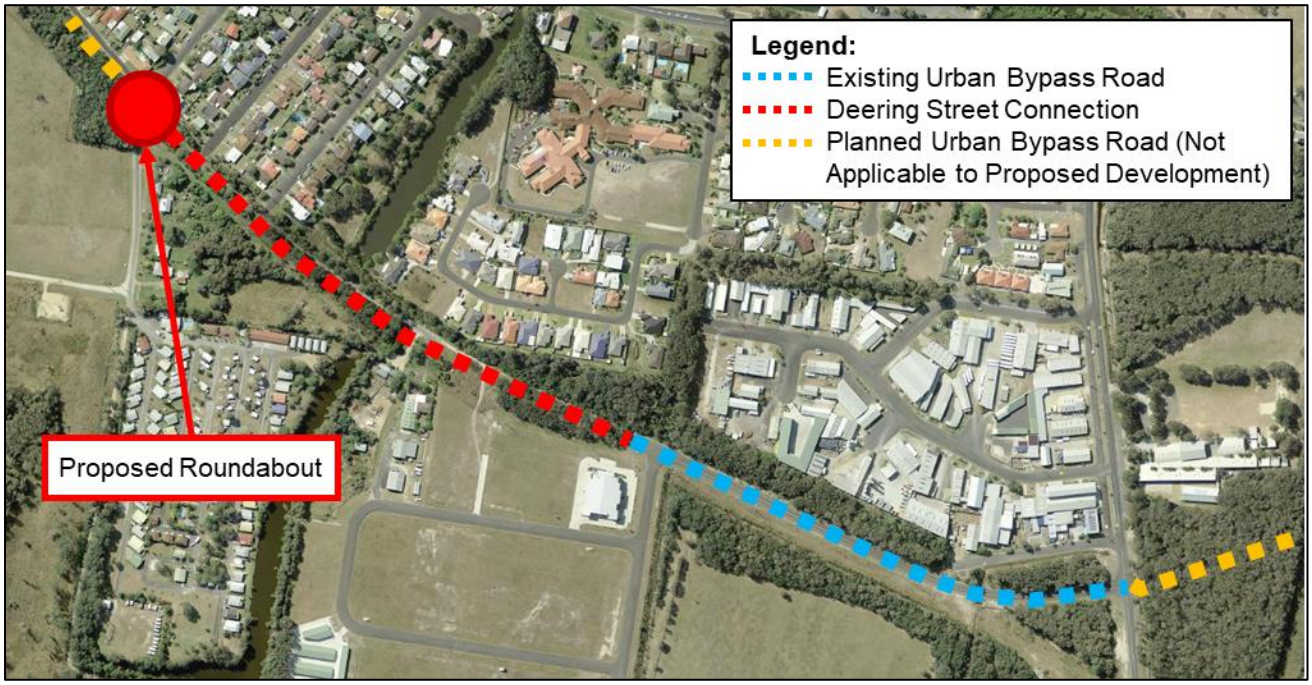


Source: Section 94 Contributions Plan: Yamba Urban Bypass & Urban Intersections (edited by Bitzios)

Figure 4.6: Yamba Urban Bypass Plan

This planned link would provide an alternate local connection between the WYURA and the Yamba Town Centre to the east thereby significantly reducing WYURA traffic flows via Yamba Road and importantly at the Yamba Road / Golding Street roundabout.

Noting that traffic flows at the Yamba Road / Golding Street roundabout are only expected to marginally exceed the capacity of the roundabout, the Deering Street connection between Golding Street and Angourie Road alone is expected to offset impacts on Yamba Road. As illustrated in Figure 4.7 the eastern portion of this Deering Street connection is already constructed. Also, as shown at **Appendix A**, a roundabout is proposed as a part of the development at the Golding Street / Deering Street intersection at the western end of this connection.



Source: SIXMaps (edited by Bitzios)

Figure 4.7: Yamba Urban Bypass Deering Street Connection

Based on the above, the proposed development will contribute to the Deering Street connection portion of the Yamba Urban Bypass through the provision of the roundabout as well as contributions in accordance with the Bypass S94 plan (in addition to standard development contributions). As such, the development will be contributing to the majority of the expected cost of the remaining bypass between Golding Street and Angourie Road.

With the proposed development and other developments within the WYURA it is expected that this connection will be warranted / provided by 2043. By providing a majority contribution to this connection, which offsets impacts on Yamba Road / Golding Street intersection previously identified, the proposed development is considered to provide appropriate mitigation measures to offset the impact of development traffic on the external road network.

5. INTERNAL TRAFFIC ASSESSMENT

5.1 Overview

The future Carrs Drive / Miles Street and Carrs Drive / Proposed Collector Road intersections form key internal intersections within the WYURA. The following assessment therefore forecasts ultimate traffic volumes and subsequent intersect requirements at these intersections assuming full development of the WYURA.

5.2 Traffic Volumes

It is expected that ultimate traffic volumes at these intersections will be a result of expected WYURA developments south of Miles Street. For the purposes of this assessment, and generally consistent with traffic distributions determined above, it is estimated that 50% of development these trips will enter / exit the site via Carrs Drive, with the remaining trips via the future Golding Street link.

Traffic distribution through the intersection will vary depending on the access points for the future development sites. Traffic distributions for the various southern WYURA developments are provided at **Appendix E** (Sheet 1 to Sheet 6). Ultimate traffic volumes at the Carrs Drive / Miles Street and Carrs Drive / Proposed Collector Road intersections are subsequently provide at **Appendix E** (Sheet 7).

5.3 Turn Warrants Assessment

A turn warrant assessment was undertaken in accordance with the *Austroads Guide to Traffic Management: Part 6* at the Carrs Drive / Miles Street intersection and Carrs Drive / Proposed Collector Road intersections adopting the above forecast ultimate traffic volumes as illustrated in Figure 5.1 and Figure 5.2.

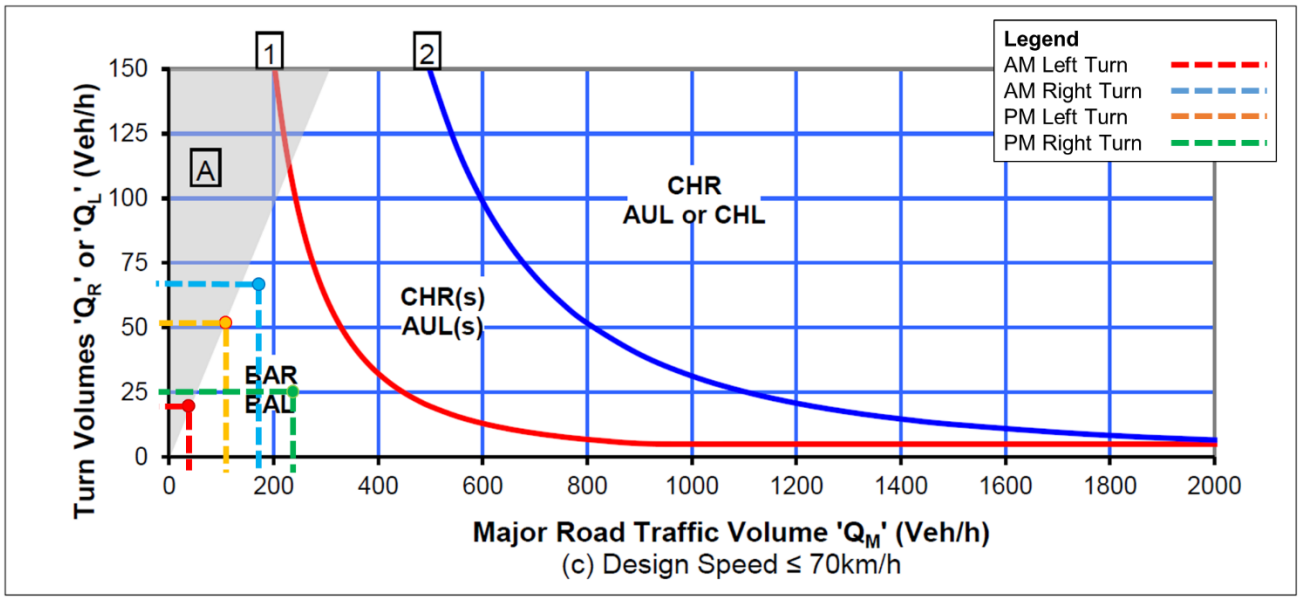


Figure 5.1: Carrs Drive / Miles Street Turn Warrants Assessment

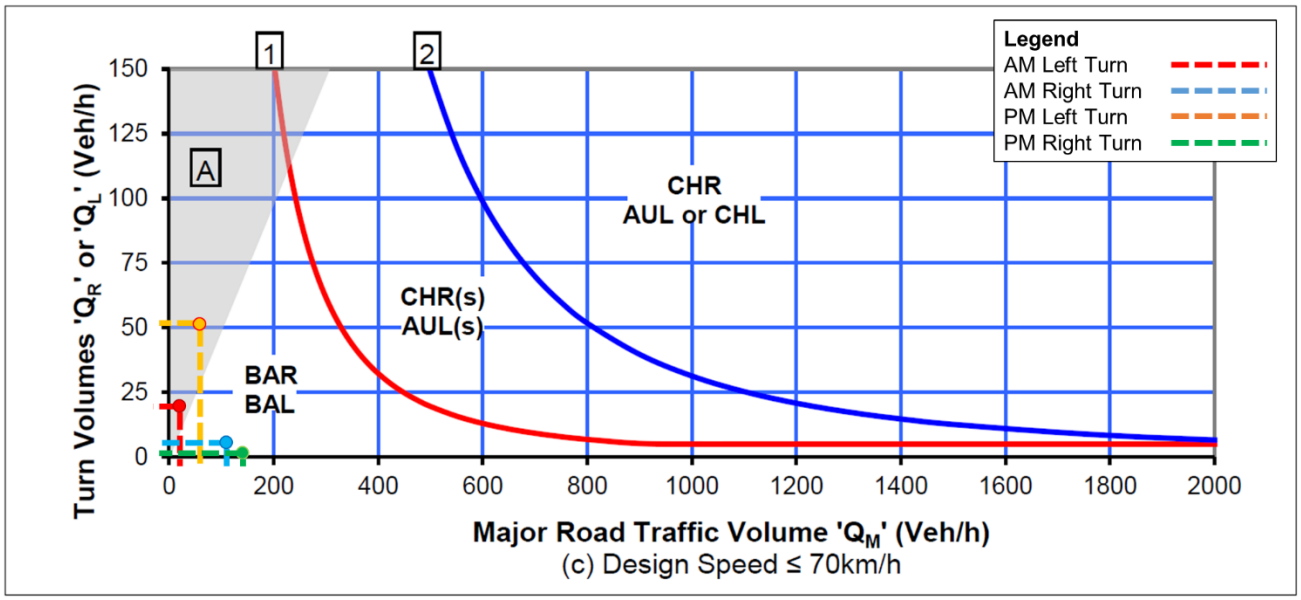
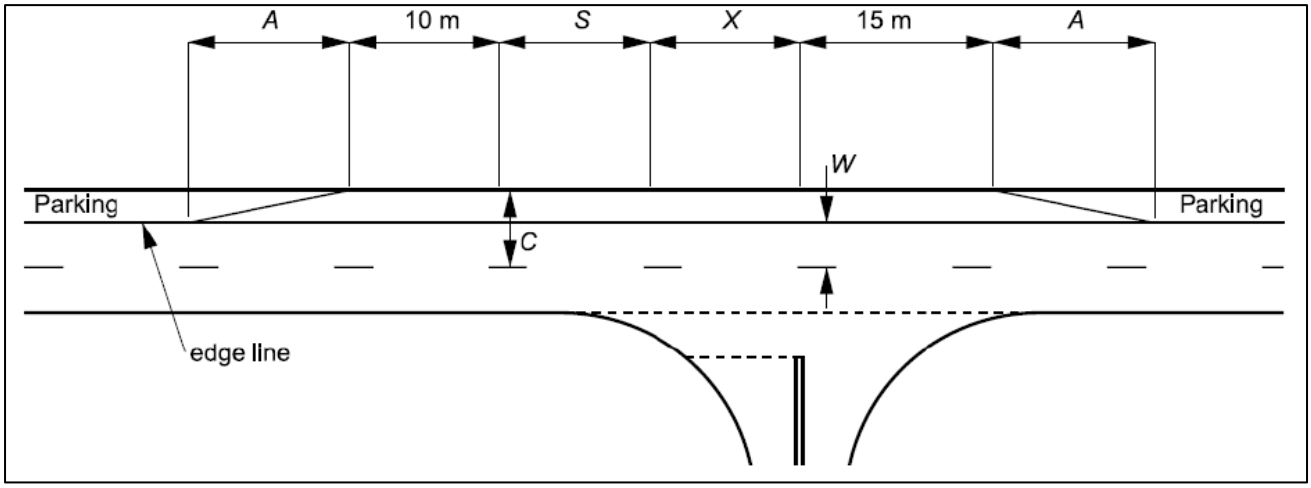


Figure 5.2: Carrs Drive / Proposed Collector Road Turn Warrants Assessment

As shown, basic left-turn (BAL) and basic right-turn (BAR) treatments are sufficient to cater for the ultimate traffic volumes at the Carrs Drive / Miles Street and Carrs Drive / Proposed Collector Road intersections.

In accordance with the Austroads Guide to Road Design: Part 4, the urban BAL consists of a kerb return radius that facilitates a single radius turn for a design vehicle. As such, at future development stages, the intersections shall be design with a kerb return radius on the north-east corner of the intersection catering for the required design vehicle, to be confirmed by swept path assessment at design stages.

Standard design for an urban BAR treatment is shown in Figure 5.3.



Source: Figure 7.6 Austroads Guide to Road Design: Part 4A

Figure 5.3: BAR Treatment Design

Approximate design dimensions for the Carrs Drive / Miles Street intersection are as follows:

- Lane Width (W): 3.5m
- BAR Width (C): 6m
- Taper Length (A): 21m
- Storage Length (S): 12.5m

- Turning Path Distance (X): 6m
- Total BAR Length: 85.5m

As collector roads are 5.5m wide from the centreline to the kerb line, with the construction of the future intersections, the western side of Carrs Drive should be widened by 0.5m for the BAR treatment length. For the 85.5m length of the BAR, parking should also be restricted on the western side of Carrs Drive.

6. ACCESS & ROAD CAPACITY ASSESSMENT

6.1 Road Hierarchy

6.1.1 Northern Rivers Road Cross-Sections

Relevant road cross-section requirements in accordance with the *Northern Rivers Design Manual Section D1: Geometric Road Design (Urban and Rural)* are summarised in Table 6.1.

Table 6.1: Northern Rivers Design Manual Road Cross-Section Details

Road Type	Max Traffic Volume (vpd)	Max Speed	Carriageway Width	Footpath Requirement	Min. Verge Width
Local Street	2,000	50km/h	7-9m	Network Dependant	3.5m
Collector Street	3,000	50km/h	11m	One side	
Distributor Road	3,000+	60km/h	13m	One side	

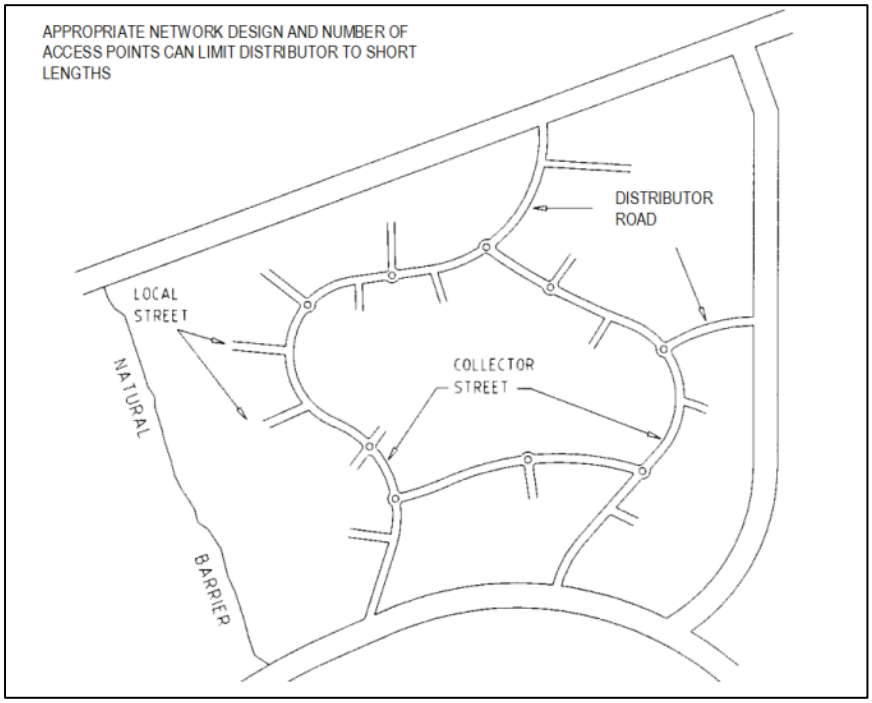
In addition to the above, guidelines are in place for distributor road types as follows:

- Direct access to a distributor should not be provided for single Lot dwellings but may be provided to multi-Lot developments and non-residential land uses
- Distributor roads should serve only the development and should not attract through traffic.

6.1.2 WYURA Network Planning

A road hierarchy plan within the WYURA is provided in Council's DCP identifying the Carrs Drive and Miles Street as future collector roads. However, the following is noted:

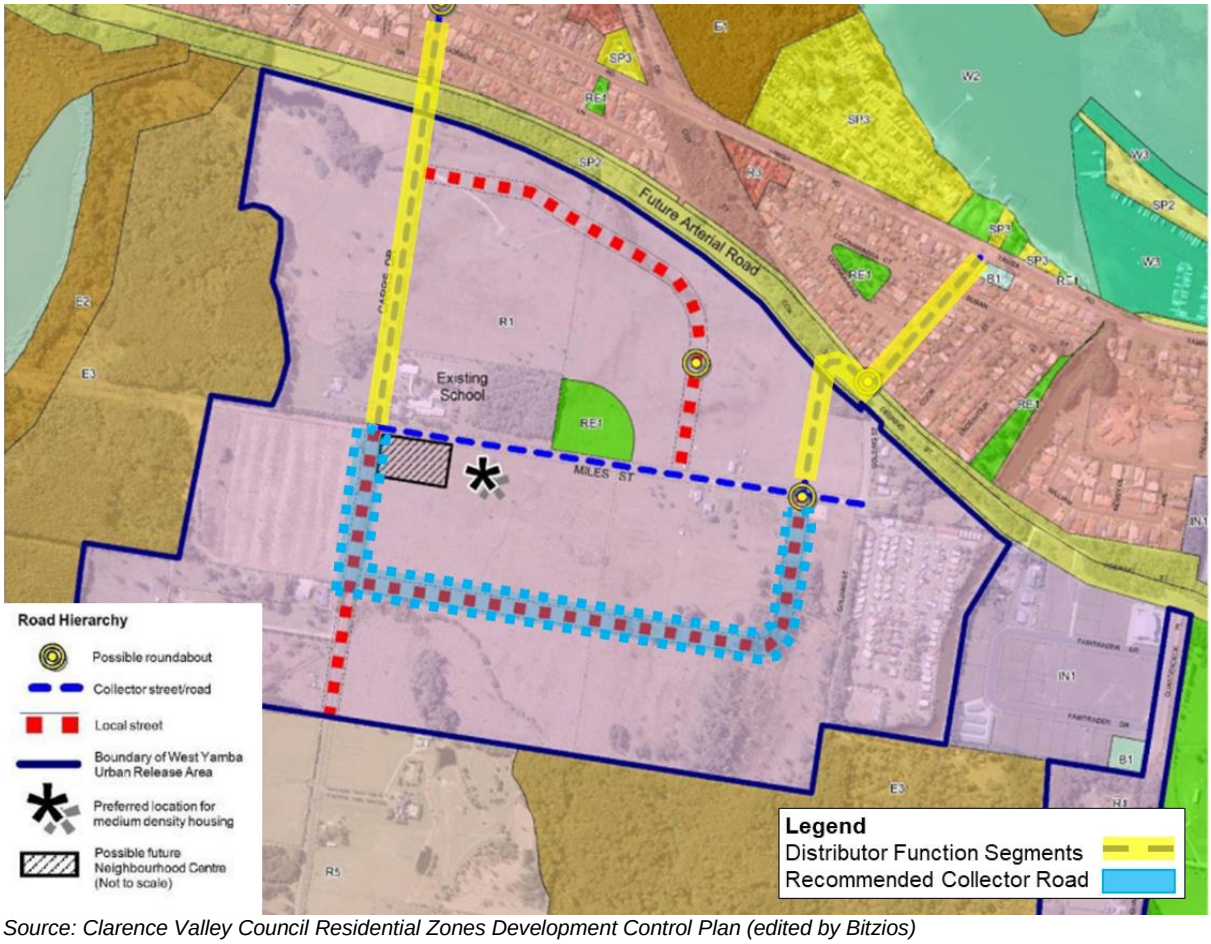
- As per Council's DCP, single dwelling Lot access is to be restricted on Miles Street and Carrs Drive north of Miles Street, consistent with a distributor road type
- Planning and land zoning within the WYURA, as per Council's DCP, identifies an ultimate maximum yield of 1,144 dwellings within the WYURA. Daily traffic generation associated with this overarching yield exceeds the capacity of the two collector roads under Council's definition
- As per the Northern Rivers Design Manual, the convenient and safe distribution of traffic generated by a residential development area is the main function of a distributor road type. The application of typical cross-sections for a development area, as per Figure D1.5 of the Northern Rivers Design Manual, is illustrated in Figure 6.1.



Source: Northern Rivers Design Manual D1 Geometric Road Design Figure D1.5

Figure 6.1: Northern Rivers Road Hierarchy Applicable Uses

Based on the above, the northern portion of Carrs Drive and the ultimate eastern connection via Golding Street will perform a distributor road function for the WYURA, as illustrated in Figure 6.2.



Source: Clarence Valley Council Residential Zones Development Control Plan (edited by Bitzios)

Figure 6.2: WYURA Road Hierarchy Function

While segments illustrated are expected to perform a distributor function, it is considered acceptable that carriageway width is constructed as per a collector road type in line with WYURA planning considering that:

- No single Lot accesses are proposed along these sections of road
- Widening of Carrs Drive may encourage increased vehicle speeds, undesirable in proximity to the existing school and future seniors living and neighbourhood centre sites
- An urban road under interrupted flow conditions is noted as providing sufficient road capacity of 18,000 daily trips in accordance with the *Austroads Guide to Traffic Management: Part 3*.

Additionally, the ultimate daily traffic generation of the proposed development on Lot 46 & 47 is estimated in the order of 3,950 vehicles per day (vpd). While these daily trips will distribute to the external network via various routes, it is expected that the primary road through these Lots would ultimately carry higher than the 2,000vpd limit for a local street. As such, the length of local street illustrated in Figure 6.2 is recommended to instead be provided as a collector street.

6.1.3 Proposed Cross-Sections

Details of proposed road cross-sections within the subject site are outlined in Table 6.2.

Table 6.2: Proposed Road Cross-Sections

Road Type	Capacity	Posted Speed	Carriageway Width	Parking	Footpath	Verge Width	Road Reserve
Local Street	2,000 vpd	50km/h	7.5m	On-Street	Varies	Min. 3.5m	14.5m
Collector	3,000 vpd		11m	On-Street	One side		18m

As shown, proposed road cross-sections comply with the relevant requirements of the Northern Rivers Design Manual.

6.2 Heavy Vehicle Access

6.2.1 Construction Traffic

There is expected to be an ongoing need for large earthmoving vehicles (typically truck & dog) to access the site. Noting flooding constraints impacting the subject site require substantial earthworks are as a part of the proposed development.

With development of adjacent sites within the WYURA currently underway, significant construction traffic volumes were surveyed with 10-15% of turns to / from Carrs Drive surveyed as heavy vehicles in the AM peak hour. As evidenced by surveys of other intersections, turning movements to primarily residential catchments would typically include 2-4% heavy vehicle movements.

The above SIDRA assessment carried this high proportion of heavy vehicle movements through to future year intersection assessments. A detailed above, the Yamba Road / Carrs Drive and Yamba Road / Treelands Drive intersections are expected to operate within acceptable performance limits despite the large number of heavy vehicle movements. Construction traffic for the subject site is therefore not expected to result in adverse impact to road network capacity in the vicinity of the subject site.

It is acknowledged that large volumes of heavy vehicles on the local road network would have amenity impacts on surrounding residents. As such, mitigation measures are recommended to ameliorate amenity impacts as follows:

- Heavy vehicle movements to / from the development site should be limited to daylight hours only (e.g. 8:00am to 6:00pm)
- Hourly heavy vehicle movement limits should be applied to the development site so that earthmoving vehicle trips are distributed relatively evenly across the day, minimising impacts at any one period of the day
- Heavy vehicle movements should be restricted on the length of Carrs Drive fronting the St James Catholic Primary School between 2:30 and 3:30pm where there will be the peak number of students / parents in the vicinity of the school.

It is further noted that the applicant is investigating the potential for local dredging, reducing the need for material to be transport from distant areas.

6.2.2 Service Vehicle Access

Residential components of the proposed development areas are expected to be serviced by 8.8m MRV's (removal trucks) and side-loading refuse collection vehicles. As proposed road cross-sections comply with relevant dimensional requirements, proposed roads will cater for typical servicing requirements for residential neighbourhoods. Any cul-de-sacs within the future development area shall have a minimum radius of 10m to facilitate service vehicle manoeuvring in accordance with the Northern Rivers Design Manual.

Service vehicle access to the future neighbourhood centre will be subject to further development application stages at a later date.

7. ALTERNATE TRANSPORT PROVISIONS

7.1 Public Transport

Future bus services within the WYURA will be subject to further consultation with TfNSW and Council. However, with the construction of future collector roads including Carrs Drive, Miles Street and the recommended collector road within Lot 46 & 47, proposed residential lots will be located within 400m of a potential bus service. As such, the proposed development is considered to provide good opportunity for future public transport connectivity in line with WYURA planning requirements.

7.2 Active Transport Provision

The proposes an active transport connection on all new collector roads and key local roads as shown on the development plans provided at **Appendix A**. These proposed footpaths are considered to provide a high level of active transport connectivity through the proposed development area. Consistent with the requirements of the Northern Rivers Design Manual, footpaths are not required on minor local street / no-through roads.

As per the requirements of the Northern Rivers Design Manual, footpaths shall be a minimum of 1.5m wide.

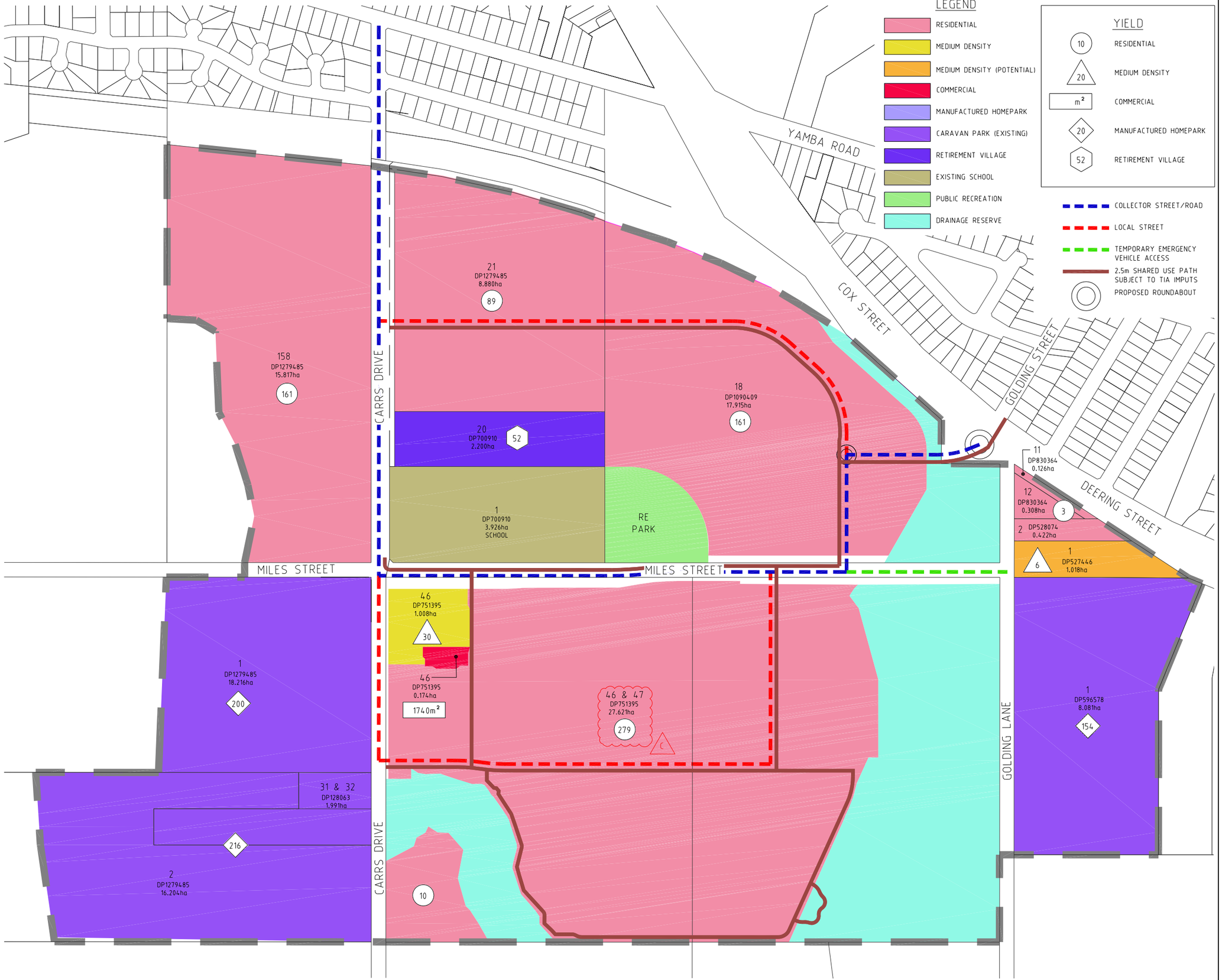
8. SUMMARY AND CONCLUSIONS

The key findings of the TIA for the proposed West Yamba Urban Release Area residential development in Yamba are as follows:

- The proposed development area within the WYURA comprises of 539 low density residential Lots, 30 medium-density dwellings and a small neighbourhood centre commercial site
- This TIA considered cumulative impacts of both the proposed development and the multiple recognised development applications adjacent to the subject site
- Noting the currently undeveloped environment in the WYURA, limited alternate transport provisions are existing in the vicinity of the subject site
- The proposed development is expected to generate in the order of 476 vehicle trips in the AM peak hour and 514 vehicle trips in the PM peak hour
- SIDRA assessment was undertaken at key intersections at years 2033 and 2043 with and without the proposed development area as well as with and without a 11% seasonality factor applied
- SIDRA assessment indicates that the future Golding Street connection is required to cater for full development of the WYURA and redistribute traffic volumes from the Yamba Road / Carrs Drive intersection. This link is warranted by the subject site's delivery of 450 residential Lots or 350 Residential Lots and the proposed neighbourhood centre site
- External intersections are generally expected to operate within acceptable performance limits with or without the proposed development. With development traffic and seasonality factors applied, the Yamba Road / Golding Street intersection is expected to fail by 2043. However, the Yamba Urban Bypass is expected to at least be partially constructed by this date offsetting the impacts to the roundabout. As a part of the development the Golding Street / Deering Street roundabout will be constructed and S94 contributions will be provided and as such, the development is considered to suitably offset development traffic impacts
- The future Carrs Drive / Miles Street and Carrs Drive / Collector Road intersections will ultimately warrant the provision of urban BAL and BAR turn treatments
- Road cross-sections are proposed in accordance with the Northern Rivers Design Manual and generally in accordance with the WYURA road hierarchy planning
- Construction traffic for the subject site is not expected to result in adverse impact to road network capacity in the vicinity of the subject site however, it is recommended that measures be implemented to manage potential amenity impacts on local residents
- Proposed footpaths are considered to provide a high level of active transport connectivity through the proposed development area and road links provide good opportunity for future public transport connectivity in line with WYURA planning requirements.

Based on the above assessment, it is concluded that there are no significant traffic or transport impacts associated with the proposed development to preclude its approval and relevant conditioning on transport planning grounds.

Appendix A: Development Plans



PROJECT NAME

YAMBA GARDENS

OVERALL SKETCH

RP DESCRIPTION

Lot 46 on DP751395,
& Lot 47 on DP751395
MILES ST, YAMBA NSW 2464
LOCALITY OF CLARENCE VALLEY

CLIENT

KAHUNA NO. 1 PTY LTD

NORTH

0 125 250 375 500 625m

Scale 1:12500 - A1 (1:25000 - A3)

ISSUES	DATE	
TENDER		
COUNCIL		
CONSTRUCTION		

C	09-12-22	LOT NUMBER AMENDED
B	06-12-22	LOT NUMBERS AMENDED
A	17-05-22	ISSUE
PRE	DATE	AMENDMENT

ASSOCIATED CONSULTANTS

DRAWING TITLE

TRAFFIC IMPACT ASSESMENT LOT YEILDS

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065

mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

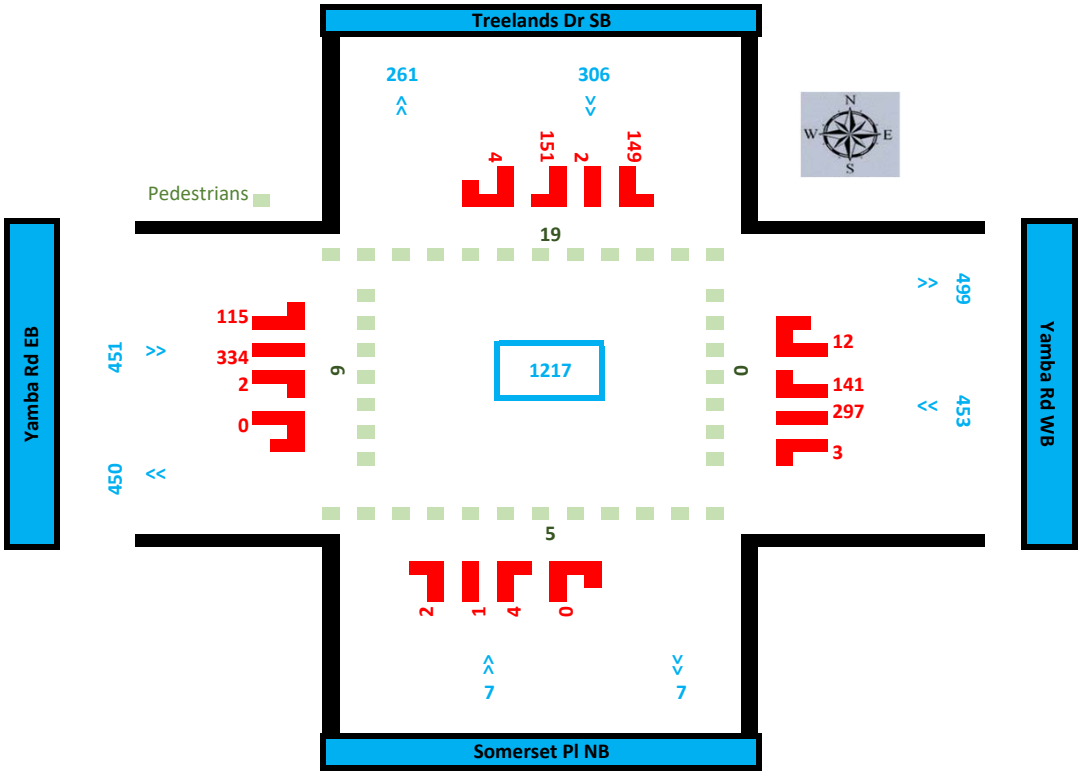
DESIGNED PP	DRAWN SF	
APPROVED	NER 906726	DATE 17-05-22

DRAWING NUMBER: 33801-ALL-SK030 | AMEND.: C

Appendix B: Traffic Surveys

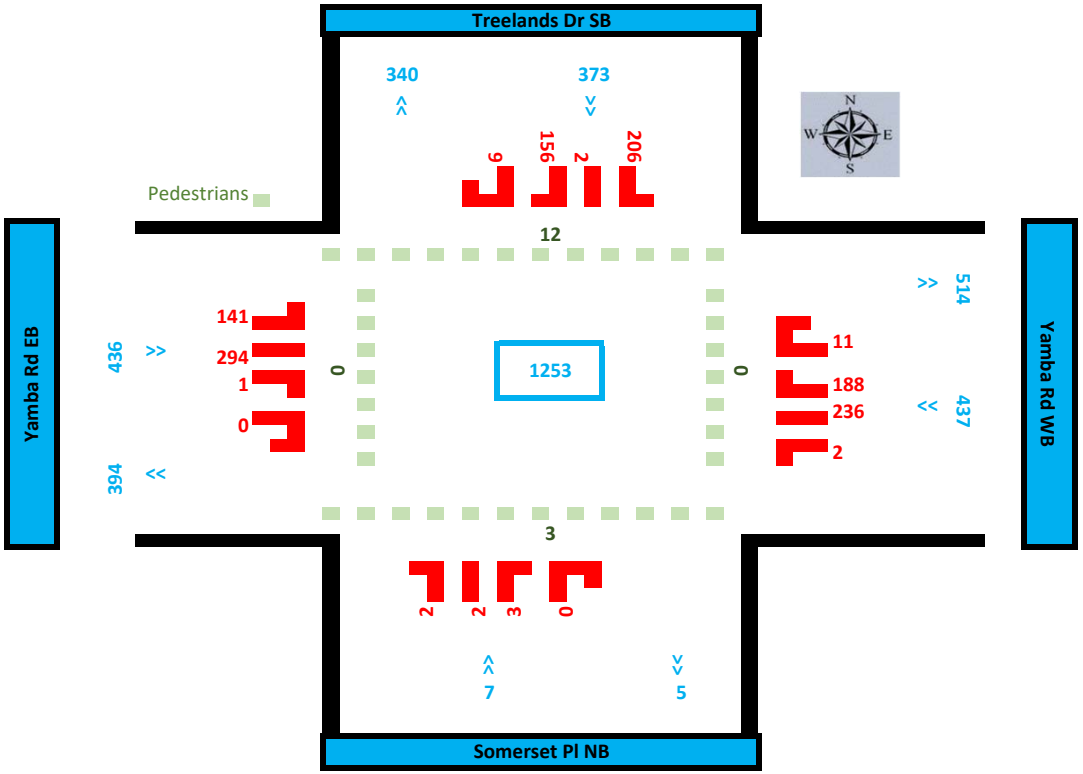
Turning Movement Count Summary

Site ID:	1
Location:	Yamba Rd & Treelands Dr/Somerset Pl, Yamba
Date:	20-July-2022
Surveyed Time:	6:00 AM to 9:00 AM
Weather:	Fine
Data for hour starting:	8:00 AM to 9:00 AM
Vehicle Class:	ALL VEHICLES



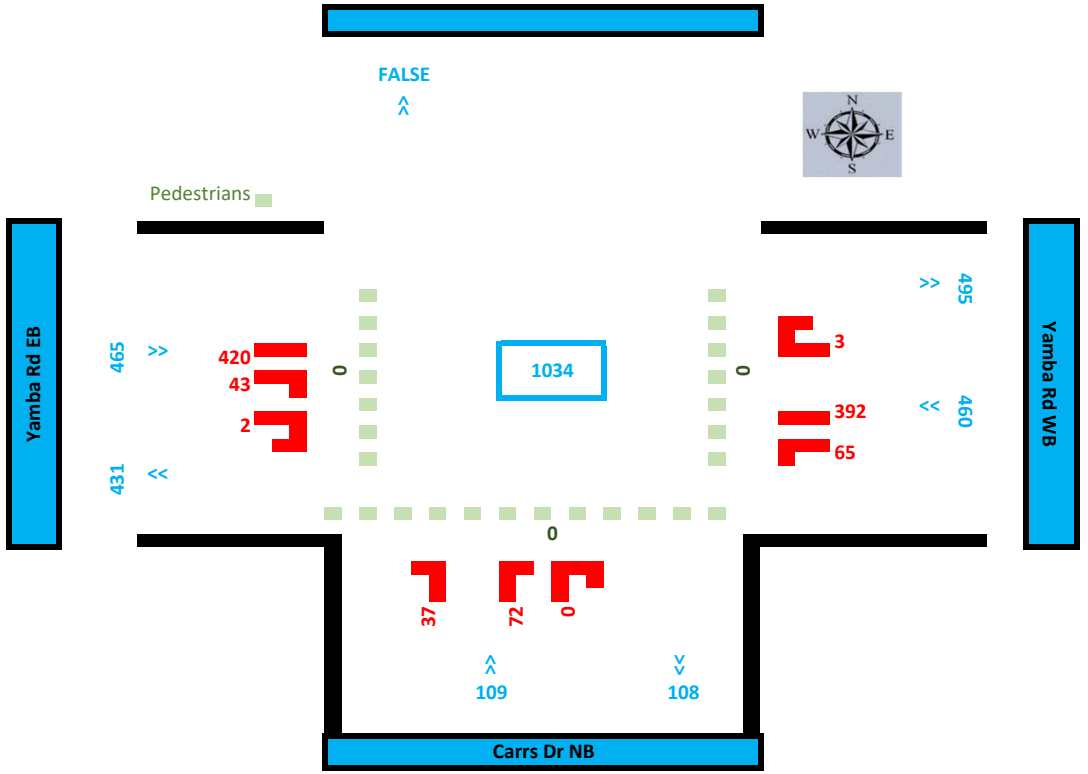
Turning Movement Count Summary

Site ID:	1
Location:	Yamba Rd & Treelands Dr/Somerset Pl, Yamba
Date:	20-July-2022
Surveyed Time:	3:00 PM to 6:00 PM
Weather:	Fine
Data for hour starting:	3:15 PM to 4:15 PM
Vehicle Class:	ALL VEHICLES



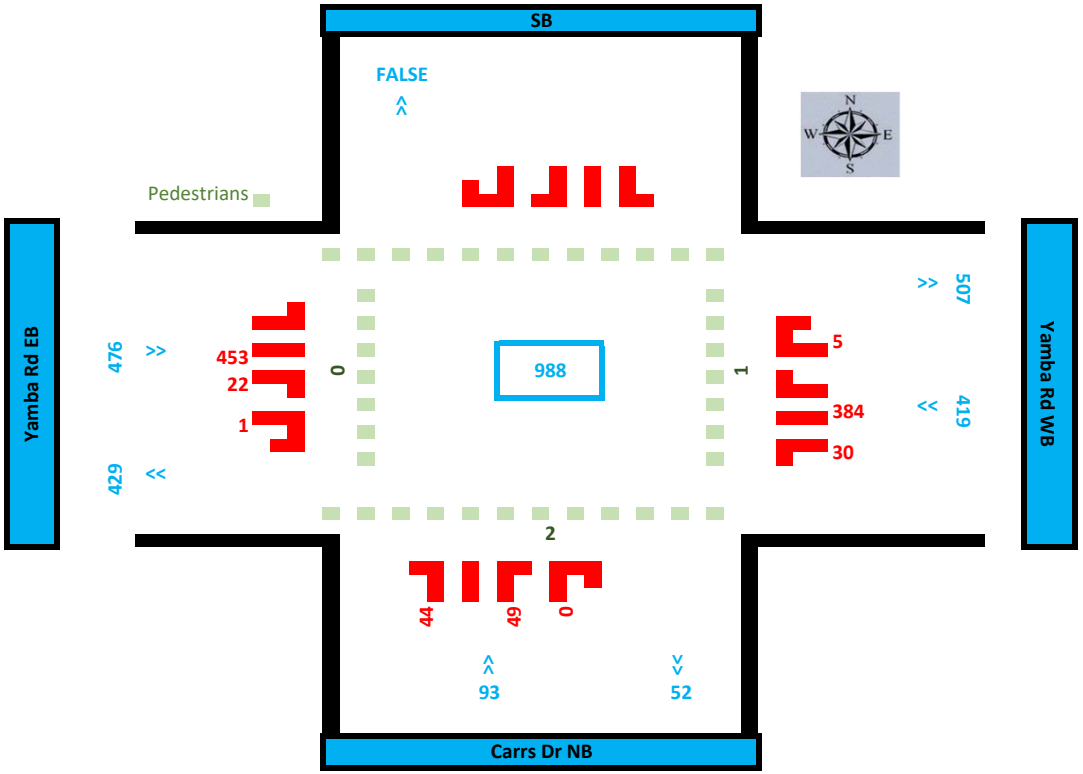
Turning Movement Count Summary

Site ID:	2
Location:	Yamba Rd & Carrs Dr, Yamba
Date:	20-July-2022
Surveyed Time:	6:00 AM to 9:00 AM
Weather:	Fine
Data for hour starting:	8:00 AM to 9:00 AM
Vehicle Class:	ALL VEHICLES



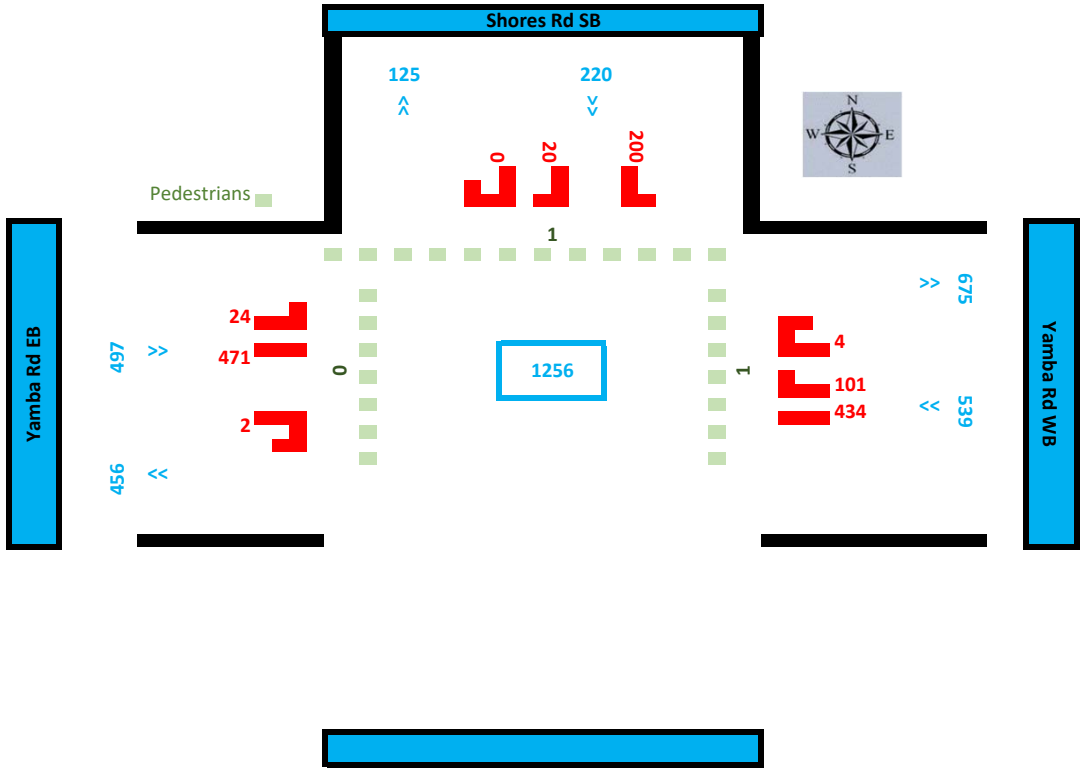
Turning Movement Count Summary

Site ID:	2
Location:	Yamba Rd & Carrs Dr, Yamba
Date:	20-July-2022
Surveyed Time:	3:00 PM to 6:00 PM
Weather:	Fine
Data for hour starting:	3:15 PM to 4:15 PM
Vehicle Class:	ALL VEHICLES



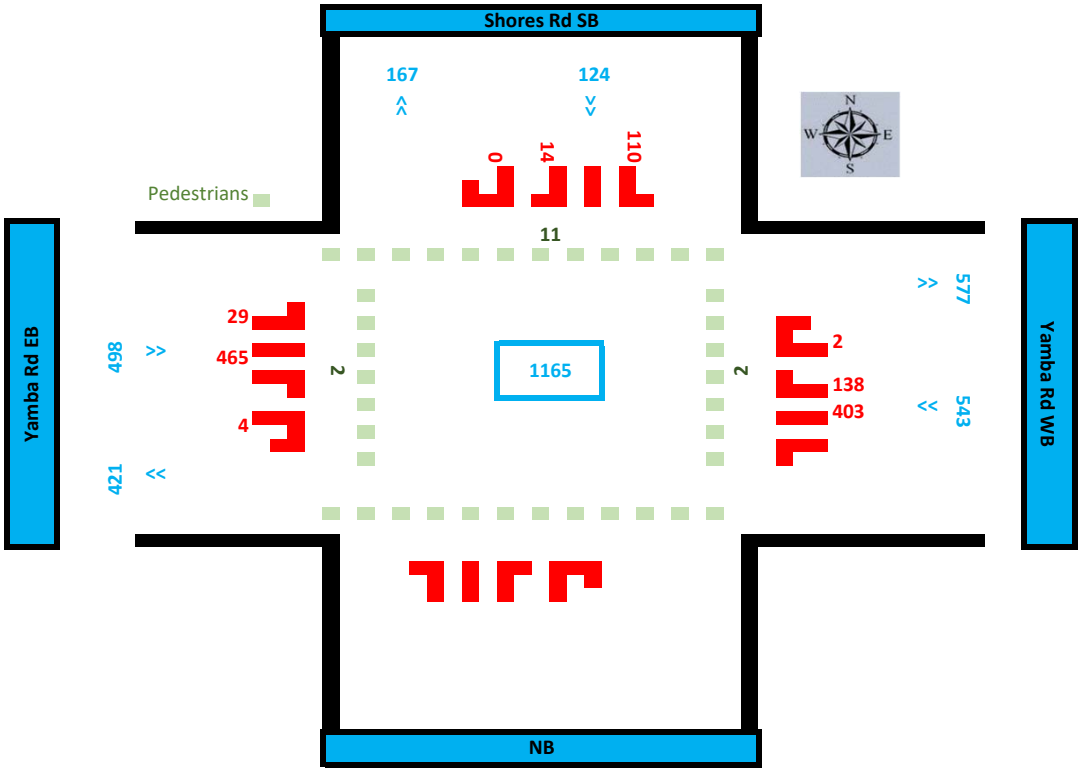
Turning Movement Count Summary

Site ID:	3
Location:	Yamba Rd & Shores Dr, Yamba
Date:	20-July-2022
Surveyed Time:	6:00 AM to 9:00 AM
Weather:	Fine
Data for hour starting:	8:00 AM to 9:00 AM
Vehicle Class:	ALL VEHICLES



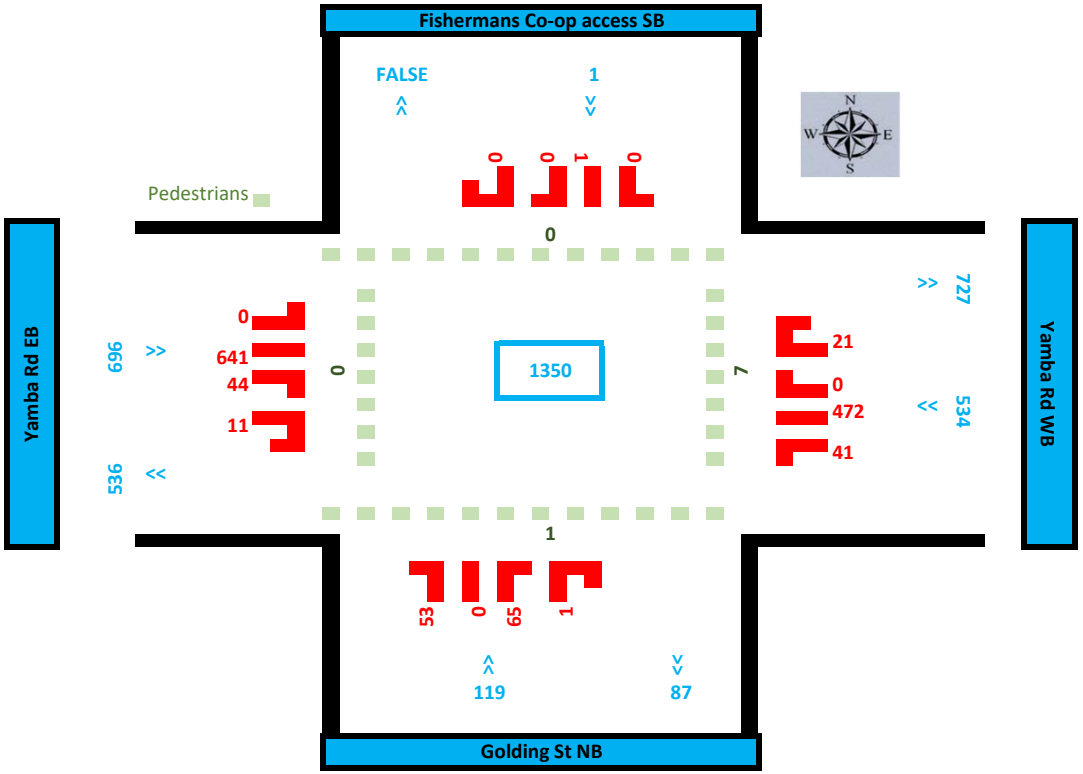
Turning Movement Count Summary

Site ID:	3
Location:	Yamba Rd & Shores Dr, Yamba
Date:	20-July-2022
Surveyed Time:	3:00 PM to 6:00 PM
Weather:	Fine
Data for hour starting:	3:15 PM to 4:15 PM
Vehicle Class:	ALL VEHICLES



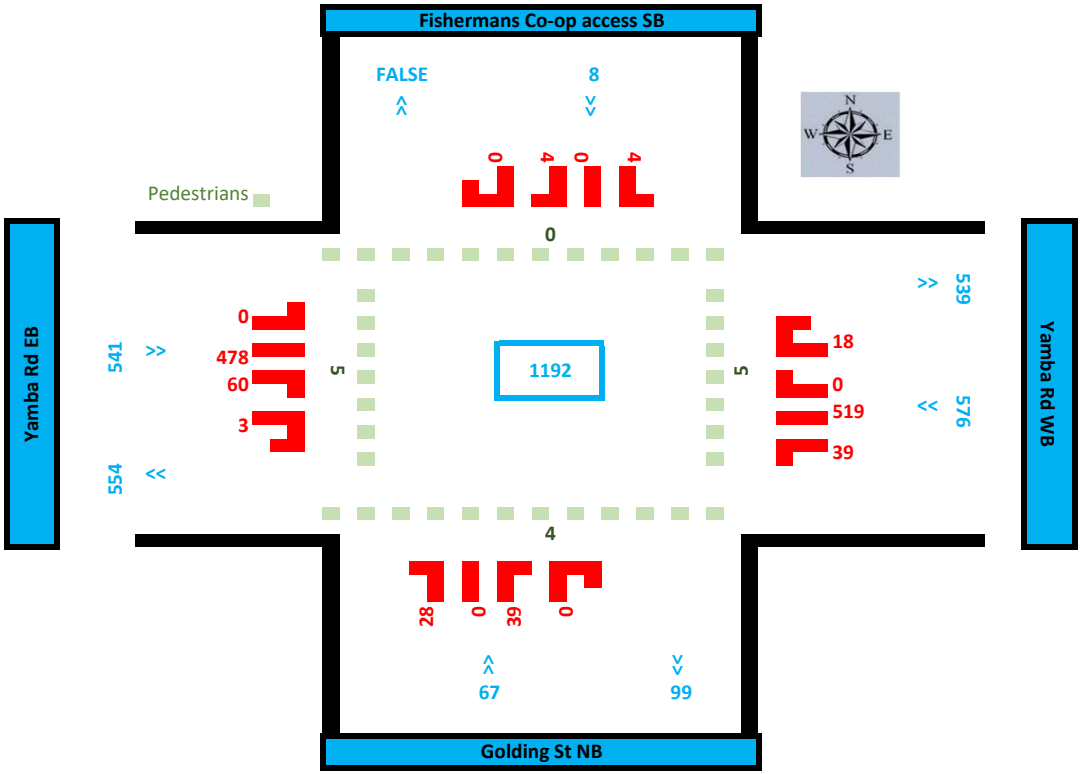
Turning Movement Count Summary

Site ID:	4
Location:	Yamba Rd & Golding St, Yamba
Date:	20-July-2022
Surveyed Time:	6:00 AM to 9:00 AM
Weather:	Fine
Data for hour starting:	8:00 AM to 9:00 AM
Vehicle Class:	ALL VEHICLES

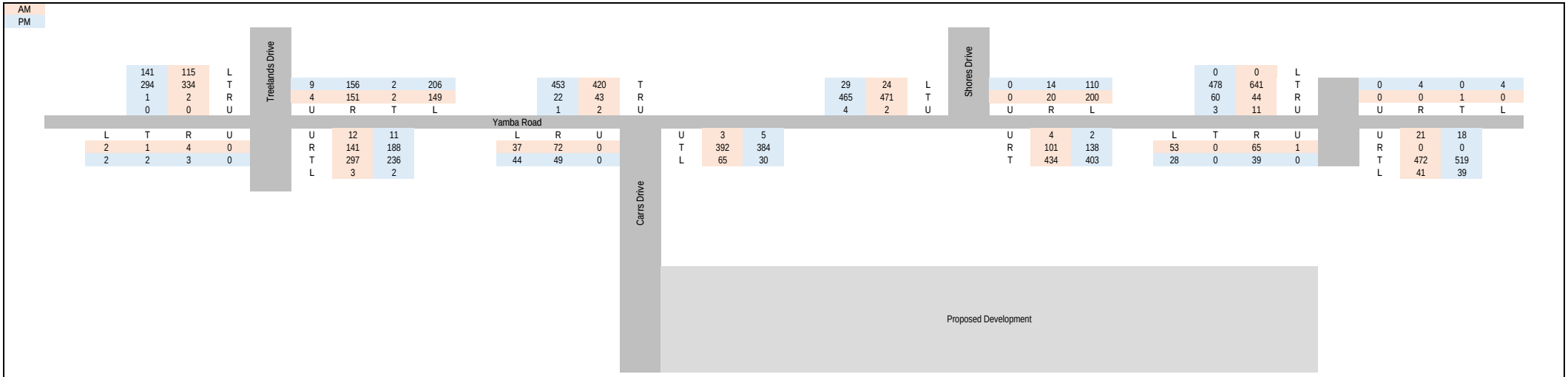


Turning Movement Count Summary

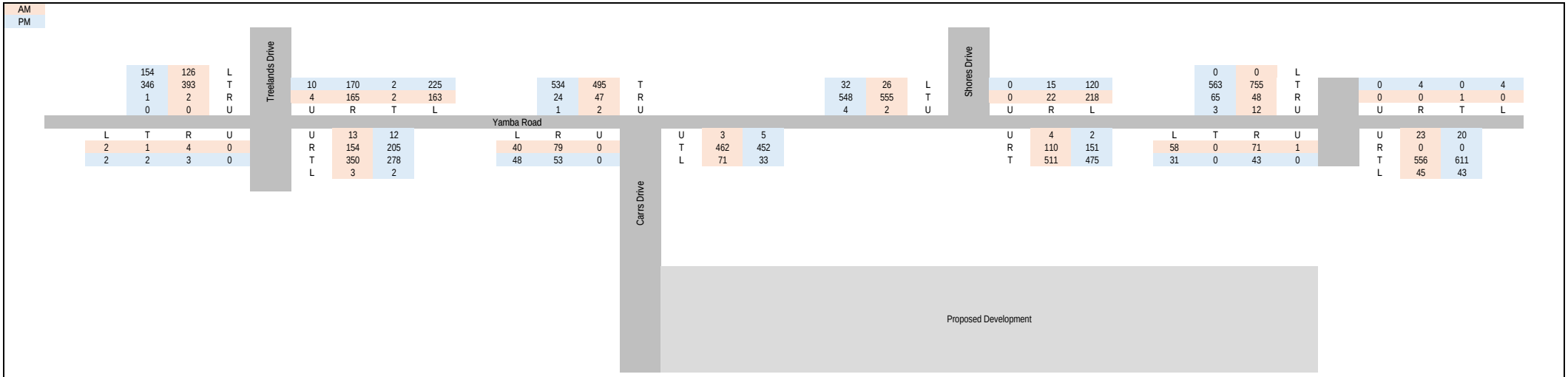
Site ID:	4
Location:	Yamba Rd & Golding St, Yamba
Date:	20-July-2022
Surveyed Time:	3:00 PM to 6:00 PM
Weather:	Fine
Data for hour starting:	3:15 PM to 4:15 PM
Vehicle Class:	ALL VEHICLES



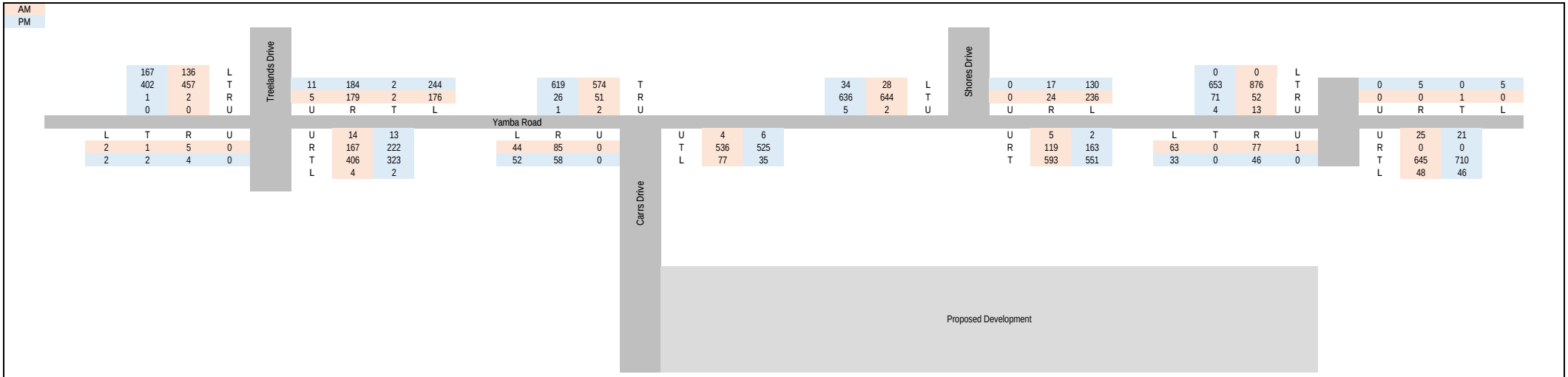
Appendix C: Network Diagrams



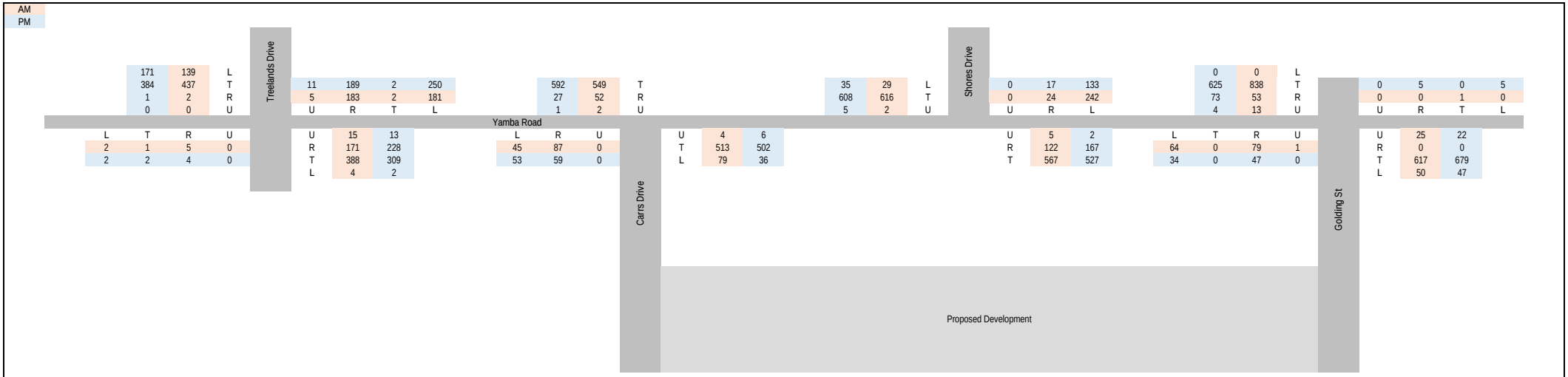
Sheet Name: 2022 Survey Volumes	Sheet Number 1
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



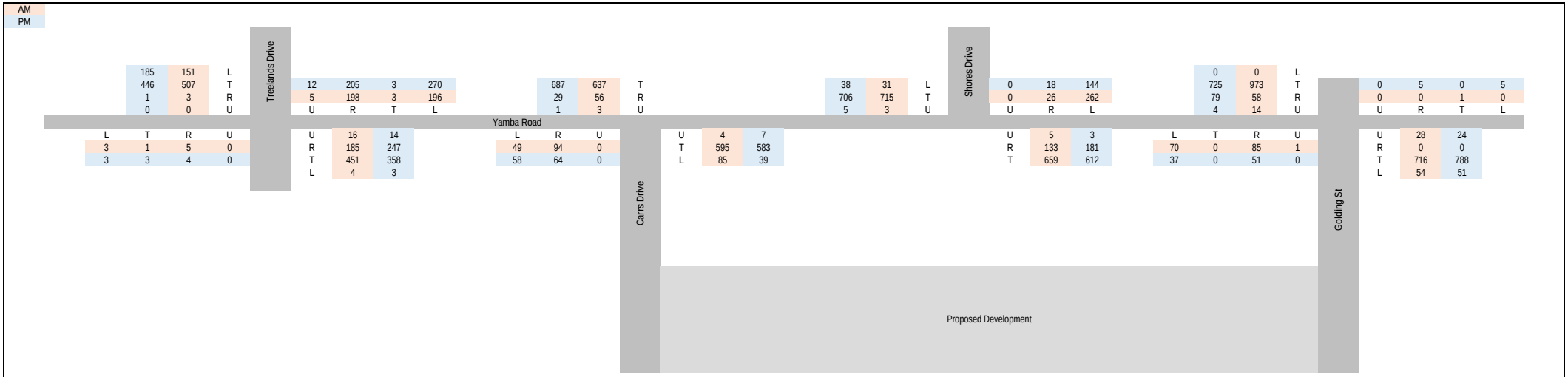
Sheet Name: 2033 Survey Volumes	Sheet Number 2
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



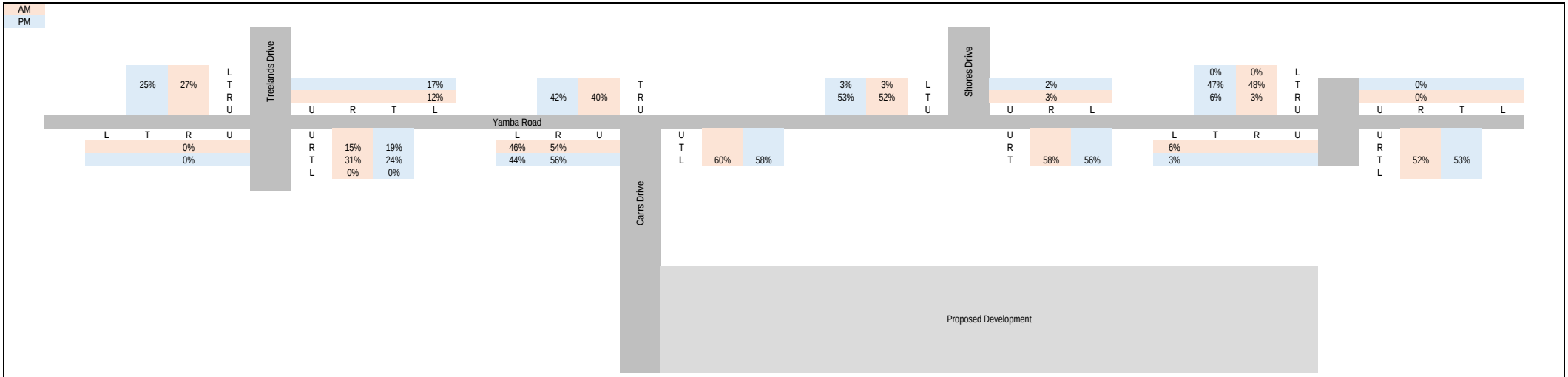
Sheet Name: 2043 Survey Volumes	Sheet Number 3
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



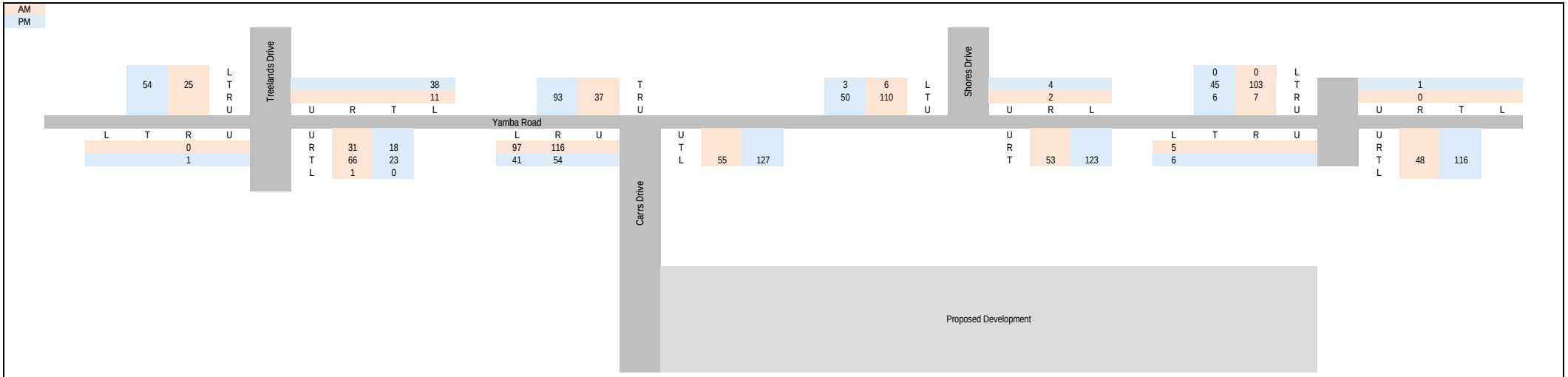
Sheet Name: 2033 Survey Volumes with Seasonality	Sheet Number 4
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



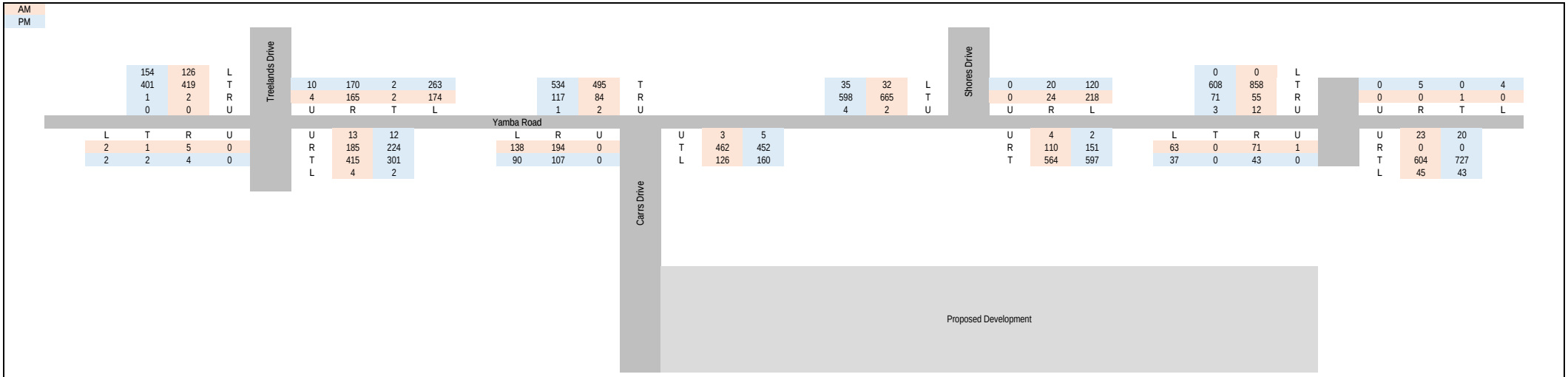
Sheet Name: 2043 Survey Volumes with Seasonality	Sheet Number 5
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



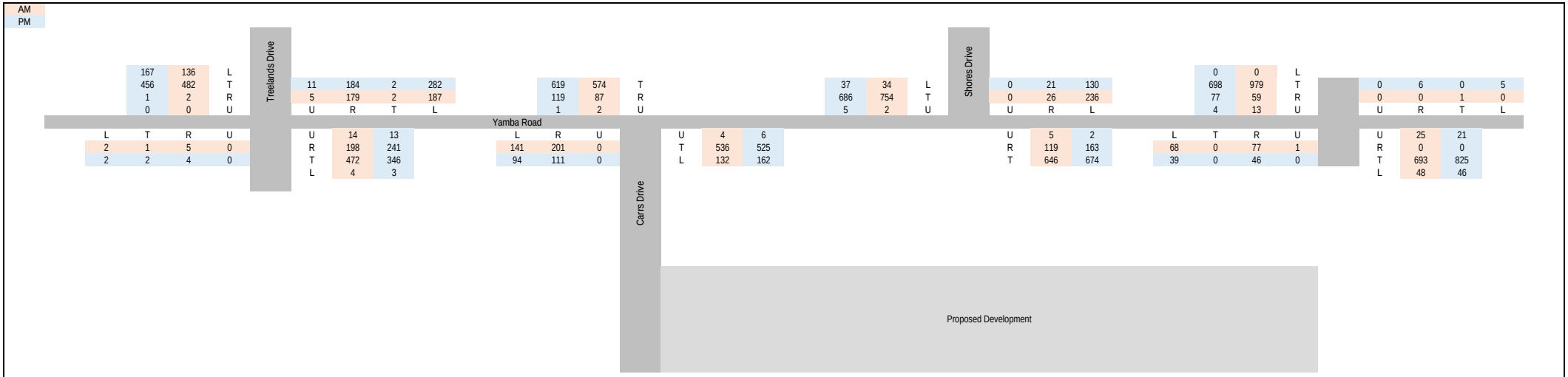
BITZIOS consulting	Sheet Name: Adjacent Development Traffic Distribution	Sheet Number 6
	Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



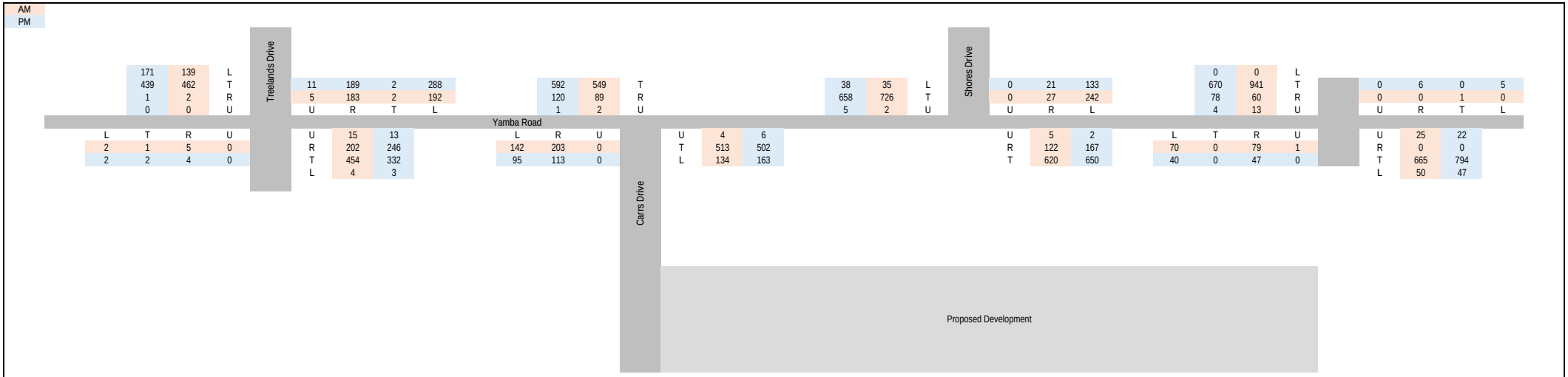
BITZIOS consulting	Sheet Name: Adjacent Development Trip Assignment	Sheet Number 7
	Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



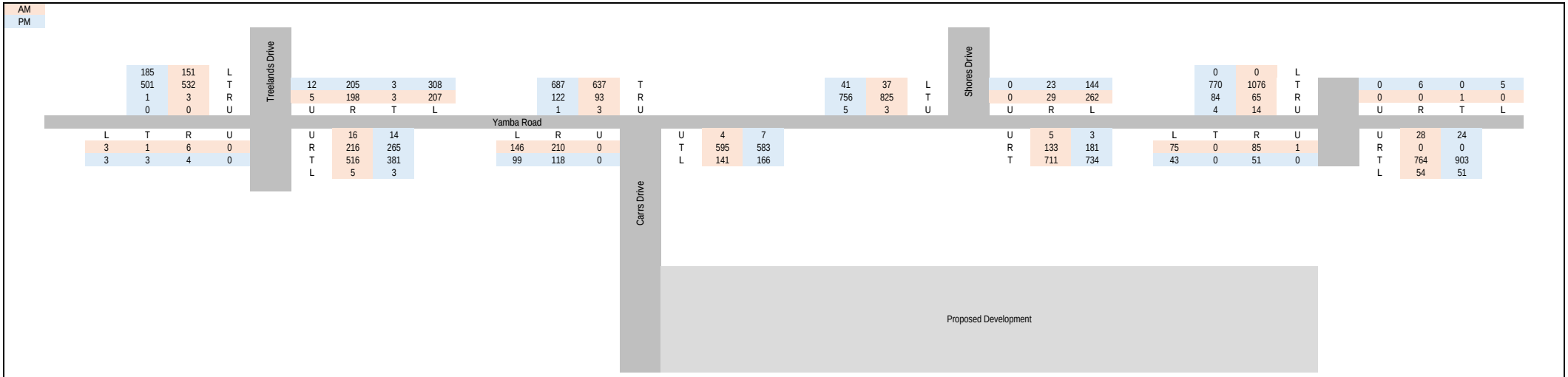
Sheet Name: 2033 Background Traffic Volumes	Sheet Number 8
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



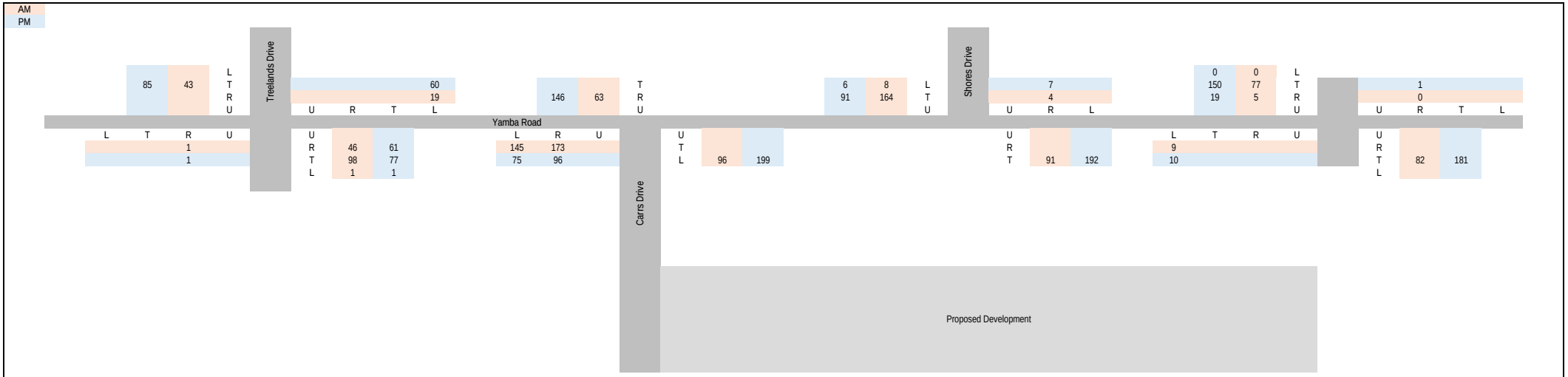
Sheet Name: 2043 Background Traffic Volumes	Sheet Number 9
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



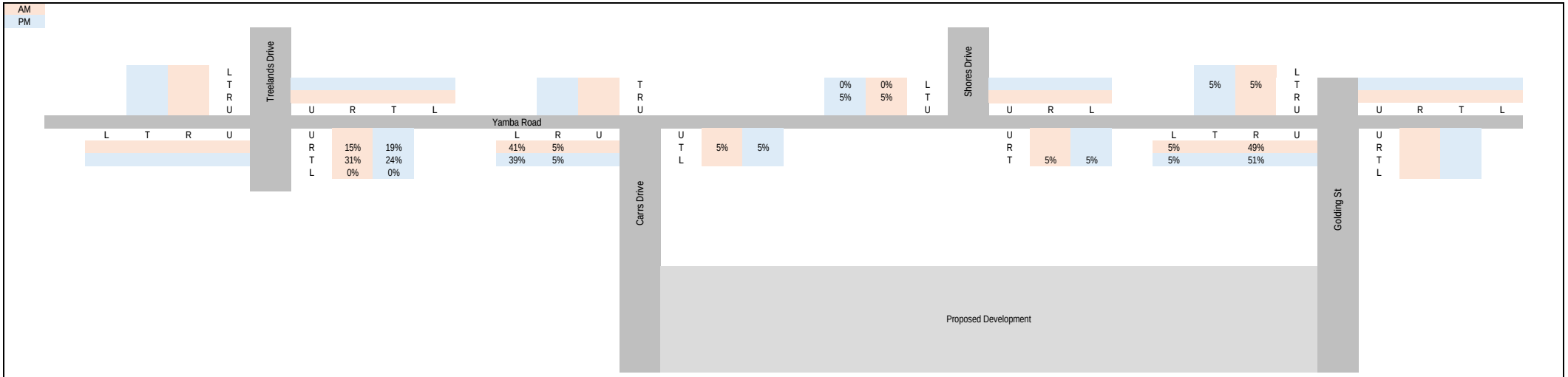
Sheet Name: 2033 Background Traffic Volumes with Seasonality	Sheet Number 10
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



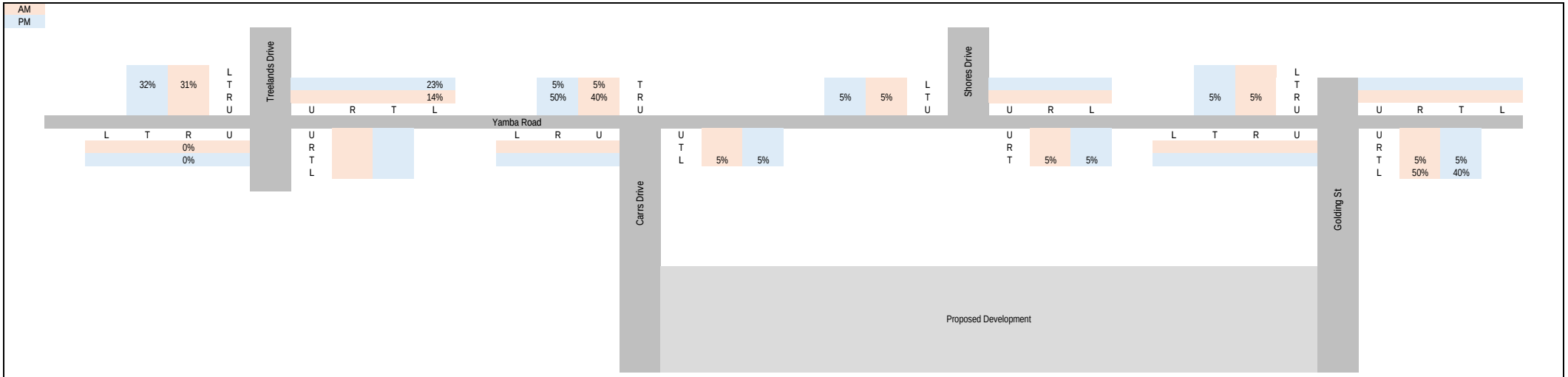
Sheet Name: 2043 Background Traffic Volumes with Seasonality	Sheet Number 11
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



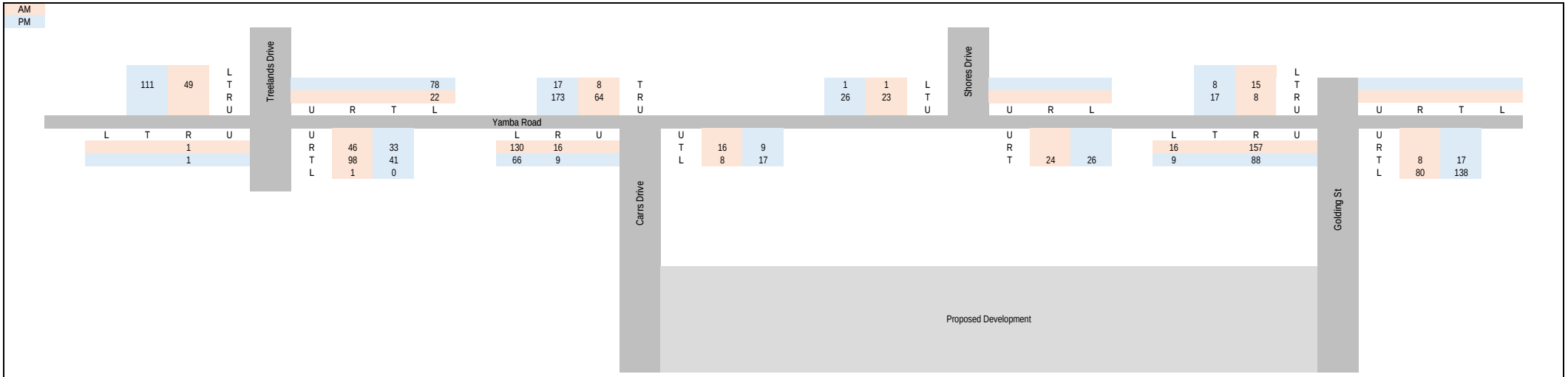
BITZIOS consulting	Sheet Name: Development Trips - Carrs Drive Only	Sheet Number 12
	Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



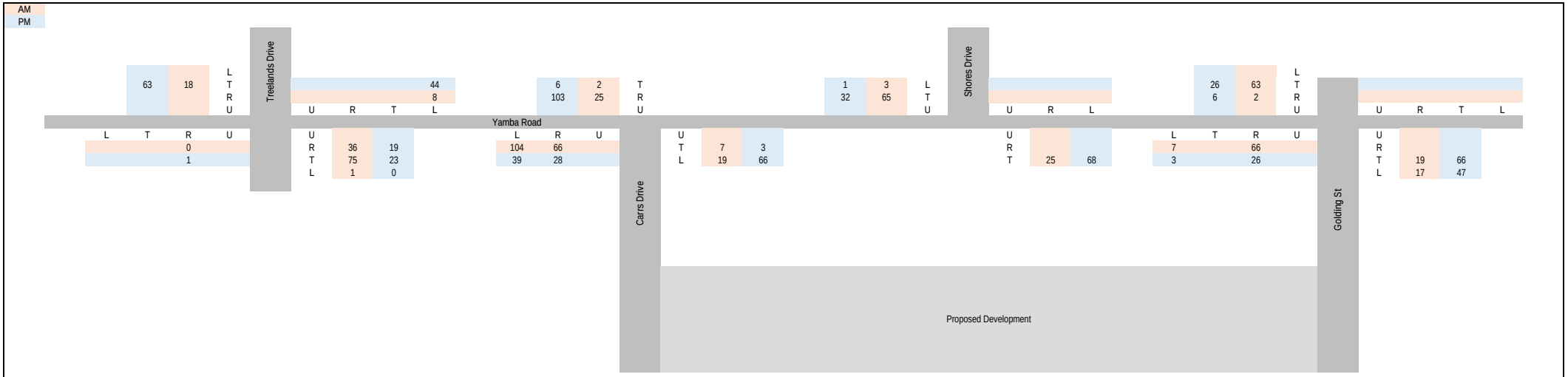
BITZIOS consulting	Sheet Name: Development Traffic Distriubtion OUT	Sheet Number 13
	Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



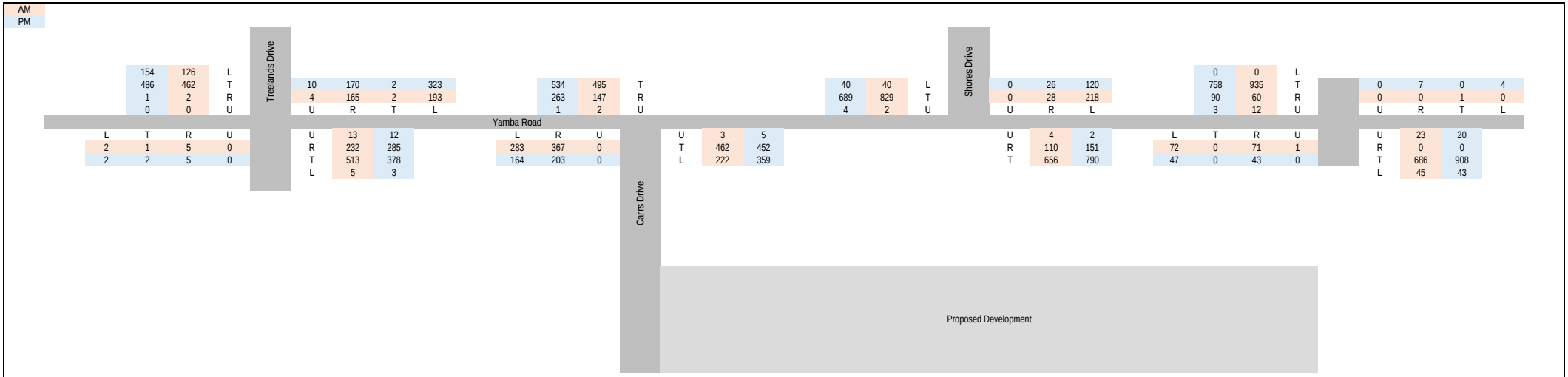
BITZIOS consulting	Sheet Name: Development Traffic Distribution IN	Sheet Number 14
	Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



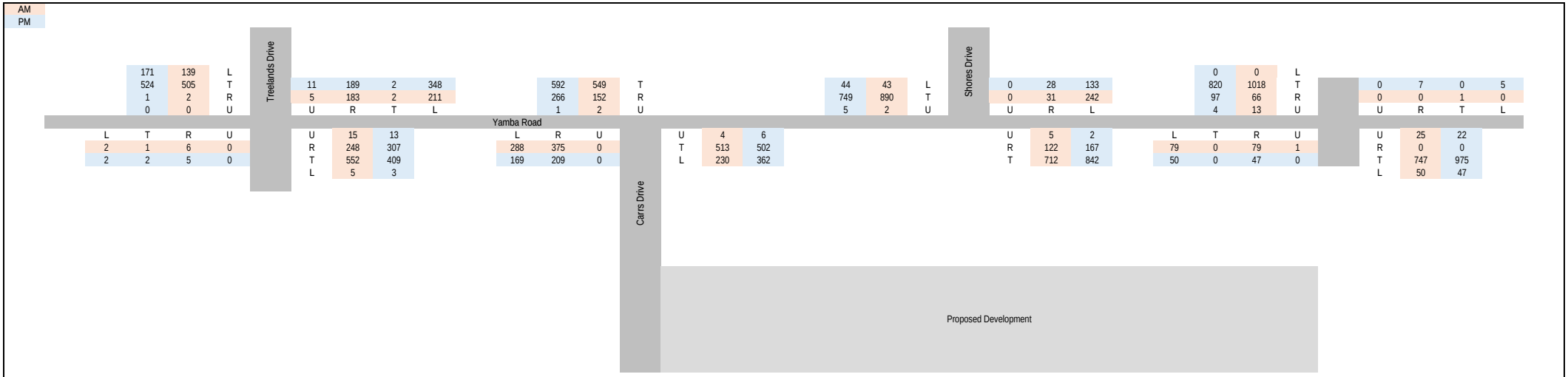
Sheet Name: Development Trip Assignment	Sheet Number 15
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



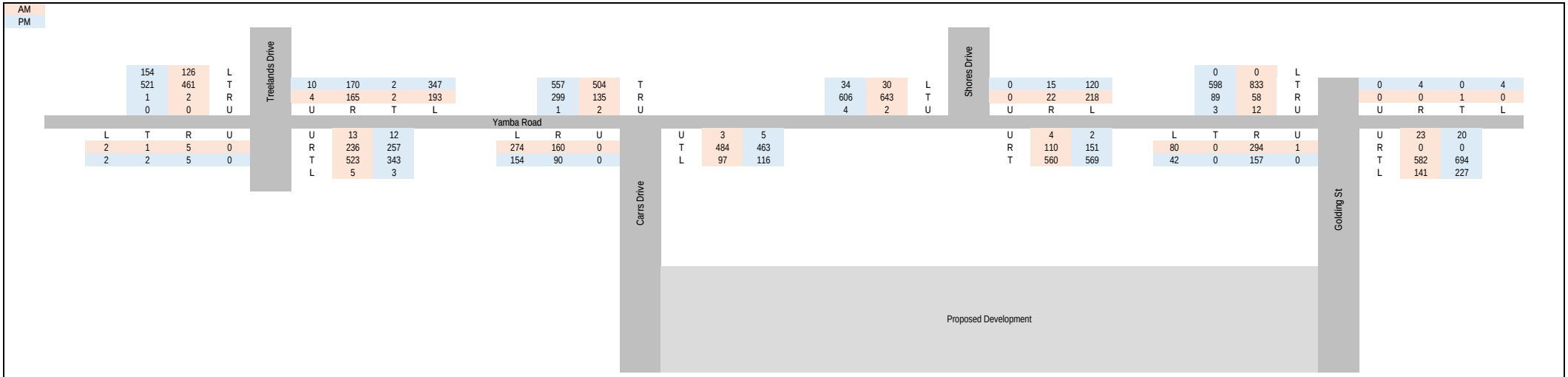
BITZIOS consulting	Sheet Name: Adjacent Development Trip Assignment - With Golding Street Link	Sheet Number 16
	Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



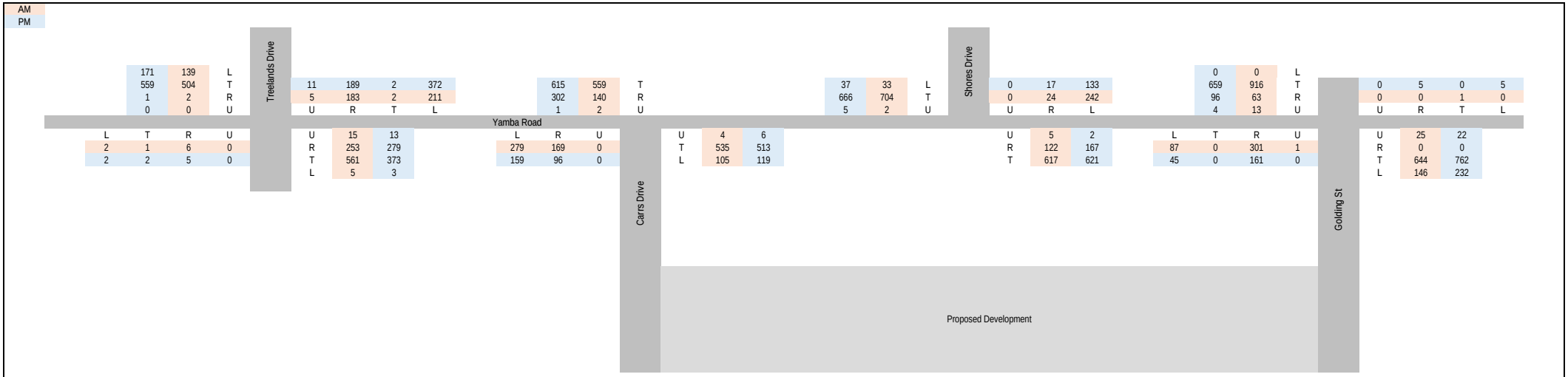
Sheet Name: 2033 Design Traffic Volumes - Carrs Drive Only	Sheet Number 17
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



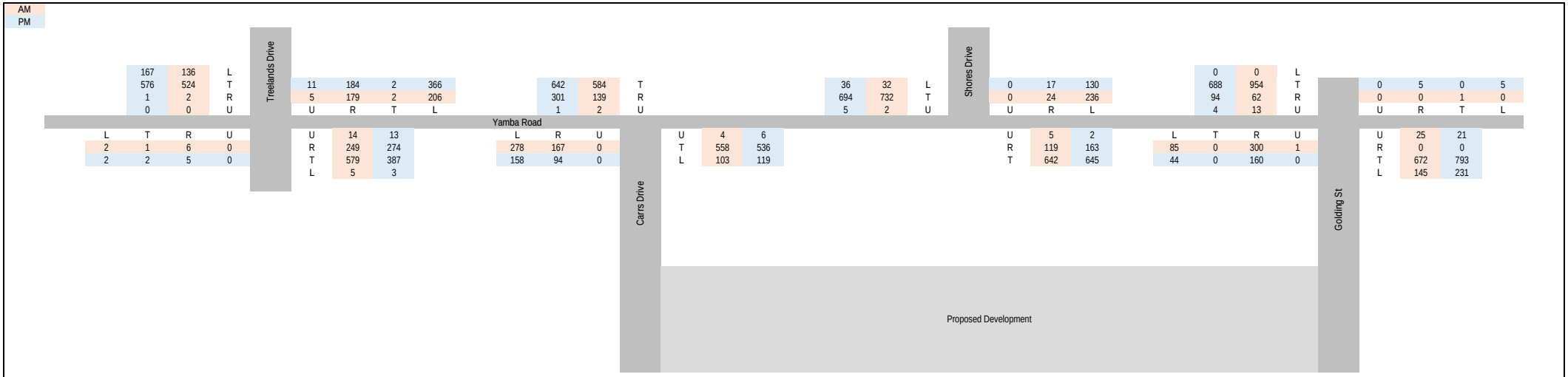
Sheet Name: 2033 Design Traffic Volumes with Seasonality - Carrs Drive Only	Sheet Number 18
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



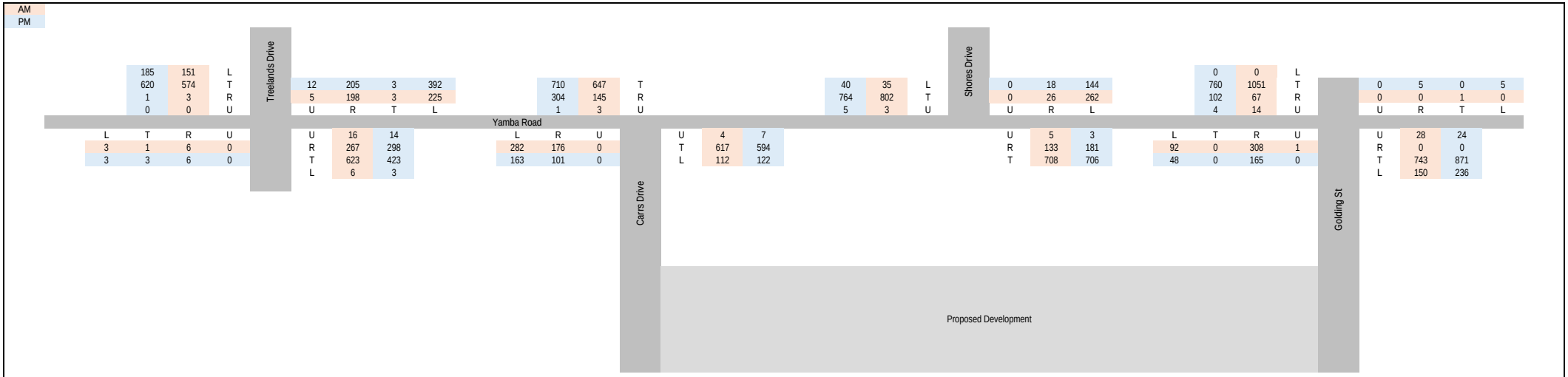
Sheet Name: 2033 Design Traffic Volumes	Sheet Number 19
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



Sheet Name: 2033 Design Traffic Volumes with Seasonality	Sheet Number 20
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



Sheet Name: 2043 Design Traffic Volumes	Sheet Number 21
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



Sheet Name: 2043 Design Traffic Volumes with Seasonality	Sheet Number 22
Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023

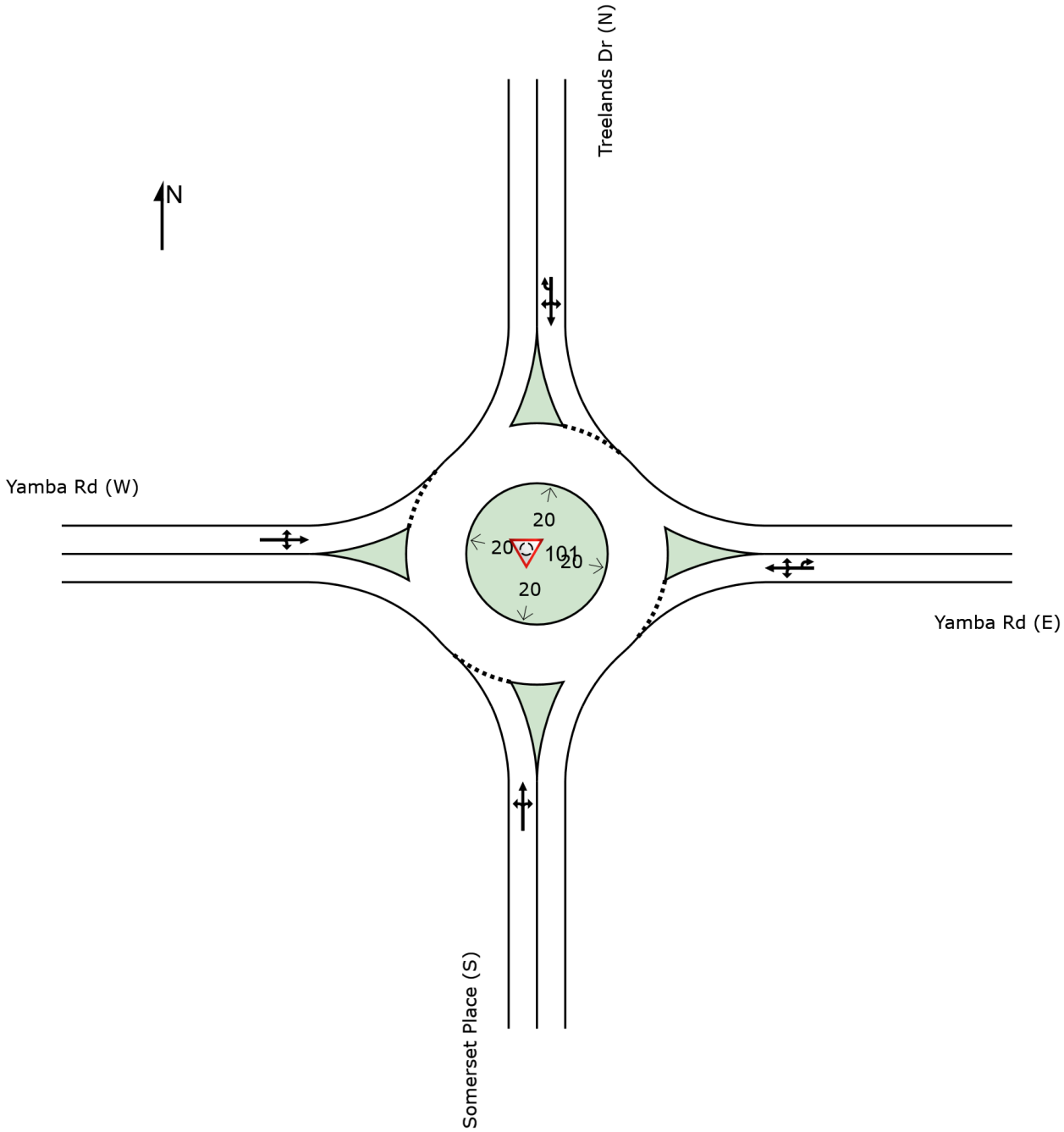
Appendix D: SIDRA Outputs

SITE LAYOUT

Site: 101 [2033 BG AM (Site Folder: General)]

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 101 [2033 BG AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.013	7.8	LOS A	0.1	0.6	0.76	0.65	0.76	40.2
2	T1	All MCs	1	0.0	1	0.0	0.013	7.7	LOS A	0.1	0.6	0.76	0.65	0.76	23.0
3	R2	All MCs	5	0.0	5	0.0	0.013	12.2	LOS A	0.1	0.6	0.76	0.65	0.76	37.0
Approach			8	0.0	8	0.0	0.013	10.5	LOS A	0.1	0.6	0.76	0.65	0.76	36.1
East: Yamba Rd (E)															
4	L2	All MCs	4	0.0	4	0.0	0.540	5.2	LOS A	4.8	34.7	0.59	0.55	0.59	41.1
5	T1	All MCs	437	6.4	437	6.4	0.540	5.6	LOS A	4.8	34.7	0.59	0.55	0.59	47.3
6	R2	All MCs	195	0.8	195	0.8	0.540	10.1	LOS A	4.8	34.7	0.59	0.55	0.59	31.8
6u	U	All MCs	14	0.0	14	0.0	0.540	12.2	LOS A	4.8	34.7	0.59	0.55	0.59	44.8
Approach			649	4.5	649	4.5	0.540	7.1	LOS A	4.8	34.7	0.59	0.55	0.59	42.7
North: Treelands Dr (N)															
7	L2	All MCs	183	4.0	183	4.0	0.408	7.1	LOS A	2.8	20.5	0.72	0.69	0.72	39.7
8	T1	All MCs	2	0.0	2	0.0	0.408	7.2	LOS A	2.8	20.5	0.72	0.69	0.72	33.2
9	R2	All MCs	174	4.0	174	4.0	0.408	12.0	LOS A	2.8	20.5	0.72	0.69	0.72	41.8
9u	U	All MCs	4	0.0	4	0.0	0.408	13.9	LOS A	2.8	20.5	0.72	0.69	0.72	23.3
Approach			363	3.9	363	3.9	0.408	9.5	LOS A	2.8	20.5	0.72	0.69	0.72	40.6
West: Yamba Rd (W)															
10	L2	All MCs	133	6.1	133	6.1	0.502	5.6	LOS A	4.0	29.5	0.59	0.53	0.59	44.9
11	T1	All MCs	441	6.0	441	6.0	0.502	5.8	LOS A	4.0	29.5	0.59	0.53	0.59	47.7
12	R2	All MCs	2	0.0	2	0.0	0.502	10.3	LOS A	4.0	29.5	0.59	0.53	0.59	44.3
Approach			576	6.0	576	6.0	0.502	5.8	LOS A	4.0	29.5	0.59	0.53	0.59	47.2
All Vehicles			1597	4.9	1597	4.9	0.540	7.2	LOS A	4.8	34.7	0.62	0.57	0.62	43.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 BG PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.012	7.0	LOS A	0.1	0.5	0.72	0.62	0.72	41.4
2	T1	All MCs	2	0.0	2	0.0	0.012	7.0	LOS A	0.1	0.5	0.72	0.62	0.72	23.7
3	R2	All MCs	4	0.0	4	0.0	0.012	11.5	LOS A	0.1	0.5	0.72	0.62	0.72	38.2
Approach			8	0.0	8	0.0	0.012	9.2	LOS A	0.1	0.5	0.72	0.62	0.72	35.6
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.477	5.2	LOS A	3.9	28.1	0.56	0.56	0.56	40.9
5	T1	All MCs	317	3.8	317	3.8	0.477	5.5	LOS A	3.9	28.1	0.56	0.56	0.56	47.1
6	R2	All MCs	236	1.1	236	1.1	0.477	10.1	LOS A	3.9	28.1	0.56	0.56	0.56	31.7
6u	U	All MCs	13	0.0	13	0.0	0.477	12.1	LOS A	3.9	28.1	0.56	0.56	0.56	44.6
Approach			568	2.6	568	2.6	0.477	7.5	LOS A	3.9	28.1	0.56	0.56	0.56	40.9
North: Treelands Dr (N)															
7	L2	All MCs	277	1.5	277	1.5	0.508	7.5	LOS A	4.1	29.2	0.76	0.71	0.80	40.0
8	T1	All MCs	2	0.0	2	0.0	0.508	7.7	LOS A	4.1	29.2	0.76	0.71	0.80	33.0
9	R2	All MCs	179	3.2	179	3.2	0.508	12.4	LOS A	4.1	29.2	0.76	0.71	0.80	41.8
9u	U	All MCs	11	0.0	11	0.0	0.508	14.4	LOS A	4.1	29.2	0.76	0.71	0.80	23.1
Approach			468	2.1	468	2.1	0.508	9.5	LOS A	4.1	29.2	0.76	0.71	0.80	40.3
West: Yamba Rd (W)															
10	L2	All MCs	162	6.4	162	6.4	0.527	6.0	LOS A	4.2	30.6	0.64	0.56	0.64	44.6
11	T1	All MCs	422	2.8	422	2.8	0.527	6.1	LOS A	4.2	30.6	0.64	0.56	0.64	47.9
12	R2	All MCs	1	0.0	1	0.0	0.527	10.7	LOS A	4.2	30.6	0.64	0.56	0.64	44.0
Approach			585	3.8	585	3.8	0.527	6.1	LOS A	4.2	30.6	0.64	0.56	0.64	47.1
All Vehicles			1631	2.9	1631	2.9	0.527	7.6	LOS A	4.2	30.6	0.65	0.60	0.66	43.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.015	8.9	LOS A	0.1	0.7	0.82	0.67	0.82	39.1
2	T1	All MCs	1	0.0	1	0.0	0.015	8.8	LOS A	0.1	0.7	0.82	0.67	0.82	22.3
3	R2	All MCs	5	0.0	5	0.0	0.015	13.3	LOS A	0.1	0.7	0.82	0.67	0.82	35.9
Approach			8	0.0	8	0.0	0.015	11.7	LOS A	0.1	0.7	0.82	0.67	0.82	35.1
East: Yamba Rd (E)															
4	L2	All MCs	4	0.0	4	0.0	0.614	5.5	LOS A	6.0	43.5	0.67	0.57	0.67	40.6
5	T1	All MCs	497	6.4	497	6.4	0.614	5.9	LOS A	6.0	43.5	0.67	0.57	0.67	46.9
6	R2	All MCs	208	0.8	208	0.8	0.614	10.4	LOS A	6.0	43.5	0.67	0.57	0.67	31.5
6u	U	All MCs	15	0.0	15	0.0	0.614	12.4	LOS A	6.0	43.5	0.67	0.57	0.67	44.4
Approach			724	4.6	724	4.6	0.614	7.3	LOS A	6.0	43.5	0.67	0.57	0.67	42.6
North: Treelands Dr (N)															
7	L2	All MCs	197	4.0	197	4.0	0.476	8.3	LOS A	3.7	26.9	0.80	0.74	0.85	38.4
8	T1	All MCs	2	0.0	2	0.0	0.476	8.3	LOS A	3.7	26.9	0.80	0.74	0.85	31.7
9	R2	All MCs	188	4.0	188	4.0	0.476	13.1	LOS A	3.7	26.9	0.80	0.74	0.85	40.6
9u	U	All MCs	5	0.0	5	0.0	0.476	15.0	LOS B	3.7	26.9	0.80	0.74	0.85	22.6
Approach			393	3.9	393	3.9	0.476	10.7	LOS A	3.7	26.9	0.80	0.74	0.85	39.3
West: Yamba Rd (W)															
10	L2	All MCs	143	6.1	143	6.1	0.578	5.9	LOS A	5.1	37.4	0.66	0.56	0.66	44.4
11	T1	All MCs	507	6.0	507	6.0	0.578	6.1	LOS A	5.1	37.4	0.66	0.56	0.66	47.3
12	R2	All MCs	2	0.0	2	0.0	0.578	10.5	LOS A	5.1	37.4	0.66	0.56	0.66	43.8
Approach			653	6.0	653	6.0	0.578	6.0	LOS A	5.1	37.4	0.66	0.56	0.66	46.8
All Vehicles			1778	5.0	1778	5.0	0.614	7.6	LOS A	6.0	43.5	0.70	0.60	0.71	43.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.013	7.8	LOS A	0.1	0.6	0.77	0.64	0.77	40.6
2	T1	All MCs	2	0.0	2	0.0	0.013	7.8	LOS A	0.1	0.6	0.77	0.64	0.77	23.2
3	R2	All MCs	4	0.0	4	0.0	0.013	12.3	LOS A	0.1	0.6	0.77	0.64	0.77	37.4
Approach			8	0.0	8	0.0	0.013	10.0	LOS A	0.1	0.6	0.77	0.64	0.77	34.8
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.543	5.4	LOS A	4.9	34.7	0.63	0.58	0.63	40.5
5	T1	All MCs	364	3.8	364	3.8	0.543	5.7	LOS A	4.9	34.7	0.63	0.58	0.63	46.8
6	R2	All MCs	254	1.1	254	1.1	0.543	10.3	LOS A	4.9	34.7	0.63	0.58	0.63	31.5
6u	U	All MCs	14	0.0	14	0.0	0.543	12.3	LOS A	4.9	34.7	0.63	0.58	0.63	44.3
Approach			635	2.6	635	2.6	0.543	7.7	LOS A	4.9	34.7	0.63	0.58	0.63	40.9
North: Treelands Dr (N)															
7	L2	All MCs	297	1.5	297	1.5	0.586	9.2	LOS A	5.6	39.9	0.85	0.79	0.99	38.0
8	T1	All MCs	2	0.0	2	0.0	0.586	9.4	LOS A	5.6	39.9	0.85	0.79	0.99	30.8
9	R2	All MCs	194	3.2	194	3.2	0.586	14.2	LOS A	5.6	39.9	0.85	0.79	0.99	40.0
9u	U	All MCs	12	0.0	12	0.0	0.586	16.1	LOS B	5.6	39.9	0.85	0.79	0.99	22.0
Approach			504	2.1	504	2.1	0.586	11.3	LOS A	5.6	39.9	0.85	0.79	0.99	38.5
West: Yamba Rd (W)															
10	L2	All MCs	176	6.4	176	6.4	0.604	6.7	LOS A	5.6	40.6	0.72	0.61	0.75	44.1
11	T1	All MCs	480	2.8	480	2.8	0.604	6.8	LOS A	5.6	40.6	0.72	0.61	0.75	47.5
12	R2	All MCs	1	0.0	1	0.0	0.604	11.3	LOS A	5.6	40.6	0.72	0.61	0.75	43.4
Approach			657	3.8	657	3.8	0.604	6.8	LOS A	5.6	40.6	0.72	0.61	0.75	46.7
All Vehicles			1804	2.9	1804	2.9	0.604	8.4	LOS A	5.6	40.6	0.73	0.65	0.78	42.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 BG AM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.015	8.7	LOS A	0.1	0.7	0.82	0.67	0.82	39.3
2	T1	All MCs	1	0.0	1	0.0	0.015	8.7	LOS A	0.1	0.7	0.82	0.67	0.82	22.4
3	R2	All MCs	5	0.0	5	0.0	0.015	13.2	LOS A	0.1	0.7	0.82	0.67	0.82	36.0
Approach			8	0.0	8	0.0	0.015	11.5	LOS A	0.1	0.7	0.82	0.67	0.82	35.3
East: Yamba Rd (E)															
4	L2	All MCs	4	0.0	4	0.0	0.605	5.5	LOS A	5.8	42.1	0.67	0.57	0.67	40.6
5	T1	All MCs	478	6.4	478	6.4	0.605	5.9	LOS A	5.8	42.1	0.67	0.57	0.67	46.9
6	R2	All MCs	213	0.8	213	0.8	0.605	10.4	LOS A	5.8	42.1	0.67	0.57	0.67	31.5
6u	U	All MCs	16	0.0	16	0.0	0.605	12.4	LOS A	5.8	42.1	0.67	0.57	0.67	44.4
Approach			711	4.5	711	4.5	0.605	7.4	LOS A	5.8	42.1	0.67	0.57	0.67	42.4
North: Treelands Dr (N)															
7	L2	All MCs	202	4.0	202	4.0	0.478	8.1	LOS A	3.7	26.9	0.79	0.74	0.84	38.6
8	T1	All MCs	2	0.0	2	0.0	0.478	8.1	LOS A	3.7	26.9	0.79	0.74	0.84	31.9
9	R2	All MCs	193	4.0	193	4.0	0.478	12.9	LOS A	3.7	26.9	0.79	0.74	0.84	40.8
9u	U	All MCs	5	0.0	5	0.0	0.478	14.8	LOS B	3.7	26.9	0.79	0.74	0.84	22.7
Approach			402	3.9	402	3.9	0.478	10.5	LOS A	3.7	26.9	0.79	0.74	0.84	39.5
West: Yamba Rd (W)															
10	L2	All MCs	146	6.1	146	6.1	0.566	5.9	LOS A	4.9	36.0	0.66	0.56	0.66	44.5
11	T1	All MCs	486	6.0	486	6.0	0.566	6.1	LOS A	4.9	36.0	0.66	0.56	0.66	47.3
12	R2	All MCs	2	0.0	2	0.0	0.566	10.5	LOS A	4.9	36.0	0.66	0.56	0.66	43.8
Approach			635	6.0	635	6.0	0.566	6.1	LOS A	4.9	36.0	0.66	0.56	0.66	46.8
All Vehicles			1756	4.9	1756	4.9	0.605	7.6	LOS A	5.8	42.1	0.70	0.60	0.71	43.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 BG PM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.013	7.8	LOS A	0.1	0.6	0.77	0.64	0.77	40.7
2	T1	All MCs	2	0.0	2	0.0	0.013	7.7	LOS A	0.1	0.6	0.77	0.64	0.77	23.2
3	R2	All MCs	4	0.0	4	0.0	0.013	12.2	LOS A	0.1	0.6	0.77	0.64	0.77	37.4
Approach			8	0.0	8	0.0	0.013	10.0	LOS A	0.1	0.6	0.77	0.64	0.77	34.9
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.538	5.4	LOS A	4.8	34.1	0.64	0.58	0.64	40.5
5	T1	All MCs	349	3.8	349	3.8	0.538	5.8	LOS A	4.8	34.1	0.64	0.58	0.64	46.8
6	R2	All MCs	259	1.1	259	1.1	0.538	10.3	LOS A	4.8	34.1	0.64	0.58	0.64	31.5
6u	U	All MCs	14	0.0	14	0.0	0.538	12.4	LOS A	4.8	34.1	0.64	0.58	0.64	44.3
Approach			625	2.6	625	2.6	0.538	7.8	LOS A	4.8	34.1	0.64	0.58	0.64	40.6
North: Treelands Dr (N)															
7	L2	All MCs	303	1.5	303	1.5	0.589	9.1	LOS A	5.6	40.2	0.85	0.78	0.98	38.2
8	T1	All MCs	2	0.0	2	0.0	0.589	9.2	LOS A	5.6	40.2	0.85	0.78	0.98	31.0
9	R2	All MCs	199	3.2	199	3.2	0.589	14.0	LOS A	5.6	40.2	0.85	0.78	0.98	40.2
9u	U	All MCs	12	0.0	12	0.0	0.589	15.9	LOS B	5.6	40.2	0.85	0.78	0.98	22.1
Approach			516	2.1	516	2.1	0.589	11.1	LOS A	5.6	40.2	0.85	0.78	0.98	38.7
West: Yamba Rd (W)															
10	L2	All MCs	180	6.4	180	6.4	0.596	6.7	LOS A	5.4	39.4	0.72	0.61	0.75	44.1
11	T1	All MCs	462	2.8	462	2.8	0.596	6.8	LOS A	5.4	39.4	0.72	0.61	0.75	47.5
12	R2	All MCs	1	0.0	1	0.0	0.596	11.3	LOS A	5.4	39.4	0.72	0.61	0.75	43.5
Approach			643	3.8	643	3.8	0.596	6.8	LOS A	5.4	39.4	0.72	0.61	0.75	46.7
All Vehicles			1793	2.9	1793	2.9	0.596	8.4	LOS A	5.6	40.2	0.73	0.65	0.77	42.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG AM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	3	0.0	3	0.0	0.022	10.3	LOS A	0.1	1.0	0.88	0.71	0.88	38.0
2	T1	All MCs	1	0.0	1	0.0	0.022	10.2	LOS A	0.1	1.0	0.88	0.71	0.88	21.6
3	R2	All MCs	6	0.0	6	0.0	0.022	14.7	LOS B	0.1	1.0	0.88	0.71	0.88	34.7
Approach			11	0.0	11	0.0	0.022	12.9	LOS A	0.1	1.0	0.88	0.71	0.88	34.5
East: Yamba Rd (E)															
4	L2	All MCs	5	0.0	5	0.0	0.691	6.4	LOS A	8.0	58.3	0.78	0.62	0.81	39.9
5	T1	All MCs	543	6.4	543	6.4	0.691	6.8	LOS A	8.0	58.3	0.78	0.62	0.81	46.2
6	R2	All MCs	227	0.8	227	0.8	0.691	11.3	LOS A	8.0	58.3	0.78	0.62	0.81	31.1
6u	U	All MCs	17	0.0	17	0.0	0.691	13.3	LOS A	8.0	58.3	0.78	0.62	0.81	43.8
Approach			793	4.6	793	4.6	0.691	8.2	LOS A	8.0	58.3	0.78	0.62	0.81	42.0
North: Treelands Dr (N)															
7	L2	All MCs	218	4.0	218	4.0	0.571	10.4	LOS A	5.3	38.7	0.89	0.83	1.06	36.2
8	T1	All MCs	3	0.0	3	0.0	0.571	10.5	LOS A	5.3	38.7	0.89	0.83	1.06	29.3
9	R2	All MCs	208	4.0	208	4.0	0.571	15.3	LOS B	5.3	38.7	0.89	0.83	1.06	38.6
9u	U	All MCs	5	0.0	5	0.0	0.571	17.2	LOS B	5.3	38.7	0.89	0.83	1.06	21.3
Approach			435	3.9	435	3.9	0.571	12.8	LOS A	5.3	38.7	0.89	0.83	1.06	37.2
West: Yamba Rd (W)															
10	L2	All MCs	159	6.1	159	6.1	0.657	6.8	LOS A	7.0	51.4	0.76	0.62	0.81	43.8
11	T1	All MCs	560	6.0	560	6.0	0.657	7.1	LOS A	7.0	51.4	0.76	0.62	0.81	46.7
12	R2	All MCs	3	0.0	3	0.0	0.657	11.5	LOS A	7.0	51.4	0.76	0.62	0.81	43.1
Approach			722	6.0	722	6.0	0.657	7.0	LOS A	7.0	51.4	0.76	0.62	0.81	46.2
All Vehicles			1960	4.9	1960	4.9	0.691	8.8	LOS A	8.0	58.3	0.80	0.67	0.87	42.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG PM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	3	0.0	3	0.0	0.019	8.9	LOS A	0.1	0.9	0.83	0.68	0.83	39.9
2	T1	All MCs	3	0.0	3	0.0	0.019	8.9	LOS A	0.1	0.9	0.83	0.68	0.83	22.6
3	R2	All MCs	4	0.0	4	0.0	0.019	13.4	LOS A	0.1	0.9	0.83	0.68	0.83	36.7
Approach			11	0.0	11	0.0	0.019	10.7	LOS A	0.1	0.9	0.83	0.68	0.83	33.7
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.615	5.8	LOS A	6.0	42.9	0.73	0.60	0.73	40.0
5	T1	All MCs	401	3.8	401	3.8	0.615	6.1	LOS A	6.0	42.9	0.73	0.60	0.73	46.4
6	R2	All MCs	279	1.1	279	1.1	0.615	10.6	LOS A	6.0	42.9	0.73	0.60	0.73	31.2
6u	U	All MCs	15	0.0	15	0.0	0.615	12.7	LOS A	6.0	42.9	0.73	0.60	0.73	43.9
Approach			698	2.6	698	2.6	0.615	8.0	LOS A	6.0	42.9	0.73	0.60	0.73	40.5
North: Treelands Dr (N)															
7	L2	All MCs	324	1.5	324	1.5	0.689	12.0	LOS A	8.1	57.6	0.95	0.89	1.24	35.3
8	T1	All MCs	3	0.0	3	0.0	0.689	12.2	LOS A	8.1	57.6	0.95	0.89	1.24	27.9
9	R2	All MCs	216	3.2	216	3.2	0.689	17.0	LOS B	8.1	57.6	0.95	0.89	1.24	37.5
9u	U	All MCs	13	0.0	13	0.0	0.689	18.9	LOS B	8.1	57.6	0.95	0.89	1.24	20.5
Approach			556	2.1	556	2.1	0.689	14.1	LOS A	8.1	57.6	0.95	0.89	1.24	35.8
West: Yamba Rd (W)															
10	L2	All MCs	195	6.4	195	6.4	0.687	8.3	LOS A	8.0	57.6	0.82	0.70	0.93	43.2
11	T1	All MCs	527	2.8	527	2.8	0.687	8.4	LOS A	8.0	57.6	0.82	0.70	0.93	46.7
12	R2	All MCs	1	0.0	1	0.0	0.687	12.9	LOS A	8.0	57.6	0.82	0.70	0.93	42.6
Approach			723	3.8	723	3.8	0.687	8.3	LOS A	8.0	57.6	0.82	0.70	0.93	45.9
All Vehicles			1987	2.9	1987	2.9	0.689	9.9	LOS A	8.1	57.6	0.82	0.72	0.95	41.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM - Carrs Access Only (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.016	9.8	LOS A	0.1	0.8	0.86	0.69	0.86	38.3
2	T1	All MCs	1	0.0	1	0.0	0.016	9.7	LOS A	0.1	0.8	0.86	0.69	0.86	21.8
3	R2	All MCs	5	0.0	5	0.0	0.016	14.2	LOS A	0.1	0.8	0.86	0.69	0.86	35.1
Approach			8	0.0	8	0.0	0.016	12.6	LOS A	0.1	0.8	0.86	0.69	0.86	34.3
East: Yamba Rd (E)															
4	L2	All MCs	5	0.0	5	0.0	0.663	5.5	LOS A	7.0	51.1	0.70	0.57	0.70	40.4
5	T1	All MCs	540	6.4	540	6.4	0.663	5.9	LOS A	7.0	51.1	0.70	0.57	0.70	46.7
6	R2	All MCs	244	0.8	244	0.8	0.663	10.4	LOS A	7.0	51.1	0.70	0.57	0.70	31.4
6u	U	All MCs	14	0.0	14	0.0	0.663	12.4	LOS A	7.0	51.1	0.70	0.57	0.70	44.3
Approach			803	4.5	803	4.5	0.663	7.4	LOS A	7.0	51.1	0.70	0.57	0.70	42.2
North: Treelands Dr (N)															
7	L2	All MCs	203	4.0	203	4.0	0.458	7.8	LOS A	3.4	24.9	0.79	0.72	0.81	39.0
8	T1	All MCs	2	0.0	2	0.0	0.458	7.9	LOS A	3.4	24.9	0.79	0.72	0.81	32.4
9	R2	All MCs	174	4.0	174	4.0	0.458	12.6	LOS A	3.4	24.9	0.79	0.72	0.81	41.2
9u	U	All MCs	4	0.0	4	0.0	0.458	14.6	LOS B	3.4	24.9	0.79	0.72	0.81	22.9
Approach			383	3.9	383	3.9	0.458	10.1	LOS A	3.4	24.9	0.79	0.72	0.81	39.9
West: Yamba Rd (W)															
10	L2	All MCs	133	6.1	133	6.1	0.574	6.1	LOS A	5.0	36.4	0.70	0.58	0.70	44.2
11	T1	All MCs	486	6.0	486	6.0	0.574	6.3	LOS A	5.0	36.4	0.70	0.58	0.70	47.1
12	R2	All MCs	2	0.0	2	0.0	0.574	10.8	LOS A	5.0	36.4	0.70	0.58	0.70	43.5
Approach			621	6.0	621	6.0	0.574	6.3	LOS A	5.0	36.4	0.70	0.58	0.70	46.6
All Vehicles			1816	4.9	1816	4.9	0.663	7.6	LOS A	7.0	51.1	0.72	0.60	0.72	43.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM - Carrs Access Only (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.015	7.9	LOS A	0.1	0.6	0.77	0.66	0.77	40.4
2	T1	All MCs	2	0.0	2	0.0	0.015	7.8	LOS A	0.1	0.6	0.77	0.66	0.77	23.2
3	R2	All MCs	5	0.0	5	0.0	0.015	12.3	LOS A	0.1	0.6	0.77	0.66	0.77	37.2
Approach			9	0.0	9	0.0	0.015	10.3	LOS A	0.1	0.6	0.77	0.66	0.77	34.9
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.577	5.2	LOS A	5.1	36.5	0.59	0.57	0.59	40.7
5	T1	All MCs	398	3.8	398	3.8	0.577	5.5	LOS A	5.1	36.5	0.59	0.57	0.59	47.0
6	R2	All MCs	300	1.1	300	1.1	0.577	10.0	LOS A	5.1	36.5	0.59	0.57	0.59	31.6
6u	U	All MCs	13	0.0	13	0.0	0.577	12.1	LOS A	5.1	36.5	0.59	0.57	0.59	44.5
Approach			714	2.6	714	2.6	0.577	7.5	LOS A	5.1	36.5	0.59	0.57	0.59	40.7
North: Treelands Dr (N)															
7	L2	All MCs	340	1.5	340	1.5	0.599	9.0	LOS A	5.6	40.2	0.84	0.80	0.99	38.5
8	T1	All MCs	2	0.0	2	0.0	0.599	9.2	LOS A	5.6	40.2	0.84	0.80	0.99	31.3
9	R2	All MCs	179	3.2	179	3.2	0.599	13.9	LOS A	5.6	40.2	0.84	0.80	0.99	40.0
9u	U	All MCs	11	0.0	11	0.0	0.599	15.9	LOS B	5.6	40.2	0.84	0.80	0.99	22.3
Approach			532	2.0	532	2.0	0.599	10.8	LOS A	5.6	40.2	0.84	0.80	0.99	38.7
West: Yamba Rd (W)															
10	L2	All MCs	162	6.4	162	6.4	0.620	7.0	LOS A	5.7	41.1	0.72	0.64	0.78	44.0
11	T1	All MCs	512	2.7	512	2.7	0.620	7.1	LOS A	5.7	41.1	0.72	0.64	0.78	47.4
12	R2	All MCs	1	0.0	1	0.0	0.620	11.7	LOS A	5.7	41.1	0.72	0.64	0.78	43.4
Approach			675	3.6	675	3.6	0.620	7.1	LOS A	5.7	41.1	0.72	0.64	0.78	46.7
All Vehicles			1929	2.8	1929	2.8	0.620	8.3	LOS A	5.7	41.1	0.71	0.66	0.77	42.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM Seasonality - Carrs Access Only (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.022	11.3	LOS A	0.2	1.1	0.91	0.73	0.91	37.0
2	T1	All MCs	1	0.0	1	0.0	0.022	11.2	LOS A	0.2	1.1	0.91	0.73	0.91	21.0
3	R2	All MCs	6	0.0	6	0.0	0.022	15.7	LOS B	0.2	1.1	0.91	0.73	0.91	33.7
Approach			9	0.0	9	0.0	0.022	14.2	LOS A	0.2	1.1	0.91	0.73	0.91	33.1
East: Yamba Rd (E)															
4	L2	All MCs	5	0.0	5	0.0	0.731	6.5	LOS A	9.4	68.0	0.81	0.62	0.84	39.7
5	T1	All MCs	581	6.4	581	6.4	0.731	7.0	LOS A	9.4	68.0	0.81	0.62	0.84	46.1
6	R2	All MCs	261	0.8	261	0.8	0.731	11.4	LOS A	9.4	68.0	0.81	0.62	0.84	31.0
6u	U	All MCs	16	0.0	16	0.0	0.731	13.5	LOS A	9.4	68.0	0.81	0.62	0.84	43.6
Approach			863	4.6	863	4.6	0.731	8.4	LOS A	9.4	68.0	0.81	0.62	0.84	41.6
North: Treelands Dr (N)															
7	L2	All MCs	222	4.0	222	4.0	0.538	9.4	LOS A	4.8	34.4	0.86	0.79	0.98	37.3
8	T1	All MCs	2	0.0	2	0.0	0.538	9.5	LOS A	4.8	34.4	0.86	0.79	0.98	30.4
9	R2	All MCs	193	4.0	193	4.0	0.538	14.3	LOS A	4.8	34.4	0.86	0.79	0.98	39.6
9u	U	All MCs	5	0.0	5	0.0	0.538	16.2	LOS B	4.8	34.4	0.86	0.79	0.98	21.9
Approach			422	3.9	422	3.9	0.538	11.7	LOS A	4.8	34.4	0.86	0.79	0.98	38.2
West: Yamba Rd (W)															
10	L2	All MCs	146	6.1	146	6.1	0.645	7.3	LOS A	6.8	49.9	0.78	0.65	0.84	43.6
11	T1	All MCs	532	6.0	532	6.0	0.645	7.5	LOS A	6.8	49.9	0.78	0.65	0.84	46.6
12	R2	All MCs	2	0.0	2	0.0	0.645	11.9	LOS A	6.8	49.9	0.78	0.65	0.84	43.0
Approach			680	6.0	680	6.0	0.645	7.4	LOS A	6.8	49.9	0.78	0.65	0.84	46.1
All Vehicles			1975	4.9	1975	4.9	0.731	8.8	LOS A	9.4	68.0	0.81	0.67	0.87	42.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM Seasonality - Carrs Access Only (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.017	8.9	LOS A	0.1	0.8	0.83	0.68	0.83	39.4
2	T1	All MCs	2	0.0	2	0.0	0.017	8.8	LOS A	0.1	0.8	0.83	0.68	0.83	22.6
3	R2	All MCs	5	0.0	5	0.0	0.017	13.3	LOS A	0.1	0.8	0.83	0.68	0.83	36.2
Approach			9	0.0	9	0.0	0.017	11.3	LOS A	0.1	0.8	0.83	0.68	0.83	34.1
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.639	5.4	LOS A	6.2	44.0	0.68	0.59	0.68	40.2
5	T1	All MCs	431	3.8	431	3.8	0.639	5.8	LOS A	6.2	44.0	0.68	0.59	0.68	46.6
6	R2	All MCs	323	1.1	323	1.1	0.639	10.3	LOS A	6.2	44.0	0.68	0.59	0.68	31.3
6u	U	All MCs	14	0.0	14	0.0	0.639	12.4	LOS A	6.2	44.0	0.68	0.59	0.68	44.1
Approach			771	2.6	771	2.6	0.639	7.8	LOS A	6.2	44.0	0.68	0.59	0.68	40.3
North: Treelands Dr (N)															
7	L2	All MCs	366	1.5	366	1.5	0.692	11.3	LOS A	7.8	55.7	0.93	0.89	1.21	36.2
8	T1	All MCs	2	0.0	2	0.0	0.692	11.5	LOS A	7.8	55.7	0.93	0.89	1.21	28.8
9	R2	All MCs	199	3.2	199	3.2	0.692	16.2	LOS B	7.8	55.7	0.93	0.89	1.21	37.9
9u	U	All MCs	12	0.0	12	0.0	0.692	18.2	LOS B	7.8	55.7	0.93	0.89	1.21	21.0
Approach			579	2.0	579	2.0	0.692	13.1	LOS A	7.8	55.7	0.93	0.89	1.21	36.5
West: Yamba Rd (W)															
10	L2	All MCs	180	6.4	180	6.4	0.692	8.3	LOS A	7.7	55.3	0.81	0.72	0.94	43.2
11	T1	All MCs	552	2.7	552	2.7	0.692	8.4	LOS A	7.7	55.3	0.81	0.72	0.94	46.7
12	R2	All MCs	1	0.0	1	0.0	0.692	12.9	LOS A	7.7	55.3	0.81	0.72	0.94	42.6
Approach			733	3.6	733	3.6	0.692	8.4	LOS A	7.7	55.3	0.81	0.72	0.94	46.0
All Vehicles			2092	2.8	2092	2.8	0.692	9.5	LOS A	7.8	55.7	0.80	0.72	0.92	41.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.017	10.0	LOS A	0.1	0.8	0.87	0.70	0.87	38.1
2	T1	All MCs	1	0.0	1	0.0	0.017	10.0	LOS A	0.1	0.8	0.87	0.70	0.87	21.7
3	R2	All MCs	5	0.0	5	0.0	0.017	14.5	LOS A	0.1	0.8	0.87	0.70	0.87	34.9
Approach			8	0.0	8	0.0	0.017	12.8	LOS A	0.1	0.8	0.87	0.70	0.87	34.1
East: Yamba Rd (E)															
4	L2	All MCs	5	0.0	5	0.0	0.675	5.5	LOS A	7.3	53.0	0.71	0.57	0.71	40.4
5	T1	All MCs	551	6.4	551	6.4	0.675	5.9	LOS A	7.3	53.0	0.71	0.57	0.71	46.7
6	R2	All MCs	248	0.8	248	0.8	0.675	10.4	LOS A	7.3	53.0	0.71	0.57	0.71	31.4
6u	U	All MCs	14	0.0	14	0.0	0.675	12.5	LOS A	7.3	53.0	0.71	0.57	0.71	44.2
Approach			818	4.6	818	4.6	0.675	7.4	LOS A	7.3	53.0	0.71	0.57	0.71	42.2
North: Treelands Dr (N)															
7	L2	All MCs	203	4.0	203	4.0	0.458	7.8	LOS A	3.4	24.9	0.79	0.72	0.81	39.0
8	T1	All MCs	2	0.0	2	0.0	0.458	7.9	LOS A	3.4	24.9	0.79	0.72	0.81	32.4
9	R2	All MCs	174	4.0	174	4.0	0.458	12.6	LOS A	3.4	24.9	0.79	0.72	0.81	41.2
9u	U	All MCs	4	0.0	4	0.0	0.458	14.6	LOS B	3.4	24.9	0.79	0.72	0.81	22.9
Approach			383	3.9	383	3.9	0.458	10.0	LOS A	3.4	24.9	0.79	0.72	0.81	39.9
West: Yamba Rd (W)															
10	L2	All MCs	133	6.1	133	6.1	0.576	6.2	LOS A	5.0	37.0	0.70	0.58	0.71	44.2
11	T1	All MCs	485	6.0	485	6.0	0.576	6.4	LOS A	5.0	37.0	0.70	0.58	0.71	47.1
12	R2	All MCs	2	0.0	2	0.0	0.576	10.9	LOS A	5.0	37.0	0.70	0.58	0.71	43.5
Approach			620	6.0	620	6.0	0.576	6.4	LOS A	5.0	37.0	0.70	0.58	0.71	46.5
All Vehicles			1829	4.9	1829	4.9	0.675	7.6	LOS A	7.3	53.0	0.72	0.61	0.73	43.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.013	7.2	LOS A	0.1	0.6	0.73	0.64	0.73	41.1
2	T1	All MCs	2	0.0	2	0.0	0.013	7.1	LOS A	0.1	0.6	0.73	0.64	0.73	23.6
3	R2	All MCs	5	0.0	5	0.0	0.013	11.6	LOS A	0.1	0.6	0.73	0.64	0.73	37.9
Approach			9	0.0	9	0.0	0.013	9.6	LOS A	0.1	0.6	0.73	0.64	0.73	35.6
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.527	5.1	LOS A	4.4	31.5	0.57	0.57	0.57	40.8
5	T1	All MCs	361	3.8	361	3.8	0.527	5.4	LOS A	4.4	31.5	0.57	0.57	0.57	47.1
6	R2	All MCs	271	1.1	271	1.1	0.527	10.0	LOS A	4.4	31.5	0.57	0.57	0.57	31.7
6u	U	All MCs	13	0.0	13	0.0	0.527	12.0	LOS A	4.4	31.5	0.57	0.57	0.57	44.6
Approach			647	2.6	647	2.6	0.527	7.4	LOS A	4.4	31.5	0.57	0.57	0.57	40.8
North: Treelands Dr (N)															
7	L2	All MCs	365	1.5	365	1.5	0.649	10.3	LOS A	6.7	47.9	0.89	0.85	1.11	37.2
8	T1	All MCs	2	0.0	2	0.0	0.649	10.5	LOS A	6.7	47.9	0.89	0.85	1.11	29.8
9	R2	All MCs	179	3.2	179	3.2	0.649	15.3	LOS B	6.7	47.9	0.89	0.85	1.11	38.8
9u	U	All MCs	11	0.0	11	0.0	0.649	17.3	LOS B	6.7	47.9	0.89	0.85	1.11	21.5
Approach			557	2.0	557	2.0	0.649	12.1	LOS A	6.7	47.9	0.89	0.85	1.11	37.4
West: Yamba Rd (W)															
10	L2	All MCs	162	6.4	162	6.4	0.632	6.8	LOS A	5.9	42.5	0.70	0.63	0.75	44.1
11	T1	All MCs	548	2.7	548	2.7	0.632	6.9	LOS A	5.9	42.5	0.70	0.63	0.75	47.5
12	R2	All MCs	1	0.0	1	0.0	0.632	11.4	LOS A	5.9	42.5	0.70	0.63	0.75	43.5
Approach			712	3.5	712	3.5	0.632	6.9	LOS A	5.9	42.5	0.70	0.63	0.75	46.8
All Vehicles			1925	2.8	1925	2.8	0.649	8.6	LOS A	6.7	47.9	0.71	0.67	0.79	42.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.022	11.6	LOS A	0.2	1.1	0.92	0.73	0.92	36.7
2	T1	All MCs	1	0.0	1	0.0	0.022	11.5	LOS A	0.2	1.1	0.92	0.73	0.92	20.9
3	R2	All MCs	6	0.0	6	0.0	0.022	16.0	LOS B	0.2	1.1	0.92	0.73	0.92	33.5
Approach			9	0.0	9	0.0	0.022	14.5	LOS B	0.2	1.1	0.92	0.73	0.92	32.9
East: Yamba Rd (E)															
4	L2	All MCs	5	0.0	5	0.0	0.743	6.7	LOS A	9.8	71.6	0.82	0.63	0.87	39.5
5	T1	All MCs	591	6.4	591	6.4	0.743	7.1	LOS A	9.8	71.6	0.82	0.63	0.87	46.0
6	R2	All MCs	266	0.8	266	0.8	0.743	11.6	LOS A	9.8	71.6	0.82	0.63	0.87	30.9
6u	U	All MCs	16	0.0	16	0.0	0.743	13.6	LOS A	9.8	71.6	0.82	0.63	0.87	43.5
Approach			878	4.5	878	4.5	0.743	8.6	LOS A	9.8	71.6	0.82	0.63	0.87	41.5
North: Treelands Dr (N)															
7	L2	All MCs	222	4.0	222	4.0	0.538	9.4	LOS A	4.8	34.5	0.86	0.79	0.98	37.3
8	T1	All MCs	2	0.0	2	0.0	0.538	9.5	LOS A	4.8	34.5	0.86	0.79	0.98	30.4
9	R2	All MCs	193	4.0	193	4.0	0.538	14.3	LOS A	4.8	34.5	0.86	0.79	0.98	39.6
9u	U	All MCs	5	0.0	5	0.0	0.538	16.2	LOS B	4.8	34.5	0.86	0.79	0.98	21.9
Approach			422	3.9	422	3.9	0.538	11.7	LOS A	4.8	34.5	0.86	0.79	0.98	38.2
West: Yamba Rd (W)															
10	L2	All MCs	146	6.1	146	6.1	0.649	7.4	LOS A	6.9	50.7	0.79	0.65	0.86	43.5
11	T1	All MCs	531	6.0	531	6.0	0.649	7.6	LOS A	6.9	50.7	0.79	0.65	0.86	46.5
12	R2	All MCs	2	0.0	2	0.0	0.649	12.0	LOS A	6.9	50.7	0.79	0.65	0.86	42.9
Approach			679	6.0	679	6.0	0.649	7.6	LOS A	6.9	50.7	0.79	0.65	0.86	46.0
All Vehicles			1988	4.9	1988	4.9	0.743	8.9	LOS A	9.8	71.6	0.82	0.67	0.89	42.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.015	8.0	LOS A	0.1	0.7	0.78	0.66	0.78	40.3
2	T1	All MCs	2	0.0	2	0.0	0.015	7.9	LOS A	0.1	0.7	0.78	0.66	0.78	23.1
3	R2	All MCs	5	0.0	5	0.0	0.015	12.5	LOS A	0.1	0.7	0.78	0.66	0.78	37.1
Approach			9	0.0	9	0.0	0.015	10.5	LOS A	0.1	0.7	0.78	0.66	0.78	34.8
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.587	5.3	LOS A	5.3	38.0	0.64	0.59	0.64	40.4
5	T1	All MCs	393	3.8	393	3.8	0.587	5.6	LOS A	5.3	38.0	0.64	0.59	0.64	46.7
6	R2	All MCs	294	1.1	294	1.1	0.587	10.2	LOS A	5.3	38.0	0.64	0.59	0.64	31.5
6u	U	All MCs	14	0.0	14	0.0	0.587	12.3	LOS A	5.3	38.0	0.64	0.59	0.64	44.2
Approach			703	2.6	703	2.6	0.587	7.7	LOS A	5.3	38.0	0.64	0.59	0.64	40.5
North: Treelands Dr (N)															
7	L2	All MCs	392	1.5	392	1.5	0.746	13.4	LOS A	9.5	67.6	0.98	0.96	1.38	34.2
8	T1	All MCs	2	0.0	2	0.0	0.746	13.6	LOS A	9.5	67.6	0.98	0.96	1.38	26.8
9	R2	All MCs	199	3.2	199	3.2	0.746	18.4	LOS B	9.5	67.6	0.98	0.96	1.38	36.1
9u	U	All MCs	12	0.0	12	0.0	0.746	20.3	LOS B	9.5	67.6	0.98	0.96	1.38	19.9
Approach			604	2.0	604	2.0	0.746	15.2	LOS B	9.5	67.6	0.98	0.96	1.38	34.6
West: Yamba Rd (W)															
10	L2	All MCs	180	6.4	180	6.4	0.702	8.0	LOS A	7.9	56.9	0.79	0.70	0.91	43.4
11	T1	All MCs	588	2.7	588	2.7	0.702	8.1	LOS A	7.9	56.9	0.79	0.70	0.91	46.9
12	R2	All MCs	1	0.0	1	0.0	0.702	12.7	LOS A	7.9	56.9	0.79	0.70	0.91	42.8
Approach			769	3.6	769	3.6	0.702	8.1	LOS A	7.9	56.9	0.79	0.70	0.91	46.2
All Vehicles			2086	2.8	2086	2.8	0.746	10.0	LOS A	9.5	67.6	0.80	0.74	0.95	41.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.023	11.8	LOS A	0.2	1.1	0.93	0.73	0.93	36.6
2	T1	All MCs	1	0.0	1	0.0	0.023	11.7	LOS A	0.2	1.1	0.93	0.73	0.93	20.8
3	R2	All MCs	6	0.0	6	0.0	0.023	16.2	LOS B	0.2	1.1	0.93	0.73	0.93	33.3
Approach			9	0.0	9	0.0	0.023	14.7	LOS B	0.2	1.1	0.93	0.73	0.93	32.7
East: Yamba Rd (E)															
4	L2	All MCs	5	0.0	5	0.0	0.751	6.7	LOS A	10.2	74.0	0.83	0.63	0.87	39.5
5	T1	All MCs	609	6.4	609	6.4	0.751	7.1	LOS A	10.2	74.0	0.83	0.63	0.87	46.0
6	R2	All MCs	262	0.8	262	0.8	0.751	11.6	LOS A	10.2	74.0	0.83	0.63	0.87	30.9
6u	U	All MCs	15	0.0	15	0.0	0.751	13.6	LOS A	10.2	74.0	0.83	0.63	0.87	43.5
Approach			892	4.6	892	4.6	0.751	8.6	LOS A	10.2	74.0	0.83	0.63	0.87	41.6
North: Treelands Dr (N)															
7	L2	All MCs	217	4.0	217	4.0	0.539	9.7	LOS A	4.8	34.7	0.88	0.80	1.00	37.0
8	T1	All MCs	2	0.0	2	0.0	0.539	9.8	LOS A	4.8	34.7	0.88	0.80	1.00	30.1
9	R2	All MCs	188	4.0	188	4.0	0.539	14.5	LOS B	4.8	34.7	0.88	0.80	1.00	39.3
9u	U	All MCs	5	0.0	5	0.0	0.539	16.5	LOS B	4.8	34.7	0.88	0.80	1.00	21.7
Approach			413	3.9	413	3.9	0.539	12.0	LOS A	4.8	34.7	0.88	0.80	1.00	37.9
West: Yamba Rd (W)															
10	L2	All MCs	143	6.1	143	6.1	0.661	7.5	LOS A	7.2	53.3	0.80	0.66	0.87	43.5
11	T1	All MCs	552	6.0	552	6.0	0.661	7.7	LOS A	7.2	53.3	0.80	0.66	0.87	46.5
12	R2	All MCs	2	0.0	2	0.0	0.661	12.1	LOS A	7.2	53.3	0.80	0.66	0.87	42.8
Approach			697	6.0	697	6.0	0.661	7.7	LOS A	7.2	53.3	0.80	0.66	0.87	46.0
All Vehicles			2011	4.9	2011	4.9	0.751	9.0	LOS A	10.2	74.0	0.83	0.67	0.90	42.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.015	8.1	LOS A	0.1	0.7	0.79	0.66	0.79	40.2
2	T1	All MCs	2	0.0	2	0.0	0.015	8.0	LOS A	0.1	0.7	0.79	0.66	0.79	23.1
3	R2	All MCs	5	0.0	5	0.0	0.015	12.5	LOS A	0.1	0.7	0.79	0.66	0.79	37.0
Approach			9	0.0	9	0.0	0.015	10.5	LOS A	0.1	0.7	0.79	0.66	0.79	34.8
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.591	5.3	LOS A	5.4	38.7	0.64	0.58	0.64	40.5
5	T1	All MCs	407	3.8	407	3.8	0.591	5.6	LOS A	5.4	38.7	0.64	0.58	0.64	46.8
6	R2	All MCs	288	1.1	288	1.1	0.591	10.2	LOS A	5.4	38.7	0.64	0.58	0.64	31.5
6u	U	All MCs	14	0.0	14	0.0	0.591	12.3	LOS A	5.4	38.7	0.64	0.58	0.64	44.3
Approach			713	2.6	713	2.6	0.591	7.6	LOS A	5.4	38.7	0.64	0.58	0.64	40.8
North: Treelands Dr (N)															
7	L2	All MCs	385	1.5	385	1.5	0.746	13.8	LOS A	9.5	67.7	0.99	0.97	1.40	33.9
8	T1	All MCs	2	0.0	2	0.0	0.746	14.0	LOS A	9.5	67.7	0.99	0.97	1.40	26.5
9	R2	All MCs	194	3.2	194	3.2	0.746	18.7	LOS B	9.5	67.7	0.99	0.97	1.40	35.9
9u	U	All MCs	12	0.0	12	0.0	0.746	20.7	LOS B	9.5	67.7	0.99	0.97	1.40	19.7
Approach			593	2.0	593	2.0	0.746	15.6	LOS B	9.5	67.7	0.99	0.97	1.40	34.3
West: Yamba Rd (W)															
10	L2	All MCs	176	6.4	176	6.4	0.710	8.1	LOS A	8.1	58.7	0.80	0.70	0.91	43.3
11	T1	All MCs	606	2.7	606	2.7	0.710	8.2	LOS A	8.1	58.7	0.80	0.70	0.91	46.8
12	R2	All MCs	1	0.0	1	0.0	0.710	12.7	LOS A	8.1	58.7	0.80	0.70	0.91	42.8
Approach			783	3.5	783	3.5	0.710	8.2	LOS A	8.1	58.7	0.80	0.70	0.91	46.2
All Vehicles			2098	2.8	2098	2.8	0.746	10.1	LOS A	9.5	67.7	0.80	0.74	0.96	41.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES AM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	3	0.0	3	0.0	0.032	14.0	LOS A	0.2	1.7	0.99	0.78	0.99	35.0
2	T1	All MCs	1	0.0	1	0.0	0.032	14.0	LOS A	0.2	1.7	0.99	0.78	0.99	19.7
3	R2	All MCs	6	0.0	6	0.0	0.032	18.5	LOS B	0.2	1.7	0.99	0.78	0.99	31.8
Approach			11	0.0	11	0.0	0.032	16.7	LOS B	0.2	1.7	0.99	0.78	0.99	31.6
East: Yamba Rd (E)															
4	L2	All MCs	6	0.0	6	0.0	0.832	9.2	LOS A	15.0	109.5	0.98	0.74	1.14	38.0
5	T1	All MCs	656	6.4	656	6.4	0.832	9.6	LOS A	15.0	109.5	0.98	0.74	1.14	44.6
6	R2	All MCs	281	0.8	281	0.8	0.832	14.1	LOS A	15.0	109.5	0.98	0.74	1.14	29.9
6u	U	All MCs	17	0.0	17	0.0	0.832	16.1	LOS B	15.0	109.5	0.98	0.74	1.14	42.1
Approach			960	4.6	960	4.6	0.832	11.0	LOS A	15.0	109.5	0.98	0.74	1.14	40.4
North: Treelands Dr (N)															
7	L2	All MCs	237	4.0	237	4.0	0.650	12.8	LOS A	7.0	50.7	0.97	0.90	1.26	34.2
8	T1	All MCs	3	0.0	3	0.0	0.650	12.8	LOS A	7.0	50.7	0.97	0.90	1.26	27.1
9	R2	All MCs	208	4.0	208	4.0	0.650	17.6	LOS B	7.0	50.7	0.97	0.90	1.26	36.6
9u	U	All MCs	5	0.0	5	0.0	0.650	19.5	LOS B	7.0	50.7	0.97	0.90	1.26	20.1
Approach			454	3.9	454	3.9	0.650	15.1	LOS B	7.0	50.7	0.97	0.90	1.26	35.2
West: Yamba Rd (W)															
10	L2	All MCs	159	6.1	159	6.1	0.750	9.4	LOS A	10.4	76.8	0.92	0.76	1.09	42.4
11	T1	All MCs	604	6.0	604	6.0	0.750	9.7	LOS A	10.4	76.8	0.92	0.76	1.09	45.5
12	R2	All MCs	3	0.0	3	0.0	0.750	14.0	LOS A	10.4	76.8	0.92	0.76	1.09	41.8
Approach			766	6.0	766	6.0	0.750	9.6	LOS A	10.4	76.8	0.92	0.76	1.09	45.0
All Vehicles			2191	4.9	2191	4.9	0.832	11.4	LOS A	15.0	109.5	0.96	0.78	1.14	41.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES PM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	3	0.0	3	0.0	0.023	9.3	LOS A	0.2	1.1	0.85	0.70	0.85	39.3
2	T1	All MCs	3	0.0	3	0.0	0.023	9.2	LOS A	0.2	1.1	0.85	0.70	0.85	22.4
3	R2	All MCs	6	0.0	6	0.0	0.023	13.7	LOS A	0.2	1.1	0.85	0.70	0.85	36.0
Approach			13	0.0	13	0.0	0.023	11.5	LOS A	0.2	1.1	0.85	0.70	0.85	33.6
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.661	5.9	LOS A	6.8	48.8	0.73	0.62	0.75	40.0
5	T1	All MCs	445	3.8	445	3.8	0.661	6.2	LOS A	6.8	48.8	0.73	0.62	0.75	46.4
6	R2	All MCs	314	1.1	314	1.1	0.661	10.7	LOS A	6.8	48.8	0.73	0.62	0.75	31.2
6u	U	All MCs	15	0.0	15	0.0	0.661	12.8	LOS A	6.8	48.8	0.73	0.62	0.75	43.9
Approach			777	2.6	777	2.6	0.661	8.2	LOS A	6.8	48.8	0.73	0.62	0.75	40.4
North: Treelands Dr (N)															
7	L2	All MCs	413	1.5	413	1.5	0.886	24.2	LOS B	16.6	118.5	1.00	1.31	1.97	26.9
8	T1	All MCs	3	0.0	3	0.0	0.886	24.4	LOS B	16.6	118.5	1.00	1.31	1.97	19.8
9	R2	All MCs	216	3.2	216	3.2	0.886	29.2	LOS C	16.6	118.5	1.00	1.31	1.97	29.2
9u	U	All MCs	13	0.0	13	0.0	0.886	31.1	LOS C	16.6	118.5	1.00	1.31	1.97	15.8
Approach			644	2.0	644	2.0	0.886	26.0	LOS B	16.6	118.5	1.00	1.31	1.97	27.5
West: Yamba Rd (W)															
10	L2	All MCs	195	6.4	195	6.4	0.794	10.3	LOS A	11.6	83.7	0.92	0.82	1.16	41.5
11	T1	All MCs	653	2.7	653	2.7	0.794	10.4	LOS A	11.6	83.7	0.92	0.82	1.16	45.2
12	R2	All MCs	1	0.0	1	0.0	0.794	14.9	LOS B	11.6	83.7	0.92	0.82	1.16	41.0
Approach			848	3.5	848	3.5	0.794	10.4	LOS A	11.6	83.7	0.92	0.82	1.16	44.5
All Vehicles			2282	2.8	2282	2.8	0.886	14.0	LOS A	16.6	118.5	0.88	0.89	1.25	37.9

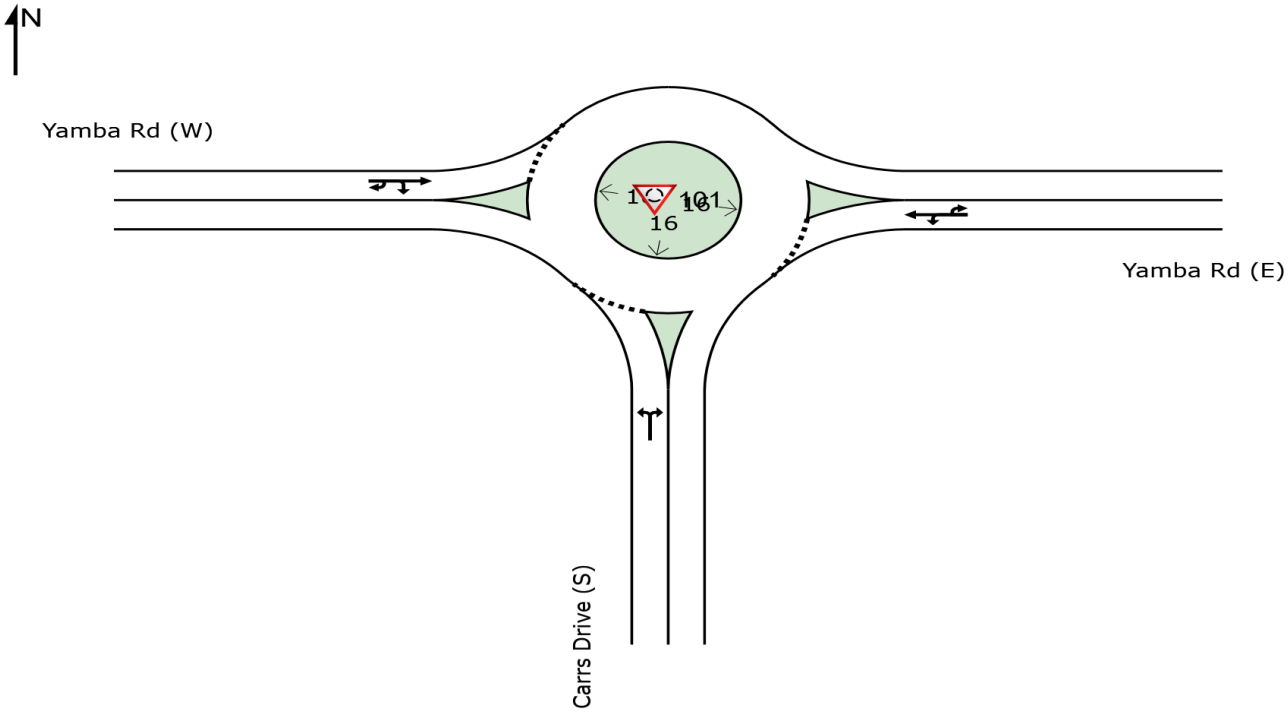
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

SITE LAYOUT

Site: 101 [2033 BG AM (Site Folder: General)]

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 101 [2033 BG AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	145	10.8	145	10.8	0.420	8.0	LOS A	2.8	20.8	0.73	0.71	0.73	37.2
3	R2	All MCs	204	4.2	204	4.2	0.420	12.1	LOS A	2.8	20.8	0.73	0.71	0.73	42.3
Approach			349	6.9	349	6.9	0.420	10.4	LOS A	2.8	20.8	0.73	0.71	0.73	40.4
East: Yamba Rd (E)															
4	L2	All MCs	133	1.5	133	1.5	0.469	4.8	LOS A	4.0	28.8	0.40	0.45	0.40	47.4
5	T1	All MCs	486	4.3	486	4.3	0.469	5.1	LOS A	4.0	28.8	0.40	0.45	0.40	49.6
6u	U	All MCs	3	0.0	3	0.0	0.469	11.0	LOS A	4.0	28.8	0.40	0.45	0.40	50.8
Approach			622	3.7	622	3.7	0.469	5.0	LOS A	4.0	28.8	0.40	0.45	0.40	49.2
West: Yamba Rd (W)															
11	T1	All MCs	521	4.8	521	4.8	0.548	6.1	LOS A	4.8	35.1	0.63	0.56	0.63	48.3
12	R2	All MCs	88	14.0	88	14.0	0.548	10.5	LOS A	4.8	35.1	0.63	0.56	0.63	40.2
12u	U	All MCs	2	0.0	2	0.0	0.548	12.0	LOS A	4.8	35.1	0.63	0.56	0.63	44.8
Approach			612	6.1	612	6.1	0.548	6.8	LOS A	4.8	35.1	0.63	0.56	0.63	47.5
All Vehicles			1583	5.3	1583	5.3	0.548	6.9	LOS A	4.8	35.1	0.56	0.55	0.56	46.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 BG PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	95	6.8	95	6.8	0.240	7.2	LOS A	1.5	10.5	0.65	0.69	0.65	38.7
3	R2	All MCs	113	0.0	113	0.0	0.240	11.4	LOS A	1.5	10.5	0.65	0.69	0.65	43.4
Approach			207	3.1	207	3.1	0.240	9.5	LOS A	1.5	10.5	0.65	0.69	0.65	41.5
East: Yamba Rd (E)															
4	L2	All MCs	168	3.3	168	3.3	0.503	5.1	LOS A	4.2	30.1	0.45	0.48	0.45	47.0
5	T1	All MCs	476	2.1	476	2.1	0.503	5.3	LOS A	4.2	30.1	0.45	0.48	0.45	49.7
6u	U	All MCs	5	0.0	5	0.0	0.503	11.3	LOS A	4.2	30.1	0.45	0.48	0.45	50.6
Approach			649	2.4	649	2.4	0.503	5.3	LOS A	4.2	30.1	0.45	0.48	0.45	49.1
West: Yamba Rd (W)															
11	T1	All MCs	562	2.4	562	2.4	0.526	5.3	LOS A	4.7	33.7	0.47	0.49	0.47	49.1
12	R2	All MCs	123	0.0	123	0.0	0.526	9.3	LOS A	4.7	33.7	0.47	0.49	0.47	41.7
12u	U	All MCs	1	0.0	1	0.0	0.526	11.3	LOS A	4.7	33.7	0.47	0.49	0.47	45.6
Approach			686	2.0	686	2.0	0.526	6.0	LOS A	4.7	33.7	0.47	0.49	0.47	48.2
All Vehicles			1543	2.3	1543	2.3	0.526	6.2	LOS A	4.7	33.7	0.49	0.51	0.49	47.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	148	10.8	148	10.8	0.470	9.5	LOS A	3.5	26.2	0.80	0.77	0.87	35.7
3	R2	All MCs	212	4.2	212	4.2	0.470	13.6	LOS A	3.5	26.2	0.80	0.77	0.87	41.0
Approach			360	6.9	360	6.9	0.470	11.9	LOS A	3.5	26.2	0.80	0.77	0.87	39.1
East: Yamba Rd (E)															
4	L2	All MCs	139	1.5	139	1.5	0.534	4.9	LOS A	5.1	36.5	0.45	0.46	0.45	47.0
5	T1	All MCs	564	4.3	564	4.3	0.534	5.2	LOS A	5.1	36.5	0.45	0.46	0.45	49.3
6u	U	All MCs	4	0.0	4	0.0	0.534	11.1	LOS A	5.1	36.5	0.45	0.46	0.45	50.6
Approach			707	3.7	707	3.7	0.534	5.1	LOS A	5.1	36.5	0.45	0.46	0.45	49.0
West: Yamba Rd (W)															
11	T1	All MCs	604	4.8	604	4.8	0.631	6.4	LOS A	6.2	45.4	0.71	0.58	0.72	47.9
12	R2	All MCs	92	14.0	92	14.0	0.631	10.9	LOS A	6.2	45.4	0.71	0.58	0.72	39.7
12u	U	All MCs	2	0.0	2	0.0	0.631	12.3	LOS A	6.2	45.4	0.71	0.58	0.72	44.4
Approach			698	6.0	698	6.0	0.631	7.0	LOS A	6.2	45.4	0.71	0.58	0.72	47.2
All Vehicles			1765	5.3	1765	5.3	0.631	7.3	LOS A	6.2	45.4	0.63	0.57	0.64	46.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	99	6.8	99	6.8	0.272	7.9	LOS A	1.7	12.3	0.71	0.71	0.71	38.0
3	R2	All MCs	117	0.0	117	0.0	0.272	12.0	LOS A	1.7	12.3	0.71	0.71	0.71	42.8
Approach			216	3.1	216	3.1	0.272	10.1	LOS A	1.7	12.3	0.71	0.71	0.71	40.9
East: Yamba Rd (E)															
4	L2	All MCs	171	3.3	171	3.3	0.565	5.2	LOS A	5.2	37.4	0.50	0.48	0.50	46.7
5	T1	All MCs	553	2.1	553	2.1	0.565	5.4	LOS A	5.2	37.4	0.50	0.48	0.50	49.4
6u	U	All MCs	6	0.0	6	0.0	0.565	11.4	LOS A	5.2	37.4	0.50	0.48	0.50	50.3
Approach			729	2.4	729	2.4	0.565	5.4	LOS A	5.2	37.4	0.50	0.48	0.50	48.9
West: Yamba Rd (W)															
11	T1	All MCs	652	2.4	652	2.4	0.599	5.4	LOS A	6.0	43.0	0.54	0.50	0.54	48.8
12	R2	All MCs	125	0.0	125	0.0	0.599	9.5	LOS A	6.0	43.0	0.54	0.50	0.54	41.3
12u	U	All MCs	1	0.0	1	0.0	0.599	11.4	LOS A	6.0	43.0	0.54	0.50	0.54	45.3
Approach			778	2.0	778	2.0	0.599	6.1	LOS A	6.0	43.0	0.54	0.50	0.54	48.0
All Vehicles			1723	2.3	1723	2.3	0.599	6.3	LOS A	6.0	43.0	0.54	0.52	0.54	47.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 BG AM Sens (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	149	10.8	149	10.8	0.463	9.1	LOS A	3.4	25.3	0.78	0.76	0.84	36.1
3	R2	All MCs	214	4.2	214	4.2	0.463	13.2	LOS A	3.4	25.3	0.78	0.76	0.84	41.3
Approach			363	6.9	363	6.9	0.463	11.5	LOS A	3.4	25.3	0.78	0.76	0.84	39.4
East: Yamba Rd (E)															
4	L2	All MCs	141	1.5	141	1.5	0.520	4.9	LOS A	4.8	34.6	0.45	0.46	0.45	47.1
5	T1	All MCs	540	4.3	540	4.3	0.520	5.2	LOS A	4.8	34.6	0.45	0.46	0.45	49.4
6u	U	All MCs	4	0.0	4	0.0	0.520	11.1	LOS A	4.8	34.6	0.45	0.46	0.45	50.6
Approach			685	3.7	685	3.7	0.520	5.1	LOS A	4.8	34.6	0.45	0.46	0.45	49.0
West: Yamba Rd (W)															
11	T1	All MCs	578	4.8	578	4.8	0.612	6.3	LOS A	5.7	42.3	0.70	0.58	0.70	48.0
12	R2	All MCs	94	14.0	94	14.0	0.612	10.8	LOS A	5.7	42.3	0.70	0.58	0.70	39.8
12u	U	All MCs	2	0.0	2	0.0	0.612	12.2	LOS A	5.7	42.3	0.70	0.58	0.70	44.5
Approach			674	6.1	674	6.1	0.612	7.0	LOS A	5.7	42.3	0.70	0.58	0.70	47.2
All Vehicles			1722	5.3	1722	5.3	0.612	7.2	LOS A	5.7	42.3	0.62	0.57	0.63	46.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 BG PM Sens (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	100	6.8	100	6.8	0.269	7.7	LOS A	1.7	12.1	0.69	0.70	0.69	38.2
3	R2	All MCs	119	0.0	119	0.0	0.269	11.8	LOS A	1.7	12.1	0.69	0.70	0.69	43.0
Approach			219	3.1	219	3.1	0.269	9.9	LOS A	1.7	12.1	0.69	0.70	0.69	41.1
East: Yamba Rd (E)															
4	L2	All MCs	172	3.3	172	3.3	0.549	5.1	LOS A	4.9	35.3	0.49	0.48	0.49	46.7
5	T1	All MCs	528	2.1	528	2.1	0.549	5.4	LOS A	4.9	35.3	0.49	0.48	0.49	49.5
6u	U	All MCs	6	0.0	6	0.0	0.549	11.4	LOS A	4.9	35.3	0.49	0.48	0.49	50.4
Approach			706	2.4	706	2.4	0.549	5.4	LOS A	4.9	35.3	0.49	0.48	0.49	48.9
West: Yamba Rd (W)															
11	T1	All MCs	623	2.4	623	2.4	0.581	5.4	LOS A	5.7	40.3	0.53	0.50	0.53	48.9
12	R2	All MCs	126	0.0	126	0.0	0.581	9.5	LOS A	5.7	40.3	0.53	0.50	0.53	41.4
12u	U	All MCs	1	0.0	1	0.0	0.581	11.4	LOS A	5.7	40.3	0.53	0.50	0.53	45.3
Approach			751	2.0	751	2.0	0.581	6.1	LOS A	5.7	40.3	0.53	0.50	0.53	48.0
All Vehicles			1676	2.3	1676	2.3	0.581	6.3	LOS A	5.7	40.3	0.53	0.52	0.53	47.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG AM Sens (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	154	10.8	154	10.8	0.527	11.3	LOS A	4.4	33.0	0.86	0.84	1.02	34.2
3	R2	All MCs	221	4.2	221	4.2	0.527	15.3	LOS B	4.4	33.0	0.86	0.84	1.02	39.5
Approach			375	6.9	375	6.9	0.527	13.7	LOS A	4.4	33.0	0.86	0.84	1.02	37.6
East: Yamba Rd (E)															
4	L2	All MCs	148	1.5	148	1.5	0.594	5.0	LOS A	6.2	44.9	0.52	0.47	0.52	46.6
5	T1	All MCs	626	4.3	626	4.3	0.594	5.3	LOS A	6.2	44.9	0.52	0.47	0.52	49.0
6u	U	All MCs	4	0.0	4	0.0	0.594	11.3	LOS A	6.2	44.9	0.52	0.47	0.52	50.2
Approach			779	3.7	779	3.7	0.594	5.3	LOS A	6.2	44.9	0.52	0.47	0.52	48.6
West: Yamba Rd (W)															
11	T1	All MCs	671	4.8	671	4.8	0.704	7.5	LOS A	8.5	62.5	0.80	0.64	0.86	47.4
12	R2	All MCs	98	14.0	98	14.0	0.704	12.0	LOS A	8.5	62.5	0.80	0.64	0.86	39.1
12u	U	All MCs	3	0.0	3	0.0	0.704	13.4	LOS A	8.5	62.5	0.80	0.64	0.86	43.8
Approach			772	5.9	772	5.9	0.704	8.1	LOS A	8.5	62.5	0.80	0.64	0.86	46.7
All Vehicles			1925	5.2	1925	5.2	0.704	8.1	LOS A	8.5	62.5	0.70	0.61	0.75	45.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG PM Sens (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	104	6.8	104	6.8	0.308	8.5	LOS A	2.0	14.6	0.76	0.73	0.76	37.4
3	R2	All MCs	124	0.0	124	0.0	0.308	12.6	LOS A	2.0	14.6	0.76	0.73	0.76	42.2
Approach			228	3.1	228	3.1	0.308	10.8	LOS A	2.0	14.6	0.76	0.73	0.76	40.2
East: Yamba Rd (E)															
4	L2	All MCs	175	3.3	175	3.3	0.617	5.3	LOS A	6.3	44.9	0.56	0.49	0.56	46.3
5	T1	All MCs	614	2.1	614	2.1	0.617	5.5	LOS A	6.3	44.9	0.56	0.49	0.56	49.1
6u	U	All MCs	7	0.0	7	0.0	0.617	11.5	LOS A	6.3	44.9	0.56	0.49	0.56	50.1
Approach			796	2.3	796	2.3	0.617	5.5	LOS A	6.3	44.9	0.56	0.49	0.56	48.6
West: Yamba Rd (W)															
11	T1	All MCs	723	2.4	723	2.4	0.662	5.6	LOS A	7.4	52.7	0.61	0.51	0.61	48.5
12	R2	All MCs	128	0.0	128	0.0	0.662	9.7	LOS A	7.4	52.7	0.61	0.51	0.61	40.9
12u	U	All MCs	1	0.0	1	0.0	0.662	11.6	LOS A	7.4	52.7	0.61	0.51	0.61	44.9
Approach			853	2.0	853	2.0	0.662	6.2	LOS A	7.4	52.7	0.61	0.51	0.61	47.7
All Vehicles			1877	2.3	1877	2.3	0.662	6.5	LOS A	7.4	52.7	0.61	0.53	0.61	47.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM - Carrs Only (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	298	10.8	298	10.8	0.846	18.9	LOS B	14.7	108.8	1.00	1.12	1.67	28.7
3	R2	All MCs	386	4.2	386	4.2	0.846	22.9	LOS B	14.7	108.8	1.00	1.12	1.67	34.1
Approach			684	7.1	684	7.1	0.846	21.2	LOS B	14.7	108.8	1.00	1.12	1.67	32.0
East: Yamba Rd (E)															
4	L2	All MCs	234	1.5	234	1.5	0.607	5.5	LOS A	6.2	44.8	0.65	0.53	0.65	46.0
5	T1	All MCs	486	4.3	486	4.3	0.607	5.8	LOS A	6.2	44.8	0.65	0.53	0.65	48.5
6u	U	All MCs	3	0.0	3	0.0	0.607	11.8	LOS A	6.2	44.8	0.65	0.53	0.65	49.8
Approach			723	3.4	723	3.4	0.607	5.8	LOS A	6.2	44.8	0.65	0.53	0.65	47.8
West: Yamba Rd (W)															
11	T1	All MCs	521	4.8	521	4.8	0.775	12.7	LOS A	11.2	83.3	0.99	0.89	1.30	43.6
12	R2	All MCs	155	14.0	155	14.0	0.775	17.3	LOS B	11.2	83.3	0.99	0.89	1.30	34.7
12u	U	All MCs	2	0.0	2	0.0	0.775	18.5	LOS B	11.2	83.3	0.99	0.89	1.30	39.8
Approach			678	6.9	678	6.9	0.775	13.8	LOS A	11.2	83.3	0.99	0.89	1.30	42.1
All Vehicles			2085	5.7	2085	5.7	0.846	13.4	LOS A	14.7	108.8	0.87	0.84	1.20	40.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM - Carrs Only (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	173	6.8	173	6.8	0.483	8.2	LOS A	3.9	27.9	0.82	0.74	0.86	37.6
3	R2	All MCs	214	0.0	214	0.0	0.483	12.3	LOS A	3.9	27.9	0.82	0.74	0.86	42.4
Approach			386	3.0	386	3.0	0.483	10.5	LOS A	3.9	27.9	0.82	0.74	0.86	40.5
East: Yamba Rd (E)															
4	L2	All MCs	378	3.3	378	3.3	0.808	10.6	LOS A	13.3	95.0	0.96	0.79	1.17	42.6
5	T1	All MCs	476	2.1	476	2.1	0.808	10.7	LOS A	13.3	95.0	0.96	0.79	1.17	45.8
6u	U	All MCs	5	0.0	5	0.0	0.808	16.7	LOS B	13.3	95.0	0.96	0.79	1.17	47.3
Approach			859	2.6	859	2.6	0.808	10.7	LOS A	13.3	95.0	0.96	0.79	1.17	44.6
West: Yamba Rd (W)															
11	T1	All MCs	562	2.4	562	2.4	0.733	7.6	LOS A	9.5	67.1	0.82	0.65	0.87	47.0
12	R2	All MCs	277	0.0	277	0.0	0.733	11.6	LOS A	9.5	67.1	0.82	0.65	0.87	39.0
12u	U	All MCs	1	0.0	1	0.0	0.733	13.5	LOS A	9.5	67.1	0.82	0.65	0.87	43.2
Approach			840	1.6	840	1.6	0.733	8.9	LOS A	9.5	67.1	0.82	0.65	0.87	45.0
All Vehicles			2085	2.3	2085	2.3	0.808	9.9	LOS A	13.3	95.0	0.88	0.72	0.99	44.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM Sens - Carrs Only (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	303	10.8	303	10.8	0.931	31.4	LOS C	22.5	166.8	1.00	1.50	2.34	22.8
3	R2	All MCs	395	4.2	395	4.2	0.931	35.4	LOS C	22.5	166.8	1.00	1.50	2.34	27.9
Approach			698	7.1	698	7.1	0.931	33.7	LOS C	22.5	166.8	1.00	1.50	2.34	25.8
East: Yamba Rd (E)															
4	L2	All MCs	242	1.5	242	1.5	0.664	5.7	LOS A	7.4	53.0	0.71	0.54	0.71	45.6
5	T1	All MCs	540	4.3	540	4.3	0.664	6.0	LOS A	7.4	53.0	0.71	0.54	0.71	48.1
6u	U	All MCs	4	0.0	4	0.0	0.664	12.0	LOS A	7.4	53.0	0.71	0.54	0.71	49.5
Approach			786	3.4	786	3.4	0.664	6.0	LOS A	7.4	53.0	0.71	0.54	0.71	47.5
West: Yamba Rd (W)															
11	T1	All MCs	578	4.8	578	4.8	0.854	16.7	LOS B	15.7	116.1	1.00	1.06	1.53	40.8
12	R2	All MCs	160	14.0	160	14.0	0.854	21.3	LOS B	15.7	116.1	1.00	1.06	1.53	31.6
12u	U	All MCs	2	0.0	2	0.0	0.854	22.5	LOS B	15.7	116.1	1.00	1.06	1.53	36.8
Approach			740	6.8	740	6.8	0.854	17.7	LOS B	15.7	116.1	1.00	1.06	1.53	39.3
All Vehicles			2224	5.7	2224	5.7	0.931	18.6	LOS B	22.5	166.8	0.90	1.02	1.50	36.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM Sens - Carrs Only (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	178	6.8	178	6.8	0.533	9.6	LOS A	4.7	34.0	0.88	0.79	0.98	36.3
3	R2	All MCs	220	0.0	220	0.0	0.533	13.6	LOS A	4.7	34.0	0.88	0.79	0.98	41.2
Approach			398	3.0	398	3.0	0.533	11.8	LOS A	4.7	34.0	0.88	0.79	0.98	39.3
East: Yamba Rd (E)															
4	L2	All MCs	381	3.3	381	3.3	0.867	13.1	LOS A	17.7	126.9	1.00	0.92	1.34	40.3
5	T1	All MCs	528	2.1	528	2.1	0.867	13.3	LOS A	17.7	126.9	1.00	0.92	1.34	43.7
6u	U	All MCs	6	0.0	6	0.0	0.867	19.3	LOS B	17.7	126.9	1.00	0.92	1.34	45.4
Approach			916	2.6	916	2.6	0.867	13.3	LOS A	17.7	126.9	1.00	0.92	1.34	42.4
West: Yamba Rd (W)															
11	T1	All MCs	623	2.4	623	2.4	0.795	9.0	LOS A	12.5	89.1	0.91	0.70	1.03	46.3
12	R2	All MCs	280	0.0	280	0.0	0.795	13.0	LOS A	12.5	89.1	0.91	0.70	1.03	38.2
12u	U	All MCs	1	0.0	1	0.0	0.795	14.9	LOS B	12.5	89.1	0.91	0.70	1.03	42.5
Approach			904	1.7	904	1.7	0.795	10.2	LOS A	12.5	89.1	0.91	0.70	1.03	44.4
All Vehicles			2218	2.3	2218	2.3	0.867	11.8	LOS A	17.7	126.9	0.94	0.81	1.15	42.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	288	10.8	288	10.8	0.578	10.5	LOS A	5.2	39.3	0.84	0.81	1.00	35.4
3	R2	All MCs	168	4.2	168	4.2	0.578	14.5	LOS B	5.2	39.3	0.84	0.81	1.00	40.8
Approach			457	8.4	457	8.4	0.578	12.0	LOS A	5.2	39.3	0.84	0.81	1.00	37.6
East: Yamba Rd (E)															
4	L2	All MCs	102	1.5	102	1.5	0.505	5.2	LOS A	4.3	30.8	0.52	0.50	0.52	46.6
5	T1	All MCs	509	4.3	509	4.3	0.505	5.6	LOS A	4.3	30.8	0.52	0.50	0.52	49.0
6u	U	All MCs	3	0.0	3	0.0	0.505	11.5	LOS A	4.3	30.8	0.52	0.50	0.52	50.2
Approach			615	3.8	615	3.8	0.505	5.5	LOS A	4.3	30.8	0.52	0.50	0.52	48.6
West: Yamba Rd (W)															
11	T1	All MCs	531	4.8	531	4.8	0.581	5.9	LOS A	5.5	40.8	0.63	0.54	0.63	48.3
12	R2	All MCs	142	14.0	142	14.0	0.581	10.3	LOS A	5.5	40.8	0.63	0.54	0.63	40.1
12u	U	All MCs	2	0.0	2	0.0	0.581	11.8	LOS A	5.5	40.8	0.63	0.54	0.63	44.7
Approach			675	6.7	675	6.7	0.581	6.8	LOS A	5.5	40.8	0.63	0.54	0.63	47.0
All Vehicles			1746	6.1	1746	6.1	0.581	7.7	LOS A	5.5	40.8	0.64	0.60	0.69	45.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	162	6.8	162	6.8	0.317	7.5	LOS A	2.1	15.3	0.72	0.69	0.72	39.1
3	R2	All MCs	95	0.0	95	0.0	0.317	11.6	LOS A	2.1	15.3	0.72	0.69	0.72	43.8
Approach			257	4.3	257	4.3	0.317	9.0	LOS A	2.1	15.3	0.72	0.69	0.72	41.1
East: Yamba Rd (E)															
4	L2	All MCs	122	3.3	122	3.3	0.601	7.4	LOS A	5.6	39.8	0.74	0.65	0.79	45.1
5	T1	All MCs	487	2.1	487	2.1	0.601	7.6	LOS A	5.6	39.8	0.74	0.65	0.79	48.1
6u	U	All MCs	5	0.0	5	0.0	0.601	13.6	LOS A	5.6	39.8	0.74	0.65	0.79	49.2
Approach			615	2.3	615	2.3	0.601	7.6	LOS A	5.6	39.8	0.74	0.65	0.79	47.6
West: Yamba Rd (W)															
11	T1	All MCs	586	2.4	586	2.4	0.664	5.3	LOS A	7.7	54.9	0.55	0.51	0.55	48.3
12	R2	All MCs	315	0.0	315	0.0	0.664	9.4	LOS A	7.7	54.9	0.55	0.51	0.55	40.7
12u	U	All MCs	1	0.0	1	0.0	0.664	11.3	LOS A	7.7	54.9	0.55	0.51	0.55	44.8
Approach			902	1.6	902	1.6	0.664	6.8	LOS A	7.7	54.9	0.55	0.51	0.55	46.3
All Vehicles			1774	2.2	1774	2.2	0.664	7.4	LOS A	7.7	54.9	0.64	0.58	0.66	46.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM Sens (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	294	10.8	294	10.8	0.634	12.4	LOS A	6.4	48.2	0.90	0.88	1.16	33.7
3	R2	All MCs	178	4.2	178	4.2	0.634	16.5	LOS B	6.4	48.2	0.90	0.88	1.16	39.1
Approach			472	8.3	472	8.3	0.634	14.0	LOS A	6.4	48.2	0.90	0.88	1.16	36.0
East: Yamba Rd (E)															
4	L2	All MCs	111	1.5	111	1.5	0.559	5.4	LOS A	5.1	37.1	0.57	0.51	0.57	46.3
5	T1	All MCs	563	4.3	563	4.3	0.559	5.7	LOS A	5.1	37.1	0.57	0.51	0.57	48.7
6u	U	All MCs	4	0.0	4	0.0	0.559	11.6	LOS A	5.1	37.1	0.57	0.51	0.57	50.0
Approach			678	3.8	678	3.8	0.559	5.7	LOS A	5.1	37.1	0.57	0.51	0.57	48.4
West: Yamba Rd (W)															
11	T1	All MCs	588	4.8	588	4.8	0.642	6.1	LOS A	6.6	49.1	0.70	0.56	0.70	47.9
12	R2	All MCs	147	14.0	147	14.0	0.642	10.5	LOS A	6.6	49.1	0.70	0.56	0.70	39.7
12u	U	All MCs	2	0.0	2	0.0	0.642	12.0	LOS A	6.6	49.1	0.70	0.56	0.70	44.4
Approach			738	6.6	738	6.6	0.642	7.0	LOS A	6.6	49.1	0.70	0.56	0.70	46.7
All Vehicles			1887	6.0	1887	6.0	0.642	8.3	LOS A	6.6	49.1	0.70	0.62	0.77	44.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM Sens (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	167	6.8	167	6.8	0.355	8.0	LOS A	2.5	17.8	0.77	0.72	0.77	38.5
3	R2	All MCs	101	0.0	101	0.0	0.355	12.1	LOS A	2.5	17.8	0.77	0.72	0.77	43.2
Approach			268	4.2	268	4.2	0.355	9.5	LOS A	2.5	17.8	0.77	0.72	0.77	40.5
East: Yamba Rd (E)															
4	L2	All MCs	125	3.3	125	3.3	0.660	8.3	LOS A	7.1	50.9	0.80	0.69	0.90	44.7
5	T1	All MCs	540	2.1	540	2.1	0.660	8.5	LOS A	7.1	50.9	0.80	0.69	0.90	47.6
6u	U	All MCs	6	0.0	6	0.0	0.660	14.4	LOS A	7.1	50.9	0.80	0.69	0.90	48.8
Approach			672	2.3	672	2.3	0.660	8.5	LOS A	7.1	50.9	0.80	0.69	0.90	47.2
West: Yamba Rd (W)															
11	T1	All MCs	647	2.4	647	2.4	0.718	5.5	LOS A	9.3	66.0	0.63	0.52	0.63	48.0
12	R2	All MCs	318	0.0	318	0.0	0.718	9.6	LOS A	9.3	66.0	0.63	0.52	0.63	40.3
12u	U	All MCs	1	0.0	1	0.0	0.718	11.5	LOS A	9.3	66.0	0.63	0.52	0.63	44.4
Approach			966	1.6	966	1.6	0.718	6.9	LOS A	9.3	66.0	0.63	0.52	0.63	46.1
All Vehicles			1906	2.2	1906	2.2	0.718	7.8	LOS A	9.3	66.0	0.71	0.61	0.74	45.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	293	10.8	293	10.8	0.648	13.2	LOS A	6.7	50.4	0.92	0.90	1.21	33.1
3	R2	All MCs	176	4.2	176	4.2	0.648	17.2	LOS B	6.7	50.4	0.92	0.90	1.21	38.5
Approach			468	8.3	468	8.3	0.648	14.7	LOS B	6.7	50.4	0.92	0.90	1.21	35.4
East: Yamba Rd (E)															
4	L2	All MCs	108	1.5	108	1.5	0.576	5.4	LOS A	5.4	39.3	0.58	0.51	0.58	46.2
5	T1	All MCs	587	4.3	587	4.3	0.576	5.7	LOS A	5.4	39.3	0.58	0.51	0.58	48.6
6u	U	All MCs	4	0.0	4	0.0	0.576	11.7	LOS A	5.4	39.3	0.58	0.51	0.58	49.9
Approach			700	3.8	700	3.8	0.576	5.7	LOS A	5.4	39.3	0.58	0.51	0.58	48.3
West: Yamba Rd (W)															
11	T1	All MCs	615	4.8	615	4.8	0.661	6.1	LOS A	7.1	52.2	0.72	0.56	0.72	47.9
12	R2	All MCs	146	14.0	146	14.0	0.661	10.6	LOS A	7.1	52.2	0.72	0.56	0.72	39.6
12u	U	All MCs	2	0.0	2	0.0	0.661	12.0	LOS A	7.1	52.2	0.72	0.56	0.72	44.3
Approach			763	6.6	763	6.6	0.661	7.0	LOS A	7.1	52.2	0.72	0.56	0.72	46.7
All Vehicles			1932	6.0	1932	6.0	0.661	8.4	LOS A	7.1	52.2	0.72	0.63	0.79	44.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	166	6.8	166	6.8	0.362	8.2	LOS A	2.5	18.3	0.79	0.73	0.79	38.3
3	R2	All MCs	99	0.0	99	0.0	0.362	12.3	LOS A	2.5	18.3	0.79	0.73	0.79	43.1
Approach			265	4.3	265	4.3	0.362	9.7	LOS A	2.5	18.3	0.79	0.73	0.79	40.3
East: Yamba Rd (E)															
4	L2	All MCs	125	3.3	125	3.3	0.683	8.6	LOS A	7.8	55.7	0.82	0.71	0.94	44.5
5	T1	All MCs	564	2.1	564	2.1	0.683	8.8	LOS A	7.8	55.7	0.82	0.71	0.94	47.5
6u	U	All MCs	6	0.0	6	0.0	0.683	14.7	LOS B	7.8	55.7	0.82	0.71	0.94	48.7
Approach			696	2.3	696	2.3	0.683	8.8	LOS A	7.8	55.7	0.82	0.71	0.94	47.0
West: Yamba Rd (W)															
11	T1	All MCs	676	2.4	676	2.4	0.735	5.6	LOS A	10.0	70.6	0.65	0.52	0.65	48.0
12	R2	All MCs	317	0.0	317	0.0	0.735	9.6	LOS A	10.0	70.6	0.65	0.52	0.65	40.3
12u	U	All MCs	1	0.0	1	0.0	0.735	11.5	LOS A	10.0	70.6	0.65	0.52	0.65	44.3
Approach			994	1.6	994	1.6	0.735	6.9	LOS A	10.0	70.6	0.65	0.52	0.65	46.1
All Vehicles			1955	2.2	1955	2.2	0.735	7.9	LOS A	10.0	70.6	0.73	0.61	0.77	45.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES AM Sens (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	297	10.8	297	10.8	0.729	17.1	LOS B	8.8	65.9	0.99	1.01	1.47	30.2
3	R2	All MCs	185	4.2	185	4.2	0.729	21.1	LOS B	8.8	65.9	0.99	1.01	1.47	35.7
Approach			482	8.3	482	8.3	0.729	18.6	LOS B	8.8	65.9	0.99	1.01	1.47	32.5
East: Yamba Rd (E)															
4	L2	All MCs	118	1.5	118	1.5	0.642	5.6	LOS A	6.7	48.7	0.66	0.53	0.66	45.7
5	T1	All MCs	649	4.3	649	4.3	0.642	5.9	LOS A	6.7	48.7	0.66	0.53	0.66	48.2
6u	U	All MCs	4	0.0	4	0.0	0.642	11.9	LOS A	6.7	48.7	0.66	0.53	0.66	49.6
Approach			772	3.8	772	3.8	0.642	5.9	LOS A	6.7	48.7	0.66	0.53	0.66	47.9
West: Yamba Rd (W)															
11	T1	All MCs	681	4.8	681	4.8	0.734	7.1	LOS A	9.6	70.7	0.82	0.61	0.85	47.3
12	R2	All MCs	153	14.0	153	14.0	0.734	11.5	LOS A	9.6	70.7	0.82	0.61	0.85	39.0
12u	U	All MCs	3	0.0	3	0.0	0.734	13.0	LOS A	9.6	70.7	0.82	0.61	0.85	43.7
Approach			837	6.5	837	6.5	0.734	7.9	LOS A	9.6	70.7	0.82	0.61	0.85	46.2
All Vehicles			2091	5.9	2091	5.9	0.734	9.6	LOS A	9.6	70.7	0.80	0.67	0.93	43.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES PM Sens (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	172	6.8	172	6.8	0.415	9.1	LOS A	3.1	22.5	0.86	0.76	0.88	37.3
3	R2	All MCs	106	0.0	106	0.0	0.415	13.1	LOS A	3.1	22.5	0.86	0.76	0.88	42.2
Approach			278	4.2	278	4.2	0.415	10.6	LOS A	3.1	22.5	0.86	0.76	0.88	39.5
East: Yamba Rd (E)															
4	L2	All MCs	128	3.3	128	3.3	0.753	10.0	LOS A	10.4	74.3	0.91	0.77	1.10	43.2
5	T1	All MCs	625	2.1	625	2.1	0.753	10.2	LOS A	10.4	74.3	0.91	0.77	1.10	46.3
6u	U	All MCs	7	0.0	7	0.0	0.753	16.2	LOS B	10.4	74.3	0.91	0.77	1.10	47.7
Approach			761	2.3	761	2.3	0.753	10.2	LOS A	10.4	74.3	0.91	0.77	1.10	45.9
West: Yamba Rd (W)															
11	T1	All MCs	747	2.4	747	2.4	0.799	5.9	LOS A	12.5	88.5	0.77	0.53	0.77	47.5
12	R2	All MCs	320	0.0	320	0.0	0.799	9.9	LOS A	12.5	88.5	0.77	0.53	0.77	39.6
12u	U	All MCs	1	0.0	1	0.0	0.799	11.9	LOS A	12.5	88.5	0.77	0.53	0.77	43.8
Approach			1068	1.7	1068	1.7	0.799	7.1	LOS A	12.5	88.5	0.77	0.53	0.77	45.7
All Vehicles			2107	2.2	2107	2.2	0.799	8.7	LOS A	12.5	88.5	0.83	0.65	0.90	45.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM Sens - Trigger (450 Lots) (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	225	10.8	225	10.8	0.853	21.2	LOS B	15.0	110.9	1.00	1.19	1.79	27.4
3	R2	All MCs	439	4.2	439	4.2	0.853	25.2	LOS B	15.0	110.9	1.00	1.19	1.79	32.7
Approach			664	6.4	664	6.4	0.853	23.8	LOS B	15.0	110.9	1.00	1.19	1.79	31.1
East: Yamba Rd (E)															
4	L2	All MCs	163	1.5	163	1.5	0.554	5.0	LOS A	5.6	40.4	0.53	0.48	0.53	46.6
5	T1	All MCs	540	4.3	540	4.3	0.554	5.3	LOS A	5.6	40.4	0.53	0.48	0.53	49.0
6u	U	All MCs	4	0.0	4	0.0	0.554	11.3	LOS A	5.6	40.4	0.53	0.48	0.53	50.2
Approach			707	3.6	707	3.6	0.554	5.3	LOS A	5.6	40.4	0.53	0.48	0.53	48.5
West: Yamba Rd (W)															
11	T1	All MCs	578	4.8	578	4.8	0.836	16.8	LOS B	14.2	104.6	1.00	1.06	1.53	40.9
12	R2	All MCs	107	14.0	107	14.0	0.836	21.5	LOS B	14.2	104.6	1.00	1.06	1.53	31.6
12u	U	All MCs	2	0.0	2	0.0	0.836	22.5	LOS B	14.2	104.6	1.00	1.06	1.53	36.9
Approach			687	6.2	687	6.2	0.836	17.5	LOS B	14.2	104.6	1.00	1.06	1.53	39.8
All Vehicles			2059	5.4	2059	5.4	0.853	15.3	LOS B	15.0	110.9	0.84	0.90	1.27	39.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM Sens - Trigger (450 Lots) (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	145	6.8	145	6.8	0.395	8.0	LOS A	2.8	20.1	0.78	0.72	0.78	38.0
3	R2	All MCs	161	0.0	161	0.0	0.395	12.1	LOS A	2.8	20.1	0.78	0.72	0.78	42.7
Approach			306	3.2	306	3.2	0.395	10.2	LOS A	2.8	20.1	0.78	0.72	0.78	40.7
East: Yamba Rd (E)															
4	L2	All MCs	288	3.3	288	3.3	0.713	6.9	LOS A	8.6	61.2	0.78	0.61	0.82	45.2
5	T1	All MCs	528	2.1	528	2.1	0.713	7.1	LOS A	8.6	61.2	0.78	0.61	0.82	48.1
6u	U	All MCs	6	0.0	6	0.0	0.713	13.1	LOS A	8.6	61.2	0.78	0.61	0.82	49.3
Approach			823	2.5	823	2.5	0.713	7.1	LOS A	8.6	61.2	0.78	0.61	0.82	47.3
West: Yamba Rd (W)															
11	T1	All MCs	623	2.4	623	2.4	0.683	6.0	LOS A	7.6	53.9	0.69	0.56	0.69	47.9
12	R2	All MCs	212	0.0	212	0.0	0.683	10.1	LOS A	7.6	53.9	0.69	0.56	0.69	40.1
12u	U	All MCs	1	0.0	1	0.0	0.683	12.0	LOS A	7.6	53.9	0.69	0.56	0.69	44.3
Approach			836	1.8	836	1.8	0.683	7.0	LOS A	7.6	53.9	0.69	0.56	0.69	46.5
All Vehicles			1965	2.3	1965	2.3	0.713	7.6	LOS A	8.6	61.2	0.74	0.61	0.76	46.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM Sens - Trigger (350 Lots + NC) (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	223	10.8	223	10.8	0.851	21.0	LOS B	14.8	109.4	1.00	1.18	1.77	27.5
3	R2	All MCs	435	4.2	435	4.2	0.851	24.9	LOS B	14.8	109.4	1.00	1.18	1.77	32.8
Approach			658	6.4	658	6.4	0.851	23.6	LOS B	14.8	109.4	1.00	1.18	1.77	31.2
East: Yamba Rd (E)															
4	L2	All MCs	180	1.5	180	1.5	0.577	5.2	LOS A	5.9	42.9	0.57	0.49	0.57	46.4
5	T1	All MCs	540	4.3	540	4.3	0.577	5.5	LOS A	5.9	42.9	0.57	0.49	0.57	48.8
6u	U	All MCs	4	0.0	4	0.0	0.577	11.4	LOS A	5.9	42.9	0.57	0.49	0.57	50.1
Approach			724	3.6	724	3.6	0.577	5.4	LOS A	5.9	42.9	0.57	0.49	0.57	48.3
West: Yamba Rd (W)															
11	T1	All MCs	578	4.8	578	4.8	0.845	17.3	LOS B	14.8	109.5	1.00	1.08	1.56	40.5
12	R2	All MCs	119	14.0	119	14.0	0.845	21.9	LOS B	14.8	109.5	1.00	1.08	1.56	31.3
12u	U	All MCs	2	0.0	2	0.0	0.845	23.0	LOS B	14.8	109.5	1.00	1.08	1.56	36.5
Approach			699	6.4	699	6.4	0.845	18.1	LOS B	14.8	109.5	1.00	1.08	1.56	39.3
All Vehicles			2081	5.4	2081	5.4	0.851	15.4	LOS B	14.8	109.5	0.85	0.90	1.28	39.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM Sens - Trigger (350 Lots + NC) (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Yamba Road / Carrs Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Carrs Drive (S)															
1	L2	All MCs	166	6.8	166	6.8	0.460	8.6	LOS A	3.6	25.7	0.82	0.75	0.86	37.4
3	R2	All MCs	185	0.0	185	0.0	0.460	12.7	LOS A	3.6	25.7	0.82	0.75	0.86	42.2
Approach			352	3.2	352	3.2	0.460	10.7	LOS A	3.6	25.7	0.82	0.75	0.86	40.2
East: Yamba Rd (E)															
4	L2	All MCs	319	3.3	319	3.3	0.761	8.3	LOS A	10.8	76.9	0.86	0.68	0.96	44.5
5	T1	All MCs	528	2.1	528	2.1	0.761	8.5	LOS A	10.8	76.9	0.86	0.68	0.96	47.5
6u	U	All MCs	6	0.0	6	0.0	0.761	14.5	LOS A	10.8	76.9	0.86	0.68	0.96	48.7
Approach			854	2.5	854	2.5	0.761	8.5	LOS A	10.8	76.9	0.86	0.68	0.96	46.5
West: Yamba Rd (W)															
11	T1	All MCs	623	2.4	623	2.4	0.723	6.7	LOS A	8.9	63.0	0.78	0.60	0.80	47.4
12	R2	All MCs	234	0.0	234	0.0	0.723	10.8	LOS A	8.9	63.0	0.78	0.60	0.80	39.6
12u	U	All MCs	1	0.0	1	0.0	0.723	12.7	LOS A	8.9	63.0	0.78	0.60	0.80	43.8
Approach			858	1.7	858	1.7	0.723	7.8	LOS A	8.9	63.0	0.78	0.60	0.80	45.9
All Vehicles			2063	2.3	2063	2.3	0.761	8.6	LOS A	10.8	76.9	0.82	0.66	0.88	45.3

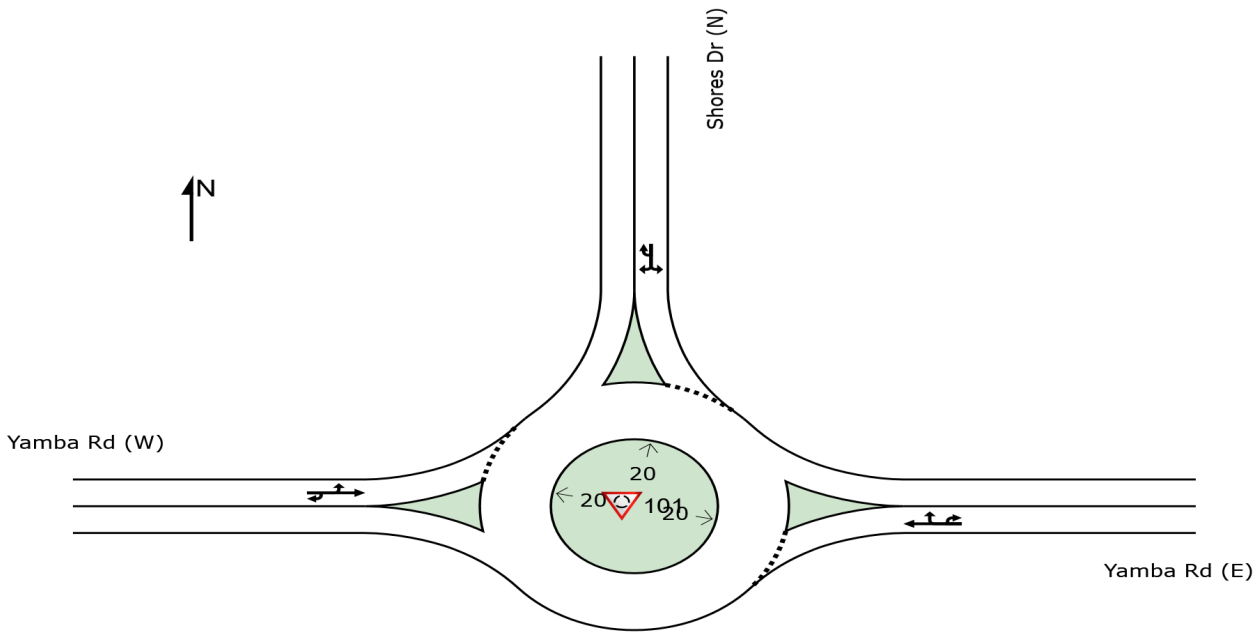
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [2033 BG AM (Site Folder: Yamba Road / Shores Drive)]

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Organisation: BITZIOS CONSULTING | Licence: PLUS / FLOATING | Created: Monday, 8 May 2023 11:06:14 AM
Project: P:\P5746 WYURA Subdivision TIA\Technical\Models\P5746.001M Yamba Road & Shores Drive Intersection.sip9

MOVEMENT SUMMARY

Site: 101 [2033 BG AM (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	594	4.1	594	4.1	0.458	4.3	LOS A	4.3	30.9	0.21	0.43	0.21	53.0
6	R2	All MCs	116	4.0	116	4.0	0.458	8.9	LOS A	4.3	30.9	0.21	0.43	0.21	52.0
6u	U	All MCs	4	0.0	4	0.0	0.458	11.0	LOS A	4.3	30.9	0.21	0.43	0.21	52.9
Approach			714	4.1	714	4.1	0.458	5.1	LOS A	4.3	30.9	0.21	0.43	0.21	52.9
North: Shores Dr (N)															
7	L2	All MCs	229	1.5	229	1.5	0.348	8.9	LOS A	2.4	16.9	0.81	0.73	0.81	49.9
9	R2	All MCs	25	2.0	25	2.0	0.348	13.8	LOS A	2.4	16.9	0.81	0.73	0.81	48.3
9u	U	All MCs	1	0.0	1	0.0	0.348	15.7	LOS B	2.4	16.9	0.81	0.73	0.81	48.4
Approach			256	1.5	256	1.5	0.348	9.4	LOS A	2.4	16.9	0.81	0.73	0.81	49.8
West: Yamba Rd (W)															
10	L2	All MCs	34	4.2	34	4.2	0.551	4.9	LOS A	4.7	33.9	0.45	0.45	0.45	51.2
11	T1	All MCs	700	4.7	700	4.7	0.551	5.1	LOS A	4.7	33.9	0.45	0.45	0.45	52.4
12u	U	All MCs	2	0.0	2	0.0	0.551	11.7	LOS A	4.7	33.9	0.45	0.45	0.45	50.7
Approach			736	4.7	736	4.7	0.551	5.1	LOS A	4.7	33.9	0.45	0.45	0.45	52.3
All Vehicles			1705	3.9	1705	3.9	0.551	5.8	LOS A	4.7	33.9	0.40	0.48	0.40	52.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 BG PM (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	628	2.2	628	2.2	0.496	4.3	LOS A	4.7	33.6	0.20	0.44	0.20	53.0
6	R2	All MCs	159	2.2	159	2.2	0.496	8.9	LOS A	4.7	33.6	0.20	0.44	0.20	52.0
6u	U	All MCs	2	0.0	2	0.0	0.496	11.0	LOS A	4.7	33.6	0.20	0.44	0.20	52.8
Approach			789	2.2	789	2.2	0.496	5.2	LOS A	4.7	33.6	0.20	0.44	0.20	52.8
North: Shores Dr (N)															
7	L2	All MCs	126	2.7	126	2.7	0.190	7.8	LOS A	1.2	8.5	0.72	0.69	0.72	50.6
9	R2	All MCs	21	0.0	21	0.0	0.190	12.5	LOS A	1.2	8.5	0.72	0.69	0.72	49.2
9u	U	All MCs	1	0.0	1	0.0	0.190	14.6	LOS B	1.2	8.5	0.72	0.69	0.72	49.2
Approach			148	2.3	148	2.3	0.190	8.5	LOS A	1.2	8.5	0.72	0.69	0.72	50.4
West: Yamba Rd (W)															
10	L2	All MCs	37	3.4	37	3.4	0.524	5.1	LOS A	4.1	29.6	0.49	0.48	0.49	51.0
11	T1	All MCs	629	2.4	629	2.4	0.524	5.3	LOS A	4.1	29.6	0.49	0.48	0.49	52.2
12u	U	All MCs	4	0.0	4	0.0	0.524	12.0	LOS A	4.1	29.6	0.49	0.48	0.49	50.5
Approach			671	2.4	671	2.4	0.524	5.4	LOS A	4.1	29.6	0.49	0.48	0.49	52.2
All Vehicles			1608	2.3	1608	2.3	0.524	5.6	LOS A	4.7	33.6	0.37	0.48	0.37	52.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG AM (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	680	4.1	680	4.1	0.520	4.3	LOS A	5.5	39.5	0.24	0.42	0.24	52.9
6	R2	All MCs	125	4.0	125	4.0	0.520	9.0	LOS A	5.5	39.5	0.24	0.42	0.24	51.9
6u	U	All MCs	5	0.0	5	0.0	0.520	11.0	LOS A	5.5	39.5	0.24	0.42	0.24	52.7
Approach			811	4.1	811	4.1	0.520	5.1	LOS A	5.5	39.5	0.24	0.42	0.24	52.7
North: Shores Dr (N)															
7	L2	All MCs	248	1.5	248	1.5	0.428	10.9	LOS A	3.3	23.4	0.89	0.80	0.96	48.5
9	R2	All MCs	27	2.0	27	2.0	0.428	15.7	LOS B	3.3	23.4	0.89	0.80	0.96	46.8
9u	U	All MCs	1	0.0	1	0.0	0.428	17.7	LOS B	3.3	23.4	0.89	0.80	0.96	46.9
Approach			277	1.5	277	1.5	0.428	11.4	LOS A	3.3	23.4	0.89	0.80	0.96	48.3
West: Yamba Rd (W)															
10	L2	All MCs	36	4.2	36	4.2	0.629	5.1	LOS A	6.0	43.6	0.53	0.47	0.53	50.8
11	T1	All MCs	794	4.7	794	4.7	0.629	5.4	LOS A	6.0	43.6	0.53	0.47	0.53	52.0
12u	U	All MCs	2	0.0	2	0.0	0.629	12.0	LOS A	6.0	43.6	0.53	0.47	0.53	50.3
Approach			832	4.7	832	4.7	0.629	5.4	LOS A	6.0	43.6	0.53	0.47	0.53	52.0
All Vehicles			1919	4.0	1919	4.0	0.629	6.1	LOS A	6.0	43.6	0.46	0.50	0.47	51.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG PM (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	709	2.2	709	2.2	0.555	4.3	LOS A	5.9	41.9	0.23	0.43	0.23	52.9
6	R2	All MCs	172	2.2	172	2.2	0.555	8.9	LOS A	5.9	41.9	0.23	0.43	0.23	51.9
6u	U	All MCs	2	0.0	2	0.0	0.555	11.0	LOS A	5.9	41.9	0.23	0.43	0.23	52.7
Approach			883	2.2	883	2.2	0.555	5.2	LOS A	5.9	41.9	0.23	0.43	0.23	52.7
North: Shores Dr (N)															
7	L2	All MCs	137	2.7	137	2.7	0.230	8.7	LOS A	1.5	10.9	0.79	0.72	0.79	49.9
9	R2	All MCs	22	0.0	22	0.0	0.230	13.4	LOS A	1.5	10.9	0.79	0.72	0.79	48.4
9u	U	All MCs	1	0.0	1	0.0	0.230	15.5	LOS B	1.5	10.9	0.79	0.72	0.79	48.4
Approach			160	2.3	160	2.3	0.230	9.4	LOS A	1.5	10.9	0.79	0.72	0.79	49.7
West: Yamba Rd (W)															
10	L2	All MCs	39	3.4	39	3.4	0.604	5.4	LOS A	5.3	38.2	0.57	0.50	0.57	50.6
11	T1	All MCs	722	2.4	722	2.4	0.604	5.6	LOS A	5.3	38.2	0.57	0.50	0.57	51.9
12u	U	All MCs	5	0.0	5	0.0	0.604	12.3	LOS A	5.3	38.2	0.57	0.50	0.57	50.1
Approach			766	2.4	766	2.4	0.604	5.6	LOS A	5.3	38.2	0.57	0.50	0.57	51.8
All Vehicles			1809	2.3	1809	2.3	0.604	5.8	LOS A	5.9	41.9	0.42	0.49	0.42	52.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 BG AM Sens (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	653	4.1	653	4.1	0.507	4.3	LOS A	5.2	37.5	0.24	0.43	0.24	52.9
6	R2	All MCs	128	4.0	128	4.0	0.507	9.0	LOS A	5.2	37.5	0.24	0.43	0.24	51.9
6u	U	All MCs	5	0.0	5	0.0	0.507	11.0	LOS A	5.2	37.5	0.24	0.43	0.24	52.7
Approach			786	4.1	786	4.1	0.507	5.1	LOS A	5.2	37.5	0.24	0.43	0.24	52.7
North: Shores Dr (N)															
7	L2	All MCs	255	1.5	255	1.5	0.424	10.4	LOS A	3.2	22.8	0.88	0.79	0.93	48.8
9	R2	All MCs	28	2.0	28	2.0	0.424	15.2	LOS B	3.2	22.8	0.88	0.79	0.93	47.2
9u	U	All MCs	1	0.0	1	0.0	0.424	17.2	LOS B	3.2	22.8	0.88	0.79	0.93	47.3
Approach			284	1.5	284	1.5	0.424	10.9	LOS A	3.2	22.8	0.88	0.79	0.93	48.7
West: Yamba Rd (W)															
10	L2	All MCs	37	4.2	37	4.2	0.611	5.1	LOS A	5.6	41.0	0.52	0.47	0.52	50.8
11	T1	All MCs	764	4.7	764	4.7	0.611	5.3	LOS A	5.6	41.0	0.52	0.47	0.52	52.1
12u	U	All MCs	2	0.0	2	0.0	0.611	12.0	LOS A	5.6	41.0	0.52	0.47	0.52	50.4
Approach			803	4.7	803	4.7	0.611	5.4	LOS A	5.6	41.0	0.52	0.47	0.52	52.0
All Vehicles			1874	3.9	1874	3.9	0.611	6.1	LOS A	5.6	41.0	0.46	0.50	0.47	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.

MOVEMENT SUMMARY

Site: 101 [2033 BG PM Sens (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	684	2.2	684	2.2	0.543	4.3	LOS A	5.6	39.9	0.23	0.44	0.23	52.9
6	R2	All MCs	176	2.2	176	2.2	0.543	8.9	LOS A	5.6	39.9	0.23	0.44	0.23	51.9
6u	U	All MCs	2	0.0	2	0.0	0.543	11.0	LOS A	5.6	39.9	0.23	0.44	0.23	52.7
Approach			862	2.2	862	2.2	0.543	5.3	LOS A	5.6	39.9	0.23	0.44	0.23	52.7
North: Shores Dr (N)															
7	L2	All MCs	140	2.7	140	2.7	0.226	8.4	LOS A	1.5	10.6	0.77	0.71	0.77	50.1
9	R2	All MCs	22	0.0	22	0.0	0.226	13.1	LOS A	1.5	10.6	0.77	0.71	0.77	48.7
9u	U	All MCs	1	0.0	1	0.0	0.226	15.2	LOS B	1.5	10.6	0.77	0.71	0.77	48.7
Approach			163	2.3	163	2.3	0.226	9.1	LOS A	1.5	10.6	0.77	0.71	0.77	49.9
West: Yamba Rd (W)															
10	L2	All MCs	40	3.4	40	3.4	0.585	5.4	LOS A	5.0	35.8	0.56	0.50	0.56	50.6
11	T1	All MCs	693	2.4	693	2.4	0.585	5.6	LOS A	5.0	35.8	0.56	0.50	0.56	51.9
12u	U	All MCs	5	0.0	5	0.0	0.585	12.2	LOS A	5.0	35.8	0.56	0.50	0.56	50.2
Approach			738	2.4	738	2.4	0.585	5.6	LOS A	5.0	35.8	0.56	0.50	0.56	51.8
All Vehicles			1763	2.3	1763	2.3	0.585	5.8	LOS A	5.6	39.9	0.42	0.49	0.42	52.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG AM Sens (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	748	4.1	748	4.1	0.578	4.4	LOS A	6.7	48.8	0.29	0.42	0.29	52.7
6	R2	All MCs	140	4.0	140	4.0	0.578	9.0	LOS A	6.7	48.8	0.29	0.42	0.29	51.7
6u	U	All MCs	5	0.0	5	0.0	0.578	11.1	LOS A	6.7	48.8	0.29	0.42	0.29	52.5
Approach			894	4.1	894	4.1	0.578	5.2	LOS A	6.7	48.8	0.29	0.42	0.29	52.5
North: Shores Dr (N)															
7	L2	All MCs	276	1.5	276	1.5	0.541	14.8	LOS B	5.0	35.5	0.98	0.91	1.22	45.8
9	R2	All MCs	31	2.0	31	2.0	0.541	19.7	LOS B	5.0	35.5	0.98	0.91	1.22	44.1
9u	U	All MCs	1	0.0	1	0.0	0.541	21.6	LOS B	5.0	35.5	0.98	0.91	1.22	44.1
Approach			307	1.5	307	1.5	0.541	15.3	LOS B	5.0	35.5	0.98	0.91	1.22	45.7
West: Yamba Rd (W)															
10	L2	All MCs	39	4.2	39	4.2	0.699	5.4	LOS A	7.5	54.7	0.62	0.50	0.62	50.3
11	T1	All MCs	868	4.7	868	4.7	0.699	5.7	LOS A	7.5	54.7	0.62	0.50	0.62	51.6
12u	U	All MCs	3	0.0	3	0.0	0.699	12.3	LOS A	7.5	54.7	0.62	0.50	0.62	49.9
Approach			911	4.7	911	4.7	0.699	5.7	LOS A	7.5	54.7	0.62	0.50	0.62	51.5
All Vehicles			2112	4.0	2112	4.0	0.699	6.9	LOS A	7.5	54.7	0.53	0.53	0.57	51.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG PM Sens (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	773	2.2	773	2.2	0.609	4.4	LOS A	7.2	51.6	0.27	0.43	0.27	52.7
6	R2	All MCs	191	2.2	191	2.2	0.609	9.0	LOS A	7.2	51.6	0.27	0.43	0.27	51.8
6u	U	All MCs	3	0.0	3	0.0	0.609	11.0	LOS A	7.2	51.6	0.27	0.43	0.27	52.5
Approach			966	2.2	966	2.2	0.609	5.3	LOS A	7.2	51.6	0.27	0.43	0.27	52.5
North: Shores Dr (N)															
7	L2	All MCs	152	2.7	152	2.7	0.286	9.6	LOS A	2.0	14.4	0.86	0.76	0.86	49.2
9	R2	All MCs	24	0.0	24	0.0	0.286	14.3	LOS A	2.0	14.4	0.86	0.76	0.86	47.7
9u	U	All MCs	1	0.0	1	0.0	0.286	16.4	LOS B	2.0	14.4	0.86	0.76	0.86	47.7
Approach			177	2.3	177	2.3	0.286	10.3	LOS A	2.0	14.4	0.86	0.76	0.86	49.0
West: Yamba Rd (W)															
10	L2	All MCs	43	3.4	43	3.4	0.678	5.8	LOS A	6.7	47.6	0.66	0.54	0.66	50.1
11	T1	All MCs	796	2.4	796	2.4	0.678	6.0	LOS A	6.7	47.6	0.66	0.54	0.66	51.4
12u	U	All MCs	5	0.0	5	0.0	0.678	12.6	LOS A	6.7	47.6	0.66	0.54	0.66	49.7
Approach			844	2.4	844	2.4	0.678	6.0	LOS A	6.7	47.6	0.66	0.54	0.66	51.4
All Vehicles			1987	2.3	1987	2.3	0.678	6.1	LOS A	7.2	51.6	0.49	0.51	0.49	51.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM - Carrs Dr Only (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	691	4.1	691	4.1	0.524	4.4	LOS A	5.6	40.3	0.26	0.42	0.26	52.9
6	R2	All MCs	116	4.0	116	4.0	0.524	9.0	LOS A	5.6	40.3	0.26	0.42	0.26	51.9
6u	U	All MCs	4	0.0	4	0.0	0.524	11.0	LOS A	5.6	40.3	0.26	0.42	0.26	52.7
Approach			811	4.1	811	4.1	0.524	5.1	LOS A	5.6	40.3	0.26	0.42	0.26	52.7
North: Shores Dr (N)															
7	L2	All MCs	229	1.5	229	1.5	0.447	12.5	LOS A	3.6	25.6	0.93	0.84	1.05	47.3
9	R2	All MCs	29	2.0	29	2.0	0.447	17.4	LOS B	3.6	25.6	0.93	0.84	1.05	45.5
9u	U	All MCs	1	0.0	1	0.0	0.447	19.4	LOS B	3.6	25.6	0.93	0.84	1.05	45.6
Approach			260	1.6	260	1.6	0.447	13.1	LOS A	3.6	25.6	0.93	0.84	1.05	47.1
West: Yamba Rd (W)															
10	L2	All MCs	42	4.2	42	4.2	0.680	5.1	LOS A	7.2	52.6	0.56	0.47	0.56	50.6
11	T1	All MCs	873	4.7	873	4.7	0.680	5.4	LOS A	7.2	52.6	0.56	0.47	0.56	51.9
12u	U	All MCs	2	0.0	2	0.0	0.680	12.0	LOS A	7.2	52.6	0.56	0.47	0.56	50.2
Approach			917	4.7	917	4.7	0.680	5.4	LOS A	7.2	52.6	0.56	0.47	0.56	51.8
All Vehicles			1987	4.0	1987	4.0	0.680	6.3	LOS A	7.2	52.6	0.48	0.50	0.50	51.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM - Carrs Dr Only (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	832	2.2	832	2.2	0.628	4.4	LOS A	7.7	54.6	0.29	0.42	0.29	52.7
6	R2	All MCs	159	2.2	159	2.2	0.628	9.0	LOS A	7.7	54.6	0.29	0.42	0.29	51.8
6u	U	All MCs	2	0.0	2	0.0	0.628	11.1	LOS A	7.7	54.6	0.29	0.42	0.29	52.6
Approach			993	2.2	993	2.2	0.628	5.1	LOS A	7.7	54.6	0.29	0.42	0.29	52.6
North: Shores Dr (N)															
7	L2	All MCs	126	2.7	126	2.7	0.222	8.7	LOS A	1.5	10.4	0.79	0.73	0.79	49.8
9	R2	All MCs	27	0.0	27	0.0	0.222	13.4	LOS A	1.5	10.4	0.79	0.73	0.79	48.3
9u	U	All MCs	1	0.0	1	0.0	0.222	15.5	LOS B	1.5	10.4	0.79	0.73	0.79	48.3
Approach			155	2.2	155	2.2	0.222	9.6	LOS A	1.5	10.4	0.79	0.73	0.79	49.5
West: Yamba Rd (W)															
10	L2	All MCs	42	3.4	42	3.4	0.601	5.3	LOS A	5.4	38.6	0.55	0.49	0.55	50.7
11	T1	All MCs	725	2.4	725	2.4	0.601	5.5	LOS A	5.4	38.6	0.55	0.49	0.55	51.9
12u	U	All MCs	4	0.0	4	0.0	0.601	12.1	LOS A	5.4	38.6	0.55	0.49	0.55	50.2
Approach			772	2.4	772	2.4	0.601	5.5	LOS A	5.4	38.6	0.55	0.49	0.55	51.9
All Vehicles			1919	2.3	1919	2.3	0.628	5.7	LOS A	7.7	54.6	0.43	0.48	0.43	52.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM Sens - Carrs Dr Only (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	749	4.1	749	4.1	0.573	4.4	LOS A	6.7	48.7	0.30	0.42	0.30	52.7
6	R2	All MCs	128	4.0	128	4.0	0.573	9.0	LOS A	6.7	48.7	0.30	0.42	0.30	51.7
6u	U	All MCs	5	0.0	5	0.0	0.573	11.1	LOS A	6.7	48.7	0.30	0.42	0.30	52.5
Approach			883	4.1	883	4.1	0.573	5.1	LOS A	6.7	48.7	0.30	0.42	0.30	52.5
North: Shores Dr (N)															
7	L2	All MCs	255	1.5	255	1.5	0.567	17.3	LOS B	5.4	38.6	1.00	0.95	1.31	44.2
9	R2	All MCs	33	2.0	33	2.0	0.567	22.2	LOS B	5.4	38.6	1.00	0.95	1.31	42.4
9u	U	All MCs	1	0.0	1	0.0	0.567	24.2	LOS B	5.4	38.6	1.00	0.95	1.31	42.5
Approach			288	1.6	288	1.6	0.567	17.9	LOS B	5.4	38.6	1.00	0.95	1.31	44.0
West: Yamba Rd (W)															
10	L2	All MCs	45	4.2	45	4.2	0.742	5.5	LOS A	8.8	64.3	0.66	0.51	0.66	50.1
11	T1	All MCs	937	4.7	937	4.7	0.742	5.7	LOS A	8.8	64.3	0.66	0.51	0.66	51.4
12u	U	All MCs	2	0.0	2	0.0	0.742	12.3	LOS A	8.8	64.3	0.66	0.51	0.66	49.7
Approach			984	4.7	984	4.7	0.742	5.7	LOS A	8.8	64.3	0.66	0.51	0.66	51.4
All Vehicles			2156	4.0	2156	4.0	0.742	7.1	LOS A	8.8	64.3	0.56	0.53	0.60	50.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM Sens - Carrs Dr Only (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	886	2.2	886	2.2	0.676	4.5	LOS A	9.2	65.6	0.34	0.42	0.34	52.5
6	R2	All MCs	176	2.2	176	2.2	0.676	9.1	LOS A	9.2	65.6	0.34	0.42	0.34	51.6
6u	U	All MCs	2	0.0	2	0.0	0.676	11.1	LOS A	9.2	65.6	0.34	0.42	0.34	52.4
Approach			1064	2.2	1064	2.2	0.676	5.2	LOS A	9.2	65.6	0.34	0.42	0.34	52.3
North: Shores Dr (N)															
7	L2	All MCs	140	2.7	140	2.7	0.271	9.5	LOS A	1.9	13.4	0.85	0.75	0.85	49.2
9	R2	All MCs	29	0.0	29	0.0	0.271	14.2	LOS A	1.9	13.4	0.85	0.75	0.85	47.7
9u	U	All MCs	1	0.0	1	0.0	0.271	16.3	LOS B	1.9	13.4	0.85	0.75	0.85	47.7
Approach			171	2.2	171	2.2	0.271	10.4	LOS A	1.9	13.4	0.85	0.75	0.85	48.9
West: Yamba Rd (W)															
10	L2	All MCs	46	3.4	46	3.4	0.665	5.6	LOS A	6.6	47.1	0.64	0.52	0.64	50.3
11	T1	All MCs	788	2.4	788	2.4	0.665	5.8	LOS A	6.6	47.1	0.64	0.52	0.64	51.5
12u	U	All MCs	5	0.0	5	0.0	0.665	12.4	LOS A	6.6	47.1	0.64	0.52	0.64	49.8
Approach			840	2.4	840	2.4	0.665	5.8	LOS A	6.6	47.1	0.64	0.52	0.64	51.5
All Vehicles			2075	2.3	2075	2.3	0.676	5.9	LOS A	9.2	65.6	0.50	0.49	0.50	51.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	589	4.1	589	4.1	0.453	4.3	LOS A	4.2	30.2	0.20	0.43	0.20	53.1
6	R2	All MCs	116	4.0	116	4.0	0.453	8.9	LOS A	4.2	30.2	0.20	0.43	0.20	52.1
6u	U	All MCs	4	0.0	4	0.0	0.453	11.0	LOS A	4.2	30.2	0.20	0.43	0.20	52.9
Approach			709	4.1	709	4.1	0.453	5.1	LOS A	4.2	30.2	0.20	0.43	0.20	52.9
North: Shores Dr (N)															
7	L2	All MCs	229	1.5	229	1.5	0.336	8.6	LOS A	2.3	16.1	0.79	0.72	0.79	50.1
9	R2	All MCs	23	2.0	23	2.0	0.336	13.5	LOS A	2.3	16.1	0.79	0.72	0.79	48.5
9u	U	All MCs	1	0.0	1	0.0	0.336	15.5	LOS B	2.3	16.1	0.79	0.72	0.79	48.6
Approach			254	1.5	254	1.5	0.336	9.1	LOS A	2.3	16.1	0.79	0.72	0.79	50.0
West: Yamba Rd (W)															
10	L2	All MCs	32	4.2	32	4.2	0.533	4.9	LOS A	4.4	31.8	0.44	0.45	0.44	51.2
11	T1	All MCs	677	4.7	677	4.7	0.533	5.1	LOS A	4.4	31.8	0.44	0.45	0.44	52.4
12u	U	All MCs	2	0.0	2	0.0	0.533	11.7	LOS A	4.4	31.8	0.44	0.45	0.44	50.8
Approach			711	4.7	711	4.7	0.533	5.1	LOS A	4.4	31.8	0.44	0.45	0.44	52.4
All Vehicles			1674	3.9	1674	3.9	0.533	5.7	LOS A	4.4	31.8	0.39	0.48	0.39	52.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	599	2.2	599	2.2	0.471	4.2	LOS A	4.3	30.6	0.17	0.44	0.17	53.1
6	R2	All MCs	159	2.2	159	2.2	0.471	8.9	LOS A	4.3	30.6	0.17	0.44	0.17	52.1
6u	U	All MCs	2	0.0	2	0.0	0.471	10.9	LOS A	4.3	30.6	0.17	0.44	0.17	52.9
Approach			760	2.2	760	2.2	0.471	5.2	LOS A	4.3	30.6	0.17	0.44	0.17	52.9
North: Shores Dr (N)															
7	L2	All MCs	126	2.7	126	2.7	0.185	7.8	LOS A	1.2	8.2	0.72	0.69	0.72	50.6
9	R2	All MCs	16	0.0	16	0.0	0.185	12.5	LOS A	1.2	8.2	0.72	0.69	0.72	49.2
9u	U	All MCs	1	0.0	1	0.0	0.185	14.6	LOS B	1.2	8.2	0.72	0.69	0.72	49.2
Approach			143	2.4	143	2.4	0.185	8.4	LOS A	1.2	8.2	0.72	0.69	0.72	50.5
West: Yamba Rd (W)															
10	L2	All MCs	36	3.4	36	3.4	0.528	5.2	LOS A	4.2	29.9	0.49	0.48	0.49	51.0
11	T1	All MCs	638	2.4	638	2.4	0.528	5.4	LOS A	4.2	29.9	0.49	0.48	0.49	52.2
12u	U	All MCs	4	0.0	4	0.0	0.528	12.0	LOS A	4.2	29.9	0.49	0.48	0.49	50.5
Approach			678	2.4	678	2.4	0.528	5.4	LOS A	4.2	29.9	0.49	0.48	0.49	52.2
All Vehicles			1581	2.3	1581	2.3	0.528	5.6	LOS A	4.3	30.6	0.36	0.48	0.36	52.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM Sens (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	649	4.1	649	4.1	0.501	4.3	LOS A	5.0	36.6	0.23	0.43	0.23	52.9
6	R2	All MCs	128	4.0	128	4.0	0.501	9.0	LOS A	5.0	36.6	0.23	0.43	0.23	52.0
6u	U	All MCs	5	0.0	5	0.0	0.501	11.0	LOS A	5.0	36.6	0.23	0.43	0.23	52.8
Approach			783	4.1	783	4.1	0.501	5.1	LOS A	5.0	36.6	0.23	0.43	0.23	52.8
North: Shores Dr (N)															
7	L2	All MCs	255	1.5	255	1.5	0.407	9.8	LOS A	3.0	21.0	0.86	0.76	0.88	49.3
9	R2	All MCs	25	2.0	25	2.0	0.407	14.6	LOS B	3.0	21.0	0.86	0.76	0.88	47.7
9u	U	All MCs	1	0.0	1	0.0	0.407	16.6	LOS B	3.0	21.0	0.86	0.76	0.88	47.8
Approach			281	1.5	281	1.5	0.407	10.2	LOS A	3.0	21.0	0.86	0.76	0.88	49.2
West: Yamba Rd (W)															
10	L2	All MCs	35	4.2	35	4.2	0.592	5.1	LOS A	5.3	38.5	0.50	0.47	0.50	50.9
11	T1	All MCs	741	4.7	741	4.7	0.592	5.3	LOS A	5.3	38.5	0.50	0.47	0.50	52.1
12u	U	All MCs	2	0.0	2	0.0	0.592	11.9	LOS A	5.3	38.5	0.50	0.47	0.50	50.5
Approach			778	4.7	778	4.7	0.592	5.3	LOS A	5.3	38.5	0.50	0.47	0.50	52.1
All Vehicles			1842	3.9	1842	3.9	0.592	6.0	LOS A	5.3	38.5	0.44	0.50	0.44	51.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM Sens (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	654	2.2	654	2.2	0.518	4.3	LOS A	5.1	36.5	0.20	0.44	0.20	53.0
6	R2	All MCs	176	2.2	176	2.2	0.518	8.9	LOS A	5.1	36.5	0.20	0.44	0.20	52.0
6u	U	All MCs	2	0.0	2	0.0	0.518	11.0	LOS A	5.1	36.5	0.20	0.44	0.20	52.8
Approach			832	2.2	832	2.2	0.518	5.3	LOS A	5.1	36.5	0.20	0.44	0.20	52.8
North: Shores Dr (N)															
7	L2	All MCs	140	2.7	140	2.7	0.222	8.5	LOS A	1.5	10.4	0.78	0.72	0.78	50.1
9	R2	All MCs	18	0.0	18	0.0	0.222	13.2	LOS A	1.5	10.4	0.78	0.72	0.78	48.7
9u	U	All MCs	1	0.0	1	0.0	0.222	15.3	LOS B	1.5	10.4	0.78	0.72	0.78	48.7
Approach			159	2.4	159	2.4	0.222	9.1	LOS A	1.5	10.4	0.78	0.72	0.78	50.0
West: Yamba Rd (W)															
10	L2	All MCs	39	3.4	39	3.4	0.590	5.4	LOS A	5.1	36.2	0.56	0.50	0.56	50.6
11	T1	All MCs	701	2.4	701	2.4	0.590	5.6	LOS A	5.1	36.2	0.56	0.50	0.56	51.9
12u	U	All MCs	5	0.0	5	0.0	0.590	12.3	LOS A	5.1	36.2	0.56	0.50	0.56	50.2
Approach			745	2.4	745	2.4	0.590	5.7	LOS A	5.1	36.2	0.56	0.50	0.56	51.8
All Vehicles			1736	2.3	1736	2.3	0.590	5.8	LOS A	5.1	36.5	0.40	0.49	0.40	52.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES AM (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	676	4.1	676	4.1	0.515	4.3	LOS A	5.3	38.7	0.23	0.42	0.23	52.9
6	R2	All MCs	125	4.0	125	4.0	0.515	9.0	LOS A	5.3	38.7	0.23	0.42	0.23	52.0
6u	U	All MCs	5	0.0	5	0.0	0.515	11.0	LOS A	5.3	38.7	0.23	0.42	0.23	52.8
Approach			806	4.1	806	4.1	0.515	5.1	LOS A	5.3	38.7	0.23	0.42	0.23	52.8
North: Shores Dr (N)															
7	L2	All MCs	248	1.5	248	1.5	0.412	10.2	LOS A	3.1	21.7	0.87	0.78	0.91	48.9
9	R2	All MCs	25	2.0	25	2.0	0.412	15.1	LOS B	3.1	21.7	0.87	0.78	0.91	47.3
9u	U	All MCs	1	0.0	1	0.0	0.412	17.1	LOS B	3.1	21.7	0.87	0.78	0.91	47.4
Approach			275	1.5	275	1.5	0.412	10.7	LOS A	3.1	21.7	0.87	0.78	0.91	48.8
West: Yamba Rd (W)															
10	L2	All MCs	34	4.2	34	4.2	0.610	5.1	LOS A	5.6	41.0	0.51	0.47	0.51	50.9
11	T1	All MCs	771	4.7	771	4.7	0.610	5.3	LOS A	5.6	41.0	0.51	0.47	0.51	52.1
12u	U	All MCs	2	0.0	2	0.0	0.610	11.9	LOS A	5.6	41.0	0.51	0.47	0.51	50.4
Approach			806	4.7	806	4.7	0.610	5.3	LOS A	5.6	41.0	0.51	0.47	0.51	52.0
All Vehicles			1887	4.0	1887	4.0	0.610	6.0	LOS A	5.6	41.0	0.44	0.49	0.45	51.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES PM (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	679	2.2	679	2.2	0.531	4.3	LOS A	5.4	38.4	0.20	0.44	0.20	53.0
6	R2	All MCs	172	2.2	172	2.2	0.531	8.9	LOS A	5.4	38.4	0.20	0.44	0.20	52.0
6u	U	All MCs	2	0.0	2	0.0	0.531	11.0	LOS A	5.4	38.4	0.20	0.44	0.20	52.8
Approach			853	2.2	853	2.2	0.531	5.2	LOS A	5.4	38.4	0.20	0.44	0.20	52.8
North: Shores Dr (N)															
7	L2	All MCs	137	2.7	137	2.7	0.227	8.8	LOS A	1.5	10.7	0.80	0.73	0.80	49.9
9	R2	All MCs	18	0.0	18	0.0	0.227	13.5	LOS A	1.5	10.7	0.80	0.73	0.80	48.4
9u	U	All MCs	1	0.0	1	0.0	0.227	15.6	LOS B	1.5	10.7	0.80	0.73	0.80	48.4
Approach			156	2.4	156	2.4	0.227	9.4	LOS A	1.5	10.7	0.80	0.73	0.80	49.7
West: Yamba Rd (W)															
10	L2	All MCs	38	3.4	38	3.4	0.609	5.4	LOS A	5.4	38.5	0.57	0.50	0.57	50.6
11	T1	All MCs	731	2.4	731	2.4	0.609	5.6	LOS A	5.4	38.5	0.57	0.50	0.57	51.9
12u	U	All MCs	5	0.0	5	0.0	0.609	12.3	LOS A	5.4	38.5	0.57	0.50	0.57	50.1
Approach			774	2.4	774	2.4	0.609	5.7	LOS A	5.4	38.5	0.57	0.50	0.57	51.8
All Vehicles			1782	2.3	1782	2.3	0.609	5.8	LOS A	5.4	38.5	0.41	0.49	0.41	52.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES AM Sens (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	745	4.1	745	4.1	0.571	4.4	LOS A	6.6	47.6	0.27	0.42	0.27	52.8
6	R2	All MCs	140	4.0	140	4.0	0.571	9.0	LOS A	6.6	47.6	0.27	0.42	0.27	51.8
6u	U	All MCs	5	0.0	5	0.0	0.571	11.0	LOS A	6.6	47.6	0.27	0.42	0.27	52.6
Approach			891	4.1	891	4.1	0.571	5.1	LOS A	6.6	47.6	0.27	0.42	0.27	52.6
North: Shores Dr (N)															
7	L2	All MCs	276	1.5	276	1.5	0.514	13.6	LOS A	4.6	32.4	0.96	0.88	1.15	46.6
9	R2	All MCs	27	2.0	27	2.0	0.514	18.5	LOS B	4.6	32.4	0.96	0.88	1.15	44.9
9u	U	All MCs	1	0.0	1	0.0	0.514	20.4	LOS B	4.6	32.4	0.96	0.88	1.15	45.0
Approach			304	1.5	304	1.5	0.514	14.0	LOS A	4.6	32.4	0.96	0.88	1.15	46.5
West: Yamba Rd (W)															
10	L2	All MCs	37	4.2	37	4.2	0.679	5.4	LOS A	7.0	51.0	0.60	0.50	0.60	50.4
11	T1	All MCs	844	4.7	844	4.7	0.679	5.6	LOS A	7.0	51.0	0.60	0.50	0.60	51.7
12u	U	All MCs	3	0.0	3	0.0	0.679	12.2	LOS A	7.0	51.0	0.60	0.50	0.60	50.0
Approach			884	4.7	884	4.7	0.679	5.6	LOS A	7.0	51.0	0.60	0.50	0.60	51.6
All Vehicles			2079	3.9	2079	3.9	0.679	6.7	LOS A	7.0	51.0	0.51	0.52	0.54	51.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES PM Sens (Site Folder: Yamba Road / Shores Drive)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Shores Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Yamba Rd (E)															
5	T1	All MCs	743	2.2	743	2.2	0.583	4.3	LOS A	6.6	47.1	0.23	0.43	0.23	52.9
6	R2	All MCs	191	2.2	191	2.2	0.583	8.9	LOS A	6.6	47.1	0.23	0.43	0.23	51.9
6u	U	All MCs	3	0.0	3	0.0	0.583	11.0	LOS A	6.6	47.1	0.23	0.43	0.23	52.7
Approach			937	2.2	937	2.2	0.583	5.3	LOS A	6.6	47.1	0.23	0.43	0.23	52.7
North: Shores Dr (N)															
7	L2	All MCs	152	2.7	152	2.7	0.281	9.7	LOS A	2.0	14.1	0.87	0.76	0.87	49.2
9	R2	All MCs	19	0.0	19	0.0	0.281	14.4	LOS A	2.0	14.1	0.87	0.76	0.87	47.7
9u	U	All MCs	1	0.0	1	0.0	0.281	16.5	LOS B	2.0	14.1	0.87	0.76	0.87	47.7
Approach			172	2.4	172	2.4	0.281	10.3	LOS A	2.0	14.1	0.87	0.76	0.87	49.1
West: Yamba Rd (W)															
10	L2	All MCs	42	3.4	42	3.4	0.682	5.8	LOS A	6.7	48.0	0.66	0.54	0.66	50.1
11	T1	All MCs	804	2.4	804	2.4	0.682	6.0	LOS A	6.7	48.0	0.66	0.54	0.66	51.4
12u	U	All MCs	5	0.0	5	0.0	0.682	12.7	LOS A	6.7	48.0	0.66	0.54	0.66	49.7
Approach			852	2.4	852	2.4	0.682	6.1	LOS A	6.7	48.0	0.66	0.54	0.66	51.4
All Vehicles			1960	2.3	1960	2.3	0.682	6.0	LOS A	6.7	48.0	0.47	0.51	0.47	51.8

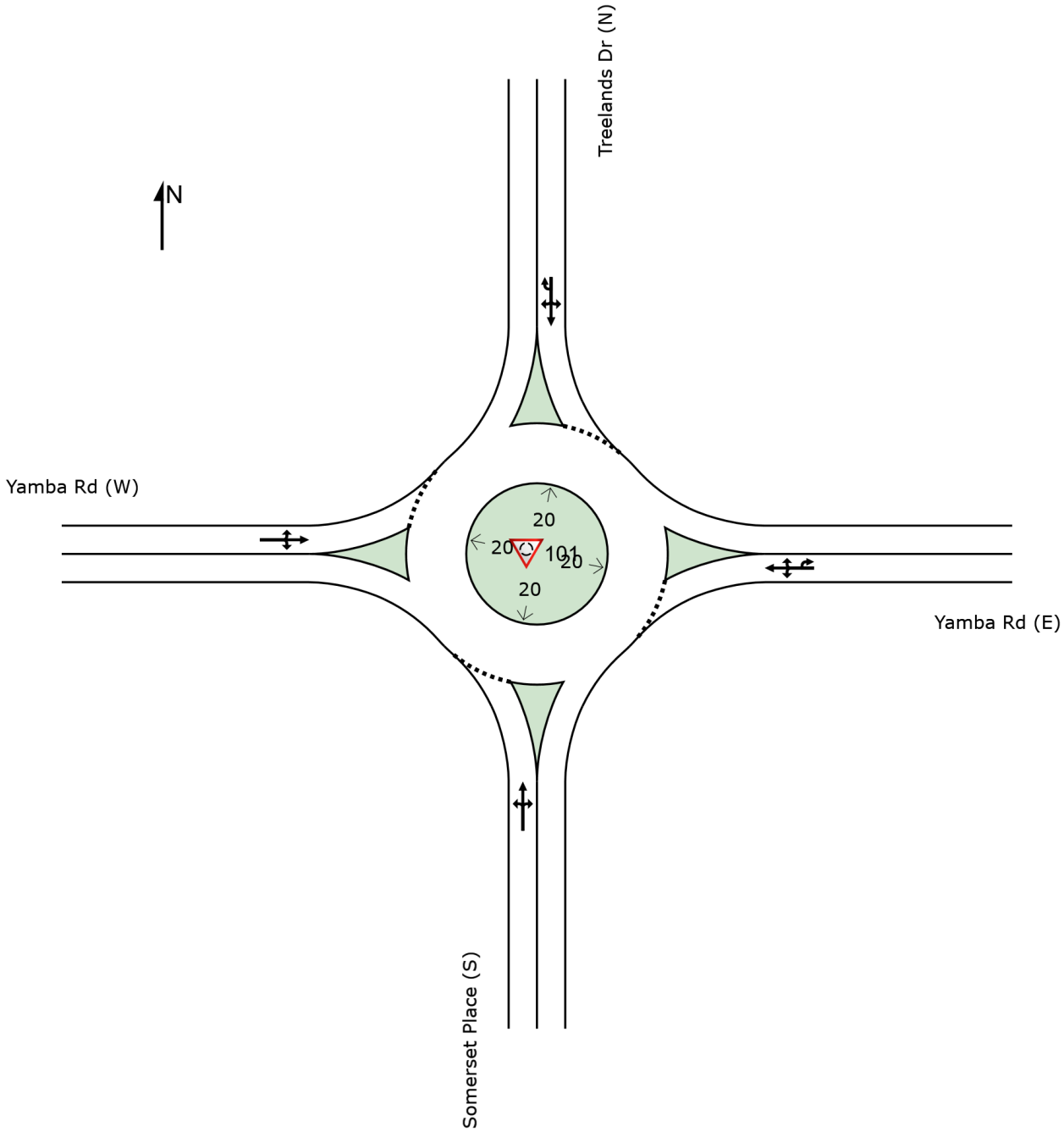
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

SITE LAYOUT

Site: 101 [2033 BG AM (Site Folder: General)]

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 101 [2033 BG AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.013	7.8	LOS A	0.1	0.6	0.76	0.65	0.76	40.2
2	T1	All MCs	1	0.0	1	0.0	0.013	7.7	LOS A	0.1	0.6	0.76	0.65	0.76	23.0
3	R2	All MCs	5	0.0	5	0.0	0.013	12.2	LOS A	0.1	0.6	0.76	0.65	0.76	37.0
Approach			8	0.0	8	0.0	0.013	10.5	LOS A	0.1	0.6	0.76	0.65	0.76	36.1
East: Yamba Rd (E)															
4	L2	All MCs	4	0.0	4	0.0	0.540	5.2	LOS A	4.8	34.7	0.59	0.55	0.59	41.1
5	T1	All MCs	437	6.4	437	6.4	0.540	5.6	LOS A	4.8	34.7	0.59	0.55	0.59	47.3
6	R2	All MCs	195	0.8	195	0.8	0.540	10.1	LOS A	4.8	34.7	0.59	0.55	0.59	31.8
6u	U	All MCs	14	0.0	14	0.0	0.540	12.2	LOS A	4.8	34.7	0.59	0.55	0.59	44.8
Approach			649	4.5	649	4.5	0.540	7.1	LOS A	4.8	34.7	0.59	0.55	0.59	42.7
North: Treelands Dr (N)															
7	L2	All MCs	183	4.0	183	4.0	0.408	7.1	LOS A	2.8	20.5	0.72	0.69	0.72	39.7
8	T1	All MCs	2	0.0	2	0.0	0.408	7.2	LOS A	2.8	20.5	0.72	0.69	0.72	33.2
9	R2	All MCs	174	4.0	174	4.0	0.408	12.0	LOS A	2.8	20.5	0.72	0.69	0.72	41.8
9u	U	All MCs	4	0.0	4	0.0	0.408	13.9	LOS A	2.8	20.5	0.72	0.69	0.72	23.3
Approach			363	3.9	363	3.9	0.408	9.5	LOS A	2.8	20.5	0.72	0.69	0.72	40.6
West: Yamba Rd (W)															
10	L2	All MCs	133	6.1	133	6.1	0.502	5.6	LOS A	4.0	29.5	0.59	0.53	0.59	44.9
11	T1	All MCs	441	6.0	441	6.0	0.502	5.8	LOS A	4.0	29.5	0.59	0.53	0.59	47.7
12	R2	All MCs	2	0.0	2	0.0	0.502	10.3	LOS A	4.0	29.5	0.59	0.53	0.59	44.3
Approach			576	6.0	576	6.0	0.502	5.8	LOS A	4.0	29.5	0.59	0.53	0.59	47.2
All Vehicles			1597	4.9	1597	4.9	0.540	7.2	LOS A	4.8	34.7	0.62	0.57	0.62	43.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 BG PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.012	7.0	LOS A	0.1	0.5	0.72	0.62	0.72	41.4
2	T1	All MCs	2	0.0	2	0.0	0.012	7.0	LOS A	0.1	0.5	0.72	0.62	0.72	23.7
3	R2	All MCs	4	0.0	4	0.0	0.012	11.5	LOS A	0.1	0.5	0.72	0.62	0.72	38.2
Approach			8	0.0	8	0.0	0.012	9.2	LOS A	0.1	0.5	0.72	0.62	0.72	35.6
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.477	5.2	LOS A	3.9	28.1	0.56	0.56	0.56	40.9
5	T1	All MCs	317	3.8	317	3.8	0.477	5.5	LOS A	3.9	28.1	0.56	0.56	0.56	47.1
6	R2	All MCs	236	1.1	236	1.1	0.477	10.1	LOS A	3.9	28.1	0.56	0.56	0.56	31.7
6u	U	All MCs	13	0.0	13	0.0	0.477	12.1	LOS A	3.9	28.1	0.56	0.56	0.56	44.6
Approach			568	2.6	568	2.6	0.477	7.5	LOS A	3.9	28.1	0.56	0.56	0.56	40.9
North: Treelands Dr (N)															
7	L2	All MCs	277	1.5	277	1.5	0.508	7.5	LOS A	4.1	29.2	0.76	0.71	0.80	40.0
8	T1	All MCs	2	0.0	2	0.0	0.508	7.7	LOS A	4.1	29.2	0.76	0.71	0.80	33.0
9	R2	All MCs	179	3.2	179	3.2	0.508	12.4	LOS A	4.1	29.2	0.76	0.71	0.80	41.8
9u	U	All MCs	11	0.0	11	0.0	0.508	14.4	LOS A	4.1	29.2	0.76	0.71	0.80	23.1
Approach			468	2.1	468	2.1	0.508	9.5	LOS A	4.1	29.2	0.76	0.71	0.80	40.3
West: Yamba Rd (W)															
10	L2	All MCs	162	6.4	162	6.4	0.527	6.0	LOS A	4.2	30.6	0.64	0.56	0.64	44.6
11	T1	All MCs	422	2.8	422	2.8	0.527	6.1	LOS A	4.2	30.6	0.64	0.56	0.64	47.9
12	R2	All MCs	1	0.0	1	0.0	0.527	10.7	LOS A	4.2	30.6	0.64	0.56	0.64	44.0
Approach			585	3.8	585	3.8	0.527	6.1	LOS A	4.2	30.6	0.64	0.56	0.64	47.1
All Vehicles			1631	2.9	1631	2.9	0.527	7.6	LOS A	4.2	30.6	0.65	0.60	0.66	43.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.015	8.9	LOS A	0.1	0.7	0.82	0.67	0.82	39.1
2	T1	All MCs	1	0.0	1	0.0	0.015	8.8	LOS A	0.1	0.7	0.82	0.67	0.82	22.3
3	R2	All MCs	5	0.0	5	0.0	0.015	13.3	LOS A	0.1	0.7	0.82	0.67	0.82	35.9
Approach			8	0.0	8	0.0	0.015	11.7	LOS A	0.1	0.7	0.82	0.67	0.82	35.1
East: Yamba Rd (E)															
4	L2	All MCs	4	0.0	4	0.0	0.614	5.5	LOS A	6.0	43.5	0.67	0.57	0.67	40.6
5	T1	All MCs	497	6.4	497	6.4	0.614	5.9	LOS A	6.0	43.5	0.67	0.57	0.67	46.9
6	R2	All MCs	208	0.8	208	0.8	0.614	10.4	LOS A	6.0	43.5	0.67	0.57	0.67	31.5
6u	U	All MCs	15	0.0	15	0.0	0.614	12.4	LOS A	6.0	43.5	0.67	0.57	0.67	44.4
Approach			724	4.6	724	4.6	0.614	7.3	LOS A	6.0	43.5	0.67	0.57	0.67	42.6
North: Treelands Dr (N)															
7	L2	All MCs	197	4.0	197	4.0	0.476	8.3	LOS A	3.7	26.9	0.80	0.74	0.85	38.4
8	T1	All MCs	2	0.0	2	0.0	0.476	8.3	LOS A	3.7	26.9	0.80	0.74	0.85	31.7
9	R2	All MCs	188	4.0	188	4.0	0.476	13.1	LOS A	3.7	26.9	0.80	0.74	0.85	40.6
9u	U	All MCs	5	0.0	5	0.0	0.476	15.0	LOS B	3.7	26.9	0.80	0.74	0.85	22.6
Approach			393	3.9	393	3.9	0.476	10.7	LOS A	3.7	26.9	0.80	0.74	0.85	39.3
West: Yamba Rd (W)															
10	L2	All MCs	143	6.1	143	6.1	0.578	5.9	LOS A	5.1	37.4	0.66	0.56	0.66	44.4
11	T1	All MCs	507	6.0	507	6.0	0.578	6.1	LOS A	5.1	37.4	0.66	0.56	0.66	47.3
12	R2	All MCs	2	0.0	2	0.0	0.578	10.5	LOS A	5.1	37.4	0.66	0.56	0.66	43.8
Approach			653	6.0	653	6.0	0.578	6.0	LOS A	5.1	37.4	0.66	0.56	0.66	46.8
All Vehicles			1778	5.0	1778	5.0	0.614	7.6	LOS A	6.0	43.5	0.70	0.60	0.71	43.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.013	7.8	LOS A	0.1	0.6	0.77	0.64	0.77	40.6
2	T1	All MCs	2	0.0	2	0.0	0.013	7.8	LOS A	0.1	0.6	0.77	0.64	0.77	23.2
3	R2	All MCs	4	0.0	4	0.0	0.013	12.3	LOS A	0.1	0.6	0.77	0.64	0.77	37.4
Approach			8	0.0	8	0.0	0.013	10.0	LOS A	0.1	0.6	0.77	0.64	0.77	34.8
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.543	5.4	LOS A	4.9	34.7	0.63	0.58	0.63	40.5
5	T1	All MCs	364	3.8	364	3.8	0.543	5.7	LOS A	4.9	34.7	0.63	0.58	0.63	46.8
6	R2	All MCs	254	1.1	254	1.1	0.543	10.3	LOS A	4.9	34.7	0.63	0.58	0.63	31.5
6u	U	All MCs	14	0.0	14	0.0	0.543	12.3	LOS A	4.9	34.7	0.63	0.58	0.63	44.3
Approach			635	2.6	635	2.6	0.543	7.7	LOS A	4.9	34.7	0.63	0.58	0.63	40.9
North: Treelands Dr (N)															
7	L2	All MCs	297	1.5	297	1.5	0.586	9.2	LOS A	5.6	39.9	0.85	0.79	0.99	38.0
8	T1	All MCs	2	0.0	2	0.0	0.586	9.4	LOS A	5.6	39.9	0.85	0.79	0.99	30.8
9	R2	All MCs	194	3.2	194	3.2	0.586	14.2	LOS A	5.6	39.9	0.85	0.79	0.99	40.0
9u	U	All MCs	12	0.0	12	0.0	0.586	16.1	LOS B	5.6	39.9	0.85	0.79	0.99	22.0
Approach			504	2.1	504	2.1	0.586	11.3	LOS A	5.6	39.9	0.85	0.79	0.99	38.5
West: Yamba Rd (W)															
10	L2	All MCs	176	6.4	176	6.4	0.604	6.7	LOS A	5.6	40.6	0.72	0.61	0.75	44.1
11	T1	All MCs	480	2.8	480	2.8	0.604	6.8	LOS A	5.6	40.6	0.72	0.61	0.75	47.5
12	R2	All MCs	1	0.0	1	0.0	0.604	11.3	LOS A	5.6	40.6	0.72	0.61	0.75	43.4
Approach			657	3.8	657	3.8	0.604	6.8	LOS A	5.6	40.6	0.72	0.61	0.75	46.7
All Vehicles			1804	2.9	1804	2.9	0.604	8.4	LOS A	5.6	40.6	0.73	0.65	0.78	42.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 BG AM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.015	8.7	LOS A	0.1	0.7	0.82	0.67	0.82	39.3
2	T1	All MCs	1	0.0	1	0.0	0.015	8.7	LOS A	0.1	0.7	0.82	0.67	0.82	22.4
3	R2	All MCs	5	0.0	5	0.0	0.015	13.2	LOS A	0.1	0.7	0.82	0.67	0.82	36.0
Approach			8	0.0	8	0.0	0.015	11.5	LOS A	0.1	0.7	0.82	0.67	0.82	35.3
East: Yamba Rd (E)															
4	L2	All MCs	4	0.0	4	0.0	0.605	5.5	LOS A	5.8	42.1	0.67	0.57	0.67	40.6
5	T1	All MCs	478	6.4	478	6.4	0.605	5.9	LOS A	5.8	42.1	0.67	0.57	0.67	46.9
6	R2	All MCs	213	0.8	213	0.8	0.605	10.4	LOS A	5.8	42.1	0.67	0.57	0.67	31.5
6u	U	All MCs	16	0.0	16	0.0	0.605	12.4	LOS A	5.8	42.1	0.67	0.57	0.67	44.4
Approach			711	4.5	711	4.5	0.605	7.4	LOS A	5.8	42.1	0.67	0.57	0.67	42.4
North: Treelands Dr (N)															
7	L2	All MCs	202	4.0	202	4.0	0.478	8.1	LOS A	3.7	26.9	0.79	0.74	0.84	38.6
8	T1	All MCs	2	0.0	2	0.0	0.478	8.1	LOS A	3.7	26.9	0.79	0.74	0.84	31.9
9	R2	All MCs	193	4.0	193	4.0	0.478	12.9	LOS A	3.7	26.9	0.79	0.74	0.84	40.8
9u	U	All MCs	5	0.0	5	0.0	0.478	14.8	LOS B	3.7	26.9	0.79	0.74	0.84	22.7
Approach			402	3.9	402	3.9	0.478	10.5	LOS A	3.7	26.9	0.79	0.74	0.84	39.5
West: Yamba Rd (W)															
10	L2	All MCs	146	6.1	146	6.1	0.566	5.9	LOS A	4.9	36.0	0.66	0.56	0.66	44.5
11	T1	All MCs	486	6.0	486	6.0	0.566	6.1	LOS A	4.9	36.0	0.66	0.56	0.66	47.3
12	R2	All MCs	2	0.0	2	0.0	0.566	10.5	LOS A	4.9	36.0	0.66	0.56	0.66	43.8
Approach			635	6.0	635	6.0	0.566	6.1	LOS A	4.9	36.0	0.66	0.56	0.66	46.8
All Vehicles			1756	4.9	1756	4.9	0.605	7.6	LOS A	5.8	42.1	0.70	0.60	0.71	43.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 BG PM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.013	7.8	LOS A	0.1	0.6	0.77	0.64	0.77	40.7
2	T1	All MCs	2	0.0	2	0.0	0.013	7.7	LOS A	0.1	0.6	0.77	0.64	0.77	23.2
3	R2	All MCs	4	0.0	4	0.0	0.013	12.2	LOS A	0.1	0.6	0.77	0.64	0.77	37.4
Approach			8	0.0	8	0.0	0.013	10.0	LOS A	0.1	0.6	0.77	0.64	0.77	34.9
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.538	5.4	LOS A	4.8	34.1	0.64	0.58	0.64	40.5
5	T1	All MCs	349	3.8	349	3.8	0.538	5.8	LOS A	4.8	34.1	0.64	0.58	0.64	46.8
6	R2	All MCs	259	1.1	259	1.1	0.538	10.3	LOS A	4.8	34.1	0.64	0.58	0.64	31.5
6u	U	All MCs	14	0.0	14	0.0	0.538	12.4	LOS A	4.8	34.1	0.64	0.58	0.64	44.3
Approach			625	2.6	625	2.6	0.538	7.8	LOS A	4.8	34.1	0.64	0.58	0.64	40.6
North: Treelands Dr (N)															
7	L2	All MCs	303	1.5	303	1.5	0.589	9.1	LOS A	5.6	40.2	0.85	0.78	0.98	38.2
8	T1	All MCs	2	0.0	2	0.0	0.589	9.2	LOS A	5.6	40.2	0.85	0.78	0.98	31.0
9	R2	All MCs	199	3.2	199	3.2	0.589	14.0	LOS A	5.6	40.2	0.85	0.78	0.98	40.2
9u	U	All MCs	12	0.0	12	0.0	0.589	15.9	LOS B	5.6	40.2	0.85	0.78	0.98	22.1
Approach			516	2.1	516	2.1	0.589	11.1	LOS A	5.6	40.2	0.85	0.78	0.98	38.7
West: Yamba Rd (W)															
10	L2	All MCs	180	6.4	180	6.4	0.596	6.7	LOS A	5.4	39.4	0.72	0.61	0.75	44.1
11	T1	All MCs	462	2.8	462	2.8	0.596	6.8	LOS A	5.4	39.4	0.72	0.61	0.75	47.5
12	R2	All MCs	1	0.0	1	0.0	0.596	11.3	LOS A	5.4	39.4	0.72	0.61	0.75	43.5
Approach			643	3.8	643	3.8	0.596	6.8	LOS A	5.4	39.4	0.72	0.61	0.75	46.7
All Vehicles			1793	2.9	1793	2.9	0.596	8.4	LOS A	5.6	40.2	0.73	0.65	0.77	42.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG AM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	3	0.0	3	0.0	0.022	10.3	LOS A	0.1	1.0	0.88	0.71	0.88	38.0
2	T1	All MCs	1	0.0	1	0.0	0.022	10.2	LOS A	0.1	1.0	0.88	0.71	0.88	21.6
3	R2	All MCs	6	0.0	6	0.0	0.022	14.7	LOS B	0.1	1.0	0.88	0.71	0.88	34.7
Approach			11	0.0	11	0.0	0.022	12.9	LOS A	0.1	1.0	0.88	0.71	0.88	34.5
East: Yamba Rd (E)															
4	L2	All MCs	5	0.0	5	0.0	0.691	6.4	LOS A	8.0	58.3	0.78	0.62	0.81	39.9
5	T1	All MCs	543	6.4	543	6.4	0.691	6.8	LOS A	8.0	58.3	0.78	0.62	0.81	46.2
6	R2	All MCs	227	0.8	227	0.8	0.691	11.3	LOS A	8.0	58.3	0.78	0.62	0.81	31.1
6u	U	All MCs	17	0.0	17	0.0	0.691	13.3	LOS A	8.0	58.3	0.78	0.62	0.81	43.8
Approach			793	4.6	793	4.6	0.691	8.2	LOS A	8.0	58.3	0.78	0.62	0.81	42.0
North: Treelands Dr (N)															
7	L2	All MCs	218	4.0	218	4.0	0.571	10.4	LOS A	5.3	38.7	0.89	0.83	1.06	36.2
8	T1	All MCs	3	0.0	3	0.0	0.571	10.5	LOS A	5.3	38.7	0.89	0.83	1.06	29.3
9	R2	All MCs	208	4.0	208	4.0	0.571	15.3	LOS B	5.3	38.7	0.89	0.83	1.06	38.6
9u	U	All MCs	5	0.0	5	0.0	0.571	17.2	LOS B	5.3	38.7	0.89	0.83	1.06	21.3
Approach			435	3.9	435	3.9	0.571	12.8	LOS A	5.3	38.7	0.89	0.83	1.06	37.2
West: Yamba Rd (W)															
10	L2	All MCs	159	6.1	159	6.1	0.657	6.8	LOS A	7.0	51.4	0.76	0.62	0.81	43.8
11	T1	All MCs	560	6.0	560	6.0	0.657	7.1	LOS A	7.0	51.4	0.76	0.62	0.81	46.7
12	R2	All MCs	3	0.0	3	0.0	0.657	11.5	LOS A	7.0	51.4	0.76	0.62	0.81	43.1
Approach			722	6.0	722	6.0	0.657	7.0	LOS A	7.0	51.4	0.76	0.62	0.81	46.2
All Vehicles			1960	4.9	1960	4.9	0.691	8.8	LOS A	8.0	58.3	0.80	0.67	0.87	42.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 BG PM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	3	0.0	3	0.0	0.019	8.9	LOS A	0.1	0.9	0.83	0.68	0.83	39.9
2	T1	All MCs	3	0.0	3	0.0	0.019	8.9	LOS A	0.1	0.9	0.83	0.68	0.83	22.6
3	R2	All MCs	4	0.0	4	0.0	0.019	13.4	LOS A	0.1	0.9	0.83	0.68	0.83	36.7
Approach			11	0.0	11	0.0	0.019	10.7	LOS A	0.1	0.9	0.83	0.68	0.83	33.7
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.615	5.8	LOS A	6.0	42.9	0.73	0.60	0.73	40.0
5	T1	All MCs	401	3.8	401	3.8	0.615	6.1	LOS A	6.0	42.9	0.73	0.60	0.73	46.4
6	R2	All MCs	279	1.1	279	1.1	0.615	10.6	LOS A	6.0	42.9	0.73	0.60	0.73	31.2
6u	U	All MCs	15	0.0	15	0.0	0.615	12.7	LOS A	6.0	42.9	0.73	0.60	0.73	43.9
Approach			698	2.6	698	2.6	0.615	8.0	LOS A	6.0	42.9	0.73	0.60	0.73	40.5
North: Treelands Dr (N)															
7	L2	All MCs	324	1.5	324	1.5	0.689	12.0	LOS A	8.1	57.6	0.95	0.89	1.24	35.3
8	T1	All MCs	3	0.0	3	0.0	0.689	12.2	LOS A	8.1	57.6	0.95	0.89	1.24	27.9
9	R2	All MCs	216	3.2	216	3.2	0.689	17.0	LOS B	8.1	57.6	0.95	0.89	1.24	37.5
9u	U	All MCs	13	0.0	13	0.0	0.689	18.9	LOS B	8.1	57.6	0.95	0.89	1.24	20.5
Approach			556	2.1	556	2.1	0.689	14.1	LOS A	8.1	57.6	0.95	0.89	1.24	35.8
West: Yamba Rd (W)															
10	L2	All MCs	195	6.4	195	6.4	0.687	8.3	LOS A	8.0	57.6	0.82	0.70	0.93	43.2
11	T1	All MCs	527	2.8	527	2.8	0.687	8.4	LOS A	8.0	57.6	0.82	0.70	0.93	46.7
12	R2	All MCs	1	0.0	1	0.0	0.687	12.9	LOS A	8.0	57.6	0.82	0.70	0.93	42.6
Approach			723	3.8	723	3.8	0.687	8.3	LOS A	8.0	57.6	0.82	0.70	0.93	45.9
All Vehicles			1987	2.9	1987	2.9	0.689	9.9	LOS A	8.1	57.6	0.82	0.72	0.95	41.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM - Carrs Access Only (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.016	9.8	LOS A	0.1	0.8	0.86	0.69	0.86	38.3
2	T1	All MCs	1	0.0	1	0.0	0.016	9.7	LOS A	0.1	0.8	0.86	0.69	0.86	21.8
3	R2	All MCs	5	0.0	5	0.0	0.016	14.2	LOS A	0.1	0.8	0.86	0.69	0.86	35.1
Approach			8	0.0	8	0.0	0.016	12.6	LOS A	0.1	0.8	0.86	0.69	0.86	34.3
East: Yamba Rd (E)															
4	L2	All MCs	5	0.0	5	0.0	0.663	5.5	LOS A	7.0	51.1	0.70	0.57	0.70	40.4
5	T1	All MCs	540	6.4	540	6.4	0.663	5.9	LOS A	7.0	51.1	0.70	0.57	0.70	46.7
6	R2	All MCs	244	0.8	244	0.8	0.663	10.4	LOS A	7.0	51.1	0.70	0.57	0.70	31.4
6u	U	All MCs	14	0.0	14	0.0	0.663	12.4	LOS A	7.0	51.1	0.70	0.57	0.70	44.3
Approach			803	4.5	803	4.5	0.663	7.4	LOS A	7.0	51.1	0.70	0.57	0.70	42.2
North: Treelands Dr (N)															
7	L2	All MCs	203	4.0	203	4.0	0.458	7.8	LOS A	3.4	24.9	0.79	0.72	0.81	39.0
8	T1	All MCs	2	0.0	2	0.0	0.458	7.9	LOS A	3.4	24.9	0.79	0.72	0.81	32.4
9	R2	All MCs	174	4.0	174	4.0	0.458	12.6	LOS A	3.4	24.9	0.79	0.72	0.81	41.2
9u	U	All MCs	4	0.0	4	0.0	0.458	14.6	LOS B	3.4	24.9	0.79	0.72	0.81	22.9
Approach			383	3.9	383	3.9	0.458	10.1	LOS A	3.4	24.9	0.79	0.72	0.81	39.9
West: Yamba Rd (W)															
10	L2	All MCs	133	6.1	133	6.1	0.574	6.1	LOS A	5.0	36.4	0.70	0.58	0.70	44.2
11	T1	All MCs	486	6.0	486	6.0	0.574	6.3	LOS A	5.0	36.4	0.70	0.58	0.70	47.1
12	R2	All MCs	2	0.0	2	0.0	0.574	10.8	LOS A	5.0	36.4	0.70	0.58	0.70	43.5
Approach			621	6.0	621	6.0	0.574	6.3	LOS A	5.0	36.4	0.70	0.58	0.70	46.6
All Vehicles			1816	4.9	1816	4.9	0.663	7.6	LOS A	7.0	51.1	0.72	0.60	0.72	43.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM - Carrs Access Only (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.015	7.9	LOS A	0.1	0.6	0.77	0.66	0.77	40.4
2	T1	All MCs	2	0.0	2	0.0	0.015	7.8	LOS A	0.1	0.6	0.77	0.66	0.77	23.2
3	R2	All MCs	5	0.0	5	0.0	0.015	12.3	LOS A	0.1	0.6	0.77	0.66	0.77	37.2
Approach			9	0.0	9	0.0	0.015	10.3	LOS A	0.1	0.6	0.77	0.66	0.77	34.9
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.577	5.2	LOS A	5.1	36.5	0.59	0.57	0.59	40.7
5	T1	All MCs	398	3.8	398	3.8	0.577	5.5	LOS A	5.1	36.5	0.59	0.57	0.59	47.0
6	R2	All MCs	300	1.1	300	1.1	0.577	10.0	LOS A	5.1	36.5	0.59	0.57	0.59	31.6
6u	U	All MCs	13	0.0	13	0.0	0.577	12.1	LOS A	5.1	36.5	0.59	0.57	0.59	44.5
Approach			714	2.6	714	2.6	0.577	7.5	LOS A	5.1	36.5	0.59	0.57	0.59	40.7
North: Treelands Dr (N)															
7	L2	All MCs	340	1.5	340	1.5	0.599	9.0	LOS A	5.6	40.2	0.84	0.80	0.99	38.5
8	T1	All MCs	2	0.0	2	0.0	0.599	9.2	LOS A	5.6	40.2	0.84	0.80	0.99	31.3
9	R2	All MCs	179	3.2	179	3.2	0.599	13.9	LOS A	5.6	40.2	0.84	0.80	0.99	40.0
9u	U	All MCs	11	0.0	11	0.0	0.599	15.9	LOS B	5.6	40.2	0.84	0.80	0.99	22.3
Approach			532	2.0	532	2.0	0.599	10.8	LOS A	5.6	40.2	0.84	0.80	0.99	38.7
West: Yamba Rd (W)															
10	L2	All MCs	162	6.4	162	6.4	0.620	7.0	LOS A	5.7	41.1	0.72	0.64	0.78	44.0
11	T1	All MCs	512	2.7	512	2.7	0.620	7.1	LOS A	5.7	41.1	0.72	0.64	0.78	47.4
12	R2	All MCs	1	0.0	1	0.0	0.620	11.7	LOS A	5.7	41.1	0.72	0.64	0.78	43.4
Approach			675	3.6	675	3.6	0.620	7.1	LOS A	5.7	41.1	0.72	0.64	0.78	46.7
All Vehicles			1929	2.8	1929	2.8	0.620	8.3	LOS A	5.7	41.1	0.71	0.66	0.77	42.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM Seasonality - Carrs Access Only (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.022	11.3	LOS A	0.2	1.1	0.91	0.73	0.91	37.0
2	T1	All MCs	1	0.0	1	0.0	0.022	11.2	LOS A	0.2	1.1	0.91	0.73	0.91	21.0
3	R2	All MCs	6	0.0	6	0.0	0.022	15.7	LOS B	0.2	1.1	0.91	0.73	0.91	33.7
Approach			9	0.0	9	0.0	0.022	14.2	LOS A	0.2	1.1	0.91	0.73	0.91	33.1
East: Yamba Rd (E)															
4	L2	All MCs	5	0.0	5	0.0	0.731	6.5	LOS A	9.4	68.0	0.81	0.62	0.84	39.7
5	T1	All MCs	581	6.4	581	6.4	0.731	7.0	LOS A	9.4	68.0	0.81	0.62	0.84	46.1
6	R2	All MCs	261	0.8	261	0.8	0.731	11.4	LOS A	9.4	68.0	0.81	0.62	0.84	31.0
6u	U	All MCs	16	0.0	16	0.0	0.731	13.5	LOS A	9.4	68.0	0.81	0.62	0.84	43.6
Approach			863	4.6	863	4.6	0.731	8.4	LOS A	9.4	68.0	0.81	0.62	0.84	41.6
North: Treelands Dr (N)															
7	L2	All MCs	222	4.0	222	4.0	0.538	9.4	LOS A	4.8	34.4	0.86	0.79	0.98	37.3
8	T1	All MCs	2	0.0	2	0.0	0.538	9.5	LOS A	4.8	34.4	0.86	0.79	0.98	30.4
9	R2	All MCs	193	4.0	193	4.0	0.538	14.3	LOS A	4.8	34.4	0.86	0.79	0.98	39.6
9u	U	All MCs	5	0.0	5	0.0	0.538	16.2	LOS B	4.8	34.4	0.86	0.79	0.98	21.9
Approach			422	3.9	422	3.9	0.538	11.7	LOS A	4.8	34.4	0.86	0.79	0.98	38.2
West: Yamba Rd (W)															
10	L2	All MCs	146	6.1	146	6.1	0.645	7.3	LOS A	6.8	49.9	0.78	0.65	0.84	43.6
11	T1	All MCs	532	6.0	532	6.0	0.645	7.5	LOS A	6.8	49.9	0.78	0.65	0.84	46.6
12	R2	All MCs	2	0.0	2	0.0	0.645	11.9	LOS A	6.8	49.9	0.78	0.65	0.84	43.0
Approach			680	6.0	680	6.0	0.645	7.4	LOS A	6.8	49.9	0.78	0.65	0.84	46.1
All Vehicles			1975	4.9	1975	4.9	0.731	8.8	LOS A	9.4	68.0	0.81	0.67	0.87	42.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM Seasonality - Carrs Access Only (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.017	8.9	LOS A	0.1	0.8	0.83	0.68	0.83	39.4
2	T1	All MCs	2	0.0	2	0.0	0.017	8.8	LOS A	0.1	0.8	0.83	0.68	0.83	22.6
3	R2	All MCs	5	0.0	5	0.0	0.017	13.3	LOS A	0.1	0.8	0.83	0.68	0.83	36.2
Approach			9	0.0	9	0.0	0.017	11.3	LOS A	0.1	0.8	0.83	0.68	0.83	34.1
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.639	5.4	LOS A	6.2	44.0	0.68	0.59	0.68	40.2
5	T1	All MCs	431	3.8	431	3.8	0.639	5.8	LOS A	6.2	44.0	0.68	0.59	0.68	46.6
6	R2	All MCs	323	1.1	323	1.1	0.639	10.3	LOS A	6.2	44.0	0.68	0.59	0.68	31.3
6u	U	All MCs	14	0.0	14	0.0	0.639	12.4	LOS A	6.2	44.0	0.68	0.59	0.68	44.1
Approach			771	2.6	771	2.6	0.639	7.8	LOS A	6.2	44.0	0.68	0.59	0.68	40.3
North: Treelands Dr (N)															
7	L2	All MCs	366	1.5	366	1.5	0.692	11.3	LOS A	7.8	55.7	0.93	0.89	1.21	36.2
8	T1	All MCs	2	0.0	2	0.0	0.692	11.5	LOS A	7.8	55.7	0.93	0.89	1.21	28.8
9	R2	All MCs	199	3.2	199	3.2	0.692	16.2	LOS B	7.8	55.7	0.93	0.89	1.21	37.9
9u	U	All MCs	12	0.0	12	0.0	0.692	18.2	LOS B	7.8	55.7	0.93	0.89	1.21	21.0
Approach			579	2.0	579	2.0	0.692	13.1	LOS A	7.8	55.7	0.93	0.89	1.21	36.5
West: Yamba Rd (W)															
10	L2	All MCs	180	6.4	180	6.4	0.692	8.3	LOS A	7.7	55.3	0.81	0.72	0.94	43.2
11	T1	All MCs	552	2.7	552	2.7	0.692	8.4	LOS A	7.7	55.3	0.81	0.72	0.94	46.7
12	R2	All MCs	1	0.0	1	0.0	0.692	12.9	LOS A	7.7	55.3	0.81	0.72	0.94	42.6
Approach			733	3.6	733	3.6	0.692	8.4	LOS A	7.7	55.3	0.81	0.72	0.94	46.0
All Vehicles			2092	2.8	2092	2.8	0.692	9.5	LOS A	7.8	55.7	0.80	0.72	0.92	41.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.017	10.0	LOS A	0.1	0.8	0.87	0.70	0.87	38.1
2	T1	All MCs	1	0.0	1	0.0	0.017	10.0	LOS A	0.1	0.8	0.87	0.70	0.87	21.7
3	R2	All MCs	5	0.0	5	0.0	0.017	14.5	LOS A	0.1	0.8	0.87	0.70	0.87	34.9
Approach			8	0.0	8	0.0	0.017	12.8	LOS A	0.1	0.8	0.87	0.70	0.87	34.1
East: Yamba Rd (E)															
4	L2	All MCs	5	0.0	5	0.0	0.675	5.5	LOS A	7.3	53.0	0.71	0.57	0.71	40.4
5	T1	All MCs	551	6.4	551	6.4	0.675	5.9	LOS A	7.3	53.0	0.71	0.57	0.71	46.7
6	R2	All MCs	248	0.8	248	0.8	0.675	10.4	LOS A	7.3	53.0	0.71	0.57	0.71	31.4
6u	U	All MCs	14	0.0	14	0.0	0.675	12.5	LOS A	7.3	53.0	0.71	0.57	0.71	44.2
Approach			818	4.6	818	4.6	0.675	7.4	LOS A	7.3	53.0	0.71	0.57	0.71	42.2
North: Treelands Dr (N)															
7	L2	All MCs	203	4.0	203	4.0	0.458	7.8	LOS A	3.4	24.9	0.79	0.72	0.81	39.0
8	T1	All MCs	2	0.0	2	0.0	0.458	7.9	LOS A	3.4	24.9	0.79	0.72	0.81	32.4
9	R2	All MCs	174	4.0	174	4.0	0.458	12.6	LOS A	3.4	24.9	0.79	0.72	0.81	41.2
9u	U	All MCs	4	0.0	4	0.0	0.458	14.6	LOS B	3.4	24.9	0.79	0.72	0.81	22.9
Approach			383	3.9	383	3.9	0.458	10.0	LOS A	3.4	24.9	0.79	0.72	0.81	39.9
West: Yamba Rd (W)															
10	L2	All MCs	133	6.1	133	6.1	0.576	6.2	LOS A	5.0	37.0	0.70	0.58	0.71	44.2
11	T1	All MCs	485	6.0	485	6.0	0.576	6.4	LOS A	5.0	37.0	0.70	0.58	0.71	47.1
12	R2	All MCs	2	0.0	2	0.0	0.576	10.9	LOS A	5.0	37.0	0.70	0.58	0.71	43.5
Approach			620	6.0	620	6.0	0.576	6.4	LOS A	5.0	37.0	0.70	0.58	0.71	46.5
All Vehicles			1829	4.9	1829	4.9	0.675	7.6	LOS A	7.3	53.0	0.72	0.61	0.73	43.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.013	7.2	LOS A	0.1	0.6	0.73	0.64	0.73	41.1
2	T1	All MCs	2	0.0	2	0.0	0.013	7.1	LOS A	0.1	0.6	0.73	0.64	0.73	23.6
3	R2	All MCs	5	0.0	5	0.0	0.013	11.6	LOS A	0.1	0.6	0.73	0.64	0.73	37.9
Approach			9	0.0	9	0.0	0.013	9.6	LOS A	0.1	0.6	0.73	0.64	0.73	35.6
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.527	5.1	LOS A	4.4	31.5	0.57	0.57	0.57	40.8
5	T1	All MCs	361	3.8	361	3.8	0.527	5.4	LOS A	4.4	31.5	0.57	0.57	0.57	47.1
6	R2	All MCs	271	1.1	271	1.1	0.527	10.0	LOS A	4.4	31.5	0.57	0.57	0.57	31.7
6u	U	All MCs	13	0.0	13	0.0	0.527	12.0	LOS A	4.4	31.5	0.57	0.57	0.57	44.6
Approach			647	2.6	647	2.6	0.527	7.4	LOS A	4.4	31.5	0.57	0.57	0.57	40.8
North: Treelands Dr (N)															
7	L2	All MCs	365	1.5	365	1.5	0.649	10.3	LOS A	6.7	47.9	0.89	0.85	1.11	37.2
8	T1	All MCs	2	0.0	2	0.0	0.649	10.5	LOS A	6.7	47.9	0.89	0.85	1.11	29.8
9	R2	All MCs	179	3.2	179	3.2	0.649	15.3	LOS B	6.7	47.9	0.89	0.85	1.11	38.8
9u	U	All MCs	11	0.0	11	0.0	0.649	17.3	LOS B	6.7	47.9	0.89	0.85	1.11	21.5
Approach			557	2.0	557	2.0	0.649	12.1	LOS A	6.7	47.9	0.89	0.85	1.11	37.4
West: Yamba Rd (W)															
10	L2	All MCs	162	6.4	162	6.4	0.632	6.8	LOS A	5.9	42.5	0.70	0.63	0.75	44.1
11	T1	All MCs	548	2.7	548	2.7	0.632	6.9	LOS A	5.9	42.5	0.70	0.63	0.75	47.5
12	R2	All MCs	1	0.0	1	0.0	0.632	11.4	LOS A	5.9	42.5	0.70	0.63	0.75	43.5
Approach			712	3.5	712	3.5	0.632	6.9	LOS A	5.9	42.5	0.70	0.63	0.75	46.8
All Vehicles			1925	2.8	1925	2.8	0.649	8.6	LOS A	6.7	47.9	0.71	0.67	0.79	42.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES AM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.022	11.6	LOS A	0.2	1.1	0.92	0.73	0.92	36.7
2	T1	All MCs	1	0.0	1	0.0	0.022	11.5	LOS A	0.2	1.1	0.92	0.73	0.92	20.9
3	R2	All MCs	6	0.0	6	0.0	0.022	16.0	LOS B	0.2	1.1	0.92	0.73	0.92	33.5
Approach			9	0.0	9	0.0	0.022	14.5	LOS B	0.2	1.1	0.92	0.73	0.92	32.9
East: Yamba Rd (E)															
4	L2	All MCs	5	0.0	5	0.0	0.743	6.7	LOS A	9.8	71.6	0.82	0.63	0.87	39.5
5	T1	All MCs	591	6.4	591	6.4	0.743	7.1	LOS A	9.8	71.6	0.82	0.63	0.87	46.0
6	R2	All MCs	266	0.8	266	0.8	0.743	11.6	LOS A	9.8	71.6	0.82	0.63	0.87	30.9
6u	U	All MCs	16	0.0	16	0.0	0.743	13.6	LOS A	9.8	71.6	0.82	0.63	0.87	43.5
Approach			878	4.5	878	4.5	0.743	8.6	LOS A	9.8	71.6	0.82	0.63	0.87	41.5
North: Treelands Dr (N)															
7	L2	All MCs	222	4.0	222	4.0	0.538	9.4	LOS A	4.8	34.5	0.86	0.79	0.98	37.3
8	T1	All MCs	2	0.0	2	0.0	0.538	9.5	LOS A	4.8	34.5	0.86	0.79	0.98	30.4
9	R2	All MCs	193	4.0	193	4.0	0.538	14.3	LOS A	4.8	34.5	0.86	0.79	0.98	39.6
9u	U	All MCs	5	0.0	5	0.0	0.538	16.2	LOS B	4.8	34.5	0.86	0.79	0.98	21.9
Approach			422	3.9	422	3.9	0.538	11.7	LOS A	4.8	34.5	0.86	0.79	0.98	38.2
West: Yamba Rd (W)															
10	L2	All MCs	146	6.1	146	6.1	0.649	7.4	LOS A	6.9	50.7	0.79	0.65	0.86	43.5
11	T1	All MCs	531	6.0	531	6.0	0.649	7.6	LOS A	6.9	50.7	0.79	0.65	0.86	46.5
12	R2	All MCs	2	0.0	2	0.0	0.649	12.0	LOS A	6.9	50.7	0.79	0.65	0.86	42.9
Approach			679	6.0	679	6.0	0.649	7.6	LOS A	6.9	50.7	0.79	0.65	0.86	46.0
All Vehicles			1988	4.9	1988	4.9	0.743	8.9	LOS A	9.8	71.6	0.82	0.67	0.89	42.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2033 DES PM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.015	8.0	LOS A	0.1	0.7	0.78	0.66	0.78	40.3
2	T1	All MCs	2	0.0	2	0.0	0.015	7.9	LOS A	0.1	0.7	0.78	0.66	0.78	23.1
3	R2	All MCs	5	0.0	5	0.0	0.015	12.5	LOS A	0.1	0.7	0.78	0.66	0.78	37.1
Approach			9	0.0	9	0.0	0.015	10.5	LOS A	0.1	0.7	0.78	0.66	0.78	34.8
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.587	5.3	LOS A	5.3	38.0	0.64	0.59	0.64	40.4
5	T1	All MCs	393	3.8	393	3.8	0.587	5.6	LOS A	5.3	38.0	0.64	0.59	0.64	46.7
6	R2	All MCs	294	1.1	294	1.1	0.587	10.2	LOS A	5.3	38.0	0.64	0.59	0.64	31.5
6u	U	All MCs	14	0.0	14	0.0	0.587	12.3	LOS A	5.3	38.0	0.64	0.59	0.64	44.2
Approach			703	2.6	703	2.6	0.587	7.7	LOS A	5.3	38.0	0.64	0.59	0.64	40.5
North: Treelands Dr (N)															
7	L2	All MCs	392	1.5	392	1.5	0.746	13.4	LOS A	9.5	67.6	0.98	0.96	1.38	34.2
8	T1	All MCs	2	0.0	2	0.0	0.746	13.6	LOS A	9.5	67.6	0.98	0.96	1.38	26.8
9	R2	All MCs	199	3.2	199	3.2	0.746	18.4	LOS B	9.5	67.6	0.98	0.96	1.38	36.1
9u	U	All MCs	12	0.0	12	0.0	0.746	20.3	LOS B	9.5	67.6	0.98	0.96	1.38	19.9
Approach			604	2.0	604	2.0	0.746	15.2	LOS B	9.5	67.6	0.98	0.96	1.38	34.6
West: Yamba Rd (W)															
10	L2	All MCs	180	6.4	180	6.4	0.702	8.0	LOS A	7.9	56.9	0.79	0.70	0.91	43.4
11	T1	All MCs	588	2.7	588	2.7	0.702	8.1	LOS A	7.9	56.9	0.79	0.70	0.91	46.9
12	R2	All MCs	1	0.0	1	0.0	0.702	12.7	LOS A	7.9	56.9	0.79	0.70	0.91	42.8
Approach			769	3.6	769	3.6	0.702	8.1	LOS A	7.9	56.9	0.79	0.70	0.91	46.2
All Vehicles			2086	2.8	2086	2.8	0.746	10.0	LOS A	9.5	67.6	0.80	0.74	0.95	41.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.023	11.8	LOS A	0.2	1.1	0.93	0.73	0.93	36.6
2	T1	All MCs	1	0.0	1	0.0	0.023	11.7	LOS A	0.2	1.1	0.93	0.73	0.93	20.8
3	R2	All MCs	6	0.0	6	0.0	0.023	16.2	LOS B	0.2	1.1	0.93	0.73	0.93	33.3
Approach			9	0.0	9	0.0	0.023	14.7	LOS B	0.2	1.1	0.93	0.73	0.93	32.7
East: Yamba Rd (E)															
4	L2	All MCs	5	0.0	5	0.0	0.751	6.7	LOS A	10.2	74.0	0.83	0.63	0.87	39.5
5	T1	All MCs	609	6.4	609	6.4	0.751	7.1	LOS A	10.2	74.0	0.83	0.63	0.87	46.0
6	R2	All MCs	262	0.8	262	0.8	0.751	11.6	LOS A	10.2	74.0	0.83	0.63	0.87	30.9
6u	U	All MCs	15	0.0	15	0.0	0.751	13.6	LOS A	10.2	74.0	0.83	0.63	0.87	43.5
Approach			892	4.6	892	4.6	0.751	8.6	LOS A	10.2	74.0	0.83	0.63	0.87	41.6
North: Treelands Dr (N)															
7	L2	All MCs	217	4.0	217	4.0	0.539	9.7	LOS A	4.8	34.7	0.88	0.80	1.00	37.0
8	T1	All MCs	2	0.0	2	0.0	0.539	9.8	LOS A	4.8	34.7	0.88	0.80	1.00	30.1
9	R2	All MCs	188	4.0	188	4.0	0.539	14.5	LOS B	4.8	34.7	0.88	0.80	1.00	39.3
9u	U	All MCs	5	0.0	5	0.0	0.539	16.5	LOS B	4.8	34.7	0.88	0.80	1.00	21.7
Approach			413	3.9	413	3.9	0.539	12.0	LOS A	4.8	34.7	0.88	0.80	1.00	37.9
West: Yamba Rd (W)															
10	L2	All MCs	143	6.1	143	6.1	0.661	7.5	LOS A	7.2	53.3	0.80	0.66	0.87	43.5
11	T1	All MCs	552	6.0	552	6.0	0.661	7.7	LOS A	7.2	53.3	0.80	0.66	0.87	46.5
12	R2	All MCs	2	0.0	2	0.0	0.661	12.1	LOS A	7.2	53.3	0.80	0.66	0.87	42.8
Approach			697	6.0	697	6.0	0.661	7.7	LOS A	7.2	53.3	0.80	0.66	0.87	46.0
All Vehicles			2011	4.9	2011	4.9	0.751	9.0	LOS A	10.2	74.0	0.83	0.67	0.90	42.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	2	0.0	2	0.0	0.015	8.1	LOS A	0.1	0.7	0.79	0.66	0.79	40.2
2	T1	All MCs	2	0.0	2	0.0	0.015	8.0	LOS A	0.1	0.7	0.79	0.66	0.79	23.1
3	R2	All MCs	5	0.0	5	0.0	0.015	12.5	LOS A	0.1	0.7	0.79	0.66	0.79	37.0
Approach			9	0.0	9	0.0	0.015	10.5	LOS A	0.1	0.7	0.79	0.66	0.79	34.8
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.591	5.3	LOS A	5.4	38.7	0.64	0.58	0.64	40.5
5	T1	All MCs	407	3.8	407	3.8	0.591	5.6	LOS A	5.4	38.7	0.64	0.58	0.64	46.8
6	R2	All MCs	288	1.1	288	1.1	0.591	10.2	LOS A	5.4	38.7	0.64	0.58	0.64	31.5
6u	U	All MCs	14	0.0	14	0.0	0.591	12.3	LOS A	5.4	38.7	0.64	0.58	0.64	44.3
Approach			713	2.6	713	2.6	0.591	7.6	LOS A	5.4	38.7	0.64	0.58	0.64	40.8
North: Treelands Dr (N)															
7	L2	All MCs	385	1.5	385	1.5	0.746	13.8	LOS A	9.5	67.7	0.99	0.97	1.40	33.9
8	T1	All MCs	2	0.0	2	0.0	0.746	14.0	LOS A	9.5	67.7	0.99	0.97	1.40	26.5
9	R2	All MCs	194	3.2	194	3.2	0.746	18.7	LOS B	9.5	67.7	0.99	0.97	1.40	35.9
9u	U	All MCs	12	0.0	12	0.0	0.746	20.7	LOS B	9.5	67.7	0.99	0.97	1.40	19.7
Approach			593	2.0	593	2.0	0.746	15.6	LOS B	9.5	67.7	0.99	0.97	1.40	34.3
West: Yamba Rd (W)															
10	L2	All MCs	176	6.4	176	6.4	0.710	8.1	LOS A	8.1	58.7	0.80	0.70	0.91	43.3
11	T1	All MCs	606	2.7	606	2.7	0.710	8.2	LOS A	8.1	58.7	0.80	0.70	0.91	46.8
12	R2	All MCs	1	0.0	1	0.0	0.710	12.7	LOS A	8.1	58.7	0.80	0.70	0.91	42.8
Approach			783	3.5	783	3.5	0.710	8.2	LOS A	8.1	58.7	0.80	0.70	0.91	46.2
All Vehicles			2098	2.8	2098	2.8	0.746	10.1	LOS A	9.5	67.7	0.80	0.74	0.96	41.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES AM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	3	0.0	3	0.0	0.032	14.0	LOS A	0.2	1.7	0.99	0.78	0.99	35.0
2	T1	All MCs	1	0.0	1	0.0	0.032	14.0	LOS A	0.2	1.7	0.99	0.78	0.99	19.7
3	R2	All MCs	6	0.0	6	0.0	0.032	18.5	LOS B	0.2	1.7	0.99	0.78	0.99	31.8
Approach			11	0.0	11	0.0	0.032	16.7	LOS B	0.2	1.7	0.99	0.78	0.99	31.6
East: Yamba Rd (E)															
4	L2	All MCs	6	0.0	6	0.0	0.832	9.2	LOS A	15.0	109.5	0.98	0.74	1.14	38.0
5	T1	All MCs	656	6.4	656	6.4	0.832	9.6	LOS A	15.0	109.5	0.98	0.74	1.14	44.6
6	R2	All MCs	281	0.8	281	0.8	0.832	14.1	LOS A	15.0	109.5	0.98	0.74	1.14	29.9
6u	U	All MCs	17	0.0	17	0.0	0.832	16.1	LOS B	15.0	109.5	0.98	0.74	1.14	42.1
Approach			960	4.6	960	4.6	0.832	11.0	LOS A	15.0	109.5	0.98	0.74	1.14	40.4
North: Treelands Dr (N)															
7	L2	All MCs	237	4.0	237	4.0	0.650	12.8	LOS A	7.0	50.7	0.97	0.90	1.26	34.2
8	T1	All MCs	3	0.0	3	0.0	0.650	12.8	LOS A	7.0	50.7	0.97	0.90	1.26	27.1
9	R2	All MCs	208	4.0	208	4.0	0.650	17.6	LOS B	7.0	50.7	0.97	0.90	1.26	36.6
9u	U	All MCs	5	0.0	5	0.0	0.650	19.5	LOS B	7.0	50.7	0.97	0.90	1.26	20.1
Approach			454	3.9	454	3.9	0.650	15.1	LOS B	7.0	50.7	0.97	0.90	1.26	35.2
West: Yamba Rd (W)															
10	L2	All MCs	159	6.1	159	6.1	0.750	9.4	LOS A	10.4	76.8	0.92	0.76	1.09	42.4
11	T1	All MCs	604	6.0	604	6.0	0.750	9.7	LOS A	10.4	76.8	0.92	0.76	1.09	45.5
12	R2	All MCs	3	0.0	3	0.0	0.750	14.0	LOS A	10.4	76.8	0.92	0.76	1.09	41.8
Approach			766	6.0	766	6.0	0.750	9.6	LOS A	10.4	76.8	0.92	0.76	1.09	45.0
All Vehicles			2191	4.9	2191	4.9	0.832	11.4	LOS A	15.0	109.5	0.96	0.78	1.14	41.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [2043 DES PM Seasonality (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

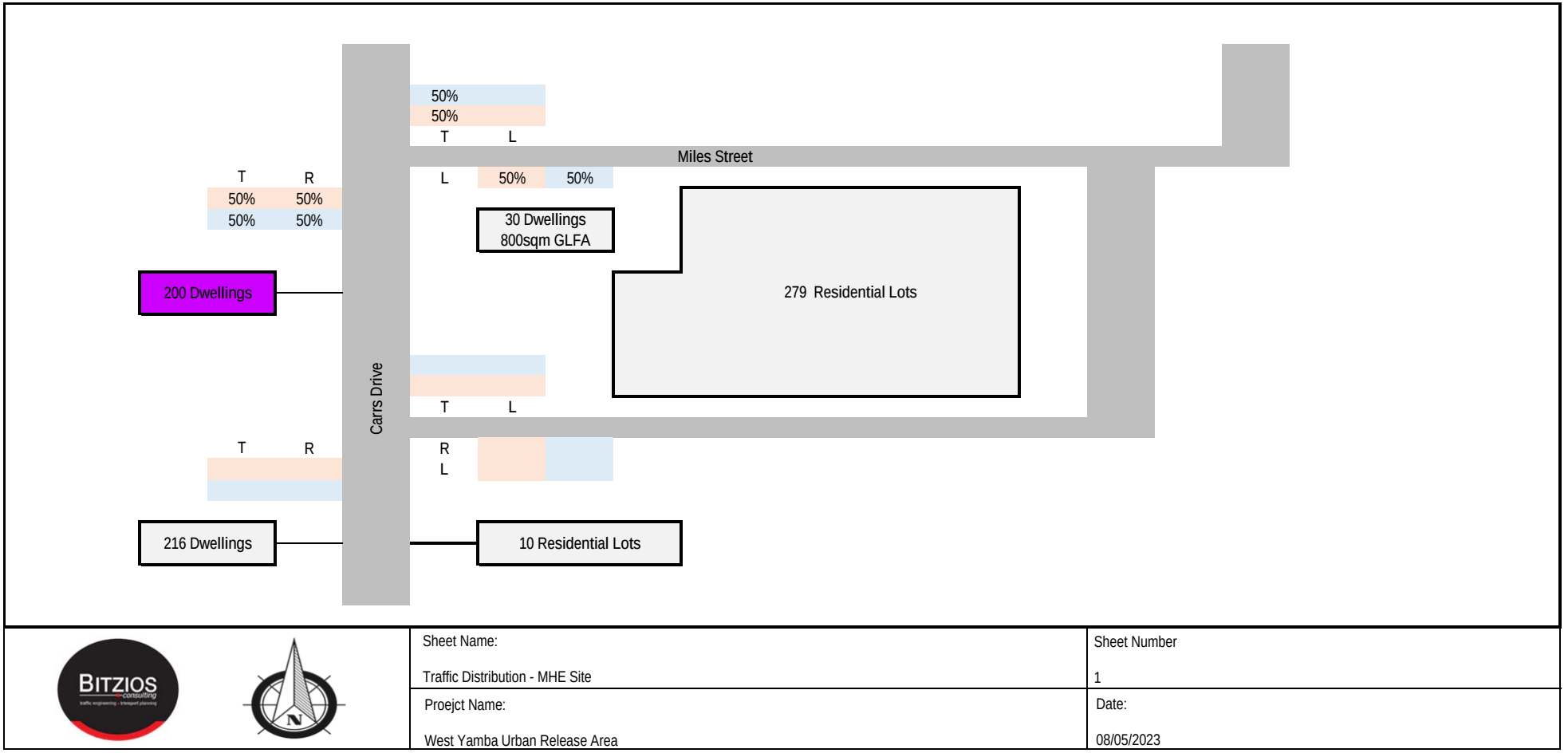
Yamba Road / Treelands Drive
Site Category: (None)
Roundabout

Vehicle Movement Performance

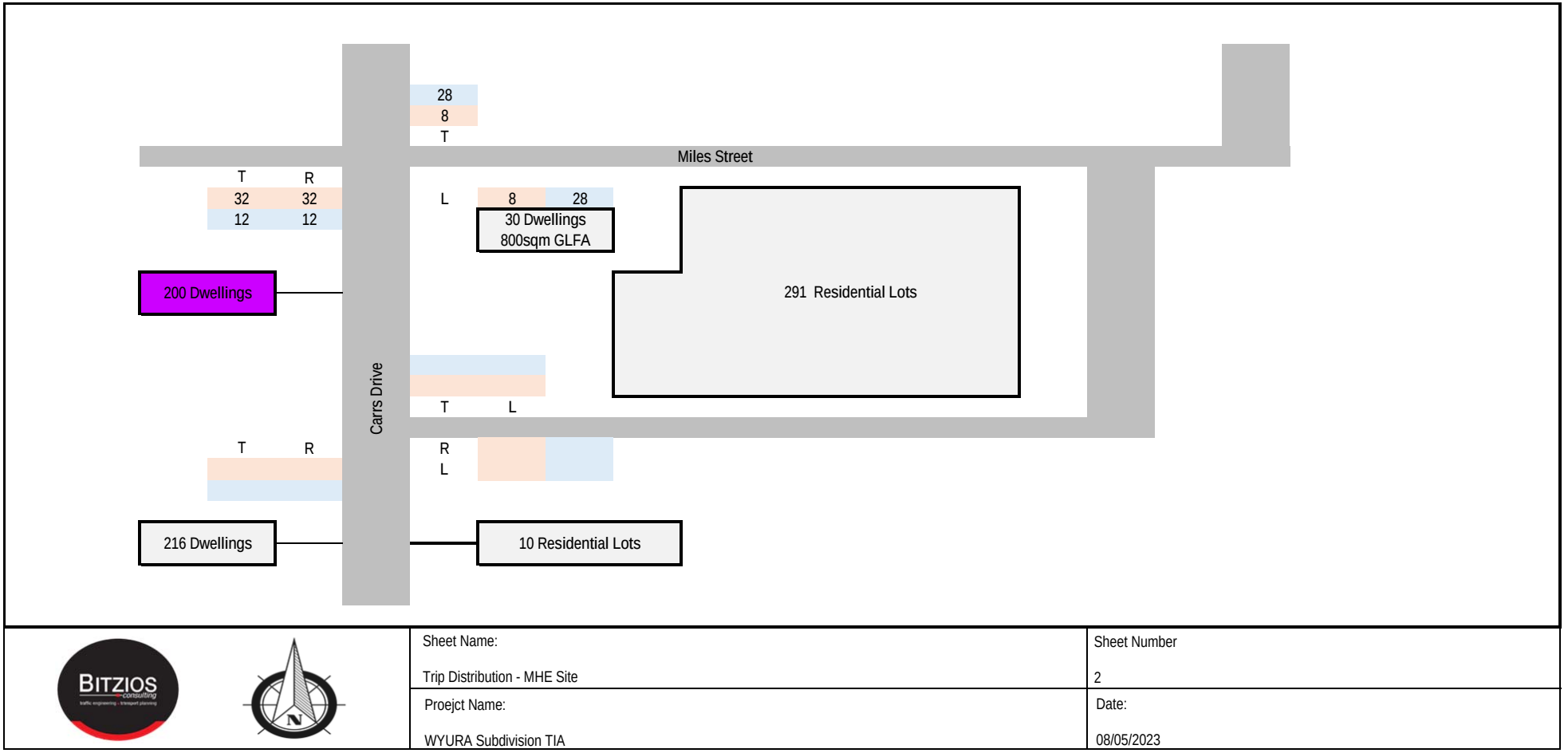
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Somerset Place (S)															
1	L2	All MCs	3	0.0	3	0.0	0.023	9.3	LOS A	0.2	1.1	0.85	0.70	0.85	39.3
2	T1	All MCs	3	0.0	3	0.0	0.023	9.2	LOS A	0.2	1.1	0.85	0.70	0.85	22.4
3	R2	All MCs	6	0.0	6	0.0	0.023	13.7	LOS A	0.2	1.1	0.85	0.70	0.85	36.0
Approach			13	0.0	13	0.0	0.023	11.5	LOS A	0.2	1.1	0.85	0.70	0.85	33.6
East: Yamba Rd (E)															
4	L2	All MCs	3	0.0	3	0.0	0.661	5.9	LOS A	6.8	48.8	0.73	0.62	0.75	40.0
5	T1	All MCs	445	3.8	445	3.8	0.661	6.2	LOS A	6.8	48.8	0.73	0.62	0.75	46.4
6	R2	All MCs	314	1.1	314	1.1	0.661	10.7	LOS A	6.8	48.8	0.73	0.62	0.75	31.2
6u	U	All MCs	15	0.0	15	0.0	0.661	12.8	LOS A	6.8	48.8	0.73	0.62	0.75	43.9
Approach			777	2.6	777	2.6	0.661	8.2	LOS A	6.8	48.8	0.73	0.62	0.75	40.4
North: Treelands Dr (N)															
7	L2	All MCs	413	1.5	413	1.5	0.886	24.2	LOS B	16.6	118.5	1.00	1.31	1.97	26.9
8	T1	All MCs	3	0.0	3	0.0	0.886	24.4	LOS B	16.6	118.5	1.00	1.31	1.97	19.8
9	R2	All MCs	216	3.2	216	3.2	0.886	29.2	LOS C	16.6	118.5	1.00	1.31	1.97	29.2
9u	U	All MCs	13	0.0	13	0.0	0.886	31.1	LOS C	16.6	118.5	1.00	1.31	1.97	15.8
Approach			644	2.0	644	2.0	0.886	26.0	LOS B	16.6	118.5	1.00	1.31	1.97	27.5
West: Yamba Rd (W)															
10	L2	All MCs	195	6.4	195	6.4	0.794	10.3	LOS A	11.6	83.7	0.92	0.82	1.16	41.5
11	T1	All MCs	653	2.7	653	2.7	0.794	10.4	LOS A	11.6	83.7	0.92	0.82	1.16	45.2
12	R2	All MCs	1	0.0	1	0.0	0.794	14.9	LOS B	11.6	83.7	0.92	0.82	1.16	41.0
Approach			848	3.5	848	3.5	0.794	10.4	LOS A	11.6	83.7	0.92	0.82	1.16	44.5
All Vehicles			2282	2.8	2282	2.8	0.886	14.0	LOS A	16.6	118.5	0.88	0.89	1.25	37.9

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.

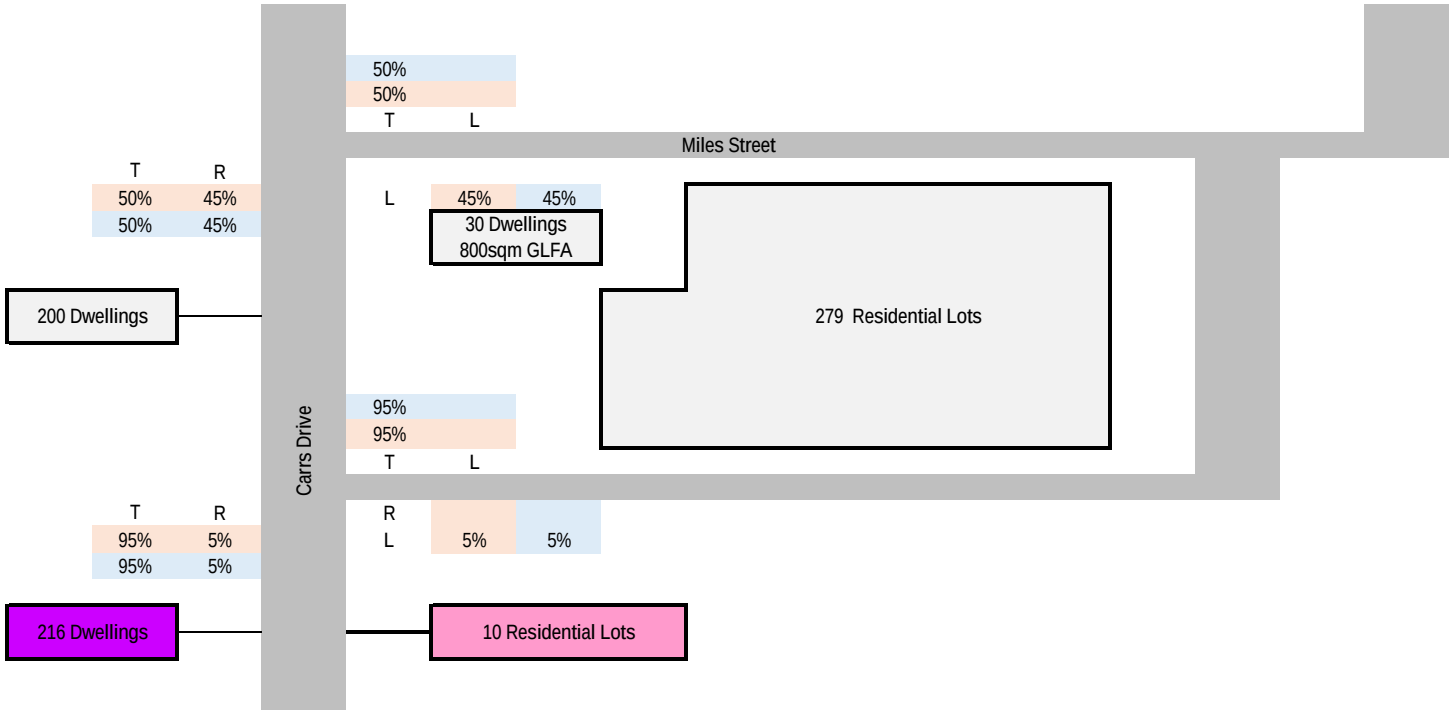
Appendix E: Carrs Drive / Miles Street Traffic Volumes



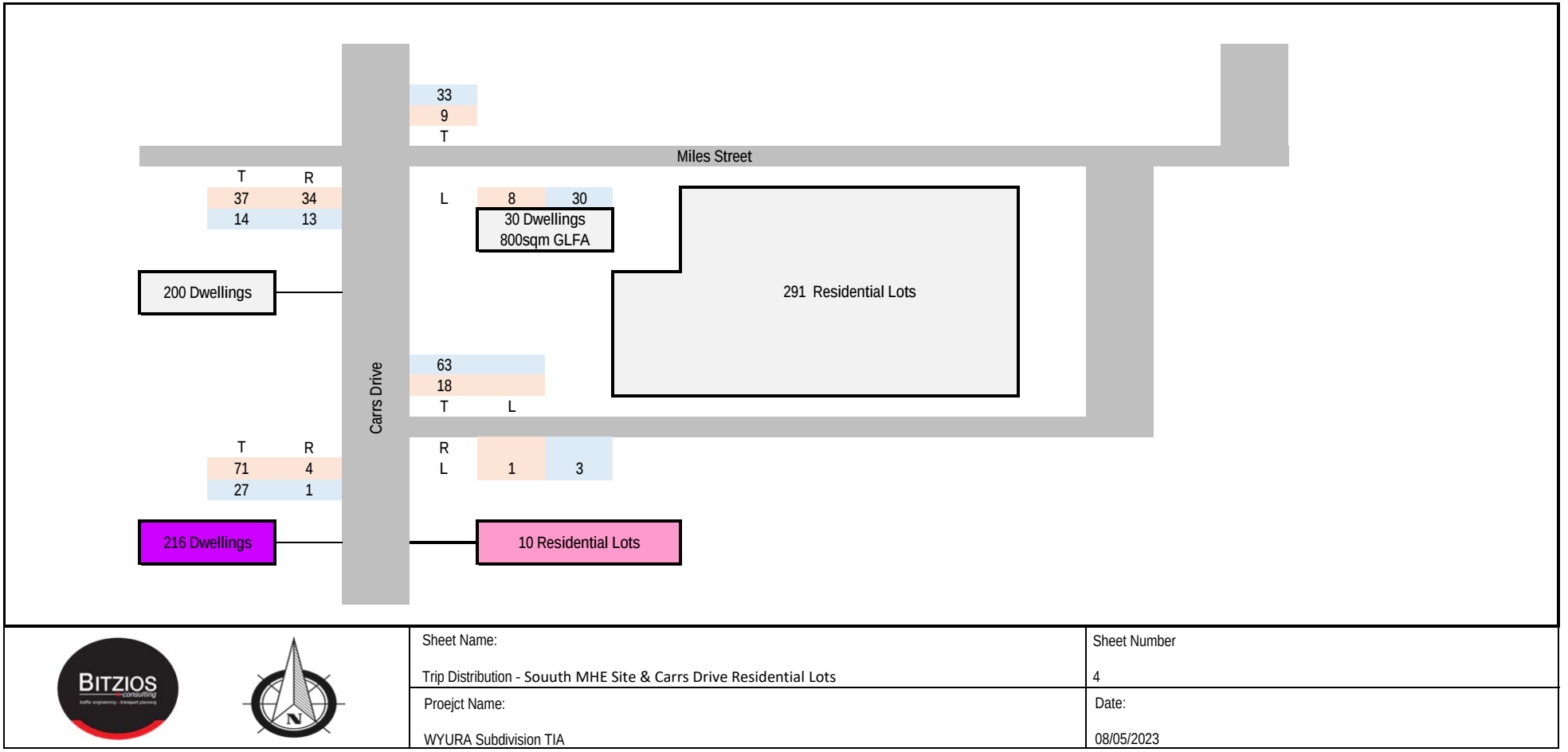
BITZIOS consulting	Sheet Name: Traffic Distribution - MHE Site	Sheet Number 1
	Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



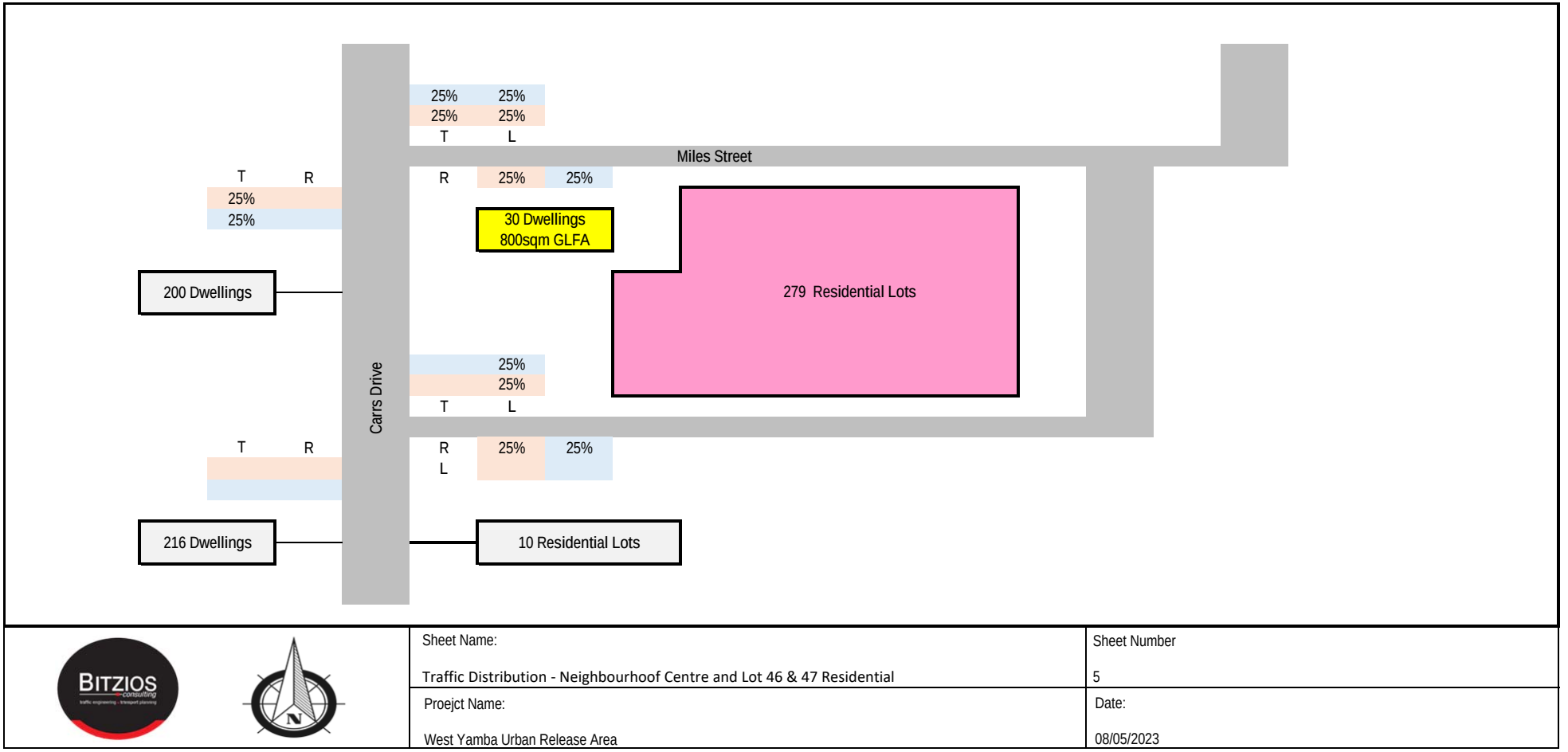
BITZIOS consulting	Sheet Name: Trip Distribution - MHE Site	Sheet Number 2
	Proejct Name: WYURA Subdivision TIA	Date: 08/05/2023



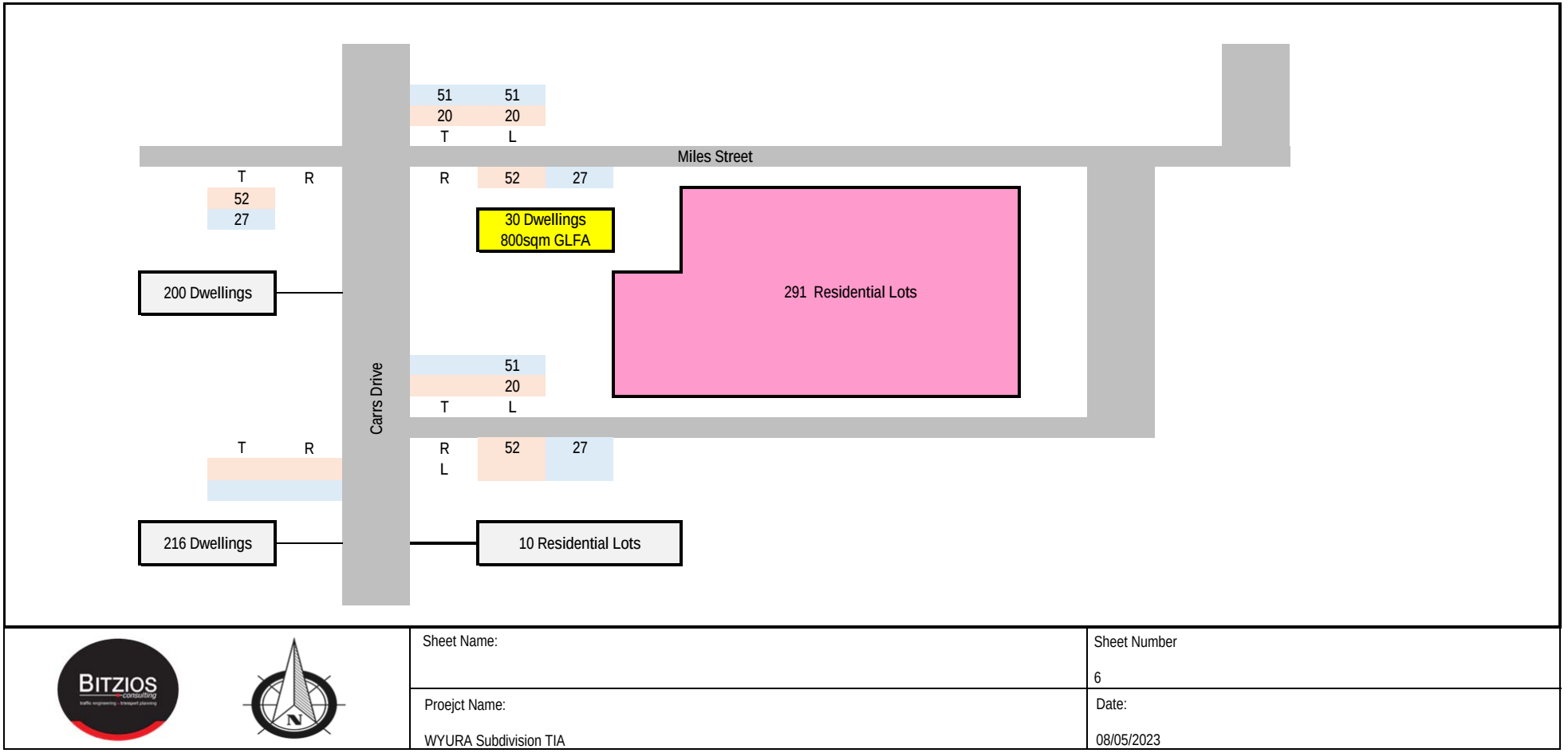
BITZIOS consulting	Sheet Name: Traffic Distribution - Souuth MHE Site & Carrs Drive Residential Lots	Sheet Number 3
	Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



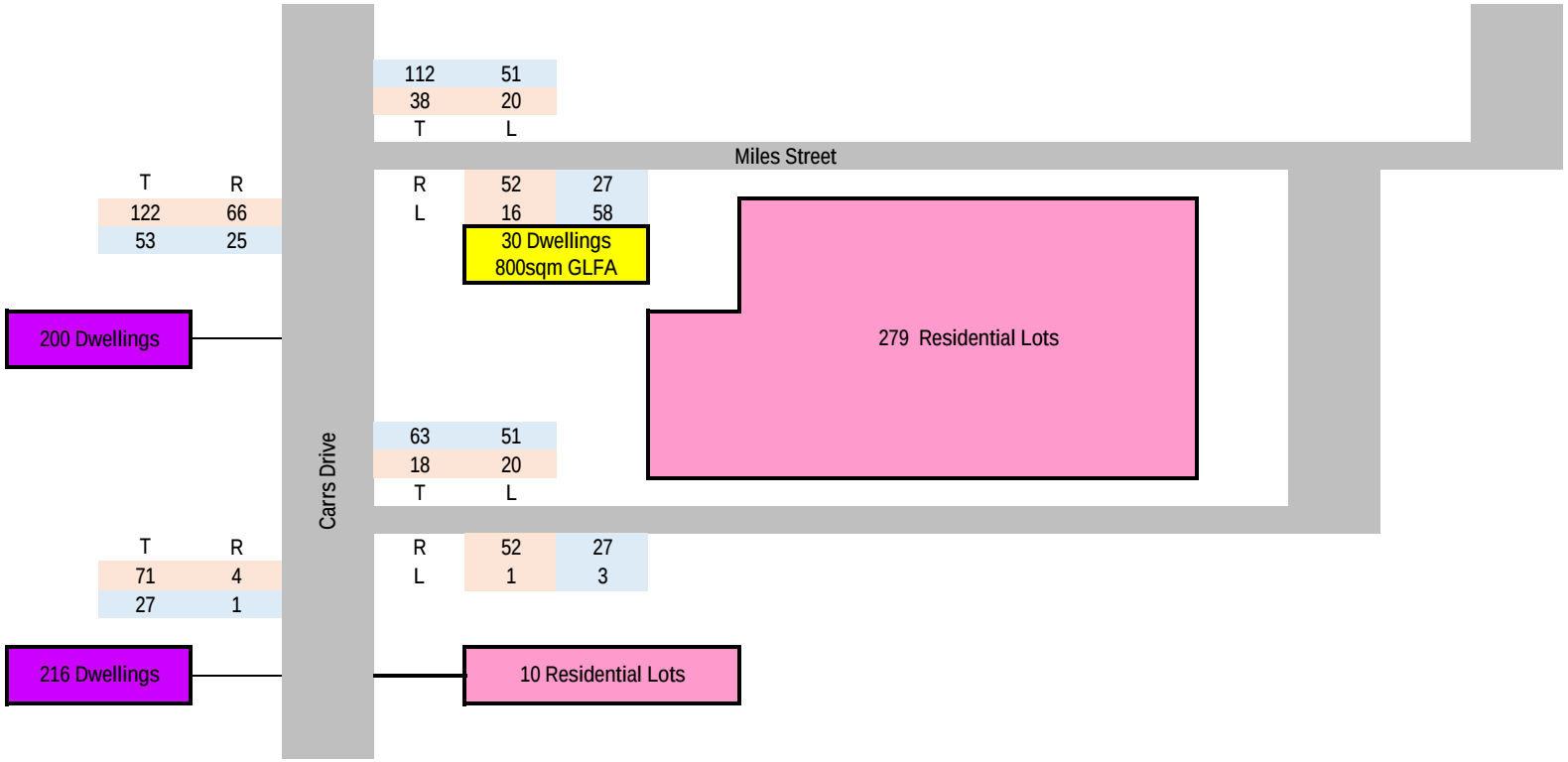
BITZIOS consulting	Sheet Name: Trip Distribution - Souuth MHE Site & Carrs Drive Residential Lots	Sheet Number 4
	Proejct Name: WYURA Subdivision TIA	Date: 08/05/2023



BITZIOS consulting	Sheet Name: Traffic Distribution - Neighbourhoof Centre and Lot 46 & 47 Residential	Sheet Number 5
	Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023



BITZIOS consulting	Sheet Name:	Sheet Number 6
	Proejct Name: WYURA Subdivision TIA	Date: 08/05/2023



BITZIOS consulting	Sheet Name: Carrs Drive / Miles Street Ultimate Traffic	Sheet Number 7
	Proejct Name: West Yamba Urban Release Area	Date: 08/05/2023