



**TRAFFIC AND PARKING IMPACT ASSESSMENT OF
THE PROPOSED NATIONAL CIRCULARITY CENTRE
AT LOT 1 DP1264640, LAGOON STREET, BEGA**



**Address: Shop 7, 720 Old Princes Highway Sutherland NSW 2232
Postal: P.O Box 66 Sutherland NSW 1499**

**Telephone: +61 2 9521 7199
Web: www.mclarentraffic.com.au
Email: admin@mclarentraffic.com.au**

Division of RAMTRANS Australia ABN: 45067491678 RPEQ: 19457

Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

Development Type: National Circularity Centre

Site Address: Lot 1 DP1264640, Lagoon Street, Bega

Prepared for: Woolamai Consulting

Document reference: 230456.01FF

Status	Issue	Prepared By	Checked By	Approved By	Date
Draft	A	AI / JC	DW / LS		4 October 2023
Final	A	AI / JC	DW / LS	CM	22 March 2024
Final	B	AI / JC	DW / LS	CM	10 April 2024
Final	C	AI / JC	DW / LS	CM	11 April 2024
Final	D	AI / JC / IC	DW / LS	CM	07 May 2024
Final	E	AI / JC / IC	DW / LS	CM	10 May 2024
Final	F	AI / JC / IC	DW / LS	CM	3 October 2024

Please be aware that all information and material contained in this report is the property of McLaren Traffic Engineering. The information contained in this document is confidential and intended solely for the use of the client for the purpose for which it has been prepared and no representation is made or if to be implied as being made to any third party. Any third party wishing to distribute this document in whole or in part for personal or commercial use must obtain written confirmation from McLaren Traffic Engineering prior to doing so. Failure to obtain written permission may constitute an infringement of copyright and may be liable for legal action.

TABLE OF CONTENTS

1	INTRODUCTION.....	1
1.1	Description and Scale of Development.....	1
1.2	State Environmental Planning Policy (Transport and Infrastructure) 2021	1
1.3	Site Description.....	1
1.4	Site Context	2
2	EXISTING TRAFFIC AND PARKING CONDITIONS	4
2.1	Road Hierarchy.....	4
2.1.1	Lagoon Street / Anderson Street	4
2.1.2	Princes Highway	4
2.1.3	Bridge Street	4
2.2	Existing Traffic Management	4
2.3	Existing Traffic Environment	5
2.3.1	Existing Road Performance.....	5
2.3.2	Two-Way Traffic Volumes	6
2.4	Future Road and Infrastructure Upgrades	6
3	PARKING ASSESSMENT	7
3.1	Council Parking Requirement	7
3.2	First Principles Parking Assessment.....	8
3.2.1	Event Parking Demand	10
3.3	Parking for People with Disabilities.....	10
3.4	Bicycle Parking Requirements.....	11
3.5	Motorcycle Parking Requirements	11
3.6	Servicing & Loading	11
3.7	Car Park Design & Compliance	11
4	TRAFFIC ASSESSMENT	13
4.1	Traffic Generation	13
4.2	Traffic Assignment	14
4.3	Traffic Impact.....	14
5	CONCLUSION	16

1 **INTRODUCTION**

McLaren Traffic Engineering was commissioned by *Woolamai Consulting* to provide a traffic and parking impact assessment of the proposed National Circularity Centre at Lot 1 DP1264640, Lagoon Street, Bega as depicted in **Annexure A**.

1.1 Description and Scale of Development

The proposed development has the following characteristics relevant to traffic and parking:

- A National Circularity Centre containing:
 - 360.51m² GFA Restaurant Use;
 - 137.49m² GFA Office Use;
 - 283.21m² GFA Museum;
 - 213.31m² GFA Auditorium;
 - 137.49m² GFA Gift Shop.
- An at-grade northern car parking area with vehicular access via a proposed two-way driveway from Lagoon Street accommodating 83 parking spaces including four (4) accessible parking spaces and three (3) electric vehicle parking spaces;
- An at-grade southern car parking area with vehicular access proposed via a one-way entry driveway from Lagoon Street at the location of the acquired Ridge Street and a one-way exit driveway at the southern end of the site to Lagoon Street. The off-street parking area accommodates 17 parking spaces consisting of:
 - Five (5) staff car parking spaces;
 - Five (5) coach parking spaces;
 - Seven (7) car + caravan parking spaces.
- Provision of an on-street Bus Drop Off area accommodating two (2) buses on the site frontage of Lagoon Street.
- Operating hours of 9:00am to 5:00pm, Monday to Sunday with evening events also occurring outside of these hours.

1.2 State Environmental Planning Policy (Transport and Infrastructure) 2021

The proposed development does qualify as a traffic generating development with relevant size and/or capacity under *Clause 2.122* of the *SEPP (Transport and Infrastructure) 2021*, as the proposal provides more than 50 car parking spaces within 90m access to a classified road. Accordingly, formal referral to Transport for NSW (TfNSW) is necessary and the application will be assessed by Bega Valley Council officers in conjunction with TfNSW officers.

1.3 Site Description

The subject site is formally identified as Lot 1 DP1264640 which currently consists of the existing Bega Cheese factories and Heritage Centre. The area of the site for the proposed development is located at the northern end of this lot and is predominately vacant with the

Bega Cheese Training Centre located on the southern portion of the development area. The development area is currently zoned *E4 – General Industrial* under the *Bega Valley Local Environmental Plan 2013*. The site has frontages to Lagoon Street to the west, Bridge Street to the north and Ridge Street terminating in the southern portion of the site.

The development area of the site is generally surrounded by industrial developments and agricultural land with Bega Cheese factories and Heritage Centre located approximately 300m south-east.

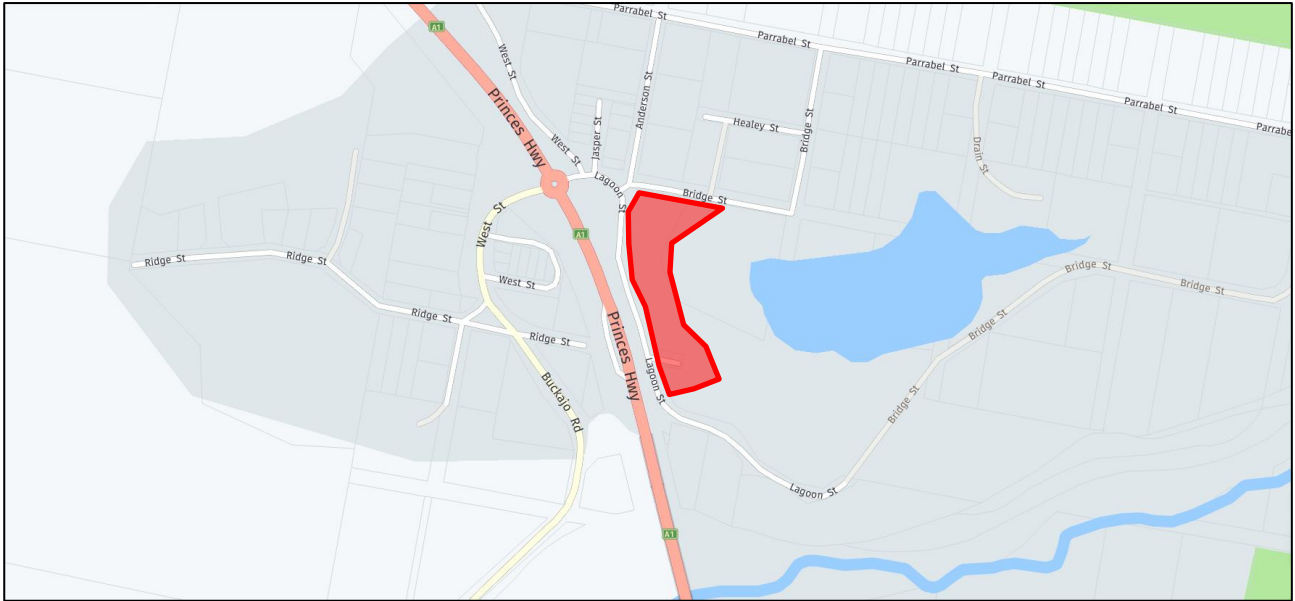
1.4 Site Context

The location of the site is shown on an aerial photo and a street map in **Figure 1** and **Figure 2** respectively.



 Site Location

FIGURE 1: SITE CONTEXT – AERIAL PHOTO



 Site Location

FIGURE 2: SITE CONTEXT – STREET MAP

2 EXISTING TRAFFIC AND PARKING CONDITIONS

2.1 *Road Hierarchy*

The road network servicing the site has characteristics as described in the following sub-sections.

2.1.1 Lagoon Street / Anderson Street

- Unclassified LOCAL Road;
- Approximately 9m wide carriageway facilitating one (1) traffic flow lane in each direction;
- Default 50km/h speed limit with a 15km/h speed limit within close proximity of Bega Cheese factories due to forklift activity;
- Insufficient width to accommodate kerbside parking along the western side of the road due to the BB-lines along the centre of the road. No kerbs are present on the eastern side of the road, however, informal parking may occur within the verge.

2.1.2 Princes Highway

- TfNSW Classified STATE Road (No. 1);
- Approximately 13m wide carriageway facilitating one (1) traffic flow lane in each direction;
- Signposted 80km/h speed limit;
- No kerbside parking permitted along both sides of the road.

2.1.3 Bridge Street

- Unclassified LOCAL Road;
- Approximately 7m wide carriageway facilitating one (1) traffic flow lane in each direction;
- Default 50km/h speed limit;
- No kerbs are present on the eastern side of the road, however, informal parking may occur within the verge.

2.2 *Existing Traffic Management*

- “Give Way” controlled intersection of Anderson Street / Bridge Street.
- “Give Way” controlled intersection of Bridge Street / Lagoon Street.
- Priority controlled intersection of Jasper Street / Bridge Street.
- “Give Way” controlled intersection of West Street / Bridge Street.
- Roundabout controlled intersection of Princes Highway / West Street.

2.3 Existing Traffic Environment

Turning movement count traffic surveys were conducted at the intersections of Princes Highway / West Street and Bridge Street / Lagoon Street from 7:00am to 10:00am and 2:00pm to 6:00pm on Thursday 22 June 2023 representing a typical operating weekday and from 10:00am to 2:00pm on Saturday 24 June 2023 representing a typical operating weekend day. The full survey results are shown in **Annexure B** for reference.

2.3.1 Existing Road Performance

The performance of the surrounding intersections under the existing traffic conditions has been assessed using SIDRA INTERSECTION 9.1, **Table 1** summarises the resultant intersection performance data, with full SIDRA results reproduced in **Annexure C**.

TABLE 1: EXISTING INTERSECTION PERFORMANCES (SIDRA INTERSECTION 9.1)

Intersection	Peak Hour	Degree of Saturation ⁽¹⁾	Average Delay ⁽²⁾ (sec/veh)	Level of Service ⁽³⁾⁽⁴⁾	Control Type	Worst Movement
EXISTING PERFORMANCE						
Princes Highway / West Street	AM	0.33	7.7 (Worst: 13.3)	A (Worst: A)	Roundabout	UT from Princes Highway
	PM	0.28	7.5 (Worst: 13.2)	A (Worst: A)		UT from Princes Highway
	WE	0.20	7.1 (Worst: 13.2)	A (Worst: A)		UT from Princes Highway
Bridge Street / Lagoon Street	AM	0.03	1 (Worst: 4.9)	NA (Worst: A)	Give Way	RT from Bridge Street
	PM	0.04	0.6 (Worst: 4.9)	NA (Worst: A)		RT from Bridge Street
	WE	0.03	1.4 (Worst: 4.8)	NA (Worst: A)		RT from Bridge Street

Notes:

- (1) The Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
- (2) The average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
- (3) The Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.
- (4) No overall Level of Service is provided for Give Way and Stop controlled intersections as the low delays associated with the dominant movements skew the average delay of the intersection. The Level of Service of the worst approach is an indicator of the operation of the intersection, with a worse Level of Service corresponding to long delays and reduced safety outcomes for that approach.

As shown, the relevant intersections are currently performing at a high level of efficiency, with a level of service “A” conditions in both the AM & PM peak hour periods. The level of service “A” performance is characterised by low approach delays and spare capacity.

2.3.2 Two-Way Traffic Volumes

Automatic traffic count (ATC) surveys were undertaken from Tuesday 20 June 2023 to Tuesday 27 June 2022 along Lagoon Street to the south of Bridge Street at the approximate northern carpark driveway to determine the existing characteristics of these roads in terms of:

- Peak traffic volumes and speeds;
- Daily traffic volumes and speeds;
- Classification of vehicles.

The complete tube survey results are reproduced in **Annexure B**, with the results summarised in **Table 2**.

TABLE 2: 7-DAY TUBE SURVEY RESULTS

Road	Direction	Peak Hour Volumes		Average Weekday Daily Volume	85 th Percentile Speed	Heavy Vehicles
		Time	Volume			
Lagoon Street (South of Bridge Street)	Northbound	AM 11am – 12pm	32	439	43.6km/h	19.1%
		PM 3pm – 4pm	43			
	Southbound	AM 11am – 12 pm	37	436	42.4km/h	19.3%
		PM 5pm – 6pm	36			

2.4 Future Road and Infrastructure Upgrades

From Bega Valley Shire Council Development Application tracker and website, it appears that there are no future planned road or public transport changes that will affect traffic conditions within the immediate vicinity of the subject site.

3 PARKING ASSESSMENT

3.1 Council Parking Requirement

Reference is made to the *Bega Valley Development Control Plan 2013* (BVDCP) which designates the following parking rates applicable to the proposed development:

5.9.3 Calculating the required number of car parking spaces Commercial Land Uses

Businesses and Office Premises, Shops

1 parking space per 25m² gross floor area ground floor

Restaurant or café, entertainment facilities

1 parking space per 25m² gross floor area ground floor

Function centre

1 parking space per 4m² of assembly area or 1 parking space per 10 seats, whichever is greater.

TABLE 3: BVDCP PARKING RATES

Land Use	Scale (GFA)	Parking Rate	Spaces Required	Spaces Proposed
Restaurant	360.51m ²	1 space per 25m ² GFA	14.4	100
Office	137.49m ²	1 space per 25m ² GFA	5.5	
Museum ⁽¹⁾	283.21m ²	1 space per 25m ² GFA	11.3	
Auditorium	213.31m ²	1 space per 4m ²	53.3	
Gift Shop	77.09m ²	1 space per 25m ² GFA	3.1	
Circulation Spine	472.58m ²	Anciliary	0	
Entry Halo	314.16m ²	Anciliary	0	
Green Room	49.77m ²	Anciliary	0	
Amenities	91.08m ²	Anciliary	0	
Total	1999.20m²	-	87.6 (88)	100⁽²⁾

Notes:

- (1) The DCP parking requirements for all the primary types of commercial uses result in the same car parking rate of 1 space per 25m² GFA, which has been applied and is considered the most relevant parking rate for the Museum use.
- (2) Includes all car parking, car + caravan parking and coach parking spaces.

As shown, strict application of the DCP requires the provision of **88** parking spaces. The proposed plans detail the provision of **100** parking spaces (including 88 car parking spaces, seven (7) car & caravan spaces and five (5) coach parking spaces), resulting in compliance with the BVDCP parking requirements.

3.2 First Principles Parking Assessment

In addition to the DCP parking requirement a demand based assessment based on the currently operating Bega Cheese Heritage Centre has been undertaken utilising sales data and the average number of visitors per year.

It has been advised that the existing Bega Cheese Heritage Centre attracts approximately 220,000 visitors per year. Hourly sales data was obtained for all transactions that occurred from 1 July 2022 to 30 June 2023 at the existing Bega Cheese Heritage Centre. The number of visitors on-site at any one time was assumed to align with the hourly sales data for the year as the average length of stay for a visitor is approximately 1-hour. Applying the 220,000 visitors per year data to the yearly sales data results in the data presented in **Annexure D**. It should be noted that the sales data has been omitted from the report to maintain the confidentiality of information that was provided as commercial in confidence.

To determine the parking requirement needed, reference is made to *Austroads Guide to Traffic Management Part 11: Parking Management Techniques* which states the following with reference to parking demand studies:

5.2.3 Supply Based on a Forecast of Demand

Conventional practice is not to provide parking supply to meet demand on the busiest day of the year as this approach would be uneconomical because parking supply would exceed demand for all but one day of the year. Likewise, it would be inappropriate to link the supply of parking to the demand on an average day as this would mean that there would be insufficient parking available on half the days of every year. Instead accepted practice is to adopt a level of supply to satisfy the parking demand that will only be exceeded for a number of hours or days each year. This demand is most often taken to be equivalent to the 85th percentile hourly utilisation level experienced throughout the year.

Considering the above, the site should provide parking to accommodate the 85th percentile parking demand. Further to this, for a conservative analysis the assessment will consider only the peak hours for busy times at the Heritage Centre being weekends, public holidays and school holiday periods. The peak hour data for these holiday/weekend periods was ordered by number of visitors to determine the 85th percentile visitor demand as shown in **Figure 3**.

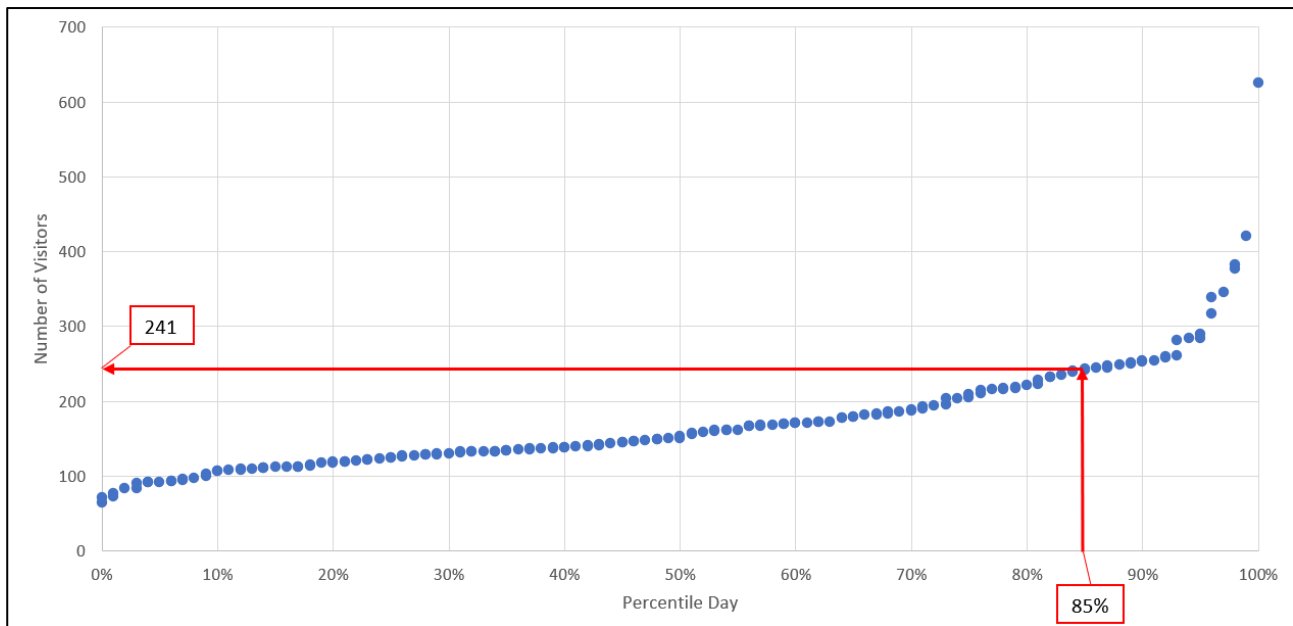


FIGURE 3: PEAK HOUR VISITOR DEMAND ON WEEKEND OR HOLIDAY PERIOD

As shown above the 85th percentile peak hour demanded 241 visitors.

The location of the site attracts visitors that travel some distance via private vehicle or arrive via bus/coach. Based on MTE's experience, it is assumed that the parking demand of the site would be 1 car parking space per 4 visitors (when consideration is made to a portion of visitors arriving via bus/coach). Applying the one (1) parking space per four (4) visitor rate results in an 85th percentile parking demand of 60 parking spaces for the existing Heritage Centre.

The improvements and expansion of the site are anticipated to increase the number of visitors per year to 400,000 representing an 82% ($400,000/220,000$) increase in visitors. This increase would result in a parking demand of 110 ($60 \times 182\%$) parking spaces for the subject development.

The existing Heritage Centre did not include an auditorium for events, displays and exhibitions such that the proposed development is likely to generate visitor demand at different times to the land uses shared with the existing Heritage Centre. In particular, the auditorium is proposed to accommodate evening events which lie outside of the existing 9am-5pm operating hours of the existing Heritage Centre. To consider the offset peaks of the different uses on-site as well as the extended periods of visitor attendance (evening events) for the proposed development, a 10% reduction to the peak parking demand has been adopted resulting in a parking demand of **99** ($110 \times 90\%$) parking spaces. The proposed plans detail **100** parking spaces (including 88 car parking spaces, 7 caravan spaces and 5 coach parking spaces) satisfying the anticipated demand of the site. The 85th percentile parking demand is similar to the DCP parking requirement as determined in **Section 3.1**.

The above assessment satisfies the 85th percentile parking demand of the site as per the accepted design practice. During hourly periods that exceed the 85th percentile parking demand, additional visitors will park on-street within the surrounding road network.

3.2.1 Event Parking Demand

The proposed development is expected to hold events up to 200 guests at a time. Typically, events have a parking demand of 1 space per 3 guests which results in a parking demand of 67 spaces which can be accommodated on-site. It is expected that large events held on-site will be managed with the day-to-day operation of the site such that the events will occur outside of peak visitation times or the day-to-day operation will be managed to operate at reduced capacity.

3.3 **Parking for People with Disabilities**

The BVDCP states the following regarding accessible parking provision relevant to the proposed development:

5.9.2.4 Commercial developments

Of the car parking spaces required, 1 per 25 must be accessible car parking spaces in accordance with the Australian Standard 2890.6, with a minimum of one accessible car parking space per development.

In developments requiring 50 or more car parking spaces, of the car parking spaces required, 3 in 50 car spaces are to be designated for seniors, and 2 in 50 car parking spaces for parents with prams.

In accordance with the DCP requirements the site requires four (4) accessible car parking spaces, six (6) spaces designated for seniors and four (4) spaces for parents with prams. The proposed car park details the provision of four (4) car parking spaces designed in accordance with AS2890.6:2022, four (4) car parking spaces allocated to parents with pram parking and six (6) car parking spaces able to be allocated to seniors. This satisfies the BVDCP requirements.

Further, reference is made to the *Section D4D6* of the *Building Code of Australia* (BCA) as part of the *National Construction Code 2022* (NCC) which categorises a commercial building as a Class 6 building and therefore requires the provision of car parking for people with disabilities at a rate of:

<i>Class 6 buildings</i>	<i>1 accessible space for every 50 carparking spaces or part thereof.</i>
--------------------------	---

In accordance with the BCA requirements, two (2) car parking spaces for people with disabilities are required to be provided. The proposed car parking layout details the provision of four (4) car parking spaces designed in accordance with AS2890.6:2022, complying with BCA requirements.

3.4 Bicycle Parking Requirements

Reference is made to the BVDCP which outlines the following requirements for bicycle parking spaces:

2) Commercial Land Uses

Business and Office Premises, Shops

1 bicycle storage space per 200m² of gross floor area for development or redevelopment of over 1000m² of total floor space

Applying the above rates, results in a bicycle parking requirement of seven (7) bicycle spaces. Eight (8) bicycle parking spaces are detailed on the plans near the Entry Halo complying with the BVDCP requirements.

3.5 Motorcycle Parking Requirements

The BVDCP does not require the provision of motorcycle parking. No motorcycle parking has been provided, satisfying the BVDCP requirements.

3.6 Servicing & Loading

The BVDCP does not specify any requirements for service facilities to be made available. All deliveries will be undertaken within the southern car parking area near the green room via vehicles up to an 8.8m long Medium Rigid Vehicle. Waste collection will also occur via the loading area adjacent to the green room which is sufficient to accommodate vehicles up to a 10.5m long rear loading waste truck as per the *EPA Better practice guide for resource recovery in residential developments*.

The largest vehicle to access the site will be 14.5m long rigid buses (coaches) which will utilise the southern parking area along with cars and caravans for parking.

Swept path testing has been undertaken and with the results reproduced in **Annexure E** showing that the above vehicles can successfully enter and exit the site in a forward direction.

3.7 Car Park Design & Compliance

The car parking layout as depicted in **Annexure A**, has been assessed to achieve the relevant clauses and objectives of AS2890.1:2004, AS2890.2:2018 and AS2890.6:2022. Any variances from standards are addressed in the following subsections including required changes, if any. Swept path testing has been undertaken and the results are reproduced within **Annexure E** for reference.

The proposed car parking and vehicular access design achieves the following:

- 7.7m wide two-way driveway facilitating access to Lagoon Street;
- Minimum 5.8m wide parking aisles;
- Minimum 5.4m long, 2.6m wide spaces for staff / visitors;

- Minimum 5.4m long, 2.4m wide accessible spaces with adjacent associated 5.4m long, 2.4m wide shared space;
- Minimum headroom of 2.2m for general circulation and 2.5m headroom clearance provided over accessible and adaptable parking areas;
- Minimum 14.5m long, 3.0m wide spaces for car + caravans;
- Minimum 14.5m long, 4.0m wide spaces for coaches.

Whilst the plans have been assessed to comply with the relevant standards, it is usual and expected that a design certificate be required at the Construction Certificate stage to account for any changes following the development application.

4 TRAFFIC ASSESSMENT

The impact of the expected traffic generation levels associated with the subject proposal is discussed in the following sub-sections.

4.1 **Traffic Generation**

Traffic generation rates for the relevant land uses are provided in the *RTA Guide to Traffic Generating Developments (2002)* (RTA Guide) and recent supplements as adopted by *Transport for NSW (TfNSW)* and are as follows:

3.5 Office and commercial

Evening peak hour vehicle trips = 2 per 100m² gross floor area

3.6.1 Shopping Centres

Specialty Shops

Friday: 5.6 trips per 100m² GFA

Saturday: 10.7 trips per 100m² GFA

3.7.2 Restaurants

Evening peak hour vehicle trips = 5 per 100m² gross floor area

The RTA Guide does not provide traffic generation rates for auditoriums or similar uses. Accordingly, the peak hour traffic volumes generated by the auditorium will be assessed on a first-principles basis. The auditorium is expected to hold events of up to 200 people. As detailed in **Section 3.2.1**, this is expected to generate a parking demand of 67 car parking spaces. It is reasonable to assume that all guests arriving before an event will arrive during a one-hour period and would similarly leave during a one-hour period after an event. The distribution of inbound and outbound vehicles has been assumed to be 100% arrival during the AM peak, 100% departure during the PM peak and a 50/50 arrival/departure split during the Weekend peak to conservatively assess the types of events that may be held on-site.

Whilst it is important to note that events will be managed to occur outside of peak times of the rest of the Circularity Centre, the event traffic generation will be assessed as occurring during these peaks as a conservative assessment.

The resulting AM and PM peak hourly traffic generation is summarised in **Table 4**.

TABLE 4: ESTIMATED WEEKDAY TRAFFIC GENERATION

Use	Scale	Generation Rate	Peak Hour Trips		
			Weekday AM	Weekday PM	Saturday
Restaurant ⁽¹⁾	360.51m ² GFA	5 per 100m ² GFA	18 (9 in, 9 out)	18 (9 in, 9 out)	18 (9 in, 9 out)
Office ⁽¹⁾	137.49m ² GFA	2 per 100m ² GFA	3 (2 in, 1 out)	3 (1 in, 2 out)	3 (1 in, 2 out)
Museum ^{(1) (2)}	283.21m ² GFA	5.6 per 100m ² GFA (Weekday) 10.7 per 100m ² GFA (Saturday)	16 (8 in, 8 out)	16 (8 in, 8 out)	30 (15 in, 15 out)
Gift Shop ⁽¹⁾	77.09m ² GFA	5.6 per 100m ² GFA (Weekday) 10.7 per 100m ² GFA (Saturday)	4 (2 in, 2 out)	4 (2 in, 2 out)	8 (4 in, 4 out)
Auditorium ⁽³⁾	213.31m ² GFA (67 parking spaces)	1 per guest parking space ⁽⁴⁾	67 (67 in, 0 out)	67 (0 in, 67 out)	67 (34 in, 33 out)
Total	-	-	108 (88 in, 20 out)	108 (20 in, 88 out)	126 (63 in, 63 out)

Notes:

- (1) Assumes 50% inbound & 50% outbound during AM, PM and Weekend peak hour periods.
- (2) Specialty shop traffic generation rate assumed.
- (3) Assumes 100% inbound during the AM peak, 100% outbound during the PM peak and a 50/50 split during the weekend peak.
- (4) Refer to **Section 3.2.1** for parking space calculation.

As shown, the expected traffic generation associated with the proposed development is in the order of **108** vehicle trips in the AM peak period (88 in, 20 out), **108** vehicle trips in the PM peak period (20 in, 88 out) and **126** vehicle trips in the Saturday peak period (63 in, 63 out).

4.2 Traffic Assignment

The road network, traffic surveys and locations of residential areas surrounding the site have been assessed and the following traffic assignment has been assumed for all traffic to and from the site:

- 25% to/from the north via Princes Highway;
- 75% to/from the south via Princes Highway.

4.3 Traffic Impact

The traffic generation and traffic assignment outlined in **Section 4.1 & 4.2** above has been added to the existing traffic volumes recorded. SIDRA INTERSECTION 9.1 was used to assess the intersections performance. The purpose of this assessment is to compare the existing intersection operations to the future scenario under the increased traffic load. The results of this assessment are shown in **Table 5**.

TABLE 5: INTERSECTION PERFORMANCE (SIDRA INTERSECTION 9.1)

Intersection	Peak Hour	Degree of Saturation ⁽¹⁾	Average Delay ⁽²⁾ (sec/veh)	Level of Service ⁽³⁾⁽⁴⁾	Control Type	Worst Movement
EXISTING PERFORMANCE						
Princes Highway / West Street	AM	0.33	7.7 (Worst: 13.3)	A (Worst: A)	Roundabout	UT from Princes Highway
	PM	0.28	7.5 (Worst: 13.2)	A (Worst: A)		UT from Princes Highway
	WE	0.20	7.1 (Worst: 13.2)	A (Worst: A)		UT from Princes Highway
Bridge Street / Lagoon Street	AM	0.03	1 (Worst: 4.9)	NA (Worst: A)	Give Way	RT from Bridge Street
	PM	0.04	0.6 (Worst: 4.9)	NA (Worst: A)		RT from Bridge Street
	WE	0.03	1.4 (Worst: 4.8)	NA (Worst: A)		RT from Bridge Street
FUTURE (POST DEVELOPMENT) PERFORMANCE						
Princes Highway / West Street	AM	0.38	8.1 (Worst: 13.8)	A (Worst: A)	Roundabout	RT from Princes Highway
	PM	0.32	7.7 (Worst: 13.4)	A (Worst: A)		UT from Princes Highway
	WE	0.23	7.4 (Worst: 13.3)	A (Worst: A)		UT from Princes Highway
Bridge Street / Lagoon Street	AM	0.08	0.5 (Worst: 5.4)	NA (Worst: A)	Give Way	RT from Bridge Street
	PM	0.07	0.3 (Worst: 5.3)	NA (Worst: A)		RT from Bridge Street
	WE	0.07	0.6 (Worst: 5.3)	NA (Worst: A)		RT from Bridge Street

NOTES: Refer to Table 1.

As shown, the intersections of Princes Highway / West Street and Bridge Street / Lagoon Street all retain the same overall level of service under future conditions with minimal delays and additional capacity, indicating that there will be no adverse impact on the existing road network as a result of the proposed development.

5 CONCLUSION

In view of the foregoing, the subject National Circularity Centre proposal at Lot 1 DP1264640, Lagoon Street, Bega (as depicted in **Annexure A**) is fully supportable in terms of its traffic and parking impacts. The following outcomes of this traffic and parking impact assessment are relevant to note:

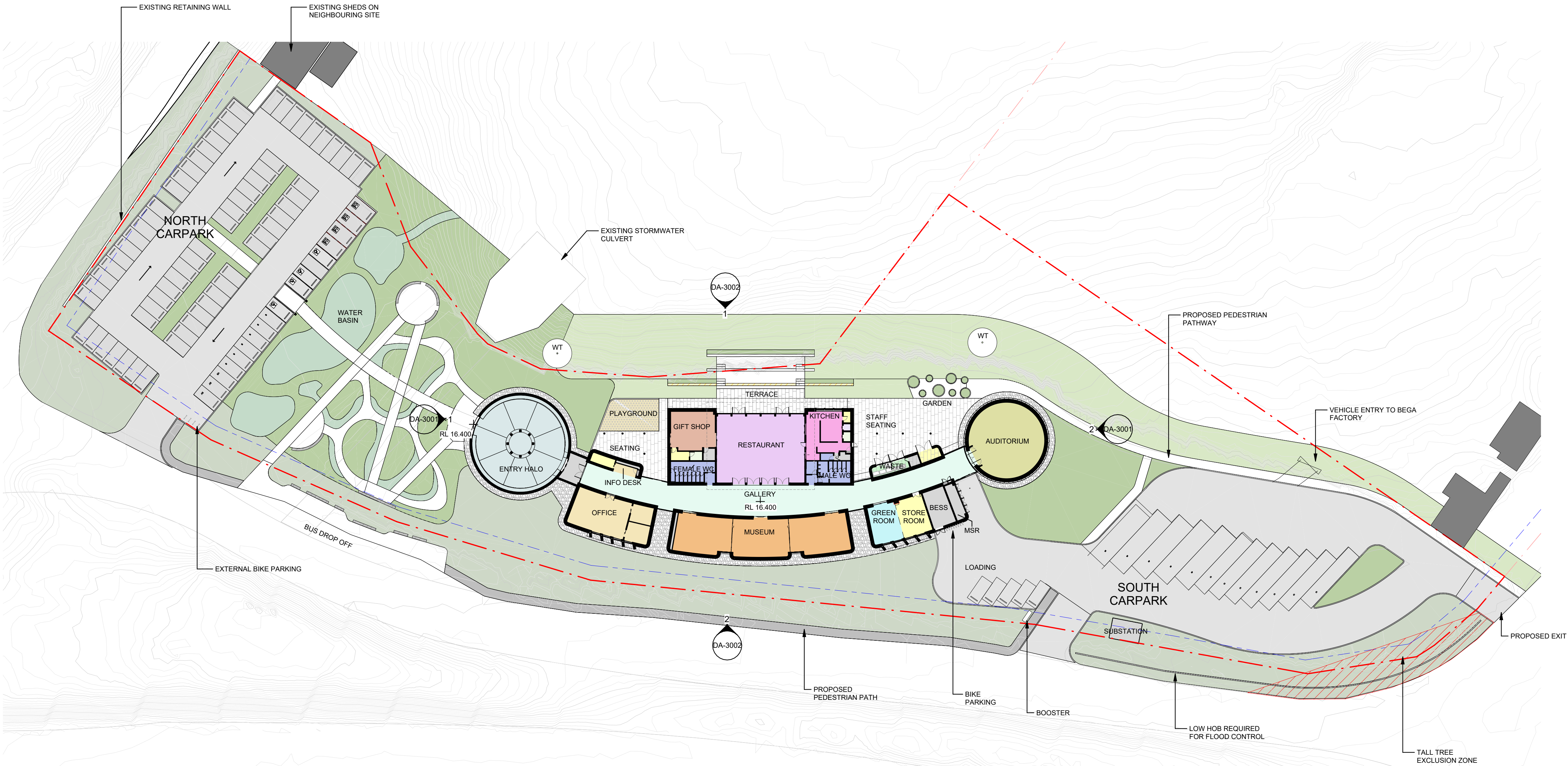
- a) The proposal includes the provision of **100** parking spaces (including 88 car parking spaces, 7 caravan spaces and 5 coach parking spaces) within a proposed at grade carpark, satisfying Council's DCP requirements and the anticipated 85th percentile parking demand.
- b) Council's DCP requires the provision of seven (**7**) bicycle parking spaces and nil (**0**) motorcycle parking spaces which have been provided onsite resulting in compliance with the BVDCP parking space provision requirements.
- c) The parking areas of the site have been assessed against the relevant sections of AS2890.1:2004, AS2890.2:2018 and AS2890.6:2022 and have been found to satisfy the objectives of each standard. Swept path testing has been undertaken and the results are reproduced within **Annexure E**.
- d) The traffic generation of the proposed development has been estimated to be some **108** vehicle trips in the AM peak period (88 in, 20 out), **108** vehicle trips in the PM peak period (20 in, 88 out) and **126** vehicle trips in the Saturday peak period (63 in, 63 out). The impacts of the traffic generation have been modelled using SIDRA INTERSECTION 9.1, indicating that there will be no adverse impact to the performance of the intersections as a result of the generated traffic.



**ANNEXURE A: PROPOSED PLANS
(1 SHEET)**

CAR PARK TYPE	NUMBER OF SPACES	LOCATION
GROUND FLOOR		
5400mm x 2600mm	66	NORTH CARPARK
5400mm x 2600mm	5	SOUTH CARPARK
5400mm x 2600mm / Seniors	6	NORTH CARPARK
5400mm x 2600mm Electric	3	NORTH CARPARK
5400x2600@90° Disabled with Wheelstop	4	NORTH CARPARK
7400mm x 2900mm / Parents With Prams	4	NORTH CARPARK
14500mm x 3000mm Caravan Bay	7	SOUTH CARPARK
14500mm x 4000mm Bus Bay	5	SOUTH CARPARK
	100	
Grand Totals: 100	100	

BIKE PARKING		
PARKING TYPE	NUMBER OF SPACES	LOCATION
<varies>	16	<varies>
Grand total	16	



2 MASTERPLAN - GROUND FLOOR
SCALE 1 : 500

MASTERPLAN USES

AMENITIES	FREEZER	KITCHEN	RESTAURANT
AUDITORIUM	GALLERY/ CIRCULATION	MUSEUM	STORE ROOM
COOL ROOM	GIFT SHOP	OFFICE	WASTE
ENTRY HALO	GREEN ROOM / STORAGE	PLANT	

GA PLANS LEGEND:

---	SITE BOUNDARY
---	3m SETBACK
■	EXISTING BUILDINGS
■	NEW ON-GRADE CARPARK
■	NEW PEDESTRIAN PATHS
■	NEW PEDESTRIAN PATHS (COUNCIL)
■	HALO WATER FEATURE
SK	SKYLIGHT
WT	WATER TANK
BOL	BOLLARD
BK	BICYCLE RACKS
FOR LANDSCAPE FINISHES REFER TO LANDSCAPE ARCHITECT'S DRAWINGS	

© COPYRIGHT COX ARCHITECTURE PTY LTD ACN 002 535 891

ANY FORM OF REPRODUCTION OF THIS DRAWING IN FULL OR IN PART WITHOUT THE WRITTEN PERMISSION OF COX ARCHITECTURE PTY LTD CONSTITUTES AN INFRINGEMENT OF COPYRIGHT

Rev	Description	By	Date
1	Issued For DA Submission	LV	09/04/2024
2	DA Draft for Information	SM	20/09/2024
3	Issued For DA Submission	SM	27/09/2024

Structural Engineer
Level 5, 151 Clarence Street, Sydney NSW 2000
ARUP

MEP Engineers
Level 5, 151 Clarence Street, Sydney NSW 2000
ARUP

Acoustic Engineer
Level 5, 151 Clarence Street, Sydney NSW 2000
ARUP

Civil Engineer
Level 5, 151 Clarence Street, Sydney NSW 2000
ARUP

Sustainability and ESD Engineer
Level 5, 151 Clarence Street, Sydney NSW 2000
ARUP

Quantity Surveyor
Level 28, 45 Clarence Street, Sydney NSW 2000
WT Partnership

Traffic Engineer
Shop 7, 720 Old Princess Highway, Sutherland NSW 2232
T +61 2 9521 7199
McLaren Traffic Engineering

Stormwater Engineer
Bega NSW 2550
M +61 9409 909 388
JSA Engineering Solutions

BCA/ DDA Consultant
8/14 Wornald Street Symonston ACT 2609
ATLR

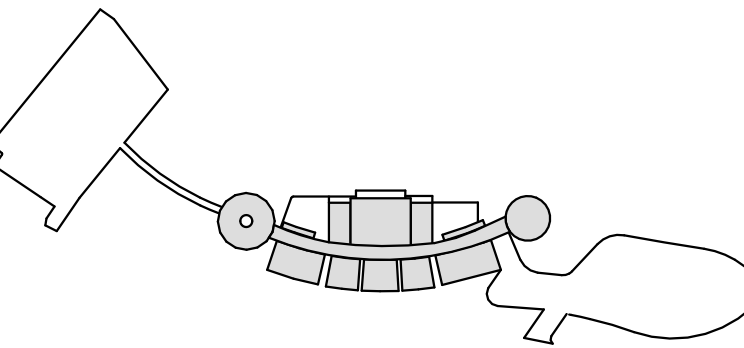
Landscape Architect
Suite 3, 1775 Myrtle St, Chippendale, NSW
T +61 2 8244 8900
Context

Ecologist
7 High Crescent Tura Beach, NSW, 2550
M +61 448 235 977
Local Environmental Solutions

Geotechnical Engineer
Unit 2/157 Newcastle St, Fyshwick, ACT, 2609
T +61 2 6285 1547
ACT Geotechnical

Facade Engineer
Level 5, 151 Clarence Street, Sydney NSW 2000
ARUP

AV Design
Level 5, 151 Clarence Street, Sydney NSW 2000
ARUP



KEY PLAN

Cox Architecture
70 George Street
The Rocks NSW 2000
Australia
T + 61 2 9267 9599
coxarchitecture.com.au

Nominated Architects:
Joe Agius No. 6491
Ramin Jahromi No. 10000

COX

Client
REGIONAL CIRCULARITY
CO-OPERATIVE

Project No.
222111.01

Project
NATIONAL CIRCULARITY CENTRE
BEGA

Level 1 / Suite 5/106 Auckland St, Bega, NSW, 2550
Acknowledgement

Drawing Title
MASTERPLAN - GROUND FLOOR PLAN

Document Control Status:
DEVELOPMENT APPLICATION

Co-ordinated:	LV	Drawn:	LV
Project Architect:	LV	Scale:	As indicated @ A1
Project Director:	JF	Date:	27/09/2024
Drawing Number:	DA-2101	Revision:	3



PLOT STAMP DATE: 27/09/2024 6:45:07 PM



**ANNEXURE B: TRAFFIC SURVEY DATA
(5 SHEETS)**

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

T. 1300 82 88 82 - F. 1300 83 88 83 - E. traffic@trafficsurvey.com.au - W. www.trafficsurvey.com.au

AUTOMATIC COUNT SUMMARY

Street Name :	Anderson St	Location :	South of Bridge St
Suburb :	Bega	Start Date :	00:00 Tue 20/June/2023
Machine ID:	ME83TFY0/P	Finish Date :	00:00 Tue 27/June/2023
Site ID:	2561	Speed Zone :	50 km/h
Prepared By :	Vo Son Binh	Email:	binh@trafficsurvey.com.au

GPS information	Lat 36° 39' 55.16 South	Direction of Travel		
	Long 149° 49' 40.16 East	Both directions	Northbound	Southbound
Traffic Volume : (Vehicles/Day)	Weekdays Average	875	439	436
	7 Day Average	775	390	385
Weekday	AM 11:00	69	32	37
	PM 17:00	78	42	36
Speeds : (Km/Hr)	85th Percentile	43.0	43.6	42.4
	Average	38.0	37.9	38.2
Classification % :	Light Vehicles up to 5.5m	80.8%	80.9%	80.7%

Location

GPS Information [Load Google Map \(internet required\)](#)
(Latitude, Longitude) -36.665322, 149.827821



[Speed Data](#) [Speed Graph](#) [Speed Bin](#)
[Volume Data](#) [Volume Graph](#) [Classification](#)



QUALITY ASSURED COMPANY BY ISO 9001:2015

OH&S SYSTEM CERTIFIED TO ISO 4801:2001

ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015

Status of movement – Covid 19

"Traffic behaviour is not the same as pre-pandemic (traditional morning/afternoon peak is much less pronounced and school start/finish times are much more pronounced), the current patterns are close enough to what probably is going to be a 'COVID normal' situation for at least the next year or two. Workplaces are currently not all yet open. These results should be used for indicative assessment only."

TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au



Intersection of West St and Princes Hwy, Bega

GPS -36.665137, 149.826628

Date:	Thu 22/06/23
Weather:	Fine
Suburban:	Bega
Customer:	McLaren

North:	Princes Hwy
East:	West St
South:	Princes Hwy
West:	West St

Survey	AM: 7:00 AM-10:00 AM
Period	PM: 2:00 PM-6:00 PM
Traffic	AM: 8:15 AM-9:15 AM
Peak	PM: 4:15 PM-5:15 PM

All Vehicles

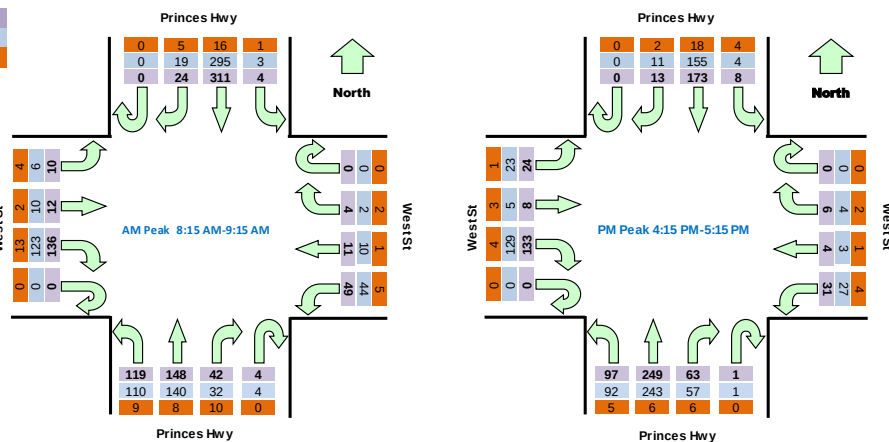
Time		North Approach Princes Hwy				East Approach West St				South Approach Princes Hwy				West Approach West St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	6	29	2	0	0	0	5	0	10	18	26	0	8	3	0	496	
7:15	7:30	0	8	24	3	0	2	1	4	0	13	21	19	0	10	0	4	568	
7:30	7:45	0	12	40	1	0	1	1	4	0	8	27	25	0	11	1	5	636	
7:45	8:00	0	4	50	2	0	1	3	8	0	4	29	22	0	16	2	3	746	
8:00	8:15	0	7	60	0	0	1	3	11	0	8	30	29	0	22	4	4	840	
8:15	8:30	0	7	71	1	0	1	2	11	1	5	27	22	0	23	3	3	874	Peak
8:30	8:45	0	7	89	1	0	1	5	15	1	6	41	29	0	43	4	4	874	Peak
8:45	9:00	0	6	77	0	0	1	2	12	1	16	41	30	0	49	2	1	799	
9:00	9:15	0	4	74	2	0	1	2	11	1	15	39	38	0	21	3	2	746	
9:15	9:30	0	0	51	1	0	1	2	12	1	7	42	23	0	27	3	7		
9:30	9:45	0	6	61	0	0	0	2	9	0	2	37	36	0	15	0	3		
9:45	10:00	0	1	67	0	0	0	2	6	0	12	39	23	0	29	0	6		
14:00	14:15	0	0	35	0	0	3	2	17	0	16	55	15	0	34	3	3	701	
14:15	14:30	1	3	35	0	0	3	1	12	0	9	46	20	0	35	1	0	707	
14:30	14:45	0	4	33	1	0	2	1	5	0	4	50	20	0	24	2	7	750	
14:45	15:00	0	5	44	1	0	3	1	15	1	12	53	29	0	30	2	3	788	
15:00	15:15	0	4	44	3	0	3	0	14	0	6	57	14	0	37	1	6	773	
15:15	15:30	0	4	37	0	0	3	2	22	0	13	63	28	0	29	2	6	776	
15:30	15:45	0	8	37	1	0	2	1	15	0	11	57	28	0	23	5	3	759	
15:45	16:00	0	3	39	1	0	1	0	7	1	11	66	26	0	22	0	7	758	
16:00	16:15	0	3	38	1	0	0	3	19	0	6	60	26	0	28	4	4	780	
16:15	16:30	0	5	44	1	0	0	3	6	1	8	63	21	0	31	2	7	810	Peak
16:30	16:45	0	3	42	1	0	1	0	8	0	14	49	26	0	35	4	7	807	
16:45	17:00	0	4	45	1	0	4	1	5	0	25	66	20	0	32	0	3	768	
17:00	17:15	0	1	42	5	0	1	0	12	0	16	71	30	0	35	2	7	675	
17:15	17:30	0	3	42	2	0	0	0	5	0	22	63	20	0	27	2	3		
17:30	17:45	0	7	32	3	0	6	1	13	0	11	40	25	0	12	0	1		
17:45	18:00	0	1	36	3	0	3	0	12	0	9	28	13	0	6	1	1		

Peak Time		North Approach Princes Hwy				East Approach West St				South Approach Princes Hwy				West Approach West St				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
8:15	9:15	0	24	311	4	0	4	11	49	4	42	148	119	0	136	12	10	874
16:15	17:15	0	13	173	8	0	6	4	31	1	63	249	97	0	133	8	24	810

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

Graphic

Total
Light
Heavy



TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au



Intersection of Bridge St and Anderson St, Bega

GPS: -36.665179, 149.827646

Date:	Thu 22/06/23
Weather:	Fine
Suburban:	Bega
Customer:	McLaren

North:	Anderson St
East:	Bridge St
South:	Anderson St
West:	Bridge St

Survey	AM: 7:00 AM-10:00 AM
Period	PM: 2:00 PM-6:00 PM
Traffic	AM: 8:30 AM-9:30 AM
Peak	PM: 4:45 PM-5:45 PM

All Vehicles

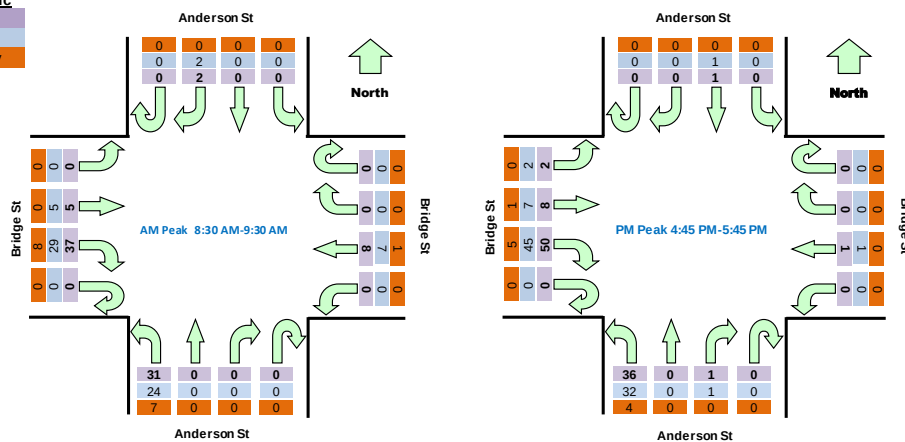
Time		North Approach Anderson St				East Approach Bridge St				South Approach Anderson St				West Approach Bridge St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	0	0	0	0	0	0	0	0	0	0	1	0	13	0	0	63	
7:15	7:30	0	0	0	0	0	0	2	1	0	0	0	3	0	15	0	0	62	
7:30	7:45	0	0	0	0	0	0	1	0	0	0	0	2	0	6	1	1	55	
7:45	8:00	0	0	0	0	0	0	5	0	0	0	0	4	0	8	0	0	67	
8:00	8:15	0	0	0	0	0	0	1	0	0	0	0	6	1	4	1	0	72	
8:15	8:30	0	1	0	0	0	0	3	0	0	0	0	4	0	5	1	0	80	
8:30	8:45	0	1	0	0	0	0	4	0	0	0	0	8	0	10	0	0	83	Peak
8:45	9:00	0	1	0	0	0	0	1	0	0	0	0	9	0	8	3	0	66	
9:00	9:15	0	0	0	0	0	0	1	0	0	0	0	7	0	13	0	0	59	
9:15	9:30	0	0	0	0	0	0	2	0	0	0	0	7	0	6	2	0		
9:30	9:45	0	0	0	0	0	0	4	0	0	0	0	1	0	0	1	0		
9:45	10:00	0	0	0	0	0	0	1	1	0	0	0	3	0	10	0	0		
14:00	14:15	0	0	0	0	0	0	0	0	0	0	0	17	0	8	1	0	82	
14:15	14:30	0	0	0	0	0	0	1	0	0	0	0	9	0	8	1	2	76	
14:30	14:45	0	0	0	0	0	0	1	0	0	0	0	6	0	4	2	1	78	
14:45	15:00	0	0	0	0	0	0	1	0	0	0	0	12	0	6	0	2	90	
15:00	15:15	0	0	0	0	0	0	0	0	0	0	0	13	0	7	0	0	82	
15:15	15:30	0	0	0	0	0	0	1	0	0	0	0	11	0	8	3	0	83	
15:30	15:45	0	1	0	0	0	0	0	1	0	0	0	14	0	8	2	0	70	
15:45	16:00	0	0	0	0	0	0	0	0	0	0	0	5	0	5	3	0	61	
16:00	16:15	0	0	0	0	0	0	0	0	0	0	0	14	0	3	2	2	71	
16:15	16:30	0	1	0	0	0	0	3	0	0	0	0	3	0	2	1	0	80	
16:30	16:45	0	0	0	0	0	0	2	0	0	0	0	4	0	8	3	0	91	
16:45	17:00	0	0	0	0	0	0	0	0	0	0	0	7	0	12	4	0	99	Peak
17:00	17:15	0	0	1	0	0	0	0	0	0	0	0	9	0	18	2	0	98	
17:15	17:30	0	0	0	0	0	0	0	0	0	0	0	3	0	16	0	2		
17:30	17:45	0	0	0	0	0	0	1	0	0	1	0	17	0	4	2	0		
17:45	18:00	0	0	1	0	0	0	1	0	0	0	0	10	0	7	3	0		

Peak Time		North Approach Anderson St				East Approach Bridge St				South Approach Anderson St				West Approach Bridge St				Peak total
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	
8:30	9:30	0	2	0	0	0	0	8	0	0	0	0	31	0	37	5	0	83
16:45	17:45	0	0	1	0	0	0	1	0	0	1	0	36	0	50	8	2	99

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

Graphic

Total
Light
Heavy



TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au



Intersection of West St and Princes Hwy, Bega

GPS: -36.665137, 149.826628

Date:	Sat 24/06/23
Weather:	Fine
Suburban:	Bega
Customer:	McLaren

North:	Princes Hwy
East:	West St
South:	Princes Hwy
West:	West St

Survey	AM: 10:00 AM-12:00 PM
Period	PM: 12:00 PM-2:00 PM
Traffic	AM: 11:30 AM-12:30 PM
Peak	PM: 12:00 PM-1:00 PM

All Vehicles

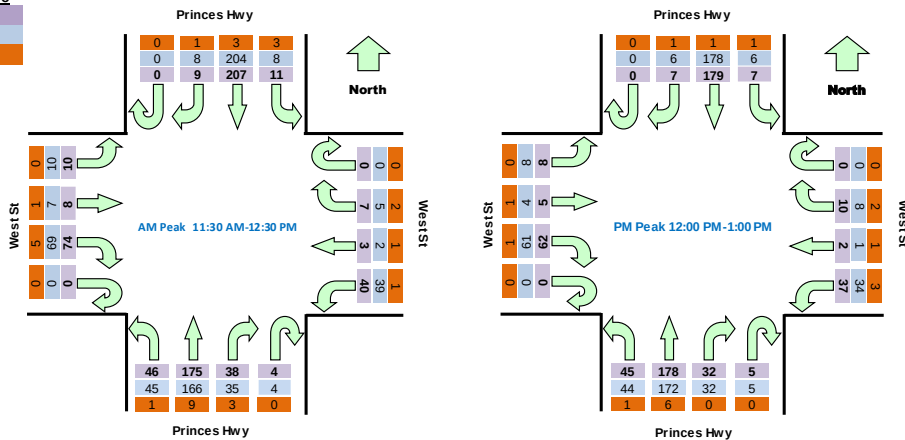
Time		North Approach Princes Hwy				East Approach West St				South Approach Princes Hwy				West Approach West St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
10:00	10:15	0	0	40	2	0	0	3	5	3	5	34	16	0	23	1	3	603	
10:15	10:30	0	4	41	1	0	0	1	12	0	5	56	20	0	20	2	4	618	
10:30	10:45	0	6	35	2	0	0	2	6	1	10	37	14	0	16	3	2	601	
10:45	11:00	0	5	45	1	0	1	1	14	0	13	46	22	0	16	2	2	621	
11:00	11:15	0	1	37	2	0	3	1	8	1	8	50	14	0	23	0	2	623	Peak
11:15	11:30	0	1	39	1	0	0	1	10	1	17	43	19	0	11	3	3	631	
11:30	11:45	0	1	47	3	0	1	2	7	0	12	46	9	0	21	4	1	632	
11:45	12:00	0	5	57	3	0	0	0	13	1	10	43	16	0	19	1	2	625	
12:00	12:15	0	3	50	2	0	4	1	10	0	11	41	9	0	20	3	4	577	Peak
12:15	12:30	0	0	53	3	0	2	0	10	3	5	45	12	0	14	0	3	547	
12:30	12:45	0	2	42	1	0	3	1	9	1	10	51	12	0	14	1	0	536	
12:45	13:00	0	2	34	1	0	1	0	8	1	6	41	12	0	14	1	1	531	
13:00	13:15	0	0	48	2	0	0	0	9	0	9	42	8	0	7	0	3	521	
13:15	13:30	0	3	42	2	0	5	0	9	3	11	48	6	0	8	0	2		
13:30	13:45	0	0	37	1	0	1	0	10	1	6	66	13	0	4	2	1		
13:45	14:00	0	1	37	0	0	0	1	7	0	11	43	8	1	3	0	0		

Peak Time		North Approach Princes Hwy				East Approach West St				South Approach Princes Hwy				West Approach West St				Peak total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L		
11:30	12:30	0	9	207	11	0	7	3	40	4	38	175	46	0	74	8	10	632	
12:00	13:00	0	7	179	7	0	10	2	37	5	32	178	45	0	62	5	8	577	

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

Graphic

Total
Light
Heavy



TRANS TRAFFIC SURVEY

TURNING MOVEMENT SURVEY

trafficsurvey.com.au



Intersection of Bridge St and Anderson St, Bega

GPS: -36.665179, 149.827646

Date:	Sat 24/06/23
Weather:	Fine
Suburban:	Bega
Customer:	McLaren

North:	Anderson St
East:	Bridge St
South:	Anderson St
West:	Bridge St

Survey	AM:	10:00 AM-12:00 PM
Period	PM:	12:00 PM-2:00 PM
Traffic	AM:	10:45 AM-11:45 AM
Peak	PM:	12:00 PM-1:00 PM

All Vehicles

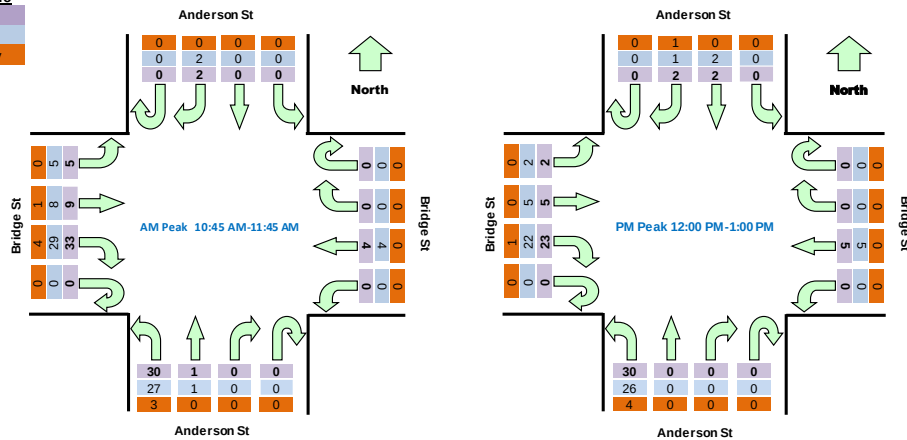
Time		North Approach Anderson St				East Approach Bridge St				South Approach Anderson St				West Approach Bridge St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
10:00	10:15	0	0	0	0	0	0	2	0	0	0	0	5	0	5	1	0	61	
10:15	10:30	0	0	0	0	0	0	1	0	0	0	0	5	0	5	0	1	63	
10:30	10:45	0	0	0	0	0	0	3	0	0	0	0	1	0	8	3	0	73	
10:45	11:00	0	1	0	0	0	0	1	0	0	0	1	8	0	8	2	0	84	Peak
11:00	11:15	0	0	0	0	0	0	0	0	0	0	0	8	0	6	1	0	83	
11:15	11:30	0	1	0	0	0	0	1	0	0	0	0	7	0	10	2	1		
11:30	11:45	0	0	0	0	0	0	2	0	0	0	0	7	0	9	4	4		
11:45	12:00	0	2	0	0	0	0	1	0	0	0	0	5	0	10	0	2		
12:00	12:15	0	0	0	0	0	0	2	0	0	0	0	10	0	7	2	1	69	Peak
12:15	12:30	0	1	1	0	0	0	0	0	0	0	0	7	0	7	1	0	61	
12:30	12:45	0	1	1	0	0	0	2	0	0	0	0	8	0	5	1	1	66	
12:45	13:00	0	0	0	0	0	0	1	0	0	0	0	5	0	4	1	0	66	
13:00	13:15	0	0	0	0	0	0	0	0	0	1	0	6	0	3	3	1	69	Peak
13:15	13:30	0	0	0	0	0	0	0	0	0	1	0	10	0	10	1	0		
13:30	13:45	0	0	0	0	0	0	3	0	0	0	0	6	0	8	2	0		
13:45	14:00	0	1	0	0	0	0	0	0	0	0	0	3	0	4	6	0		

Peak Time		North Approach Anderson St				East Approach Bridge St				South Approach Anderson St				West Approach Bridge St				Peak total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L		
10:45	11:45	0	2	0	0	0	0	4	0	0	0	1	30	0	33	9	5	84	
12:00	13:00	0	2	2	0	0	0	5	0	0	0	0	30	0	23	5	2	69	

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

Graphic

Total
Light
Heavy





**ANNEXURE C: SIDRA RESULTS
(12 SHEETS)**

MOVEMENT SUMMARY

Site: 02 [EX WE Lagoon St / Bridge St (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Anderson Street / Bridge Street
Existing Conditions
WE Peak Period
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh.]	Dist]				
			veh/h		veh/h		v/c	sec		veh	m				km/h
South: Lagoon Street (S)															
2	T1	All MCs	31	6.9	31	6.9	0.017	0.0	LOS A	0.0	0.0	0.01	0.02	0.01	49.9
3	R2	All MCs	1	0.0	1	0.0	0.017	4.6	LOS A	0.0	0.0	0.01	0.02	0.01	48.4
Approach			32	6.7	32	6.7	0.017	0.2	NA	0.0	0.0	0.01	0.02	0.01	49.8
East: Bridge Street (E)															
4	L2	All MCs	1	0.0	1	0.0	0.009	4.7	LOS A	0.0	0.2	0.14	0.52	0.14	45.7
6	R2	All MCs	9	0.0	9	0.0	0.009	4.8	LOS A	0.0	0.2	0.14	0.52	0.14	45.5
Approach			11	0.0	11	0.0	0.009	4.8	LOS A	0.0	0.2	0.14	0.52	0.14	45.5
North: Lagoon Street (N)															
7	L2	All MCs	17	6.3	17	6.3	0.031	4.6	LOS A	0.0	0.0	0.00	0.17	0.00	47.7
8	T1	All MCs	38	13.9	38	13.9	0.031	0.0	LOS A	0.0	0.0	0.00	0.17	0.00	49.0
Approach			55	11.5	55	11.5	0.031	1.4	NA	0.0	0.0	0.00	0.17	0.00	48.6
All Vehicles			97	8.7	97	8.7	0.031	1.4	NA	0.0	0.2	0.02	0.16	0.02	48.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

SIDRA INTERSECTION 9.1 | Copyright © 2000-2023 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: MCLAREN TRAFFIC ENGINEERING | Licence: NETWORK / 1PC | Processed: Thursday, 7 September 2023 10:50:57 AM

Project: \\mte_nas1\mte storage\Jobs\2023\230456\SIDRA\23 09 07.sip9

MOVEMENT SUMMARY

 **Site: 01 [EX AM Princes Hwy / West St (Site Folder: Existing)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Princes Highway / West Street

Existing Conditions

AM Peak Period

Site Category: (None)

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist m]				km/h
South: Princes Highway (S)															
1	L2	All MCs	125	7.6	125	7.6	0.236	6.0	LOS A	1.6	11.8	0.21	0.52	0.21	54.1
2	T1	All MCs	156	5.4	156	5.4	0.236	6.5	LOS A	1.6	11.8	0.21	0.52	0.21	64.0
3	R2	All MCs	44	23.8	44	23.8	0.236	11.4	LOS A	1.6	11.8	0.21	0.52	0.21	53.3
3u	U	All MCs	4	0.0	4	0.0	0.236	13.3	LOS A	1.6	11.8	0.21	0.52	0.21	64.2
Approach			329	8.6	329	8.6	0.236	7.0	LOS A	1.6	11.8	0.21	0.52	0.21	58.4
East: West Street (E)															
4	L2	All MCs	52	10.2	52	10.2	0.086	6.3	LOS A	0.5	3.8	0.64	0.61	0.64	50.8
5	T1	All MCs	12	9.1	12	9.1	0.086	6.2	LOS A	0.5	3.8	0.64	0.61	0.64	45.5
6	R2	All MCs	4	50.0	4	50.0	0.086	12.4	LOS A	0.5	3.8	0.64	0.61	0.64	43.4
Approach			67	12.5	67	12.5	0.086	6.6	LOS A	0.5	3.8	0.64	0.61	0.64	49.3
North: Princes Highway (N)															
7	L2	All MCs	4	25.0	4	25.0	0.326	7.9	LOS A	2.2	16.5	0.51	0.56	0.51	52.6
8	T1	All MCs	327	5.1	327	5.1	0.326	7.8	LOS A	2.2	16.5	0.51	0.56	0.51	62.2
9	R2	All MCs	25	20.8	25	20.8	0.326	12.9	LOS A	2.2	16.5	0.51	0.56	0.51	52.1
Approach			357	6.5	357	6.5	0.326	8.2	LOS A	2.2	16.5	0.51	0.56	0.51	61.2
West: West Street (W)															
10	L2	All MCs	11	40.0	11	40.0	0.160	5.0	LOS A	0.9	7.1	0.45	0.59	0.45	44.7
11	T1	All MCs	13	16.7	13	16.7	0.160	4.4	LOS A	0.9	7.1	0.45	0.59	0.45	44.5
12	R2	All MCs	143	9.6	143	9.6	0.160	8.8	LOS A	0.9	7.1	0.45	0.59	0.45	48.9
Approach			166	12.0	166	12.0	0.160	8.2	LOS A	0.9	7.1	0.45	0.59	0.45	48.2
All Vehicles			920	8.7	920	8.7	0.326	7.7	LOS A	2.2	16.5	0.40	0.56	0.40	56.5

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

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

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2023 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: MCLAREN TRAFFIC ENGINEERING | Licence: NETWORK / 1PC | Processed: Thursday, 7 September 2023 10:50:54 AM

Project: \\mte_nas1\mte storage\Jobs\2023\230456\SIDRA\23 09 07.sip9

MOVEMENT SUMMARY

 **Site: 01 [EX PM Princes Hwy / West St (Site Folder: Existing)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Princes Highway / West Street
Existing Conditions
PM Peak Period
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Princes Highway (S)															
1	L2	All MCs	102	5.2	102	5.2	0.284	5.8	LOS A	2.0	14.4	0.16	0.52	0.16	54.2
2	T1	All MCs	262	2.4	262	2.4	0.284	6.3	LOS A	2.0	14.4	0.16	0.52	0.16	64.9
3	R2	All MCs	66	9.5	66	9.5	0.284	11.0	LOS A	2.0	14.4	0.16	0.52	0.16	53.6
3u	U	All MCs	1	0.0	1	0.0	0.284	13.2	LOS A	2.0	14.4	0.16	0.52	0.16	64.3
Approach			432	4.1	432	4.1	0.284	6.9	LOS A	2.0	14.4	0.16	0.52	0.16	60.2
East: West Street (E)															
4	L2	All MCs	33	12.9	33	12.9	0.048	5.0	LOS A	0.3	2.1	0.52	0.55	0.52	50.9
5	T1	All MCs	4	25.0	4	25.0	0.048	5.3	LOS A	0.3	2.1	0.52	0.55	0.52	45.9
6	R2	All MCs	6	33.3	6	33.3	0.048	10.1	LOS A	0.3	2.1	0.52	0.55	0.52	46.5
Approach			43	17.1	43	17.1	0.048	5.8	LOS A	0.3	2.1	0.52	0.55	0.52	49.7
North: Princes Highway (N)															
7	L2	All MCs	8	50.0	8	50.0	0.199	8.5	LOS A	1.2	9.4	0.48	0.56	0.48	52.5
8	T1	All MCs	182	10.4	182	10.4	0.199	7.8	LOS A	1.2	9.4	0.48	0.56	0.48	61.1
9	R2	All MCs	14	15.4	14	15.4	0.199	12.6	LOS A	1.2	9.4	0.48	0.56	0.48	52.3
Approach			204	12.4	204	12.4	0.199	8.2	LOS A	1.2	9.4	0.48	0.56	0.48	60.0
West: West Street (W)															
10	L2	All MCs	25	4.2	25	4.2	0.177	5.0	LOS A	1.0	7.5	0.54	0.63	0.54	50.3
11	T1	All MCs	8	37.5	8	37.5	0.177	5.9	LOS A	1.0	7.5	0.54	0.63	0.54	44.3
12	R2	All MCs	140	3.0	140	3.0	0.177	9.5	LOS A	1.0	7.5	0.54	0.63	0.54	50.0
Approach			174	4.8	174	4.8	0.177	8.6	LOS A	1.0	7.5	0.54	0.63	0.54	49.8
All Vehicles			853	6.9	853	6.9	0.284	7.5	LOS A	2.0	14.4	0.33	0.55	0.33	57.1

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: 01 [EX WE Princes Hwy / West St (Site Folder: Existing)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Princes Highway / West Street
Existing Conditions
Weekend Peak Period
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist] m				km/h
South: Princes Highway (S)															
1	L2	All MCs	48	2.2	48	2.2	0.184	5.7	LOS A	1.2	8.5	0.13	0.53	0.13	54.3
2	T1	All MCs	184	5.1	184	5.1	0.184	6.3	LOS A	1.2	8.5	0.13	0.53	0.13	64.2
3	R2	All MCs	40	7.9	40	7.9	0.184	11.0	LOS A	1.2	8.5	0.13	0.53	0.13	53.7
3u	U	All MCs	4	0.0	4	0.0	0.184	13.2	LOS A	1.2	8.5	0.13	0.53	0.13	64.4
Approach			277	4.9	277	4.9	0.184	7.0	LOS A	1.2	8.5	0.13	0.53	0.13	60.6
East: West Street (E)															
4	L2	All MCs	42	2.5	42	2.5	0.054	4.5	LOS A	0.3	2.2	0.49	0.53	0.49	53.1
5	T1	All MCs	3	33.3	3	33.3	0.054	5.2	LOS A	0.3	2.2	0.49	0.53	0.49	46.1
6	R2	All MCs	7	28.6	7	28.6	0.054	9.7	LOS A	0.3	2.2	0.49	0.53	0.49	47.5
Approach			53	8.0	53	8.0	0.054	5.3	LOS A	0.3	2.2	0.49	0.53	0.49	51.8
North: Princes Highway (N)															
7	L2	All MCs	12	27.3	12	27.3	0.196	7.0	LOS A	1.2	8.7	0.36	0.51	0.36	53.3
8	T1	All MCs	218	1.4	218	1.4	0.196	7.0	LOS A	1.2	8.7	0.36	0.51	0.36	64.2
9	R2	All MCs	9	11.1	9	11.1	0.196	11.8	LOS A	1.2	8.7	0.36	0.51	0.36	53.0
Approach			239	3.1	239	3.1	0.196	7.2	LOS A	1.2	8.7	0.36	0.51	0.36	63.1
West: West Street (W)															
10	L2	All MCs	11	0.0	11	0.0	0.091	4.1	LOS A	0.5	3.6	0.43	0.59	0.43	51.5
11	T1	All MCs	8	12.5	8	12.5	0.091	4.4	LOS A	0.5	3.6	0.43	0.59	0.43	44.7
12	R2	All MCs	78	6.8	78	6.8	0.091	8.8	LOS A	0.5	3.6	0.43	0.59	0.43	49.7
Approach			97	6.5	97	6.5	0.091	7.9	LOS A	0.5	3.6	0.43	0.59	0.43	49.4
All Vehicles			665	4.7	665	4.7	0.196	7.1	LOS A	1.2	8.7	0.28	0.53	0.28	58.7

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: 02 [EX AM Lagoon St / Bridge St (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Anderson Street / Bridge Street
Existing Conditions
AM Peak Period
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lagoon Street (S)															
2	T1	All MCs	33	22.6	33	22.6	0.020	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	49.8
3	R2	All MCs	1	0.0	1	0.0	0.020	4.6	LOS A	0.0	0.1	0.01	0.02	0.01	48.4
Approach			34	21.9	34	21.9	0.020	0.1	NA	0.0	0.1	0.01	0.02	0.01	49.8
East: Bridge Street (E)															
4	L2	All MCs	1	0.0	1	0.0	0.010	4.7	LOS A	0.0	0.2	0.15	0.52	0.15	45.6
6	R2	All MCs	11	10.0	11	10.0	0.010	4.9	LOS A	0.0	0.2	0.15	0.52	0.15	45.3
Approach			12	9.1	12	9.1	0.010	4.9	LOS A	0.0	0.2	0.15	0.52	0.15	45.3
North: Lagoon Street (N)															
7	L2	All MCs	5	0.0	5	0.0	0.026	4.6	LOS A	0.0	0.0	0.00	0.06	0.00	48.3
8	T1	All MCs	39	21.6	39	21.6	0.026	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	49.5
Approach			44	19.0	44	19.0	0.026	0.6	NA	0.0	0.0	0.00	0.06	0.00	49.4
All Vehicles			89	18.8	89	18.8	0.026	1.0	NA	0.0	0.2	0.02	0.11	0.02	49.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

SIDRA INTERSECTION 9.1 | Copyright © 2000-2023 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: MCLAREN TRAFFIC ENGINEERING | Licence: NETWORK / 1PC | Processed: Thursday, 7 September 2023 10:50:56 AM

Project: \\mte_nas1\mte storage\Jobs\2023\230456\SIDRA\23 09 07.sip9

MOVEMENT SUMMARY

Site: 02 [EX PM Lagoon St / Bridge St (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Anderson Street / Bridge Street
Existing Conditions
PM Peak Period
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lagoon Street (S)															
2	T1	All MCs	38	11.1	38	11.1	0.021	0.0	LOS A	0.0	0.0	0.01	0.02	0.01	49.9
3	R2	All MCs	1	0.0	1	0.0	0.021	4.6	LOS A	0.0	0.0	0.01	0.02	0.01	48.4
Approach			39	10.8	39	10.8	0.021	0.1	NA	0.0	0.0	0.01	0.02	0.01	49.8
East: Bridge Street (E)															
4	L2	All MCs	1	0.0	1	0.0	0.002	4.7	LOS A	0.0	0.0	0.14	0.50	0.14	45.6
6	R2	All MCs	1	0.0	1	0.0	0.002	4.9	LOS A	0.0	0.0	0.14	0.50	0.14	45.4
Approach			2	0.0	2	0.0	0.002	4.8	LOS A	0.0	0.0	0.14	0.50	0.14	45.5
North: Lagoon Street (N)															
7	L2	All MCs	11	10.0	11	10.0	0.035	4.7	LOS A	0.0	0.0	0.00	0.09	0.00	48.1
8	T1	All MCs	53	10.0	53	10.0	0.035	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	49.5
Approach			63	10.0	63	10.0	0.035	0.8	NA	0.0	0.0	0.00	0.09	0.00	49.2
All Vehicles			104	10.1	104	10.1	0.035	0.6	NA	0.0	0.0	0.01	0.07	0.01	49.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

 **Site: 01 [FU AM Princes Hwy / West St (Site Folder: Future)]**

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Princes Highway / West Street

Future Conditions

AM Peak Period

Site Category: (None)

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Princes Highway (S)															
1	L2	All MCs	125	7.6	125	7.6	0.288	6.0	LOS A	2.0	15.1	0.24	0.54	0.24	52.7
2	T1	All MCs	156	5.4	156	5.4	0.288	6.5	LOS A	2.0	15.1	0.24	0.54	0.24	62.0
3	R2	All MCs	119	8.8	119	8.8	0.288	10.0	LOS A	2.0	15.1	0.24	0.54	0.24	54.9
3u	U	All MCs	4	0.0	4	0.0	0.288	13.4	LOS A	2.0	15.1	0.24	0.54	0.24	62.2
Approach			404	7.0	404	7.0	0.288	7.5	LOS A	2.0	15.1	0.24	0.54	0.24	56.7
East: West Street (E)															
4	L2	All MCs	73	7.2	73	7.2	0.119	6.6	LOS A	0.7	5.3	0.65	0.63	0.65	51.3
5	T1	All MCs	12	9.1	12	9.1	0.119	6.2	LOS A	0.7	5.3	0.65	0.63	0.65	46.4
6	R2	All MCs	11	20.0	11	20.0	0.119	12.2	LOS A	0.7	5.3	0.65	0.63	0.65	46.3
Approach			95	8.9	95	8.9	0.119	7.1	LOS A	0.7	5.3	0.65	0.63	0.65	50.0
North: Princes Highway (N)															
7	L2	All MCs	29	3.6	29	3.6	0.377	6.4	LOS A	2.6	19.3	0.60	0.60	0.60	55.9
8	T1	All MCs	327	5.1	327	5.1	0.377	8.5	LOS A	2.6	19.3	0.60	0.60	0.60	61.4
9	R2	All MCs	25	20.8	25	20.8	0.377	13.8	LOS A	2.6	19.3	0.60	0.60	0.60	51.5
Approach			382	6.1	382	6.1	0.377	8.7	LOS A	2.6	19.3	0.60	0.60	0.60	60.2
West: West Street (W)															
10	L2	All MCs	11	40.0	11	40.0	0.173	5.7	LOS A	1.0	7.7	0.52	0.62	0.52	44.6
11	T1	All MCs	13	16.7	13	16.7	0.173	5.0	LOS A	1.0	7.7	0.52	0.62	0.52	44.3
12	R2	All MCs	143	9.6	143	9.6	0.173	9.4	LOS A	1.0	7.7	0.52	0.62	0.52	48.7
Approach			166	12.0	166	12.0	0.173	8.8	LOS A	1.0	7.7	0.52	0.62	0.52	48.1
All Vehicles			1047	7.6	1047	7.6	0.377	8.1	LOS A	2.6	19.3	0.45	0.58	0.45	55.6

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2023 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: MCLAREN TRAFFIC ENGINEERING | Licence: NETWORK / 1PC | Processed: Tuesday, 3 October 2023 11:18:27 AM

Project: \\mte_nas1\mte storage\Jobs\2023\230456\SIDRA\23 09 07.sip9

MOVEMENT SUMMARY

 **Site: 01 [FU PM Princes Hwy / West St (Site Folder: Future)]**

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Princes Highway / West Street
Future Conditions
PM Peak Period
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist] m				km/h
South: Princes Highway (S)															
1	L2	All MCs	102	5.2	102	5.2	0.316	6.0	LOS A	2.4	17.0	0.25	0.52	0.25	53.6
2	T1	All MCs	262	2.4	262	2.4	0.316	6.5	LOS A	2.4	17.0	0.25	0.52	0.25	64.0
3	R2	All MCs	87	7.2	87	7.2	0.316	10.8	LOS A	2.4	17.0	0.25	0.52	0.25	54.2
3u	U	All MCs	1	0.0	1	0.0	0.316	13.4	LOS A	2.4	17.0	0.25	0.52	0.25	63.4
Approach			453	4.0	453	4.0	0.316	7.2	LOS A	2.4	17.0	0.25	0.52	0.25	59.3
East: West Street (E)															
4	L2	All MCs	107	3.9	107	3.9	0.148	5.7	LOS A	0.9	6.3	0.55	0.59	0.55	52.2
5	T1	All MCs	4	25.0	4	25.0	0.148	5.6	LOS A	0.9	6.3	0.55	0.59	0.55	48.0
6	R2	All MCs	32	6.7	32	6.7	0.148	10.7	LOS A	0.9	6.3	0.55	0.59	0.55	50.3
Approach			143	5.1	143	5.1	0.148	6.8	LOS A	0.9	6.3	0.55	0.59	0.55	51.6
North: Princes Highway (N)															
7	L2	All MCs	15	28.6	15	28.6	0.208	7.3	LOS A	1.3	9.9	0.50	0.57	0.50	54.5
8	T1	All MCs	182	10.4	182	10.4	0.208	8.0	LOS A	1.3	9.9	0.50	0.57	0.50	60.9
9	R2	All MCs	14	15.4	14	15.4	0.208	12.8	LOS A	1.3	9.9	0.50	0.57	0.50	52.2
Approach			211	12.0	211	12.0	0.208	8.3	LOS A	1.3	9.9	0.50	0.57	0.50	59.7
West: West Street (W)															
10	L2	All MCs	25	4.2	25	4.2	0.185	5.4	LOS A	1.1	8.0	0.58	0.64	0.58	50.1
11	T1	All MCs	8	37.5	8	37.5	0.185	6.4	LOS A	1.1	8.0	0.58	0.64	0.58	44.1
12	R2	All MCs	140	3.0	140	3.0	0.185	9.8	LOS A	1.1	8.0	0.58	0.64	0.58	49.8
Approach			174	4.8	174	4.8	0.185	9.0	LOS A	1.1	8.0	0.58	0.64	0.58	49.6
All Vehicles			980	6.0	980	6.0	0.316	7.7	LOS A	2.4	17.0	0.40	0.56	0.40	56.2

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2023 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: MCLAREN TRAFFIC ENGINEERING | Licence: NETWORK / 1PC | Processed: Tuesday, 3 October 2023 11:18:28 AM

Project: \\mte_nas1\mte storage\Jobs\2023\230456\SIDRA\23 09 07.sip9

MOVEMENT SUMMARY

 **Site: 01 [FU WE Princes Hwy / West St (Site Folder: Future)]**

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Princes Highway / West Street

Future Conditions

Weekend Peak Period

Site Category: (None)

Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]		[Total HV]					[Veh. veh	Dist]				km/h
			veh/h	%	veh/h	%	v/c	sec			m				
South: Princes Highway (S)															
1	L2	All MCs	48	2.2	48	2.2	0.231	5.8	LOS A	1.6	11.4	0.20	0.54	0.20	52.9
2	T1	All MCs	184	5.1	184	5.1	0.231	6.5	LOS A	1.6	11.4	0.20	0.54	0.20	62.2
3	R2	All MCs	96	3.3	96	3.3	0.231	9.9	LOS A	1.6	11.4	0.20	0.54	0.20	54.9
3u	U	All MCs	4	0.0	4	0.0	0.231	13.3	LOS A	1.6	11.4	0.20	0.54	0.20	62.4
Approach			333	4.1	333	4.1	0.231	7.5	LOS A	1.6	11.4	0.20	0.54	0.20	58.5
East: West Street (E)															
4	L2	All MCs	98	1.1	98	1.1	0.126	5.3	LOS A	0.7	5.3	0.51	0.57	0.51	53.3
5	T1	All MCs	3	33.3	3	33.3	0.126	5.4	LOS A	0.7	5.3	0.51	0.57	0.51	47.8
6	R2	All MCs	26	8.0	26	8.0	0.126	10.4	LOS A	0.7	5.3	0.51	0.57	0.51	50.2
Approach			127	3.3	127	3.3	0.126	6.3	LOS A	0.7	5.3	0.51	0.57	0.51	52.5
North: Princes Highway (N)															
7	L2	All MCs	31	10.3	31	10.3	0.226	6.0	LOS A	1.4	10.1	0.43	0.54	0.43	55.8
8	T1	All MCs	218	1.4	218	1.4	0.226	7.4	LOS A	1.4	10.1	0.43	0.54	0.43	63.5
9	R2	All MCs	9	11.1	9	11.1	0.226	12.3	LOS A	1.4	10.1	0.43	0.54	0.43	52.4
Approach			258	2.9	258	2.9	0.226	7.4	LOS A	1.4	10.1	0.43	0.54	0.43	62.0
West: West Street (W)															
10	L2	All MCs	11	0.0	11	0.0	0.098	4.6	LOS A	0.5	4.0	0.50	0.61	0.50	51.3
11	T1	All MCs	8	12.5	8	12.5	0.098	4.9	LOS A	0.5	4.0	0.50	0.61	0.50	44.6
12	R2	All MCs	78	6.8	78	6.8	0.098	9.3	LOS A	0.5	4.0	0.50	0.61	0.50	49.5
Approach			97	6.5	97	6.5	0.098	8.4	LOS A	0.5	4.0	0.50	0.61	0.50	49.2
All Vehicles			815	3.9	815	3.9	0.231	7.4	LOS A	1.6	11.4	0.36	0.55	0.36	57.2

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.

SIDRA INTERSECTION 9.1 | Copyright © 2000-2023 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: MCLAREN TRAFFIC ENGINEERING | Licence: NETWORK / 1PC | Processed: Tuesday, 3 October 2023 11:18:29 AM

Project: \\mte_nas1\mte storage\Jobs\2023\230456\SIDRA\23 09 07.sip9

MOVEMENT SUMMARY

Site: 02 [FU AM Lagoon St / Bridge St (Site Folder: Future)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Anderson Street / Bridge Street
Future Conditions
AM Peak Period
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Lagoon Street (S)															
2	T1	All MCs	60	12.3	60	12.3	0.034	0.1	LOS A	0.0	0.1	0.01	0.03	0.01	54.4
3	R2	All MCs	1	0.0	1	0.0	0.034	4.7	LOS A	0.0	0.1	0.01	0.03	0.01	50.5
Approach			61	12.1	61	12.1	0.034	0.2	NA	0.0	0.1	0.01	0.03	0.01	54.3
East: Bridge Street (E)															
4	L2	All MCs	1	0.0	1	0.0	0.011	5.0	LOS A	0.0	0.3	0.26	0.54	0.26	45.4
6	R2	All MCs	11	10.0	11	10.0	0.011	5.4	LOS A	0.0	0.3	0.26	0.54	0.26	45.0
Approach			12	9.1	12	9.1	0.011	5.4	LOS A	0.0	0.3	0.26	0.54	0.26	45.1
North: Lagoon Street (N)															
7	L2	All MCs	5	0.0	5	0.0	0.077	5.2	LOS A	0.0	0.0	0.00	0.03	0.00	54.3
8	T1	All MCs	139	6.1	139	6.1	0.077	0.1	LOS A	0.0	0.0	0.00	0.03	0.00	56.3
Approach			144	5.8	144	5.8	0.077	0.3	NA	0.0	0.0	0.00	0.03	0.00	56.2
All Vehicles			217	7.8	217	7.8	0.077	0.5	NA	0.0	0.3	0.02	0.06	0.02	55.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 02 [FU PM Lagoon St / Bridge St (Site Folder: Future)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Anderson Street / Bridge Street
Future Conditions
PM Peak Period
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh]	[Dist]				km/h
South: Lagoon Street (S)															
2	T1	All MCs	138	3.1	138	3.1	0.073	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
3	R2	All MCs	1	0.0	1	0.0	0.073	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	51.7
Approach			139	3.0	139	3.0	0.073	0.1	NA	0.0	0.0	0.00	0.01	0.00	57.1
East: Bridge Street (E)															
4	L2	All MCs	1	0.0	1	0.0	0.002	4.8	LOS A	0.0	0.0	0.20	0.50	0.20	45.5
6	R2	All MCs	1	0.0	1	0.0	0.002	5.3	LOS A	0.0	0.0	0.20	0.50	0.20	45.3
Approach			2	0.0	2	0.0	0.002	5.0	LOS A	0.0	0.0	0.20	0.50	0.20	45.4
North: Lagoon Street (N)															
7	L2	All MCs	11	10.0	11	10.0	0.049	4.9	LOS A	0.0	0.0	0.00	0.07	0.00	50.5
8	T1	All MCs	80	6.6	80	6.6	0.049	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	52.2
Approach			91	7.0	91	7.0	0.049	0.6	NA	0.0	0.0	0.00	0.07	0.00	52.0
All Vehicles			232	4.5	232	4.5	0.073	0.3	NA	0.0	0.0	0.00	0.04	0.00	54.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

SIDRA INTERSECTION 9.1 | Copyright © 2000-2023 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: MCLAREN TRAFFIC ENGINEERING | Licence: NETWORK / 1PC | Processed: Tuesday, 3 October 2023 11:18:30 AM

Project: \\mte_nas1\mte storage\Jobs\2023\230456\SIDRA\23 09 07.sip9

MOVEMENT SUMMARY

▼ Site: 02 [FU WE Lagoon St / Bridge St (Site Folder: Future)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Anderson Street / Bridge Street

Future Conditions

WE Peak Period

Site Category: (None)

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh.]	Dist]				
			veh/h		veh/h		v/c	sec		veh	m				km/h
South: Lagoon Street (S)															
2	T1	All MCs	105	2.0	105	2.0	0.055	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	57.0
3	R2	All MCs	1	0.0	1	0.0	0.055	4.6	LOS A	0.0	0.1	0.01	0.01	0.01	51.6
Approach			106	2.0	106	2.0	0.055	0.1	NA	0.0	0.1	0.01	0.01	0.01	56.9
East: Bridge Street (E)															
4	L2	All MCs	1	0.0	1	0.0	0.010	4.9	LOS A	0.0	0.2	0.26	0.54	0.26	45.4
6	R2	All MCs	9	0.0	9	0.0	0.010	5.3	LOS A	0.0	0.2	0.26	0.54	0.26	45.2
Approach			11	0.0	11	0.0	0.010	5.3	LOS A	0.0	0.2	0.26	0.54	0.26	45.2
North: Lagoon Street (N)															
7	L2	All MCs	17	6.3	17	6.3	0.069	5.2	LOS A	0.0	0.0	0.00	0.08	0.00	52.8
8	T1	All MCs	113	4.7	113	4.7	0.069	0.1	LOS A	0.0	0.0	0.00	0.08	0.00	54.7
Approach			129	4.9	129	4.9	0.069	0.7	NA	0.0	0.0	0.00	0.08	0.00	54.5
All Vehicles			246	3.4	246	3.4	0.069	0.6	NA	0.0	0.2	0.01	0.07	0.01	55.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

SIDRA INTERSECTION 9.1 | Copyright © 2000-2023 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: MCLAREN TRAFFIC ENGINEERING | Licence: NETWORK / 1PC | Processed: Tuesday, 3 October 2023 11:18:31 AM

Project: \\mte_nas1\mte storage\Jobs\2023\230456\SIDRA\23 09 07.sip9



**ANNEXURE D: VISITOR DEMAND
(4 SHEETS)**

Date	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	TOTAL	Peak Hour
1/07/2022	0	0	0	0	0	0	0	0	0	19	57	141	130	98	41	66	0	0	0	0	0	0	0	0	553	141
2/07/2022	0	0	0	0	0	0	0	0	3	45	73	111	96	56	69	0	18	0	0	0	0	0	0	0	472	111
3/07/2022	0	0	0	0	0	0	0	0	3	45	73	111	96	56	69	0	18	0	0	0	0	0	0	0	472	111
4/07/2022	0	0	0	0	0	0	0	0	3	45	73	111	96	56	69	0	18	0	0	0	0	0	0	0	472	111
5/07/2022	0	0	0	0	0	0	0	0	1	21	114	233	176	128	61	57	10	0	0	0	0	0	0	0	801	233
6/07/2022	0	0	0	0	0	0	0	0	11	14	69	80	138	129	58	90	4	0	0	0	0	0	0	0	593	138
7/07/2022	0	0	0	0	0	0	0	0	3	42	92	94	170	52	67	53	33	0	0	0	0	0	0	0	606	170
8/07/2022	0	0	0	0	0	0	0	0	0	51	71	87	158	97	65	45	17	0	0	0	0	0	0	0	590	158
9/07/2022	0	0	0	0	0	0	0	0	6	31	43	129	106	111	59	17	10	0	0	0	0	0	0	0	513	129
10/07/2022	0	0	0	0	0	0	0	0	2	60	73	93	70	153	29	32	4	0	0	0	0	0	0	0	515	153
11/07/2022	0	0	0	0	0	0	0	0	0	24	108	82	103	35	69	31	16	0	0	0	0	0	0	0	467	108
12/07/2022	0	0	0	0	0	0	0	0	3	40	71	104	104	119	67	33	21	0	0	0	0	0	0	0	563	119
13/07/2022	0	0	0	0	0	0	0	0	0	20	48	70	110	32	48	7	17	0	0	0	0	0	0	0	352	110
14/07/2022	0	0	0	0	0	0	0	0	0	42	110	87	151	77	64	7	2	0	0	0	0	0	0	0	542	151
15/07/2022	0	0	0	0	0	0	0	0	0	17	71	87	113	66	72	28	13	0	0	0	0	0	0	0	466	113
16/07/2022	0	0	0	0	0	0	0	0	5	21	39	97	131	100	78	42	2	0	0	0	0	0	0	0	514	131
17/07/2022	0	0	0	0	0	0	0	0	7	19	56	129	96	106	43	9	9	0	0	0	0	0	0	0	474	129
18/07/2022	0	0	0	0	0	0	0	0	2	37	233	120	80	67	30	41	20	0	0	0	0	0	0	0	630	233
19/07/2022	0	0	0	0	0	0	0	0	0	21	65	89	86	27	50	32	14	0	0	0	0	0	0	0	383	89
20/07/2022	0	0	0	0	0	0	0	1	4	34	47	98	65	25	16	31	33	0	0	0	0	0	0	0	354	98
21/07/2022	0	0	0	0	0	0	0	1	18	36	31	106	101	90	47	38	14	0	0	0	0	0	0	0	482	106
22/07/2022	0	0	0	0	0	0	0	0	1	22	59	93	94	42	49	64	20	0	0	0	0	0	0	0	444	94
23/07/2022	0	0	0	0	0	0	0	0	1	38	41	68	97	96	21	18	20	0	0	0	0	0	0	0	400	97
24/07/2022	0	0	0	0	0	0	0	0	0	40	64	61	61	25	25	2	0	0	0	0	0	0	0	0	281	64
25/07/2022	0	0	0	0	0	0	0	0	0	7	47	57	63	55	35	13	14	0	0	0	0	0	0	0	291	63
26/07/2022	0	0	0	0	0	0	0	0	35	45	35	42	76	85	46	64	8	0	0	0	0	0	0	0	435	85
27/07/2022	0	0	0	0	0	0	0	0	0	4	60	34	67	34	31	49	0	0	0	0	0	0	0	0	278	67
28/07/2022	0	0	0	0	0	0	0	0	2	14	43	72	41	80	8	6	37	0	0	0	0	0	0	0	303	80
29/07/2022	0	0	0	0	0	0	0	0	7	23	45	95	100	33	31	50	6	0	0	0	0	0	0	0	390	100
30/07/2022	0	0	0	0	0	0	0	0	5	20	26	54	138	88	36	57	2	0	0	0	0	0	0	0	427	138
31/07/2022	0	0	0	0	0	0	0	0	14	19	95	134	138	59	33	2	0	0	0	0	0	0	0	0	494	138
1/08/2022	0	0	0	0	0	0	0	0	0	26	19	42	94	18	72	17	3	0	0	0	0	0	0	0	291	94
2/08/2022	0	0	0	0	0	0	0	0	2	11	60	69	47	60	60	49	11	0	0	0	0	0	0	0	369	69
3/08/2022	0	0	0	0	0	0	0	4	1	9	107	48	53	38	16	22	32	0	0	0	0	0	0	0	330	107
4/08/2022	0	0	0	0	0	0	0	0	0	20	79	54	98	59	95	57	16	0	0	0	0	0	0	0	477	98
5/08/2022	0	0	0	0	0	0	0	0	1	22	105	95	81	62	9	25	7	0	0	0	0	0	0	0	408	105
6/08/2022	0	0	0	0	0	0	0	0	0	35	39	73	72	63	43	29	14	0	0	0	0	0	0	0	370	73
7/08/2022	0	0	0	0	0	0	0	0	3	37	64	84	147	130	14	3	0	0	0	0	0	0	0	0	481	147
8/08/2022	0	0	0	0	0	0	0	0	0	27	81	94	82	40	49	26	23	0	0	0	0	0	0	0	423	94
9/08/2022	0	0	0	0	0	0	0	0	0	14	87	49	490	55	22	22	0	0	0	0	0	0	0	0	740	490
10/08/2022	0	0	0	0	0	0	0	0	1	17	32	61	55	44	32	35	1	0	0	0	0	0	0	0	276	61
11/08/2022	0	0	0	0	0	0	0	0	2	27	44	70	65	48	22	7	7	0	0	0	0	0	0	0	291	70
12/08/2022	0	0	0	0	0	0	0	0	1	34	118	68	45	28	41	49	7	0	0	0	0	0	0	0	390	118
13/08/2022	0	0	0	0	0	0	0	0	0	62	58	90	52	76	15	19	12	0	0	0	0	0	0	0	384	90
14/08/2022	0	0	0	0	0	0	0	0	0	3	26	86	150	91	20	0	1	0	0	0	0	0	0	0	376	150
15/08/2022	0	0	0	0	0	0	0	0	3	11	53	64	100	99	31	14	26	0	0	0	0	0	0	0	401	100
16/08/2022	0	0	0	0	0	0	0	0	0	20	37	70	124	68	53	182	17	0	0	0	0	0	0	0	571	182
17/08/2022	0	0	0	0	0	0	0	0	5	23	70	104	91	59	39	17	10	0	0	0	0	0	0	0	418	104
18/08/2022	0	0	0	0	0	0	0	1	9	63	113	229	209	69	13	11	20	0	0	0	0	0	0	0	736	229
19/08/2022	0	0	0	0	0	0	0	4	5	60	45	122	89	24	32	21	0	0	0	0	0	0	0	0	401	122
20/08/2022	0	0	0	0	0	0	0	0	2	36	73	92	75	78	44	11	5	0	0	0	0	0	0	0	417	92
21/08/2022	0	0	0	0	0	0	0	0	0	45	53	64	125	56	40	10	18	0	0	0	0	0	0	0	411	125
22/08/2022	0	0	0	0	0	0	0	0	0	16	83	107	92	49	505	15	14	0	0	0	0	0	0	0	881	505
23/08/2022	0	0	0	0	0	0	0	0	26	32	109	112	118	38	79	44	8	0	0	0	0	0	0	0	564	118
24/08/2022	0	0	0	0	0	0	0	0	6	53	93	84	47	52	48	15	4	0	0	0	0	0	0	0	404	93
25/08/2022	0	0	0	0	0	0	0	0	8	52	101	53	137	76	33	24	13	0	0	0	0	0	0	0	497	137
26/08/2022	0	0	0	0	0	0	0	0	1	55	91	40	64	44	32	24	11	0	0	0	0	0	0	0	356	91
27/08/2022	0	0	0	0	0	0	0	0	0	11	26	59	83	80	41	1	2	0	0	0	0	0	0	0	302	83
28/08/2022	0	0	0	0	0	0	0	0	9	26	34	77	95	68	30	6	0	0	0	0	0	0	0	0	345	95
29/08/2022	0	0	0	0	0	0	0	0	0	9	43	76	87	231	56	60	2	0	0	0	0	0	0	0	563	231
30/08/2022	0	0	0	0	0	0	0	0	98	26	27	54	282	49	48	47	0	0	0	0	0	0	0	0	630	282
31/08/2022	0	0	0	0	0	0	0	0	0	23	70	58	110	74	44	29	0	0	0	0	0	0	0	0	408	110
1/09/2022	0	0	0	0	0	0	36	3	0	22	51	121	167	124	28	11	26	0	0	0	0	0	0	0	587	167
2/09/2022	0	0	0	0	0	0	0	2	6	28	118	77	108	27	72	31	20	0	0	0	0	0	0	0	490	118
3/09/2022	0	0	0	0	0	0	0	0	15	49</																

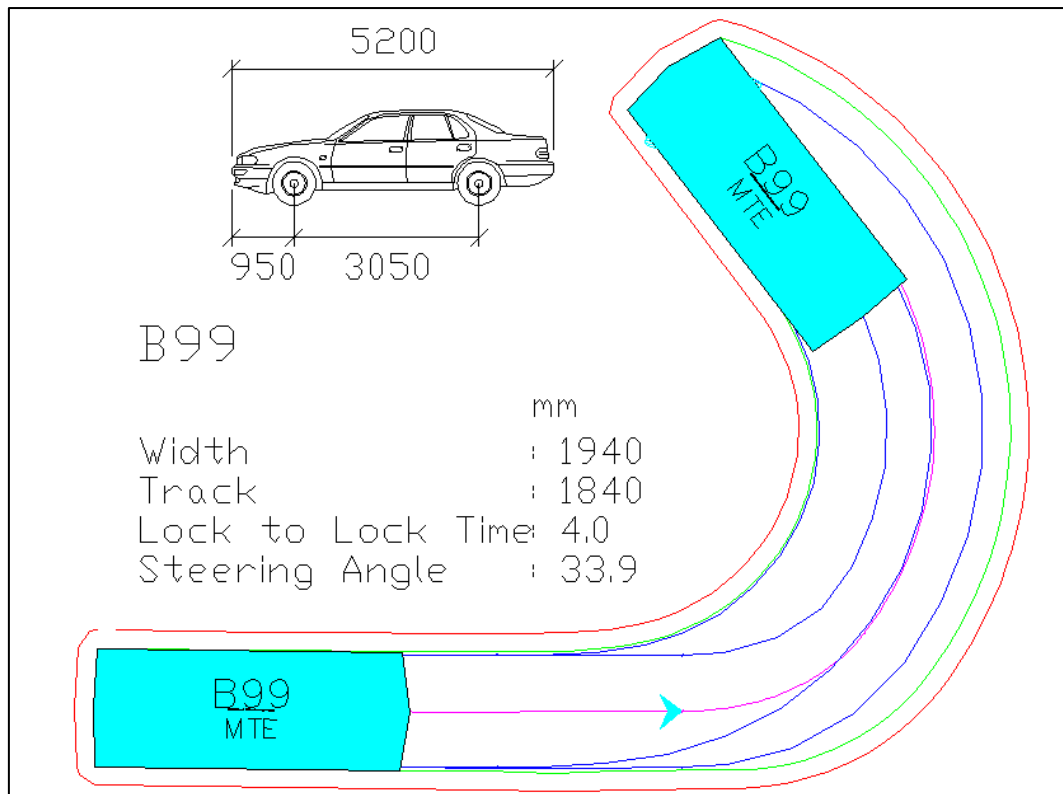
1/10/2022	0	0	0	0	0	0	0	0	0	26	89	132	186	219	123	76	58	67	0	0	0	0	0	0	0	0	977	219
2/10/2022	0	0	0	0	0	0	0	0	0	16	57	71	160	166	159	72	53	21	0	0	0	0	0	0	0	0	775	166
3/10/2022	0	0	0	0	0	0	0	0	0	0	51	172	239	157	172	87	41	18	0	0	0	0	0	0	0	0	936	239
4/10/2022	0	0	0	0	0	0	0	0	0	8	78	114	76	125	111	92	66	13	0	0	0	0	0	0	0	0	683	125
5/10/2022	0	0	0	0	0	0	0	0	0	4	53	107	101	167	101	83	32	16	0	0	0	0	0	0	0	0	664	167
6/10/2022	0	0	0	0	0	0	33	0	10	20	93	107	181	130	108	86	34	0	0	0	0	0	0	0	0	0	802	181
7/10/2022	0	0	0	0	0	0	0	0	1	30	121	100	115	112	211	28	33	0	0	0	0	0	0	0	0	0	751	211
8/10/2022	0	0	0	0	0	0	0	0	3	36	67	61	140	89	43	35	16	0	0	0	0	0	0	0	0	0	489	140
9/10/2022	0	0	0	0	0	0	0	0	0	49	63	62	126	83	38	72	12	0	0	0	0	0	0	0	0	0	504	126
10/10/2022	0	0	0	0	0	0	0	0	43	43	69	133	116	34	56	26	7	0	0	0	0	0	0	0	0	0	526	133
11/10/2022	0	0	0	0	0	0	0	0	1	53	62	51	72	59	33	18	16	0	0	0	0	0	0	0	0	0	365	72
12/10/2022	0	0	0	0	0	0	0	0	14	128	65	104	74	98	72	65	12	0	0	0	0	0	0	0	0	0	632	128
13/10/2022	0	0	0	0	0	0	0	0	1	37	84	178	99	57	47	11	21	0	0	0	0	0	0	0	0	0	535	178
14/10/2022	0	0	0	0	0	0	0	0	103	22	98	80	134	96	87	129	43	0	0	0	0	0	0	0	0	0	792	134
15/10/2022	0	0	0	0	0	0	0	0	7	111	119	76	108	82	54	17	8	0	0	0	0	0	0	0	0	0	583	119
16/10/2022	0	0	0	0	0	0	0	0	10	22	67	156	117	34	33	36	11	0	0	0	0	0	0	0	0	0	487	156
17/10/2022	0	0	0	0	0	0	0	0	10	63	67	123	127	79	102	43	29	0	0	0	0	0	0	0	0	0	643	127
18/10/2022	0	0	0	0	0	0	0	0	7	86	106	105	109	76	83	15	15	0	0	0	0	0	0	0	0	0	602	109
19/10/2022	0	0	0	0	0	0	0	0	30	42	101	87	101	73	36	28	3	0	0	0	0	0	0	0	0	0	502	101
20/10/2022	0	0	0	0	0	0	0	0	12	62	60	120	117	51	19	33	13	0	0	0	0	0	0	0	0	0	487	120
21/10/2022	0	0	0	0	0	0	0	0	11	45	80	124	102	90	94	49	20	0	0	0	0	0	0	0	0	0	614	124
22/10/2022	0	0	0	0	0	0	0	0	19	89	68	120	61	30	40	17	0	0	0	0	0	0	0	0	0	0	443	120
23/10/2022	0	0	0	0	0	0	0	0	9	79	101	186	119	83	110	23	6	0	0	0	0	0	0	0	0	0	716	186
24/10/2022	0	0	0	0	0	0	0	0	16	77	69	173	106	77	41	19	2	0	0	0	0	0	0	0	0	0	580	173
25/10/2022	0	0	0	0	0	0	0	0	0	61	77	103	109	68	8	0	0	0	0	0	0	0	0	0	0	0	427	109
26/10/2022	0	0	0	0	0	0	0	0	0	8	101	38	59	54	39	51	17	0	0	0	0	0	0	0	0	0	368	101
27/10/2022	0	0	0	0	0	0	0	0	0	59	49	64	63	62	33	26	25	0	0	0	0	0	0	0	0	0	380	64
28/10/2020	0	0	0	0	0	0	0	0	0	27	62	88	149	61	55	142	112	0	0	0	0	0	0	0	0	0	696	149
29/10/2022	0	0	0	0	0	0	0	0	7	64	126	195	82	87	51	33	49	0	0	0	0	0	0	0	0	0	694	195
30/10/2022	0	0	0	0	0	0	0	0	3	86	87	103	193	144	77	27	123	0	0	0	0	0	0	0	0	0	842	193
31/10/2022	0	0	0	0	0	0	0	0	114	48	111	53	76	32	69	54	20	0	0	0	0	0	0	0	0	0	577	114
1/11/2022	0	0	0	0	0	0	0	0	2	59	101	103	116	98	26	19	0	0	0	0	0	0	0	0	0	0	524	116
2/11/2022	0	0	0	0	0	0	0	0	7	50	86	106	99	82	83	7	16	0	0	0	0	0	0	0	0	0	535	106
3/11/2022	0	0	0	0	0	0	17	2	5	49	69	84	77	101	30	25	32	0	0	0	0	0	0	0	0	0	490	101
4/11/2022	0	0	0	0	0	0	0	113	1	133	70	94	73	62	59	28	30	0	0	0	0	0	0	0	0	0	664	133
5/11/2022	0	0	0	0	0	0	0	0	5	92	111	121	128	58	36	26	9	0	0	0	0	0	0	0	0	0	586	128
6/11/2022	0	0	0	0	0	0	0	0	17	96	47	88	75	113	29	28	12	0	0	0	0	0	0	0	0	0	596	113
7/11/2022	0	0	0	0	0	0	0	1	23	52	96	150	115	67	20	7	2	0	0	0	0	0	0	0	0	0	532	150
8/11/2022	0	0	0	0	0	0	0	0	0	52	102	60	114	33	16	7	8	0	0	0	0	0	0	0	0	0	391	114
9/11/2022	0	0	0	0	0	0	0	2	0	18	95	74	512	95	110	83	2	0	0	0	0	0	0	0	0	0	991	512
10/11/2022	0	0	0	0	0	0	0	0	3	60	159	84	83	47	66	31	32	0	0	0	0	0	0	0	0	0	565	159
11/11/2022	0	0	0	0	0	0	0	2	2	90	71	95	110	58	59	30	0	0	0	0	0	0	0	0	0	0	518	110
12/11/2022	0	0	0	0	0	0	0	0	7	25	72	93	76	42	108	48	13	0	0	0	0	0	0	0	0	0	485	108
13/11/2022	0	0	0	0	0	0	0	0	14	71	106	97	86	123	61	68	4	0	0	0	0	0	0	0	0	0	630	123
14/11/2022	0	0	0	0	0	0	0	0	2	24	67	87	63	50	36	275	4	0	0	0	0	0	0	0	0	0	608	275
15/11/2022	0	0	0	0	0	0	0	0	9	157	87	76	88	95	59	6	15	0	0	0	0	0	0	0	0	0	593	157
16/11/2022	0	0	0	0	0	0	0	0	0	23	97	126	104	58	55	42	8	0	0	0	0	0	0	0	0	0	514	126
17/11/2022	0	0	0	0	0	0	0	0	16	67	115	158	156	153	38	73	2	0	0	0	0	0	0	0	0	0	777	158
18/11/2022	0	0	0	0	0	0	0	0	1	101	62	112	52	44	44	32	29	0	0	0	0	0	0	0	0	0	477	112
19/11/2022	0	0	0	0	0	0	0	0	5	33	63	74	93	86	45	31	10	0	0	0	0	0	0	0	0	0	440	93
20/11/2022	0	0	0	0	0	0	0	0	5	74	118	86	196	67	41	19	5	0	0	0	0	0	0	0	0	0	611	196
21/11/2022	0	0	0	0	0	0	0	0	1	31	112	83	113	33	40	34	6	0	0	0	0	0	0	0	0	0	453	113
22/11/2022	0	0	0	0	0	0	0	0	2	64	74	186	91	81	55	63	15	0	0	0	0	0	0	0	0	0	632	186
23/11/2022	0	0	0	0	0	0	0	0	13	75	59	240	30	51	39	28	30	0	0	0	0	0	0	0	0	0	563	240
24/11/2022	0	0	0	0	0	0	0	0	11	65	44	69	76	85	74	24	8	0	0	0	0	0	0	0	0	0	457	85
25/11/2022	0	0	0	0	0	0	0	0	2	78	98	50	79	87	30	23	23	0	0	0	0	0	0	0	0	0	471	98
26/11/2022	0	0	0	0	0	0	0	0	5	33	33	52	84	81	75	67	14	0	0	0	0	0	0	0	0	0	443	84
27/11/2022	0	0	0	0	0	0	0	0	7	32	59	61	86	145	45	48	0	0	0	0	0	0	0	0	0	0	484	145
28/11/2022	0	0	0	0	0	0	0	1	1	19	97	83	125	89	54	2	7	0	0	0	0	0	0	0	0	0	478	125
29/11/2022	0	0	0	0	0	0	0	0	1	29	71	55	105	59	50	10	27	0	0	0	0	0	0	0	0	0	406	105
30/11/2022	0	0	0	0	0	0	0	0	10	24	93	90	67	65	89	28	32	0	0	0	0	0	0	0	0	0	497	93
1/12/2022	0	0	0	0	0	0	62	3	10	27	77	65	112	51	79	37	26	0										

[illegible]

1/04/2023	0	0	0	0	0	0	0	0	0	3	65	92	178	94	86	48	16	2	0	0	0	0	0	0	0	0	583	178
2/04/2023	0	0	0	0	0	0	0	0	0	11	59	115	105	122	32	79	16	0	0	0	0	0	0	0	0	0	539	122
3/04/2023	0	0	0	0	0	0	0	0	0	14	38	111	107	73	56	27	12	0	0	0	0	0	0	0	0	0	437	111
4/04/2023	0	0	0	0	0	0	0	0	0	18	67	86	101	77	71	53	32	35	0	0	0	0	0	0	0	0	540	101
5/04/2023	0	0	0	0	0	0	0	0	0	8	101	83	81	77	100	48	63	2	0	0	0	0	0	0	0	0	563	101
6/04/2023	0	0	0	0	0	0	0	51	1	64	52	77	106	50	75	54	62	5	0	0	0	0	0	0	0	0	595	106
7/04/2023	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8/04/2023	0	0	0	0	0	0	0	0	0	22	179	251	284	258	267	112	71	52	0	0	0	0	0	0	0	0	1496	284
9/04/2023	0	0	0	0	0	0	0	0	0	15	88	155	167	191	253	145	56	0	0	0	0	0	0	0	0	0	1069	253
10/04/2023	0	0	0	0	0	0	0	0	0	10	202	195	260	219	235	69	71	3	0	0	0	0	0	0	0	0	1263	260
11/04/2023	0	0	0	0	0	0	0	0	0	4	61	223	178	140	107	76	49	6	0	0	0	0	0	0	0	0	844	223
12/04/2023	0	0	0	0	0	0	0	0	0	9	81	131	155	170	125	97	75	14	0	0	0	0	0	0	0	0	858	170
13/04/2023	0	0	0	0	0	0	0	0	0	12	112	137	243	251	146	114	49	11	0	0	0	0	0	0	0	0	1074	251
14/04/2023	0	0	0	0	0	0	0	1	0	9	39	171	113	204	77	42	27	17	0	0	0	0	0	0	0	0	699	204
15/04/2023	0	0	0	0	0	0	0	0	0	14	88	151	187	95	54	80	26	10	0	0	0	0	0	0	0	0	704	187
16/04/2023	0	0	0	0	0	0	0	0	0	10	58	82	99	186	169	46	38	7	0	0	0	0	0	0	0	0	696	186
17/04/2023	0	0	0	0	0	0	0	0	0	4	75	128	135	114	118	45	33	33	0	0	0	0	0	0	0	0	684	135
18/04/2023	0	0	0	0	0	0	0	0	1	5	44	93	80	134	215	35	28	19	0	0	0	0	0	0	0	0	655	215
19/04/2023	0	0	0	0	0	0	0	0	1	163	76	169	172	96	123	91	28	2	0	0	0	0	0	0	0	0	919	172
20/04/2023	0	0	0	0	0	0	0	0	1	9	243	153	135	233	153	123	49	20	0	0	0	0	0	0	0	0	1120	243
21/04/2023	0	0	0	0	0	0	0	0	0	2	41	146	144	91	85	76	18	21	0	0	0	0	0	0	0	0	623	146
22/04/2023	0	0	0	0	0	0	0	0	0	13	35	70	132	120	125	47	22	7	0	0	0	0	0	0	0	0	572	132
23/04/2023	0	0	0	0	0	0	0	0	0	4	72	626	96	229	116	42	87	6	0	0	0	0	0	0	0	0	1278	626
24/04/2023	0	0	0	0	0	0	0	0	0	22	16	103	130	116	72	92	19	8	0	0	0	0	0	0	0	0	577	130
25/04/2023	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26/04/2023	0	0	0	0	0	0	0	0	1	21	73	63	82	97	74	41	36	31	0	0	0	0	0	0	0	0	518	97
27/04/2023	0	0	0	0	0	0	0	0	1	7	46	232	98	103	78	60	28	0	0	0	0	0	0	0	0	0	643	232
28/04/2023	0	0	0	0	0	0	0	0	1	11	36	97	98	70	31	66	70	31	10	0	0	0	0	0	0	0	521	98
29/04/2023	0	0	0	0	0	0	0	0	0	0	30	65	67	113	145	37	38	15	0	0	0	0	0	0	0	0	511	145
30/04/2023	0	0	0	0	0	0	0	0	0	0	38	89	135	136	36	23	27	1	0	0	0	0	0	0	0	0	486	136
1/05/2023	0	0	0	0	0	0	0	0	0	0	36	61	52	97	68	62	31	16	0	0	0	0	0	0	0	0	422	97
2/05/2023	0	0	0	0	0	0	0	0	0	2	36	37	79	127	67	21	29	15	0	0	0	0	0	0	0	0	413	127
3/05/2023	0	0	0	0	0	0	0	0	0	1	151	53	109	128	78	39	19	8	0	0	0	0	0	0	0	0	586	151
4/05/2023	0	0	0	0	0	0	0	21	17	10	16	75	47	121	68	125	31	46	0	0	0	0	0	0	0	0	576	125
5/05/2023	0	0	0	0	0	0	0	0	0	4	38	121	56	132	71	41	38	26	0	0	0	0	0	0	0	0	528	132
6/05/2023	0	0	0	0	0	0	0	0	0	0	54	46	53	107	115	76	5	20	0	0	0	0	0	0	0	0	476	115
7/05/2023	0	0	0	0	0	0	0	0	0	0	44	106	149	134	102	44	31	-5	0	0	0	0	0	0	0	0	606	149
8/05/2023	0	0	0	0	0	0	0	0	0	1	46	68	104	151	78	49	23	0	0	0	0	0	0	0	0	0	520	151
9/05/2023	0	0	0	0	0	0	0	0	1	0	50	78	64	83	52	42	47	28	0	0	0	0	0	0	0	0	444	83
10/05/2023	0	0	0	0	0	0	0	0	0	0	17	104	59	77	55	73	28	18	0	0	0	0	0	0	0	0	431	104
11/05/2023	0	0	0	0	0	0	0	0	1	0	21	56	95	176	67	23	18	3	0	0	0	0	0	0	0	0	459	176
12/05/2023	0	0	0	0	0	0	0	0	1	0	47	51	115	99	112	47	20	43	0	0	0	0	0	0	0	0	535	115
13/05/2023	0	0	0	0	0	0	0	0	0	0	37	93	71	172	53	25	8	4	0	0	0	0	0	0	0	0	463	172
14/05/2023	0	0	0	0	0	0	0	0	0	0	40	26	120	173	143	52	12	18	0	0	0	0	0	0	0	0	584	173
15/05/2023	0	0	0	0	0	0	0	0	0	1	8	42	104	111	110	27	22	30	0	0	0	0	0	0	0	0	454	111
16/05/2023	0	0	0	0	0	0	0	0	0	2	105	87	87	103	216	48	57	27	0	0	0	0	0	0	0	0	732	216
17/05/2023	0	0	0	0	0	0	0	0	1	8	41	81	102	49	36	50	13	11	0	0	0	0	0	0	0	0	392	102
18/05/2023	0	0	0	0	0	0	0	0	0	0	29	55	58	83	49	65	30	4	0	0	0	0	0	0	0	0	372	83
19/05/2023	0	0	0	0	0	0	0	0	0	1	44	102	76	82	92	31	23	11	0	0	0	0	0	0	0	0	460	102
20/05/2023	0	0	0	0	0	0	0	0	0	0	34	25	55	93	61	23	37	1	0	0	0	0	0	0	0	0	327	93
21/05/2023	0	0	0	0	0	0	0	0	0	0	54	28	137	123	32	57	19	0	0	0	0	0	0	0	0	0	449	137
22/05/2023	0	0	0	0	0	0	0	0	0	0	27	46	61	115	64	60	37	4	0	0	0	0	0	0	0	0	412	115
23/05/2023	0	0	0	0	0	0	0	0	0	0	39	93	65	106	41	32	29	5	0	0	0	0	0	0	0	0	410	106
24/05/2023	0	0	0	0	0	0	0	0	0	1	43	56	77	117	82	25	39	7	0	0	0	0	0	0	0	0	447	117
25/05/2023	0	0	0	0	0	0	0	0	1	2	14	67	131	70	59	36	26	23	4	0	0	0	0	0	0	0	434	131
26/05/2023	0	0	0	0	0	0	0	0	0	0	29	56	79	103	84	70	44	40	0	0	0	0	0	0	0	0	505	103
27/05/2023	0	0	0	0	0	0	0	0	0	0	32	51	100	77	98	22	48	27	1	0	0	0	0	0	0	0	457	100
28/05/2023	0	0	0	0	0	0	0	0	0	0	30	62	346	104	116	36	19	13	0	0	0	0	0	0	0	0	731	346
30/05/2023	0	0	0	0	0	0	0	0	0	1	16	21	98	99	43	37	15	0	0	0	0	0	0	0	0	0	330	99
31/05/2023	0	0	0	0	0	0	0	0	0	4	26	76	101	130	45	37	34	8	0	0	0	0	0	0	0	0	461	130
1/06/2023	0	0	0	0	0	0	0	0	35	3	21	76	62	156	107	61	45	4	0	0	0	0	0	0	0	0	571	156
2/06/2023	0	0	0	0	0	0	0	0	0	0	28	67	68	66	73	29	29	30	0	0	0							



**ANNEXURE E: SWEPT PATH TESTING
(9 SHEETS)**



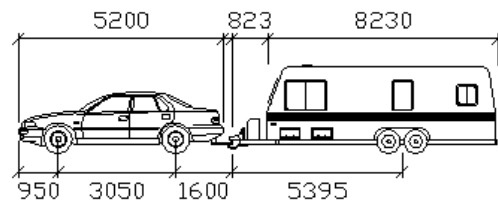
AUSTRALIAN STANDARD 99.8TH PERCENTILE SIZE VEHICLE (B99)

Blue – Tyre Path

Green – Vehicle Body

Red – 300mm Clearance

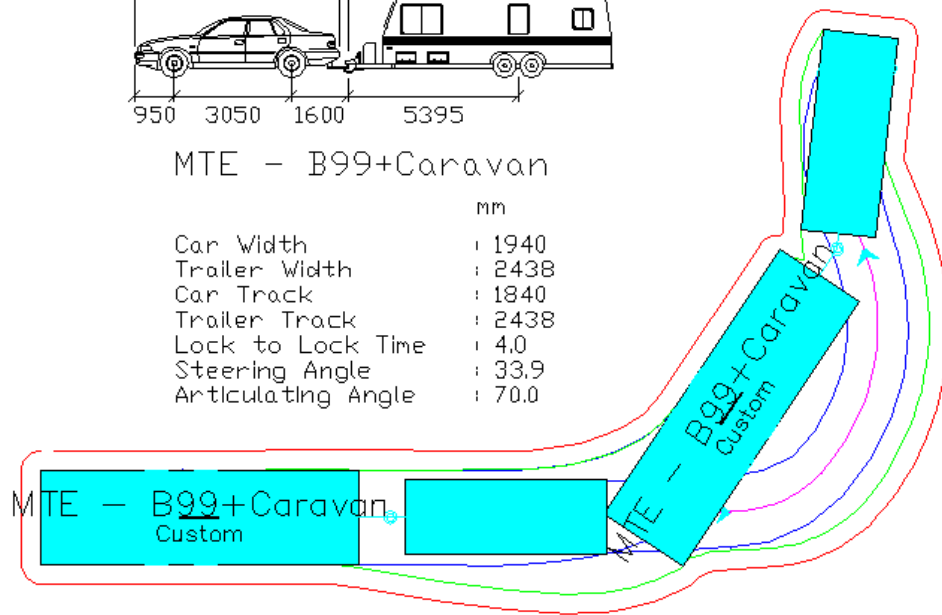
Tested @ 5-km/h internally; 10-km/h on public roads.



MTE - B99+Caravan

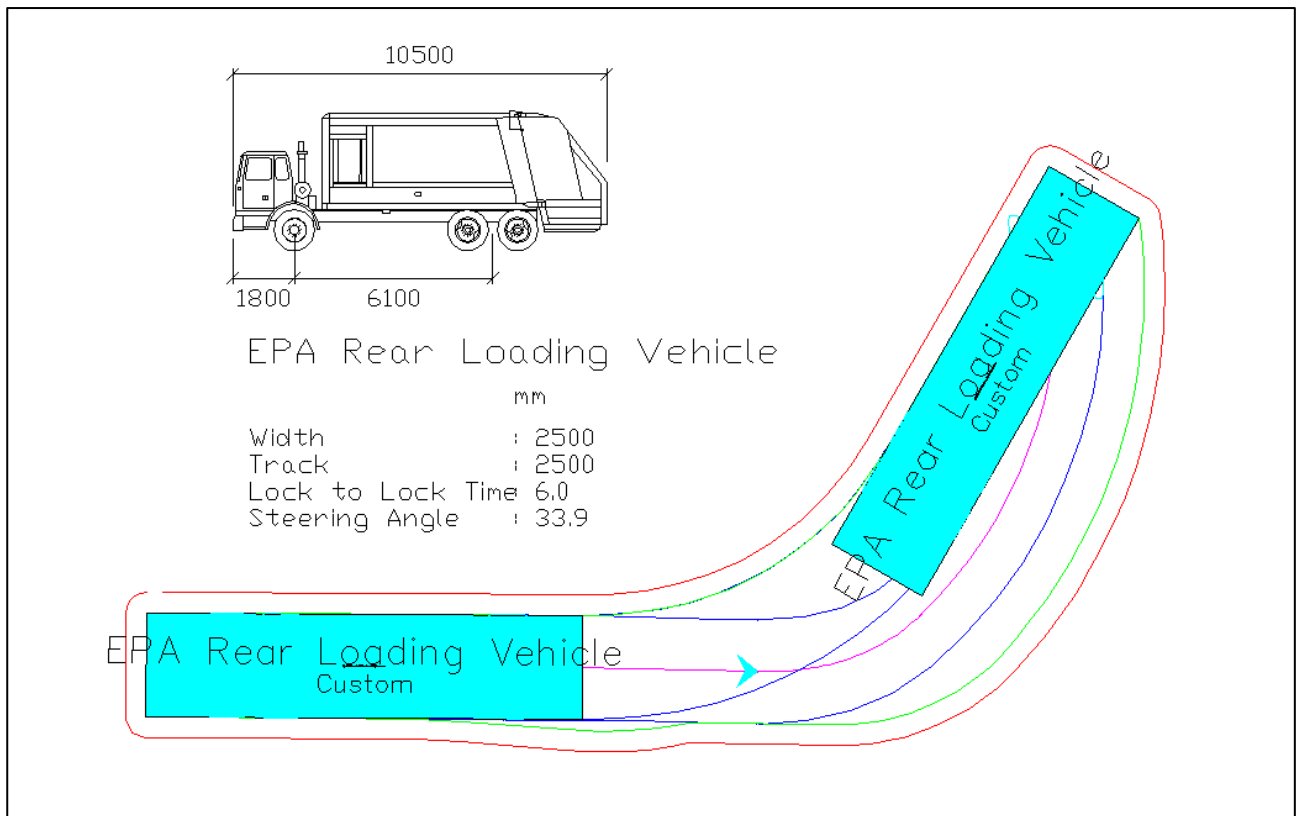
mm

Car Width	: 1940
Trailer Width	: 2438
Car Track	: 1840
Trailer Track	: 2438
Lock to Lock Time	: 4.0
Steering Angle	: 33.9
Articulating Angle	: 70.0



B99 AND CARAVAN

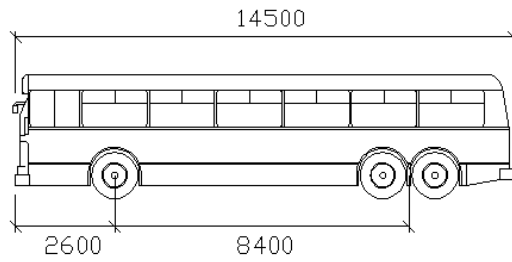
Blue – Tyre Path
 Green – Vehicle Body
 Red – 300mm Clearance
 Tested @ 5-km/h internally.



EPA REAR LOADING WASTE COLLECTION VEHICLE

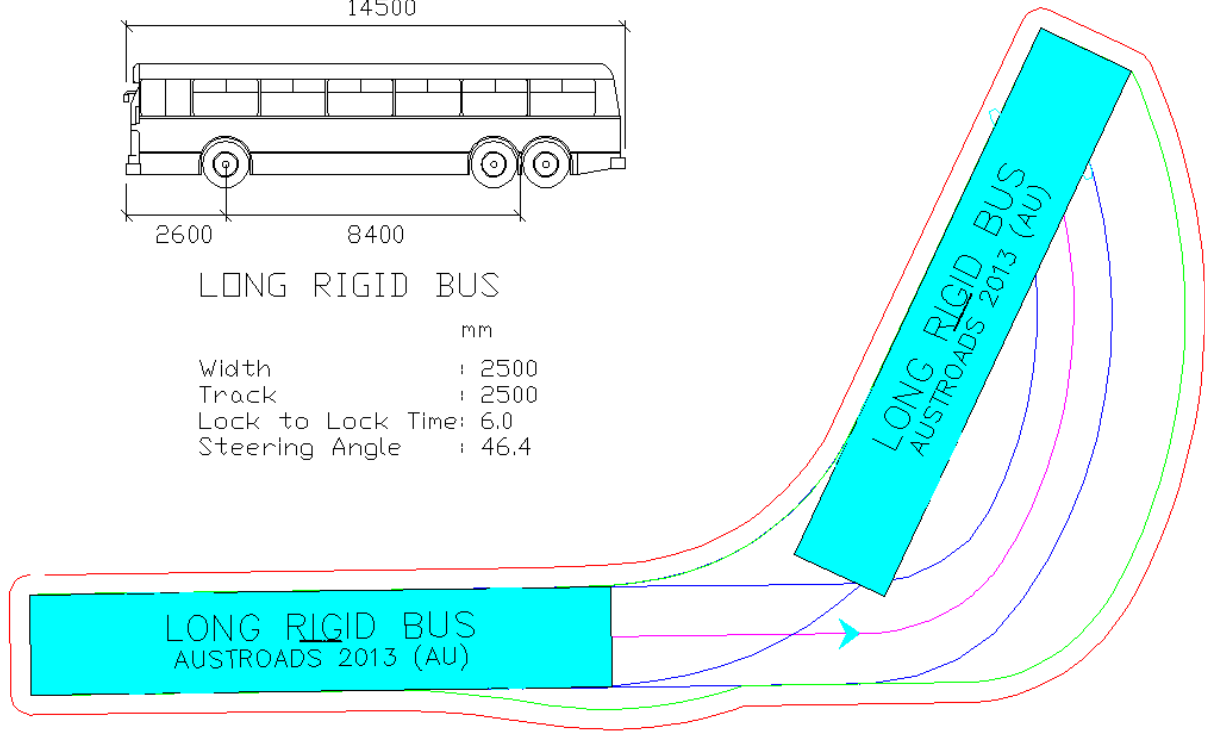
Blue – Tyre Path
 Green – Vehicle Body
 Red – 500mm Clearance

Tested @ 5-km/h



LONG RIGID BUS

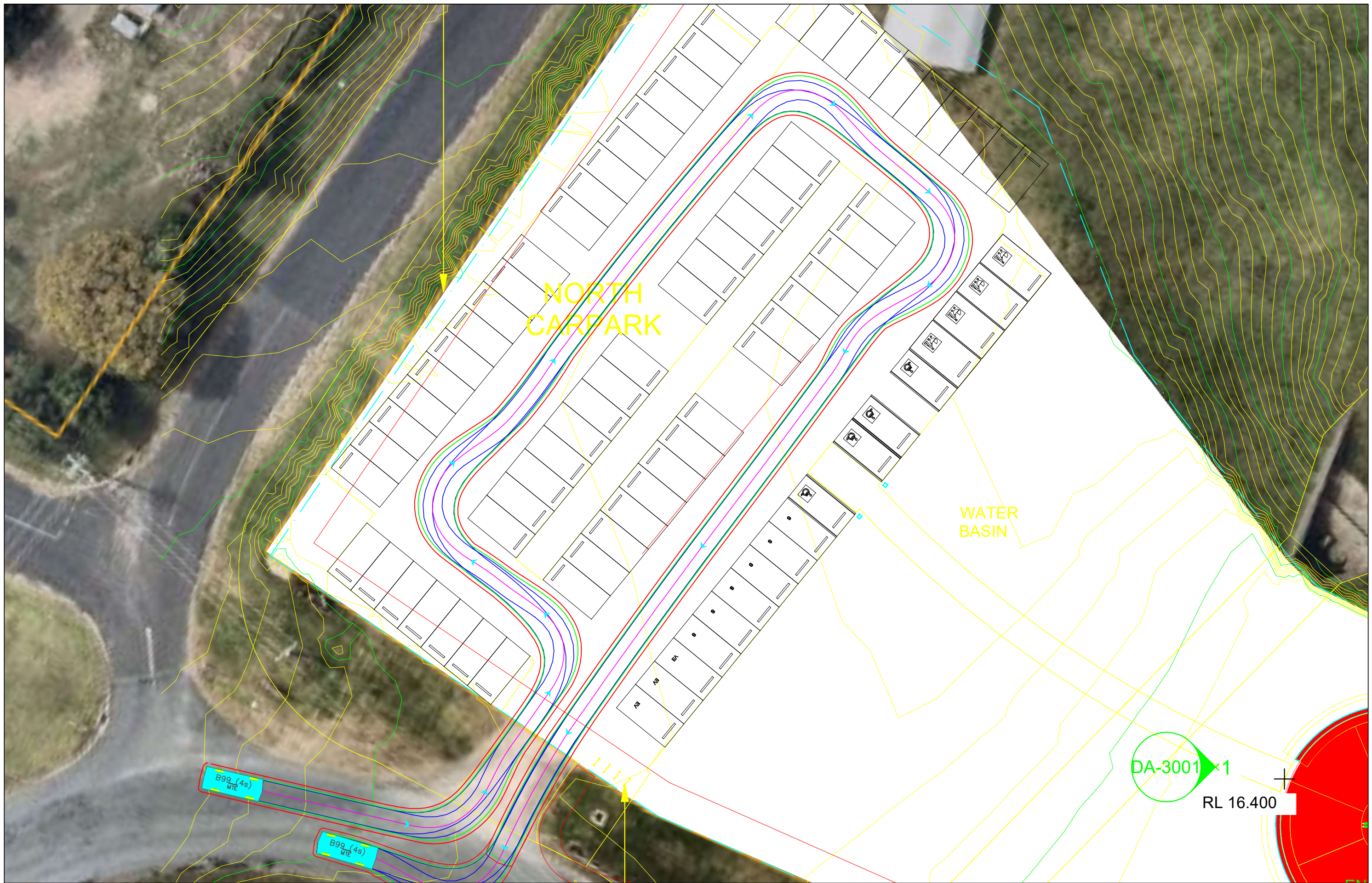
	mm
Width	: 2500
Track	: 2500
Lock to Lock Time:	6.0
Steering Angle	: 46.4



AUSTROADS LONG RIGID BUS (COACH)

Blue – Tyre Path
 Green – Vehicle Body
 Red – 500mm Clearance

Tested @ 5-km/h



MCLAREN TRAFFIC ENGINEERING
A division of RAMTRANS Australia Pty. Ltd.

Shop 7, 716-720 Old Princes Hwy, Sutherland NSW 2232
P : (02) 9521 - 7199
E : admin@mcclarentraffic.com.au
www.mcclarentraffic.com.au

CLIENT / Project:
Bega Circularity Centre

Project Address:
Lagoon Street, Bega

Notes:
CONCEPT PLAN ONLY.
NOT FOR CONSTRUCTION.

Tested Using:
*AutoTURN 10
*ZWCAD 2019

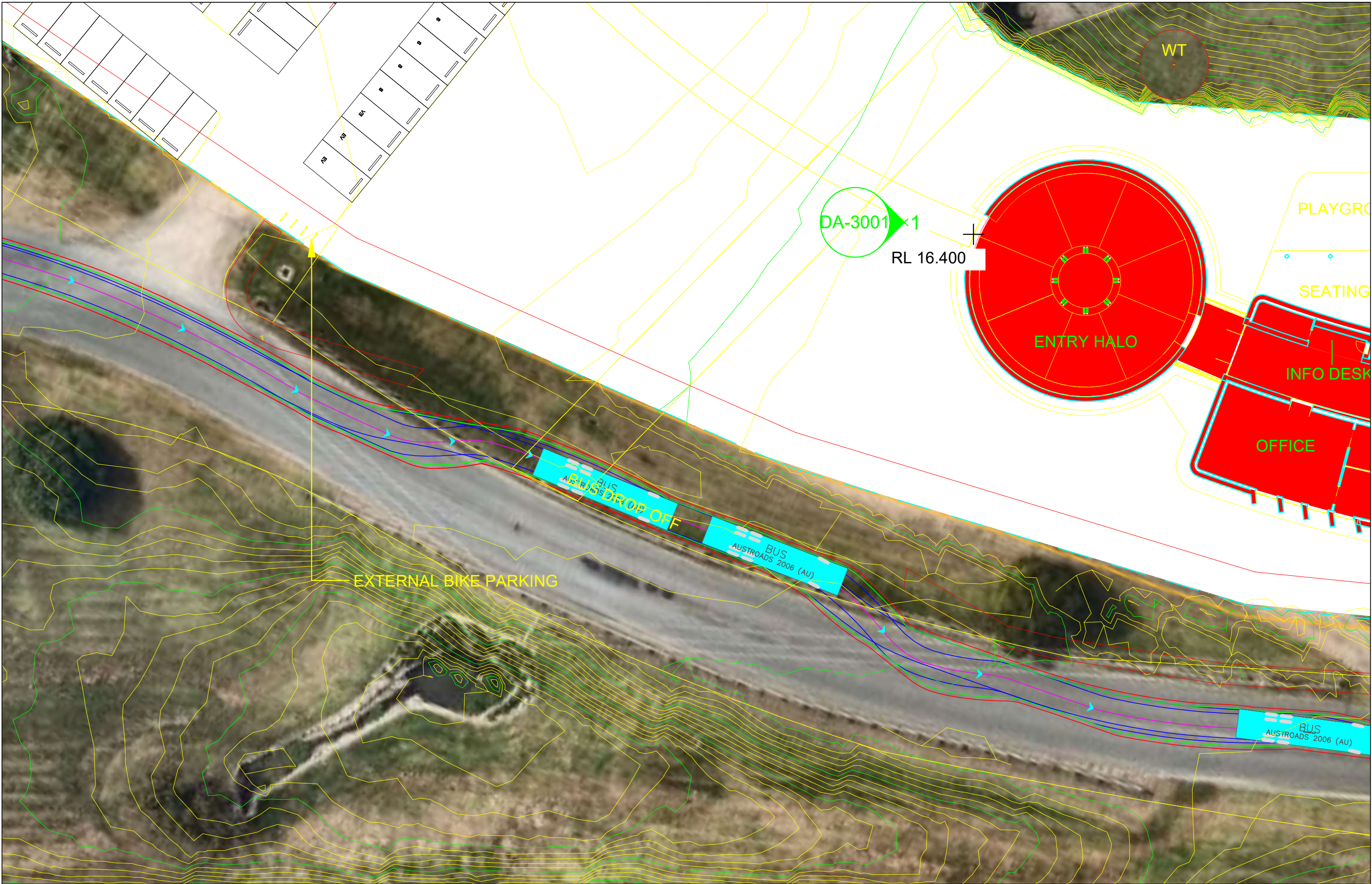
Scale 1:300

Drawing Title:
B99 Circulation

Project No:	Drawing No:
2023/456	2023-456-01D

Revision	Date	Details
A	29/09/2023	
B	22/03/2024	
C	07/05/2024	
D	03/10/2024	





MCLAREN TRAFFIC ENGINEERING
A division of RAMTRANS Australia Pty. Ltd.
Shop 7, 716-720 Old Princes Hwy, Sutherland NSW 2232
P : (02) 9521 - 7199
E : admin@mcclarentraffic.com.au
www.mcclarentraffic.com.au

CLIENT / Project:
Bega Circularity Centre

Project Address:
Lagoon Street, Bega

Notes:
CONCEPT PLAN ONLY.
NOT FOR CONSTRUCTION.

Tested Using:
*AutoTURN 10
*ZWCAD 2019

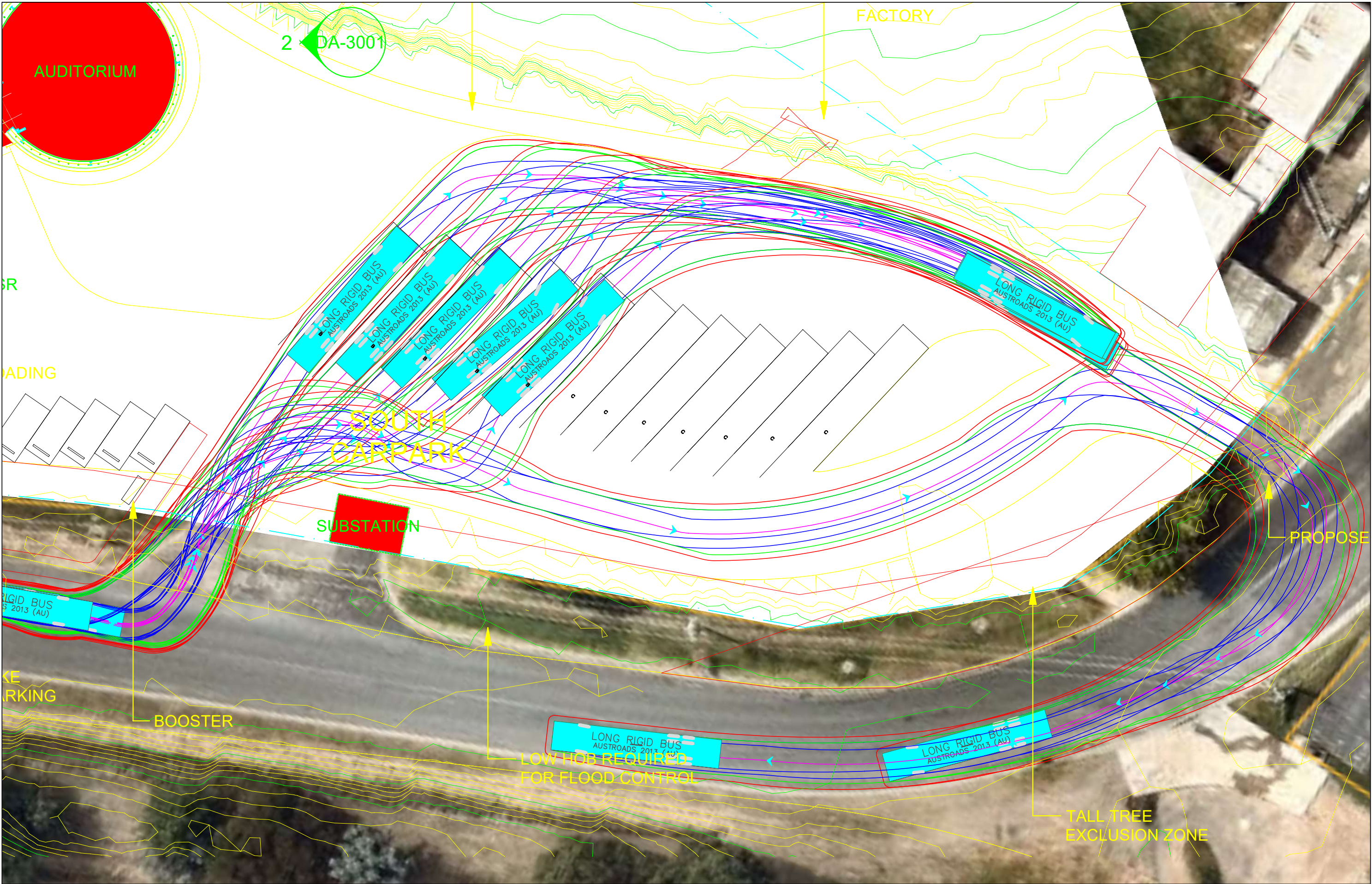
Scale 1:300

Drawing Title:
Bus Drop Off Circulation

Project No:	Drawing No:
2023/456	2023-456-02D

Revision	Date	Details
A	29/09/2023	
B	22/03/2024	
C	07/05/2024	
D	03/10/2024	





MCLAREN TRAFFIC ENGINEERING
A division of RAMTRANS Australia Pty. Ltd.

Shop 7, 716-720 Old Princes Hwy, Sutherland NSW 2232
P : (02) 9521 - 7199
E : admin@mcclarentraffic.com.au
www.mcclarentraffic.com.au

CLIENT / Project:
Bega Circularity Centre

Project Address:
Lagoon Street, Bega

Notes:
CONCEPT PLAN ONLY.
NOT FOR CONSTRUCTION.

Tested Using:
*AutoTURN 10
*ZWCAD 2019

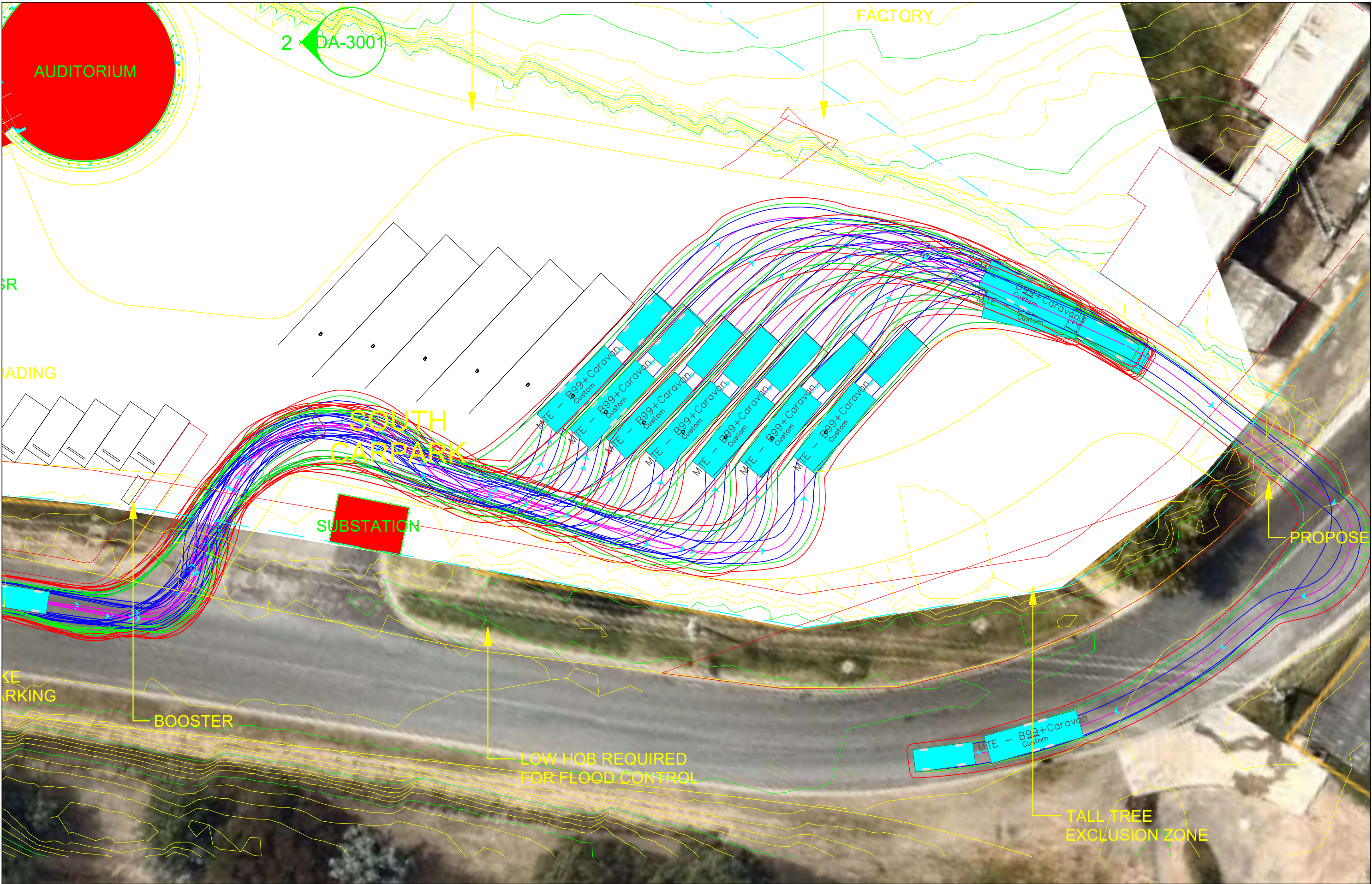
Scale 1:300

Drawing Title:
Bus Parking and Circulation

Project No:	Drawing No:
2023/456	2023-456-03D

Revision	Date	Details
A	29/09/2023	
B	22/03/2024	
C	07/05/2024	
D	03/10/2024	





MCLAREN TRAFFIC ENGINEERING
A division of RAMTRANS Australia Pty. Ltd.

Shop 7, 716-720 Old Princes Hwy, Sutherland NSW 2232
P : (02) 9521 - 7199
E : admin@mcclarentraffic.com.au
www.mcclarentraffic.com.au

CLIENT / Project:
Bega Circularity Centre

Project Address:
Lagoon Street, Bega

Notes:
CONCEPT PLAN ONLY.
NOT FOR CONSTRUCTION.

Tested Using:
*AutoTURN 10
*ZWCAD 2019

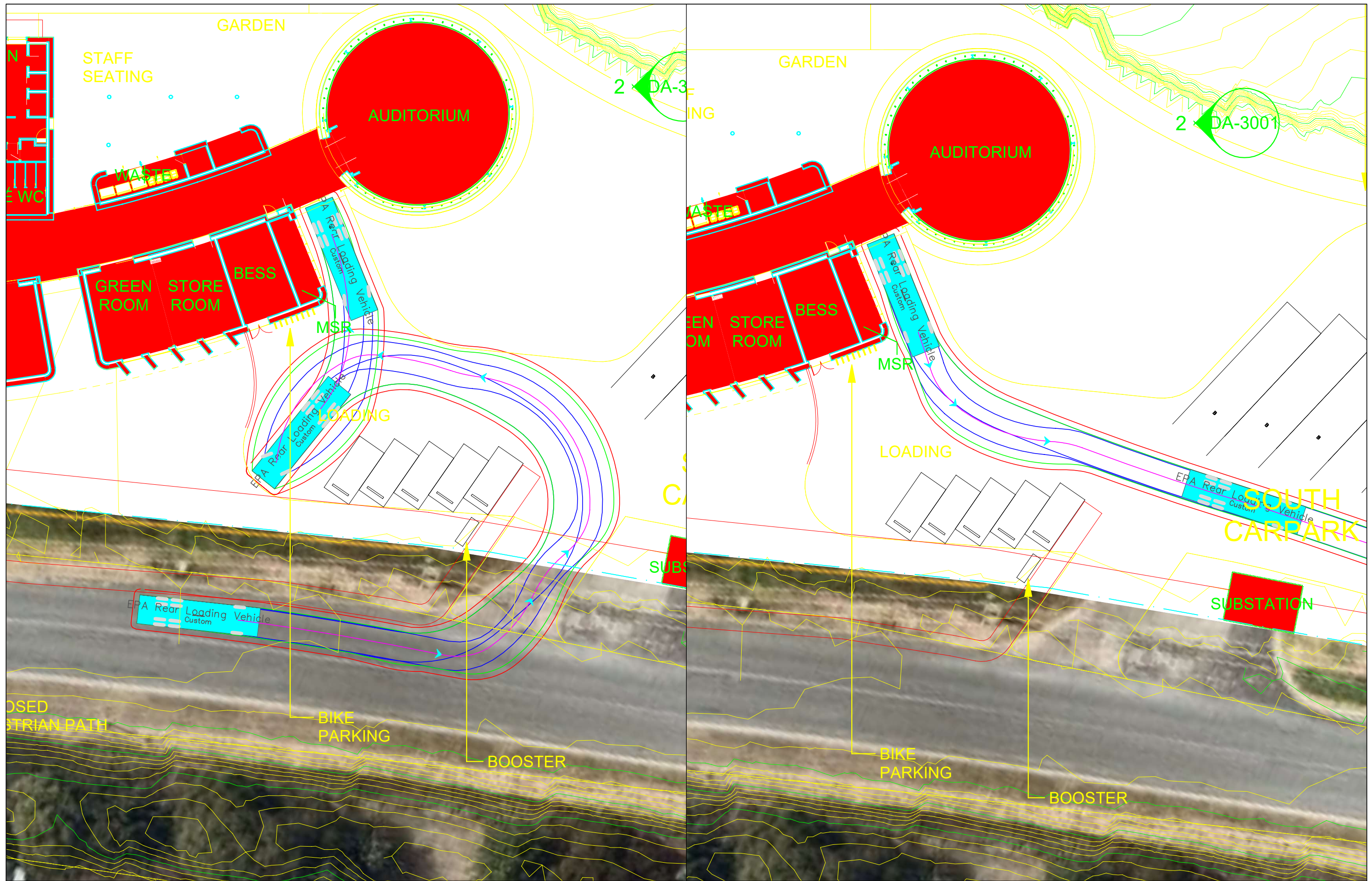
Scale 1:300

Drawing Title:
Caravan Parking and Circulation

Project No:	Drawing No:
2023/456	2023-456-04D

Revision	Date	Details
A	29/09/2023	
B	22/03/2024	
C	07/05/2024	
D	03/10/2024	





MCLAREN TRAFFIC ENGINEERING
A division of RAMTRANS Australia Pty. Ltd.
Shop 7, 716-720 Old Princes Hwy, Sutherland NSW 2232
P : (02) 9521 - 7199
E : admin@mcclarentraffic.com.au
www.mcclarentraffic.com.au

CLIENT / Project:
Bega Circularity Centre

Project Address:
Lagoon Street, Bega

Notes:
CONCEPT PLAN ONLY.
NOT FOR CONSTRUCTION.

Tested Using:
*AutoTURN 10
*ZWCAD 2019

Scale 1:300

Drawing Title:
Waste Collection

Project No: 2023/456
Drawing No: 2023-456-05D

Revision	Date	Details
A	29/09/2023	
B	22/03/2024	
C	07/05/2024	
D	03/10/2024	

