TRAFFIC AND PARKING IMPACT ASSESSMENT OF THE PROPOSED RESIDENTIAL TOWNHOUSES AT 262 ABERGLASSLYN ROAD, ABERGLASSLYN

McLaren
Traffic Engineering & Road Safety Consultants

Development Type: **Residential Townhouses**

Site Address: **262 Aberglasslyn Road, Aberglasslyn**

Prepared for: **MHM Construction Group**

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Final	**C**	**JC**	**DF**	**30 May 2023**
Final	**D**	**JC**	**DF**	**7 September 2023**

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1   INTRODUCTION

M^CLaren Traffic Engineering was commissioned by *MHM Construction* Group to provide a traffic and parking impact assessment of the proposed residential townhouses at 262 Aberglasslyn Road, Aberglasslyn 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 total of 24 townhouse dwellings consisting of;
    - 18 two-bedroom units;
    - 6 three-bedroom units.
- A total of 35 car parking spaces provided on-site including:
    - 29 residential car parking spaces within enclosed garages
    - 6 visitor car parking spaces.

1.2   State Environmental Planning Policy (Transport and Infrastructure) 2021

The proposed development does not qualify as a traffic generating development with relevant size and/or capacity under *Clause 2.122* of the *SEPP (Transport and Infrastructure) 2021*. Accordingly, formal referral to Transport for NSW (TfNSW) is unnecessary and the application can be assessed by Maitland Council officers accordingly.

1.3   Site Description

The subject development is currently zoned *R1 – General Residential* under the *Maitland Council LEP 2011* and is currently unoccupied. The site has a singular frontage to Aberglasslyn Road to the west.

The site is generally surrounded by residential dwellings in all directions, with large lot residential properties primarily on the western side of Aberglasslyn Road. Woolworths Aberglasslyn located approximately 600m to the south and McKeachies Sportsground located approximately 800m to the east of site.

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.
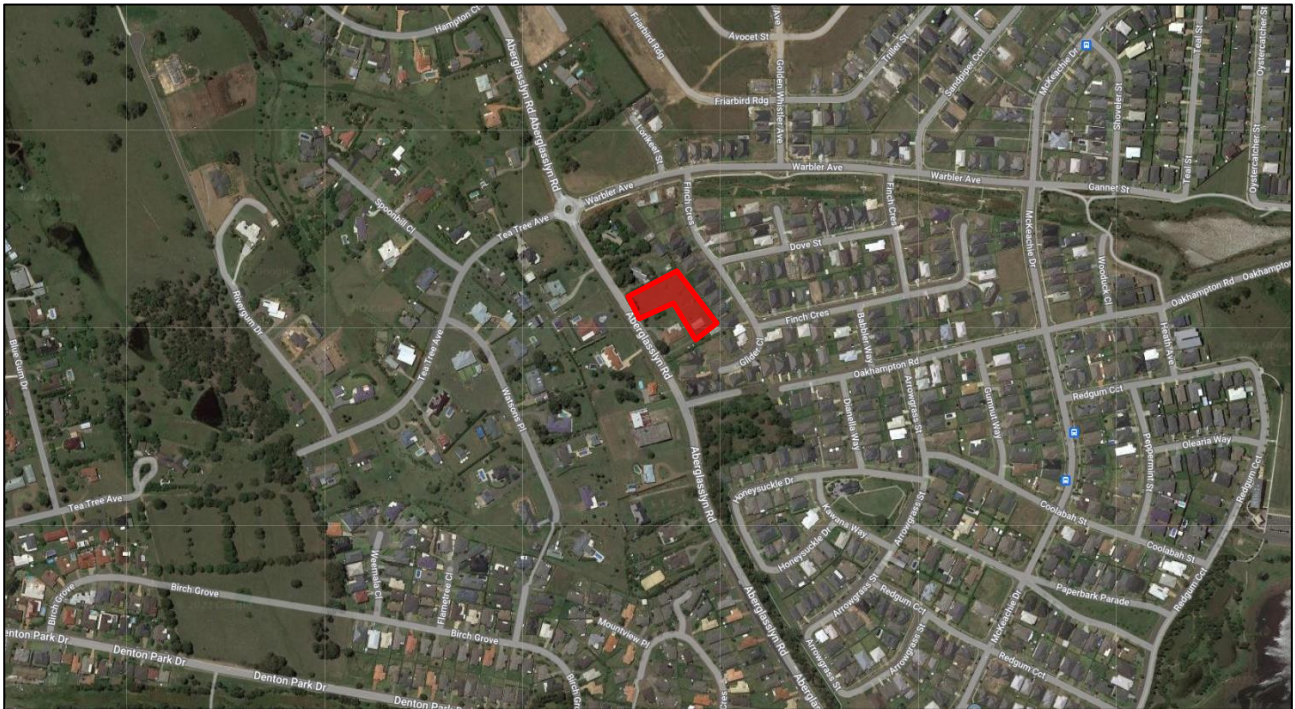
Site Location

FIGURE 1: SITE CONTEXT – AERIAL PHOTO
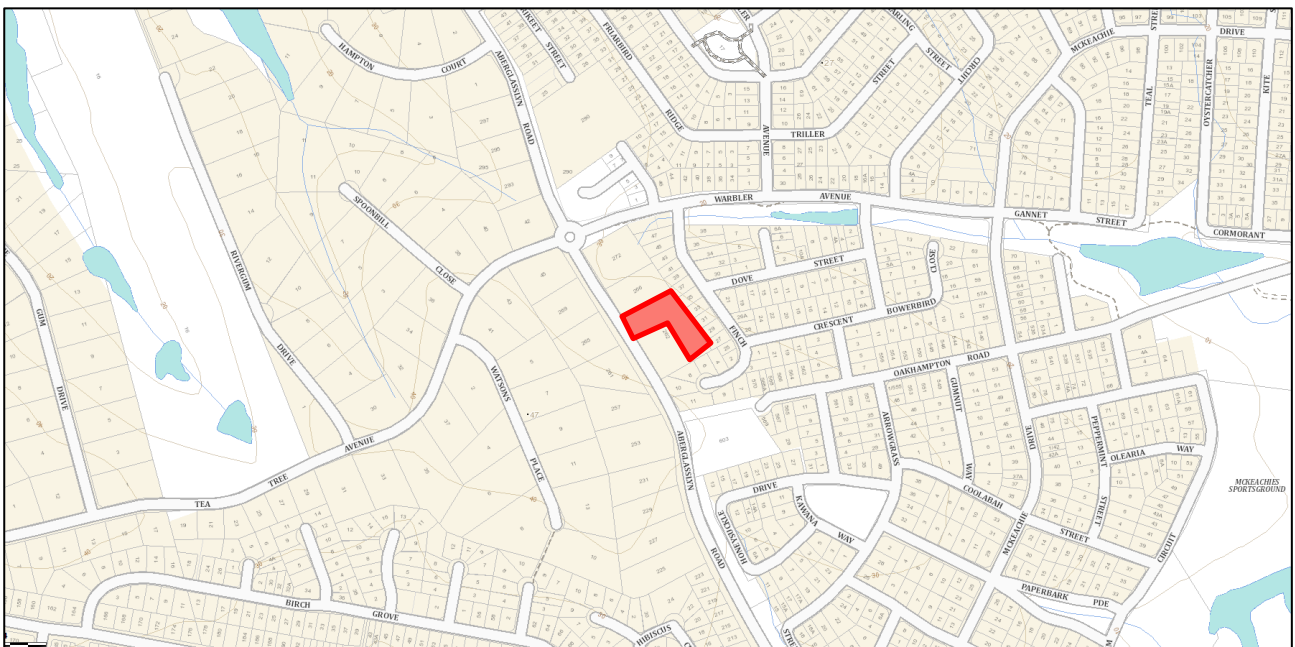
Site Location

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 Aberglasslyn Road

- Unclassified COLLECTOR Road;

- Approximately 8m wide two-way carriageway facilitating one (1) traffic flow lane in each direction;

- Signposted 60km/h speed limit;

- No formal kerbside parking permitted along both sides of the road.

2.1.2 Warbler Avenue

- Unclassified COLLECTOR Road;

- Approximately 11m wide two-way carriageway facilitating one (1) traffic flow lane in each direction and kerbside parking;

- Default 50km/h speed limit applies;

- Generally, unrestricted kerbside parking permitted along both sides of the road.

2.2 Existing Traffic Management

- Roundabout controlled intersection of Aberglasslyn Road / Warbler Avenue / Tea Tree Avenue;

- Roundabout controlled intersection of Aberglasslyn Road / Denton Park Drive / McKeachie Drive;

- "STOP" controlled intersection of Aberglasslyn Road / Oakhampton Road.

2.3 Existing Traffic Environment

Intersection traffic surveys were conducted at the intersections of Aberglasslyn Road / Warbler Avenue / Tea Tree Avenue and Aberglasslyn Road / Denton Park Drive / McKeachie Drive from 7:00am to 9:30am and 2:30pm to 6:00pm on Thursday 3 November 2022 representing a typical operating weekday. 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						
Tea Tree Avenue / Warbler Avenue	AM	0.07	5.7 (Worst: 12.1)	**A** (Worst: B)	Roundabout	UT from Aberglasslyn Road
	PM	0.11	5.7 (Worst: 10.7)	**A** (Worst: B)		UT from Aberglasslyn Road
McKeachie Drive / Denton Park Drive	AM	0.38	6.2 (Worst: 11.7)	**A** (Worst: B)	Roundabout	UT from Aberglasslyn Road
	PM	0.45	6.9 (Worst: 12.1)	**A** (Worst: B)		UT from Aberglasslyn Road
Aberglasslyn Road / Site Driveway	AM	0.05	0.1 (Worst: 6)	**NA** (Worst: A)	Give Way	RT from Site Driveway
	PM	0.08	0.1 (Worst: 6.2)	**NA** (Worst: A)		RT from Site Driveway

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 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.

2.4 Public Transport

The subject site has access to existing bus stop (ID: 2320327) located approximately 700m walking distance to the east of site on McKeachie Drive. The bus stop services existing bus route 186 (Rutherford to Aberglasslyn via Denton Park Drive (Loop Service)) provided by Hunter Valley Buses.

The location of the site subject to the surrounding public transport network is shown in **Figure 3**.
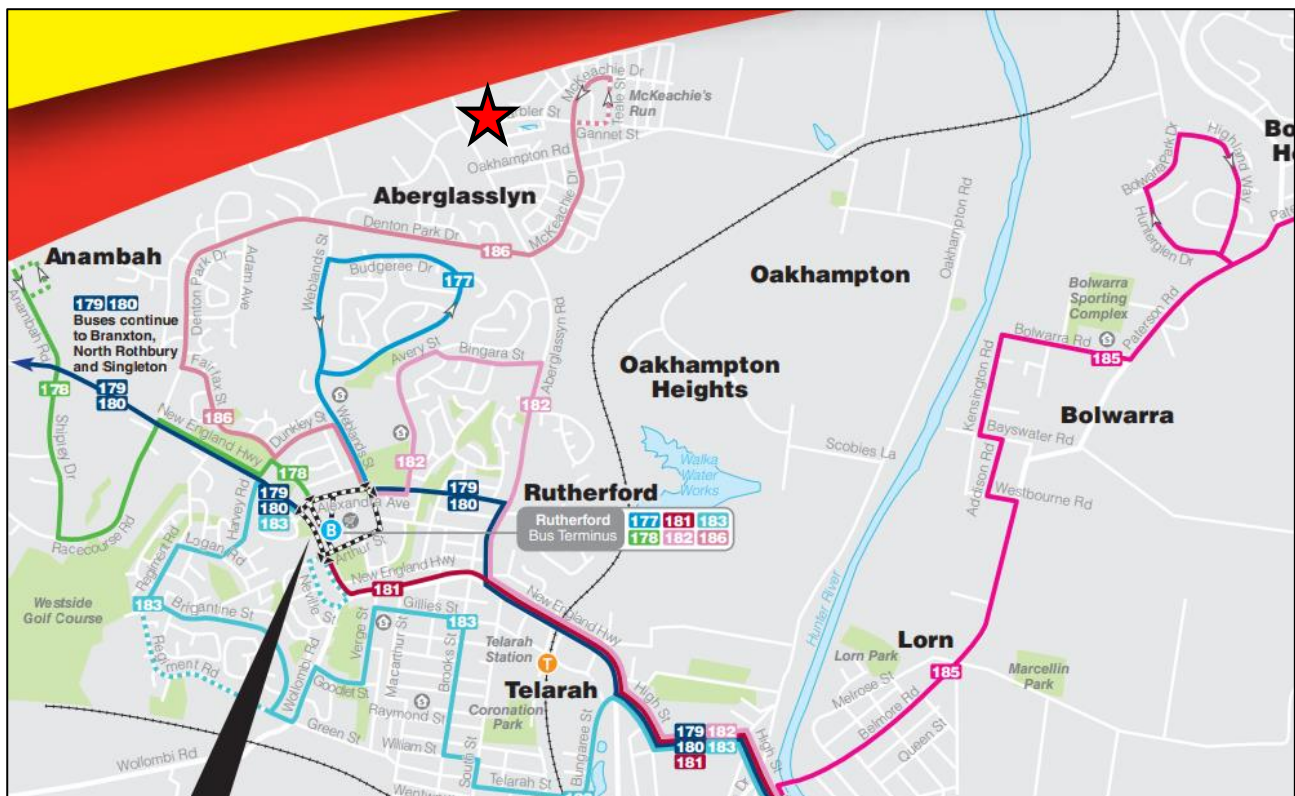
Site Location

FIGURE 3: PUBLIC TRANSPORT NETWORK MAP

2.5 Future Road and Infrastructure Upgrades

From Maitland Council Development Application tracker and website, it appears that Aberglasslyn Road is currently undergoing upgrades to widen the carriageway and formalise kerbs and drainage along both sides of the road. The federal government has recently committed through its *Roads to Recovery Program* to an upgrade of Aberglasslyn Road north of Warbler Avenue, including rehabilitation or the road pavement and resealing, as well as widening the road to accommodate a 1m road shoulder. This work is expected to start in October 2022 and finish in May 2023.

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 *Maitland Development Control Plan (MDCP) 2011 Part C – Design Guidelines* which designates the following parking rates applicable to the proposed development:

1.2 Calculation of Numbers

Where the calculation results in a fraction of a space, the total number of parking spaces required will be the next highest whole number.

Appendix A – Car Parking Requirements for Specific Land Uses

Multi dwelling Housing / Dual Occupancy

1 space for each one- or two-bedroom dwelling

or

2 spaces for each dwelling containing more than two bedrooms

plus

1 visitor space for the first three dwellings and 1 space for every five thereafter or part thereof

Table 2 presents the parking requirements of the proposal according to the Council's above car parking rates.

TABLE 2: DCP PARKING RATES

Land Use	Type	Scale	Rate	Spaces Required
Multi Dwelling Housing	Two-Bedroom Unit	19	1 per dwelling	19
	Three-Bedroom Unit	5	2 per dwelling	10
	Visitor	3	1 per 3 dwellings	1
	Visitor	21	1 per 5 dwellings	5 (4.2)
TOTAL	**-**	**-**	**-**	**35**

As shown, strict application of the DCP requires the provision of **35** car parking spaces, (with **29** for residential use and **6** for visitor use). The proposed plans detail the provision of **35** car parking spaces, resulting in compliance with Council's DCP parking requirements.

3.2 Parking for People with Disabilities

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

> *12.4 Where an adaptable dwelling is required in accordance with the provisions of this Plan, one (1) accessible car parking space shall be provided for every adaptable dwelling. This is in addition to any accessible parking required by Section 15 of this chapter.*

The proposed site requires three (3) adaptable dwellings and therefore three (**3**) adaptable spaces. The proposed car parking layout incorporates three (**3**) accessible parking spaces within the relevant enclosed garages, resulting in compliance with Council's DCP requirements.

3.3 Bicycle & Motorcycle Parking Requirements

The MDCP does not require the provision of bicycle / motorcycle parking. No bicycle / motorcycle parking has been provided, satisfying Council requirements.

The proposed development provides one (1) enclosed garage per dwelling, where it would be expected that residents can store their bicycles or motorcycles if required.

3.4 Servicing & Loading

The MDCP does not specify the requirement of service facilities made available for residential developments. Delivery / courier vehicles to the site can utilise the existing on-street parking and / or the provided visitor car parking spaces within the car park. These types of delivery vehicles for residential developments are infrequent and typically occur outside of peak residential visitor periods which occur after 6pm on Friday and Saturday nights. The standard size of a courier vehicle is a B99 design vehicle, which can easily park within the existing on-street kerbside parking supply or within the on-site visitor parking spaces.

It is expected that waste collection will be completed by Council's waste collection service vehicles along the Aberglasslyn Road frontage.

3.5 *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* and *AS4199:1995*. Any variances from standards are addressed in the following subsections including required changes, if any. Swept path testing has been undertaken and are reproduced within **Annexure D** for reference.

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

- 5.5m wide two-way driveway facilitating access to Aberglasslyn Road;

- Minimum 5.5m wide parking aisles;

- Compliant ramp grades not exceeding 10%;

- Minimum 5.4m long, 2.4m wide spaces for residents;

  - Enclosed single garages with a minimum internal width of 3.5m with minimum entry width of 2.7m and a minimum internal length of 5.8m;

  - Enclosed double garages with a minimum internal width of 6.0m with minimum entry width of 5.2m and a minimum internal length of 5.6m;

- Minimum 5.4m long, 2.5m wide spaces for visitors;

- Enclosed single garage with a minimum internal width of 3.9m with minimum entry width of 3.0m for adaptable units;

- Minimum headroom of 2.2m for general circulation and 2.5m headroom clearance provided over accessible and adaptable parking areas.

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.

3.5.1 Driveway / Circulation Roadway Width

Reference is made to Clause 3.3 of *AS2890.1* which states the following regarding driveway width requirements at Category 1 access driveways:

> *Where the circulation roadway leading from a Category 1 access driveway is 30m or longer, or sight distance from one end to the other is restricted, and the frontage road is an arterial or sub-arterial road, both the access driveway and circulation roadway for at least the first 6m from the property boundary shall be a minimum of 5.5m wide.*

The proposed circulation roadway leads from a Category 1 access driveway, is approximately 59m long and the frontage road (Aberglasslyn Road) is considered to be a sub-arterial road. Considering the above, the driveway and the first 6m of circulation roadway shall be a minimum of 5.5m wide. The proposed plans detail a 5.5m width for both the site driveway and circulation roadway resulting in compliance with *AS2890.1:2004* requirements. Furthermore, swept path testing as reproduced in **Annexure D** shows that two-way passing can occur within the site boundary.

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)* and recent supplements as adopted by Transport for NSW (TfNSW) and are as follows:

> ### *3.3.2 Medium density residential flat building*
>
> *Smaller units and flats (up to two bedrooms):*
>
> *Weekday peak hour vehicle trips = 0.4-0.5 per dwelling*
>
> *Larger units and town houses (three or more bedrooms):*
>
> *Weekday peak hour vehicle trips = 0.5 – 0.65 per dwelling*

The resulting AM and PM peak hourly traffic generation is summarised in **Table 3**.

TABLE 3: ESTIMATED TRAFFIC GENERATION

Use	Type	Scale	Peak	Generation Rate	Trips
Residential [1]	Two Bedroom	19 units	AM	0.5 per dwelling	10 (2 in, 8 out)
			PM		10 (8 in, 2 out)
	Three Bedroom	5 units	AM	0.65 per dwelling	3 (1 in, 2 out)
			PM		3 (2 in, 1 out)
Total	**-**	**-**	**AM**		**13 (3 in, 10 out)**
			PM		**13 (10 in, 3 out)**

Notes:
(1)   Assumes 20% inbound & 80% outbound during AM peak. Vice versa for PM.

As shown, the expected traffic generation associated with the proposed development is in the order of **13** vehicle trips in the AM peak period (3 in, 10 out) and **13** vehicle trips in the PM peak period (10 in, 3 out).

4.2 Cumulative Traffic Assessment

A cumulative traffic assessment has been undertaken and incorporates the traffic generated by the proposed multi dwelling housing developments on 266 Aberglasslyn Road and 272 Aberglasslyn Road.

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

TABLE 4: ESTIMATED CUMULATIVE TRAFFIC GENERATION

Use	Type	Scale	Peak	Generation Rate	Trips
Long-day care [1]	Child Care Centre	101 Children	AM	0.8 per child	81 (41 in, 40 out)
			PM	0.7 per child	71 (35 in, 36 out)
Residential [2]	Two Bedroom	19 units	AM	0.5 per dwelling	10 (2 in, 8 out)
			PM		10 (8 in, 2 out)
	Three Bedroom	5 units	AM	0.65 per dwelling	3 (1 in, 2 out)
			PM		3 (2 in, 1 out)
Multi Dwelling Residential on Adjacent Properties [2][3]	Three Bedroom	27 units	AM	0.65 per dwelling	18 (4 in, 14 out)
			PM		18 (14 in, 4 out)
Total	**-**	**-**	**AM**		**112 (48 in, 64 out)**
			PM		**102 (59 in, 43 out)**

Notes:
(1) Assumes 50/50 inbound/outbound split.
(2) Assumes 20% inbound and 80% outbound during AM peak: Vice versa for PM.
(3) Assumes all units are three-bedroom as a conservative approach.

As shown, the expected traffic generation associated with the surrounding developments is in the order of **112** vehicle trips in the AM peak period (48 in, 64 out) and **102** vehicle trips in the PM peak period (59 in, 43 out).

4.3   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:
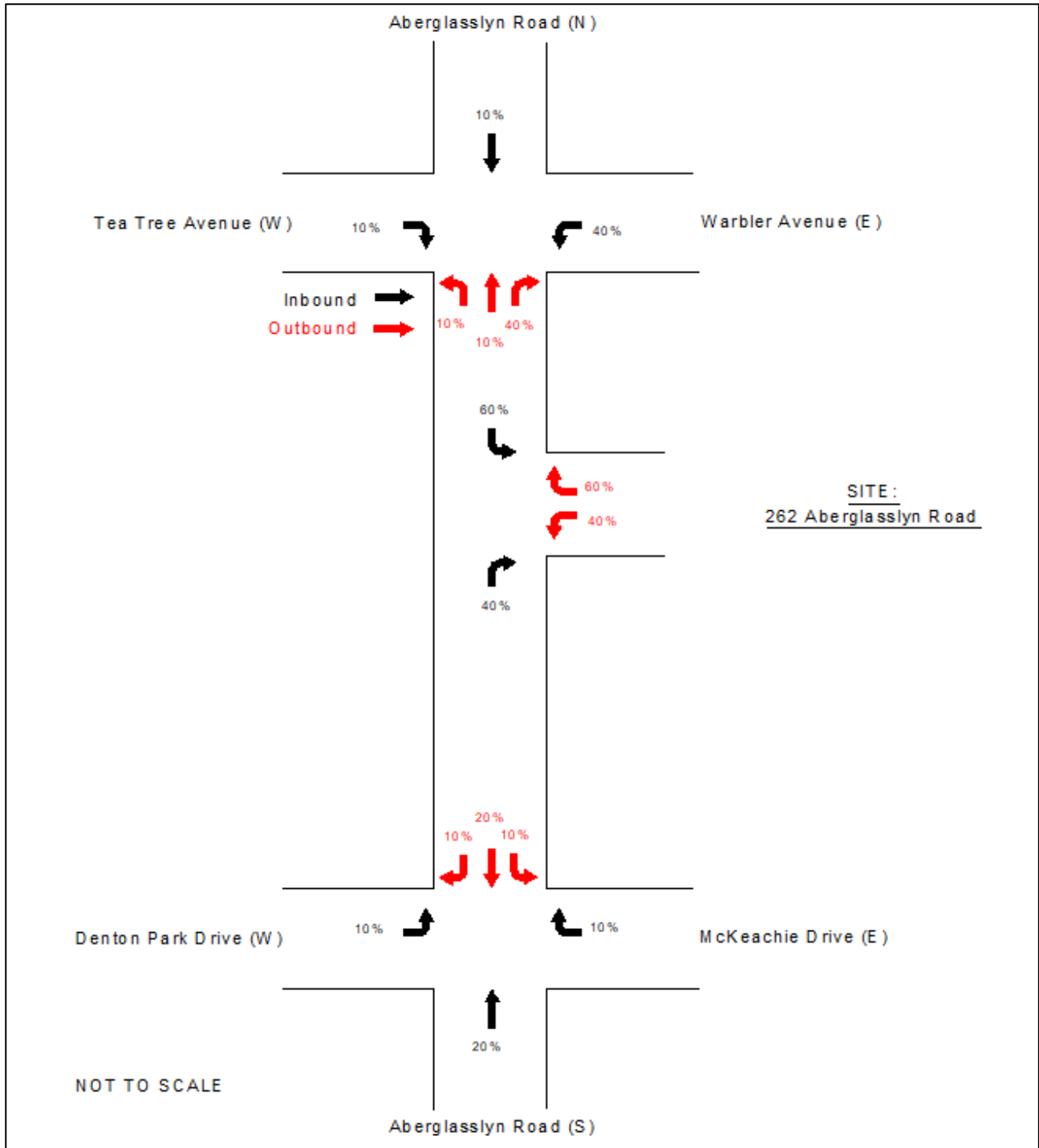
FIGURE 4: TRIP DISTRIBUTION

4.4 Traffic Impact

The traffic generation outlined in **Section 4.2** & **4.3** 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**.

As shown, the intersection of Aberglasslyn Road / Tea Tree Avenue / Warbler Avenue, Aberglasslyn Road / McKeachie Drive / Denton Park Drive and Aberglasslyn Road / Site Driveway all retain the same overall level of service under future conditions with minimal delays and additional capacity, indicating that there will be negligible impact on the existing road network as a result of the proposed development.

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*
Tea Tree Avenue / Warbler Avenue	AM	0.07	5.7 (Worst: 12.1)	A (Worst: B)	Roundabout	UT from Aberglasslyn Road
	PM	0.11	5.7 (Worst: 10.7)	A (Worst: B)		UT from Aberglasslyn Road
McKeachie Drive / Denton Park Drive	AM	0.38	6.2 (Worst: 11.7)	A (Worst: B)	Roundabout	UT from Aberglasslyn Road
	PM	0.45	6.9 (Worst: 12.1)	A (Worst: B)		UT from Aberglasslyn Road
Aberglasslyn Road / Site Driveway	AM	0.05	0.1 (Worst: 6)	NA (Worst: A)	Give Way	RT from Site Driveway
	PM	0.08	0.1 (Worst: 6.2)	NA (Worst: A)		RT from Site Driveway
*FUTURE (POST DEVELOPMENT) PERFORMANCE*
Tea Tree Avenue / Warbler Avenue	AM	0.10	5.9 (Worst: 12.4)	A (Worst: B)	Roundabout	UT from Aberglasslyn Road
	PM	0.13	5.9 (Worst: 10.8)	A (Worst: B)		UT from Aberglasslyn Road
McKeachie Drive / Denton Park Drive	AM	0.40	6.4 (Worst: 11.8)	A (Worst: B)	Roundabout	UT from Aberglasslyn Road
	PM	0.47	7.1 (Worst: 12.2)	A (Worst: B)		UT from Aberglasslyn Road
Aberglasslyn Road / Site Driveway	AM	0.05	0.4 (Worst: 6)	NA (Worst: A)	Give Way	RT from Site Driveway
	PM	0.09	0.3 (Worst: 6.2)	NA (Worst: A)		RT from Site Driveway
*FUTURE (10-YEAR GROWTH) PERFORMANCE*
Tea Tree Avenue / Warbler Avenue	AM	0.12	6 (Worst: 12.6)	A (Worst: B)	Roundabout	UT from Aberglasslyn Road
	PM	0.15	6 (Worst: 10.9)	A (Worst: B)		UT from Aberglasslyn Road
McKeachie Drive / Denton Park Drive	AM	0.49	6.9 (Worst: 12.2)	A (Worst: B)	Roundabout	UT from Aberglasslyn Road
	PM	0.59	7.8 (Worst: 13)	A (Worst: B)		UT from Aberglasslyn Road
Aberglasslyn Road / Site Driveway	AM	0.06	0.5 (Worst: 6.1)	NA (Worst: A)	Give Way	RT from Site Driveway
	PM	0.10	0.3 (Worst: 6.4)	NA (Worst: A)		RT from Site Driveway

NOTES: Refer to **Table 1**.

4.5 Aberglasslyn Road / Site Driveway Turn Warrant

Reference is made to *Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings*, which outlines intersection turn warrants. Turn treatments can consist of basic left and right turn treatment, short or full length left / right turn deceleration lanes. Consideration is given to the road design speed and traffic volumes.

The underlying basis for turn warrants is based upon the cost benefit ratio whereby the cost of providing the infrastructure upgrade is lower than that cost incurred due to crash costs over a particular design life.

Referring to *Figure 2.25 of Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings* as shown in **Figure 5** below. The applicable left and right turn treatments for Aberglasslyn Road into the site driveway are summarised in **Table 6**.
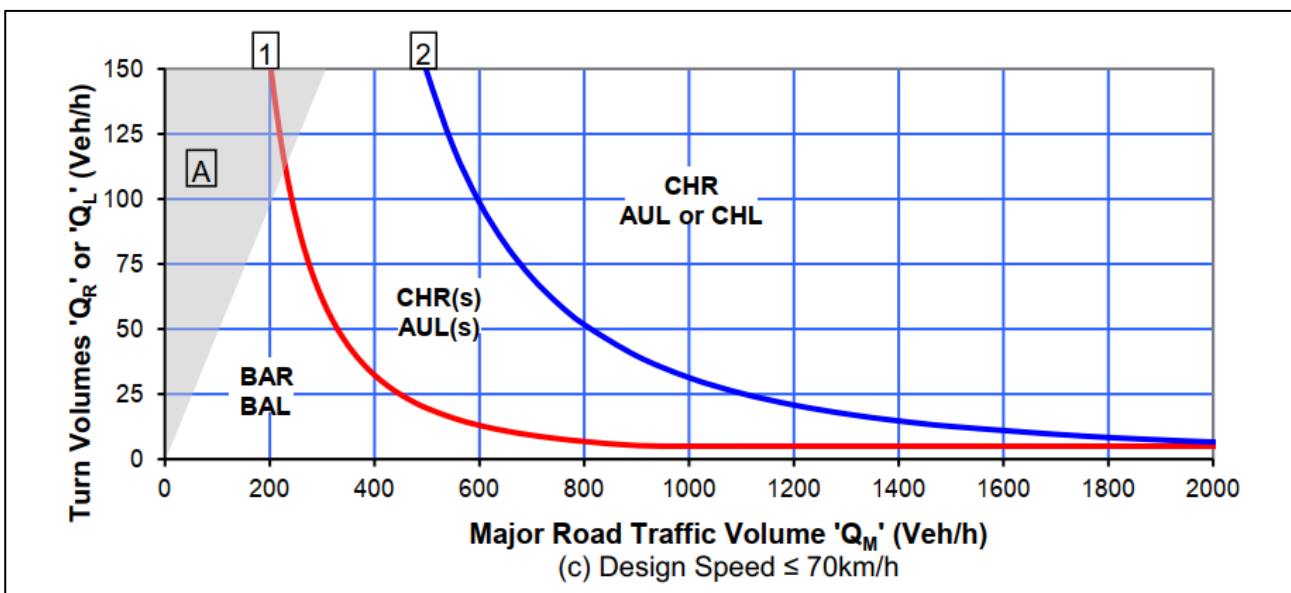
FIGURE 5: AUSTROADS TURN TREATMENTS

TABLE 6: AUSTROAD TURN WARRANT ASSESSMENT

Scenario	Peak Period	Turn	Turn Volume	Q_M Value	Turn Warrant Treatment
Future Conditions	AM	Left Turn (Q_L)	2	87	BAL
	PM		6	78	BAL
	AM	Right Turn (Q_R)	1	154	BAR
	PM		4	211	BAR

The worst-case scenario occurs during the PM peak period. The resultant warrant assessment during the PM peak period is depicted in **Figure 6**.
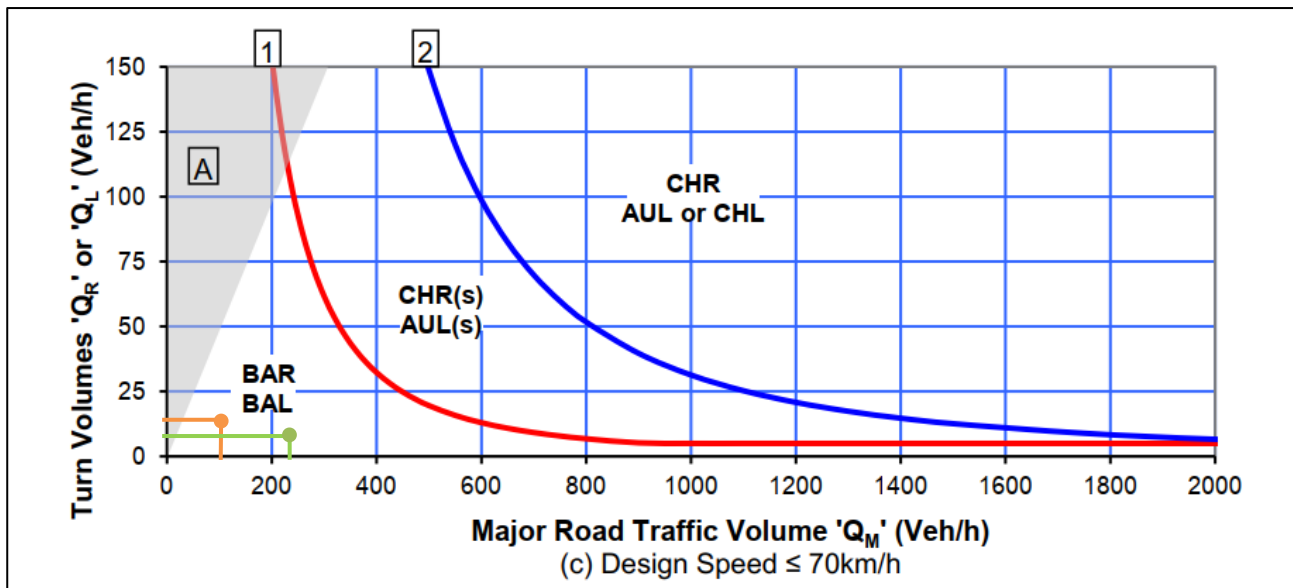
Left Turn Treatment   **Right Turn Treatment**
FIGURE 6: TREATMENT REQUIREMENT

As shown above, a BAR and BAL intersection turn treatment is warranted as part of the proposed development.

It should be noted that the assessment was conducted in line with requirements from Council within a letter dated 24 November 2022 and there is no required treatment lower than a BAR / BAL. It should also be noted that the warrant assessment and use of Austroads design guidelines strictly applies to intersections only, not driveways. The proposed driveway is provides access to 35 Class 1–2 car parking spaces from an arterial road. It is therefore a Category 2 access driveway in accordance with *AS2890.1:2004 Table 3.1.* Category 2 access driveways should not be treated as an intersection in accordance with Clause 3.1.1. As such, a BAR / BAL treatment is not strictly required.

Nonetheless, the upgrades to Aberglasslyn Road involve widening the road shoulder such that the additional road width would serve the same purpose as a BAR / BAL treatment, resulting in informal compliance with the Austroads Warrant Assessment.

5   CONCLUSION

In view of the foregoing, the subject residential townhouse proposal at 262 Aberglasslyn Road, Aberglasslyn (as depicted in **Annexure A**) is fully supportable in terms of its traffic and parking impacts. The following outcomes of this traffic impact assessment are relevant to note:

- The proposal includes the provision of **35** car parking spaces, comprised of **29** for residential use and six (**6**) for visitor use, satisfying the relevant controls applicable to the development, including Council's DCP requirements.

- Council's DCP does not require the provision of bicycle and motorcycle parking facilities.

- The parking areas of the site have been assessed against the relevant sections of *AS2890.1:2004* and *AS4299:1995* and have been found to satisfy the objectives of each standard. Swept path testing has been undertaken and is reproduced within **Annexure D**.

- The traffic generation of the proposed development has been estimated to be some **13** trips in the AM peak period (3 in, 10 out) and **13** trips in the PM peak period (10 in, 3 out). A cumulative traffic assessment has been undertaken and incorporates the traffic generated by the nearby proposed multi dwelling housing, the cumulative traffic generation has been estimated to be some **112** trips in the AM peak period (48 in, 64 out) and **102** trips in the PM peak period (59 in, 43 out). The impacts of the traffic generation have been modelled using SIDRA INTERSECTION 9.1, indicating that there will be no detrimental impact to the performance of the intersections as a result of the generated traffic.

ANNEXURE A: PROPOSED PLANS

(1 SHEET)
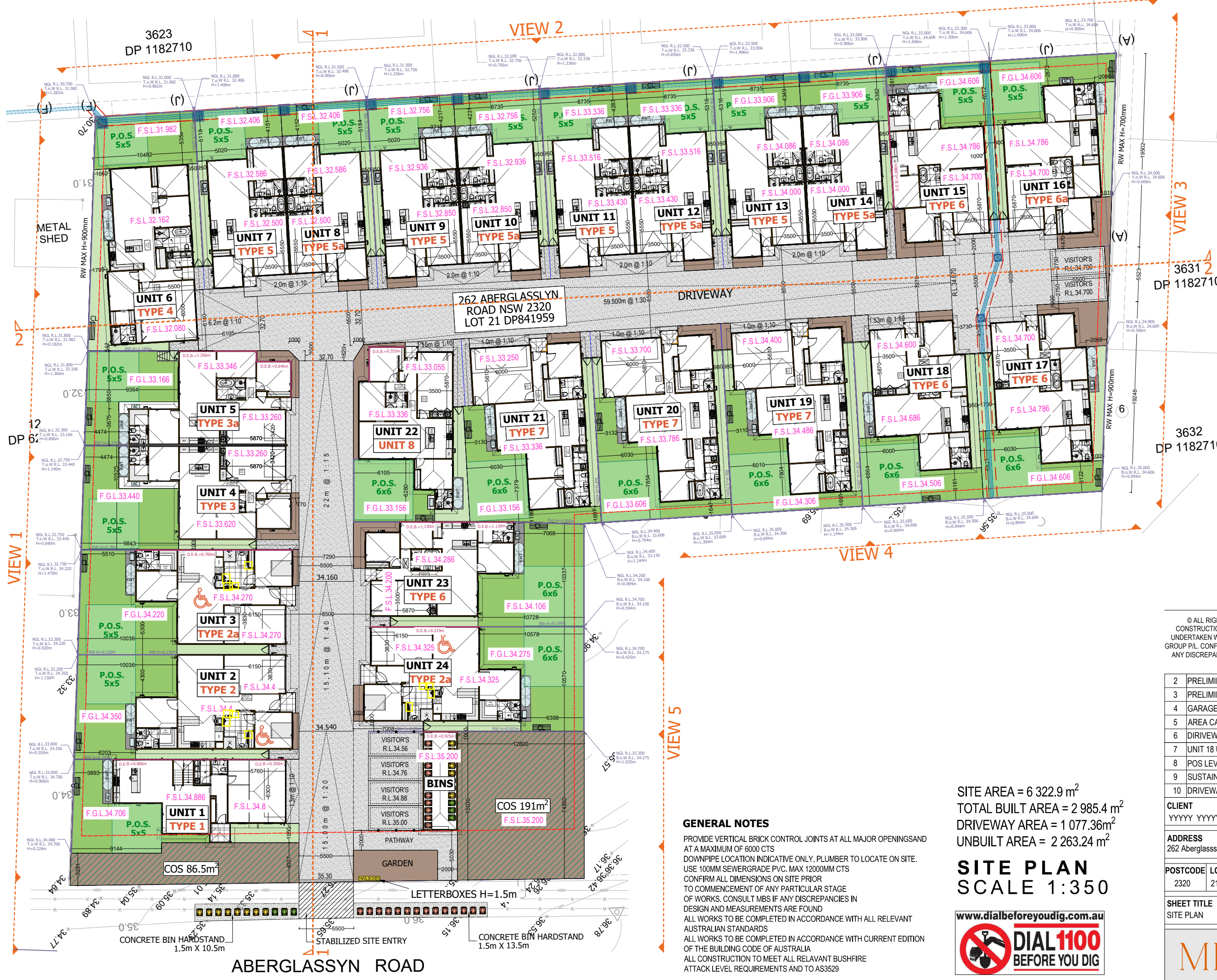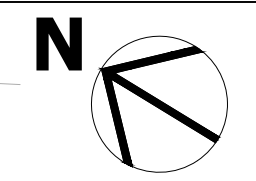
UNIT No	LIVING AREA	GARAGE	PORCH	TOTAL
UNIT 1	140 m²	38.5 m²	3.9 m²	182.4 m²
UNIT 2	103.5 m²	25.4 m²	2.9 m²	131.8 m²
UNIT 3	103.5 m²	25.4 m²	2.9 m²	131.8 m²
UNIT 4	95.5 m²	24.4 m²	1.4 m²	121.3 m²
UNIT 5	95.5 m²	24.4 m²	1.4 m²	121.3 m²
UNIT 6	110 m²	37.2 m²	1.4 m²	148.6 m²
UNIT 7	76.8 m²	22.8 m²	1.3 m²	100.9 m²
UNIT 8	76.8 m²	22.8 m²	1.3 m²	100.9 m²
UNIT 9	76.8 m²	22.8 m²	1.3 m²	100.9 m²
UNIT 10	76.8 m²	22.8 m²	1.3 m²	100.9 m²
UNIT 11	76.8 m²	22.8 m²	1.3 m²	100.9 m²
UNIT 12	76.8 m²	22.8 m²	1.3 m²	100.9 m²
UNIT 13	76.8 m²	22.8 m²	1.3 m²	100.9 m²
UNIT 14	76.8 m²	22.8 m²	1.3 m²	100.9 m²
UNIT 15	96.5 m²	24.8 m²	1.4 m²	122.7 m²
UNIT 16	96.5 m²	24.8 m²	1.4 m²	122.7 m²
UNIT 17	96.5 m²	24.8 m²	1.4 m²	122.7 m²
UNIT 18	96.5 m²	24.8 m²	1.4 m²	122.7 m²
UNIT 19	108.9 m²	35.8 m²	2.2 m²	146.9 m²
UNIT 20	108.9 m²	35.8 m²	2.2 m²	146.9 m²
UNIT 21	108.9 m²	35.8 m²	2.2 m²	146.9 m²
UNIT 22	93 m²	24.8 m²	1.4 m²	119.2 m²
UNIT 23	96.5 m²	24.8 m²	1.4 m²	122.7 m²
UNIT 24	103.5 m²	25.4 m²	2.9 m²	131.8 m²
BINS	N/A	N/A	N/A	35.8 m²
TOTAL BUILT AREA				2 982.2 m²
DRIVEWAY				1 077.36 m²

N

VIEW 1, VIEW 2, VIEW 3, VIEW 4, VIEW 5

3623 DP 1182710

3631 DP 1182710
3632 DP 1182710

12 DP 6...

METAL SHED RW MAX H=900mm

262 ABERGLASSLYN ROAD NSW 2320 LOT 21 DP841959

DRIVEWAY

UNIT 1 — TYPE 1
UNIT 2 — TYPE 2
UNIT 3 — TYPE 2a
UNIT 4 — TYPE 3
UNIT 5 — TYPE 3a
UNIT 6 — TYPE 4
UNIT 7 — TYPE 5
UNIT 8 — TYPE 5a
UNIT 9 — TYPE 5
UNIT 10 — TYPE 5a
UNIT 11 — TYPE 5
UNIT 12 — TYPE 5a
UNIT 13 — TYPE 5
UNIT 14 — TYPE 5a
UNIT 15 — TYPE 6
UNIT 16 — TYPE 6a
UNIT 17 — TYPE 6
UNIT 18 — TYPE 6
UNIT 19 — TYPE 7
UNIT 20 — TYPE 7
UNIT 21 — TYPE 7
UNIT 22 — UNIT 8
UNIT 23 — TYPE 6
UNIT 24 — TYPE 2a

VISITOR'S R.L.34.700
VISITOR'S R.L.34.56
VISITOR'S R.L.34.76
VISITOR'S R.L.34.88
VISITOR'S R.L.35.00

BINS
GARDEN
LETTERBOXES H=1.5m
PATHWAY
COS 191m²
COS 86.5m²
CONCRETE BIN HARDSTAND 1.5m X 10.5m
CONCRETE BIN HARDSTAND 1.5m X 13.5m
STABILIZED SITE ENTRY

ABERGLASSLYN ROAD

SITE AREA = 6 322.9 m²
TOTAL BUILT AREA = 2 985.4 m²
DRIVEWAY AREA = 1 077.36m²
UNBUILT AREA = 2 263.24 m²

SITE PLAN
SCALE 1:350

GENERAL NOTES
PROVIDE VERTICAL BRICK CONTROL JOINTS AT ALL MAJOR OPENINGS AND AT A MAXIMUM OF 6000 CTS
DOWNPIPE LOCATION INDICATIVE ONLY. PLUMBER TO LOCATE ON SITE.
USE 100MM SEWERGRADE PVC. MAX 12000MM CTS
CONFIRM ALL DIMENSIONS ON SITE PRIOR
TO COMMENCEMENT OF ANY PARTICULAR STAGE OF WORKS. CONSULT MBS IF ANY DISCREPANCIES IN DESIGN AND MEASUREMENTS ARE FOUND
ALL WORKS TO BE COMPLETED IN ACCORDANCE WITH ALL RELEVANT AUSTRALIAN STANDARDS
ALL WORKS TO BE COMPLETED IN ACCORDANCE WITH CURRENT EDITION OF THE BUILDING CODE OF AUSTRALIA
ALL CONSTRUCTION TO MEET ALL RELAVANT BUSHFIRE ATTACK LEVEL REQUIREMENTS AND TO AS3529

2	PRELIMINARY PLANS	13.03.2023
3	PRELIMINARY PLANS	23.03.2023
4	GARAGE DOORS AMENDED	03.04.2023
5	AREA CALCULATIONS UPDATED	03.05.2023
6	DIRIVEWAY & LEVELS UPDATED	14.05.2023
7	UNIT 18 UPDATED	16.05.2023
8	POS LEVELS UPDATED	30.05.2023
9	SUSTAINABILITY COMMITMENTS ADDED	28.06.2023
10	DRIVEWAY & RWTs AMENDED	21.08.2023

CLIENT: YYYY YYYYYY
PROJECT NUMBER: MHMXXXX
ADDRESS: 262 Aberglasslyn Road
SUBURB: Aberglasslyn NSW
POSTCODE: 2320 | LOT No.: 21 | DP No.: 841959 | SEC No | COUNCIL: Maitland
SHEET TITLE: SITE PLAN
SHEET No: 01
SCALE: 1:350

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MHM CONSTRUCTION GROUP

ANNEXURE B: TRAFFIC SURVEY DATA

(2 SHEETS)

TRANS TRAFFIC SURVEY
TURNING MOVEMENT SURVEY

trafficsurvey.com.au

Intersection of Warbler Ave and Aberglasslyn Rd, Aberglasslyn

GPS	-32.695796, 151.535077

Date:	Thu 03/11/22	**North:**	Aberglasslyn Rd	**Survey**	AM:	7:00 AM-9:30 AM
Weather:	Fine	**East:**	Warbler Ave	**Period**	PM:	2:30 PM-6:00 PM
Suburban:	Aberglasslyn	**South:**	Aberglasslyn Rd	**Traffic**	AM:	8:15 AM-9:15 AM
Customer:	McLaren	**West:**	Tea Tree Ave	**Peak**	PM:	3:45 PM-4:45 PM

All Vehicles

Time		North Approach Aberglasslyn Rd				East Approach Warbler Ave				South Approach Aberglasslyn Rd				West Approach Tea Tree Ave				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	3	4	10	0	1	0	2	12	0	5	1	2	0	3	3	3	171	
7:15	7:30	0	5	9	0	0	0	4	3	0	2	2	0	0	5	1	0	167	
7:30	7:45	0	3	5	0	0	1	6	15	0	6	3	4	0	5	2	1	193	
7:45	8:00	0	2	8	0	0	0	7	12	1	1	9	0	0	0	0	0	201	
8:00	8:15	1	1	7	0	0	0	9	10	0	4	0	1	0	5	7	0	206	
8:15	8:30	0	2	3	1	0	2	14	14	0	10	3	4	1	1	2	0	222	Peak
8:30	8:45	0	3	5	0	0	0	13	16	0	8	5	1	0	5	3	0	201	
8:45	9:00	1	1	3	0	0	0	5	7	0	19	1	4	0	2	1	1		
9:00	9:15	1	1	3	1	0	0	6	12	3	15	5	3	0	5	6	0		
9:15	9:30	0	0	7	0	0	0	7	4	0	7	4	2	0	2	3	0		
14:30	14:45	2	2	7	0	0	0	3	7	1	8	3	2	0	3	3	3	222	
14:45	15:00	0	1	7	1	0	2	5	11	0	5	2	3	0	3	1	1	253	
15:00	15:15	0	1	12	1	0	2	3	11	2	6	3	3	0	6	6	5	280	
15:15	15:30	0	2	2	1	1	1	1	8	2	27	9	3	0	1	13	4	298	
15:30	15:45	0	0	9	0	0	0	5	5	2	25	10	6	0	2	6	5	300	
15:45	16:00	0	1	7	2	0	3	4	5	1	17	10	5	0	2	8	4	307	Peak
16:00	16:15	0	3	5	0	0	1	4	18	1	21	7	5	0	2	6	6	305	
16:15	16:30	0	3	3	0	0	1	11	3	1	18	12	5	1	3	12	4	289	
16:30	16:45	0	3	10	1	0	0	5	9	0	19	12	5	0	4	10	4	270	
16:45	17:00	0	1	7	2	0	1	4	8	0	16	12	4	0	2	5	5	253	
17:00	17:15	0	1	4	0	0	1	3	12	0	19	10	2	0	4	6	1	267	
17:15	17:30	0	3	6	1	1	1	4	8	0	9	9	1	0	4	7	4		
17:30	17:45	0	2	8	1	0	1	2	8	0	21	9	3	0	2	4	4		
17:45	18:00	0	2	7	0	0	1	5	12	0	20	14	9	0	2	6	3		

Peak Time		North Approach Aberglasslyn Rd				East Approach Warbler Ave				South Approach Aberglasslyn Rd				West Approach Tea Tree Ave				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
8:15	9:15	2	7	14	2	0	2	38	49	3	52	14	12	1	13	12	1	222
15:45	16:45	0	10	25	3	0	5	24	35	3	75	41	20	1	11	36	18	307

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	

AM Peak 8:15 AM-9:15 AM

PM Peak 3:45 PM-4:45 PM

TRANS TRAFFIC SURVEY
TURNING MOVEMENT SURVEY

trafficsurvey.com.au
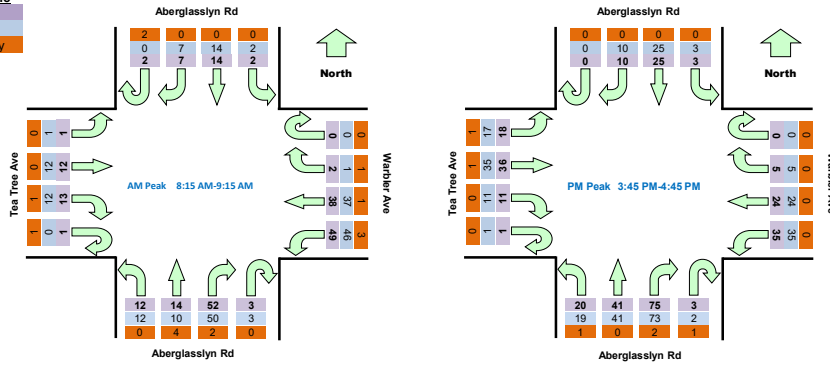
Intersection of McKeachie Dr and Aberglasslyn Rd, Aberglasslyn

GPS	-32.702386, 151.539036					
Date:	Thu 03/11/22	**North:**	Aberglasslyn Rd	**Survey**	AM:	7:00 AM-9:30 AM
Weather:	Fine	**East:**	McKeachie Dr	**Period**	PM:	2:30 PM-6:00 PM
Suburban:	Aberglasslyn	**South:**	Aberglasslyn Rd	**Traffic**	AM:	8:15 AM-9:15 AM
Customer:	McLaren	**West:**	Denton Park Dr	**Peak**	PM:	3:15 PM-4:15 PM

All Vehicles

Time		North Approach Aberglasslyn Rd				East Approach McKeachie Dr				South Approach Aberglasslyn Rd				West Approach Denton Park Dr				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	2	22	3	5	1	17	39	0	17	4	8	0	18	7	2	697	
7:15	7:30	0	4	13	2	2	0	19	56	0	20	2	8	0	22	13	2	763	
7:30	7:45	0	5	22	1	2	2	23	60	0	22	15	2	0	18	6	1	844	
7:45	8:00	0	7	18	0	4	3	21	61	0	19	8	14	0	30	22	3	1000	
8:00	8:15	0	3	22	1	3	1	31	64	1	16	5	16	0	30	18	0	1047	
8:15	8:30	0	5	17	2	4	2	31	76	1	31	13	21	1	26	13	1	1086	Peak
8:30	8:45	0	7	18	0	6	1	47	86	2	46	13	42	2	32	32	1	1029	
8:45	9:00	0	5	8	5	2	5	27	57	1	42	22	33	0	19	26	5		
9:00	9:15	0	4	19	0	3	5	29	50	0	50	18	28	1	16	24	3		
9:15	9:30	0	1	11	2	11	2	21	58	3	28	10	3	0	15	18	4		
14:30	14:45	0	3	16	1	7	3	22	53	0	44	9	14	1	29	16	6	1036	
14:45	15:00	0	4	15	1	7	2	34	55	0	38	6	14	0	26	27	3	1139	
15:00	15:15	0	7	30	1	8	7	24	34	0	56	12	20	0	23	24	2	1209	
15:15	15:30	0	4	17	1	12	9	28	49	0	71	24	43	0	21	43	10	1265	Peak
15:30	15:45	0	5	14	3	8	6	28	55	0	85	28	37	1	17	32	8	1236	
15:45	16:00	0	4	12	3	15	7	33	62	1	54	21	26	0	27	33	4	1230	
16:00	16:15	0	3	18	4	10	5	34	63	1	54	27	25	1	18	33	8	1232	
16:15	16:30	0	3	6	5	15	4	39	43	1	69	26	23	2	22	39	6	1235	
16:30	16:45	0	3	13	3	16	5	37	59	1	60	29	28	0	27	34	6	1208	
16:45	17:00	0	9	14	4	9	6	41	64	1	52	16	23	0	18	40	7	1176	
17:00	17:15	0	7	15	0	12	3	30	54	0	58	20	28	2	34	32	12	1164	
17:15	17:30	0	3	15	1	19	7	48	46	0	60	12	16	1	15	32	1		
17:30	17:45	0	6	13	0	11	2	43	46	0	54	27	24	1	19	34	9		
17:45	18:00	0	4	18	3	13	10	26	44	1	69	28	19	0	14	39	4		

Peak Time		North Approach Aberglasslyn Rd				East Approach McKeachie Dr				South Approach Aberglasslyn Rd				West Approach Denton Park Dr				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
8:15	9:15	0	21	62	7	15	13	134	269	4	169	66	124	4	93	95	10	1086
15:15	16:15	0	16	61	11	45	27	123	229	2	264	100	131	2	83	141	30	1265

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

AM Peak 8:15 AM-9:15 AM

PM Peak 3:15 PM-4:15 PM
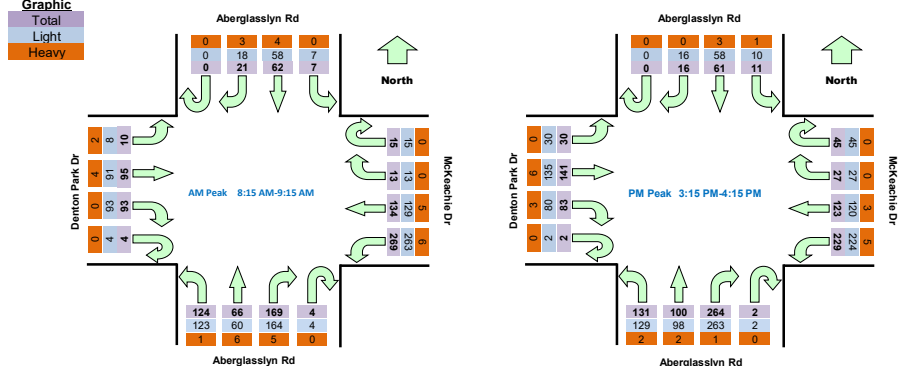
ANNEXURE C: SIDRA RESULTS

(18 SHEETS)

MOVEMENT SUMMARY

▽ Site: 01 [EX AM Aberglasslyn Rd / Tea Tree Ave (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Tea Tree Avenue
Existing Conditons
AM Peak Period
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h	%	Arrival Flows [Total HV] veh/h	%	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
1	L2	All MCs	13	0.0	13	0.0	0.069	4.6	LOS A	0.3	2.5	0.18	0.58	0.18	48.1
2	T1	All MCs	15	28.6	15	28.6	0.069	5.2	LOS A	0.3	2.5	0.18	0.58	0.18	51.2
3	R2	All MCs	55	3.8	55	3.8	0.069	8.5	LOS A	0.3	2.5	0.18	0.58	0.18	47.7
3u	U	All MCs	3	0.0	3	0.0	0.069	10.3	LOS B	0.3	2.5	0.18	0.58	0.18	51.2
Approach			85	7.4	85	7.4	0.069	7.5	LOS A	0.3	2.5	0.18	0.58	0.18	48.5
East: Warbler Avenue (E)															
4	L2	All MCs	52	6.1	52	6.1	0.073	3.6	LOS A	0.4	2.6	0.16	0.42	0.16	49.5
5	T1	All MCs	40	2.6	40	2.6	0.073	3.7	LOS A	0.4	2.6	0.16	0.42	0.16	46.7
6	R2	All MCs	3	33.3	3	33.3	0.073	7.6	LOS A	0.4	2.6	0.16	0.42	0.16	48.2
Approach			95	5.6	95	5.6	0.073	3.8	LOS A	0.4	2.6	0.16	0.42	0.16	48.2
North: Aberglasslyn Road (N)															
7	L2	All MCs	2	0.0	2	0.0	0.022	4.7	LOS A	0.1	0.8	0.23	0.52	0.23	48.5
8	T1	All MCs	15	0.0	15	0.0	0.022	5.0	LOS A	0.1	0.8	0.23	0.52	0.23	52.5
9	R2	All MCs	7	0.0	7	0.0	0.022	8.6	LOS A	0.1	0.8	0.23	0.52	0.23	48.2
9u	U	All MCs	2	100.0	2	100.0	0.022	12.1	LOS B	0.1	0.8	0.23	0.52	0.23	48.0
Approach			26	8.0	26	8.0	0.022	6.6	LOS A	0.1	0.8	0.23	0.52	0.23	50.5
West: Tea Tree Avenue (W)															
10	L2	All MCs	1	0.0	1	0.0	0.024	3.8	LOS A	0.1	0.8	0.22	0.51	0.22	48.4
11	T1	All MCs	13	0.0	13	0.0	0.024	3.8	LOS A	0.1	0.8	0.22	0.51	0.22	45.6
12	R2	All MCs	14	7.7	14	7.7	0.024	7.5	LOS A	0.1	0.8	0.22	0.51	0.22	47.8
12u	U	All MCs	1	100.0	1	100.0	0.024	10.4	LOS B	0.1	0.8	0.22	0.51	0.22	43.7
Approach			28	7.4	28	7.4	0.024	5.8	LOS A	0.1	0.8	0.22	0.51	0.22	46.6
All Vehicles			235	6.7	235	6.7	0.073	5.7	LOS A	0.4	2.6	0.18	0.50	0.18	48.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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 PM Aberglasslyn Rd / Tea Tree Ave (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Tea Tree Avenue
Existing Conditons
PM Peak Period
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h	%	Arrival Flows [Total HV] veh/h	%	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh.] veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
1	L2	All MCs	21	5.0	21	5.0	0.108	4.6	LOS A	0.5	3.9	0.16	0.57	0.16	48.4
2	T1	All MCs	43	0.0	43	0.0	0.108	4.8	LOS A	0.5	3.9	0.16	0.57	0.16	52.4
3	R2	All MCs	79	2.7	79	2.7	0.108	8.5	LOS A	0.5	3.9	0.16	0.57	0.16	48.1
3u	U	All MCs	3	33.3	3	33.3	0.108	10.7	LOS B	0.5	3.9	0.16	0.57	0.16	50.4
Approach			146	2.9	146	2.9	0.108	6.9	LOS A	0.5	3.9	0.16	0.57	0.16	49.4
East: Warbler Avenue (E)															
4	L2	All MCs	37	0.0	37	0.0	0.053	3.6	LOS A	0.3	1.8	0.18	0.44	0.18	49.6
5	T1	All MCs	25	0.0	25	0.0	0.053	3.7	LOS A	0.3	1.8	0.18	0.44	0.18	46.5
6	R2	All MCs	5	0.0	5	0.0	0.053	7.3	LOS A	0.3	1.8	0.18	0.44	0.18	49.2
Approach			67	0.0	67	0.0	0.053	3.9	LOS A	0.3	1.8	0.18	0.44	0.18	48.4
North: Aberglasslyn Road (N)															
7	L2	All MCs	3	0.0	3	0.0	0.035	5.0	LOS A	0.2	1.1	0.28	0.52	0.28	48.7
8	T1	All MCs	26	0.0	26	0.0	0.035	5.2	LOS A	0.2	1.1	0.28	0.52	0.28	52.6
9	R2	All MCs	11	0.0	11	0.0	0.035	8.8	LOS A	0.2	1.1	0.28	0.52	0.28	48.4
9u	U	All MCs	1	0.0	1	0.0	0.035	10.6	LOS B	0.2	1.1	0.28	0.52	0.28	51.9
Approach			41	0.0	41	0.0	0.035	6.3	LOS A	0.2	1.1	0.28	0.52	0.28	51.1
West: Tea Tree Avenue (W)															
10	L2	All MCs	20	5.3	20	5.3	0.060	4.1	LOS A	0.3	2.1	0.29	0.48	0.29	48.8
11	T1	All MCs	38	2.8	38	2.8	0.060	4.1	LOS A	0.3	2.1	0.29	0.48	0.29	46.0
12	R2	All MCs	12	0.0	12	0.0	0.060	7.6	LOS A	0.3	2.1	0.29	0.48	0.29	48.6
12u	U	All MCs	1	0.0	1	0.0	0.060	9.3	LOS A	0.3	2.1	0.29	0.48	0.29	45.5
Approach			71	3.0	71	3.0	0.060	4.8	LOS A	0.3	2.1	0.29	0.48	0.29	47.2
All Vehicles			325	1.9	325	1.9	0.108	5.7	LOS A	0.5	3.9	0.21	0.51	0.21	48.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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 Aberglasslyn Rd / Denton Park Dr (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Denton Park Drive
Existing Conditions
AM Peak Period
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h	Demand Flows [Total HV] %	Arrival Flows [Total HV] veh/h	Arrival Flows [Total HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh.] veh	95% Back Of Queue [Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
1	L2	All MCs	131	0.8	131	0.8	0.330	5.3	LOS A	2.2	15.5	0.46	0.58	0.46	48.1
2	T1	All MCs	69	9.1	69	9.1	0.330	5.7	LOS A	2.2	15.5	0.46	0.58	0.46	51.8
3	R2	All MCs	178	3.0	178	3.0	0.330	9.8	LOS A	2.2	15.5	0.46	0.58	0.46	47.7
3u	U	All MCs	4	0.0	4	0.0	0.330	11.7	LOS B	2.2	15.5	0.46	0.58	0.46	51.2
Approach			382	3.3	382	3.3	0.330	7.5	LOS A	2.2	15.5	0.46	0.58	0.46	48.6
East: McKeachie Drive (E)															
4	L2	All MCs	283	2.2	283	2.2	0.382	4.3	LOS A	2.6	18.2	0.47	0.49	0.47	49.1
5	T1	All MCs	141	3.7	141	3.7	0.382	4.3	LOS A	2.6	18.2	0.47	0.49	0.47	46.1
6	R2	All MCs	14	0.0	14	0.0	0.382	8.4	LOS A	2.6	18.2	0.47	0.49	0.47	48.7
6u	U	All MCs	16	0.0	16	0.0	0.382	10.2	LOS B	2.6	18.2	0.47	0.49	0.47	45.6
Approach			454	2.6	454	2.6	0.382	4.7	LOS A	2.6	18.2	0.47	0.49	0.47	48.0
North: Aberglasslyn Road (N)															
7	L2	All MCs	7	0.0	7	0.0	0.101	6.1	LOS A	0.5	4.0	0.53	0.60	0.53	48.2
8	T1	All MCs	65	6.5	65	6.5	0.101	6.5	LOS A	0.5	4.0	0.53	0.60	0.53	52.0
9	R2	All MCs	22	14.3	22	14.3	0.101	11.1	LOS B	0.5	4.0	0.53	0.60	0.53	47.7
Approach			95	7.8	95	7.8	0.101	7.5	LOS A	0.5	4.0	0.53	0.60	0.53	50.6
West: Denton Park Drive (W)															
10	L2	All MCs	11	20.0	11	20.0	0.202	5.1	LOS A	1.2	8.4	0.49	0.57	0.49	47.4
11	T1	All MCs	100	4.2	100	4.2	0.202	4.7	LOS A	1.2	8.4	0.49	0.57	0.49	45.1
12	R2	All MCs	98	0.0	98	0.0	0.202	8.7	LOS A	1.2	8.4	0.49	0.57	0.49	47.6
12u	U	All MCs	4	0.0	4	0.0	0.202	10.5	LOS B	1.2	8.4	0.49	0.57	0.49	44.6
Approach			213	3.0	213	3.0	0.202	6.7	LOS A	1.2	8.4	0.49	0.57	0.49	46.3
All Vehicles			1143	3.3	1143	3.3	0.382	6.2	LOS A	2.6	18.2	0.48	0.54	0.48	48.1

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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 PM Aberglasslyn Rd / Denton Park Dr (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Denton Park Drive
Existing Conditions
PM Peak Period
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
1	L2	All MCs	138	1.5	138	1.5	0.451	5.6	LOS A	3.3	23.4	0.55	0.60	0.55	47.8
2	T1	All MCs	105	2.0	105	2.0	0.451	5.9	LOS A	3.3	23.4	0.55	0.60	0.55	51.5
3	R2	All MCs	278	0.4	278	0.4	0.451	10.1	LOS B	3.3	23.4	0.55	0.60	0.55	47.4
3u	U	All MCs	2	0.0	2	0.0	0.451	12.1	LOS B	3.3	23.4	0.55	0.60	0.55	50.8
Approach			523	1.0	523	1.0	0.451	8.1	LOS A	3.3	23.4	0.55	0.60	0.55	48.3
East: McKeachie Drive (E)															
4	L2	All MCs	241	2.2	241	2.2	0.368	4.1	LOS A	2.5	17.6	0.44	0.50	0.44	48.8
5	T1	All MCs	129	2.4	129	2.4	0.368	4.2	LOS A	2.5	17.6	0.44	0.50	0.44	45.9
6	R2	All MCs	28	0.0	28	0.0	0.368	8.3	LOS A	2.5	17.6	0.44	0.50	0.44	48.5
6u	U	All MCs	47	0.0	47	0.0	0.368	10.0	LOS B	2.5	17.6	0.44	0.50	0.44	45.4
Approach			446	1.9	446	1.9	0.368	5.0	LOS A	2.5	17.6	0.44	0.50	0.44	47.5
North: Aberglasslyn Road (N)															
7	L2	All MCs	12	9.1	12	9.1	0.111	7.5	LOS A	0.6	4.5	0.62	0.65	0.62	47.8
8	T1	All MCs	64	4.9	64	4.9	0.111	7.6	LOS A	0.6	4.5	0.62	0.65	0.62	51.6
9	R2	All MCs	17	0.0	17	0.0	0.111	11.7	LOS B	0.6	4.5	0.62	0.65	0.62	47.5
Approach			93	4.5	93	4.5	0.111	8.3	LOS A	0.6	4.5	0.62	0.65	0.62	50.3
West: Denton Park Drive (W)															
10	L2	All MCs	32	0.0	32	0.0	0.300	5.8	LOS A	1.9	13.7	0.65	0.63	0.65	47.6
11	T1	All MCs	148	4.3	148	4.3	0.300	6.0	LOS A	1.9	13.7	0.65	0.63	0.65	44.8
12	R2	All MCs	87	3.6	87	3.6	0.300	10.2	LOS B	1.9	13.7	0.65	0.63	0.65	47.1
12u	U	All MCs	2	0.0	2	0.0	0.300	11.8	LOS B	1.9	13.7	0.65	0.63	0.65	44.3
Approach			269	3.5	269	3.5	0.300	7.4	LOS A	1.9	13.7	0.65	0.63	0.65	45.9
All Vehicles			1332	2.1	1332	2.1	0.451	6.9	LOS A	3.3	23.4	0.54	0.58	0.54	47.7

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

Roundabout LOS Method: SIDRA Roundabout LOS.

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: 03 [EX AM Aberglasslyn Rd / Site Driveway (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Site Driveway
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	Demand Flows [Total HV] %	Arrival Flows [Total HV] veh/h	Arrival Flows [Total HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh.] veh	95% Back Of Queue [Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
2	T1	All MCs	85	7.4	85	7.4	0.046	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	59.9
3	R2	All MCs	1	0.0	1	0.0	0.046	5.5	LOS A	0.0	0.0	0.01	0.01	0.01	57.1
Approach			86	7.3	86	7.3	0.046	0.1	NA	0.0	0.0	0.01	0.01	0.01	59.9
East: Site Driveway (E)															
4	L2	All MCs	1	0.0	1	0.0	0.002	5.8	LOS A	0.0	0.0	0.19	0.54	0.19	52.4
6	R2	All MCs	1	0.0	1	0.0	0.002	6.0	LOS A	0.0	0.0	0.19	0.54	0.19	52.1
Approach			2	0.0	2	0.0	0.002	5.9	LOS A	0.0	0.0	0.19	0.54	0.19	52.2
North: Aberglasslyn Road (N)															
7	L2	All MCs	1	0.0	1	0.0	0.043	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.4
8	T1	All MCs	80	5.3	80	5.3	0.043	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			81	5.2	81	5.2	0.043	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.9
All Vehicles			169	6.2	169	6.2	0.046	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

▽ Site: 03 [EX PM Aberglasslyn Rd / Site Driveway (Site Folder: Existing)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Site Driveway
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.] veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
2	T1	All MCs	159	2.0	159	2.0	0.083	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	1	0.0	1	0.0	0.083	5.5	LOS A	0.0	0.0	0.00	0.00	0.00	57.1
Approach			160	2.0	160	2.0	0.083	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
East: Site Driveway (E)															
4	L2	All MCs	1	0.0	1	0.0	0.002	5.7	LOS A	0.0	0.0	0.19	0.53	0.19	52.4
6	R2	All MCs	1	0.0	1	0.0	0.002	6.2	LOS A	0.0	0.0	0.19	0.53	0.19	52.1
Approach			2	0.0	2	0.0	0.002	6.0	LOS A	0.0	0.0	0.19	0.53	0.19	52.2
North: Aberglasslyn Road (N)															
7	L2	All MCs	1	0.0	1	0.0	0.037	5.5	LOS A	0.0	0.0	0.00	0.01	0.00	57.4
8	T1	All MCs	69	3.0	69	3.0	0.037	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.9
Approach			71	3.0	71	3.0	0.037	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.9
All Vehicles			233	2.3	233	2.3	0.083	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

▽ Site: 01 [FU AM Aberglasslyn Rd / Tea Tree Ave (Site Folder: Future)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Tea Tree Avenue
Future Conditons
AM Peak Period
Site Category: (None)
Roundabout

Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h	%	Arrival Flows [Total HV] veh/h	%	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh.] veh	[Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
1	L2	All MCs	19	0.0	19	0.0	0.097	4.6	LOS A	0.5	3.5	0.18	0.58	0.18	49.4
2	T1	All MCs	21	20.0	21	20.0	0.097	5.1	LOS A	0.5	3.5	0.18	0.58	0.18	51.4
3	R2	All MCs	82	2.6	82	2.6	0.097	8.5	LOS A	0.5	3.5	0.18	0.58	0.18	49.0
3u	U	All MCs	3	0.0	3	0.0	0.097	10.3	LOS B	0.5	3.5	0.18	0.58	0.18	51.2
Approach			125	5.0	125	5.0	0.097	7.4	LOS A	0.5	3.5	0.18	0.58	0.18	49.5
East: Warbler Avenue (E)															
4	L2	All MCs	72	4.4	72	4.4	0.089	4.0	LOS A	0.4	3.2	0.18	0.44	0.18	50.3
5	T1	All MCs	40	2.6	40	2.6	0.089	3.7	LOS A	0.4	3.2	0.18	0.44	0.18	47.3
6	R2	All MCs	3	33.3	3	33.3	0.089	7.7	LOS A	0.4	3.2	0.18	0.44	0.18	48.8
Approach			115	4.6	115	4.6	0.089	4.0	LOS A	0.4	3.2	0.18	0.44	0.18	49.1
North: Aberglasslyn Road (N)															
7	L2	All MCs	2	0.0	2	0.0	0.027	4.9	LOS A	0.1	0.9	0.27	0.52	0.27	48.6
8	T1	All MCs	20	0.0	20	0.0	0.027	5.2	LOS A	0.1	0.9	0.27	0.52	0.27	52.5
9	R2	All MCs	7	0.0	7	0.0	0.027	8.8	LOS A	0.1	0.9	0.27	0.52	0.27	48.2
9u	U	All MCs	2	100.0	2	100.0	0.027	12.4	LOS B	0.1	0.9	0.27	0.52	0.27	48.0
Approach			32	6.7	32	6.7	0.027	6.5	LOS A	0.1	0.9	0.27	0.52	0.27	50.9
West: Tea Tree Avenue (W)															
10	L2	All MCs	1	0.0	1	0.0	0.029	3.9	LOS A	0.1	1.0	0.27	0.53	0.27	48.7
11	T1	All MCs	13	0.0	13	0.0	0.029	4.0	LOS A	0.1	1.0	0.27	0.53	0.27	45.8
12	R2	All MCs	19	5.6	19	5.6	0.029	8.0	LOS A	0.1	1.0	0.27	0.53	0.27	48.2
12u	U	All MCs	1	100.0	1	100.0	0.029	10.7	LOS B	0.1	1.0	0.27	0.53	0.27	43.9
Approach			34	6.3	34	6.3	0.029	6.4	LOS A	0.1	1.0	0.27	0.53	0.27	47.1
All Vehicles			305	5.2	305	5.2	0.097	5.9	LOS A	0.5	3.5	0.20	0.52	0.20	49.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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 [FU PM Aberglasslyn Rd / Tea Tree Ave (Site Folder: Future)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Tea Tree Avenue
Future Conditons
PM Peak Period
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h	%	Arrival Flows [Total HV] veh/h	%	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh.] veh	[Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
1	L2	All MCs	25	4.2	25	4.2	0.126	4.6	LOS A	0.6	4.6	0.16	0.57	0.16	49.1
2	T1	All MCs	47	0.0	47	0.0	0.126	4.8	LOS A	0.6	4.6	0.16	0.57	0.16	52.4
3	R2	All MCs	97	2.2	97	2.2	0.126	8.4	LOS A	0.6	4.6	0.16	0.57	0.16	48.8
3u	U	All MCs	3	33.3	3	33.3	0.126	10.7	LOS B	0.6	4.6	0.16	0.57	0.16	50.3
Approach			173	2.4	173	2.4	0.126	6.9	LOS A	0.6	4.6	0.16	0.57	0.16	49.8
East: Warbler Avenue (E)															
4	L2	All MCs	62	0.0	62	0.0	0.073	4.1	LOS A	0.4	2.5	0.20	0.46	0.20	50.6
5	T1	All MCs	25	0.0	25	0.0	0.073	3.8	LOS A	0.4	2.5	0.20	0.46	0.20	47.5
6	R2	All MCs	5	0.0	5	0.0	0.073	7.3	LOS A	0.4	2.5	0.20	0.46	0.20	50.3
Approach			93	0.0	93	0.0	0.073	4.2	LOS A	0.4	2.5	0.20	0.46	0.20	49.7
North: Aberglasslyn Road (N)															
7	L2	All MCs	3	0.0	3	0.0	0.041	5.1	LOS A	0.2	1.3	0.31	0.53	0.31	48.7
8	T1	All MCs	33	0.0	33	0.0	0.041	5.4	LOS A	0.2	1.3	0.31	0.53	0.31	52.6
9	R2	All MCs	11	0.0	11	0.0	0.041	9.0	LOS A	0.2	1.3	0.31	0.53	0.31	48.3
9u	U	All MCs	1	0.0	1	0.0	0.041	10.8	LOS B	0.2	1.3	0.31	0.53	0.31	51.9
Approach			47	0.0	47	0.0	0.041	6.3	LOS A	0.2	1.3	0.31	0.53	0.31	51.3
West: Tea Tree Avenue (W)															
10	L2	All MCs	20	5.3	20	5.3	0.067	4.2	LOS A	0.3	2.3	0.32	0.50	0.32	48.9
11	T1	All MCs	38	2.8	38	2.8	0.067	4.2	LOS A	0.3	2.3	0.32	0.50	0.32	46.1
12	R2	All MCs	18	0.0	18	0.0	0.067	8.2	LOS A	0.3	2.3	0.32	0.50	0.32	48.7
12u	U	All MCs	1	0.0	1	0.0	0.067	9.4	LOS A	0.3	2.3	0.32	0.50	0.32	45.6
Approach			77	2.7	77	2.7	0.067	5.2	LOS A	0.3	2.3	0.32	0.50	0.32	47.4
All Vehicles			389	1.6	389	1.6	0.126	5.9	LOS A	0.6	4.6	0.22	0.52	0.22	49.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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 [FU AM Aberglasslyn Rd / Denton Park Dr (Site Folder: Future)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Denton Park Drive
Future Conditions
AM Peak Period
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h]	Demand Flows HV] %	Arrival Flows [Total veh/h]	Arrival Flows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh]	95% Back Of Queue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
1	L2	All MCs	131	0.8	131	0.8	0.343	5.3	LOS A	2.3	16.3	0.48	0.58	0.48	48.1
2	T1	All MCs	80	7.9	80	7.9	0.343	5.8	LOS A	2.3	16.3	0.48	0.58	0.48	51.8
3	R2	All MCs	178	3.0	178	3.0	0.343	9.9	LOS A	2.3	16.3	0.48	0.58	0.48	47.7
3u	U	All MCs	4	0.0	4	0.0	0.343	11.8	LOS B	2.3	16.3	0.48	0.58	0.48	51.2
Approach			393	3.2	393	3.2	0.343	7.6	LOS A	2.3	16.3	0.48	0.58	0.48	48.7
East: McKeachie Drive (E)															
4	L2	All MCs	283	2.2	283	2.2	0.395	4.5	LOS A	2.7	19.1	0.50	0.51	0.50	49.0
5	T1	All MCs	141	3.7	141	3.7	0.395	4.5	LOS A	2.7	19.1	0.50	0.51	0.50	46.0
6	R2	All MCs	19	0.0	19	0.0	0.395	9.0	LOS A	2.7	19.1	0.50	0.51	0.50	48.6
6u	U	All MCs	16	0.0	16	0.0	0.395	10.4	LOS B	2.7	19.1	0.50	0.51	0.50	45.5
Approach			459	2.5	459	2.5	0.395	4.9	LOS A	2.7	19.1	0.50	0.51	0.50	47.9
North: Aberglasslyn Road (N)															
7	L2	All MCs	14	0.0	14	0.0	0.128	6.1	LOS A	0.7	5.0	0.53	0.60	0.53	50.0
8	T1	All MCs	79	5.3	79	5.3	0.128	6.5	LOS A	0.7	5.0	0.53	0.60	0.53	52.0
9	R2	All MCs	28	11.1	28	11.1	0.128	11.0	LOS B	0.7	5.0	0.53	0.60	0.53	48.5
Approach			121	6.1	121	6.1	0.128	7.5	LOS A	0.7	5.0	0.53	0.60	0.53	50.9
West: Denton Park Drive (W)															
10	L2	All MCs	16	13.3	16	13.3	0.210	5.4	LOS A	1.2	8.8	0.51	0.58	0.51	47.7
11	T1	All MCs	100	4.2	100	4.2	0.210	4.8	LOS A	1.2	8.8	0.51	0.58	0.51	45.2
12	R2	All MCs	98	0.0	98	0.0	0.210	8.8	LOS A	1.2	8.8	0.51	0.58	0.51	47.6
12u	U	All MCs	4	0.0	4	0.0	0.210	10.6	LOS B	1.2	8.8	0.51	0.58	0.51	44.7
Approach			218	2.9	218	2.9	0.210	6.8	LOS A	1.2	8.8	0.51	0.58	0.51	46.4
All Vehicles			1191	3.2	1191	3.2	0.395	6.4	LOS A	2.7	19.1	0.50	0.55	0.50	48.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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 [FU PM Aberglasslyn Rd / Denton Park Dr (Site Folder: Future)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Denton Park Drive
Future Conditions
PM Peak Period
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
1	L2	All MCs	138	1.5	138	1.5	0.467	5.7	LOS A	3.5	24.6	0.57	0.60	0.57	47.7
2	T1	All MCs	118	1.8	118	1.8	0.467	6.0	LOS A	3.5	24.6	0.57	0.60	0.57	51.5
3	R2	All MCs	278	0.4	278	0.4	0.467	10.2	LOS B	3.5	24.6	0.57	0.60	0.57	47.4
3u	U	All MCs	2	0.0	2	0.0	0.467	12.2	LOS B	3.5	24.6	0.57	0.60	0.57	50.8
Approach			536	1.0	536	1.0	0.467	8.1	LOS A	3.5	24.6	0.57	0.60	0.57	48.3
East: McKeachie Drive (E)															
4	L2	All MCs	241	2.2	241	2.2	0.378	4.2	LOS A	2.6	18.2	0.46	0.51	0.46	48.8
5	T1	All MCs	129	2.4	129	2.4	0.378	4.3	LOS A	2.6	18.2	0.46	0.51	0.46	45.9
6	R2	All MCs	35	0.0	35	0.0	0.378	8.7	LOS A	2.6	18.2	0.46	0.51	0.46	48.4
6u	U	All MCs	47	0.0	47	0.0	0.378	10.2	LOS B	2.6	18.2	0.46	0.51	0.46	45.3
Approach			453	1.9	453	1.9	0.378	5.2	LOS A	2.6	18.2	0.46	0.51	0.46	47.5
North: Aberglasslyn Road (N)															
7	L2	All MCs	16	6.7	16	6.7	0.132	7.5	LOS A	0.7	5.4	0.63	0.65	0.63	48.8
8	T1	All MCs	74	4.3	74	4.3	0.132	7.6	LOS A	0.7	5.4	0.63	0.65	0.63	51.5
9	R2	All MCs	21	0.0	21	0.0	0.132	11.7	LOS B	0.7	5.4	0.63	0.65	0.63	48.2
Approach			111	3.8	111	3.8	0.132	8.4	LOS A	0.7	5.4	0.63	0.65	0.63	50.5
West: Denton Park Drive (W)															
10	L2	All MCs	38	0.0	38	0.0	0.312	6.2	LOS A	2.0	14.4	0.67	0.64	0.67	47.7
11	T1	All MCs	148	4.3	148	4.3	0.312	6.2	LOS A	2.0	14.4	0.67	0.64	0.67	44.9
12	R2	All MCs	87	3.6	87	3.6	0.312	10.3	LOS B	2.0	14.4	0.67	0.64	0.67	47.2
12u	U	All MCs	2	0.0	2	0.0	0.312	11.9	LOS B	2.0	14.4	0.67	0.64	0.67	44.4
Approach			276	3.4	276	3.4	0.312	7.5	LOS A	2.0	14.4	0.67	0.64	0.67	45.9
All Vehicles			1375	2.0	1375	2.0	0.467	7.1	LOS A	3.5	24.6	0.56	0.58	0.56	47.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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: 03 [FU AM Aberglasslyn Rd / Site Driveway (Site Folder: Future)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Site Driveway
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.] veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
2	T1	All MCs	85	7.4	85	7.4	0.046	0.0	LOS A	0.0	0.0	0.01	0.01	0.01	59.9
3	R2	All MCs	1	0.0	1	0.0	0.046	5.5	LOS A	0.0	0.0	0.01	0.01	0.01	57.1
Approach			86	7.3	86	7.3	0.046	0.1	NA	0.0	0.0	0.01	0.01	0.01	59.9
East: Site Driveway (E)															
4	L2	All MCs	4	0.0	4	0.0	0.008	5.8	LOS A	0.0	0.2	0.20	0.55	0.20	52.4
6	R2	All MCs	6	0.0	6	0.0	0.008	6.0	LOS A	0.0	0.2	0.20	0.55	0.20	52.1
Approach			11	0.0	11	0.0	0.008	5.9	LOS A	0.0	0.2	0.20	0.55	0.20	52.2
North: Aberglasslyn Road (N)															
7	L2	All MCs	2	0.0	2	0.0	0.044	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.3
8	T1	All MCs	80	5.3	80	5.3	0.044	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.8
Approach			82	5.1	82	5.1	0.044	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.8
All Vehicles			179	5.9	179	5.9	0.046	0.4	NA	0.0	0.2	0.01	0.04	0.01	59.3

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

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

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: 03 [FU PM Aberglasslyn Rd / Site Driveway (Site Folder: Future)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Site Driveway
Future 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.] veh	[Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
2	T1	All MCs	159	2.0	159	2.0	0.085	0.0	LOS A	0.0	0.2	0.01	0.02	0.01	59.8
3	R2	All MCs	4	0.0	4	0.0	0.085	5.5	LOS A	0.0	0.2	0.01	0.02	0.01	57.0
Approach			163	1.9	163	1.9	0.085	0.1	NA	0.0	0.2	0.01	0.02	0.01	59.7
East: Site Driveway (E)															
4	L2	All MCs	1	0.0	1	0.0	0.003	5.7	LOS A	0.0	0.1	0.21	0.54	0.21	52.3
6	R2	All MCs	2	0.0	2	0.0	0.003	6.2	LOS A	0.0	0.1	0.21	0.54	0.21	52.0
Approach			3	0.0	3	0.0	0.003	6.1	LOS A	0.0	0.1	0.21	0.54	0.21	52.1
North: Aberglasslyn Road (N)															
7	L2	All MCs	6	0.0	6	0.0	0.040	5.5	LOS A	0.0	0.0	0.00	0.05	0.00	57.1
8	T1	All MCs	69	3.0	69	3.0	0.040	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.5
Approach			76	2.8	76	2.8	0.040	0.5	NA	0.0	0.0	0.00	0.05	0.00	59.3
All Vehicles			242	2.2	242	2.2	0.085	0.3	NA	0.0	0.2	0.01	0.03	0.01	59.5

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

▽ Site: 01 [FU AM Aberglasslyn Rd / Tea Tree Ave - 10 year growth (Site Folder: Future - 10 year growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Tea Tree Avenue
Future (10 year growth) Conditons
AM Peak Period
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %	Arrival Flows [Total HV] veh/h %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)														
1	L2	All MCs	23 0.0	23 0.0	0.118	4.7	LOS A	0.6	4.4	0.21	0.58	0.21	49.3
2	T1	All MCs	25 20.0	25 20.0	0.118	5.2	LOS A	0.6	4.4	0.21	0.58	0.21	51.4
3	R2	All MCs	99 2.6	99 2.6	0.118	8.6	LOS A	0.6	4.4	0.21	0.58	0.21	49.0
3u	U	All MCs	4 0.0	4 0.0	0.118	10.3	LOS B	0.6	4.4	0.21	0.58	0.21	51.2
Approach			150 5.0	150 5.0	0.118	7.5	LOS A	0.6	4.4	0.21	0.58	0.21	49.5
East: Warbler Avenue (E)														
4	L2	All MCs	86 4.4	86 4.4	0.108	4.0	LOS A	0.5	4.0	0.21	0.44	0.21	50.2
5	T1	All MCs	48 2.6	48 2.6	0.108	3.8	LOS A	0.5	4.0	0.21	0.44	0.21	47.2
6	R2	All MCs	4 33.3	4 33.3	0.108	7.7	LOS A	0.5	4.0	0.21	0.44	0.21	48.7
Approach			138 4.6	138 4.6	0.108	4.0	LOS A	0.5	4.0	0.21	0.44	0.21	49.1
North: Aberglasslyn Road (N)														
7	L2	All MCs	3 0.0	3 0.0	0.033	5.0	LOS A	0.2	1.2	0.30	0.53	0.30	48.5
8	T1	All MCs	24 0.0	24 0.0	0.033	5.3	LOS A	0.2	1.2	0.30	0.53	0.30	52.4
9	R2	All MCs	9 0.0	9 0.0	0.033	8.9	LOS A	0.2	1.2	0.30	0.53	0.30	48.2
9u	U	All MCs	3 100.0	3 100.0	0.033	12.6	LOS B	0.2	1.2	0.30	0.53	0.30	47.9
Approach			38 6.7	38 6.7	0.033	6.6	LOS A	0.2	1.2	0.30	0.53	0.30	50.8
West: Tea Tree Avenue (W)														
10	L2	All MCs	1 0.0	1 0.0	0.036	4.0	LOS A	0.2	1.3	0.30	0.54	0.30	48.6
11	T1	All MCs	15 0.0	15 0.0	0.036	4.1	LOS A	0.2	1.3	0.30	0.54	0.30	45.8
12	R2	All MCs	23 5.6	23 5.6	0.036	8.1	LOS A	0.2	1.3	0.30	0.54	0.30	48.1
12u	U	All MCs	1 100.0	1 100.0	0.036	10.9	LOS B	0.2	1.3	0.30	0.54	0.30	43.9
Approach			40 6.3	40 6.3	0.036	6.6	LOS A	0.2	1.3	0.30	0.54	0.30	47.1
All Vehicles			366 5.2	366 5.2	0.118	6.0	LOS A	0.6	4.4	0.23	0.52	0.23	49.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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 [FU PM Aberglasslyn Rd / Tea Tree Ave - 10 year growth (Site Folder: Future - 10 year growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Tea Tree Avenue
Future (10 year growth) Conditons
PM Peak Period
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h	%	Arrival Flows [Total HV] veh/h	%	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
1	L2	All MCs	30	4.2	30	4.2	0.153	4.6	LOS A	0.8	5.8	0.18	0.57	0.18	49.0
2	T1	All MCs	57	0.0	57	0.0	0.153	4.9	LOS A	0.8	5.8	0.18	0.57	0.18	52.3
3	R2	All MCs	116	2.2	116	2.2	0.153	8.5	LOS A	0.8	5.8	0.18	0.57	0.18	48.8
3u	U	All MCs	4	33.3	4	33.3	0.153	10.7	LOS B	0.8	5.8	0.18	0.57	0.18	50.3
Approach			207	2.4	207	2.4	0.153	7.0	LOS A	0.8	5.8	0.18	0.57	0.18	49.7
East: Warbler Avenue (E)															
4	L2	All MCs	75	0.0	75	0.0	0.089	4.2	LOS A	0.4	3.1	0.23	0.46	0.23	50.6
5	T1	All MCs	30	0.0	30	0.0	0.089	3.8	LOS A	0.4	3.1	0.23	0.46	0.23	47.4
6	R2	All MCs	6	0.0	6	0.0	0.089	7.4	LOS A	0.4	3.1	0.23	0.46	0.23	50.2
Approach			111	0.0	111	0.0	0.089	4.3	LOS A	0.4	3.1	0.23	0.46	0.23	49.7
North: Aberglasslyn Road (N)															
7	L2	All MCs	4	0.0	4	0.0	0.050	5.3	LOS A	0.2	1.7	0.34	0.54	0.34	48.6
8	T1	All MCs	39	0.0	39	0.0	0.050	5.5	LOS A	0.2	1.7	0.34	0.54	0.34	52.5
9	R2	All MCs	13	0.0	13	0.0	0.050	9.1	LOS A	0.2	1.7	0.34	0.54	0.34	48.2
9u	U	All MCs	1	0.0	1	0.0	0.050	10.9	LOS B	0.2	1.7	0.34	0.54	0.34	51.8
Approach			57	0.0	57	0.0	0.050	6.4	LOS A	0.2	1.7	0.34	0.54	0.34	51.2
West: Tea Tree Avenue (W)															
10	L2	All MCs	24	5.3	24	5.3	0.083	4.4	LOS A	0.4	2.9	0.35	0.51	0.35	48.8
11	T1	All MCs	45	2.8	45	2.8	0.083	4.4	LOS A	0.4	2.9	0.35	0.51	0.35	46.0
12	R2	All MCs	21	0.0	21	0.0	0.083	8.4	LOS A	0.4	2.9	0.35	0.51	0.35	48.6
12u	U	All MCs	1	0.0	1	0.0	0.083	9.5	LOS A	0.4	2.9	0.35	0.51	0.35	45.5
Approach			92	2.7	92	2.7	0.083	5.4	LOS A	0.4	2.9	0.35	0.51	0.35	47.3
All Vehicles			467	1.6	467	1.6	0.153	6.0	LOS A	0.8	5.8	0.25	0.53	0.25	49.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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 [FU AM Aberglasslyn Rd / Denton Park Dr - 10 year growth (Site Folder: Future - 10 year growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Denton Park Drive
Future (10 year growth) Conditions
AM Peak Period
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
1	L2	All MCs	157	0.8	157	0.8	0.430	5.8	LOS A	3.1	22.3	0.57	0.61	0.57	47.9
2	T1	All MCs	96	7.9	96	7.9	0.430	6.2	LOS A	3.1	22.3	0.57	0.61	0.57	51.5
3	R2	All MCs	213	3.0	213	3.0	0.430	10.4	LOS B	3.1	22.3	0.57	0.61	0.57	47.5
3u	U	All MCs	5	0.0	5	0.0	0.430	12.2	LOS B	3.1	22.3	0.57	0.61	0.57	50.9
Approach			471	3.2	471	3.2	0.430	8.0	LOS A	3.1	22.3	0.57	0.61	0.57	48.4
East: McKeachie Drive (E)															
4	L2	All MCs	340	2.2	340	2.2	0.493	5.0	LOS A	3.7	26.2	0.59	0.55	0.59	48.7
5	T1	All MCs	169	3.7	169	3.7	0.493	5.0	LOS A	3.7	26.2	0.59	0.55	0.59	45.8
6	R2	All MCs	23	0.0	23	0.0	0.493	9.5	LOS A	3.7	26.2	0.59	0.55	0.59	48.4
6u	U	All MCs	19	0.0	19	0.0	0.493	10.8	LOS B	3.7	26.2	0.59	0.55	0.59	45.2
Approach			551	2.5	551	2.5	0.493	5.4	LOS A	3.7	26.2	0.59	0.55	0.59	47.6
North: Aberglasslyn Road (N)															
7	L2	All MCs	16	0.0	16	0.0	0.165	6.7	LOS A	0.9	6.8	0.60	0.63	0.60	49.7
8	T1	All MCs	95	5.3	95	5.3	0.165	7.2	LOS A	0.9	6.8	0.60	0.63	0.60	51.6
9	R2	All MCs	34	11.1	34	11.1	0.165	11.6	LOS B	0.9	6.8	0.60	0.63	0.60	48.3
Approach			145	6.1	145	6.1	0.165	8.2	LOS A	0.9	6.8	0.60	0.63	0.60	50.6
West: Denton Park Drive (W)															
10	L2	All MCs	19	13.3	19	13.3	0.268	5.9	LOS A	1.7	11.9	0.58	0.61	0.58	47.4
11	T1	All MCs	120	4.2	120	4.2	0.268	5.3	LOS A	1.7	11.9	0.58	0.61	0.58	44.9
12	R2	All MCs	117	0.0	117	0.0	0.268	9.3	LOS A	1.7	11.9	0.58	0.61	0.58	47.4
12u	U	All MCs	5	0.0	5	0.0	0.268	11.1	LOS B	1.7	11.9	0.58	0.61	0.58	44.4
Approach			261	2.9	261	2.9	0.268	7.2	LOS A	1.7	11.9	0.58	0.61	0.58	46.1
All Vehicles			1429	3.2	1429	3.2	0.493	6.9	LOS A	3.7	26.2	0.59	0.59	0.59	47.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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 [FU PM Aberglasslyn Rd / Denton Park Dr - 10 year growth (Site Folder: Future - 10 year growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Denton Park Drive
Future (10 year growth) Conditions
PM Peak Period
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total] veh/h	HV %	Arrival Flows [Total] veh/h	HV %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh.] veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
1	L2	All MCs	165	1.5	165	1.5	0.587	6.5	LOS A	5.1	36.3	0.70	0.65	0.71	47.4
2	T1	All MCs	141	1.8	141	1.8	0.587	6.8	LOS A	5.1	36.3	0.70	0.65	0.71	51.1
3	R2	All MCs	333	0.4	333	0.4	0.587	11.0	LOS B	5.1	36.3	0.70	0.65	0.71	47.0
3u	U	All MCs	3	0.0	3	0.0	0.587	13.0	LOS B	5.1	36.3	0.70	0.65	0.71	50.4
Approach			643	1.0	643	1.0	0.587	8.9	LOS A	5.1	36.3	0.70	0.65	0.71	48.0
East: McKeachie Drive (E)															
4	L2	All MCs	289	2.2	289	2.2	0.470	4.7	LOS A	3.5	24.9	0.56	0.54	0.56	48.5
5	T1	All MCs	155	2.4	155	2.4	0.470	4.7	LOS A	3.5	24.9	0.56	0.54	0.56	45.6
6	R2	All MCs	42	0.0	42	0.0	0.470	9.1	LOS A	3.5	24.9	0.56	0.54	0.56	48.2
6u	U	All MCs	57	0.0	57	0.0	0.470	10.6	LOS B	3.5	24.9	0.56	0.54	0.56	45.1
Approach			543	1.9	543	1.9	0.470	5.6	LOS A	3.5	24.9	0.56	0.54	0.56	47.3
North: Aberglasslyn Road (N)															
7	L2	All MCs	19	6.7	19	6.7	0.177	8.5	LOS A	1.1	7.7	0.71	0.69	0.71	48.3
8	T1	All MCs	88	4.3	88	4.3	0.177	8.7	LOS A	1.1	7.7	0.71	0.69	0.71	51.0
9	R2	All MCs	25	0.0	25	0.0	0.177	12.7	LOS B	1.1	7.7	0.71	0.69	0.71	47.7
Approach			133	3.8	133	3.8	0.177	9.4	LOS A	1.1	7.7	0.71	0.69	0.71	49.9
West: Denton Park Drive (W)															
10	L2	All MCs	45	0.0	45	0.0	0.417	7.2	LOS A	2.9	21.1	0.79	0.70	0.79	47.2
11	T1	All MCs	178	4.3	178	4.3	0.417	7.2	LOS A	2.9	21.1	0.79	0.70	0.79	44.4
12	R2	All MCs	105	3.6	105	3.6	0.417	11.3	LOS B	2.9	21.1	0.79	0.70	0.79	46.7
12u	U	All MCs	3	0.0	3	0.0	0.417	12.9	LOS B	2.9	21.1	0.79	0.70	0.79	43.9
Approach			331	3.4	331	3.4	0.417	8.5	LOS A	2.9	21.1	0.79	0.70	0.79	45.5
All Vehicles			1650	2.0	1650	2.0	0.587	7.8	LOS A	5.1	36.3	0.67	0.63	0.67	47.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
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: 03 [FU AM Aberglasslyn Rd / Site Driveway - 10 year growth (Site Folder: Future - 10 year growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Site Driveway
Future (10 year growth) Conditions
AM Peak Period
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h	%	Arrival Flows [Total HV] veh/h	%	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh.] veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
2	T1	All MCs	102	7.4	102	7.4	0.056	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	59.9
3	R2	All MCs	1	0.0	1	0.0	0.056	5.5	LOS A	0.0	0.1	0.01	0.01	0.01	57.1
Approach			104	7.3	104	7.3	0.056	0.1	NA	0.0	0.1	0.01	0.01	0.01	59.9
East: Site Driveway (E)															
4	L2	All MCs	5	0.0	5	0.0	0.010	5.8	LOS A	0.0	0.2	0.22	0.55	0.22	52.3
6	R2	All MCs	8	0.0	8	0.0	0.010	6.1	LOS A	0.0	0.2	0.22	0.55	0.22	52.0
Approach			13	0.0	13	0.0	0.010	6.0	LOS A	0.0	0.2	0.22	0.55	0.22	52.1
North: Aberglasslyn Road (N)															
7	L2	All MCs	3	0.0	3	0.0	0.052	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.3
8	T1	All MCs	96	5.3	96	5.3	0.052	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.8
Approach			99	5.1	99	5.1	0.052	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.8
All Vehicles			215	5.9	215	5.9	0.056	0.5	NA	0.0	0.2	0.02	0.04	0.02	59.3

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

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

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.
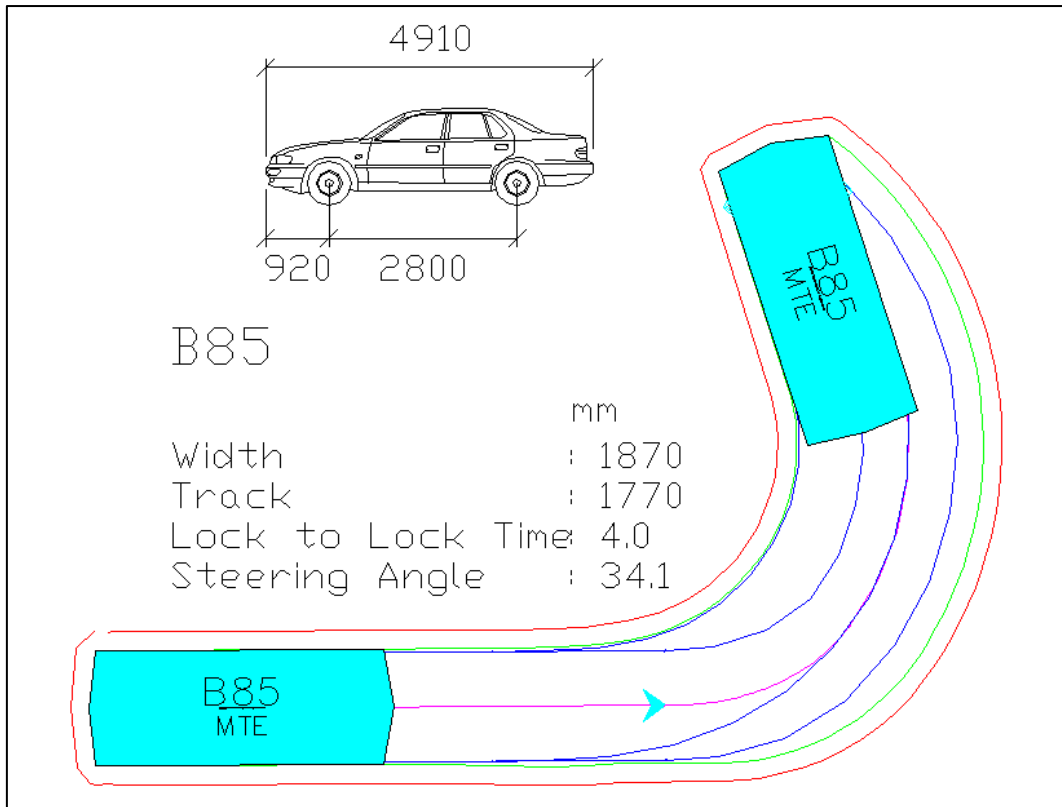
MOVEMENT SUMMARY

▽ **Site: 03 [FU PM Aberglasslyn Rd / Site Driveway - 10 year growth (Site Folder: Future - 10 year growth)]**

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Aberglasslyn Road / Site Driveway
Future (10 year growth) Conditions
PM Peak Period
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h	%	Arrival Flows [Total HV] veh/h	%	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Aberglasslyn Road (S)															
2	T1	All MCs	191	2.0	191	2.0	0.102	0.0	LOS A	0.0	0.2	0.01	0.02	0.01	59.8
3	R2	All MCs	5	0.0	5	0.0	0.102	5.6	LOS A	0.0	0.2	0.01	0.02	0.01	57.0
Approach			196	1.9	196	1.9	0.102	0.1	NA	0.0	0.2	0.01	0.02	0.01	59.7
East: Site Driveway (E)															
4	L2	All MCs	1	0.0	1	0.0	0.003	5.8	LOS A	0.0	0.1	0.24	0.54	0.24	52.2
6	R2	All MCs	3	0.0	3	0.0	0.003	6.4	LOS A	0.0	0.1	0.24	0.54	0.24	52.0
Approach			4	0.0	4	0.0	0.003	6.2	LOS A	0.0	0.1	0.24	0.54	0.24	52.1
North: Aberglasslyn Road (N)															
7	L2	All MCs	8	0.0	8	0.0	0.048	5.6	LOS A	0.0	0.0	0.00	0.05	0.00	57.0
8	T1	All MCs	83	3.0	83	3.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.5
Approach			91	2.8	91	2.8	0.048	0.5	NA	0.0	0.0	0.00	0.05	0.00	59.3
All Vehicles			291	2.2	291	2.2	0.102	0.3	NA	0.0	0.2	0.01	0.03	0.01	59.5

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

ANNEXURE D: SWEPT PATH TESTING

(6 SHEETS)

AUSTRALIAN STANDARD 85TH PERCENTILE SIZE VEHICLE (B85)

B85

	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 4.0
Steering Angle	: 34.1
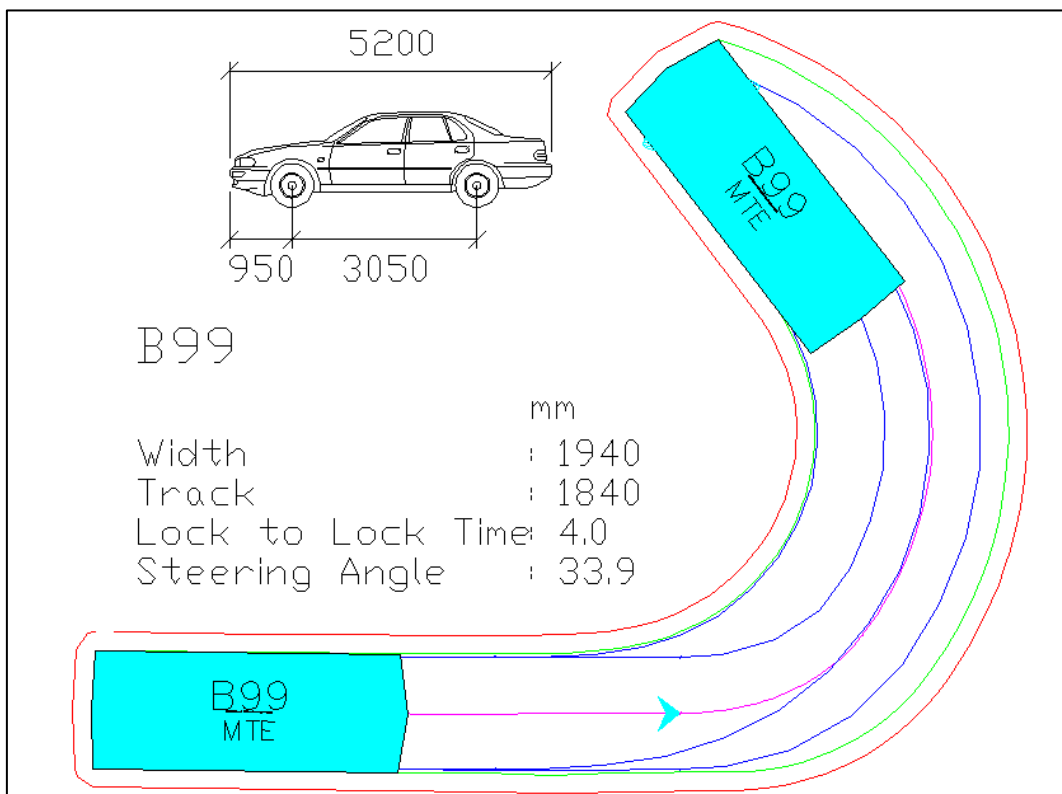
AUSTRALIAN STANDARD 99.8TH PERCENTILE SIZE VEHICLE (B99)

B99

	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	: 4.0
Steering Angle	: 33.9

Blue – Tyre Path
Green – Vehicle Body
Red – 300mm Clearance

Circulation – Two-way passing at site boundary
B99 entering / B85 exiting
SUCCESSFUL
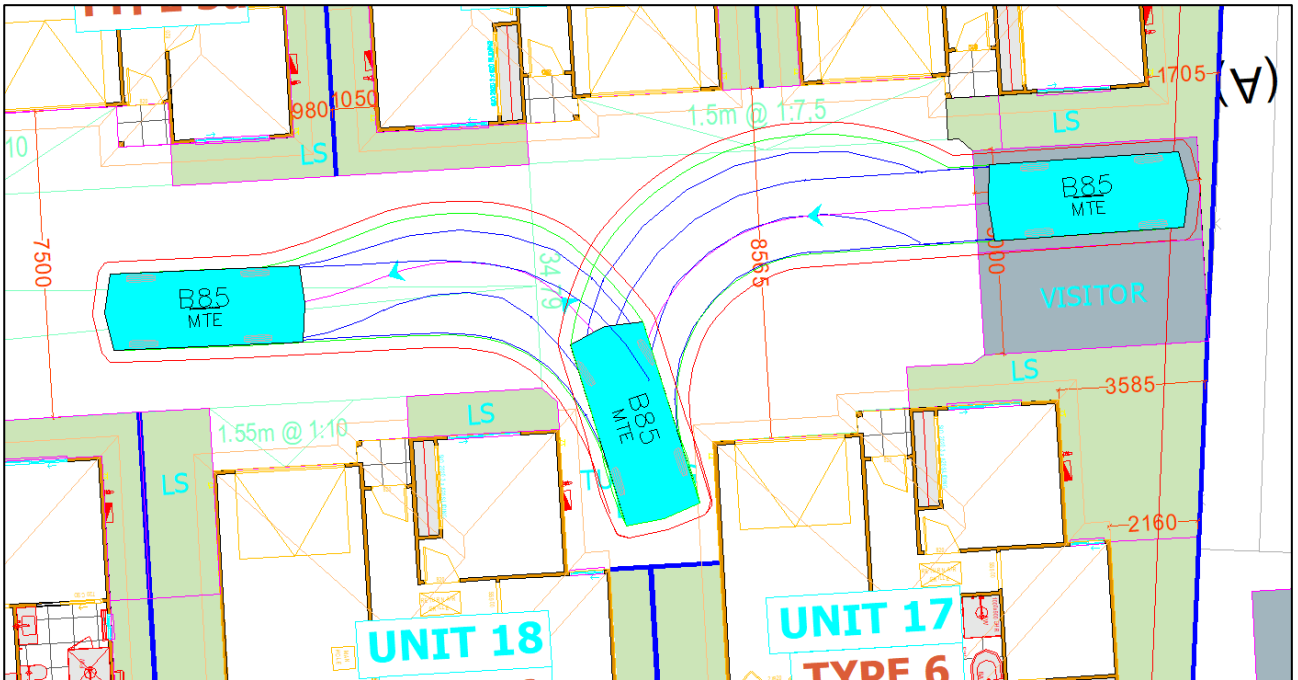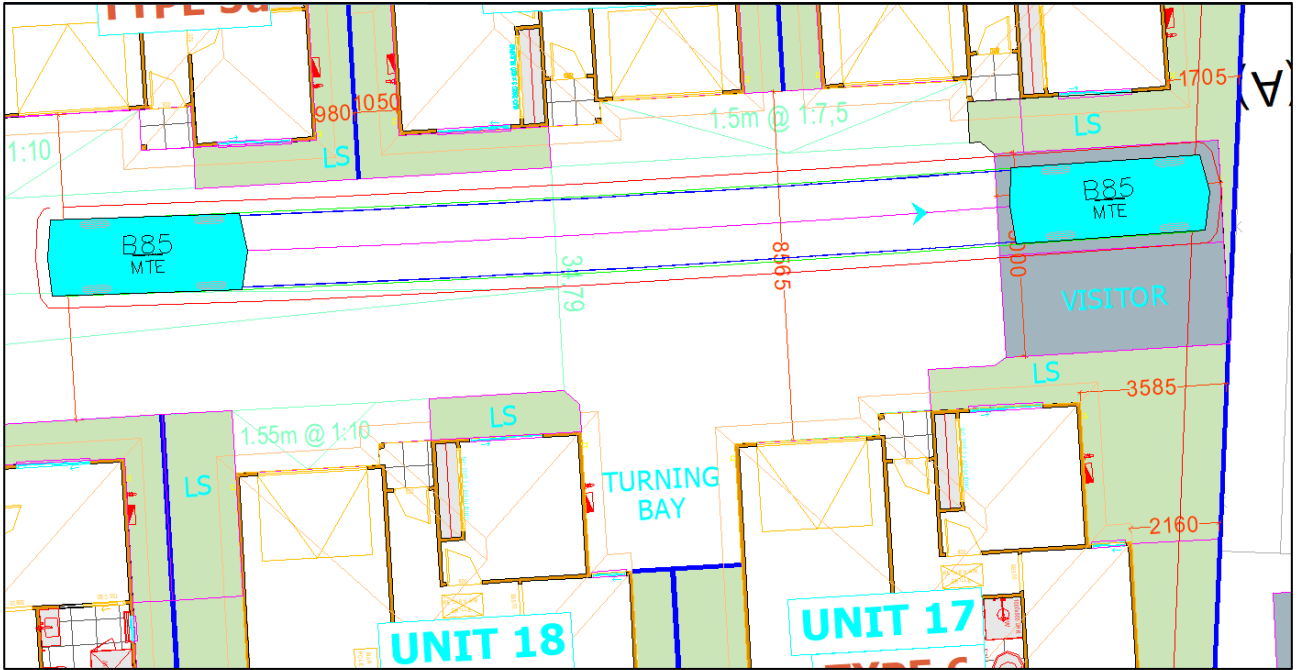
B85 Entry / Exit from Visitor Space 5
1 Manoeuvre FORWARD IN / 2 Manoeuvres REVERSE OUT
SUCCESSFUL
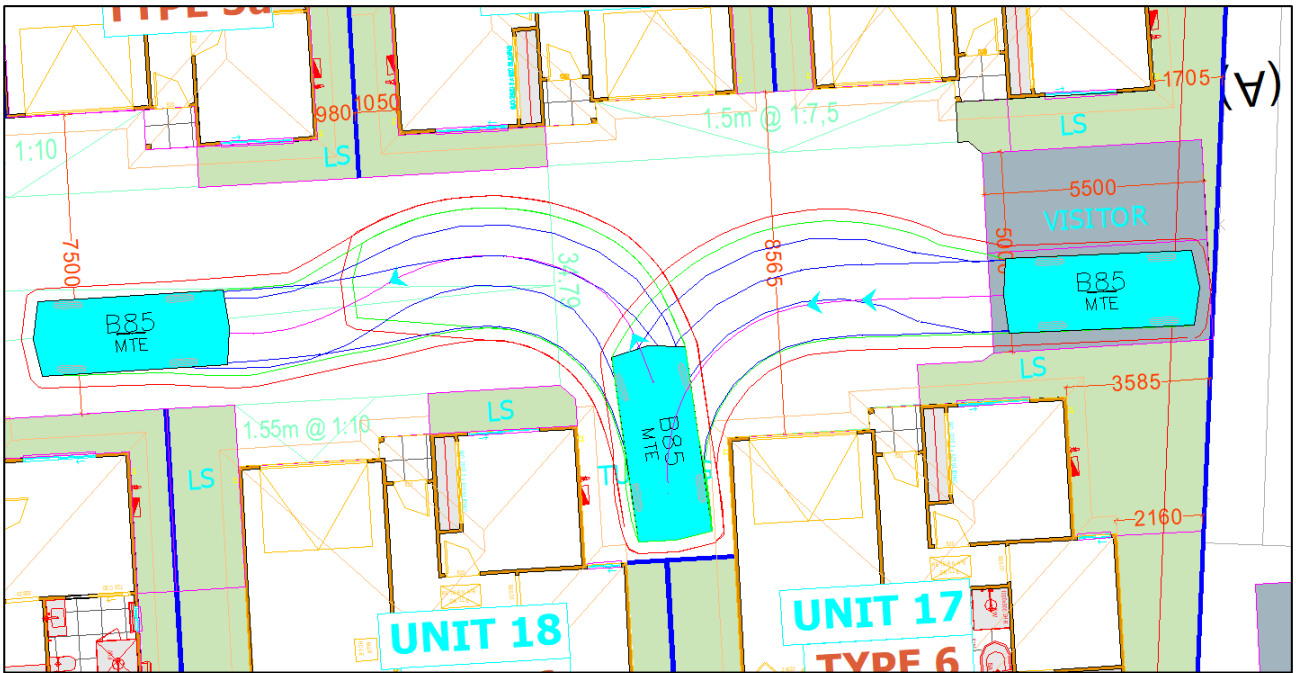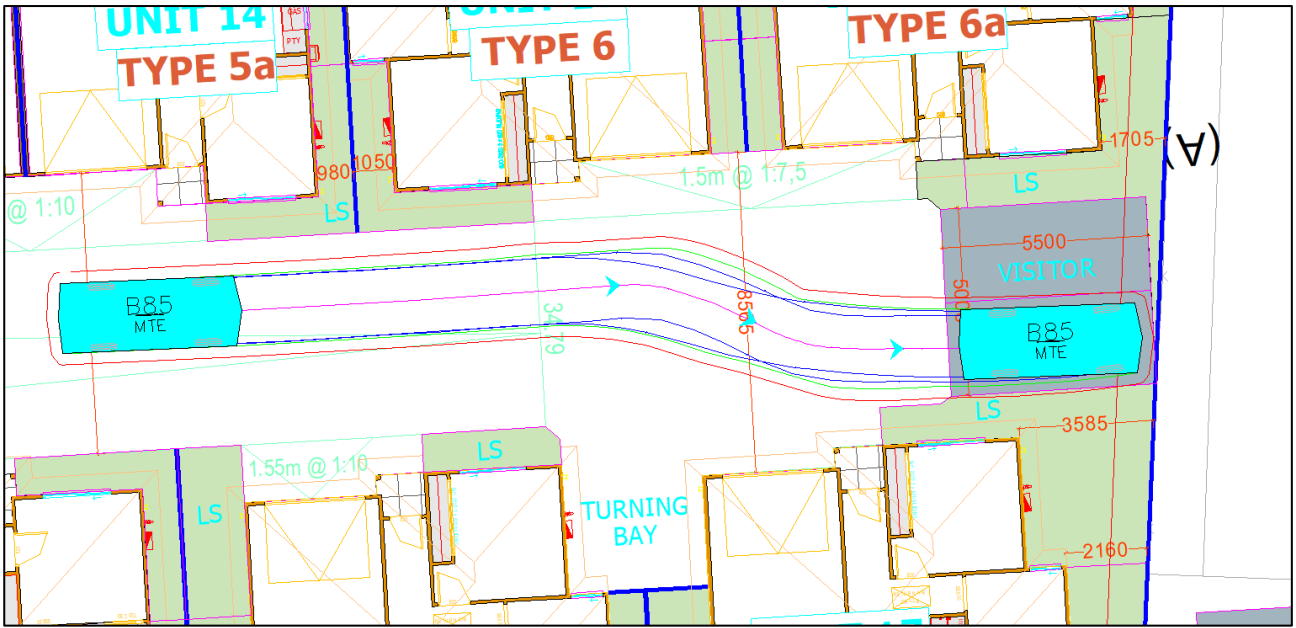
B85 Entry / Exit from Visitor Space 6
1 Manoeuvre FORWARD IN / 2 Manoeuvres REVERSE OUT
SUCCESSFUL

SITE PLAN
SCALE 1:350

ABERGLASSYN ROAD

SITE AREA = 6 322.9 m²
TOTAL BUILT AREA = 2 985.4 m²
DRIVEWAY AREA = 1 077.36 m²
UNBUILT AREA = 2 263.24 m²

GENERAL NOTES

PROVIDE VERTICAL BRICK CONTROL JOINTS AT ALL MAJOR OPENINGS AND
AT A MAXIMUM OF 6000 CTS
DOWNPIPE LOCATION INDICATIVE ONLY. PLUMBER TO LOCATE ON SITE.
USE 100MM SEWERGRADE PVC. MAX 12000MM CTS
CONFIRM ALL DIMENSIONS ON SITE PRIOR
TO COMMENCEMENT OF ANY PARTICULAR STAGE
OF WORKS. CONSULT MBS IF ANY DISCREPANCIES IN
DESIGN AND MEASUREMENTS ARE FOUND
ALL WORKS TO BE COMPLETED IN ACCORDANCE WITH ALL RELEVANT
AUSTRALIAN STANDARDS
ALL WORKS TO BE COMPLETED IN ACCORDANCE WITH CURRENT EDITION
OF THE BUILDING CODE OF AUSTRALIA
ALL CONSTRUCTION TO MEET ALL RELEVANT BUSHFIRE
ATTACK LEVEL REQUIREMENTS AND TO AS3959

CLIENT
YYYYY YYYYYY

ADDRESS
262 Aberglassyn Road

POSTCODE: 2320   LOT No. 21   DP No. 841959

SHEET TITLE
SITE PLAN

No	Description
2	PRELIMINARY PLANS
3	PRELIMINARY PLANS
4	GARAGE DOORS AMEND
5	AREA CALCULATIONS U
6	DRIVEWAY & LEVELS U
7	UNIT 18 UPDATED
8	POS LEVELS UPDATED
9	SUSTAINABILITY COMM
10	DRIVEWAY & RWT AME

UNIT TYPE labels: UNIT 1 TYPE 1, UNIT 4 TYPE 3, UNIT 5 TYPE 3, UNIT 8 TYPE 5a, UNIT 10 TYPE 5a, UNIT 12 TYPE 5a, UNIT 14 TYPE 5a, UNIT 16 TYPE 6a, UNIT 17 TYPE 6, UNIT 18 TYPE 6, UNIT 19 TYPE 7, UNIT 20 TYPE 7, UNIT 21 TYPE 7, UNIT 22 TYPE 8, UNIT 23 TYPE 6, UNIT 24 TYPE 2a

COS 191m²   COS 86.5m²

LETTERBOXES H=1.5m

VISITOR'S R.L.34.56   VISITOR'S R.L.34.76   VISITOR'S R.L.34.88   VISITOR'S R.L.35.00

BINS   GARDEN   PATHWAY

CONCRETE BIN HARDSTAND
STABILIZED SITE ENTRY

SITE PLAN
SCALE 1:350

SITE AREA = 6 322.9 m²
TOTAL BUILT AREA = 2 985.4 m²
DRIVEWAY AREA = 1 077.36 m²
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GENERAL NOTES

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DOWNPIPE LOCATION INDICATIVE ONLY. PLUMBER TO LOCATE ON SITE.
USE 100MM SEWERGRADE PVC. MAX 12000MM CTS
CONFIRM ALL DIMENSIONS ON SITE PRIOR
TO COMMENCEMENT OF ANY PARTICULAR STAGE
OF WORKS. CONSULT MBS IF ANY DISCREPANCIES IN
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ALL WORKS TO BE COMPLETED IN ACCORDANCE WITH ALL RELEVANT
AUSTRALIAN STANDARDS
ALL WORKS TO BE COMPLETED IN ACCORDANCE WITH CURRENT EDITION
OF THE BUILDING CODE OF AUSTRALIA
ALL CONSTRUCTION TO MEET ALL RELEVANT BUSHFIRE
ATTACK LEVEL REQUIREMENTS AND TO AS3959

ABERGLASSYN ROAD

ADDRESS
262 Aberglassyn Road

POSTCODE 2320 LOT No. 21 DP No. 841959

SHEET TITLE
SITE PLAN

CLIENT
YYYYY YYYYYY

METAL SHED

VIEW 1
VIEW 3
VIEW 4
VIEW 5

COS 191m²
COS 86.5m²

LETTERBOXES H=1.5m
BINS
GARDEN
PATHWAY
CONCRETE BIN HARDSTAND
STABILIZED SITE ENTRY

UNIT 1 TYPE 1
UNIT 2 TYPE 2
UNIT 4 TYPE 3
UNIT 5 TYPE 3
UNIT 8 TYPE 8
UNIT 19 TYPE 7
UNIT 20 TYPE 7
UNIT 21 TYPE 7
UNIT 22 TYPE 8
UNIT 23 TYPE 6
UNIT 24 TYPE 2a