Traffix Group

Our Reference: G21532L-06F

31st July, 2023

Plenti Property Pty Ltd
Level 10, 278 Collins Street
MELBOURNE VIC 3000

Attention: Allan Carlsson

Dear Allan,

Underbank – Proposed Rezoning
Traffic Engineering Assessment

Introduction

We understand that it is proposed to rezone the land adjacent to the 'Rivers Edge' precinct of Underbank, on either side of the Halletts Way extension, from Farming Zone to allow for residential and community uses. Further, we understand that there have been discussions with Council relating to the proposed access arrangements and in-principle support has been provided.

The following provides a detailed traffic engineering assessment of the access considerations associated with the proposed rezoning and subdivision.

Subject Site

The site is located immediately east of the 'Rivers Edge' precinct of the Underbank residential development and includes land on either side of Halletts Way, as shown in the aerial image at Figure 1.

Figure 1: Aerial View of Subject Site

Land Use

The subject site is currently zoned Farming Zone (FZ) under the Moorabool Planning Scheme, as shown in Figure 2. Land surrounding the site to the north, east and west is zoned General Residential Zone (GRZ2) with Werribee River extending along the south-east boundary of the site. Notably, there is an escarpment along the north-east boundary of the site, separating the proposed Lot D and E from the adjacent residential areas. Lot A and Lot B will have a direct abutment on their western edge to the residential lots within the Rivers Edge Precinct of the Underbank residential development.

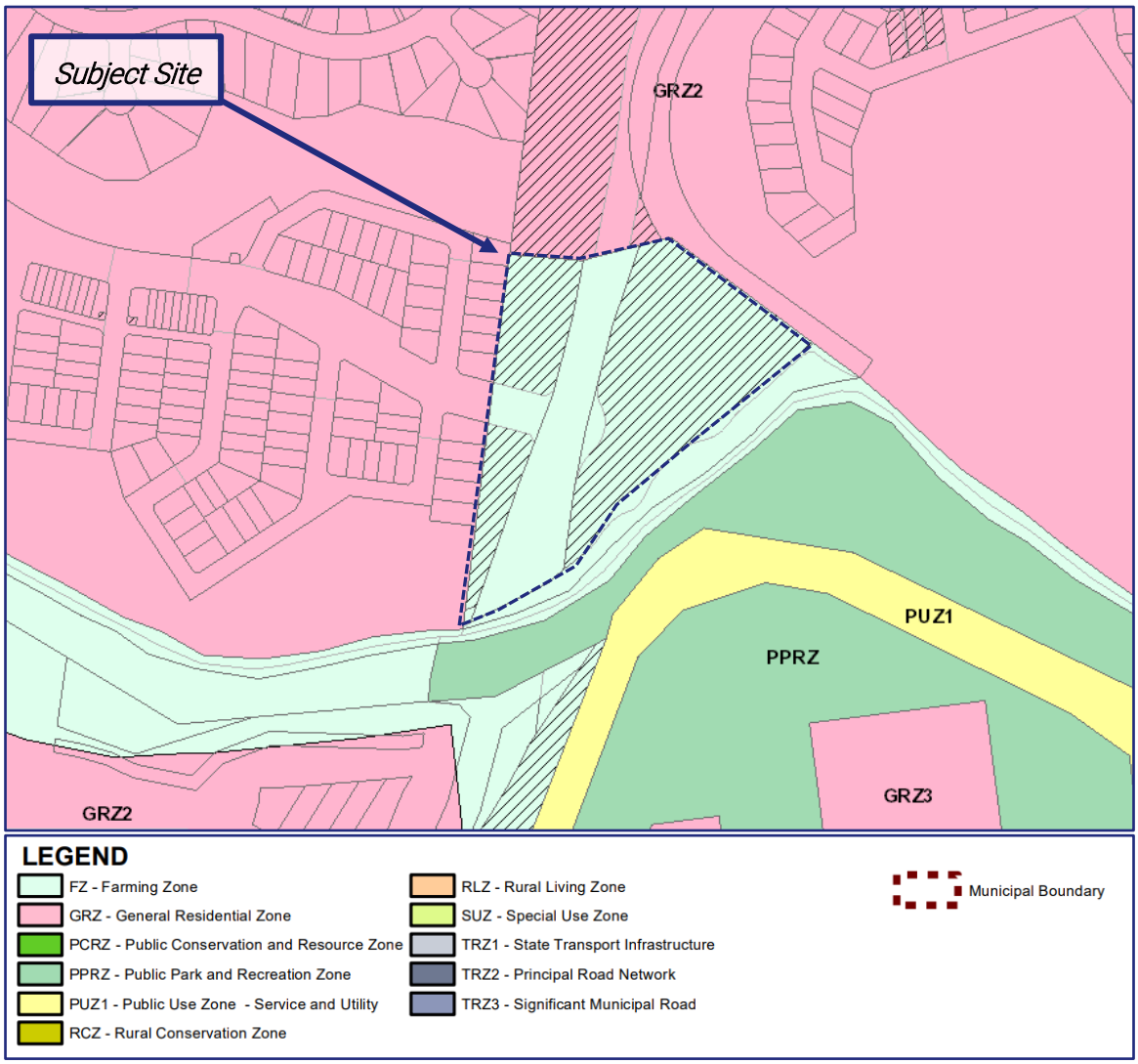


Figure 2: Land Use Zoning Map

Proposed Access & Lot Layout Arrangements

The proposal is to rezone the land from Farming Zone for residential purposes. The land will be split into five lots, as follows:

- Lot A located on the north-west of the Halletts Way/Adelong Way intersection,
- Lot B located on the south-west of the Halletts Way/Adelong Way intersection,
- Lot C located on the south-west of the Halletts Way/Adelong Way intersection but separated from Lot B by 100-year flood height contour,
- Lot D located on the eastern side of Halletts Way and
- Lot E located on the eastern side of Hallets Way but separate from Lot D by the 100-year flood height contour.

A summary of the proposed lot sizes and potential land uses is outlined in Table 1. The uses noted in Table 1 are indicative only and have been used for the purposes of assessing whether appropriate access can be provided.

Table 1: Proposed Development Summary

Lot	Size	Indicative Use
A	5,011m^2	Medium density residential or community use (childcare centre, medical centre etc.)
B	1,917m^2	Medium density residential or community use (childcare centre, medical centre etc.)
C	1,067m^2	Cannot be developed as it is below to 100-year flood extent contour.
D	4,465m^2	Medium density residential or community use (childcare centre, medical centre etc.)
E	13,665m^2	Cannot be developed as it is below to 100-year flood extent contour.

The proposed access arrangements for each lot are outlined in Table 2 below.

Table 2: Proposed Access Arrangements

Lot	Access Arrangements
Lot A	Fully directional access to Adelong Way at the western edge of the frontage, with a section of the Adelong Way median cutout and replaced with a central lane delineated by means of a differential seal or similar to allow right-turn movements in and out of the lot.
Lot B	Fully directional access to Adelong Way at the western edge of the frontage, with a section of the Adelong Way median cutout and replaced with a central lane delineated by means of a differential seal or similar to allow right-turn movements in and out of the lot.
Lot D	Two-way connection to existing Halletts Way/Adelong Way roundabout.

Traffic Generation

We are advised that lots A, B and D could accommodate community uses (child centres and/or medical centres) or residential uses. The development potential of each lot under these scenarios is outlined in Table 3 below.

Table 3: Development Summaries for Different Uses

Lot	Community Centre Use	Residential Use
A	140 place childcare centre and an 8 practitioner medical centre.	9 medium density residential lots.
B	150 place childcare centre.	4 medium density residential lots.
D	140 Place childcare centre and an 8 practitioner medical centre.	9 medium density residential lots.

An assessment of the traffic that may be generated by each lot under each development scenario is outlined below.

Lot A & D

Community Use

The RTA Guide to Traffic Generating Developments (2002) (RTA Guide) provides traffic generation rates based on extensive surveys undertaken in NSW and is considered the standard for metropolitan development characteristics.

The RTA Guide outlines the following peak hour traffic generation rates for childcare centres:

- AM peak hour – 0.8 vehicle trips per child, and
- PM peak hour – 0.7 vehicle trips per child.

Application of the above rates to a 140 place childcare centre equates to the following possible traffic generation:

- 112 AM peak hour vehicle movements, and
- 98 PM peak hour vehicle movements.

We have assumed that there will be an even distribution of inbound and outbound movements in each of the peak hours.

To assess medical centre traffic generation, we have assumed that each practitioner could see up to four patients per hour (15 minute appointments) and that each patient may drive themselves to the site. Accordingly, patients associated with each practitioner could generate up to eight movements per hour (four inbound and four outbound) with a total of 64 movements generated by the entire medical centre.

Residential Use

The RTA Guide outlines the following traffic generation rates for medium density residential development:

- Daily vehicles trips = 4-5 per dwelling
- Weekday peak hour vehicle trips = 0.4-0.5 per dwelling

Applying the traffic generation rates outlined above to the anticipated yield of 9 residential lots equates to the following anticipated traffic generation:

- 45 daily vehicles trips, and
- 5 peak hour vehicle trips.

The following typical residential splits are expected for this traffic:

- AM Peak – 80% outbound and 20% inbound, and
- PM Peak – 40% outbound and 60% inbound.

Lot B

Community Use

Application of the previously mentioned rates to a 150 place childcare centre equates to the following possible traffic generation:

- 120 AM peak hour vehicle movements, and
- 105 PM peak hour vehicle movements.

We have assumed that there will be an even distribution of inbound and outbound movements in each of the peak hours.

Residential Use

We are advised that Lot B could be developed with four medium density residential lots.

Application of the previously mentioned rates to the anticipated yield of four residential lots in Lot B equates to the following anticipated traffic generation:

- 20 daily vehicles trips, and
- 2 peak hour vehicle trips.

The following typical residential splits are expected for this traffic:

- AM Peak – 80% outbound and 20% inbound, and
- PM Peak – 40% outbound and 60% inbound.

Traffic Distribution

For Lot A and B, we have assumed an even split of traffic to/from the east and west along Adelong Way, and an even split of traffic to/from the north and south along Halletts Way.

For Lot D we have assumed that 50% of traffic will be to/from the east and west along Adelong Way, and 25% of traffic to/from the north and to/from the south along Halletts Way.

Development Scenarios

It is expected that only one of the developable lots may ultimately be developed with a community use. Accordingly, three scenarios have been assessed to determine whether appropriate access can be provided for the proposed rezoning, as follows:

- Scenario 1 – Lot A is a community use, Lots B and D are residential uses,
- Scenario 2 – Lot B is a community use, Lots A and D are residential uses, and
- Scenario 3 – Lot D is a community use, Lots A and B are residential uses.

Ultimate Traffic Volumes

Hallets Way

Previous studies undertaken by Traffix Group on the wider Bacchus Marsh network predict that ultimately the daily traffic volumes on Halletts Way will be 12,100 vehicles. Assuming a 10% peak to daily traffic ratio, the peak hour traffic volumes along Halletts Way could be expected to be in the order of 1,210 vehicles.

It is assumed that through traffic on Halletts Way will have a bias towards northbound traffic in the AM peak hour (as more drivers head towards the Melbourne bound on ramps of the Western Freeway) and a bias towards southbound traffic in the PM peak hour (as more drivers travel from the Western Freeway).

Accordingly, the following ultimate direction splits are assumed from through traffic on Halletts Way:

- AM Peak – 60% northbound and 40% southbound, and
- PM Peak – 40% northbound and 60% southbound.

Adelong Way

At full build out, the entire Underbank site is anticipated to have in the order of 1,300 residential lots. Based on a peak hour traffic generation rate of 0.9 vehicle trips per dwelling (which has been used in previous assessments of the site), the entire development could be expected to generate in the order of 1,170 peak hour vehicle movements.

While there is also a local town centre planned for Underbank, we do not anticipate that this will generate any significant amount of external vehicle trips, particularly in typical peak hours.

Previous assessments of the Underbank site have assumed that 50% of the total traffic generated will connect to the adjacent road network via the Halletts Way/Adelong Way intersection, with 30% of this traffic travelling to/from the north and 70% travelling to/from the south.

The following typical residential splits of traffic entering and exiting Unberbank in each of the peak hours have been adopted:

- AM Peak – 80% outbound and 20% inbound, and
- PM Peak – 40% outbound and 60% inbound.

Design Traffic Volumes

Based on the traffic generation and distribution assessment outlined above, the ultimate AM and PM peak hour design traffic volumes for each scenarios is outlined in Figure 3, Figure 4 and Figure 5 below.

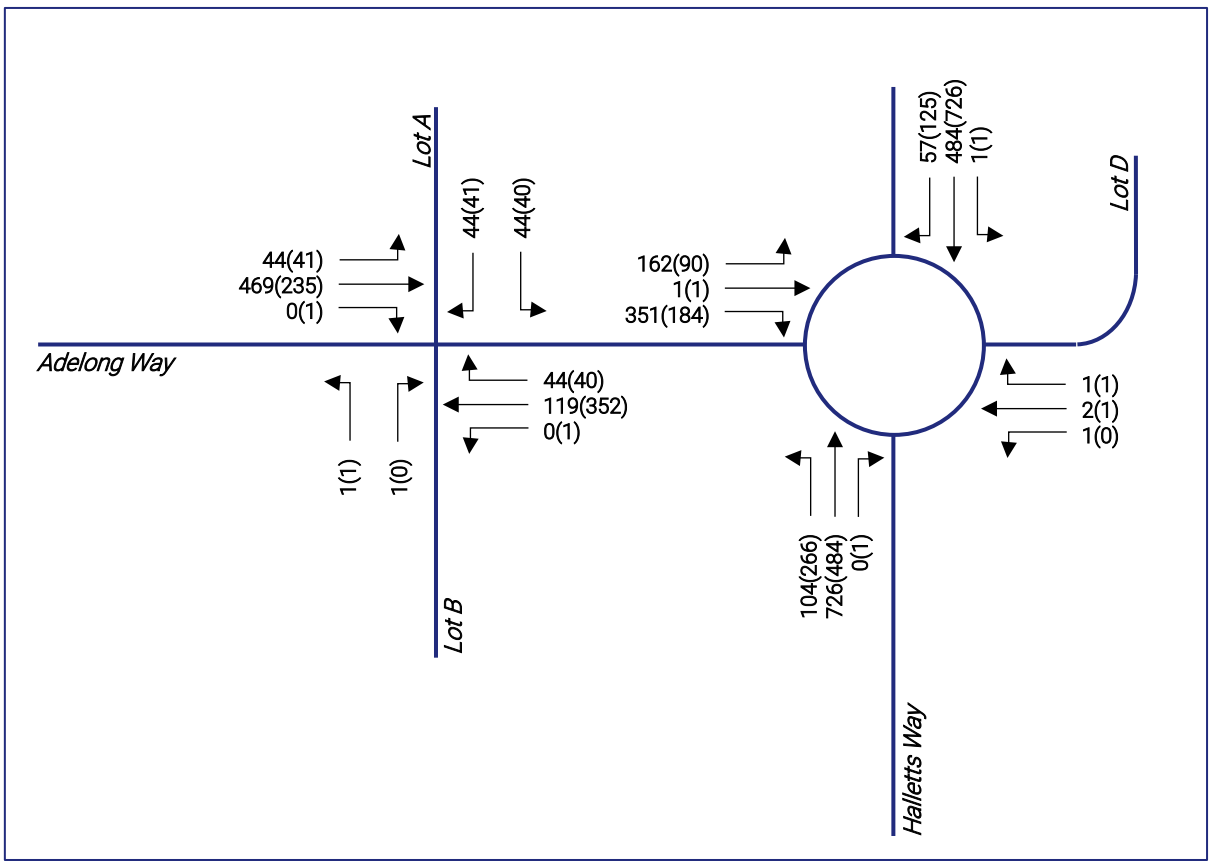


Figure 3: Scenario 1 - AM(PM) Peak Hour - Design Traffic Volumes

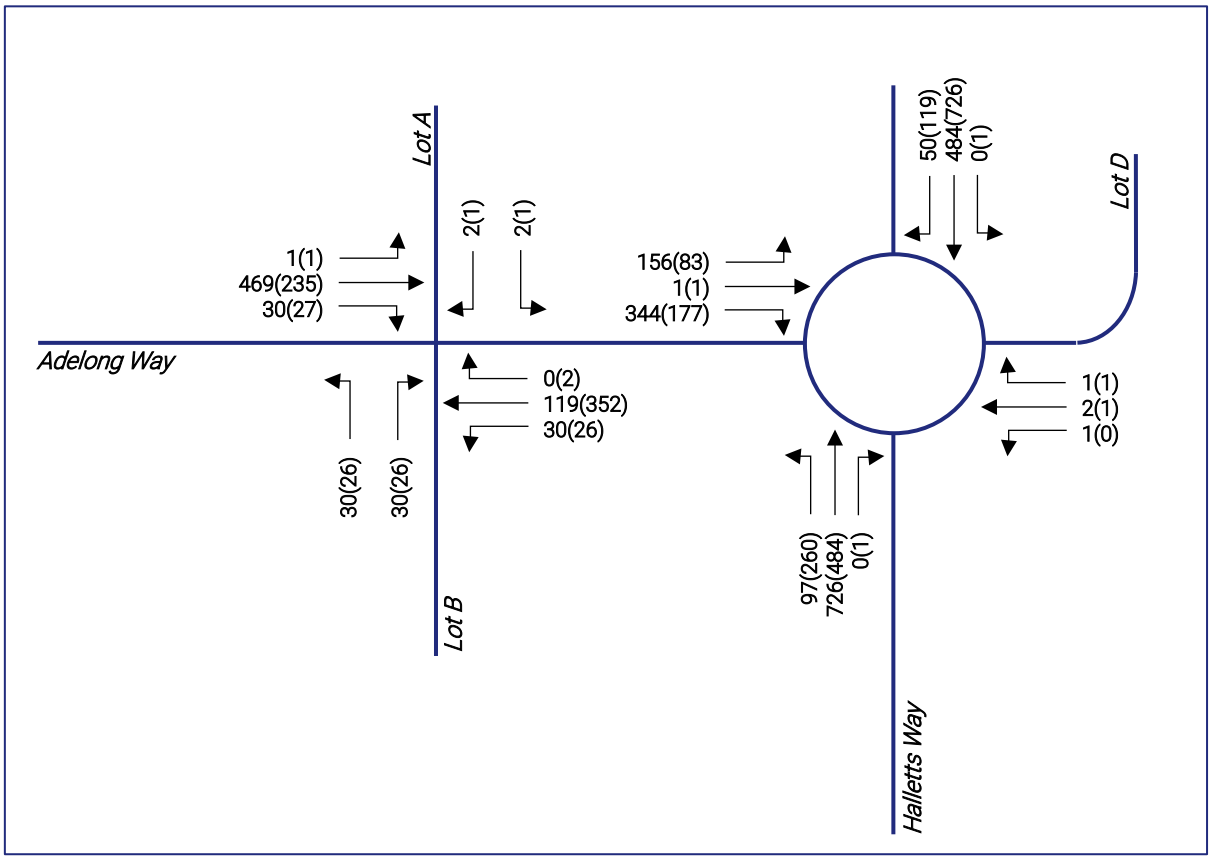


Figure 4: Scenario 2 - AM(PM) Peak Hour - Design Traffic Volumes

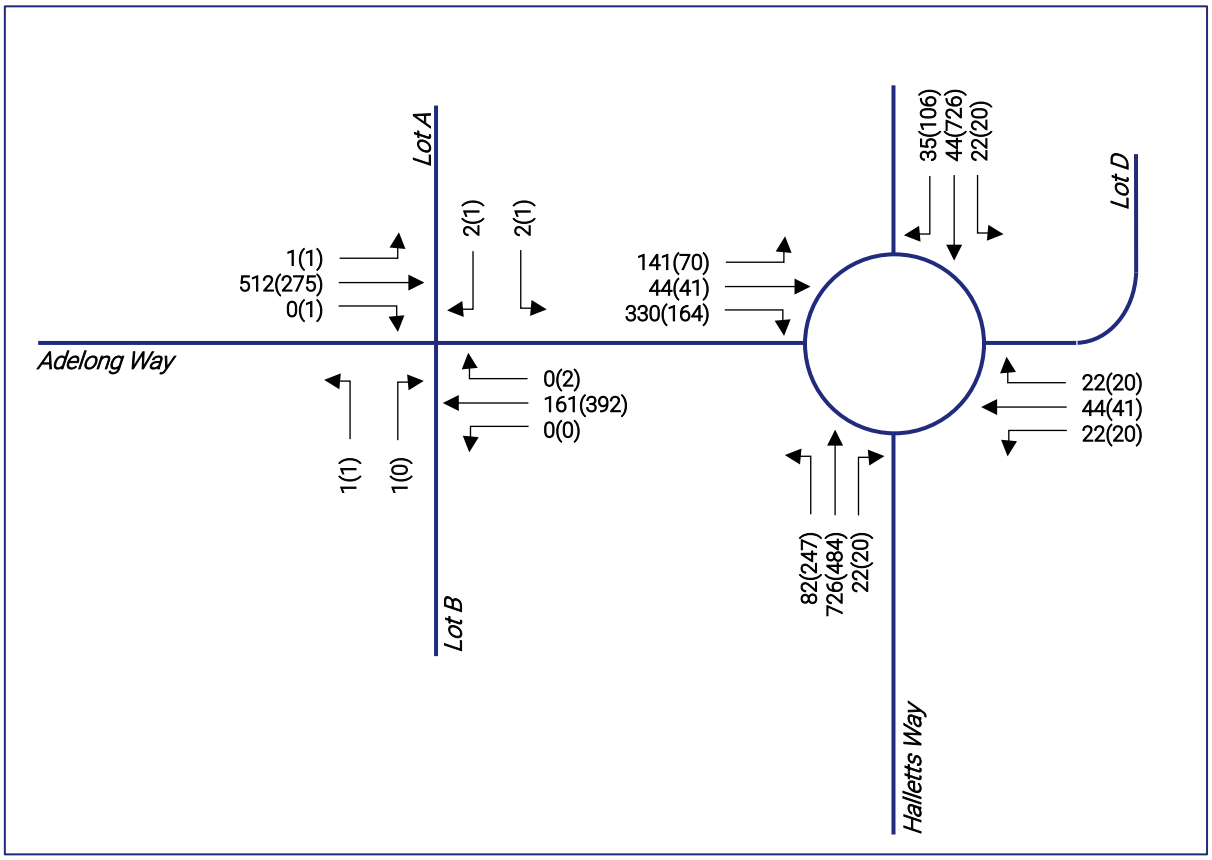


Figure 5: Scenario 3 - AM(PM) Peak Hour - Design Traffic Volumes

Traffic Impact Analysis

To assess the adequacy of the proposed access arrangements SIDRA[1] analysis has been undertaken.

The key outputs of SIDRA are degree of saturation (DOS), average delay and 95th percentile queue length. For a sign controlled intersection a DOS of up to 0.8 is considered good operating conditions and between 0.8 and 0.9 is considered acceptable operating conditions. For a roundabout controlled intersection a DOS of up to 0.85 is considered good operating conditions and between 0.85 and 0.95 is considered acceptable operating conditions.

The SIDRA analysis has been undertaken as a network model, with the Adelong Way/Lot A/Lot B intersection and the Halletts Way/Adelong Way/Lot D intersection linked to provide an accurate assessment, given their close proximity.

A summary of the SIDRA results for the three scenarios are outlined in Table 4, Table 5, and Table 6 with detailed movement summaries attached at Appendix B.

[1] SIDRA 9 is an intersection analysis software that is widely used in industry for assessing the capacity of intersection arrangements.

Table 4: Scenario 1 - Summary of SIDRA Analysis

Approach	DOS		Average Delay		95th %ile Queue	
	AM	PM	AM	PM	AM	PM
Adelong Way/Lot A/Lot B Intersection						
South – Lot B	0.006	0.005	10.7 sec	10.9 sec	0.1m	0.1m
East – Adelong Way	0.067	0.119	1.4 sec	0.4 sec	1.3m	0.9m
North – Lot A	0.278	0.173	13.1 sec	11.2 sec	5.8m	4.4m
West – Adelong Way	0.455	0.154	0.8 sec	0.9 sec	0.0m	0.0m
Halletts Way/Adelong Way/Lot D Intersection						
South – Halletts Way	0.592	0.599	4.3 sec	4.9 sec	48.1m	44.6m
East – Lot D	0.007	0.007	11.1 sec	13.8 sec	0.3m	0.4m
North – Halletts Way	0.590	0.729	8.0 sec	7.1 sec	42.4m	65.7m
West – Adelong Way	0.760	0.329	21.4 sec	8.4 sec	77.5m	16.1m

Table 5: Scenario 2 - Summary of SIDRA Analysis

Approach	DOS		Average Delay		95th %ile Queue	
	AM	PM	AM	PM	AM	PM
Adelong Way/Lot A/Lot B Intersection						
South – Lot B	0.155	0.112	10.8 sec	11.1 sec	3.1m	2.8m
East – Adelong Way	0.083	0.211	0.7 sec	0.3 sec	0.0m	0.0m
North – Lot A	0.012	0.004	11.4 sec	10.3 sec	0.2m	0.1m
West – Adelong Way	0.391	0.024	0.6 sec	0.8 sec	0.6m	0.7m
Halletts Way/Adelong Way/Lot D Intersection						
South – Halletts Way	0.579	0.589	4.2 sec	4.8 sec	46.3m	43.3m
East – Lot D	0.007	0.007	10.9 sec	13.9 sec	0.3m	0.3m
North – Halletts Way	0.578	0.717	7.7 sec	6.6 sec	40.4m	61.7m
West – Adelong Way	0.734	0.311	20.0 sec	8.4 sec	70.3m	15.0m

Table 6: Scenario 3 - Summary of SIDRA Analysis

Approach	DOS		Average Delay		95th %ile Queue	
	AM	PM	AM	PM	AM	PM
Adelong Way/Lot A/Lot B Intersection						
South – Lot B	0.007	0.005	10.9 sec	11.2 sec	0.1m	0.1m
East – Adelong Way	0.090	0.219	0.1 sec	0.0 sec	0.0m	0.0m
North – Lot A	0.015	0.004	12.1 sec	10.8 sec	0.2m	0.1m
West – Adelong Way	0.286	0.154	0.1 sec	0.1 sec	10.3m	0.0m
Halletts Way/Adelong Way/Lot D Intersection						
South – Halletts Way	0.628	0.624	4.8 sec	5.4 sec	48.4m	44.3m
East – Lot C	0.152	0.190	11.3 sec	13.9 sec	7.3m	10.0m
North – Halletts Way	0.615	0.760	8.7 sec	8.4 sec	46.3m	77.6m
West – Adelong Way	0.820	0.342	27.2 sec	8.4 sec	87.0m	17.0m

The results of the SIDRA analyses shows that development under any of the three scenarios can be accommodated by the existing road network, and that all approaches will operate within the limits of 'good' operating conditions during both peak hours.

Importantly, the queue lengths for right turns into Lots A and B (for all scenarios) are minimal and on that basis, we are confident that the proposed median break to service these lots will not result in any impacts on the through traffic on Adelong Way. It may be appropriate to include a 'KEEP CLEAR' area on Adelong Way for access to Lot A, given that queueing from the roundabout is likely extend past the Lot A access during the AM peak hour.

Conclusions

Having reviewed the subject site, adjacent road network and undertaken detailed traffic analyses, we are satisfied that the proposed arrangements would provide a suitable outcome for access to the land. Importantly, we believe that access can be achieved without resulting in any unacceptable impacts on the existing road network adjacent to the subject site.

We trust that this is sufficient for now and should you have any queries, please feel free to contact Marcus Koorn or Henry Turnbull at our CBD office on 98 222 888.

Yours faithfully,

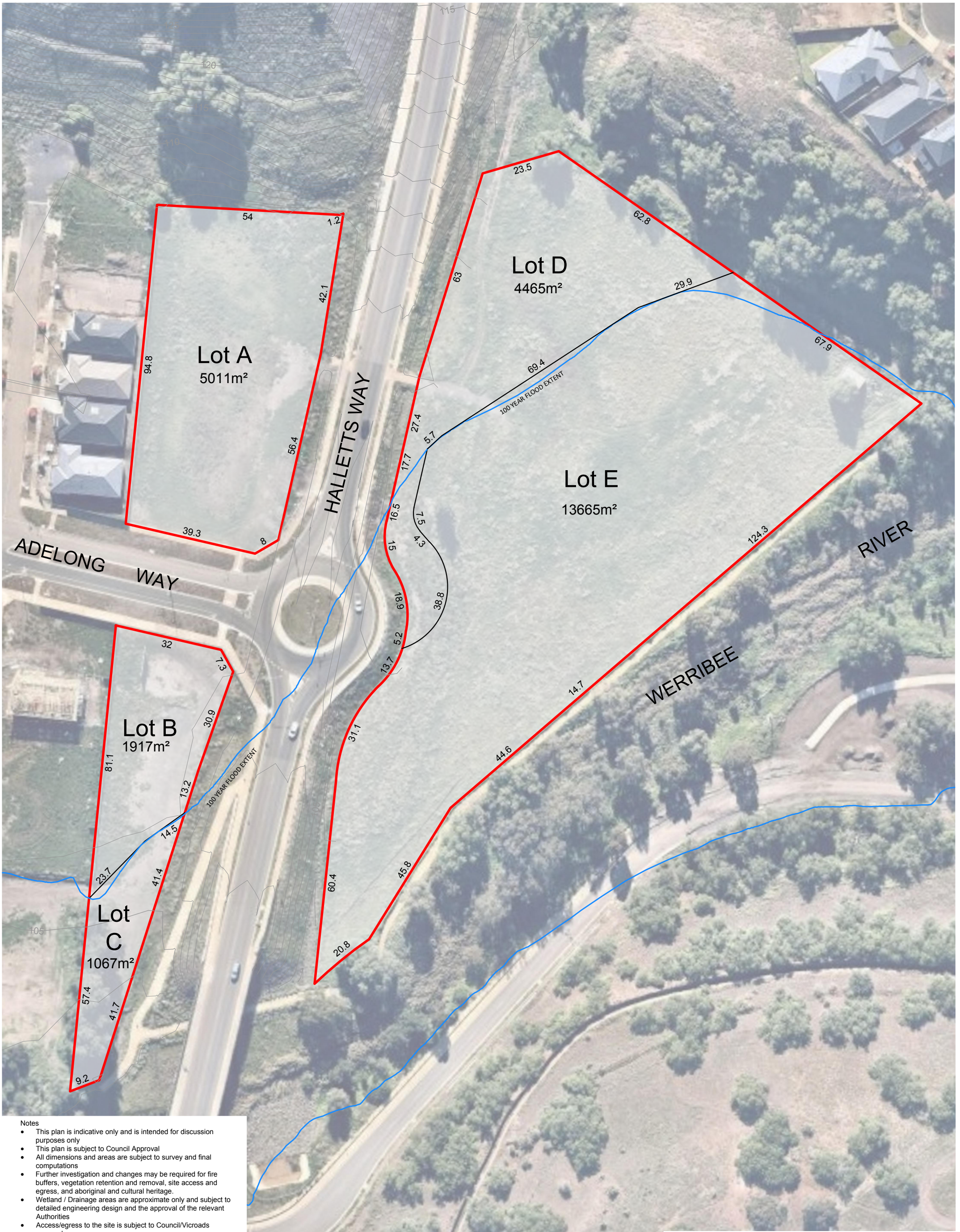
TRAFFIX GROUP PTY LTD

HENRY H TURNBULL
PRINCIPAL CONSULTANT

Registered Professional Engineer No. 6312 (Vic)
Registered Professional Engineer No. 28693 (Qld)

Appendix A

Lot Layout Plan



Notes

- This plan is indicative only and is intended for discussion purposes only
- This plan is subject to Council Approval
- All dimensions and areas are subject to survey and final computations
- Further investigation and changes may be required for fire buffers, vegetation retention and removal, site access and egress, and aboriginal and cultural heritage.
- Wetland / Drainage areas are approximate only and subject to detailed engineering design and the approval of the relevant Authorities
- Access/egress to the site is subject to Council/Vicroads approval
- All roads are 16m local access level 1 unless noted otherwise
- Road pavement is indicative only and subject to engineering design
- All public open space areas are conceptual only and subject to change during the detailed design process
- Arc dimensions shown are the length of arc (not chord)

Beveridge Williams

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Indicative Subdivision Plan - Halletts Way

Underbank, Bacchus Marsh

Kataland

Version	Date	Description	Drafted	Approved
01	02.04.20	Initial Issue	WEB	DRAFT
02	05.04.23	Bushfire buffer included	WEB	DRAFT
03	26.05.23	Lot bounadries confrimed	WEB	DRAFT
04	31.05.23	Updated based on client's comments	OX	WEB

Date: 31.05.23
Version No: 04
Job No: 2000150
Scale (A1): 1:500
(A3): 1:1000

N

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Appendix B

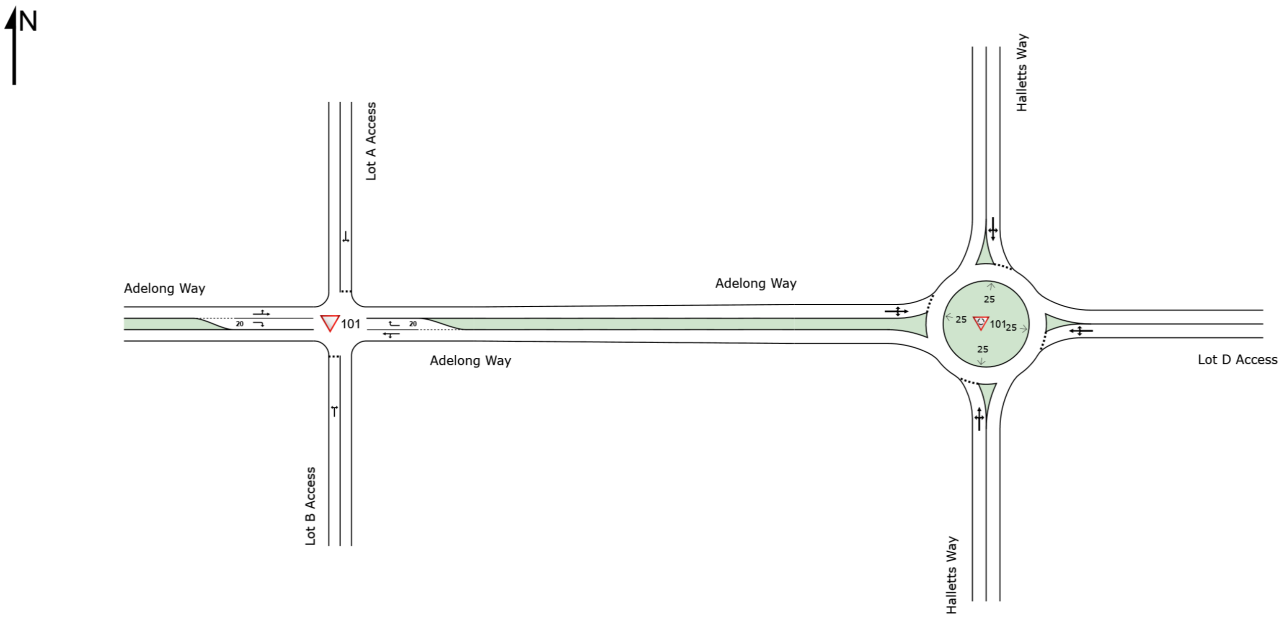
SIDRA Summaries

NETWORK LAYOUT

Network: N102 [AM Peak (Network Folder: Scenario 1)]

New Network
Network Category: (None)

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



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
101	NA	1 - Halletts Way/Adelong Way - AM
101	NA	1 - Adelong Way - AM

MOVEMENT SUMMARY

Site: 101 [1 - Adelong Way - AM (Site Folder: Scenario 1)]

Network: N102 [AM Peak (Network Folder: Scenario 1)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lot B Access														
1	L2	1	0.0	1	0.0	0.006	6.0	LOS A	0.0	0.1	0.38	0.59	0.38	49.9
3	R2	1	0.0	1	0.0	0.006	15.4	LOS C	0.0	0.1	0.38	0.59	0.38	44.6
Approach		2	0.0	2	0.0	0.006	10.7	LOS B	0.0	0.1	0.38	0.59	0.38	48.0
East: Adelong Way														
4	L2	1	0.0	1	0.0	0.067	3.3	LOS A	0.0	0.0	0.00	0.00	0.00	57.0
5	T1	125	5.0	125	5.0	0.067	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	46	0.0	46	0.0	0.046	5.3	LOS A	0.2	1.3	0.52	0.67	0.52	48.6
Approach		173	3.6	173	3.6	0.067	1.4	NA	0.2	1.3	0.14	0.18	0.14	56.4
North: Lot A Access														
7	L2	46	0.0	46	0.0	0.278	9.0	LOS A	0.8	5.8	0.63	0.87	0.72	42.1
9	R2	46	0.0	46	0.0	0.278	17.2	LOS C	0.8	5.8	0.63	0.87	0.72	48.1
Approach		93	0.0	93	0.0	0.278	13.1	LOS B	0.8	5.8	0.63	0.87	0.72	45.9
West: Adelong Way														
10	L2	46	0.0	46	0.0	0.455	5.8	LOS A	0.0	0.0	0.00	0.05	0.00	57.4
11	T1	494	5.0	494	5.0	0.455	0.3	LOS A	0.0	0.0	0.00	0.05	0.00	58.5
12	R2	1	0.0	1	0.0	0.001	5.8	LOS A	0.0	0.0	0.23	0.53	0.23	52.5
Approach		541	4.6	541	4.6	0.455	0.8	NA	0.0	0.0	0.00	0.05	0.00	58.3
All Vehicles		808	3.8	808	3.8	0.455	2.3	NA	0.8	5.8	0.10	0.18	0.11	55.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [1 - Halletts Way/Adelong Way - AM (Site Folder: Scenario 1)]

Network: N102 [AM Peak (Network Folder: Scenario 1)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Halletts Way														
1	L2	109	5.0	109	5.0	0.592	4.2	LOS A	6.6	48.1	0.40	0.41	0.40	50.4
2	T1	764	5.0	764	5.0	0.592	4.3	LOS A	6.6	48.1	0.40	0.41	0.40	55.5
3	R2	1	0.0	1	0.0	0.592	9.4	LOS A	6.6	48.1	0.40	0.41	0.40	55.8
Approach		875	5.0	875	5.0	0.592	4.3	LOS A	6.6	48.1	0.40	0.41	0.40	55.2
East: Lot D Access														
4	L2	1	0.0	1	0.0	0.007	9.7	LOS A	0.0	0.3	0.83	0.62	0.83	50.5
5	T1	2	0.0	2	0.0	0.007	9.9	LOS A	0.0	0.3	0.83	0.62	0.83	44.6
6	R2	1	0.0	1	0.0	0.007	15.1	LOS B	0.0	0.3	0.83	0.62	0.83	52.0
Approach		4	0.0	4	0.0	0.007	11.1	LOS B	0.0	0.3	0.83	0.62	0.83	48.8
North: Halletts Way														
7	L2	1	0.0	1	0.0	0.590	7.2	LOS A	5.8	42.4	0.82	0.78	0.89	51.8
8	T1	509	5.0	509	5.0	0.590	7.5	LOS A	5.8	42.4	0.82	0.78	0.89	53.1
9	R2	60	5.0	60	5.0	0.590	12.7	LOS B	5.8	42.4	0.82	0.78	0.89	46.6
Approach		571	5.0	571	5.0	0.590	8.0	LOS A	5.8	42.4	0.82	0.78	0.89	52.7
West: Adelong Way														
10	L2	171	5.0	171	5.0	0.760	18.0	LOS B	10.6	77.5	1.00	1.27	1.68	36.8
11	T1	1	0.0	1	0.0	0.760	18.2	LOS B	10.6	77.5	1.00	1.27	1.68	38.1
12	R2	369	5.0	369	5.0	0.760	23.0	LOS C	10.6	77.5	1.00	1.27	1.68	38.1
Approach		541	5.0	541	5.0	0.760	21.4	LOS C	10.6	77.5	1.00	1.27	1.68	37.6
All Vehicles		1991	5.0	1991	5.0	0.760	10.0	LOS B	10.6	77.5	0.68	0.75	0.89	50.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [1 - Adelong Way - PM (Site Folder: Scenario 1)]

Network: N101 [PM Peak (Network Folder: Scenario 1)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lot B Access														
1	L2	1	0.0	1	0.0	0.005	7.1	LOS A	0.0	0.1	0.55	0.64	0.55	49.7
3	R2	1	0.0	1	0.0	0.005	14.7	LOS B	0.0	0.1	0.55	0.64	0.55	44.4
Approach		2	0.0	2	0.0	0.005	10.9	LOS B	0.0	0.1	0.55	0.64	0.55	47.8
East: Adelong Way														
4	L2	1	0.0	1	0.0	0.199	3.3	LOS A	0.0	0.0	0.00	0.00	0.00	56.9
5	T1	371	5.0	371	5.0	0.199	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	42	0.0	42	0.0	0.031	4.0	LOS A	0.1	0.9	0.37	0.56	0.37	50.1
Approach		414	4.5	414	4.5	0.199	0.4	NA	0.1	0.9	0.04	0.06	0.04	58.7
North: Lot A Access														
7	L2	42	0.0	42	0.0	0.173	6.6	LOS A	0.6	4.4	0.53	0.73	0.53	44.0
9	R2	43	0.0	43	0.0	0.173	15.7	LOS C	0.6	4.4	0.53	0.73	0.53	49.3
Approach		85	0.0	85	0.0	0.173	11.2	LOS B	0.6	4.4	0.53	0.73	0.53	47.4
West: Adelong Way														
10	L2	43	0.0	43	0.0	0.154	5.6	LOS A	0.0	0.0	0.00	0.09	0.00	57.5
11	T1	247	5.0	247	5.0	0.154	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	58.3
12	R2	1	0.0	1	0.0	0.001	6.6	LOS A	0.0	0.0	0.42	0.54	0.42	52.0
Approach		292	4.2	292	4.2	0.154	0.9	NA	0.0	0.0	0.00	0.09	0.00	58.0
All Vehicles		793	3.9	793	3.9	0.199	1.8	NA	0.6	4.4	0.08	0.14	0.08	56.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [1 - Halletts Way/Adelong Way - PM (Site Folder: Scenario 1)]

Network: N101 [PM Peak (Network Folder: Scenario 1)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Halletts Way														
1	L2	280	5.0	280	5.0	0.599	4.8	LOS A	6.1	44.6	0.56	0.50	0.56	49.3
2	T1	509	5.0	509	5.0	0.599	4.9	LOS A	6.1	44.6	0.56	0.50	0.56	54.9
3	R2	1	0.0	1	0.0	0.599	10.0	LOS B	6.1	44.6	0.56	0.50	0.56	55.2
Approach		791	5.0	791	5.0	0.599	4.9	LOS A	6.1	44.6	0.56	0.50	0.56	53.6
East: Lot D Access														
4	L2	1	0.0	1	0.0	0.007	12.3	LOS B	0.1	0.4	0.93	0.65	0.93	48.6
5	T1	1	0.0	1	0.0	0.007	12.5	LOS B	0.1	0.4	0.93	0.65	0.93	41.7
6	R2	1	0.0	1	0.0	0.007	17.7	LOS B	0.1	0.4	0.93	0.65	0.93	49.9
Approach		3	0.0	3	0.0	0.007	14.2	LOS B	0.1	0.4	0.93	0.65	0.93	47.5
North: Halletts Way														
7	L2	1	0.0	1	0.0	0.729	6.0	LOS A	9.0	65.7	0.77	0.64	0.80	52.1
8	T1	764	5.0	764	5.0	0.729	6.2	LOS A	9.0	65.7	0.77	0.64	0.80	53.3
9	R2	132	5.0	132	5.0	0.729	11.4	LOS B	9.0	65.7	0.77	0.64	0.80	47.0
Approach		897	5.0	897	5.0	0.729	7.0	LOS A	9.0	65.7	0.77	0.64	0.80	52.7
West: Adelong Way														
10	L2	95	5.0	95	5.0	0.329	5.1	LOS A	2.2	16.1	0.71	0.78	0.71	47.6
11	T1	1	0.0	1	0.0	0.329	5.4	LOS A	2.2	16.1	0.71	0.78	0.71	49.8
12	R2	194	5.0	194	5.0	0.329	10.1	LOS B	2.2	16.1	0.71	0.78	0.71	49.8
Approach		289	5.0	289	5.0	0.329	8.4	LOS A	2.2	16.1	0.71	0.78	0.71	49.0
All Vehicles		1980	5.0	1980	5.0	0.729	6.4	LOS A	9.0	65.7	0.68	0.61	0.69	52.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2 - Adelong Way - AM (Site Folder: Scenario 2)]

Network: N101 [AM Peak (Network Folder: Scenario 2)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lot B Access														
1	L2	32	0.0	32	0.0	0.155	6.0	LOS A	0.4	3.1	0.39	0.65	0.39	49.8
3	R2	32	0.0	32	0.0	0.155	15.5	LOS C	0.4	3.1	0.39	0.65	0.39	44.5
Approach		63	0.0	63	0.0	0.155	10.8	LOS B	0.4	3.1	0.39	0.65	0.39	47.9
East: Adelong Way														
4	L2	32	0.0	32	0.0	0.083	3.3	LOS A	0.0	0.0	0.00	0.11	0.00	55.9
5	T1	125	5.0	125	5.0	0.083	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	58.7
6	R2	1	0.0	1	0.0	0.001	4.9	LOS A	0.0	0.0	0.49	0.53	0.49	49.1
Approach		158	4.0	158	4.0	0.083	0.7	NA	0.0	0.0	0.00	0.12	0.00	58.1
North: Lot A Access														
7	L2	2	0.0	2	0.0	0.012	8.0	LOS A	0.0	0.2	0.58	0.70	0.58	43.8
9	R2	2	0.0	2	0.0	0.012	14.8	LOS B	0.0	0.2	0.58	0.70	0.58	49.2
Approach		4	0.0	4	0.0	0.012	11.4	LOS B	0.0	0.2	0.58	0.70	0.58	47.2
West: Adelong Way														
10	L2	1	0.0	1	0.0	0.391	5.7	LOS A	0.0	0.0	0.00	0.00	0.00	58.0
11	T1	494	5.0	494	5.0	0.391	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
12	R2	32	0.0	32	0.0	0.020	5.9	LOS A	0.1	0.6	0.26	0.56	0.26	52.4
Approach		526	4.7	526	4.7	0.391	0.6	NA	0.1	0.6	0.02	0.03	0.02	58.7
All Vehicles		752	4.1	752	4.1	0.391	1.5	NA	0.4	3.1	0.05	0.11	0.05	57.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2 - Halletts Way/Adelong Way - AM (Site Folder: Scenario 2)]

Network: N101 [AM Peak (Network Folder: Scenario 2)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Halletts Way														
1	L2	102	5.0	102	5.0	0.579	4.1	LOS A	6.3	46.3	0.36	0.40	0.36	50.6
2	T1	764	5.0	764	5.0	0.579	4.2	LOS A	6.3	46.3	0.36	0.40	0.36	55.7
3	R2	1	0.0	1	0.0	0.579	9.4	LOS A	6.3	46.3	0.36	0.40	0.36	56.0
Approach		867	5.0	867	5.0	0.579	4.2	LOS A	6.3	46.3	0.36	0.40	0.36	55.4
East: Lot D Access														
4	L2	1	0.0	1	0.0	0.007	9.5	LOS A	0.0	0.3	0.82	0.62	0.82	50.7
5	T1	2	0.0	2	0.0	0.007	9.7	LOS A	0.0	0.3	0.82	0.62	0.82	44.8
6	R2	1	0.0	1	0.0	0.007	14.9	LOS B	0.0	0.3	0.82	0.62	0.82	52.1
Approach		4	0.0	4	0.0	0.007	10.9	LOS B	0.0	0.3	0.82	0.62	0.82	48.9
North: Halletts Way														
7	L2	1	0.0	1	0.0	0.578	6.9	LOS A	5.5	40.4	0.81	0.75	0.86	51.9
8	T1	509	5.0	509	5.0	0.578	7.2	LOS A	5.5	40.4	0.81	0.75	0.86	53.2
9	R2	53	5.0	53	5.0	0.578	12.4	LOS B	5.5	40.4	0.81	0.75	0.86	46.8
Approach		563	5.0	563	5.0	0.578	7.7	LOS A	5.5	40.4	0.81	0.75	0.86	52.8
West: Adelong Way														
10	L2	164	5.0	164	5.0	0.734	16.6	LOS B	9.6	70.3	1.00	1.24	1.60	37.7
11	T1	1	0.0	1	0.0	0.734	16.8	LOS B	9.6	70.3	1.00	1.24	1.60	39.1
12	R2	362	5.0	362	5.0	0.734	21.6	LOS C	9.6	70.3	1.00	1.24	1.60	39.0
Approach		527	5.0	527	5.0	0.734	20.0	LOS C	9.6	70.3	1.00	1.24	1.60	38.6
All Vehicles		1962	5.0	1962	5.0	0.734	9.5	LOS A	9.6	70.3	0.66	0.73	0.84	50.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2 - Adelong Way - PM (Site Folder: Scenario 2)]

Network: N101 [PM Peak (Network Folder: Scenario 2)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lot B Access														
1	L2	27	0.0	27	0.0	0.112	7.3	LOS A	0.4	2.8	0.56	0.76	0.56	49.6
3	R2	27	0.0	27	0.0	0.112	14.8	LOS B	0.4	2.8	0.56	0.76	0.56	44.2
Approach		55	0.0	55	0.0	0.112	11.1	LOS B	0.4	2.8	0.56	0.76	0.56	47.6
East: Adelong Way														
4	L2	27	0.0	27	0.0	0.211	3.3	LOS A	0.0	0.0	0.00	0.04	0.00	56.6
5	T1	371	5.0	371	5.0	0.211	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
6	R2	2	0.0	2	0.0	0.001	3.8	LOS A	0.0	0.0	0.34	0.50	0.34	50.3
Approach		400	4.6	400	4.6	0.211	0.3	NA	0.0	0.0	0.00	0.04	0.00	59.2
North: Lot A Access														
7	L2	1	0.0	1	0.0	0.004	6.5	LOS A	0.0	0.1	0.49	0.61	0.49	45.0
9	R2	1	0.0	1	0.0	0.004	14.1	LOS B	0.0	0.1	0.49	0.61	0.49	49.9
Approach		2	0.0	2	0.0	0.004	10.3	LOS B	0.0	0.1	0.49	0.61	0.49	48.2
West: Adelong Way														
10	L2	1	0.0	1	0.0	0.132	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	58.3
11	T1	247	5.0	247	5.0	0.132	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
12	R2	28	0.0	28	0.0	0.024	6.8	LOS A	0.1	0.7	0.44	0.62	0.44	51.9
Approach		277	4.5	277	4.5	0.132	0.8	NA	0.1	0.7	0.05	0.07	0.05	58.2
All Vehicles		734	4.2	734	4.2	0.211	1.3	NA	0.4	2.8	0.06	0.11	0.06	57.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [2 - Halletts Way/Adelong Way - PM (Site Folder: Scenario 2)]

Network: N101 [PM Peak (Network Folder: Scenario 2)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Halletts Way														
1	L2	274	5.0	274	5.0	0.589	4.7	LOS A	5.9	43.3	0.54	0.49	0.54	49.5
2	T1	509	5.0	509	5.0	0.589	4.8	LOS A	5.9	43.3	0.54	0.49	0.54	55.0
3	R2	1	0.0	1	0.0	0.589	9.9	LOS A	5.9	43.3	0.54	0.49	0.54	55.3
Approach		784	5.0	784	5.0	0.589	4.8	LOS A	5.9	43.3	0.54	0.49	0.54	53.7
East: Lot D Access														
4	L2	1	0.0	1	0.0	0.007	12.0	LOS B	0.0	0.3	0.92	0.65	0.92	48.7
5	T1	1	0.0	1	0.0	0.007	12.2	LOS B	0.0	0.3	0.92	0.65	0.92	42.0
6	R2	1	0.0	1	0.0	0.007	17.4	LOS B	0.0	0.3	0.92	0.65	0.92	50.1
Approach		3	0.0	3	0.0	0.007	13.9	LOS B	0.0	0.3	0.92	0.65	0.92	47.7
North: Halletts Way														
7	L2	1	0.0	1	0.0	0.717	5.6	LOS A	8.5	61.7	0.75	0.61	0.76	52.2
8	T1	764	5.0	764	5.0	0.717	5.9	LOS A	8.5	61.7	0.75	0.61	0.76	53.5
9	R2	125	5.0	125	5.0	0.717	11.1	LOS B	8.5	61.7	0.75	0.61	0.76	47.2
Approach		891	5.0	891	5.0	0.717	6.6	LOS A	8.5	61.7	0.75	0.61	0.76	52.9
West: Adelong Way														
10	L2	87	5.0	87	5.0	0.311	5.1	LOS A	2.1	15.0	0.70	0.78	0.70	47.6
11	T1	1	0.0	1	0.0	0.311	5.4	LOS A	2.1	15.0	0.70	0.78	0.70	49.8
12	R2	186	5.0	186	5.0	0.311	10.0	LOS B	2.1	15.0	0.70	0.78	0.70	49.8
Approach		275	5.0	275	5.0	0.311	8.4	LOS A	2.1	15.0	0.70	0.78	0.70	49.0
All Vehicles		1953	5.0	1953	5.0	0.717	6.2	LOS A	8.5	61.7	0.66	0.59	0.67	52.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [3 - Adelong Way - AM (Site Folder: Scenario 3)]

Network: N101 [AM Peak (Network Folder: Scenario 3)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lot B Access														
1	L2	1	0.0	1	0.0	0.007	6.1	LOS A	0.0	0.1	0.44	0.61	0.44	49.7
3	R2	1	0.0	1	0.0	0.007	15.6	LOS C	0.0	0.1	0.44	0.61	0.44	44.4
Approach		2	0.0	2	0.0	0.007	10.9	LOS B	0.0	0.1	0.44	0.61	0.44	47.8
East: Adelong Way														
4	L2	1	0.0	1	0.0	0.090	3.3	LOS A	0.0	0.0	0.00	0.00	0.00	57.0
5	T1	169	5.0	169	5.0	0.090	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	1	0.0	1	0.0	0.001	5.1	LOS A	0.0	0.0	0.51	0.54	0.51	48.8
Approach		172	4.9	172	4.9	0.090	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
North: Lot A Access														
7	L2	2	0.0	2	0.0	0.015	8.3	LOS A	0.0	0.2	0.61	0.74	0.61	43.2
9	R2	2	0.0	2	0.0	0.015	15.7	LOS C	0.0	0.2	0.61	0.74	0.61	48.8
Approach		4	0.0	4	0.0	0.015	12.0	LOS B	0.0	0.2	0.61	0.74	0.61	46.7
West: Adelong Way														
10	L2	1	0.0	1	0.0	0.286	5.6	LOS A	1.4	10.3	0.00	0.00	0.00	58.2
11	T1	539	5.0	539	5.0	0.286	0.1	LOS A	1.4	10.3	0.00	0.00	0.00	59.8
12	R2	1	0.0	1	0.0	0.001	5.9	LOS A	0.0	0.0	0.27	0.52	0.27	52.4
Approach		541	5.0	541	5.0	0.286	0.1	NA	1.4	10.3	0.00	0.00	0.00	59.8
All Vehicles		719	4.9	719	4.9	0.286	0.2	NA	1.4	10.3	0.01	0.01	0.01	59.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [3 - Halletts Way/Adelong Way - AM (Site Folder: Scenario 3)]

Network: N101 [AM Peak (Network Folder: Scenario 3)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Halletts Way														
1	L2	86	5.0	86	5.0	0.628	4.6	LOS A	6.6	48.4	0.51	0.47	0.51	49.4
2	T1	764	5.0	764	5.0	0.628	4.7	LOS A	6.6	48.4	0.51	0.47	0.51	54.9
3	R2	23	0.0	23	0.0	0.628	9.8	LOS A	6.6	48.4	0.51	0.47	0.51	55.2
Approach		874	4.9	874	4.9	0.628	4.8	LOS A	6.6	48.4	0.51	0.47	0.51	54.6
East: Lot D Access														
4	L2	23	0.0	23	0.0	0.152	9.9	LOS A	1.0	7.3	0.85	0.81	0.85	50.5
5	T1	46	0.0	46	0.0	0.152	10.0	LOS A	1.0	7.3	0.85	0.81	0.85	44.5
6	R2	23	0.0	23	0.0	0.152	15.2	LOS B	1.0	7.3	0.85	0.81	0.85	51.9
Approach		93	0.0	93	0.0	0.152	11.3	LOS B	1.0	7.3	0.85	0.81	0.85	48.7
North: Halletts Way														
7	L2	23	0.0	23	0.0	0.615	8.1	LOS A	6.4	46.3	0.86	0.85	0.98	51.8
8	T1	509	5.0	509	5.0	0.615	8.4	LOS A	6.4	46.3	0.86	0.85	0.98	53.0
9	R2	37	5.0	37	5.0	0.615	13.6	LOS B	6.4	46.3	0.86	0.85	0.98	46.5
Approach		569	4.8	569	4.8	0.615	8.7	LOS A	6.4	46.3	0.86	0.85	0.98	52.7
West: Adelong Way														
10	L2	148	5.0	148	5.0	0.820	24.0	LOS C	12.0	87.0	1.00	1.38	1.95	33.4
11	T1	46	0.0	46	0.0	0.820	24.1	LOS C	12.0	87.0	1.00	1.38	1.95	34.5
12	R2	347	5.0	347	5.0	0.820	28.9	LOS C	12.0	87.0	1.00	1.38	1.95	34.4
Approach		542	4.6	542	4.6	0.820	27.2	LOS C	12.0	87.0	1.00	1.38	1.95	34.2
All Vehicles		2078	4.6	2078	4.6	0.820	12.0	LOS B	12.0	87.0	0.75	0.83	1.03	48.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [3 - Adelong Way - PM (Site Folder: Scenario 3)]

Network: N101 [PM Peak (Network Folder: Scenario 3)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Lot B Access														
1	L2	1	0.0	1	0.0	0.005	7.4	LOS A	0.0	0.1	0.57	0.65	0.57	49.5
3	R2	1	0.0	1	0.0	0.005	14.9	LOS B	0.0	0.1	0.57	0.65	0.57	44.1
Approach		2	0.0	2	0.0	0.005	11.2	LOS B	0.0	0.1	0.57	0.65	0.57	47.6
East: Adelong Way														
4	L2	1	0.0	1	0.0	0.219	3.3	LOS A	0.0	0.0	0.00	0.00	0.00	56.9
5	T1	413	5.0	413	5.0	0.219	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	2	0.0	2	0.0	0.002	4.0	LOS A	0.0	0.0	0.37	0.50	0.37	50.2
Approach		416	5.0	416	5.0	0.219	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.8
North: Lot A Access														
7	L2	1	0.0	1	0.0	0.004	6.7	LOS A	0.0	0.1	0.52	0.62	0.52	44.4
9	R2	1	0.0	1	0.0	0.004	14.9	LOS B	0.0	0.1	0.52	0.62	0.52	49.6
Approach		2	0.0	2	0.0	0.004	10.8	LOS B	0.0	0.1	0.52	0.62	0.52	47.7
West: Adelong Way														
10	L2	1	0.0	1	0.0	0.154	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	58.3
11	T1	289	5.0	289	5.0	0.154	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
12	R2	1	0.0	1	0.0	0.001	6.8	LOS A	0.0	0.0	0.45	0.54	0.45	51.9
Approach		292	5.0	292	5.0	0.154	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
All Vehicles		712	4.9	712	4.9	0.219	0.1	NA	0.0	0.1	0.00	0.01	0.00	59.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [3 - Halletts Way/Adelong Way - PM (Site Folder: Scenario 3)]

Network: N101 [PM Peak (Network Folder: Scenario 3)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Halletts Way														
1	L2	260	5.0	260	5.0	0.624	5.2	LOS A	6.1	44.3	0.62	0.55	0.62	48.8
2	T1	509	5.0	509	5.0	0.624	5.3	LOS A	6.1	44.3	0.62	0.55	0.62	54.6
3	R2	21	0.0	21	0.0	0.624	10.4	LOS B	6.1	44.3	0.62	0.55	0.62	54.8
Approach		791	4.9	791	4.9	0.624	5.4	LOS A	6.1	44.3	0.62	0.55	0.62	53.3
East: Lot D Access														
4	L2	21	0.0	21	0.0	0.190	12.5	LOS B	1.4	10.0	0.96	0.90	0.96	48.7
5	T1	43	0.0	43	0.0	0.190	12.6	LOS B	1.4	10.0	0.96	0.90	0.96	42.0
6	R2	21	0.0	21	0.0	0.190	17.8	LOS B	1.4	10.0	0.96	0.90	0.96	50.0
Approach		85	0.0	85	0.0	0.190	13.9	LOS B	1.4	10.0	0.96	0.90	0.96	46.5
North: Halletts Way														
7	L2	21	0.0	21	0.0	0.760	7.4	LOS A	10.6	77.6	0.85	0.74	0.94	51.7
8	T1	764	5.0	764	5.0	0.760	7.7	LOS A	10.6	77.6	0.85	0.74	0.94	52.9
9	R2	112	5.0	112	5.0	0.760	12.9	LOS B	10.6	77.6	0.85	0.74	0.94	46.4
Approach		897	4.9	897	4.9	0.760	8.4	LOS A	10.6	77.6	0.85	0.74	0.94	52.4
West: Adelong Way														
10	L2	74	5.0	74	5.0	0.342	5.4	LOS A	2.3	17.0	0.75	0.80	0.75	47.6
11	T1	43	0.0	43	0.0	0.342	5.7	LOS A	2.3	17.0	0.75	0.80	0.75	49.9
12	R2	173	5.0	173	5.0	0.342	10.4	LOS B	2.3	17.0	0.75	0.80	0.75	49.8
Approach		289	4.3	289	4.3	0.342	8.4	LOS A	2.3	17.0	0.75	0.80	0.75	49.2
All Vehicles		2062	4.6	2062	4.6	0.760	7.5	LOS A	10.6	77.6	0.75	0.68	0.79	52.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.