Ref: 22/092

12th July 2022

HDB
PO Box 40
MAITLAND NSW 2320

Attention: - Mr Kerry Nichols

Dear Kerry,

RE: Preliminary Traffic Advice – Additions to an existing approved Integrated Tourist Development – 1054 Wine Country Drive, Lovedale.

Introduction

As requested Intersect Traffic has undertaken a preliminary traffic assessment for the provision of an additional 200 permanent residences and 140 residential units to an approved development on the site DA 8/2016/551/1 which provides for 300 permanent residences and 300 residential units. This assessment is a preliminary analysis of the existing road networks capability to cater for the additional traffic from the proposed changes to the development including the proposed roundabout access to the site on Wine Country Drive.

Intersect Traffic has previously carried out traffic impact assessments for planning proposal for the site and understands currently the proposed access is for a four leg roundabout on Wine Country Drive including for a fourth leg to access existing and future development in The Vintage.

Traffic Generation

To ensure a robust assessment the following traffic generation has been adopted for the permanent residential being the maximum rates for low density residential in regional areas.

AM peak trips	= 0.85 vtph
PM peak trips	= 0.9 vtph; or
Daily trips	= 9 vtpd

Traffic generation for the medium density units has also been sourced from the RTA Guide to Traffic Generation recommended rates for 1 and 2 bedroom units as shown below.

AM and PM peak trips = 0.4 per unit;
Daily trips = 4 per unit.

Therefore, the expected traffic generation from the modified development can be calculated as follows;

AM peak = 500 x 0.85 + 440 x 0.4 = 601 vtph; and
PM peak = 500 x 0.9 + 440 x 0.4 = 626 vtph.

Note whilst it is understood The Vintage is exploring other locations for its connection to Wine Country Drive for this assessment to ensure it remains robust it will be assumed a connection to The Vintage is maintained at the proposed Wine Country Drive roundabout. Recent work by Intersect Traffic has determined existing traffic generation through The Vintage access off McDonald's Road is as follows;

Weekday AM peak = 150 vtph
Weekday PM peak = 200 vtph; and
Weekend Peak = 190 vtph.

This traffic is distributed 60 % north and 40 % south. With 80 % of AM trips being outbound, 70 % of PM trips being inbound and weekend trips equally split i.e. 50% inbound and 50% outbound.

Trip Distribution

For this assessment the trip distribution has been assumed as similar to The Vintage therefore in undertaking this assessment the trip distribution used is shown diagrammatically below. Note through volumes determined from intersection traffic counts (Wine Country Drive / McDonalds Road and Wine Country Drive / Wilderness Road) in June 2022 (see ***Attachment 1***).

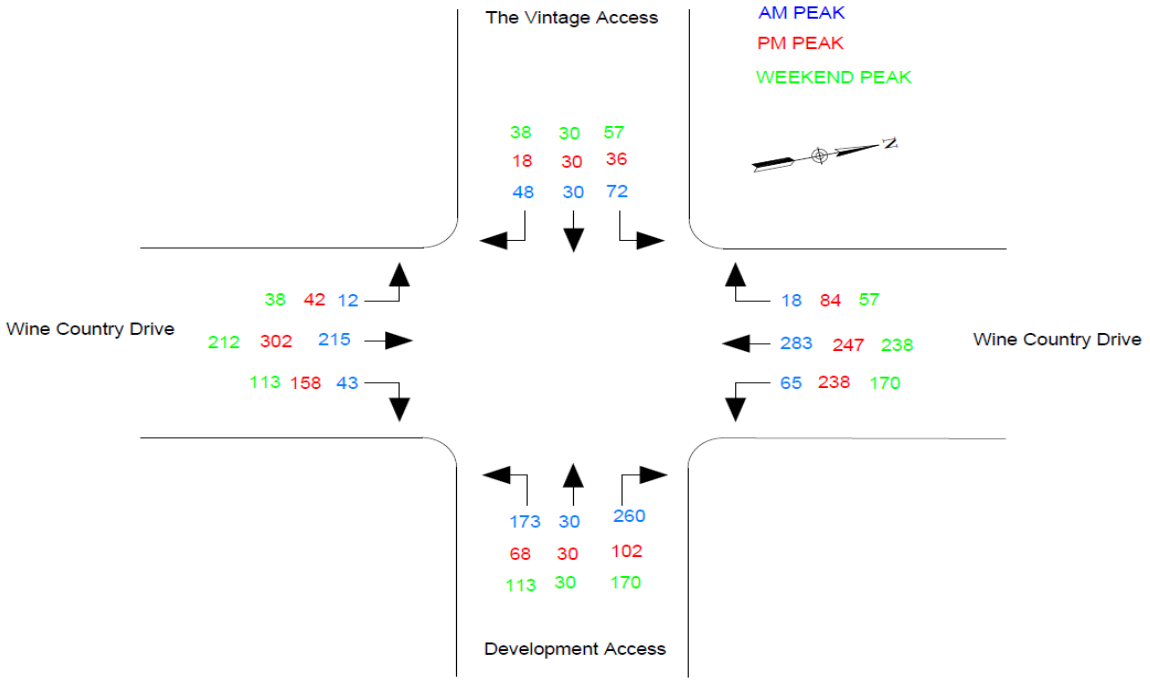


Figure 1 – Development Traffic Peak Hour Trip Distribution

Traffic Impact – Two way Mid-block Road Capacity

The traffic counts undertaken by Northern Transport Planning and Engineering has recorded the existing two-way mid-block traffic volumes on Wine Country Drive along the site frontage;

- 2022 AM – 481 vtph.
- 2022 PM – 548 vtph; and
- 2022 Weekend – 468 vtph.

The additional traffic from the proposed development will increase these values to the following levels (note The Vintage traffic not included as it is already on the network);

- 2022 AM peak – 806 vtph.
- 2022 PM peak – 888 vtph; and
- 2022 Weekend peak - 220 vtph.

Assuming full development of the site by 2040 and assuming a 1.5 % per annum traffic growth the likely 2040 two-way mid-block traffic volumes are as follows;

- 2040 AM peak – 950 vtph.
- 2040 PM peak – 1,055 vtph; and
- 2040 Weekend peak - 950 vtph.

Table 4.5 of the RTA's Guide to Traffic Generating Developments, reproduced below, provides guidance on the mid-block road capacity of rural roads.

Noting that the terrain level around the site is considered level and the heavy vehicle percentage is less than 5 % of vehicles, and a deduction of 90 % for a speed zoning of 90 km/h, motorists would experience a LoS C up to the point where a LoS D occurred at approximately 1,400 vtph. Thus 1,400 vtph is considered the two-way mid-block road capacity of Wine Country Drive at this location.

Therefore as two-way mid-block traffic volumes on Wine Country Drive post full development in 2040 are all less than 1,400 vtph it can be concluded that Wine Country Drive has sufficient spare capacity to cater for the additional development on the site without the need for any road widening and additional travel lanes.

Table 4.5
peak hour flow on two-lane rural roads (veh/hr)
(Design speed of 100km/hr)

Terrain	Level of Service	Percent of Heavy Vehicles			
		0	5	10	15
Level	B	630	590	560	530
	C	1030	970	920	870
	D	1630	1550	1480	1410
	E	2630	2500	2390	2290
Rolling	B	500	420	360	310
	C	920	760	650	570
	D	1370	1140	970	700
	E	2420	2000	1720	1510
Mountainous	B	340	230	180	150
	C	600	410	320	260
	D	1050	680	500	400
	E	2160	1400	1040	820

The data for Table 4.5 assumes the following criteria:

- *terrain level* with 20% no overtaking.
- *rolling* with 40% no overtaking.
- *mountainous* with 60% no overtaking.
- 3.7 m traffic lane width with side clearances of at least 2m.
- 60/40 directional split of traffic.

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

Traffic Impact – Intersection Capacity

In assessing performance of the development access with Wine Country Drive it is assumed the full development of the site will occur by 2040.

The impacts of the development on the proposed site access are best assessed using the SIDRA INTERSECTION 9 software. This software package predicts likely delays, queue lengths and thus levels of service that will occur at intersections. Assessment is then based on the level of service requirements of TfNSW shown below.

Assumptions made in this modelling were.

- The intersection layout will be a single lane roundabout.
- Base value (2022) traffic volumes used in the modelling were as collected by Northern Transport Planning and Engineering in June 2022. See ***Attachment 1***.
- Traffic generated by the development is distributed as per *Figure 1*.

- Future traffic growth predicted using a 1.5 % per annum compound background traffic growth rate as recommended by TfNSW for the lower Hunter region with the intersection modelled through to 2040.
- Traffic growth from The Vintage was assumed as 2 % per annum.

Table 4.2
Level of service criteria for intersections

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

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

The results of the modelling are summarised in ***Table 1*** below for the worst movement based on LoS (i.e. average delay). The Sidra Movement Summary Tables are provided in ***Attachment 2***.

Table 2 – Wine Country Drive – Sidra Modelling – Results Summary

Modelled Peak	Degree of Saturation (v/c)	Average Delay (s)	Level of Service	95% back of queue length (cars)
2022 AM plus development	0.488	7.7	A	3.5
2022 PM plus development	0.514	8.6	A	4.1
2022 Weekend plus development	0.410	8.1	A	2.9
2040 AM plus development	0.545	8.5	A	4.7
2040 PM plus development	0.617	9.1	A	5.6
2040 weekend plus development	0.501	8.6	A	3.9

This modelling shows that the Wine Country Drive roundabout access would operate satisfactorily through to at least 2040 even with the additional traffic generated by the proposed modification to the existing approved development. Average delays, LoS and 95 % back of queue lengths all remain at acceptable levels based on the TfNSW assessment criteria listed above.

Therefore it can be concluded the proposed roundabout site access would still be suitable for the additional development proposed within the modification to the existing approved development (DA 8/2016/551/1).

Conclusion

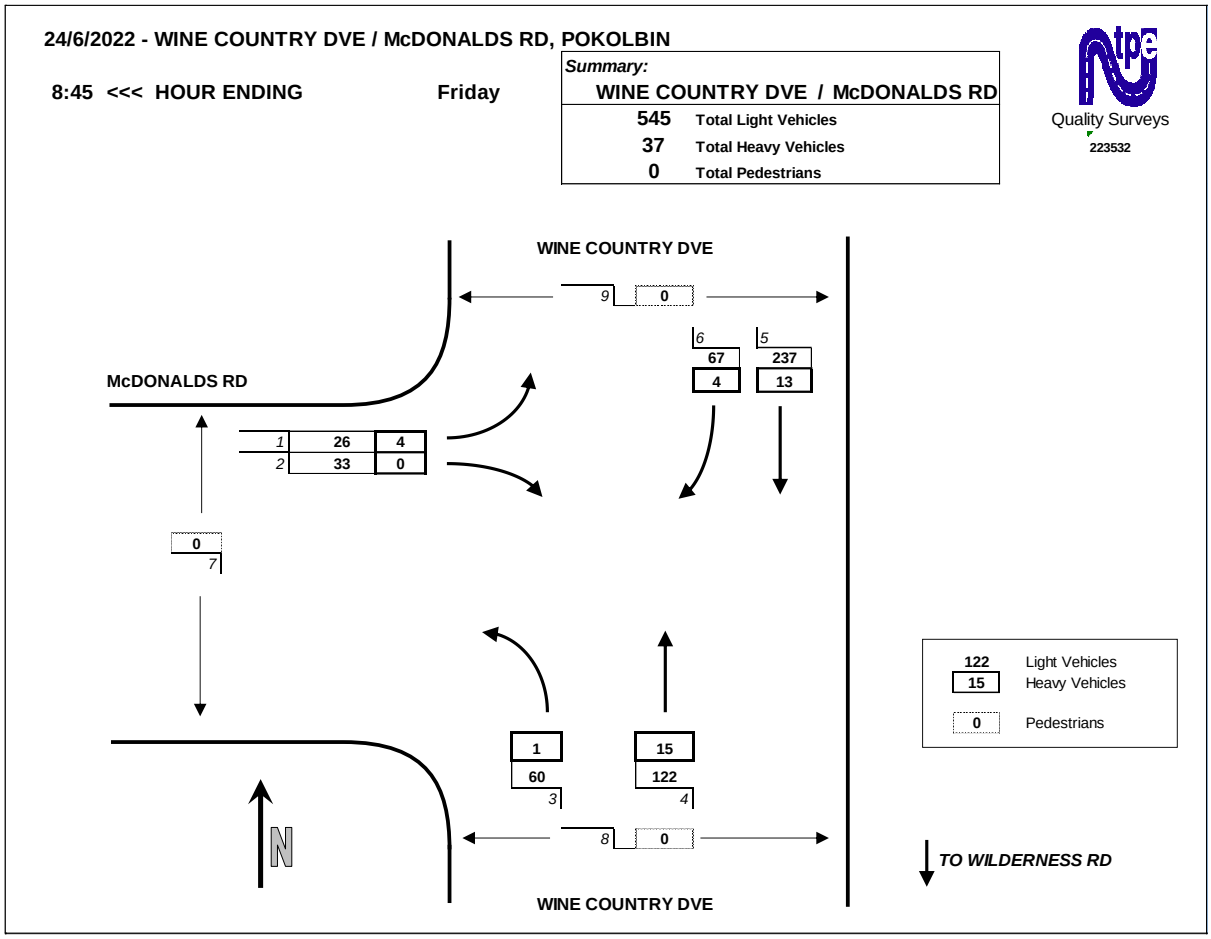
This preliminary traffic assessment has determined that the additional traffic generated by the proposed modification to the currently approved development at 1054 Wine Country Drive, Pokolbin i.e. an additional 200 permanent residences and 140 residential units, would not adversely impact on the state road network (Wine Country Drive) through to 2040. Further the proposed single lane roundabout access to the development from Wine Country Drive would remain suitable for the modified development providing an effective, efficient and suitably safe access to the development. It is therefore recommended that the proposed modification to the development could be supported by the Department of Planning, Industry and Environment, Transport for NSW and Cessnock City Council in regard to the traffic impacts of the proposal.

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

Yours sincerely

Jeff Garry
Director
Intersect Traffic

Attachment 1 – Traffic Count Data

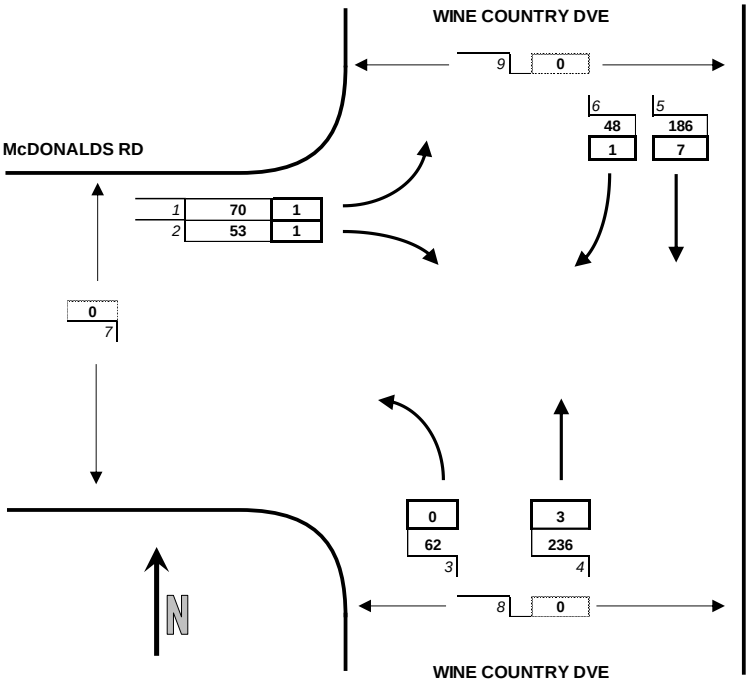


24/6/2022 - WINE COUNTRY DVE / McDONALDS RD, POKOLBIN

17:30 <<< HOUR ENDING **Friday**

Summary: WINE COUNTRY DVE / McDONALDS RD	
655	Total Light Vehicles
13	Total Heavy Vehicles
0	Total Pedestrians

Quality Surveys
223532



236	Light Vehicles
3	Heavy Vehicles
0	Pedestrians

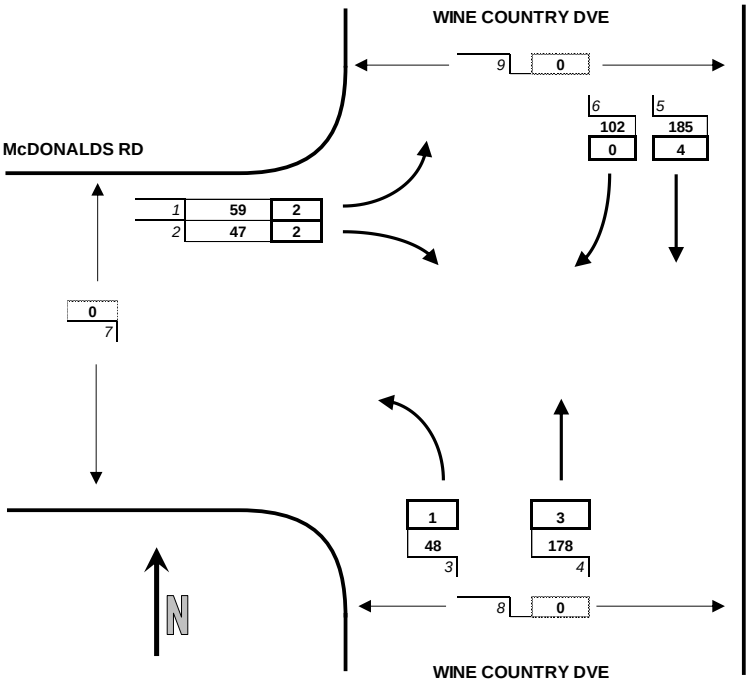
TO WILDERNESS RD

25/6/2022 - WINE COUNTRY DVE / McDONALDS RD, POKOLBIN

12:30 <<< HOUR ENDING **Saturday**

Summary: WINE COUNTRY DVE / McDONALDS RD	
619	Total Light Vehicles
12	Total Heavy Vehicles
0	Total Pedestrians

Quality Surveys
223532



178	Light Vehicles
3	Heavy Vehicles
0	Pedestrians

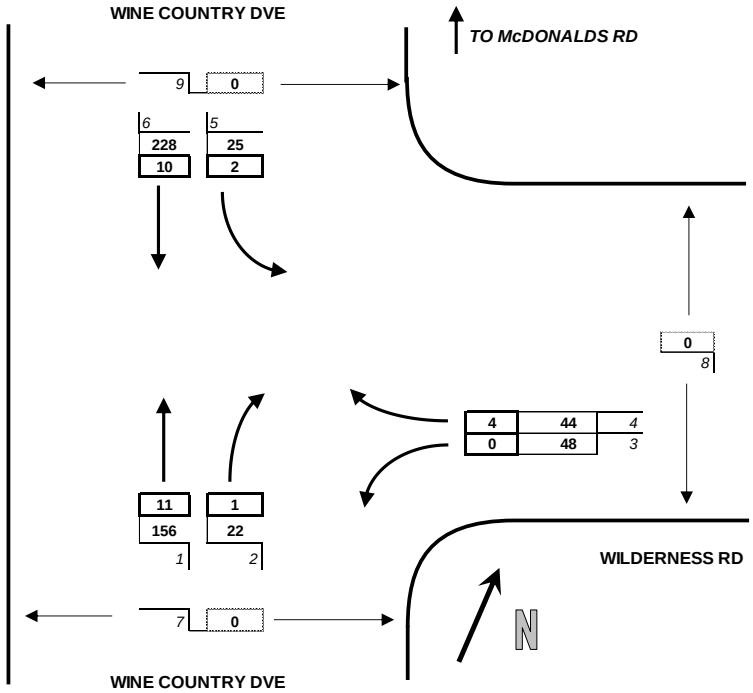
TO WILDERNESS RD

24/6/2022 - WINE COUNTRY DVE / WILDERNESS RD, POKOLBIN

9:00 <<< HOUR ENDING **Friday**

Summary: WINE COUNTRY DVE / WILDERNESS RD	
523	Total Light Vehicles
28	Total Heavy Vehicles
0	Total Pedestrians

Quality Surveys
223532



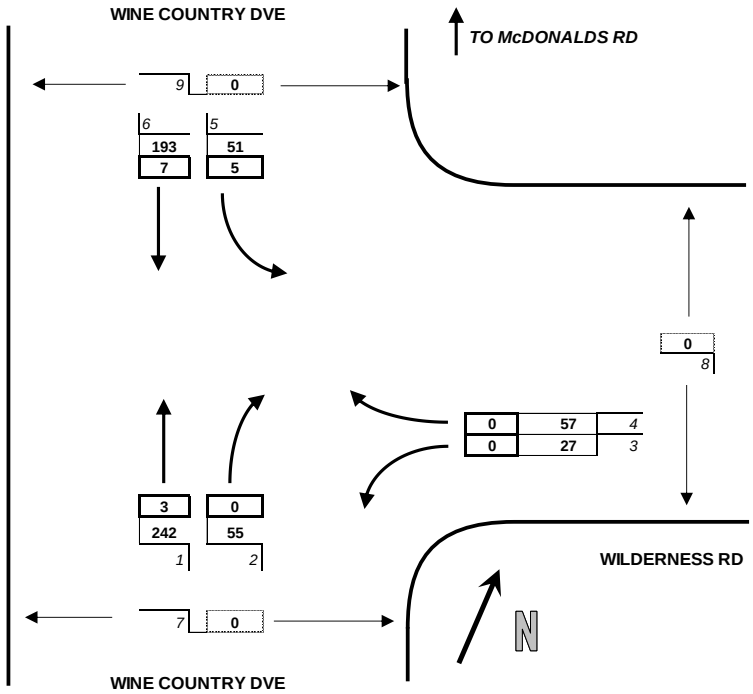
22	Light Vehicles
1	Heavy Vehicles
0	Pedestrians

24/6/2022 - WINE COUNTRY DVE / WILDERNESS RD, POKOLBIN

17:30 <<< HOUR ENDING **Friday**

Summary: WINE COUNTRY DVE / WILDERNESS RD	
625	Total Light Vehicles
15	Total Heavy Vehicles
0	Total Pedestrians

Quality Surveys
223532



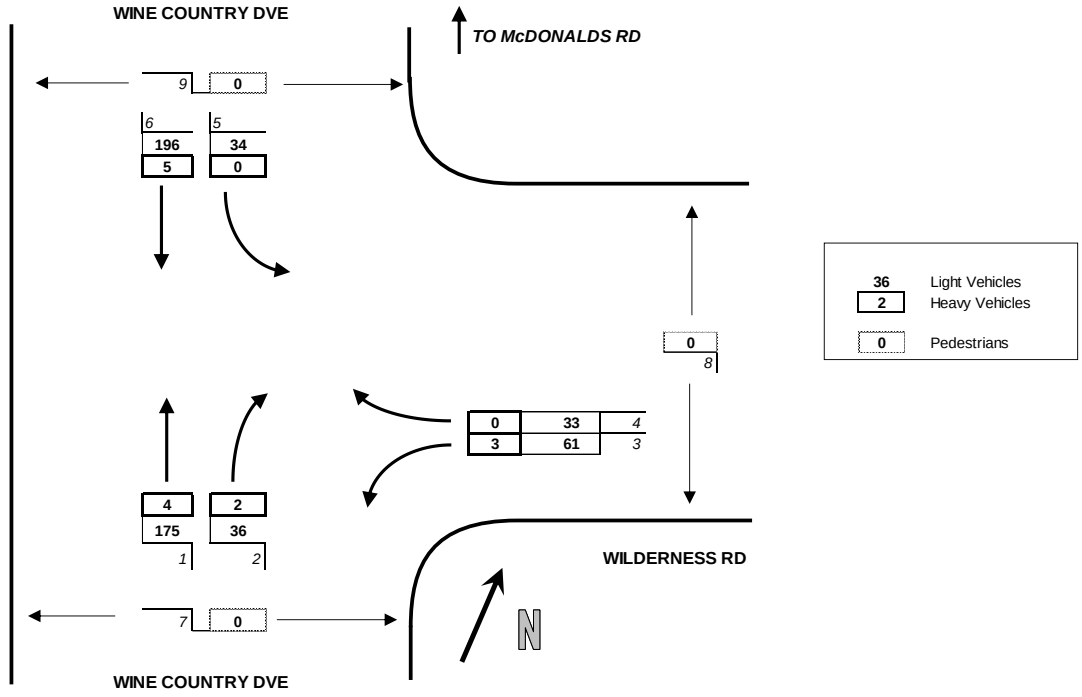
55	Light Vehicles
0	Heavy Vehicles
0	Pedestrians

25/6/2022 - WINE COUNTRY DVE / WILDERNESS RD, POKOLBIN

12:00 <<< HOUR ENDING **Saturday**

Summary: WINE COUNTRY DVE / WILDERNESS RD	
535	Total Light Vehicles
14	Total Heavy Vehicles
0	Total Pedestrians

Quality Surveys
223532



Attachment 2 – Sidra Summary Movement Tables

MOVEMENT SUMMARY

Site: 101 [2022 AM (Site Folder: General)]

Proposed Wine Country Drive Tourist Access Development
June 2022 counts
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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: Wine Country Drive														
1	L2	12	5.0	13	5.0	0.283	8.3	LOS A	1.8	13.4	0.58	0.68	0.58	54.5
2	T1	215	5.0	226	5.0	0.283	9.2	LOS A	1.8	13.4	0.58	0.68	0.58	67.0
3	R2	43	5.0	45	5.0	0.283	13.6	LOS A	1.8	13.4	0.58	0.68	0.58	56.2
Approach		270	5.0	284	5.0	0.283	9.8	LOS A	1.8	13.4	0.58	0.68	0.58	64.4
East: Tourist Development Access														
4	L2	173	5.0	182	5.0	0.488	5.6	LOS A	3.5	25.7	0.68	0.73	0.68	52.2
5	T1	30	5.0	32	5.0	0.488	5.6	LOS A	3.5	25.7	0.68	0.73	0.68	46.0
6	R2	260	5.0	274	5.0	0.488	10.1	LOS A	3.5	25.7	0.68	0.73	0.68	53.0
Approach		463	5.0	487	5.0	0.488	8.1	LOS A	3.5	25.7	0.68	0.73	0.68	52.2
North: Wine Country Drive														
7	L2	65	5.0	68	5.0	0.304	7.1	LOS A	2.0	14.5	0.37	0.50	0.37	51.3
8	T1	283	5.0	298	5.0	0.304	4.9	LOS A	2.0	14.5	0.37	0.50	0.37	56.5
9	R2	18	5.0	19	5.0	0.304	12.3	LOS A	2.0	14.5	0.37	0.50	0.37	52.8
Approach		366	5.0	385	5.0	0.304	5.6	LOS A	2.0	14.5	0.37	0.50	0.37	55.3
West: The Vintage access														
10	L2	72	5.0	76	5.0	0.184	6.1	LOS A	1.1	8.0	0.65	0.70	0.65	52.7
11	T1	30	5.0	32	5.0	0.184	6.1	LOS A	1.1	8.0	0.65	0.70	0.65	46.3
12	R2	48	5.0	51	5.0	0.184	10.6	LOS A	1.1	8.0	0.65	0.70	0.65	53.5
Approach		150	5.0	158	5.0	0.184	7.5	LOS A	1.1	8.0	0.65	0.70	0.65	51.5
All Vehicles		1249	5.0	1315	5.0	0.488	7.7	LOS A	3.5	25.7	0.56	0.65	0.56	55.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 101 [2022 PM (Site Folder: General)]

Proposed Wine Country Drive Tourist Access Development
June 2022 counts
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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: Wine Country Drive														
1	L2	42	5.0	44	5.0	0.460	8.0	LOS A	3.4	24.6	0.55	0.67	0.55	54.4
2	T1	302	5.0	318	5.0	0.460	8.8	LOS A	3.4	24.6	0.55	0.67	0.55	66.9
3	R2	158	5.0	166	5.0	0.460	13.2	LOS A	3.4	24.6	0.55	0.67	0.55	56.1
Approach		502	5.0	528	5.0	0.460	10.1	LOS A	3.4	24.6	0.55	0.67	0.55	61.9
East: Tourist Development Access														
4	L2	68	5.0	72	5.0	0.217	5.0	LOS A	1.3	9.6	0.58	0.66	0.58	52.7
5	T1	30	5.0	32	5.0	0.217	4.9	LOS A	1.3	9.6	0.58	0.66	0.58	46.4
6	R2	102	5.0	107	5.0	0.217	9.4	LOS A	1.3	9.6	0.58	0.66	0.58	53.5
Approach		200	5.0	211	5.0	0.217	7.2	LOS A	1.3	9.6	0.58	0.66	0.58	52.1
North: Wine Country Drive														
7	L2	238	5.0	251	5.0	0.514	8.0	LOS A	4.1	29.8	0.58	0.63	0.58	52.4
8	T1	247	5.0	260	5.0	0.514	5.8	LOS A	4.1	29.8	0.58	0.63	0.58	57.8
9	R2	84	5.0	88	5.0	0.514	13.2	LOS A	4.1	29.8	0.58	0.63	0.58	53.9
Approach		569	5.0	599	5.0	0.514	7.8	LOS A	4.1	29.8	0.58	0.63	0.58	54.9
West: The Vintage access														
10	L2	36	5.0	38	5.0	0.110	6.3	LOS A	0.6	4.7	0.67	0.68	0.67	52.9
11	T1	30	5.0	32	5.0	0.110	6.2	LOS A	0.6	4.7	0.67	0.68	0.67	46.5
12	R2	18	5.0	19	5.0	0.110	10.7	LOS A	0.6	4.7	0.67	0.68	0.67	53.7
Approach		84	5.0	88	5.0	0.110	7.2	LOS A	0.6	4.7	0.67	0.68	0.67	50.6
All Vehicles		1355	5.0	1426	5.0	0.514	8.6	LOS A	4.1	29.8	0.58	0.65	0.58	56.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
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 [2022 Weekend (Site Folder: General)]

Proposed Wine Country Drive Tourist Access Development
June 2022 counts
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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: Wine Country Drive														
1	L2	38	5.0	40	5.0	0.356	8.1	LOS A	2.4	17.4	0.55	0.68	0.55	54.4
2	T1	212	5.0	223	5.0	0.356	9.0	LOS A	2.4	17.4	0.55	0.68	0.55	66.9
3	R2	113	5.0	119	5.0	0.356	13.3	LOS A	2.4	17.4	0.55	0.68	0.55	56.1
Approach		363	5.0	382	5.0	0.356	10.2	LOS A	2.4	17.4	0.55	0.68	0.55	61.7
East: Tourist Development Access														
4	L2	113	5.0	119	5.0	0.330	5.1	LOS A	2.1	15.6	0.60	0.68	0.60	52.6
5	T1	30	5.0	32	5.0	0.330	5.1	LOS A	2.1	15.6	0.60	0.68	0.60	46.3
6	R2	170	5.0	179	5.0	0.330	9.6	LOS A	2.1	15.6	0.60	0.68	0.60	53.4
Approach		313	5.0	329	5.0	0.330	7.5	LOS A	2.1	15.6	0.60	0.68	0.60	52.3
North: Wine Country Drive														
7	L2	170	5.0	179	5.0	0.410	7.6	LOS A	2.9	21.0	0.49	0.59	0.49	52.3
8	T1	238	5.0	251	5.0	0.410	5.4	LOS A	2.9	21.0	0.49	0.59	0.49	57.7
9	R2	57	5.0	60	5.0	0.410	12.9	LOS A	2.9	21.0	0.49	0.59	0.49	53.8
Approach		465	5.0	489	5.0	0.410	7.1	LOS A	2.9	21.0	0.49	0.59	0.49	55.1
West: The Vintage access														
10	L2	57	5.0	60	5.0	0.151	5.8	LOS A	0.9	6.4	0.63	0.68	0.63	52.9
11	T1	30	5.0	32	5.0	0.151	5.8	LOS A	0.9	6.4	0.63	0.68	0.63	46.5
12	R2	38	5.0	40	5.0	0.151	10.3	LOS A	0.9	6.4	0.63	0.68	0.63	53.7
Approach		125	5.0	132	5.0	0.151	7.2	LOS A	0.9	6.4	0.63	0.68	0.63	51.4
All Vehicles		1266	5.0	1333	5.0	0.410	8.1	LOS A	2.9	21.0	0.55	0.65	0.55	55.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
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 [2040 AM (Site Folder: General)]

Proposed Wine Country Drive Tourist Access Development
June 2022 counts
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 18 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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: Wine Country Drive														
1	L2	12	5.0	18	5.0	0.363	8.5	LOS A	2.5	18.6	0.63	0.70	0.63	54.3
2	T1	215	5.0	296	5.0	0.363	9.4	LOS A	2.5	18.6	0.63	0.70	0.63	66.8
3	R2	43	5.0	45	5.0	0.363	13.8	LOS A	2.5	18.6	0.63	0.70	0.63	56.0
Approach		270	5.0	359	5.0	0.363	9.9	LOS A	2.5	18.6	0.63	0.70	0.63	64.5
East: Tourist Development Access														
4	L2	173	5.0	182	5.0	0.545	7.8	LOS A	4.7	34.2	0.79	0.87	0.89	50.8
5	T1	30	5.0	32	5.0	0.545	7.7	LOS A	4.7	34.2	0.79	0.87	0.89	44.9
6	R2	260	5.0	274	5.0	0.545	12.2	LOS A	4.7	34.2	0.79	0.87	0.89	51.5
Approach		463	5.0	487	5.0	0.545	10.3	LOS A	4.7	34.2	0.79	0.87	0.89	50.8
North: Wine Country Drive														
7	L2	65	5.0	68	5.0	0.389	7.3	LOS A	2.8	20.6	0.44	0.52	0.44	50.8
8	T1	283	5.0	389	5.0	0.389	5.1	LOS A	2.8	20.6	0.44	0.52	0.44	55.9
9	R2	18	5.0	27	5.0	0.389	12.5	LOS A	2.8	20.6	0.44	0.52	0.44	52.3
Approach		366	5.0	485	5.0	0.389	5.8	LOS A	2.8	20.6	0.44	0.52	0.44	54.9
West: The Vintage access														
10	L2	72	5.0	108	5.0	0.263	6.9	LOS A	1.7	12.1	0.72	0.77	0.72	52.1
11	T1	30	5.0	32	5.0	0.263	6.8	LOS A	1.7	12.1	0.72	0.77	0.72	45.9
12	R2	48	5.0	72	5.0	0.263	11.4	LOS A	1.7	12.1	0.72	0.77	0.72	52.9
Approach		150	5.0	212	5.0	0.263	8.4	LOS A	1.7	12.1	0.72	0.77	0.72	51.3
All Vehicles		1249	5.0	1543	5.0	0.545	8.5	LOS A	4.7	34.2	0.63	0.71	0.67	54.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

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

Proposed Wine Country Drive Tourist Access Development
June 2022 counts
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 18 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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: Wine Country Drive														
1	L2	42	5.0	63	5.0	0.578	8.6	LOS A	4.8	35.1	0.66	0.71	0.67	54.0
2	T1	302	5.0	416	5.0	0.578	9.4	LOS A	4.8	35.1	0.66	0.71	0.67	66.3
3	R2	158	5.0	166	5.0	0.578	13.8	LOS A	4.8	35.1	0.66	0.71	0.67	55.7
Approach		502	5.0	645	5.0	0.578	10.5	LOS A	4.8	35.1	0.66	0.71	0.67	61.9
East: Tourist Development Access														
4	L2	68	5.0	72	5.0	0.246	5.9	LOS A	1.6	11.5	0.68	0.73	0.68	52.2
5	T1	30	5.0	32	5.0	0.246	5.8	LOS A	1.6	11.5	0.68	0.73	0.68	46.0
6	R2	102	5.0	107	5.0	0.246	10.3	LOS A	1.6	11.5	0.68	0.73	0.68	53.0
Approach		200	5.0	211	5.0	0.246	8.1	LOS A	1.6	11.5	0.68	0.73	0.68	51.5
North: Wine Country Drive														
7	L2	238	5.0	251	5.0	0.617	8.3	LOS A	5.6	41.0	0.67	0.65	0.67	51.7
8	T1	247	5.0	340	5.0	0.617	6.1	LOS A	5.6	41.0	0.67	0.65	0.67	57.0
9	R2	84	5.0	126	5.0	0.617	13.6	LOS A	5.6	41.0	0.67	0.65	0.67	53.2
Approach		569	5.0	717	5.0	0.617	8.2	LOS A	5.6	41.0	0.67	0.65	0.67	54.4
West: The Vintage access														
10	L2	36	5.0	54	5.0	0.158	7.2	LOS A	1.0	7.4	0.75	0.75	0.75	52.2
11	T1	30	5.0	32	5.0	0.158	7.1	LOS A	1.0	7.4	0.75	0.75	0.75	46.0
12	R2	18	5.0	27	5.0	0.158	11.7	LOS A	1.0	7.4	0.75	0.75	0.75	53.0
Approach		84	5.0	113	5.0	0.158	8.3	LOS A	1.0	7.4	0.75	0.75	0.75	50.5
All Vehicles		1355	5.0	1685	5.0	0.617	9.1	LOS A	5.6	41.0	0.68	0.69	0.68	56.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
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 [2040 Weekend (Site Folder: General)]

Proposed Wine Country Drive Tourist Access Development
June 2022 counts
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 18 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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: Wine Country Drive														
1	L2	38	5.0	57	5.0	0.445	8.5	LOS A	3.2	23.5	0.62	0.71	0.62	54.2
2	T1	212	5.0	292	5.0	0.445	9.3	LOS A	3.2	23.5	0.62	0.71	0.62	66.6
3	R2	113	5.0	119	5.0	0.445	13.7	LOS A	3.2	23.5	0.62	0.71	0.62	55.9
Approach		363	5.0	468	5.0	0.445	10.3	LOS A	3.2	23.5	0.62	0.71	0.62	61.9
East: Tourist Development Access														
4	L2	113	5.0	119	5.0	0.369	6.0	LOS A	2.5	18.1	0.70	0.76	0.70	52.0
5	T1	30	5.0	32	5.0	0.369	6.0	LOS A	2.5	18.1	0.70	0.76	0.70	45.9
6	R2	170	5.0	179	5.0	0.369	10.5	LOS A	2.5	18.1	0.70	0.76	0.70	52.8
Approach		313	5.0	329	5.0	0.369	8.5	LOS A	2.5	18.1	0.70	0.76	0.70	51.7
North: Wine Country Drive														
7	L2	170	5.0	179	5.0	0.501	7.9	LOS A	3.9	28.4	0.56	0.61	0.56	51.7
8	T1	238	5.0	328	5.0	0.501	5.7	LOS A	3.9	28.4	0.56	0.61	0.56	57.0
9	R2	57	5.0	86	5.0	0.501	13.1	LOS A	3.9	28.4	0.56	0.61	0.56	53.2
Approach		465	5.0	592	5.0	0.501	7.5	LOS A	3.9	28.4	0.56	0.61	0.56	54.7
West: The Vintage access														
10	L2	57	5.0	86	5.0	0.216	6.5	LOS A	1.3	9.7	0.70	0.74	0.70	52.4
11	T1	30	5.0	32	5.0	0.216	6.5	LOS A	1.3	9.7	0.70	0.74	0.70	46.1
12	R2	38	5.0	57	5.0	0.216	11.0	LOS A	1.3	9.7	0.70	0.74	0.70	53.2
Approach		125	5.0	174	5.0	0.216	8.0	LOS A	1.3	9.7	0.70	0.74	0.70	51.3
All Vehicles		1266	5.0	1564	5.0	0.501	8.6	LOS A	3.9	28.4	0.62	0.69	0.62	55.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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