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Proposed Residential and Industrial Estate

Myall River Downs

Tea Gardens

Traffic Impact Study

Prepared by

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CONTENTS

1 INTRODUCTION

This report deals with traffic impacts of a proposed development known as Myall River Down off Myall Street, Tea Gardens.

The development consists of the following elements:

1. Up to 1500 Residential Dwellings
2. 106,000 sq m Light Industrial Estate (Gross Floor Area ~ 35% i.e. 37,100 sq m
3. The Grange Retirement Village 100 units (existing)
4. The Hermitage Retirement Village 280 units

This Traffic Study also includes an assessment of the combined impact of development proposed west of Myall Street known as Riverside. This development has the potential to provide up to 1045 residential dwellings.

The Myall Quay Shopping Centre off Myall Quay Boulevard is well established and will attract a significant number of trips generated by the surrounding residential areas.

2 EXISTING TRAFFIC

2.1 Intersection Counts

Surveys of existing peak hour vehicle movements were undertaken by NTPE in November 2005 and have been reported in the North Hawks Nest Traffic Study.

These AM and PM Peak Hour reports are reproduced below in Figures 2-1 and 2-2:

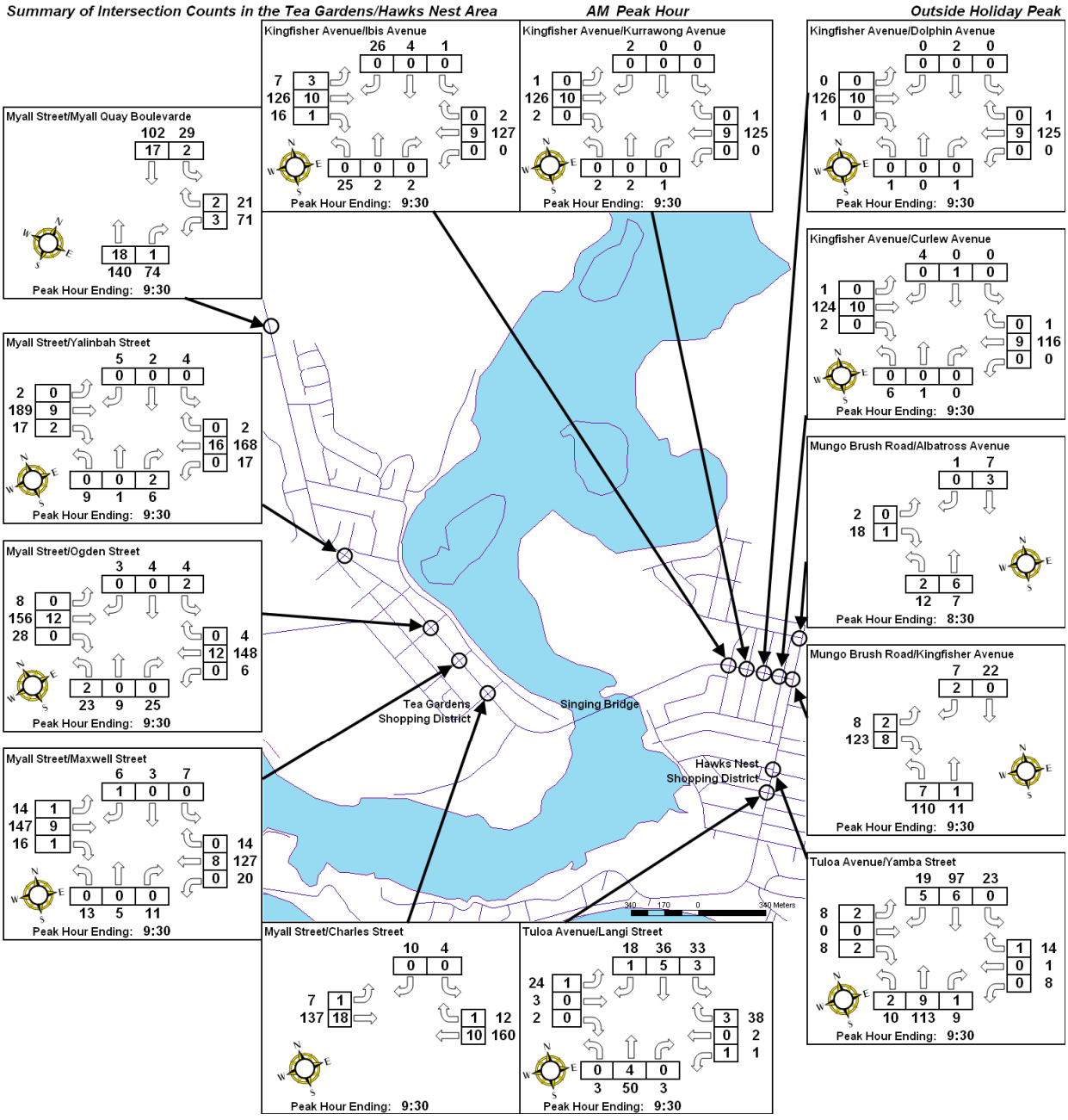


Figure 2-1: Existing Peak Hour Traffic Flows - 2007

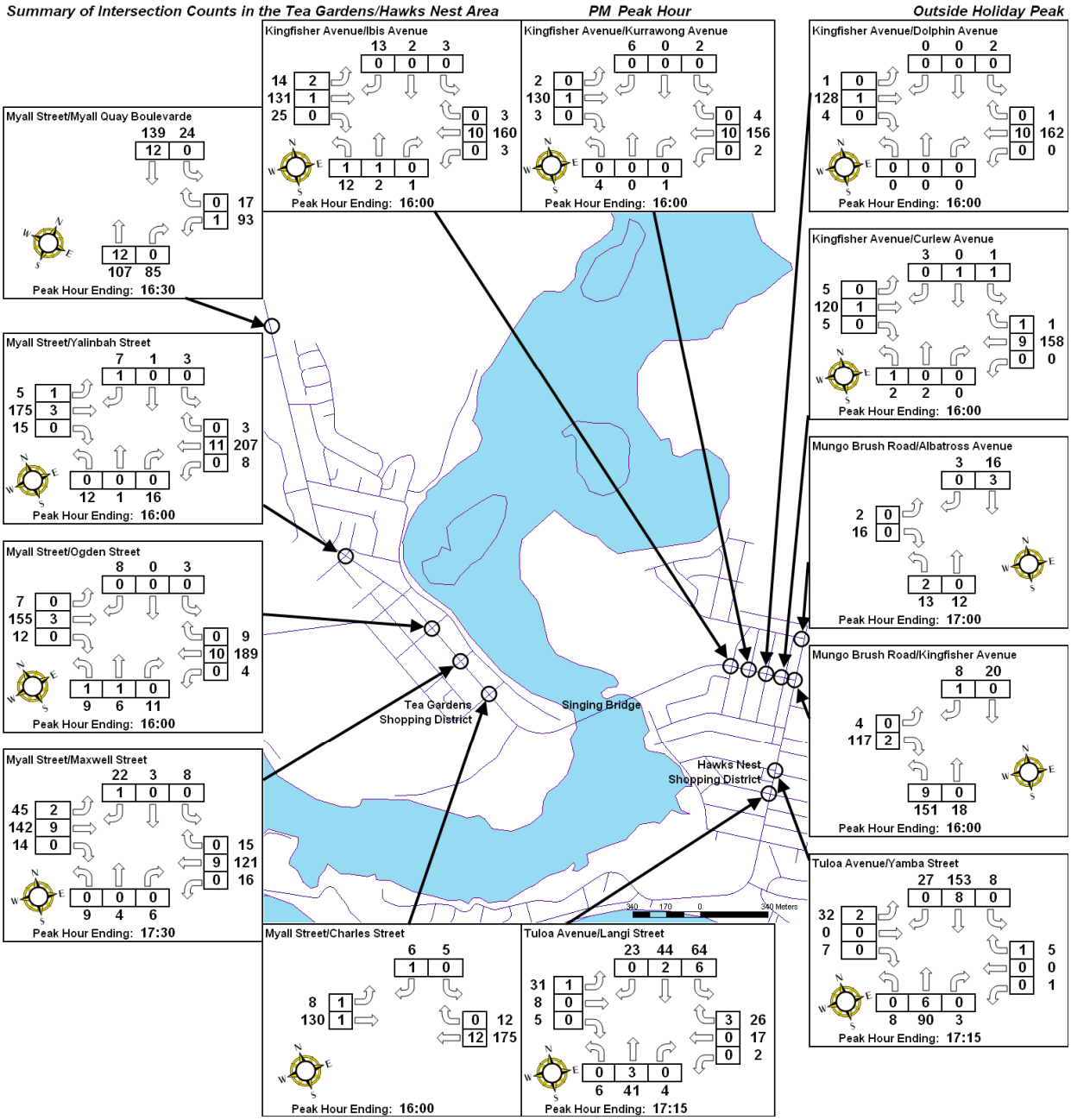


Figure 2-2: Existing Peak Hour Traffic Flows - 2007

2.2 Design Hour

A review of the survey results indicates that the AM Peak Hour is between 8:30am and 9:30am while the PM Peak Hour is between 3:30pm to 4:30pm.

Based on these results it is proposed that the following hours will provided a realistic assessment of the impact of the proposed development on the surrounding road network:

Design Peak Hour

AM Peak Hour ***8:30am – 9:30am***
PM Peak Hour ***3:30pm – 4:30pm***

3 ACCESS

The proposed access arrangements for the development are detailed in the Myall River Downs Indicative Concept Plan shown in Figure 3-1 below:

Figure 3-1: Myall River Downs Indicative Concept Plan and Access Roads

For the purpose of discussion in this report these accesses have been labelled as detailed below;

Access	Description	
1	Settlers Way (existing access to The Grange and Hermitage Retirement Villages	Give Way T Intersection
2	Opposite Myall Quays Boulevard	2 Lane Roundabout – 4 ways
3	Opposite Proposed 2nd Access to Riverside Residential Estate	2 Lane Roundabout – 4 ways

4 TRIP GENERATION

The RTA Guide to Traffic Generating Developments recommends that the following daily and peak hour trip generation rates should be used from residential and industrial developments:

	Daily Trips	Peak Hour Trips	Unit
Dwelling Houses	9	0.85	per dwelling
Medium Density Units	5-6.5	0.5 - 0.65	per dwelling
Aged	1-2	0.1 -0.2	per dwelling
Industrial Estate		1	per 100 m^2 GFA

The Home Interview Surveys carried out by NTPE in 2005 demonstrated that Peak Hour trip generation rates of between 0.54 and 0.66 trips per dwelling were representative of trip rates during non-holiday times in Tea Gardens and Hawks Nest.

However, in order to provide a conservative assessment of the proposed developments the RTA peak hour trip rates have been used to estimate the number of trips likely to be generated by the components of the proposed development and other adjacent proposed developments as detailed in Table 4-1 below:

Table 4-1: Predicted Trip Generation from Proposed Developments for YEAR 2018 and 2028

Development Area	2018	2028		Trip Rate		2018 Trips	2028 Trips
West of Myall St							
Myall River Downs South	400	800	dwellings	0.85	per dwelling	340	680
Myall River Downs North	300	700	dwellings	0.85	per dwelling	255	595
Myall River Downs Industrial	28,000	37,100	m^2	1	per 100 m^2	280	371
Myall River Downs Retirement	380	380	units	0.2	per dwelling	76	76
East of Myall St							
Riverside South	390	600	dwellings	0.85	per dwelling	332	510
Riverside North	200	445	dwellings	0.85	per dwelling	170	378

A significant number of these trips can be defined as internal trips that are contained within the immediate area. For example, trips from home to a local Child Care Centre, sporting field, shopping centre or industrial area. These internal trips can be as much as 25% of the total trips generated by these developments. However, for the purpose of this assessment it has been assumed that only 12.5% of trips will be confined to the local area and will therefore not add to traffic flows on the surrounding road network.

The trips numbers detailed in Table 4-1 are based on the assumption that a total of 1500 residential lots will be developed in the Myall River Downs Estate and 1045 residential lots will be developed in the Riverside Development by year 2028.

The Myall River Downs Estate has the potential to also accommodate a 100 room tourist holiday accommodation facility. This development would accommodate tourists in a resort type environment with residents likely to stay at the resort during their visit. It is therefore considered that this element of the proposed Myall River Downs Development will not generate significant traffic flows during the design hours. Accordingly, this element has not been included in this assessment.

5 TRIP DISTRIBUTION

A review of the Home Interview Surveys carried out in 2005 as part of the Hawks Nest Traffic Study indicates that less than 30% of trips generated by residential lots within the Tea Gardens and Hawks Nest Area are trips to destinations outside the area. It is also expected that a significant number of trips from the Myall River Downs development will be attracted to the Retail/Commercial Shopping Centre off Myall Quays Boulevard as well as the existing retail/commercial and recreational areas at Tea Gardens and Hawks Nest.

Accordingly the following trip distribution pattern has been adopted for this traffic study:

North to/from Pacific Highway	25%
South to/from Tea Gardens and Hawks Nest	40%
East / West to/from Myall Quays Shopping Centre	35%

During the AM Peak hour it is assumed that the in/out split would be 30% in and 70% out, while during the PM Peak hour the split would be 70% in and 30% out.

The assumed distribution of trips from the proposed development areas to the three access roads connecting to Myall Street are detailed below in Table 5-1:

Table 5-1: Distribution of Trips to Access Roads

Distribution Pattern to Access Roads							
Access 1		*Access 2*			*Access 3*		
Settlers Way		*Myall Quays Bvld*			*Opposite 2nd Access to Myall Quays*		
Sth	*Nth*	*Sth*	*East*	*Nth*	*Sth*	*East*	*Nth*
50%	0%	50%	100%	100%	0%	0%	0%
0%	0%	50%	25%	50%	50%	75%	50%
0%	0%	20%	20%	20%	80%	80%	80%
100%	33%	0%	100%	67%	0%	0%	0%
Access 1		*Access 2*			*Access 3*		
Nth	Sth	Nth	West	Sth	Nth	West	Sth
0%	0%	80%	60%	100%	20%	40%	0%
0%	0%	0%	20%	20%	100%	80%	80%

6 PREDICTED TRAFFIC FLOWS

The trip generation and trip distribution assumptions detailed above have been used to derive the traffic flows for year 2018 and 2028 are presented in Figures 6-1 and 6-2 below:

Figure 6-1: Predicted Traffic Flows 2018

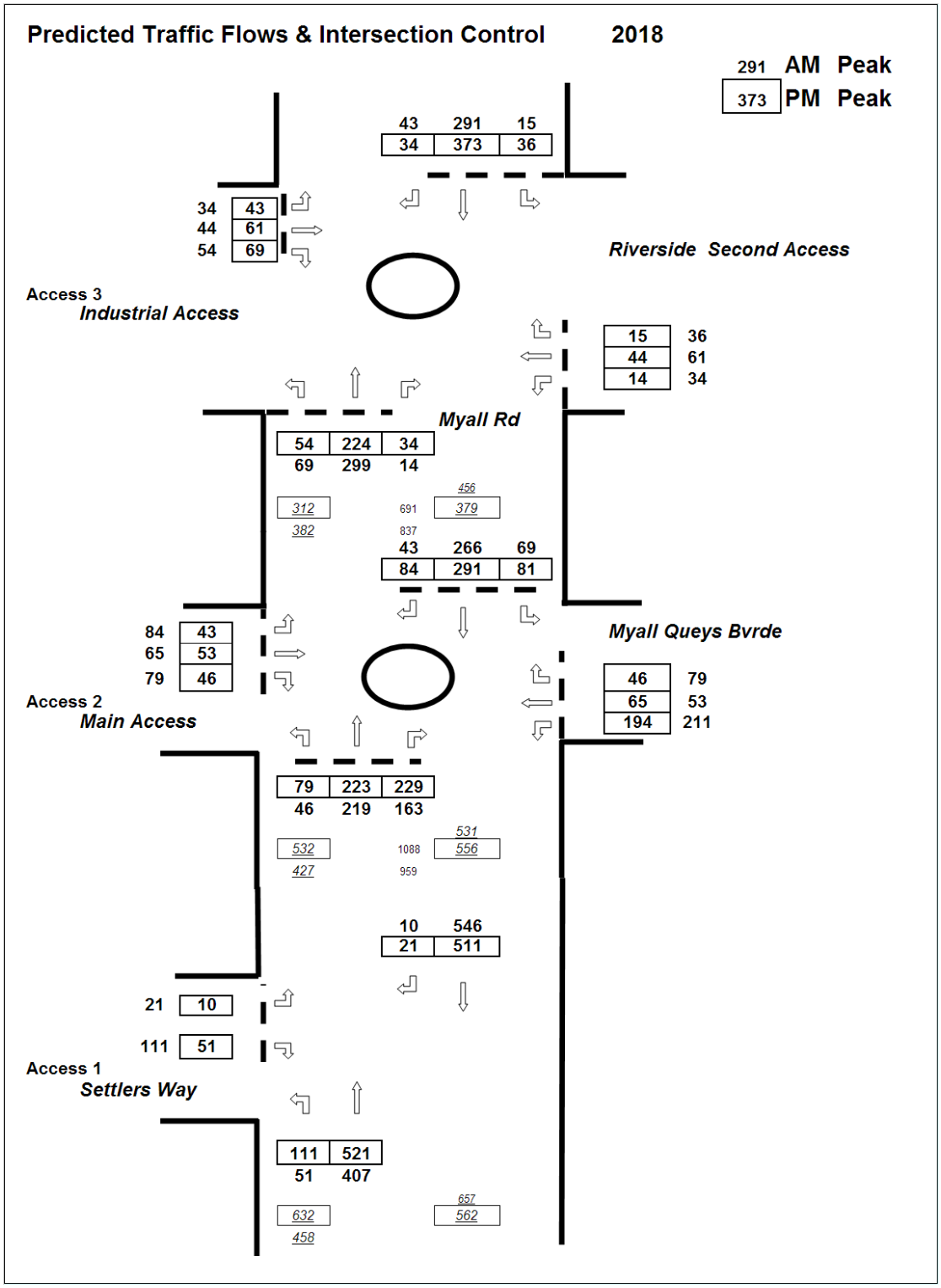
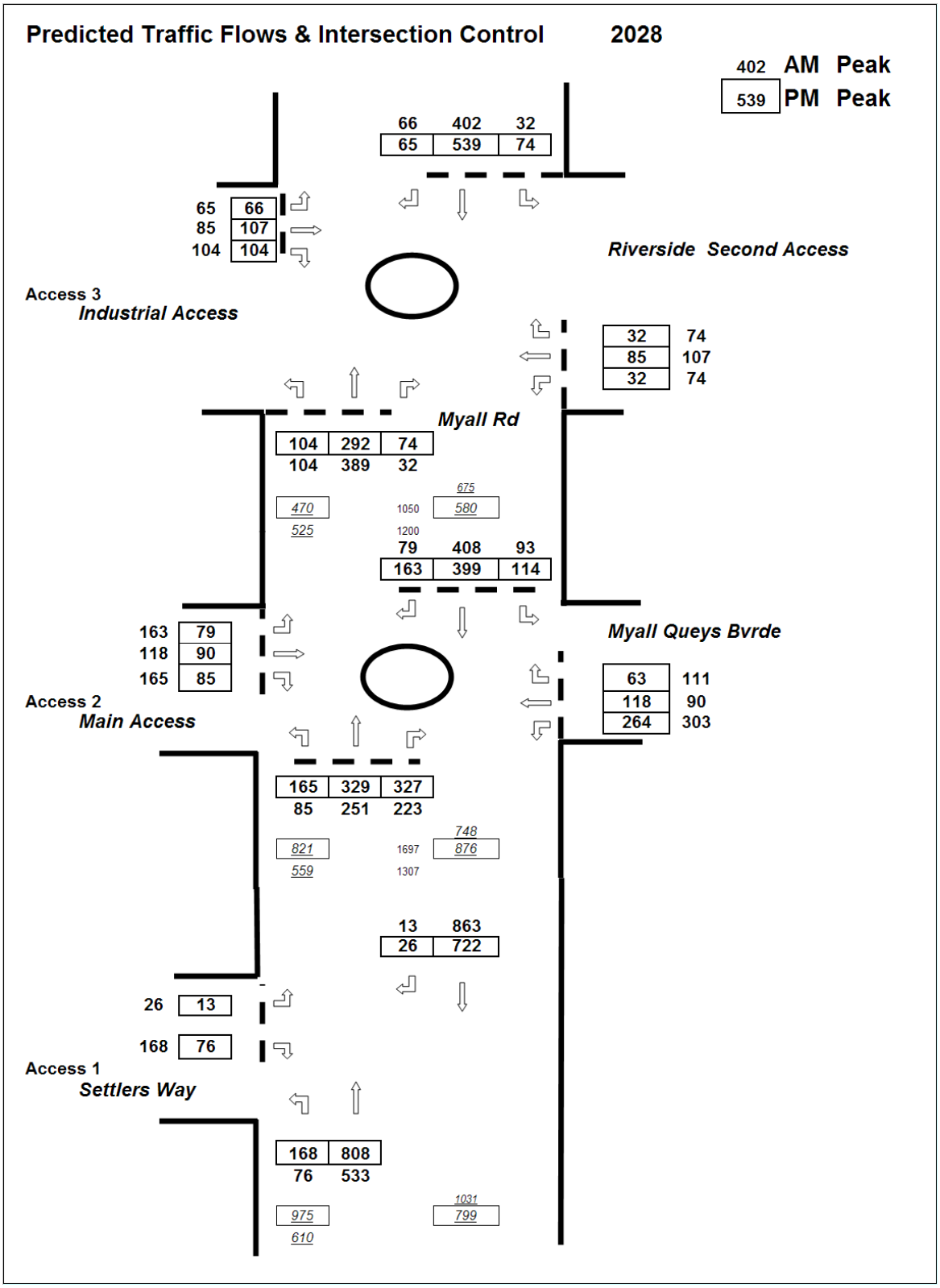


Figure 6-2: Predicted Traffic Flows 2028



7 INTERSECTION PERFORMANCE – 2018 AND 2028

The three main intersections serving the Myall River Downs residential and industrial development proposal have been assessed using SIDRA to determine the impact of the proposed development on the surrounding road network. A full report of this SIDRA analysis is presented in Appendix A of this report.

A summary of the results of this SIDRA Analysis are detailed below in Tables 7-1 and 7-2:

Table 7-1: Summary of SIDRA Analysis – Worst Turning Movement at Access Roads - 2018

	Peak Hr	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Myall Street / Industrial Access											
2nd Access Myall Quay (East)	AM	R	36	2.8	0.057	12.4	LOS B	2	0.39	0.69	45.0
2nd Access Myall Quay (East)	PM	R	15	6.2	0.034	12.6	LOS B	1	0.43	0.70	44.9
Myall St / Myall Quays Blve											
Myall Quays Blve (East)	AM	R	79	2.5	0.131	12.6	LOS B	5	0.43	0.72	44.9
Myall Quays Blve (East)	PM	R	46	2.2	0.115	12.7	LOS B	4	0.45	0.73	44.8
Myall St / Settlers Way - Give Way											
Access 1 Settlers Way (West)	AM	R	111	0.9	0.665	47.3	LOS E	29	0.93	1.16	26.0
Access 1 Settlers Way (West)	PM	R	51	2.0	0.392	43.8	LOS E	13	0.91	1.02	27.2
Myall St / Settlers Way - Traffic Control Signals											
Myall Street (North)	AM	R	10	9.1	0.034	21.1	LOS C	2	0.78	0.69	37.9
Myall Street (North)	PM	R	21	4.5	0.082	23.3	LOS C	4	0.84	0.71	36.5

Table 7-2: Summary of SIDRA Analysis – Worst Turning Movement at Access Roads - 2028

Summary of SIDRA Analysis of Worst Turning Movement at Key Intersections

	Peak Hr	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Myall Street / Industrial Access											
2nd Access Myall Quay (East)	AM	R	74	1.4	0.122	13.0	LOS B	4	0.49	0.76	44.6
2nd Access Myall Quay (East)	PM	R	32	3.1	0.077	13.3	LOS B	3	0.53	0.77	44.5
Myall Street / Myall Quays Blve											
Myall Quays Blve (East)	AM	R	111	1.8	0.233	13.7	LOS B	10	0.58	0.83	44.2
Myall Quays Blve (East)	PM	R	63	1.6	0.209	13.4	LOS B	8	0.57	0.82	44.3
Myall Street / Settlers Way - Give Way											
Access 1 Settlers Way (West)	AM	R	168	1.2	2.754	1693.	LOS F	543	1.00	3.24	1.3
Access 1 Settlers Way (West)	PM	R	76	1.3	1.267	452.4	LOS F	123	1.00	1.99	4.4
Myall Street / Settlers Way - Traffic Control Signals											
Access 1 Settlers Way (West)	AM	R	168	1.2	0.380	26.2	LOS C	35	0.88	0.79	34.8
Access 1 Settlers Way (West)	PM	R	76	1.3	0.172	25.2	LOS C	16	0.83	0.76	35.4

8 DISCUSSION

The SIDRA results detailed above demonstrate that the proposed 2 lane roundabouts at Access 2 and Access 3 will be able to accommodate traffic flows predicted through to year 2028. However, the existing intersection of Settlers Way and Myall Street will fail in 2018 due to the conflict between the predicted right turn out of Settlers Way and through traffic flows on Myall Street.

As suggested by ROADNET in their Traffic Management Plan for Tea Gardens prepared in 2007 the intersection of Settlers Way and Myall Street will require an upgrade to Traffic Control Signals (TCS) to accommodate predicted future traffic. The analysis reported above indicates that the provision of TCS at the intersection of Myall St and Settlers Way will perform adequately at LOS C in year 2028.

9 RECOMMENDATIONS

Based on this assessment of the provided concept plan it is recommended that the proposed development can be accommodated within the existing road network based on appropriate upgrades being provided. It is therefore recommended that the proposal can proceed through the rezoning process.

Appendix A SIDRA Analysis

2018 with Partial Development

And

2028 with Full Development

1. Myall Street / Industrial Access
2. Myall Street / Myall Quays Boulevard
3. Myall Street / Settlers Way

Summary of SIDRA Analysis of Worst Turning Movement at Key Intersections

	Peak Hr	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Myall Street / Industrial Access											
2nd Access Myall Quay (East)	AM	R	36	2.8	0.057	12.4	LOS B	2	0.39	0.69	45.0
2nd Access Myall Quay (East)	PM	R	15	6.2	0.034	12.6	LOS B	1	0.43	0.70	44.9
Myall St / Myall Quays Blve											
Myall Quays Blve (East)	AM	R	79	2.5	0.131	12.6	LOS B	5	0.43	0.72	44.9
Myall Quays Blve (East)	PM	R	46	2.2	0.115	12.7	LOS B	4	0.45	0.73	44.8
Myall St / Settlers Way - Give Way											
Access 1 Settlers Way (West)	AM	R	111	0.9	0.665	47.3	LOS E	29	0.93	1.16	26.0
Access 1 Settlers Way (West)	PM	R	51	2.0	0.392	43.8	LOS E	13	0.91	1.02	27.2
Myall St / Settlers Way - Traffic Control Signals											
Myall Street (North)	AM	R	10	9.1	0.034	21.1	LOS C	2	0.78	0.69	37.9
Myall Street (North)	PM	R	21	4.5	0.082	23.3	LOS C	4	0.84	0.71	36.5

Myall Street / Industrial Access

AM 2028 Two Lane Roundabout

Roundabout

Vehicle Movements

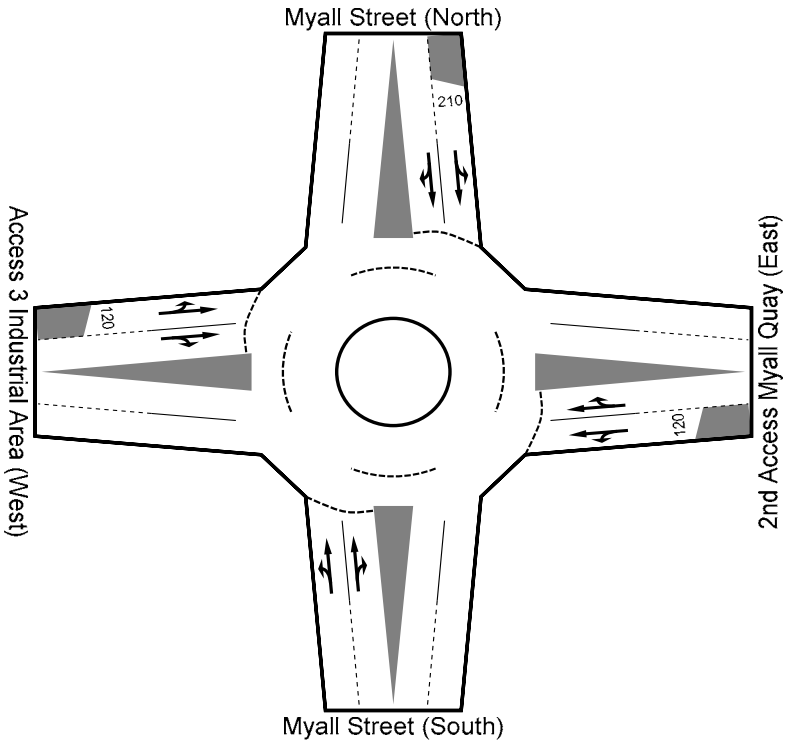
Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Myall Street (South)										
1	L	104	2.9	0.211	6.4	LOS A	9	0.36	0.55	49.5
2	T	389	2.1	0.211	5.2	LOS A	9	0.37	0.47	50.6
3	R	32	3.1	0.212	12.1	LOS B	9	0.38	0.69	45.1
Approach		**525**	**2.3**	**0.211**	**5.9**	**LOS A**	**9**	**0.37**	**0.50**	**50.0**
2nd Access Myall Quay (East)										
4	L	74	1.4	0.122	7.0	LOS A	5	0.48	0.61	48.8
5	T	107	1.9	0.122	5.9	LOS A	5	0.48	0.54	49.8
6	R	74	1.4	0.122	13.0	LOS B	4	0.49	0.76	44.6
Approach		**255**	**1.6**	**0.122**	**8.3**	**LOS A**	**5**	**0.48**	**0.63**	**47.8**
Myall Street (North)										
7	L	32	3.1	0.206	6.3	LOS A	9	0.35	0.54	49.7
8	T	423	3.1	0.207	5.1	LOS A	9	0.35	0.46	50.8
9	R	66	1.5	0.207	12.0	LOS B	9	0.36	0.68	45.2
Approach		**521**	**2.9**	**0.207**	**6.1**	**LOS A**	**9**	**0.35**	**0.49**	**49.9**
Access 3 Industrial Area (West)										
10	L	65	3.1	0.116	6.9	LOS A	5	0.45	0.60	49.0
11	T	85	2.4	0.116	5.7	LOS A	5	0.45	0.51	50.0
12	R	104	2.9	0.116	12.8	LOS B	4	0.46	0.74	44.7
Approach		**254**	**2.8**	**0.116**	**8.9**	**LOS A**	**5**	**0.45**	**0.63**	**47.4**
All Vehicles		**1555**	**2.4**	**0.212**	**6.8**	**LOS A**	**9**	**0.40**	**0.54**	**49.1**

PM 2028 Two Lane Roundabout

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Myall Street (South)										
1	L	104	2.9	0.181	6.2	LOS A	8	0.31	0.52	49.9
2	T	292	2.1	0.181	5.0	LOS A	8	0.31	0.45	51.1
3	R	74	1.4	0.181	11.9	LOS B	8	0.32	0.66	45.4
Approach		**470**	**2.1**	**0.181**	**6.3**	**LOS A**	**8**	**0.31**	**0.50**	**49.8**
2nd Access Myall Quay (East)										
4	L	32	3.1	0.077	7.3	LOS A	3	0.52	0.63	48.6
5	T	85	2.4	0.077	6.2	LOS A	3	0.52	0.56	49.5
6	R	32	3.1	0.077	13.3	LOS B	3	0.53	0.77	44.5
Approach		**149**	**2.7**	**0.077**	**8.0**	**LOS A**	**3**	**0.52**	**0.62**	**48.1**
Myall Street (North)										
7	L	74	1.4	0.289	6.6	LOS A	13	0.41	0.57	49.3
8	T	567	3.0	0.289	5.4	LOS A	13	0.41	0.49	50.3
9	R	65	1.5	0.289	12.4	LOS B	13	0.42	0.71	44.9
Approach		**706**	**2.7**	**0.289**	**6.2**	**LOS A**	**13**	**0.41**	**0.52**	**49.6**
Access 3 Industrial Area (West)										
10	L	66	3.0	0.120	6.7	LOS A	5	0.40	0.58	49.3
11	T	107	1.9	0.120	5.5	LOS A	5	0.41	0.49	50.3
12	R	104	2.9	0.120	12.5	LOS B	5	0.42	0.71	44.9
Approach		**277**	**2.5**	**0.120**	**8.4**	**LOS A**	**5**	**0.41**	**0.60**	**47.8**
All Vehicles		**1602**	**2.5**	**0.289**	**6.8**	**LOS A**	**13**	**0.39**	**0.54**	**49.2**



Myall Street / Myall Quays Blve

AM 2028 Two Lane Roundabout

Roundabout

Vehicle Movements

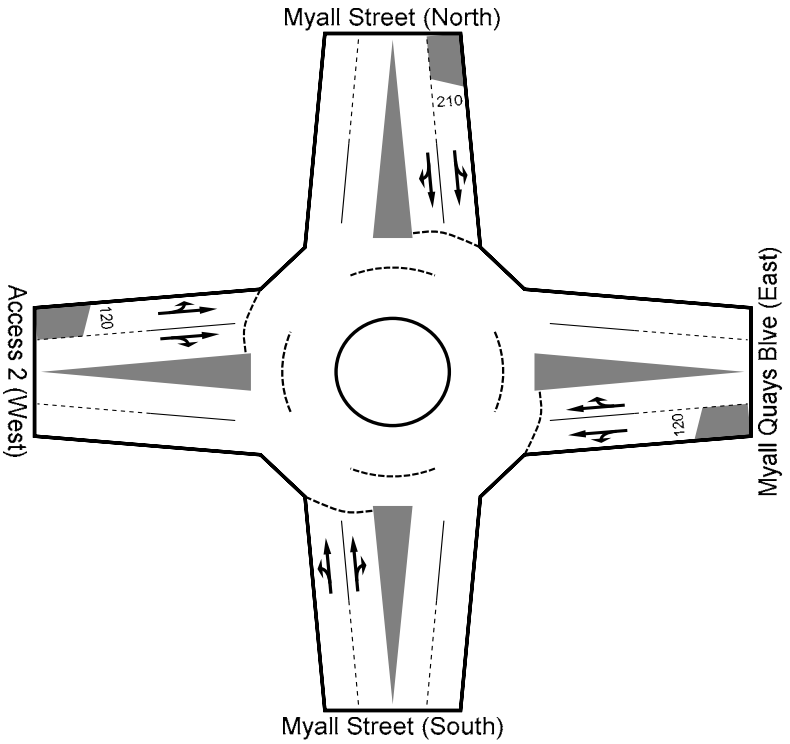
Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Myall Street (South)										
1	L	85	2.4	0.232	6.6	LOS A	11	0.42	0.57	49.2
2	T	251	2.0	0.232	5.4	LOS A	11	0.42	0.49	50.3
3	R	223	1.8	0.232	12.4	LOS B	11	0.43	0.69	44.9
Approach		**559**	**2.0**	**0.232**	**8.4**	**LOS A**	**11**	**0.42**	**0.58**	**47.7**
Myall Quays Blve (East)										
4	L	303	2.0	0.286	7.6	LOS A	13	0.59	0.66	48.1
5	T	90	2.2	0.233	6.8	LOS A	10	0.58	0.62	49.1
6	R	111	1.8	0.233	13.7	LOS B	10	0.58	0.83	44.2
Approach		**504**	**2.0**	**0.286**	**8.8**	**LOS A**	**13**	**0.58**	**0.69**	**47.3**
Myall Street (North)										
7	L	93	2.2	0.282	7.3	LOS A	13	0.53	0.64	48.5
8	T	429	3.0	0.282	6.3	LOS A	13	0.54	0.57	49.4
9	R	79	2.5	0.282	13.3	LOS B	13	0.54	0.78	44.4
Approach		**602**	**2.8**	**0.282**	**7.4**	**LOS A**	**13**	**0.54**	**0.61**	**48.5**
Access 2 (West)										
10	L	163	1.8	0.215	7.2	LOS A	9	0.52	0.63	48.6
11	T	118	1.7	0.215	6.1	LOS A	9	0.52	0.55	49.5
12	R	165	1.8	0.215	13.2	LOS B	9	0.53	0.79	44.5
Approach		**446**	**1.8**	**0.215**	**9.1**	**LOS A**	**9**	**0.52**	**0.67**	**47.1**
All Vehicles		**2111**	**2.2**	**0.286**	**8.3**	**LOS A**	**13**	**0.51**	**0.63**	**47.7**

PM 2028 Two Lane Roundabout

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Myall Street (South)										
1	L	165	1.8	0.353	7.1	LOS A	18	0.50	0.62	48.7
2	T	329	2.1	0.353	5.9	LOS A	18	0.50	0.53	49.7
3	R	327	2.1	0.353	12.9	LOS B	18	0.51	0.73	44.5
Approach		**821**	**2.1**	**0.353**	**8.9**	**LOS A**	**18**	**0.50**	**0.63**	**47.2**
Myall Quays Blve (East)										
4	L	264	1.9	0.249	7.4	LOS A	11	0.57	0.64	48.2
5	T	118	1.7	0.209	6.6	LOS A	8	0.57	0.60	49.1
6	R	63	1.6	0.209	13.4	LOS B	8	0.57	0.82	44.3
Approach		**445**	**1.8**	**0.249**	**8.0**	**LOS A**	**11**	**0.57**	**0.65**	**47.8**
Myall Street (North)										
7	L	114	1.8	0.329	7.5	LOS A	17	0.56	0.65	48.3
8	T	420	3.1	0.329	6.4	LOS A	17	0.57	0.58	49.2
9	R	163	1.8	0.329	13.4	LOS B	16	0.57	0.79	44.3
Approach		**697**	**2.6**	**0.329**	**8.2**	**LOS A**	**17**	**0.57**	**0.64**	**47.7**
Access 2 (West)										
10	L	79	2.5	0.129	7.3	LOS A	5	0.55	0.64	48.4
11	T	90	2.2	0.129	6.3	LOS A	5	0.55	0.57	49.3
12	R	77	2.6	0.129	13.4	LOS B	5	0.56	0.80	44.3
Approach		**246**	**2.4**	**0.129**	**8.8**	**LOS A**	**5**	**0.55**	**0.66**	**47.3**
All Vehicles		**2209**	**2.2**	**0.353**	**8.5**	**LOS A**	**18**	**0.54**	**0.64**	**47.5**



Myall Street / Settlers Way - Give Way

AM Peak 2028 Give Way

Give-way

Vehicle Movements

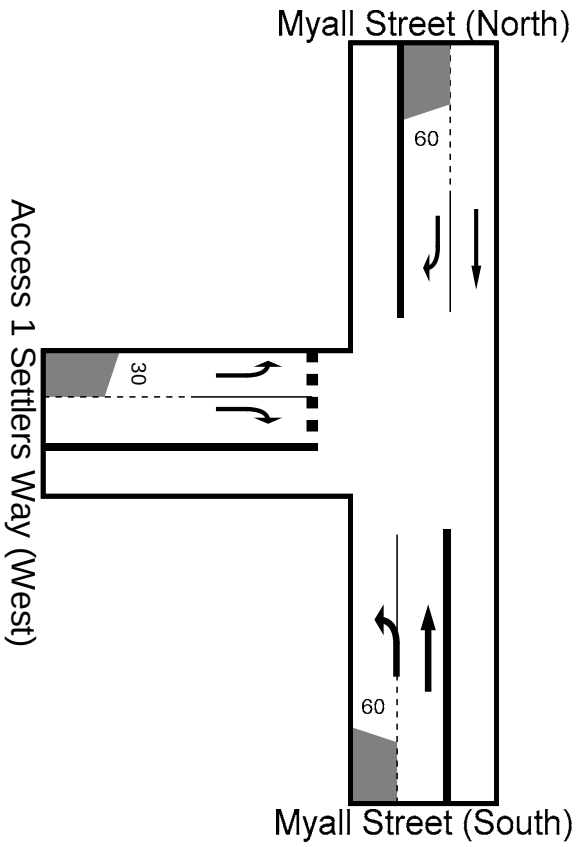
Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Myall Street (South)										
1	L	76	1.3	0.039	8.2	LOS A	0	0.00	0.67	49.0
2	T	533	3.0	0.273	0.0	LOS A	0	0.00	0.00	60.0
Approach		**609**	**2.8**	**0.273**	**1.0**	**LOS A**		**0.00**	**0.08**	**58.4**
Myall Street (North)										
8	T	863	3.0	0.443	0.0	LOS A	0	0.00	0.00	60.0
9	R	13	7.1	0.019	11.4	LOS B	1	0.53	0.73	45.6
Approach		**877**	**3.1**	**0.443**	**0.2**	**LOS A**	**1**	**0.01**	**0.01**	**59.7**
Access 1 Settlers Way (West)										
10	L	26	3.7	0.043	11.8	LOS B	1	0.52	0.76	45.3
12	R	168	1.2	2.754	1693.6	LOS F	543	1.00	3.24	1.3
Approach		**195**	**1.5**	**2.773**	**1460.7**	**LOS F**	**543**	**0.93**	**2.89**	**1.4**
All Vehicles		**1681**	**2.8**	**2.754**	**169.9**	**Not Applicable**	**543**	**0.11**	**0.37**	**10.6**

PM Peak 2028 Give Way

Give-way

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Myall Street (South)										
1	L	168	1.2	0.086	8.2	LOS A	0	0.00	0.67	49.0
2	T	808	3.0	0.414	0.0	LOS A	0	0.00	0.00	60.0
Approach		**976**	**2.7**	**0.414**	**1.4**	**LOS A**		**0.00**	**0.11**	**57.8**
Myall Street (North)										
8	T	722	3.0	0.370	0.0	LOS A	0	0.00	0.00	60.0
9	R	26	3.7	0.059	15.1	LOS C	2	0.69	0.90	42.4
Approach		**749**	**3.1**	**0.370**	**0.5**	**LOS A**	**2**	**0.03**	**0.03**	**59.1**
Access 1 Settlers Way (West)										
10	L	13	7.1	0.037	16.0	LOS C	1	0.69	0.89	41.7
12	R	76	1.3	1.267	452.4	LOS F	123	1.00	1.99	4.4
Approach		**90**	**2.2**	**1.267**	**384.5**	**LOS F**	**123**	**0.95**	**1.81**	**5.2**
All Vehicles		**1815**	**2.8**	**1.267**	**20.0**	**Not Applicable**	**123**	**0.06**	**0.17**	**38.7**



Myall Street / Settlers Way - Traffic Control Signals

AM Peak 2028 TCS

Signalised - Fixed time Cycle Time = 50 seconds

Vehicle Movements

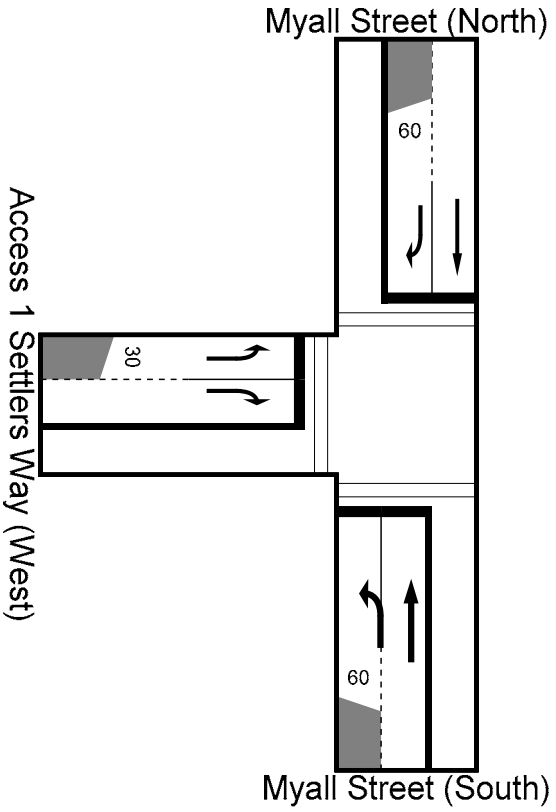
Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Myall Street (South)										
1	L	76	1.3	0.106	14.7	LOS B	10	0.52	0.73	42.7
2	T	533	3.0	0.536	8.7	LOS A	75	0.71	0.63	48.4
Approach		**609**	**2.8**	**0.536**	**9.5**	**LOS A**	**75**	**0.69**	**0.64**	**47.6**
Myall Street (North)										
8	T	863	3.0	0.868	20.2	LOS C	177	0.94	1.04	38.6
9	R	13	7.1	0.040	20.7	LOS C	3	0.69	0.71	38.2
Approach		**877**	**3.1**	**0.868**	**20.2**	**LOS C**	**177**	**0.94**	**1.04**	**38.6**
Access 1 Settlers Way (West)										
10	L	26	3.7	0.091	24.4	LOS C	6	0.80	0.71	35.9
12	R	168	1.2	0.380	26.2	LOS C	35	0.88	0.79	34.8
Approach		**195**	**1.5**	**0.380**	**26.0**	**LOS C**	**35**	**0.87**	**0.78**	**34.9**
All Vehicles		**1681**	**2.8**	**0.868**	**17.0**	**LOS B**	**177**	**0.84**	**0.86**	**40.9**

PM Peak 2028 TCS

Signalised - Fixed time Cycle Time = 50 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Myall Street (South)										
1	L	168	1.2	0.235	15.1	LOS B	22	0.56	0.75	42.4
2	T	808	3.0	0.812	15.2	LOS B	145	0.89	0.91	42.3
Approach		**976**	**2.7**	**0.812**	**15.2**	**LOS B**	**145**	**0.84**	**0.88**	**42.3**
Myall Street (North)										
8	T	722	3.0	0.726	11.1	LOS B	113	0.83	0.77	45.9
9	R	26	3.7	0.130	28.3	LOS C	7	0.87	0.73	33.7
Approach		**749**	**3.1**	**0.726**	**11.8**	**LOS B**	**113**	**0.83**	**0.77**	**45.3**
Access 1 Settlers Way (West)										
10	L	13	7.1	0.048	24.3	LOS C	3	0.79	0.69	36.0
12	R	76	1.3	0.172	25.2	LOS C	16	0.83	0.76	35.4
Approach		**90**	**2.2**	**0.172**	**25.0**	**LOS C**	**16**	**0.82**	**0.74**	**35.5**
All Vehicles		**1815**	**2.8**	**0.812**	**14.3**	**LOS B**	**145**	**0.83**	**0.83**	**43.1**



Summary of SIDRA Analysis of Worst Turning Movement at Key Intersections

	Peak Hr	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Myall Street / Industrial Access											
2nd Access Myall Quay (East)	AM	R	74	1.4	0.122	13.0	LOS B	4	0.49	0.76	44.6
2nd Access Myall Quay (East)	PM	R	32	3.1	0.077	13.3	LOS B	3	0.53	0.77	44.5
Myall Street / Myall Quays Blve											
Myall Quays Blve (East)	AM	R	111	1.8	0.233	13.7	LOS B	10	0.58	0.83	44.2
Myall Quays Blve (East)	PM	R	63	1.6	0.209	13.4	LOS B	8	0.57	0.82	44.3
Myall Street / Settlers Way - Give Way											
Access 1 Settlers Way (West)	AM	R	168	1.2	2.754	1693.	LOS F	543	1.00	3.24	1.3
Access 1 Settlers Way (West)	PM	R	76	1.3	1.267	452.4	LOS F	123	1.00	1.99	4.4
Myall Street / Settlers Way - Traffic Control Signals											
Access 1 Settlers Way (West)	AM	R	168	1.2	0.380	26.2	LOS C	35	0.88	0.79	34.8
Access 1 Settlers Way (West)	PM	R	76	1.3	0.172	25.2	LOS C	16	0.83	0.76	35.4