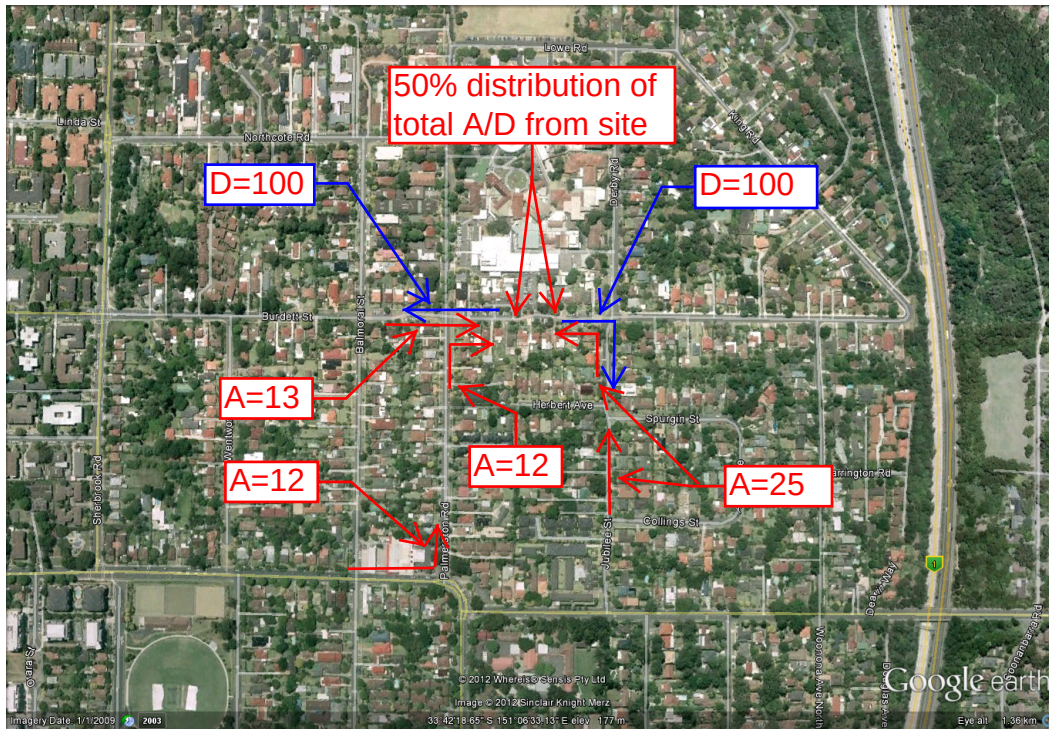
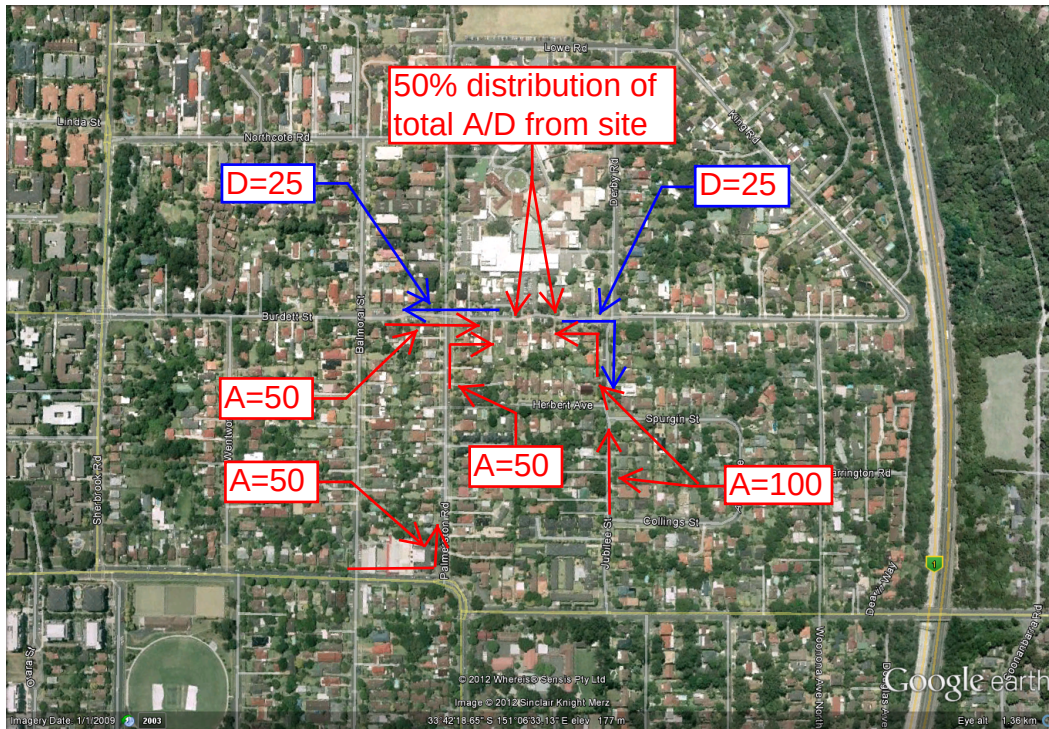




PM Additional Traffic
Generated:
Departing (D): 200
Arriving (A): 50

Hornsby Hospital
Redevelopment Potential
Additional Traffic
Job No: 111379
26/7/2012



AM Additional Traffic
Generated:
Departing (D): 50
Arriving (A): 200

Hornsby Hospital
Redevelopment Potential
Additional Traffic
Job No: 111379
26/7/2012

SIDRA ANALYSIS SUMMARY RESULTS

26 July 2012

Palmerston Road / Burdett Street Intersection**Executive Summary**

The intersection modelling analysis of the site for intersection based on Level of Service (LoS) and Degree of Saturation (DoS) as shown in the Table 1 below. The summary of results in Table 2 shows the average LoS and Dos for the intersection. The results confirm that the proposed level of traffic generation has a minimal impact on operation of the road system. Therefore, there would be no adverse impact on the street system and/or intersection operation of the road network as the result of the proposed redevelopment.

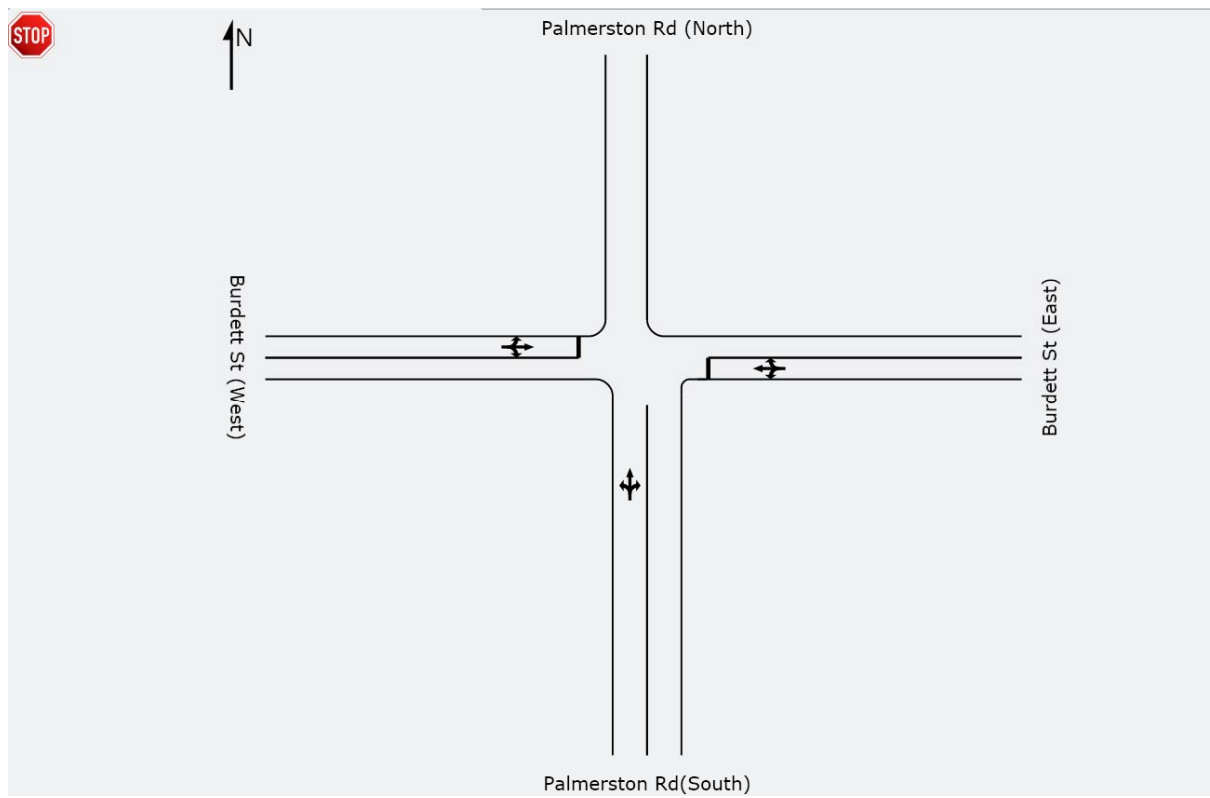
Table 1 - Criteria for Evaluating Capacity of Intersection

Level of Service	Degree of Saturation (DoS)	Ave. Delay/ Veh. (Secs)
A/B good operation	less than 0.80	Less than 28
C satisfactory	0.80 to 0.85	29-42
D poor but manageable	0.85 to 0.90	43-56
E at capacity	0.90 to 1.0	57-70
F unsatisfactory, extra capacity required	Over 1.0	Over 70

Table 2 – Intersections Operational Performances

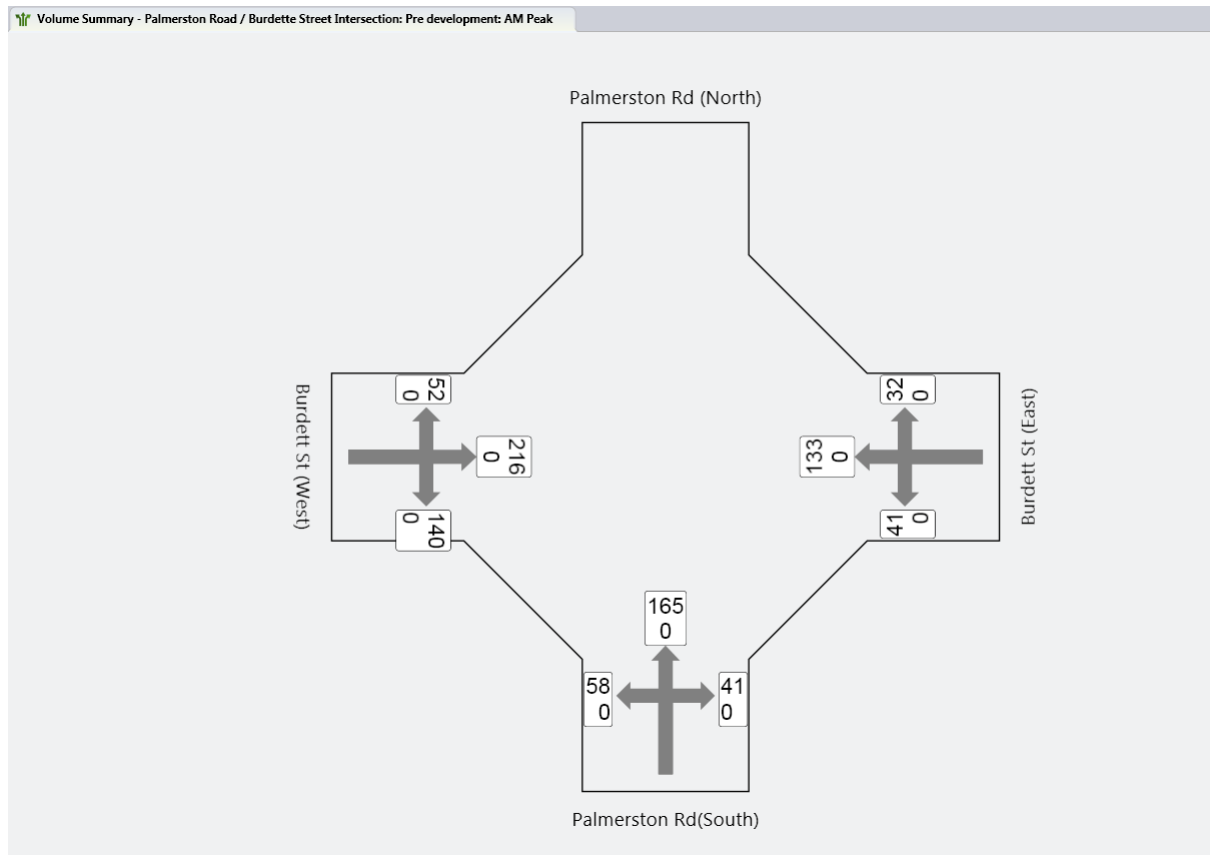
	AM Existing	AM Future	PM Existing	PM Future
LoS	A – 8.0 sec/veh	A – 7.9 sec/veh	A – 10.1 sec/veh	A – 10.4 sec/veh
DoS	A – 0.315	A – 0.220	A – 0.488	A – 0.516

Layout



AM Peak – Pre Development

Existing Volumes



MOVEMENT SUMMARY

Site: Palmerston Road /
Burdette Street Intersection:
Pre development: AM Peak

Palmerston Road / Burdette Street Intersection: Pre development:
AM Peak
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Palmerston Rd(South)											
1	L	58	0.0	0.138	6.4	LOS A	0.0	0.0	0.00	0.77	41.1
2	T	165	0.0	0.138	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
3	R	41	0.0	0.138	6.6	LOS A	0.0	0.0	0.00	0.82	40.8
Approach		264	0.0	0.138	2.4	NA	0.0	0.0	0.00	0.30	46.2
East: Burdett St (East)											
4	L	41	0.0	0.144	10.4	LOS A	0.7	5.0	0.40	0.60	28.4
5	T	133	0.0	0.144	10.2	LOS A	0.7	5.0	0.40	0.85	28.6
6	R	32	0.0	0.144	10.3	LOS A	0.7	5.0	0.40	0.95	28.4
Approach		206	0.0	0.144	10.2	LOS A	0.7	5.0	0.40	0.82	28.5
West: Burdett St (West)											
10	L	52	0.0	0.315	10.6	LOS A	1.6	11.5	0.43	0.87	28.2
11	T	216	0.0	0.315	10.3	LOS A	1.6	11.5	0.43	0.85	28.4
12	R	140	0.0	0.315	10.5	LOS A	1.6	11.5	0.43	0.93	28.3
Approach		408	0.0	0.315	10.4	LOS A	1.6	11.5	0.43	0.88	28.4
All Vehicles		878	0.0	0.315	8.0	NA	1.6	11.5	0.29	0.69	35.2

LANE SUMMARY

Site: Palmerston Road /
Burdette Street Intersection:
Pre development: AM Peak

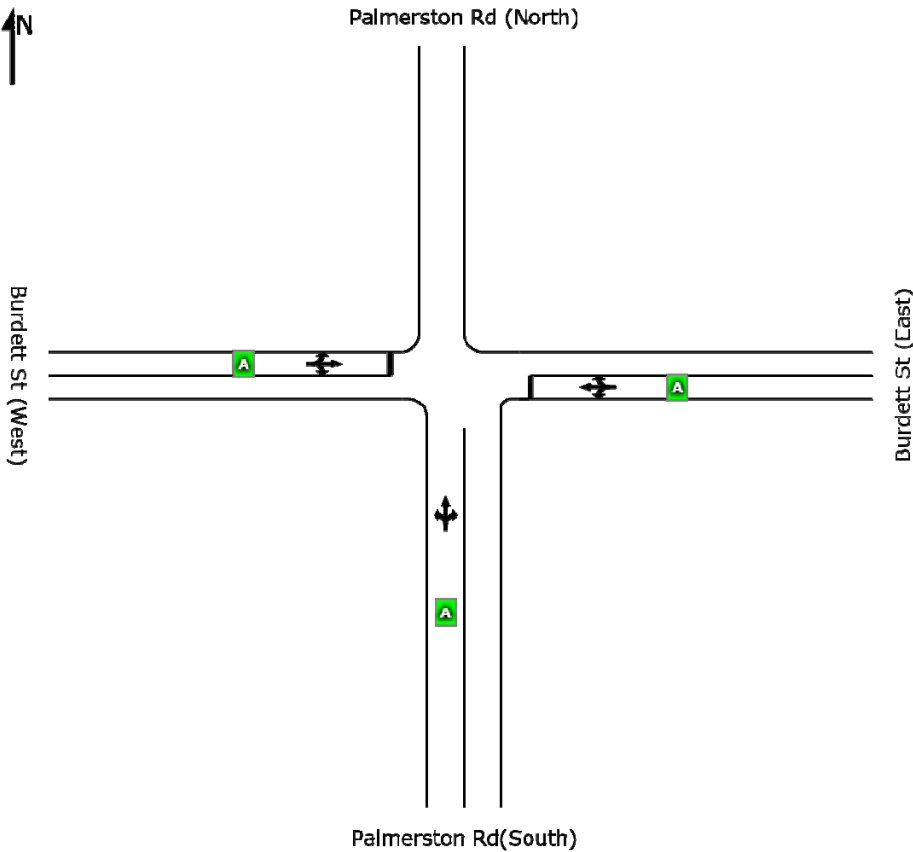
Palmerston Road / Burdette Street Intersection: Pre development:
AM Peak
Stop (Two-Way)

Lane Use and Performance																
	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Palmerston Rd(South)																
Lane 1	58	165	41	264	0.0	1914	0.138	100	2.4	LOS A	0.0	0.0	335	–	0.0	0.0
Approach	58	165	41	264	0.0		0.138		2.4	NA	0.0	0.0				
East: Burdett St (East)																
Lane 1	41	133	32	206	0.0	1431	0.144	100	10.2	LOS A	0.7	5.0	100	–	0.0	0.0
Approach	41	133	32	206	0.0		0.144		10.2	LOS A	0.7	5.0				
West: Burdett St (West)																
Lane 1	52	216	140	408	0.0	1295	0.315	100	10.4	LOS A	1.6	11.5	100	–	0.0	0.0
Approach	52	216	140	408	0.0		0.315		10.4	LOS A	1.6	11.5				
Intersection				878	0.0		0.315		8.0	NA	1.6	11.5				

LEVEL OF SERVICE SUMMARY

Site: Palmerston Road /
Burdette Street Intersection:
Pre development: AM Peak

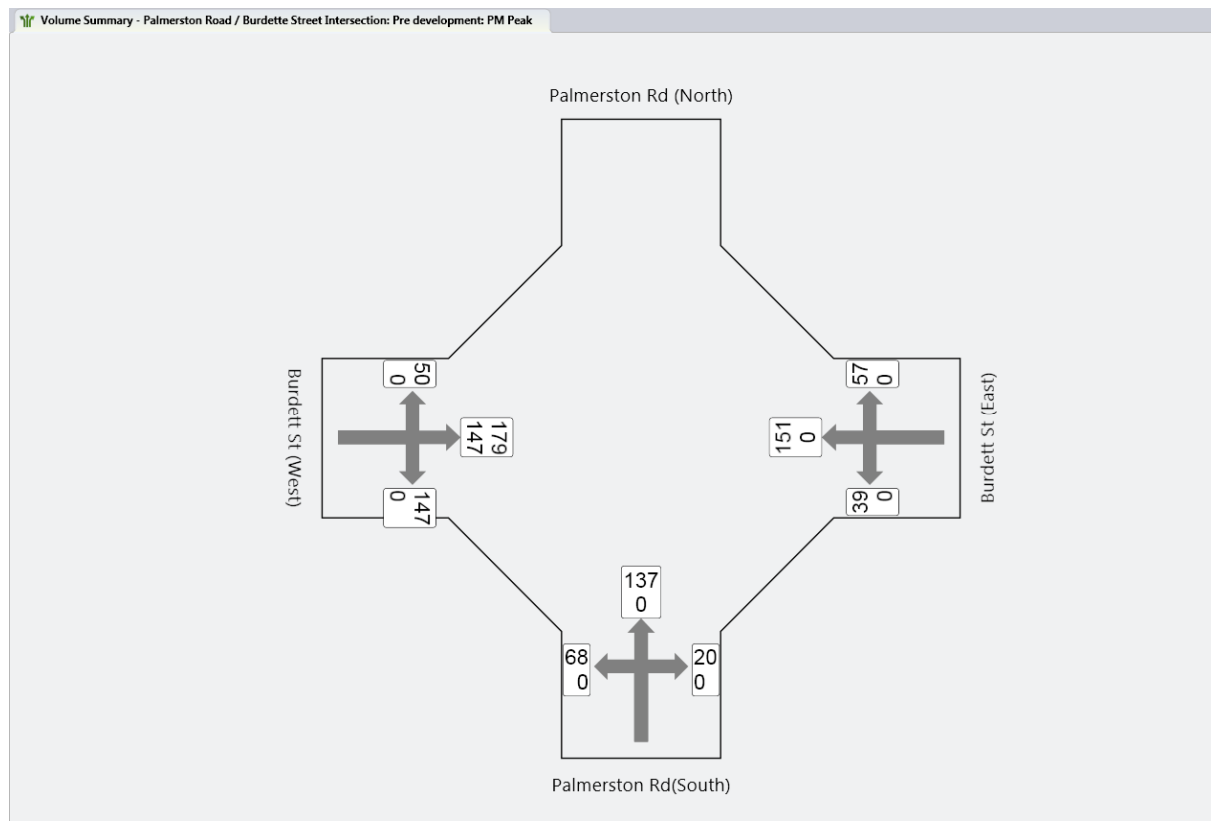
Palmerston Road / Burdette Street Intersection: Pre development:
AM Peak
Stop (Two-Way)



	South	East	North	West	Intersection
LOS	NA	A	NA	A	NA

PM Peak – Pre Development

Existing Volumes



MOVEMENT SUMMARY

Site: Palmerston Road /
Burdette Street Intersection:
Pre development: PM Peak

Palmerston Road / Burdette Street Intersection: Pre development:
PM Peak
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Palmerston Rd(South)											
1	L	68	0.0	0.118	6.4	LOS A	0.0	0.0	0.00	0.76	41.1
2	T	137	0.0	0.118	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
3	R	20	0.0	0.118	6.6	LOS A	0.0	0.0	0.00	0.82	40.8
Approach		225	0.0	0.118	2.5	NA	0.0	0.0	0.00	0.30	46.1
East: Burdett St (East)											
4	L	39	0.0	0.184	10.7	LOS A	0.9	6.5	0.39	0.59	28.0
5	T	151	0.0	0.184	10.5	LOS A	0.9	6.5	0.39	0.84	28.2
6	R	57	0.0	0.184	10.6	LOS A	0.9	6.5	0.39	1.00	28.0
Approach		247	0.0	0.184	10.5	LOS A	0.9	6.5	0.39	0.84	28.1
West: Burdett St (West)											
10	L	50	0.0	0.488	11.9	LOS A	4.1	35.3	0.52	0.88	27.0
11	T	326	45.1	0.488	13.9	LOS A	4.1	35.3	0.52	0.89	27.1
12	R	147	0.0	0.488	11.8	LOS A	4.1	35.3	0.52	0.96	27.0
Approach		523	28.1	0.488	13.1	LOS A	4.1	35.3	0.52	0.91	27.1
All Vehicles		995	14.8	0.488	10.1	NA	4.1	35.3	0.37	0.75	32.8

LANE SUMMARY

Site: Palmerston Road /
Burdette Street Intersection:
Pre development: PM Peak

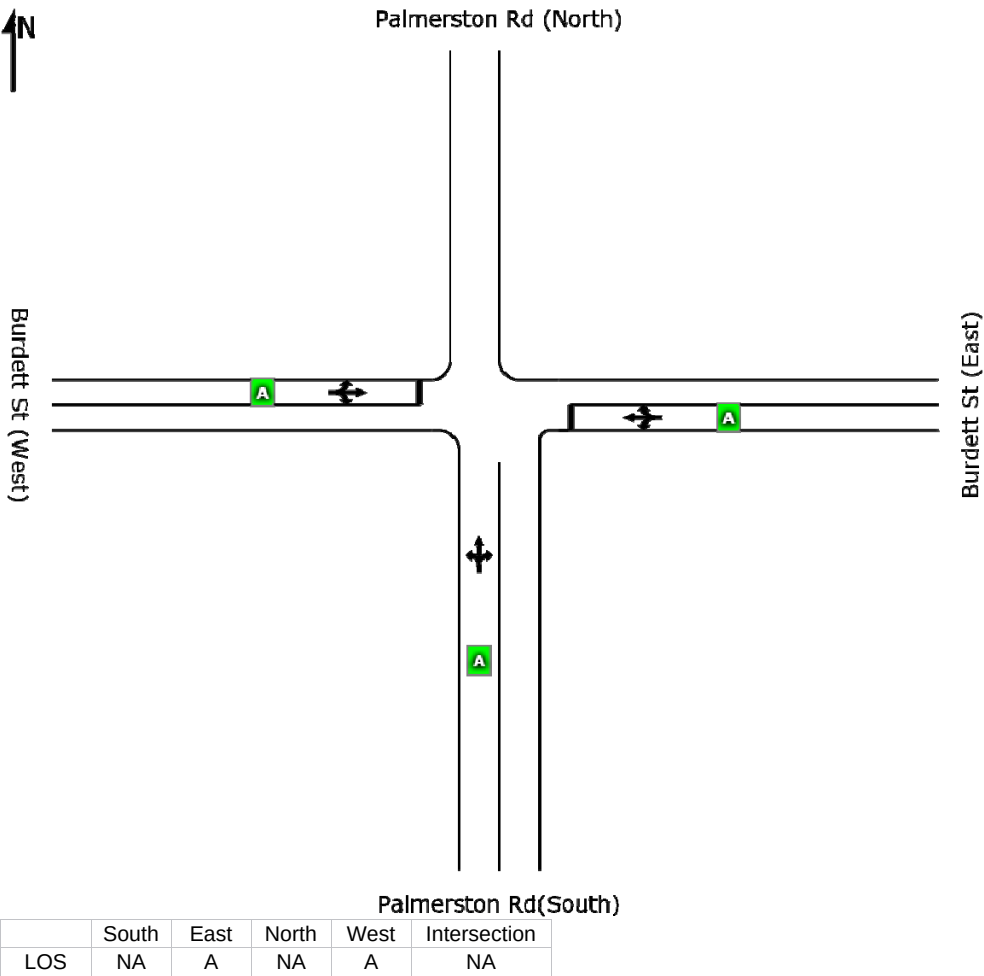
Palmerston Road / Burdette Street Intersection: Pre development:
PM Peak
Stop (Two-Way)

Lane Use and Performance																
	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h							%	veh/h				
South: Palmerston Rd(South)																
Lane 1	68	137	20	225	0.0	1913	0.118	100	2.5	LOS A	0.0	0.0	335	–	0.0	0.0
Approach	68	137	20	225	0.0		0.118		2.5	NA	0.0	0.0				
East: Burdett St (East)																
Lane 1	39	151	57	247	0.0	1345	0.184	100	10.5	LOS A	0.9	6.5	100	–	0.0	0.0
Approach	39	151	57	247	0.0		0.184		10.5	LOS A	0.9	6.5				
West: Burdett St (West)																
Lane 1	50	326	147	523	28.1	1071	0.488	100	13.1	LOS A	4.1	35.3	100	–	0.0	0.0
Approach	50	326	147	523	28.1		0.488		13.1	LOS A	4.1	35.3				
Intersection				995	14.8		0.488		10.1	NA	4.1	35.3				

LEVEL OF SERVICE SUMMARY

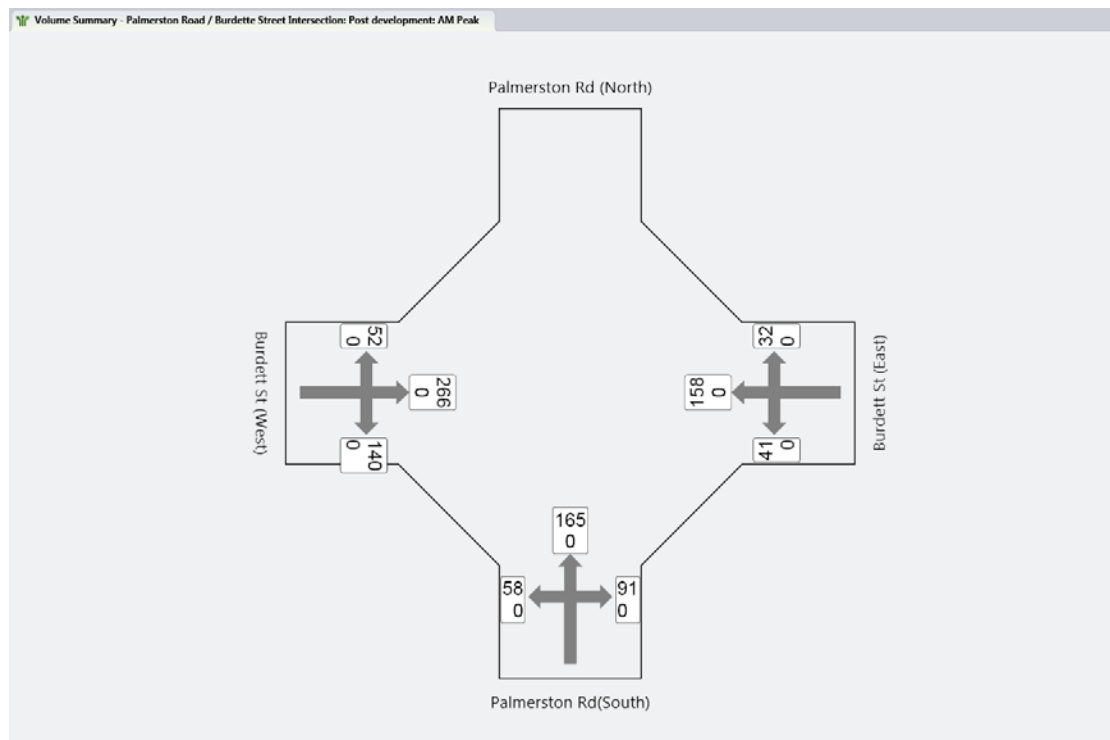
Site: Palmerston Road /
Burdette Street Intersection:
Pre development: PM Peak

Palmerston Road / Burdette Street Intersection: Pre development:
PM Peak
Stop (Two-Way)



AM Peak – Post Development

Proposed Volumes



MOVEMENT SUMMARY

Site: Derby Rd/Burdett
St/Jubilee St: Post
Development: AM Peak

Derby Rd/Burdett St/Jubilee St: Post Development: AM Peak

Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Jubilee St											
1	L	209	0.0	0.220	9.9	LOS A	1.0	6.9	0.16	0.90	28.5
2	T	48	0.0	0.220	9.6	LOS A	1.0	6.9	0.16	0.97	28.7
3	R	8	0.0	0.220	9.9	LOS A	1.0	6.9	0.16	1.00	28.5
Approach		265	0.0	0.220	9.9	LOS A	1.0	6.9	0.16	0.92	28.5
East: Burdett St (East)											
4	L	35	0.0	0.040	6.6	LOS A	0.2	1.4	0.18	0.61	37.2
5	T	40	0.0	0.040	0.1	LOS A	0.2	1.4	0.18	0.00	44.9
6	R	1	0.0	0.040	6.6	LOS A	0.2	1.4	0.18	0.66	37.2
Approach		76	0.0	0.040	3.2	NA	0.2	1.4	0.18	0.29	40.9
North: Derby Rd											
7	L	6	0.0	0.096	11.9	LOS A	0.3	2.4	0.31	0.78	36.3
8	T	33	0.0	0.096	11.6	LOS A	0.3	2.4	0.31	0.92	36.5
9	R	29	0.0	0.096	11.9	LOS A	0.3	2.4	0.31	0.99	36.3
Approach		68	0.0	0.096	11.7	LOS A	0.3	2.4	0.31	0.94	36.4
West: Burdett St (West)											
10	L	27	0.0	0.150	6.7	LOS A	0.8	5.4	0.20	0.49	29.3
11	T	25	0.0	0.150	0.2	LOS A	0.8	5.4	0.20	0.00	39.2
12	R	207	0.0	0.150	7.0	LOS A	0.8	5.4	0.20	0.62	28.8
Approach		259	0.0	0.150	6.3	NA	0.8	5.4	0.20	0.54	29.6
All Vehicles		668	0.0	0.220	7.9	NA	1.0	6.9	0.19	0.70	31.8

LANE SUMMARY

Site: Palmerston Road /
Burdette Street Intersection:
Post development: AM Peak

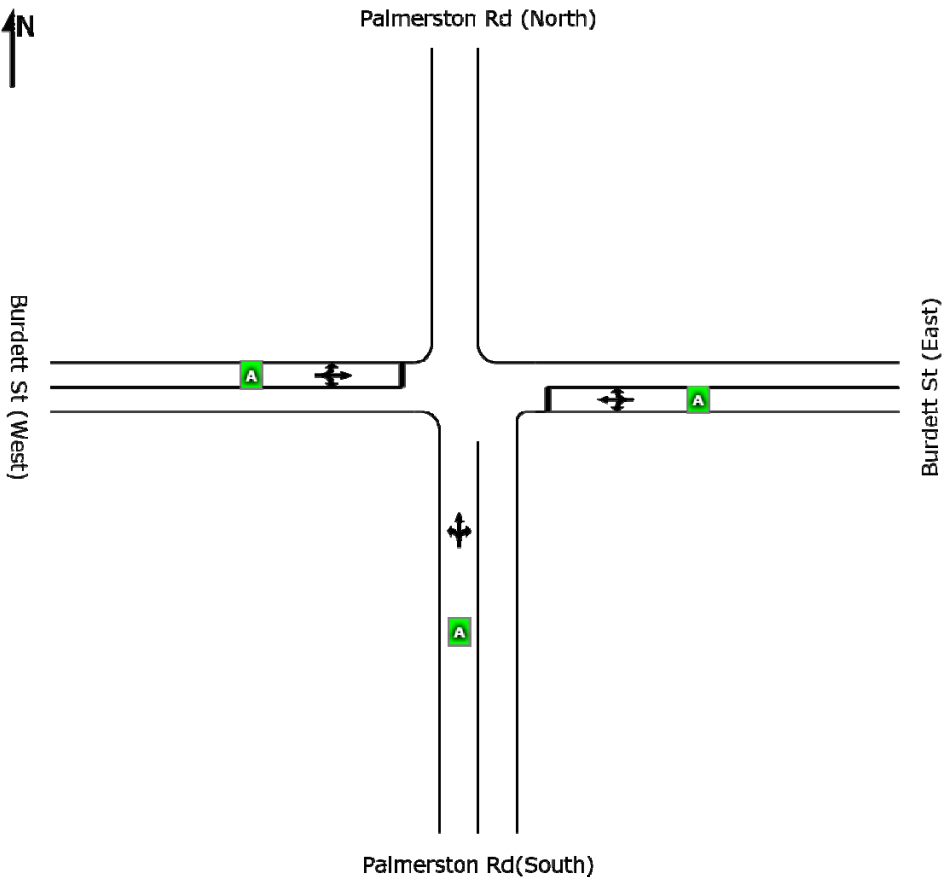
Palmerston Road / Burdette Street Intersection: Post development:
AM Peak
Stop (Two-Way)

Lane Use and Performance																
	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h							%	veh/h				
South: Palmerston Rd(South)																
Lane 1	58	165	91	314	0.0	1905	0.165	100	3.1	LOS A	0.0	0.0	335	–	0.0	0.0
Approach	58	165	91	314	0.0		0.165		3.1	NA	0.0	0.0				
East: Burdett St (East)																
Lane 1	41	158	32	231	0.0	1353	0.171	100	10.5	LOS A	0.9	6.0	100	–	0.0	0.0
Approach	41	158	32	231	0.0		0.171		10.5	LOS A	0.9	6.0				
West: Burdett St (West)																
Lane 1	52	266	140	458	0.0	1245	0.368	100	10.8	LOS A	2.1	14.6	100	–	0.0	0.0
Approach	52	266	140	458	0.0		0.368		10.8	LOS A	2.1	14.6				
Intersection				1003	0.0		0.368		8.3	NA	2.1	14.6				

LEVEL OF SERVICE SUMMARY

Site: Palmerston Road /
Burdette Street Intersection:
Post development: AM Peak

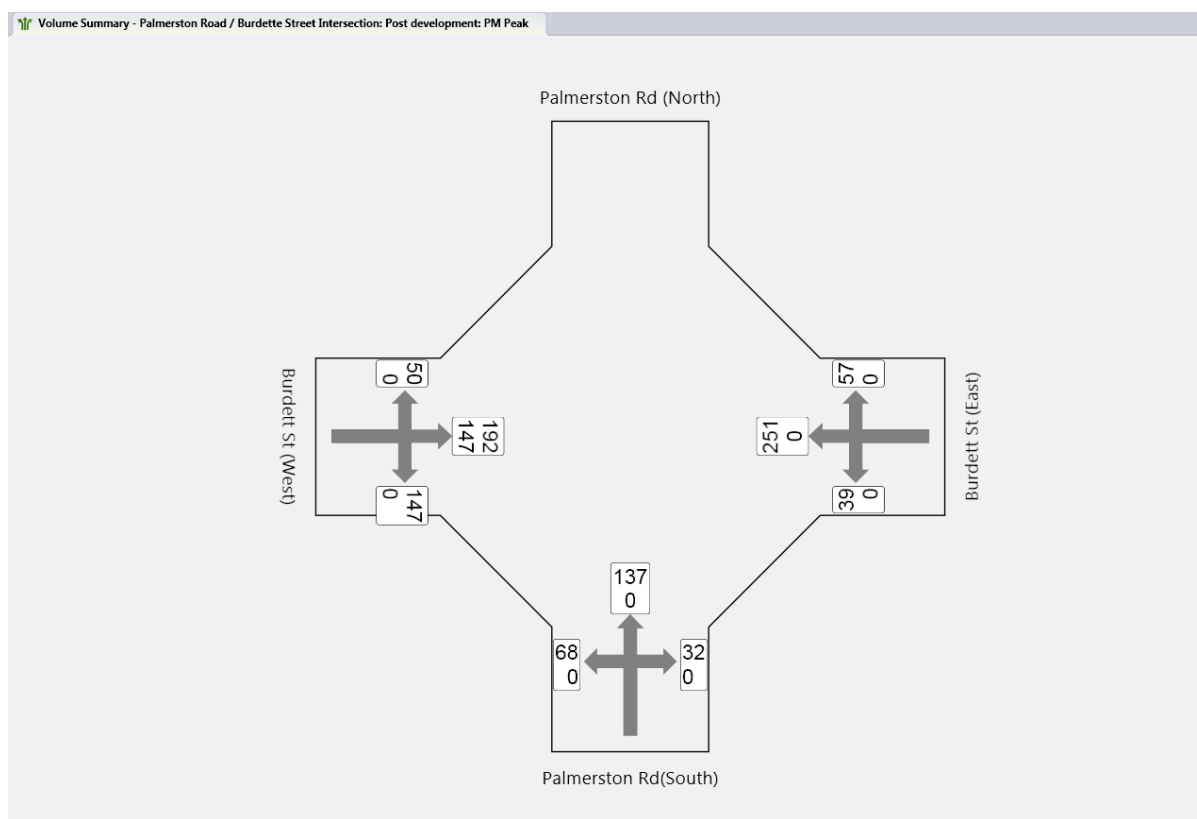
Palmerston Road / Burdette Street Intersection: Post development:
AM Peak
Stop (Two-Way)



	South	East	North	West	Intersection
LOS	NA	A	NA	A	NA

PM Peak – Post Development

Proposed Volumes



MOVEMENT SUMMARY

Site: Palmerston Road /
Burdette Street Intersection:
Post development: PM Peak

Palmerston Road / Burdette Street Intersection: Post development:
PM Peak
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Palmerston Rd(South)											
1	L	68	0.0	0.124	6.4	LOS A	0.0	0.0	0.00	0.75	41.1
2	T	137	0.0	0.124	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
3	R	32	0.0	0.124	6.6	LOS A	0.0	0.0	0.00	0.80	40.8
Approach		237	0.0	0.124	2.7	NA	0.0	0.0	0.00	0.32	45.8
East: Burdett St (East)											
4	L	39	0.0	0.256	10.7	LOS A	1.3	9.4	0.41	0.58	28.1
5	T	251	0.0	0.256	10.4	LOS A	1.3	9.4	0.41	0.85	28.2
6	R	57	0.0	0.256	10.6	LOS A	1.3	9.4	0.41	1.02	28.1
Approach		347	0.0	0.256	10.5	LOS A	1.3	9.4	0.41	0.85	28.2
West: Burdett St (West)											
10	L	50	0.0	0.516	12.5	LOS A	4.6	40.2	0.54	0.90	26.3
11	T	339	43.4	0.516	14.4	LOS A	4.6	40.2	0.54	0.92	26.4
12	R	147	0.0	0.516	12.4	LOS A	4.6	40.2	0.54	1.03	26.4
Approach		536	27.4	0.516	13.7	LOS A	4.6	40.2	0.54	0.95	26.4
All Vehicles		1120	13.1	0.516	10.4	NA	4.6	40.2	0.39	0.78	32.2

LANE SUMMARY

Site: Palmerston Road /
Burdette Street Intersection:
Post development: PM Peak

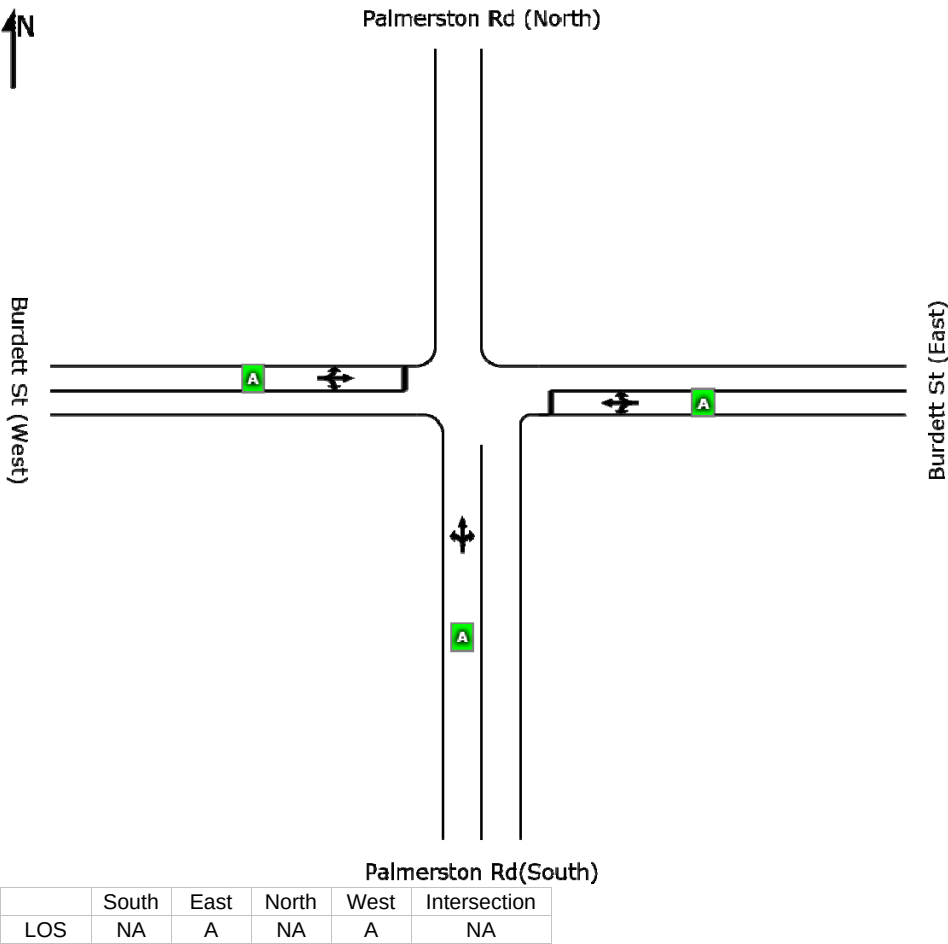
Palmerston Road / Burdette Street Intersection: Post development:
PM Peak
Stop (Two-Way)

Lane Use and Performance																
	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h							%	veh/h				
South: Palmerston Rd(South)																
Lane 1	68	137	32	237	0.0	1910	0.124	100	2.7	LOS A	0.0	0.0	335	–	0.0	0.0
Approach	68	137	32	237	0.0		0.124		2.7	NA	0.0	0.0				
East: Burdett St (East)																
Lane 1	39	251	57	347	0.0	1358	0.256	100	10.5	LOS A	1.3	9.4	100	–	0.0	0.0
Approach	39	251	57	347	0.0		0.256		10.5	LOS A	1.3	9.4				
West: Burdett St (West)																
Lane 1	50	339	140	529	27.8	1038	0.509	100	13.6	LOS A	4.5	39.1	100	–	0.0	0.0
Approach	50	339	140	529	27.8		0.509		13.6	LOS A	4.5	39.1				
Intersection				1113	13.2		0.509		10.3	NA	4.5	39.1				

LEVEL OF SERVICE SUMMARY

Site: Palmerston Road /
Burdette Street Intersection:
Post development: PM Peak

Palmerston Road / Burdette Street Intersection: Post development:
PM Peak
Stop (Two-Way)



SIDRA ANALYSIS SUMMARY RESULTS

26 July 2012

Edgeworth David Avenue / Palmerston Road Intersection**Executive Summary**

The intersection modelling analysis of the site for intersection based on Level of Service (LoS) and Degree of Saturation (DoS) as shown in the Table 1 below. The summary of results in Table 2 shows the average LoS and Dos for the intersection. The results confirm that the proposed level of traffic generation has a minimal impact on operation of the road system. Therefore, there would be no adverse impact on the street system and/or intersection operation of the road network as the result of the proposed redevelopment.

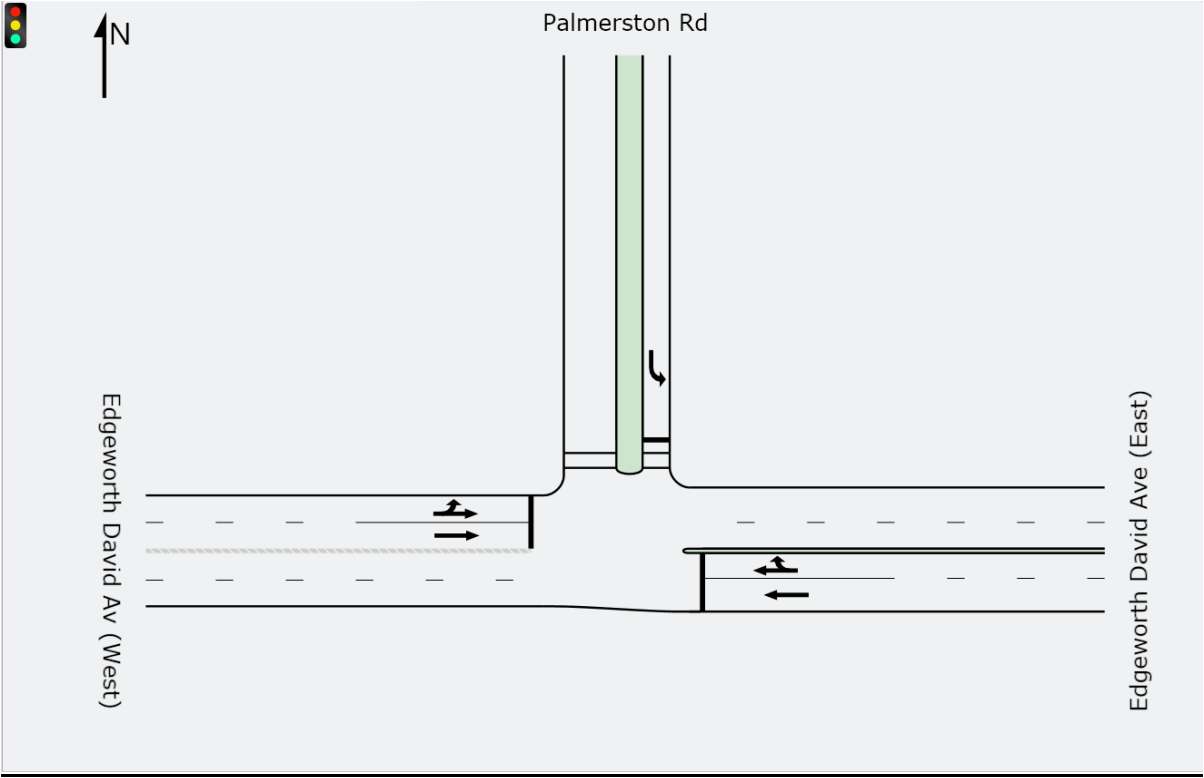
Table 1 - Criteria for Evaluating Capacity of Intersection

Level of Service	Degree of Saturation (DoS)	Ave. Delay/ Veh. (Secs)
A/B good operation	less than 0.80	Less than 28
C satisfactory	0.80 to 0.85	29-42
D poor but manageable	0.85 to 0.90	43-56
E at capacity	0.90 to 1.0	57-70
F unsatisfactory, extra capacity required	Over 1.0	Over 70

Table 2 – Intersections Operational Performances

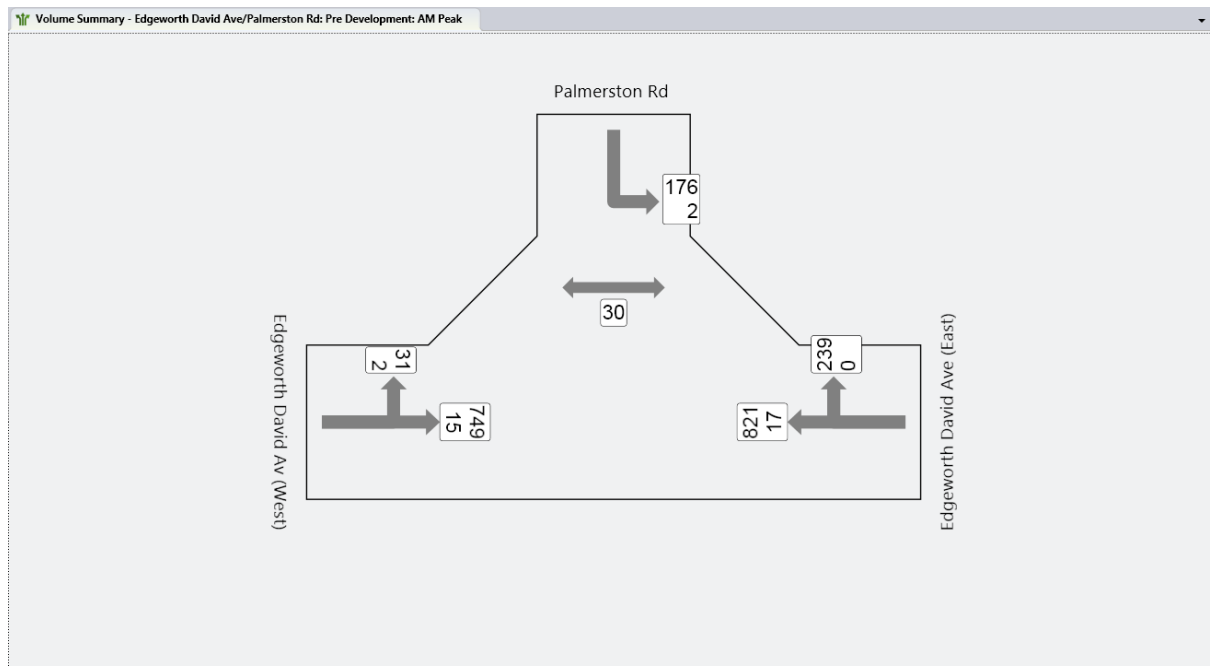
	AM Existing	AM Future	PM Existing	PM Future
LoS	A – 8.9 sec/veh	A – 9.2 sec/veh	A – 9.7 sec/veh	A – 9.7sec/veh
DoS	A – 0.575	A – 0.588	A – 0.627	A – 0.636

Layout



AM Peak – Pre Development

Existing Volumes



MOVEMENT SUMMARY

**Site: Edgeworth David
Ave/Palmerston Rd: Pre
Development: AM Peak**

Edgeworth David Ave/Palmerston Rd: Pre Development: AM Peak
Signals - Actuated Cycle Time = 41 seconds

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Edgeworth David Ave (East)											
11	T	838	2.0	0.522	2.7	LOS A	4.9	34.4	0.53	0.39	22.9
12	R	239	0.0	0.522	13.0	LOS A	4.9	34.4	0.81	0.79	17.2
Approach		1077	1.6	0.522	4.9	LOS A	4.9	34.4	0.59	0.48	21.3
North: Palmerston Rd											
1	L	178	1.1	0.286	17.9	LOS B	2.7	19.1	0.75	0.76	30.8
Approach		178	1.1	0.286	17.9	LOS B	2.7	19.1	0.75	0.76	30.8
West: Edgeworth David Av (West)											
4	L	33	6.1	0.575	15.9	LOS B	6.7	47.6	0.83	0.80	18.5
5	T	764	2.0	0.575	12.2	LOS A	6.7	47.6	0.83	0.71	17.9
Approach		797	2.1	0.575	12.3	LOS A	6.7	47.6	0.83	0.72	17.9
All Vehicles		2052	1.8	0.575	8.9	LOS A	6.7	47.6	0.70	0.60	21.1

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue		Prop. Queued	Effective Stop Rate per ped
					Pedestrian ped	Distance m		
P1	Across N approach	30	14.9	LOS B	0.0	0.0	0.85	0.85
All Pedestrians		30	14.9	LOS B			0.85	0.85

LANE SUMMARY

Site: Edgeworth David Ave/Palmerston Rd: Pre Development: AM Peak

Edgeworth David Ave/Palmerston Rd: Pre Development: AM Peak
Signals - Actuated Cycle Time = 41 seconds

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
East: Edgeworth David Ave (East)																
Lane 1	0	729	0	729	2.0	1397	0.522	100	1.6	LOS A	3.6	25.3	35	–	0.0	0.0
Lane 2	0	109	239	348	0.6	668	0.522	100	11.9	LOS A	4.9	34.4	35	–	0.0	3.5
Approach	0	838	239	1077	1.6		0.522		4.9	LOS A	4.9	34.4				
North: Palmerston Rd																
Lane 1	178	0	0	178	1.1	623	0.286	100	17.9	LOS B	2.7	19.1	320	–	0.0	0.0
Approach	178	0	0	178	1.1		0.286		17.9	LOS B	2.7	19.1				
West: Edgeworth David Av (West)																
Lane 1	33	365	0	398	2.3	692	0.575	100	12.5	LOS A	6.7	47.6	95	–	0.0	0.0
Lane 2	0	399	0	399	2.0	693	0.575	100	12.2	LOS A	6.7	47.5	95	–	0.0	0.0
Approach	33	764	0	797	2.1		0.575		12.3	LOS A	6.7	47.6				
Intersection				2052	1.8		0.575		8.9	LOS A	6.7	47.6				

PHASING SUMMARY

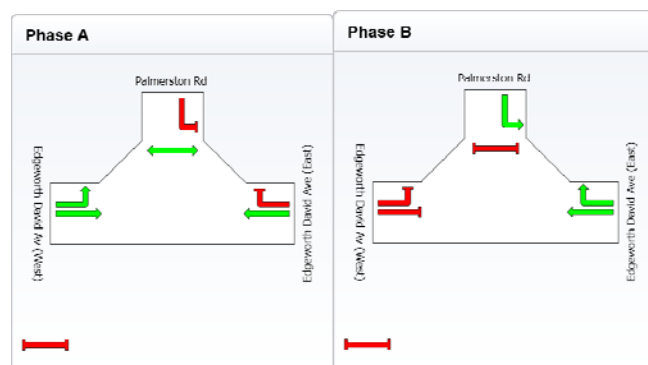
Site: Edgeworth David Ave/Palmerston Rd: Pre Development: AM Peak

Edgeworth David Ave/Palmerston Rd: Pre Development: AM Peak
Signals - Actuated Cycle Time = 41 seconds

Phase times determined by the program
Sequence: 3 Phase (phase reduction applied)
Input Sequence: A, B, C
Output Sequence: A, B

Phase Timing Results

Phase	A	B
Green Time (sec)	15	14
Yellow Time (sec)	4	4
All-Red Time (sec)	2	2
Phase Time (sec)	21	20
Phase Split	51 %	49 %

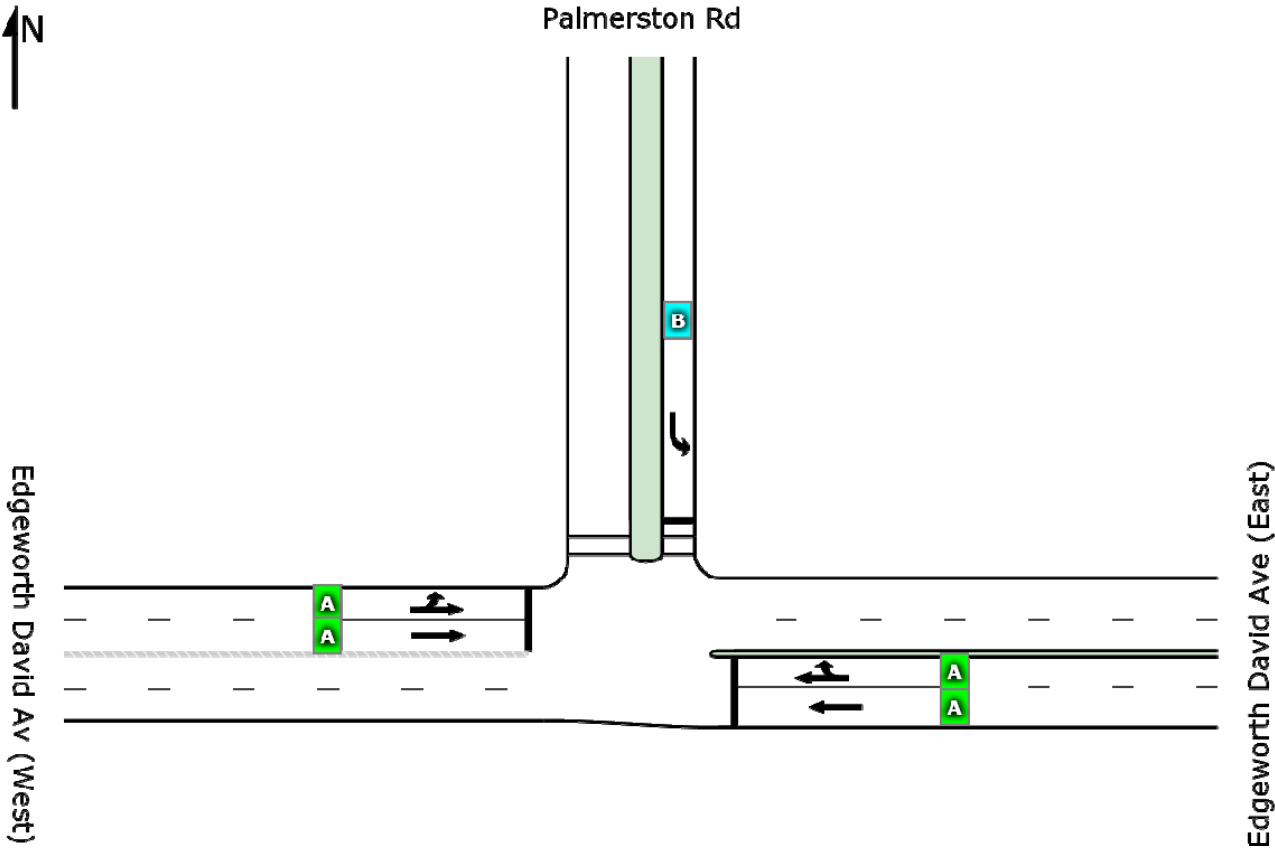


	Normal Movement		Permitted/Opposed
	Slip-Lane Movement		Opposed Slip-Lane
	Stopped Movement		Continuous Movement
	Turn On Red		Undetected Movement
			Phase Transition Applied

LEVEL OF SERVICE SUMMARY

Site: Edgeworth David Ave/Palmerston Rd: Pre Development: AM Peak

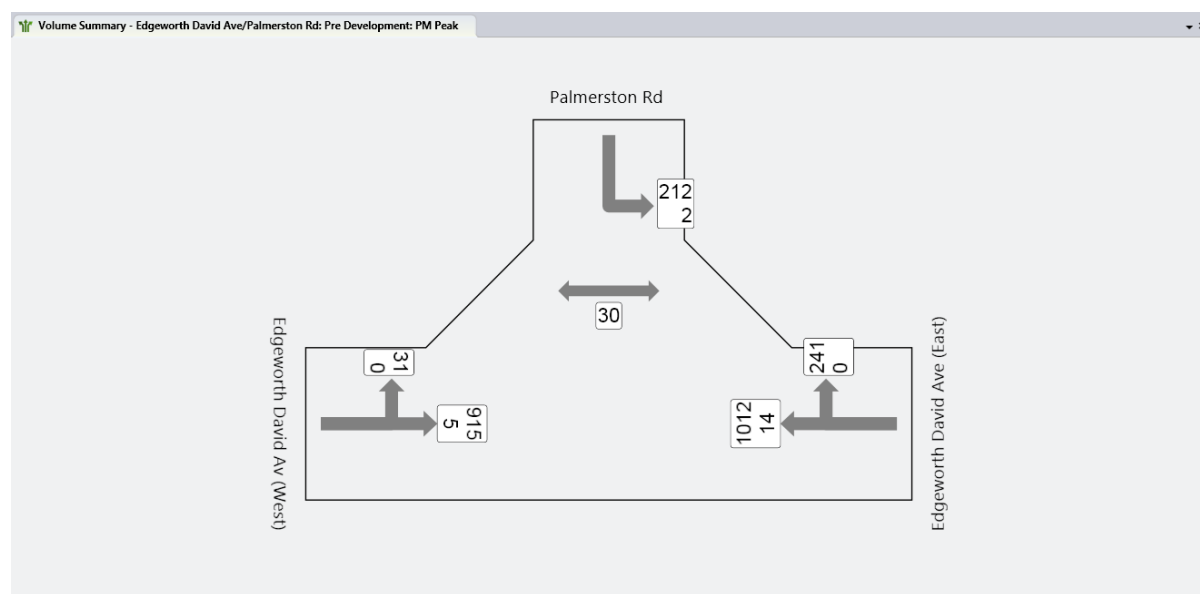
Edgeworth David Ave/Palmerston Rd: Pre Development: AM Peak
Signals - Actuated Cycle Time = 41 seconds



	East	North	West	Intersection
LOS	A	B	A	A

PM Peak – Pre Development

Existing Volumes



MOVEMENT SUMMARY

Site: Edgeworth David Ave/Palmerston Rd: Pre Development: PM Peak

Edgeworth David Ave/Palmerston Rd: Pre Development: PM Peak
Signals - Actuated Cycle Time = 48 seconds

Movement Performance - Vehicles

Mov ID	Turn	Demand		HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Flow						Vehicles	Distance			
		veh/h	%					v/c	sec			
East: Edgeworth David Ave (East)												
11	T	1026	1.4	0.578	3.0	LOS A	6.6	46.4	0.52	0.39	22.6	
12	R	241	0.0	0.578	13.9	LOS A	6.6	46.4	0.82	0.80	16.6	
Approach		1267	1.1	0.578	5.0	LOS A	6.6	46.4	0.58	0.47	21.1	
North: Palmerston Rd												
1	L	214	0.9	0.331	19.5	LOS B	3.8	26.7	0.75	0.77	29.7	
Approach		214	0.9	0.331	19.5	LOS B	3.8	26.7	0.75	0.77	29.7	
West: Edgeworth David Av (West)												
4	L	31	0.0	0.627	17.1	LOS B	9.2	64.9	0.84	0.81	17.8	
5	T	920	0.5	0.627	13.5	LOS A	9.2	64.9	0.84	0.73	17.2	
Approach		951	0.5	0.627	13.6	LOS A	9.2	64.9	0.84	0.73	17.3	
All Vehicles		2432	0.9	0.627	9.7	LOS A	9.2	64.9	0.70	0.60	20.5	

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue		Prop. Queued	Effective Stop Rate
					Pedestrian	Distance		
		ped/h	sec		ped	m		per ped
P1	Across N approach	30	18.4	LOS B	0.0	0.0	0.88	0.88
All Pedestrians		30	18.4	LOS B			0.88	0.88

LANE SUMMARY

Site: Edgeworth David Ave/Palmerston Rd: Pre Development: PM Peak

Edgeworth David Ave/Palmerston Rd: Pre Development: PM Peak
Signals - Actuated Cycle Time = 48 seconds

Lane Use and Performance

	Demand Flows				HV		Cap.	Deg.	Lane	Average	Level of	95% Back of Queue		Lane	SL Type	Cap.	Prob.
	L	T	R	Total			Satn	Util.	Delay	Service		Vehicles	Distance	Length		Adj.	Block.
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec			veh	m	m		%	%
East: Edgeworth David Ave (East)																	
Lane 1	0	859	0	859	1.4	1487	0.578	100	1.5	LOS A	4.6	32.7	35	–	0.0	0.0	
Lane 2	0	167	241	408	0.6	707	0.578	100	12.4	LOS A	6.6	46.4	35	–	0.0	30.6	
Approach	0	1026	241	1267	1.1		0.578		5.0	LOS A	6.6	46.4					
North: Palmerston Rd																	
Lane 1	214	0	0	214	0.9	647	0.331	100	19.5	LOS B	3.8	26.7	320	–	0.0	0.0	
Approach	214	0	0	214	0.9		0.331		19.5	LOS B	3.8	26.7					
West: Edgeworth David Av (West)																	
Lane 1	31	445	0	476	0.5	759	0.627	100	13.7	LOS A	9.2	64.9	95	–	0.0	0.0	
Lane 2	0	475	0	475	0.5	757	0.627	100	13.5	LOS A	9.2	64.8	95	–	0.0	0.0	
Approach	31	920	0	951	0.5		0.627		13.6	LOS A	9.2	64.9					
Intersection				2432	0.9		0.627		9.7	LOS A	9.2	64.9					

PHASING SUMMARY

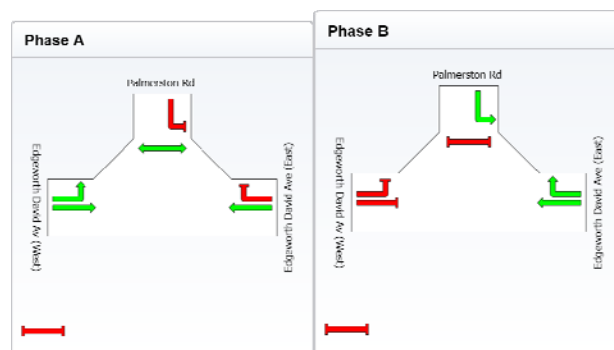
Site: Edgeworth David Ave/Palmerston Rd: Pre Development: PM Peak

Edgeworth David Ave/Palmerston Rd: Pre Development: PM Peak
Signals - Actuated Cycle Time = 48 seconds

Phase times determined by the program
Sequence: 3 Phase (phase reduction applied)
Input Sequence: A, B, C
Output Sequence: A, B

Phase Timing Results

Phase	A	B
Green Time (sec)	19	17
Yellow Time (sec)	4	4
All-Red Time (sec)	2	2
Phase Time (sec)	25	23
Phase Split	52 %	48 %

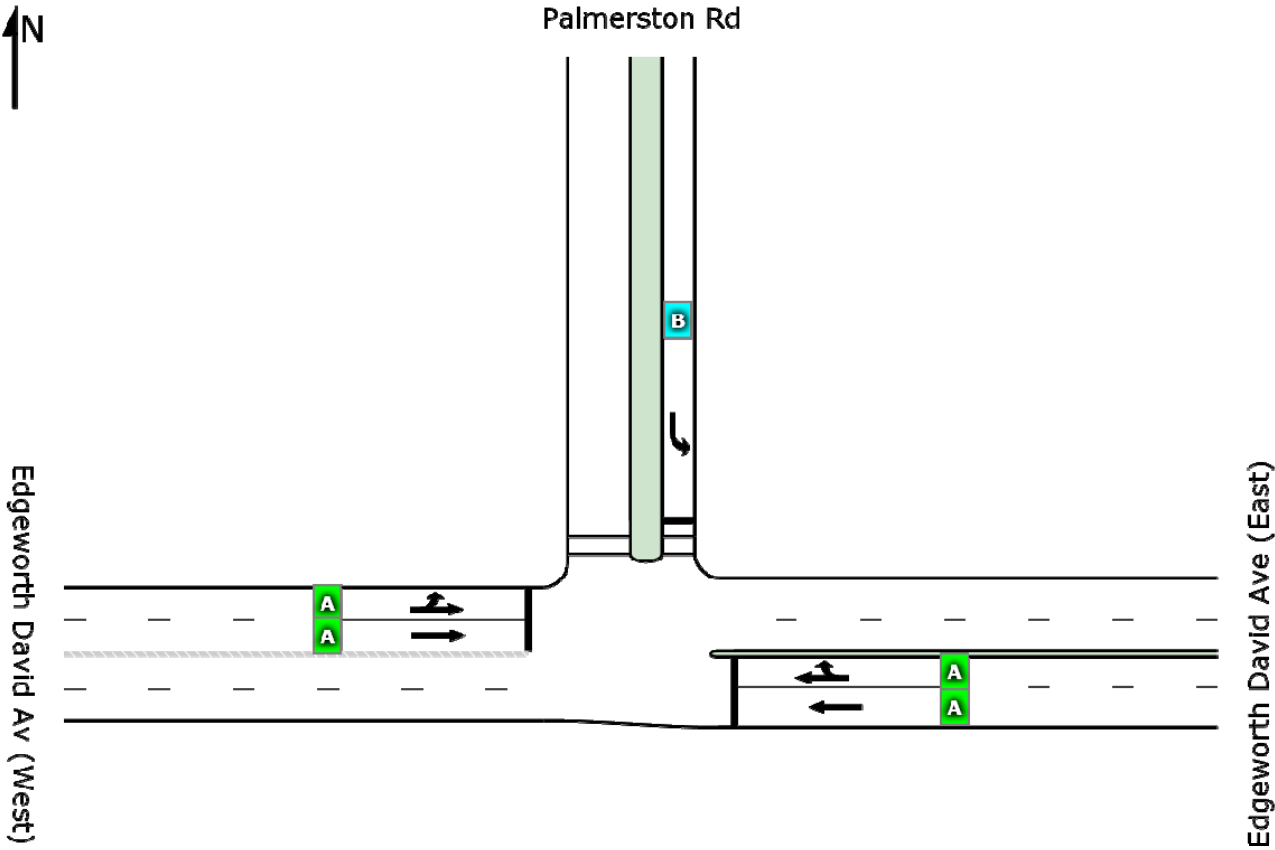


	Normal Movement		Permitted/Opposed
	Slip-Lane Movement		Opposed Slip-Lane
	Stopped Movement		Continuous Movement
	Turn On Red		Undetected Movement
			Phase Transition Applied

LEVEL OF SERVICE SUMMARY

Site: Edgeworth David Ave/Palmerston Rd: Pre Development: PM Peak

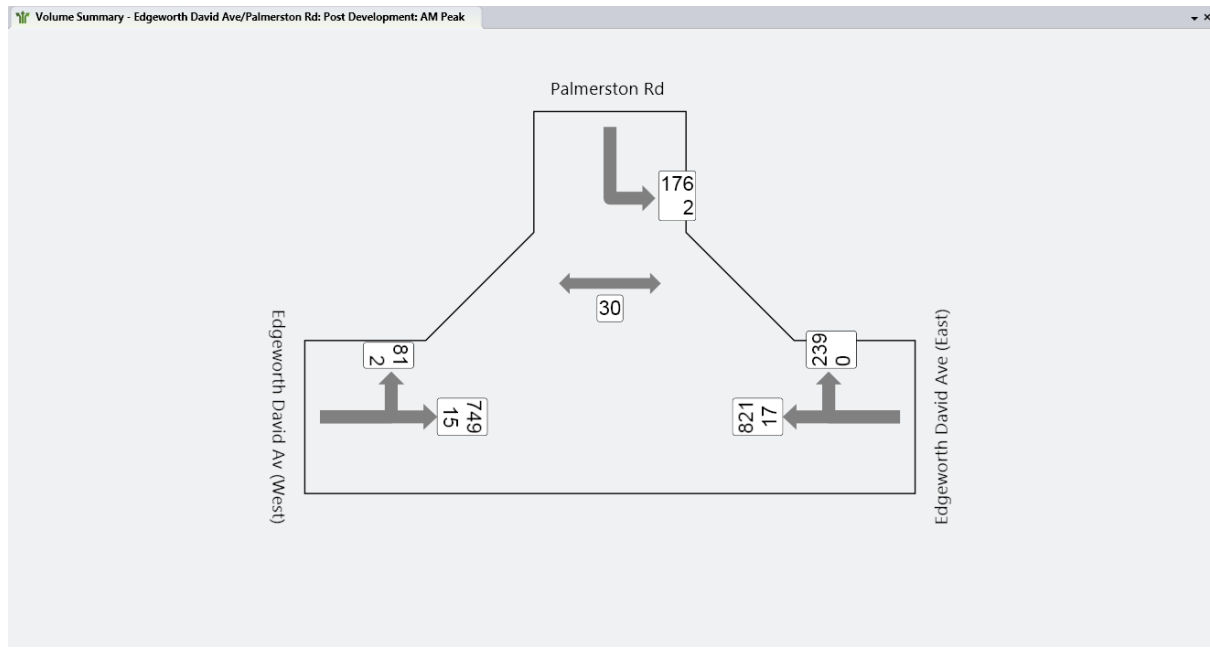
Edgeworth David Ave/Palmerston Rd: Pre Development: PM Peak
Signals - Actuated Cycle Time = 48 seconds



	East	North	West	Intersection
LOS	A	B	A	A

AM Peak – Post Development

Proposed Volumes



MOVEMENT SUMMARY

Site: Edgeworth David Ave/Palmerston Rd: Post Development: AM Peak

Edgeworth David Ave/Palmerston Rd: Post Development: AM Peak
Signals - Actuated Cycle Time = 42 seconds

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Edgeworth David Ave (East)											
11	T	838	2.0	0.523	2.6	LOS A	5.0	35.2	0.52	0.39	23.0
12	R	239	0.0	0.523	13.7	LOS A	5.0	35.2	0.82	0.79	16.7
Approach		1077	1.6	0.523	5.1	LOS A	5.0	35.2	0.59	0.48	21.1
North: Palmerston Rd											
1	L	178	1.1	0.293	18.4	LOS B	2.8	19.8	0.76	0.76	30.4
Approach		178	1.1	0.293	18.4	LOS B	2.8	19.8	0.76	0.76	30.4
West: Edgeworth David Av (West)											
4	L	83	2.4	0.588	15.8	LOS B	7.2	51.1	0.83	0.80	18.5
5	T	764	2.0	0.588	12.1	LOS A	7.2	51.4	0.83	0.71	18.0
Approach		847	2.0	0.588	12.4	LOS A	7.2	51.4	0.83	0.72	18.0
All Vehicles		2102	1.7	0.588	9.2	LOS A	7.2	51.4	0.70	0.60	20.9

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue		Prop. Queued	Effective Stop Rate per ped
					Pedestrian ped	Distance m		
P1	Across N approach	30	15.4	LOS B	0.0	0.0	0.86	0.86
All Pedestrians		30	15.4	LOS B			0.86	0.86

LANE SUMMARY

Site: Edgeworth David Ave/Palmerston Rd: Post Development: AM Peak

Edgeworth David Ave/Palmerston Rd: Post Development: AM Peak
Signals - Actuated Cycle Time = 42 seconds

Lane Use and Performance

	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
East: Edgeworth David Ave (East)																
Lane 1	0	738	0	738	2.0	1410	0.523	100	1.6	LOS A	3.6	25.8	35	–	0.0	0.0
Lane 2	0	100	239	339	0.6	648	0.523	100	12.6	LOS A	5.0	35.2	35	–	0.0	5.5
Approach	0	838	239	1077	1.6		0.523		5.1	LOS A	5.0	35.2				
North: Palmerston Rd																
Lane 1	178	0	0	178	1.1	608	0.293	100	18.4	LOS B	2.8	19.8	320	–	0.0	0.0
Approach	178	0	0	178	1.1		0.293		18.4	LOS B	2.8	19.8				
West: Edgeworth David Av (West)																
Lane 1	83	339	0	422	2.1	718	0.588	100	12.8	LOS A	7.2	51.1	95	–	0.0	0.0
Lane 2	0	425	0	425	2.0	722	0.588	100	12.1	LOS A	7.2	51.4	95	–	0.0	0.0
Approach	83	764	0	847	2.0		0.588		12.4	LOS A	7.2	51.4				
Intersection				2102	1.7		0.588		9.2	LOS A	7.2	51.4				

PHASING SUMMARY

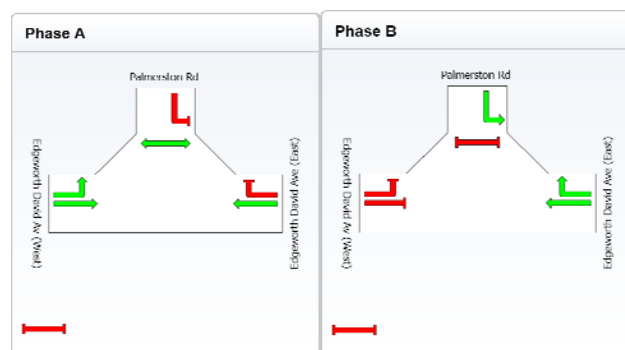
Site: Edgeworth David Ave/Palmerston Rd: Post Development: AM Peak

Edgeworth David Ave/Palmerston Rd: Post Development: AM Peak
Signals - Actuated Cycle Time = 42 seconds

Phase times determined by the program
Sequence: 3 Phase (phase reduction applied)
Input Sequence: A, B, C
Output Sequence: A, B

Phase Timing Results

Phase	A	B
Green Time (sec)	16	14
Yellow Time (sec)	4	4
All-Red Time (sec)	2	2
Phase Time (sec)	22	20
Phase Split	52 %	48 %

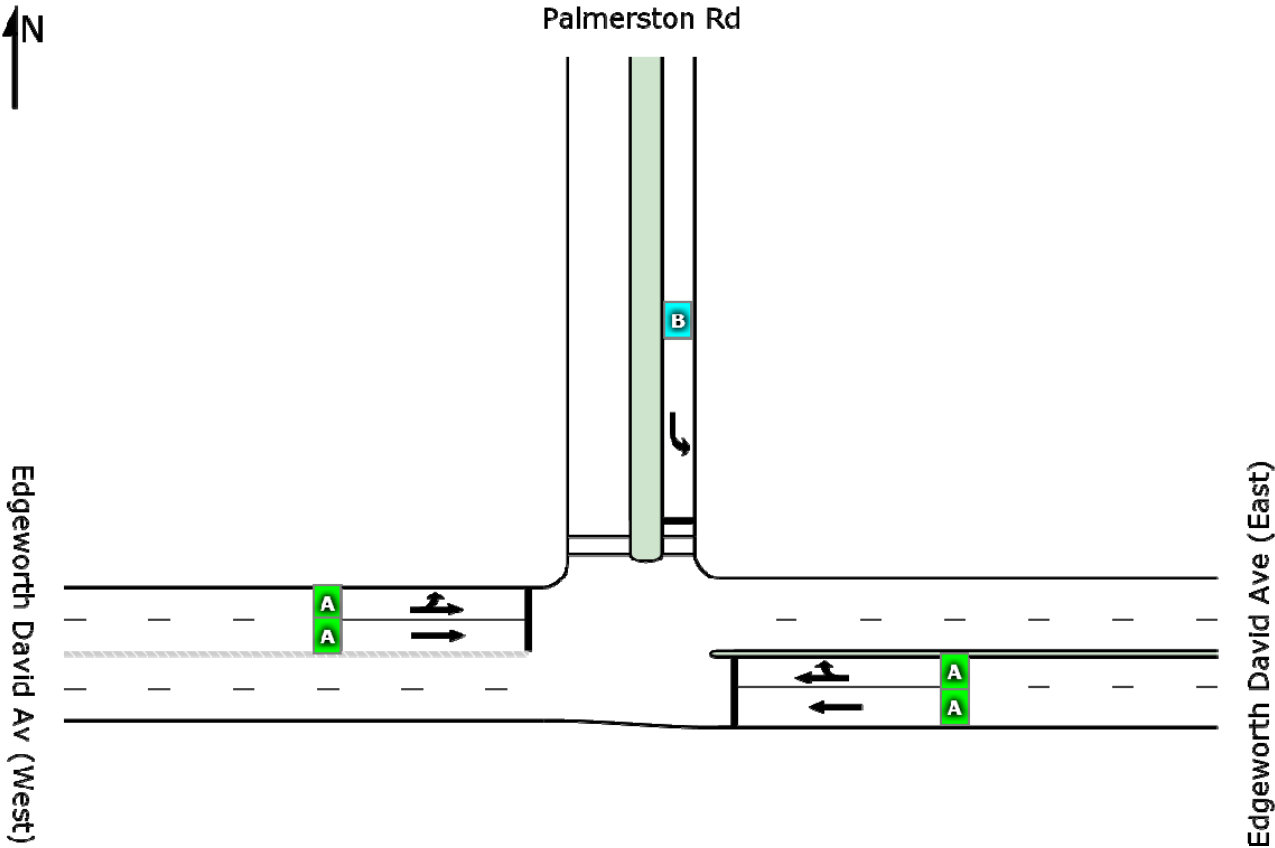


	Normal Movement		Permitted/Opposed
	Slip-Lane Movement		Opposed Slip-Lane
	Stopped Movement		Continuous Movement
	Turn On Red		Undetected Movement
			Phase Transition Applied

LEVEL OF SERVICE SUMMARY

Site: Edgeworth David Ave/
Palmerston Rd: Post
Development: AM Peak

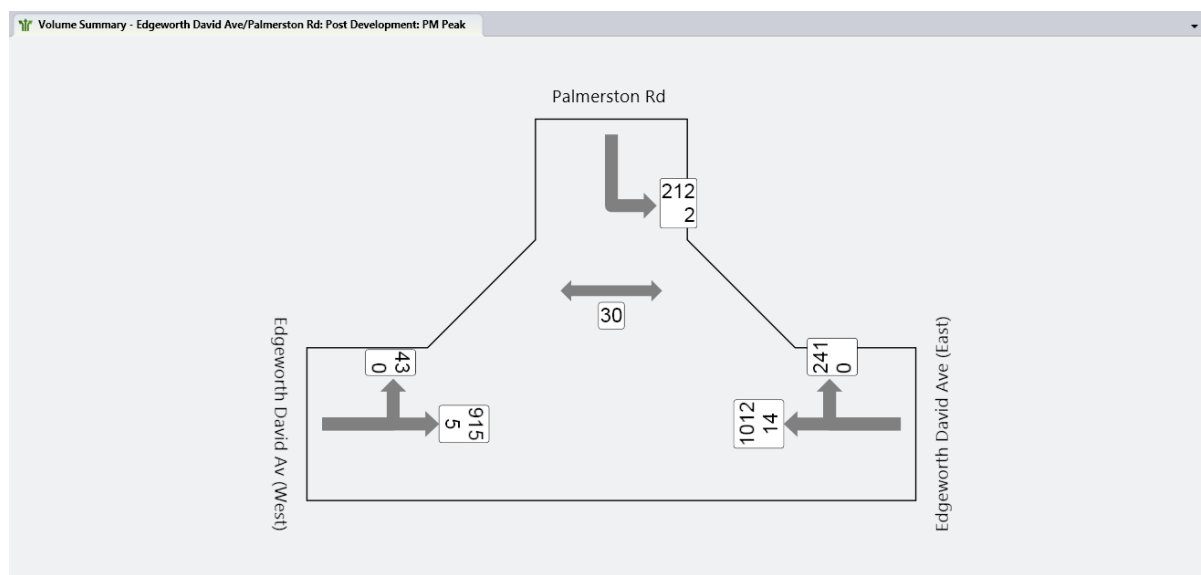
Edgeworth David Ave/
Palmerston Rd: Post Development: AM Peak
Signals - Actuated Cycle Time = 42 seconds



	East	North	West	Intersection
LOS	A	B	A	A

PM Peak – Post Development

Proposed Volumes



MOVEMENT SUMMARY

Site: Edgeworth David
Ave/Palmerston Rd: Post
Development: PM Peak

Edgeworth David Ave/Palmerston Rd: Pre Development: PM Peak
Signals - Actuated Cycle Time = 48 seconds

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Edgeworth David Ave (East)											
11	T	1026	1.4	0.578	3.0	LOS A	6.6	46.4	0.52	0.39	22.6
12	R	241	0.0	0.578	13.9	LOS A	6.6	46.4	0.82	0.80	16.6
Approach		1267	1.1	0.578	5.0	LOS A	6.6	46.4	0.58	0.47	21.1
North: Palmerston Rd											
1	L	214	0.9	0.331	19.5	LOS B	3.8	26.7	0.75	0.77	29.7
Approach		214	0.9	0.331	19.5	LOS B	3.8	26.7	0.75	0.77	29.7
West: Edgeworth David Av (West)											
4	L	43	0.0	0.636	17.2	LOS B	9.4	66.0	0.84	0.81	17.8
5	T	920	0.5	0.636	13.5	LOS A	9.4	66.0	0.84	0.73	17.2
Approach		963	0.5	0.636	13.7	LOS A	9.4	66.0	0.84	0.73	17.2
All Vehicles		2444	0.9	0.636	9.7	LOS A	9.4	66.0	0.70	0.60	20.5

Movement Performance - Pedestrians

Movement Performance - Pedestrians		Demand Flow	Average Delay	Level of Service	Average Back of Queue		Prop. Queued	Effective Stop Rate
Mov ID	Description				Pedestrian	Distance		
		ped/h	sec		ped	m		per ped
P1	Across N approach	30	18.4	LOS B	0.0	0.0	0.88	0.88
All Pedestrians		30	18.4	LOS B			0.88	0.88

LANE SUMMARY

Site: Edgeworth David Ave/Palmerston Rd: Post Development: PM Peak

Edgeworth David Ave/Palmerston Rd: Pre Development: PM Peak
Signals - Actuated Cycle Time = 48 seconds

Lane Use and Performance

	Demand Flows				HV		Cap.	Deg.	Lane	Average	Level of	95% Back of Queue		Lane	SL Type	Cap.	Prob.
	L	T	R	Total			Satn	Util.	Delay	Service	Vehicles	Distance	Length		Adj.	Block.	
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec			veh	m	m		%	%
East: Edgeworth David Ave (East)																	
Lane 1	0	859	0	859	1.4	1487	0.578	100	1.5	LOS A	4.6	32.7	35	–	0.0	0.0	
Lane 2	0	167	241	408	0.6	707	0.578	100	12.4	LOS A	6.6	46.4	35	–	0.0	30.7	
Approach	0	1026	241	1267	1.1		0.578		5.0	LOS A	6.6	46.4					
North: Palmerston Rd																	
Lane 1	214	0	0	214	0.9	647	0.331	100	19.5	LOS B	3.8	26.7	320	–	0.0	0.0	
Approach	214	0	0	214	0.9		0.331		19.5	LOS B	3.8	26.7					
West: Edgeworth David Av (West)																	
Lane 1	43	439	0	482	0.5	758	0.636	100	13.8	LOS A	9.4	66.0	95	–	0.0	0.0	
Lane 2	0	481	0	481	0.5	757	0.636	100	13.5	LOS A	9.4	66.0	95	–	0.0	0.0	
Approach	43	920	0	963	0.5		0.636		13.7	LOS A	9.4	66.0					
Intersection				2444	0.9		0.636		9.7	LOS A	9.4	66.0					

PHASING SUMMARY

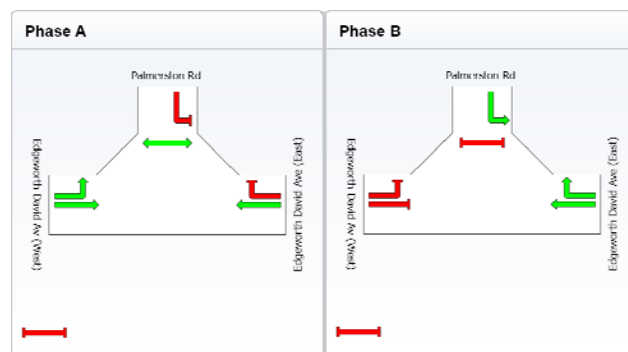
Site: Edgeworth David Ave/Palmerston Rd: Post Development: PM Peak

Edgeworth David Ave/Palmerston Rd: Pre Development: PM Peak
Signals - Actuated Cycle Time = 48 seconds

Phase times determined by the program
Sequence: 3 Phase (phase reduction applied)
Input Sequence: A, B, C
Output Sequence: A, B

Phase Timing Results

Phase	A	B
Green Time (sec)	19	17
Yellow Time (sec)	4	4
All-Red Time (sec)	2	2
Phase Time (sec)	25	23
Phase Split	52 %	48 %

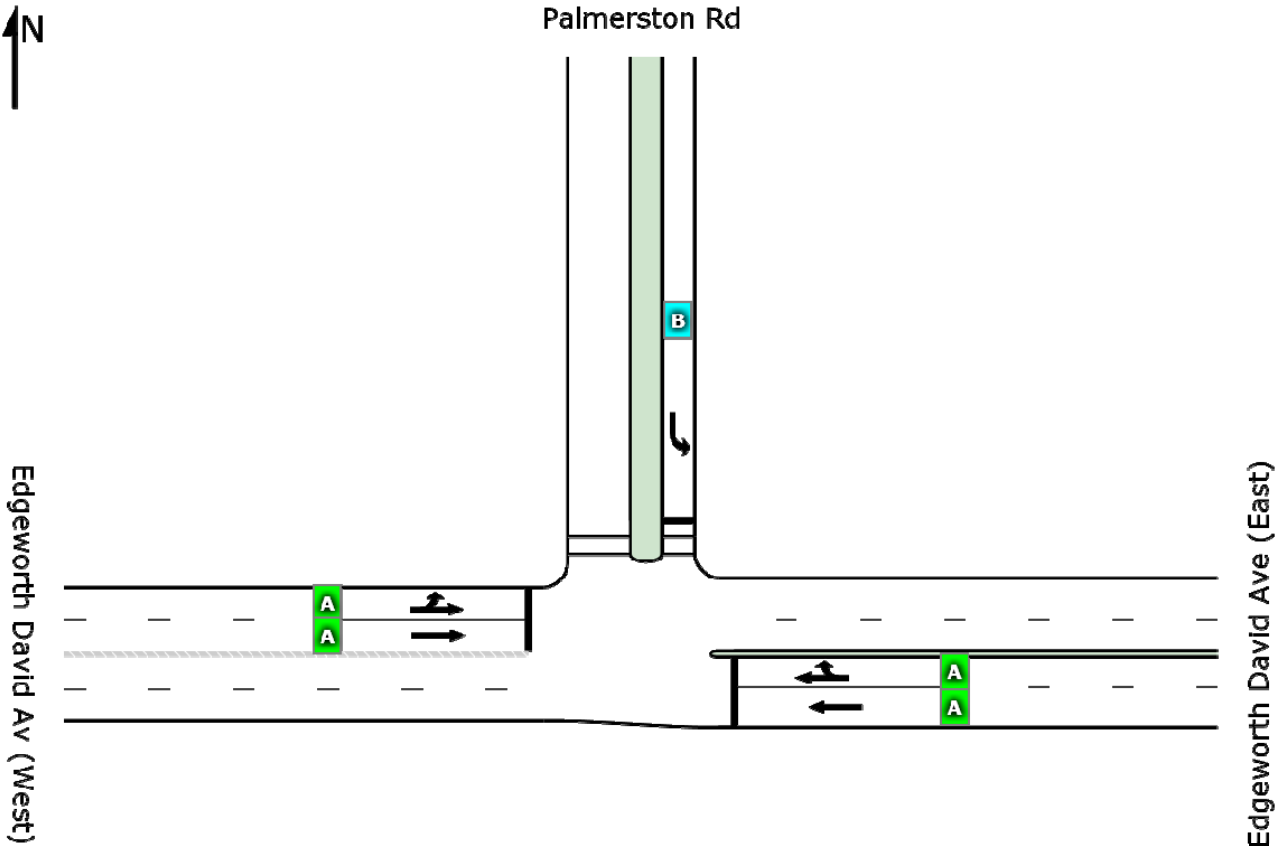


	Normal Movement		Permitted/Opposed
	Slip-Lane Movement		Opposed Slip-Lane
	Stopped Movement		Continuous Movement
	Turn On Red		Undetected Movement
			Phase Transition Applied

LEVEL OF SERVICE SUMMARY

Site: Edgeworth David Ave/
Palmerston Rd: Post
Development: PM Peak

Edgeworth David Ave/
Palmerston Rd: Pre Development: PM Peak
Signals - Actuated Cycle Time = 48 seconds



	East	North	West	Intersection
LOS	A	B	A	A

SIDRA ANALYSIS SUMMARY RESULTS

26 July 2012

Derby Road / Burdett Street / Jubilee Street Intersection**Executive Summary**

The intersection modelling analysis of the site for intersection based on Level of Service (LoS) and Degree of Saturation (DoS) as shown in the Table 1 below. The summary of results in Table 2 shows the average LoS and Dos for the intersection. The results confirm that the proposed level of traffic generation has a minimal impact on operation of the road system. Therefore, there would be no adverse impact on the street system and/or intersection operation of the road network as the result of the proposed redevelopment.

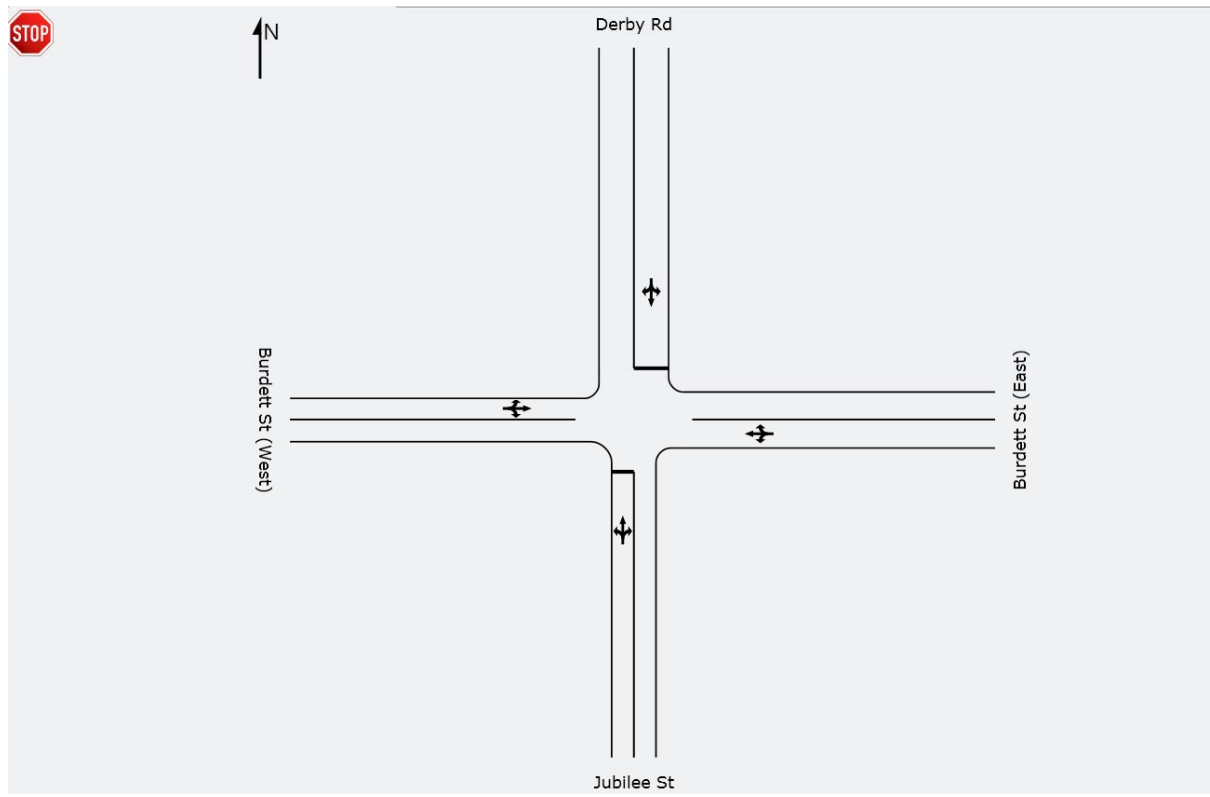
Table 1 - Criteria for Evaluating Capacity of Intersection

Level of Service	Degree of Saturation (DoS)	Ave. Delay/ Veh. (Secs)
A/B good operation	less than 0.80	Less than 28
C satisfactory	0.80 to 0.85	29-42
D poor but manageable	0.85 to 0.90	43-56
E at capacity	0.90 to 1.0	57-70
F unsatisfactory, extra capacity required	Over 1.0	Over 70

Table 2 – Intersections Operational Performances

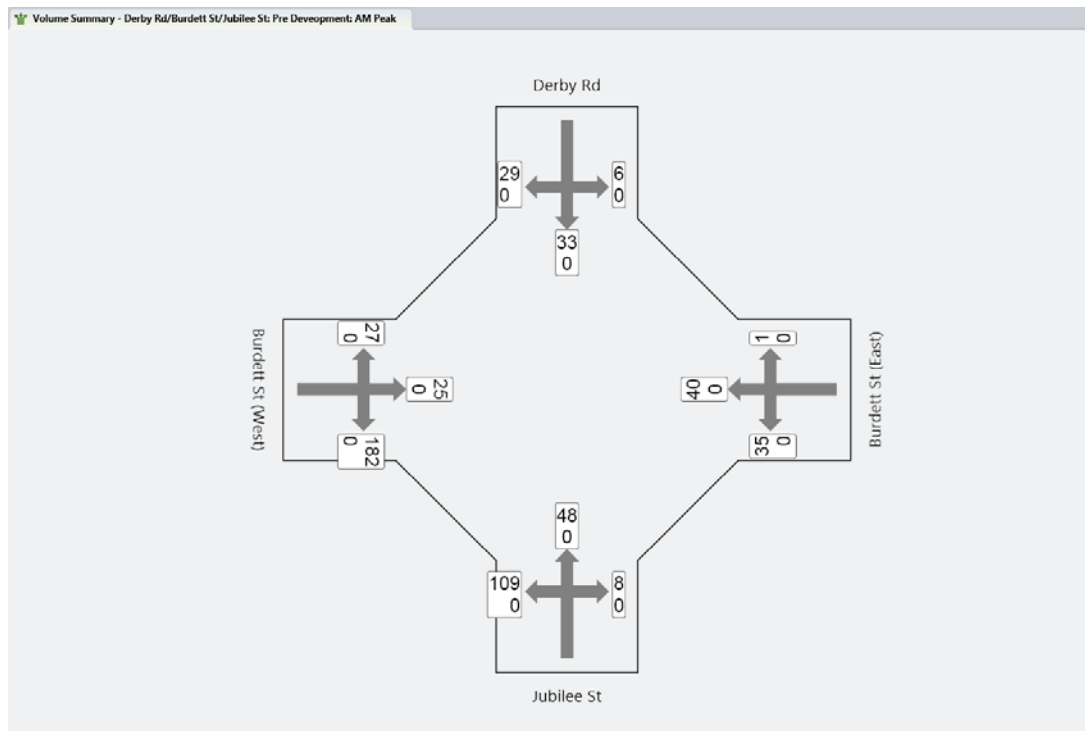
	AM Existing	AM Future	PM Existing	PM Future
LoS	A – 7.5 sec/veh	A – 7.9 sec/veh	A – 7.7 sec/veh	A – 7.8 sec/veh
DoS	A – 0.145	A – 0.22	A – 0.153	A – 0.177

Layout



AM Peak – Pre Development

Existing Volumes



MOVEMENT SUMMARY

Site: Derby Rd/Burdett St/Jubilee St: Pre Development: AM Peak

Derby Rd/Burdett St/Jubilee St: Pre Development: AM Peak

Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
		veh/h	%	v/c			Vehicles veh	Distance m			
South: Jubilee St											
1	L	109	0.0	0.145	10.0	LOS A	0.6	4.2	0.16	0.90	28.3
2	T	48	0.0	0.145	9.7	LOS A	0.6	4.2	0.16	0.96	28.5
3	R	8	0.0	0.145	10.0	LOS A	0.6	4.2	0.16	0.99	28.3
Approach		165	0.0	0.145	9.9	LOS A	0.6	4.2	0.16	0.92	28.4
East: Burdett St (East)											
4	L	35	0.0	0.040	6.6	LOS A	0.2	1.4	0.18	0.61	37.2
5	T	40	0.0	0.040	0.1	LOS A	0.2	1.4	0.18	0.00	44.9
6	R	1	0.0	0.040	6.6	LOS A	0.2	1.4	0.18	0.66	37.2
Approach		76	0.0	0.040	3.2	NA	0.2	1.4	0.18	0.29	40.9
North: Derby Rd											
7	L	6	0.0	0.087	11.3	LOS A	0.3	2.2	0.29	0.79	36.8
8	T	33	0.0	0.087	11.0	LOS A	0.3	2.2	0.29	0.92	37.1
9	R	29	0.0	0.087	11.3	LOS A	0.3	2.2	0.29	0.96	36.9
Approach		68	0.0	0.087	11.1	LOS A	0.3	2.2	0.29	0.92	37.0
West: Burdett St (West)											
10	L	27	0.0	0.135	6.7	LOS A	0.7	4.8	0.19	0.49	29.3
11	T	25	0.0	0.135	0.2	LOS A	0.7	4.8	0.19	0.00	39.3
12	R	182	0.0	0.135	7.0	LOS A	0.7	4.8	0.19	0.62	28.8
Approach		234	0.0	0.135	6.2	NA	0.7	4.8	0.19	0.54	29.7
All Vehicles		543	0.0	0.145	7.5	NA	0.7	4.8	0.19	0.67	32.6

LANE SUMMARY

Site: Derby Rd/Burdett St/Jubilee St: Pre Development: AM Peak

Derby Rd/Burdett St/Jubilee St: Pre Development: AM Peak

Stop (Two-Way)

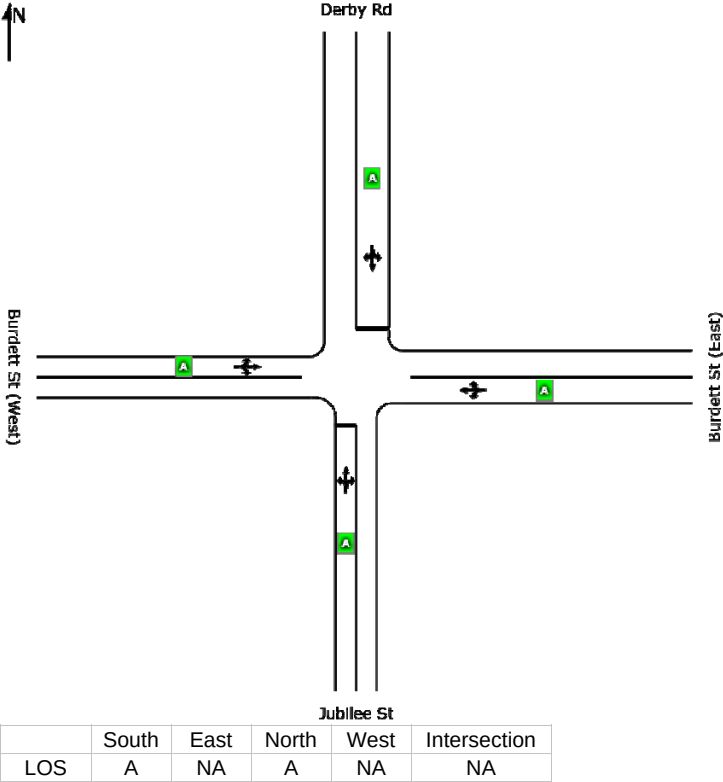
Lane Use and Performance																
	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Jubilee St																
Lane 1	109	48	8	165	0.0	1137	0.145	100	9.9	LOS A	0.6	4.2	100	–	0.0	0.0
Approach	109	48	8	165	0.0		0.145		9.9	LOS A	0.6	4.2				
East: Burdett St (East)																
Lane 1	35	40	1	76	0.0	1903	0.040	100	3.2	LOS A	0.2	1.4	250	–	0.0	0.0
Approach	35	40	1	76	0.0		0.040		3.2	NA	0.2	1.4				
North: Derby Rd																
Lane 1	6	33	29	68	0.0	778	0.087	100	11.1	LOS A	0.3	2.2	340	–	0.0	0.0
Approach	6	33	29	68	0.0		0.087		11.1	LOS A	0.3	2.2				
West: Burdett St (West)																
Lane 1	27	25	182	234	0.0	1731	0.135	100	6.2	LOS A	0.7	4.8	65	–	0.0	0.0
Approach	27	25	182	234	0.0		0.135		6.2	NA	0.7	4.8				
Intersection				543	0.0		0.145		7.5	NA	0.7	4.8				

LEVEL OF SERVICE SUMMARY

Site: Derby Rd/Burdett St/Jubilee St: Pre Development: AM Peak

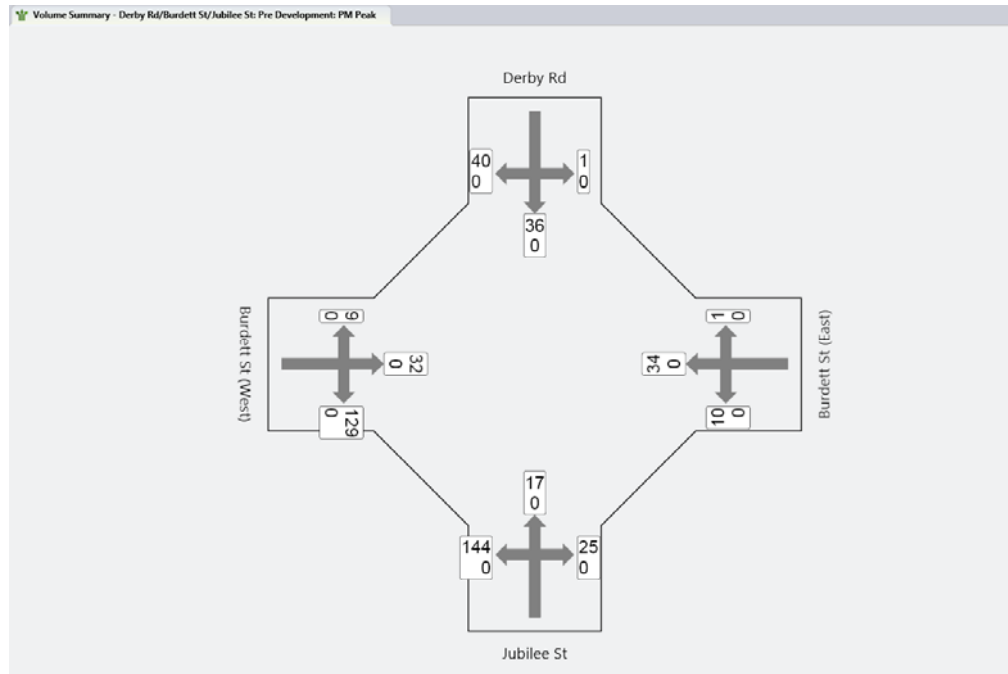
Derby Rd/Burdett St/Jubilee St: Pre Development: AM Peak

Stop (Two-Way)



PM Peak – Pre Development

Existing Volumes



MOVEMENT SUMMARY

Site: Derby Rd/Burdett St/Jubilee St: Pre Development: PM Peak

Derby Rd/Burdett St/Jubilee St: Pre Development: PM Peak

Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Jubilee St											
1	L	144	0.0	0.153	9.7	LOS A	0.6	4.5	0.12	0.92	28.6
2	T	17	0.0	0.153	9.4	LOS A	0.6	4.5	0.12	0.96	28.8
3	R	25	0.0	0.153	9.7	LOS A	0.6	4.5	0.12	0.99	28.6
Approach		186	0.0	0.153	9.7	LOS A	0.6	4.5	0.12	0.93	28.6
East: Burdett St (East)											
4	L	10	0.0	0.023	6.5	LOS A	0.1	0.8	0.13	0.71	37.5
5	T	34	0.0	0.023	0.1	LOS A	0.1	0.8	0.13	0.00	46.4
6	R	1	0.0	0.023	6.5	LOS A	0.1	0.8	0.13	0.74	37.5
Approach		45	0.0	0.023	1.7	NA	0.1	0.8	0.13	0.17	43.8
North: Derby Rd											
7	L	1	0.0	0.096	11.1	LOS A	0.3	2.4	0.35	0.75	37.2
8	T	36	0.0	0.096	10.7	LOS A	0.3	2.4	0.35	0.87	37.4
9	R	40	0.0	0.096	11.0	LOS A	0.3	2.4	0.35	0.94	37.2
Approach		77	0.0	0.096	10.9	LOS A	0.3	2.4	0.35	0.91	37.3
West: Burdett St (West)											
10	L	9	0.0	0.096	6.5	LOS A	0.5	3.3	0.13	0.54	29.8
11	T	32	0.0	0.096	0.1	LOS A	0.5	3.3	0.13	0.00	42.2
12	R	129	0.0	0.096	6.8	LOS A	0.5	3.3	0.13	0.64	29.2
Approach		170	0.0	0.096	5.6	NA	0.5	3.3	0.13	0.52	31.0
All Vehicles		478	0.0	0.153	7.7	NA	0.6	4.5	0.16	0.71	33.1

LANE SUMMARY

Site: Derby Rd/Burdett St/Jubilee St: Pre Development: PM Peak

Derby Rd/Burdett St/Jubilee St: Pre Development: PM Peak

Stop (Two-Way)

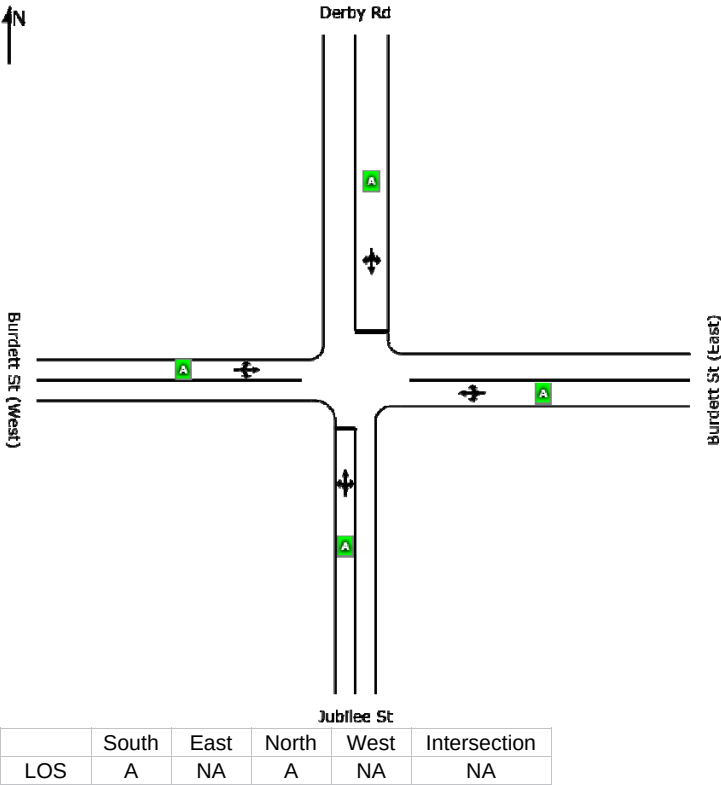
Lane Use and Performance																
	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Jubilee St																
Lane 1	144	17	25	186	0.0	1217	0.153	100	9.7	LOS A	0.6	4.5	100	–	0.0	0.0
Approach	144	17	25	186	0.0		0.153		9.7	LOS A	0.6	4.5				
East: Burdett St (East)																
Lane 1	10	34	1	45	0.0	1923	0.023	100	1.7	LOS A	0.1	0.8	250	–	0.0	0.0
Approach	10	34	1	45	0.0		0.023		1.7	NA	0.1	0.8				
North: Derby Rd																
Lane 1	1	36	40	77	0.0	799	0.096	100	10.9	LOS A	0.3	2.4	340	–	0.0	0.0
Approach	1	36	40	77	0.0		0.096		10.9	LOS A	0.3	2.4				
West: Burdett St (West)																
Lane 1	9	32	129	170	0.0	1777	0.096	100	5.6	LOS A	0.5	3.3	65	–	0.0	0.0
Approach	9	32	129	170	0.0		0.096		5.6	NA	0.5	3.3				
Intersection				478	0.0		0.153		7.7	NA	0.6	4.5				

LEVEL OF SERVICE SUMMARY

Site: Derby Rd/Burdett St/Jubilee St: Pre Development: PM Peak

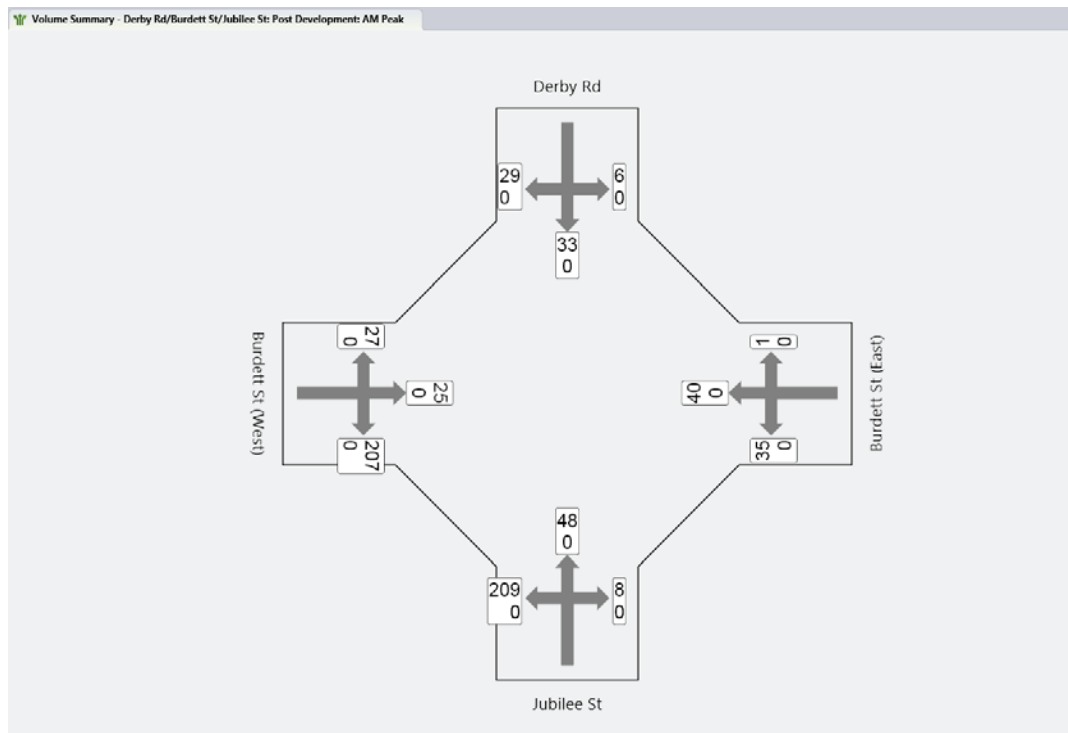
Derby Rd/Burdett St/Jubilee St: Pre Development: PM Peak

Stop (Two-Way)



AM Peak – Post Development

Proposed Volumes



MOVEMENT SUMMARY

Site: Derby Rd/Burdett St/Jubilee St: Post Development: AM Peak

Derby Rd/Burdett St/Jubilee St: Post Development: AM Peak

Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Jubilee St											
1	L	209	0.0	0.220	9.9	LOS A	1.0	6.9	0.16	0.90	28.5
2	T	48	0.0	0.220	9.6	LOS A	1.0	6.9	0.16	0.97	28.7
3	R	8	0.0	0.220	9.9	LOS A	1.0	6.9	0.16	1.00	28.5
Approach		265	0.0	0.220	9.9	LOS A	1.0	6.9	0.16	0.92	28.5
East: Burdett St (East)											
4	L	35	0.0	0.040	6.6	LOS A	0.2	1.4	0.18	0.61	37.2
5	T	40	0.0	0.040	0.1	LOS A	0.2	1.4	0.18	0.00	44.9
6	R	1	0.0	0.040	6.6	LOS A	0.2	1.4	0.18	0.66	37.2
Approach		76	0.0	0.040	3.2	NA	0.2	1.4	0.18	0.29	40.9
North: Derby Rd											
7	L	6	0.0	0.096	11.9	LOS A	0.3	2.4	0.31	0.78	36.3
8	T	33	0.0	0.096	11.6	LOS A	0.3	2.4	0.31	0.92	36.5
9	R	29	0.0	0.096	11.9	LOS A	0.3	2.4	0.31	0.99	36.3
Approach		68	0.0	0.096	11.7	LOS A	0.3	2.4	0.31	0.94	36.4
West: Burdett St (West)											
10	L	27	0.0	0.150	6.7	LOS A	0.8	5.4	0.20	0.49	29.3
11	T	25	0.0	0.150	0.2	LOS A	0.8	5.4	0.20	0.00	39.2
12	R	207	0.0	0.150	7.0	LOS A	0.8	5.4	0.20	0.62	28.8
Approach		259	0.0	0.150	6.3	NA	0.8	5.4	0.20	0.54	29.6
All Vehicles		668	0.0	0.220	7.9	NA	1.0	6.9	0.19	0.70	31.8

LANE SUMMARY

Site: Derby Rd/Burdett St/Jubilee St: Post Development: AM Peak

Derby Rd/Burdett St/Jubilee St: Post Development: AM Peak

Stop (Two-Way)

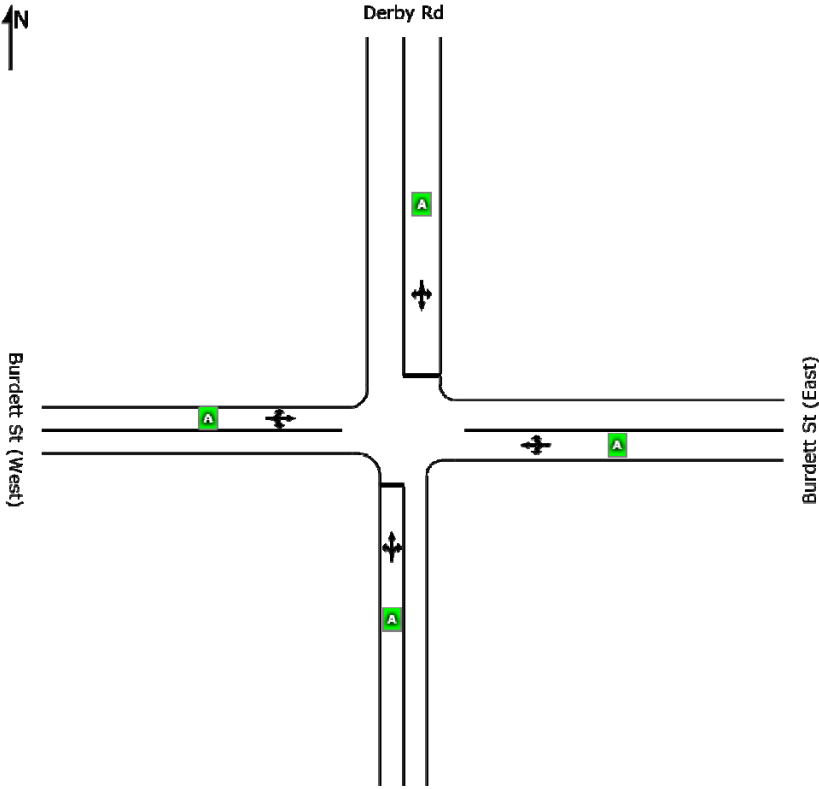
Lane Use and Performance																
	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Jubilee St																
Lane 1	209	48	8	265	0.0	1203	0.220	100	9.9	LOS A	1.0	6.9	100	–	0.0	0.0
Approach	209	48	8	265	0.0		0.220		9.9	LOS A	1.0	6.9				
East: Burdett St (East)																
Lane 1	35	40	1	76	0.0	1903	0.040	100	3.2	LOS A	0.2	1.4	250	–	0.0	0.0
Approach	35	40	1	76	0.0		0.040		3.2	NA	0.2	1.4				
North: Derby Rd																
Lane 1	6	33	29	68	0.0	706	0.096	100	11.7	LOS A	0.3	2.4	340	–	0.0	0.0
Approach	6	33	29	68	0.0		0.096		11.7	LOS A	0.3	2.4				
West: Burdett St (West)																
Lane 1	27	25	207	259	0.0	1727	0.150	100	6.3	LOS A	0.8	5.4	65	–	0.0	0.0
Approach	27	25	207	259	0.0		0.150		6.3	NA	0.8	5.4				
Intersection				668	0.0		0.220		7.9	NA	1.0	6.9				

LEVEL OF SERVICE SUMMARY

Site: Derby Rd/Burdett St/Jubilee St: Post Development: AM Peak

Derby Rd/Burdett St/Jubilee St: Post Development: AM Peak

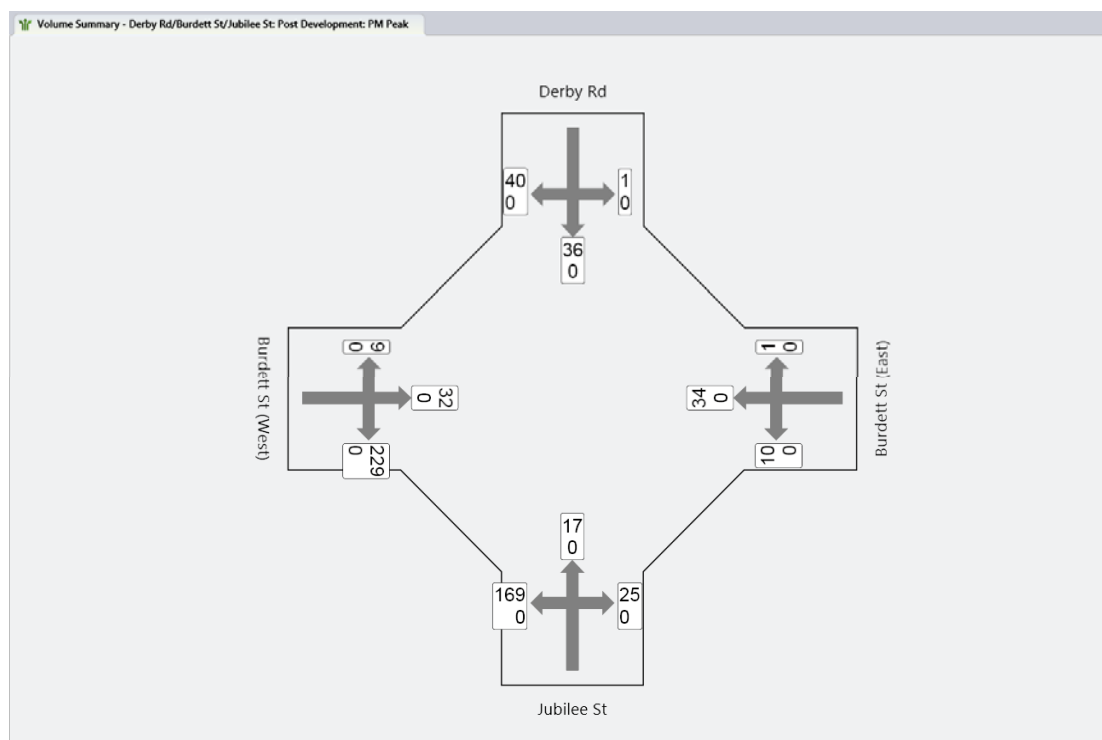
Stop (Two-Way)



	South	East	North	West	Intersection
LOS	A	NA	A	NA	NA

PM Peak – Post Development

Proposed Volumes



MOVEMENT SUMMARY

Site: Derby Rd/Burdett St/Jubilee St: Post Development: PM Peak

Derby Rd/Burdett St/Jubilee St: Post Development: PM Peak

Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed	
		veh/h	%	v/c	sec	veh	m		per veh	km/h	
South: Jubilee St											
1	L	169	0.0	0.177	9.9	LOS A	0.8	5.3	0.11	0.92	28.4
2	T	17	0.0	0.177	9.5	LOS A	0.8	5.3	0.11	0.98	28.6
3	R	25	0.0	0.177	9.8	LOS A	0.8	5.3	0.11	1.01	28.4
Approach		211	0.0	0.177	9.8	LOS A	0.8	5.3	0.11	0.93	28.4
East: Burdett St (East)											
4	L	10	0.0	0.023	6.5	LOS A	0.1	0.8	0.13	0.71	37.5
5	T	34	0.0	0.023	0.1	LOS A	0.1	0.8	0.13	0.00	46.4
6	R	1	0.0	0.023	6.5	LOS A	0.1	0.8	0.13	0.74	37.5
Approach		45	0.0	0.023	1.7	NA	0.1	0.8	0.13	0.17	43.8
North: Derby Rd											
7	L	1	0.0	0.111	12.0	LOS A	0.4	2.7	0.42	0.71	36.5
8	T	36	0.0	0.111	11.6	LOS A	0.4	2.7	0.42	0.89	36.7
9	R	40	0.0	0.111	11.9	LOS A	0.4	2.7	0.42	0.97	36.5
Approach		77	0.0	0.111	11.8	LOS A	0.4	2.7	0.42	0.93	36.6
West: Burdett St (West)											
10	L	9	0.0	0.153	6.6	LOS A	0.8	5.6	0.14	0.52	29.7
11	T	32	0.0	0.153	0.1	LOS A	0.8	5.6	0.14	0.00	41.8
12	R	229	0.0	0.153	6.9	LOS A	0.8	5.6	0.14	0.63	29.1
Approach		270	0.0	0.153	6.0	NA	0.8	5.6	0.14	0.55	30.2
All Vehicles		603	0.0	0.177	7.8	NA	0.8	5.6	0.17	0.70	32.1

LANE SUMMARY

Site: Derby Rd/Burdett St/Jubilee St: Post Development: PM Peak

Derby Rd/Burdett St/Jubilee St: Post Development: PM Peak

Stop (Two-Way)

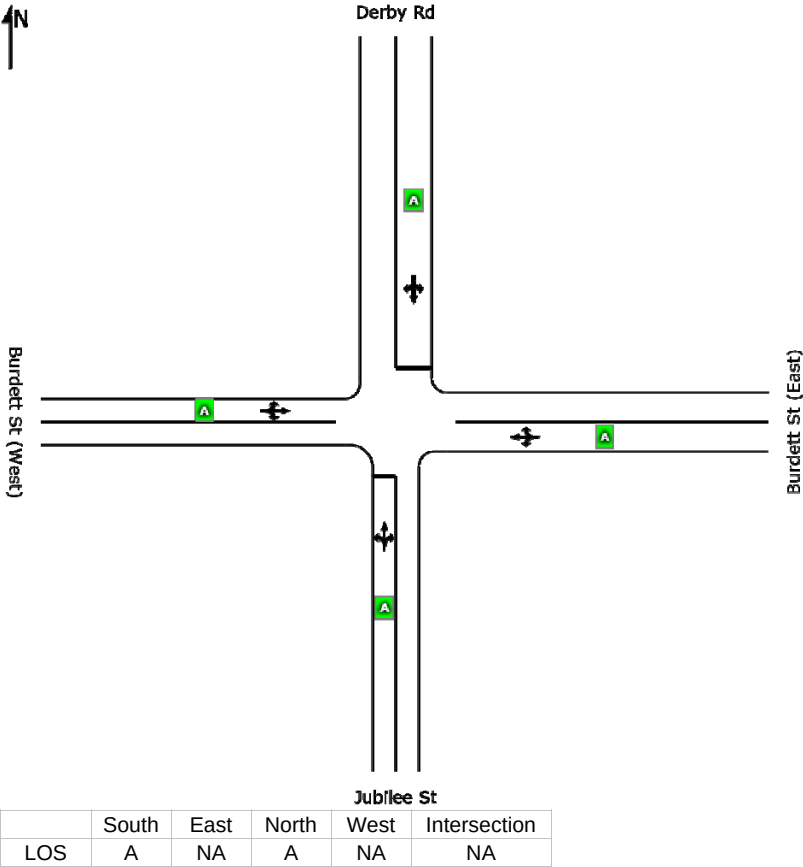
Lane Use and Performance																
	Demand Flows				HV	Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue		Lane Length	SL Type	Cap. Adj.	Prob. Block.
	L	T	R	Total							Vehicles	Distance				
	veh/h	veh/h	veh/h	veh/h	%	veh/h	v/c	%	sec		veh	m	m		%	%
South: Jubilee St																
Lane 1	169	17	25	211	0.0	1193	0.177	100	9.8	LOS A	0.8	5.3	100	–	0.0	0.0
Approach	169	17	25	211	0.0		0.177		9.8	LOS A	0.8	5.3				
East: Burdett St (East)																
Lane 1	10	34	1	45	0.0	1923	0.023	100	1.7	LOS A	0.1	0.8	250	–	0.0	0.0
Approach	10	34	1	45	0.0		0.023		1.7	NA	0.1	0.8				
North: Derby Rd																
Lane 1	1	36	40	77	0.0	696	0.111	100	11.8	LOS A	0.4	2.7	340	–	0.0	0.0
Approach	1	36	40	77	0.0		0.111		11.8	LOS A	0.4	2.7				
West: Burdett St (West)																
Lane 1	9	32	229	270	0.0	1761	0.153	100	6.0	LOS A	0.8	5.6	65	–	0.0	0.0
Approach	9	32	229	270	0.0		0.153		6.0	NA	0.8	5.6				
Intersection				603	0.0		0.177		7.8	NA	0.8	5.6				

LEVEL OF SERVICE SUMMARY

Site: Derby Rd/Burdett St/Jubilee St: Post Development: PM Peak

Derby Rd/Burdett St/Jubilee St: Post Development: PM Peak

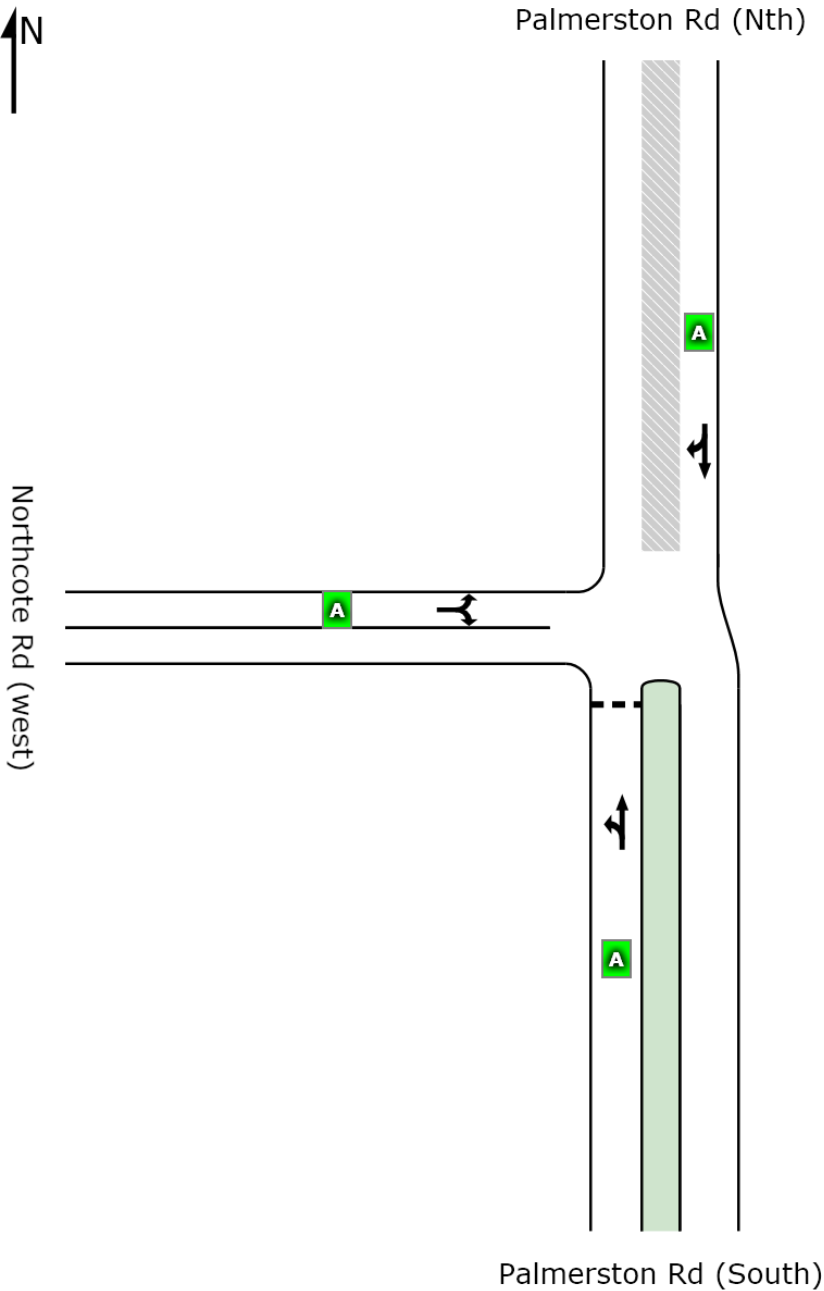
Stop (Two-Way)



LEVEL OF SERVICE SUMMARY

Site: Existing AM - Northcote Rd & Palmerston Rd

Existing - AM Northcote Rd & Palmerston Rd
Giveaway / Yield (Two-Way)



	South	North	West	Intersection
LOS	A	NA	NA	NA

Level of Service (LOS) Method: Delay (RTA NSW).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
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 lanes.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Existing AM - Northcote Rd & Palmerston Rd

Existing - AM Northcote Rd & Palmerston Rd
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV Deg. Satn %	Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Palmerston Rd (South)											
1	L	117	0.9	0.115	5.7	LOS A	0.5	3.4	0.16	0.55	36.6
2	T	48	0.0	0.115	4.3	LOS A	0.5	3.4	0.16	0.45	37.3
Approach		165	0.6	0.115	5.3	LOS A	0.5	3.4	0.16	0.52	36.8
North: Palmerston Rd (Nth)											
8	T	1	0.0	0.040	1.3	LOS A	0.0	0.0	0.00	0.11	47.8
9	R	63	0.0	0.040	6.0	LOS A	0.0	0.0	0.00	0.57	43.7
Approach		64	0.0	0.040	5.9	NA	0.0	0.0	0.00	0.56	43.8
West: Northcote Rd (west)											
10	L	106	1.0	0.067	6.6	LOS A	0.3	2.1	0.15	0.52	42.7
12	R	2	0.0	0.067	5.8	LOS A	0.3	2.1	0.15	0.53	42.6
Approach		108	1.0	0.067	6.6	NA	0.3	2.1	0.15	0.52	42.7
All Vehicles		338	0.6	0.115	5.8	NA	0.5	3.4	0.13	0.53	39.8

Level of Service (LOS) Method: Delay (RTA NSW).

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.

SIDRA Standard Delay Model used.

Processed: Tuesday, November 15, 2011 2:20:38 PM

SIDRA INTERSECTION 5.1.8.2059

Project: C:\Documents and Settings\Pauld\My Documents\Project Existing - Hornsby Hospital Palmerston Rd & Northcote St.sip

8001173, TTW PTY, SINGLE

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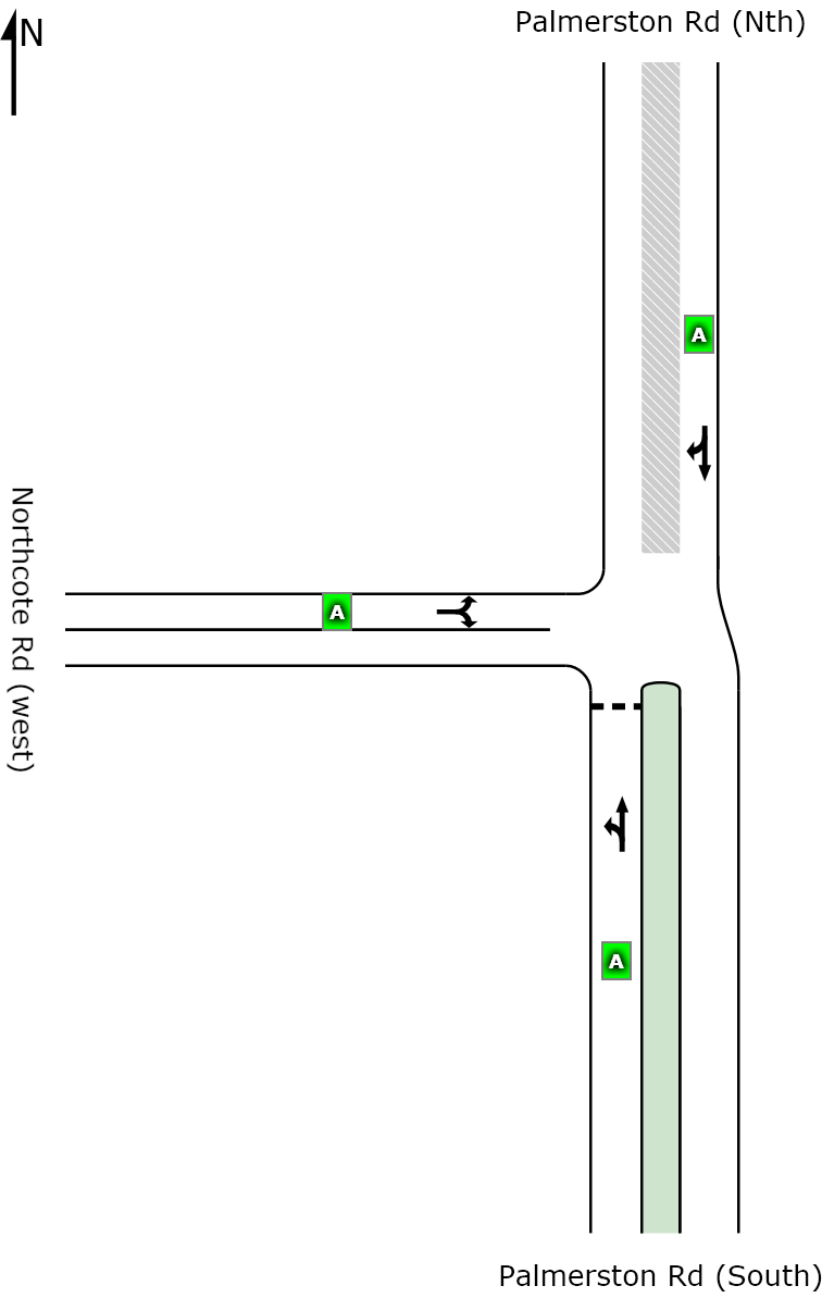
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SIDRA
INTER

LEVEL OF SERVICE SUMMARY

Site: Existing PM - Northcote Rd & Palmerston Rd - Copy

Existing - PM Northcote Rd & Palmerston Rd
Giveaway / Yield (Two-Way)



	South	North	West	Intersection
LOS	A	NA	NA	NA

Level of Service (LOS) Method: Delay (RTA NSW).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
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 lanes.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Existing PM - Northcote Rd & Palmerston Rd - Copy

Existing - PM Northcote Rd & Palmerston Rd
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV Deg. Satn %	Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Palmerston Rd (South)											
1	L	222	0.5	0.177	5.8	LOS A	0.8	5.6	0.25	0.55	36.4
2	T	32	0.0	0.177	4.4	LOS A	0.8	5.6	0.25	0.46	37.0
Approach		254	0.4	0.177	5.6	LOS A	0.8	5.6	0.25	0.54	36.5
North: Palmerston Rd (Nth)											
8	T	1	0.0	0.079	1.3	LOS A	0.0	0.0	0.00	0.11	47.8
9	R	126	0.0	0.079	6.0	LOS A	0.0	0.0	0.00	0.57	43.7
Approach		127	0.0	0.079	5.9	NA	0.0	0.0	0.00	0.56	43.8
West: Northcote Rd (west)											
10	L	43	2.4	0.030	7.1	LOS A	0.2	1.2	0.28	0.44	42.3
12	R	3	33.3	0.030	6.8	LOS A	0.2	1.2	0.28	0.53	42.1
Approach		46	4.5	0.030	7.1	NA	0.2	1.2	0.28	0.45	42.3
All Vehicles		427	0.7	0.177	5.9	NA	0.8	5.6	0.18	0.54	39.0

Level of Service (LOS) Method: Delay (RTA NSW).

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.

SIDRA Standard Delay Model used.

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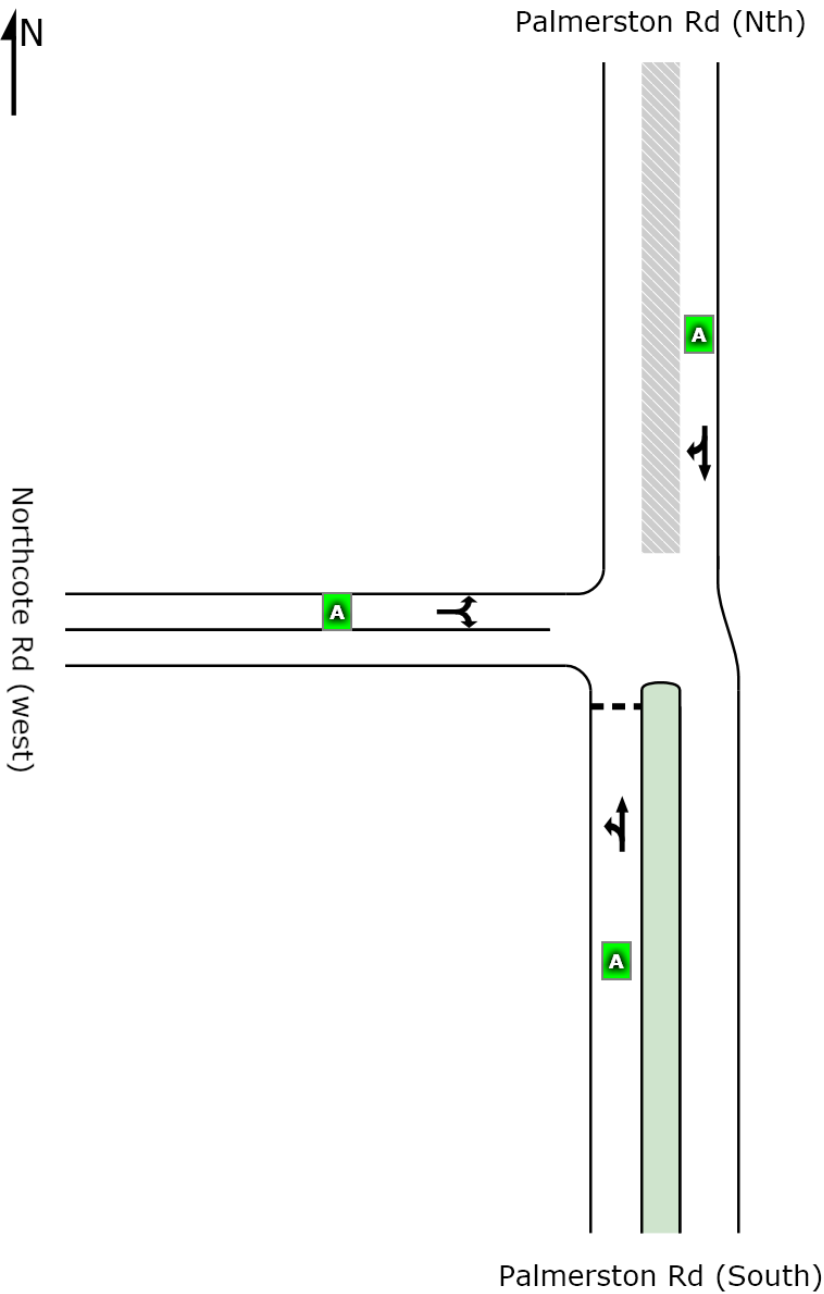
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SIDRA
INTERSECTIONS

LEVEL OF SERVICE SUMMARY

Site: Future AM - Northcote Rd & Palmerston Rd

Future - AM Northcote Rd & Palmerston Rd
Giveaway / Yield (Two-Way)



	South	North	West	Intersection
LOS	A	NA	NA	NA

Level of Service (LOS) Method: Delay (RTA NSW).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
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 lanes.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Future AM - Northcote Rd & Palmerston Rd

Future - AM Northcote Rd & Palmerston Rd
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c			Vehicles	Distance			
					sec		veh	m		per veh	km/h
South: Palmerston Rd (South)											
1	L	123	0.9	0.121	5.7	LOS A	0.5	3.6	0.18	0.55	36.6
2	T	48	0.0	0.121	4.4	LOS A	0.5	3.6	0.18	0.46	37.2
Approach		172	0.6	0.121	5.4	LOS A	0.5	3.6	0.18	0.52	36.8
North: Palmerston Rd (Nth)											
8	T	1	0.0	0.045	1.3	LOS A	0.0	0.0	0.00	0.11	47.8
9	R	73	0.0	0.045	6.0	LOS A	0.0	0.0	0.00	0.57	43.7
Approach		74	0.0	0.045	5.9	NA	0.0	0.0	0.00	0.56	43.8
West: Northcote Rd (west)											
10	L	141	0.7	0.090	6.7	LOS A	0.4	2.9	0.17	0.51	42.7
12	R	4	0.0	0.090	5.8	LOS A	0.4	2.9	0.17	0.53	42.6
Approach		145	0.7	0.090	6.6	NA	0.4	2.9	0.17	0.51	42.7
All Vehicles		391	0.5	0.121	5.9	NA	0.5	3.6	0.14	0.52	40.0

Level of Service (LOS) Method: Delay (RTA NSW).

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.

SIDRA Standard Delay Model used.

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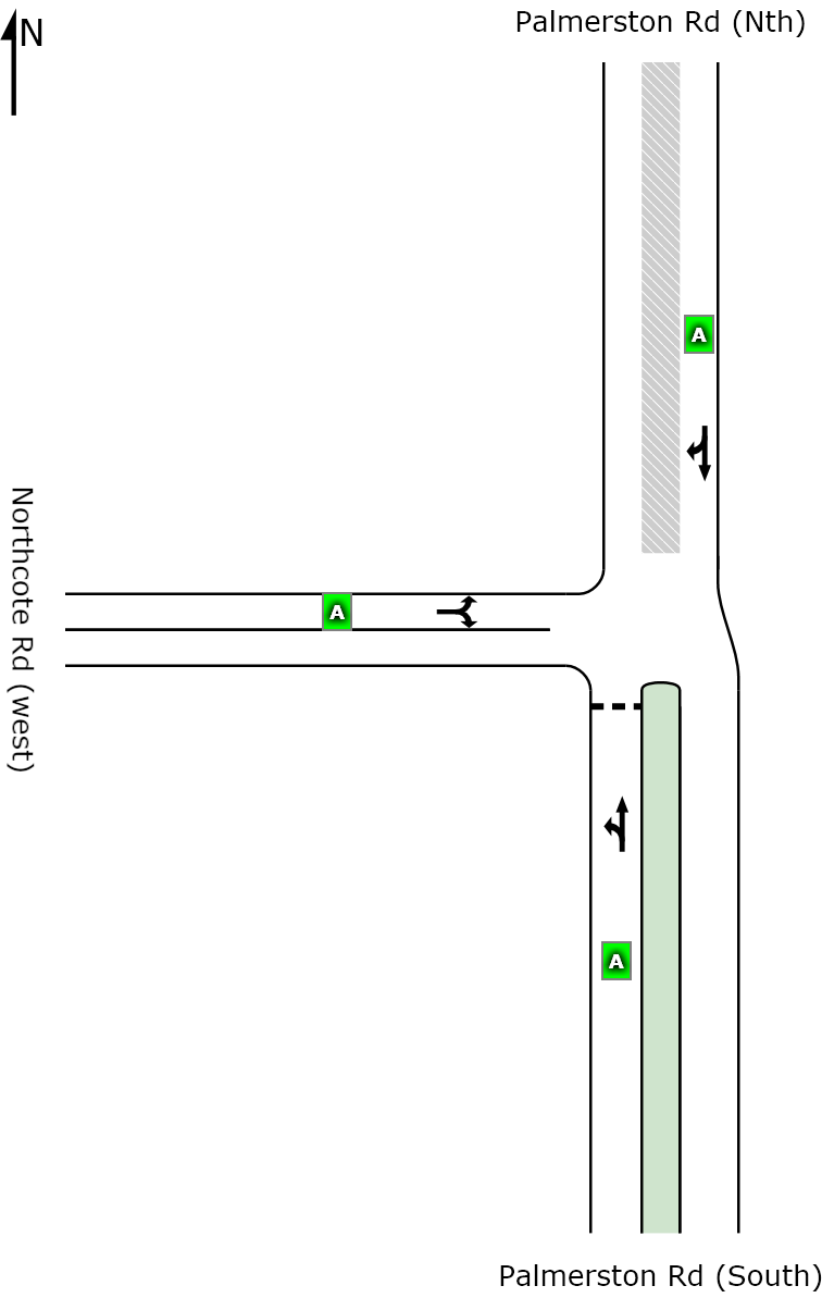
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INTERSECTIONS

LEVEL OF SERVICE SUMMARY

Site: Future PM - Northcote Rd & Palmerston Rd - Copy

Future - PM Northcote Rd & Palmerston Rd
Giveaway / Yield (Two-Way)



	South	North	West	Intersection
LOS	A	NA	NA	NA

Level of Service (LOS) Method: Delay (RTA NSW).
Lane LOS values are based on average delay per lane.
Minor Road Approach LOS values are based on average delay for all lanes.
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 lanes.
SIDRA Standard Delay Model used.

MOVEMENT SUMMARY

Site: Future PM - Northcote Rd & Palmerston Rd - Copy

Future - PM Northcote Rd & Palmerston Rd
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
							Vehicles	Distance			
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Palmerston Rd (South)											
1	L	262	0.4	0.209	5.9	LOS A	1.0	6.7	0.28	0.56	36.3
2	T	32	0.0	0.209	4.5	LOS A	1.0	6.7	0.28	0.48	36.9
Approach		294	0.4	0.209	5.7	LOS A	1.0	6.7	0.28	0.55	36.4
North: Palmerston Rd (Nth)											
8	T	1	0.0	0.092	1.3	LOS A	0.0	0.0	0.00	0.11	47.8
9	R	148	0.0	0.092	6.0	LOS A	0.0	0.0	0.00	0.57	43.7
Approach		149	0.0	0.092	6.0	NA	0.0	0.0	0.00	0.56	43.8
West: Northcote Rd (west)											
10	L	58	1.8	0.040	7.1	LOS A	0.2	1.6	0.29	0.43	42.3
12	R	4	25.0	0.040	6.7	LOS A	0.2	1.6	0.29	0.54	42.1
Approach		62	3.4	0.040	7.1	NA	0.2	1.6	0.29	0.44	42.3
All Vehicles		505	0.6	0.209	6.0	NA	1.0	6.7	0.20	0.54	39.0

Level of Service (LOS) Method: Delay (RTA NSW).

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.

SIDRA Standard Delay Model used.

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SIDRA
INTERSECTIONS

APPENDIX P2

Movements Analyses

Hornsby Ku-Ring-Gai Hospital Redevelopment
STAGE 1

COVER SHEET - WH.AR.0003[01]

APPENDIX D

Dwg.No	Drawing Title	Contractor	Submission
WH.AR.SK76	Existing Level 1 - Site Plan	WOODHEAD	Y
WH.AR.SK77	Existing Level 1 Site Plan - Planned Works	WOODHEAD	Y
WH.AR.SK78	Existing Traffic Routes Analysis - Ambulatory Day Case	WOODHEAD	Y
WH.AR.SK79	Existing Traffic Routes Analysis - ED Trolley Access	WOODHEAD	Y
WH.AR.SK80	Existing Traffic Routes Analysis - Health Information Services	WOODHEAD	Y
WH.AR.SK81	Existing Traffic Routes Analysis - Supplies	WOODHEAD	Y
WH.AR.SK82	Existing Traffic Routes Analysis - Walking Wounded	WOODHEAD	Y
WH.AR.SK83	Existing Traffic Routes Analysis - Waste Out		
		WOODHEAD	Y
WH.AR.SK85	Stage 1 Traffic Routes Analysis - Ambulatory Day Case	WOODHEAD	Y
WH.AR.SK86	Stage 1 Traffic Routes Analysis - ED Trolley Access	WOODHEAD	Y
WH.AR.SK87	Stage 1 Traffic Routes Analysis - Health Information Services	WOODHEAD	Y
WH.AR.SK88	Stage 1 Traffic Routes Analysis - Supplies	WOODHEAD	Y
WH.AR.SK89	Stage 1 Traffic Routes Analysis - Walking Wounded	WOODHEAD	Y
WH.AR.SK90	Stage 1 Traffic Routes Analysis - Waste Out	WOODHEAD	Y
WH.AR.SK118	Function Analysis Flows - Level 1	WOODHEAD	Y
WH.AR.SK119	Function Analysis Flows - Level 3 Supplies Route	WOODHEAD	Y
WH.AR.SK120	Function Analysis Flows - Level 3 Waste & Disposal Routes	WOODHEAD	Y
WH.AR.SK121	Function Analysis Flows - Level 3 Patient Discharge/Collection	WOODHEAD	Y
WH.AR.SK122	Function Analysis Flows - Level 3 Theatre/HOPE Transfer	WOODHEAD	Y
WH.AR.SK123	Function Analysis Flows - Level 2 Pre-Assessment Clinic	WOODHEAD	Y
WH.AR.SK124	Function Analysis Flows - Level 2 In-Patient/Isolation RM/ Theatre	WOODHEAD	Y
WH.AR.SK125	Function Analysis Flows - Level 2 Emergency Surgury from HOPE	WOODHEAD	Y
WH.AR.SK126	Function Analysis Flows - Level 2 Day Case Surgery	WOODHEAD	Y
WH.AR.SK127	Function Analysis Flows - Level 2 Day Patients to IPU	WOODHEAD	Y
WH.AR.SK128	Function Analysis Flows - Level 2 Day Case Endoscopy	WOODHEAD	Y

REVISION	DATE	
WH.AR.PR35[01]	22/07/2012	For Information