
1.9 Appendix 9 – Traffic Impact Assessment



**PROPOSED INDUSTRIAL REZONING – OLD
BATHURST ROAD, EMU PLAINS.**

TRAFFIC ASSESSMENT

February 2006

REF: 05.06.089

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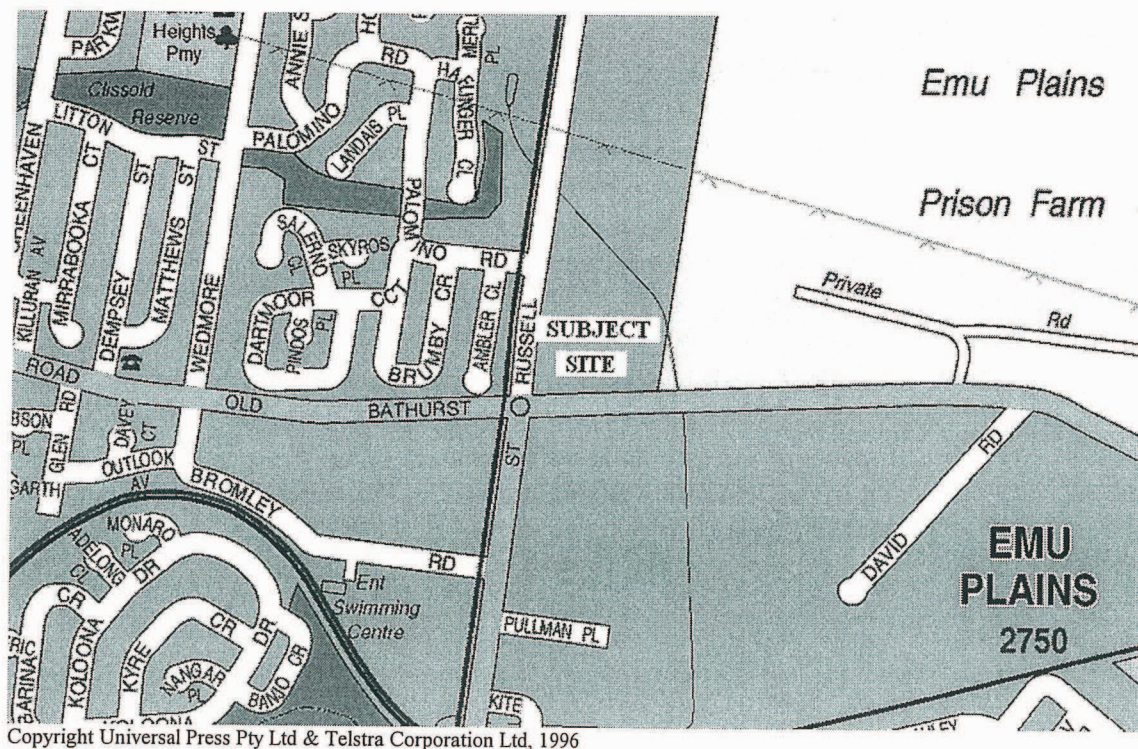
1. INTRODUCTION

This report has been prepared to accompany a rezoning application to Penrith City Council for a proposed industrial rezoning located on the north eastern corner of Old Bathurst Road and Russell Street, Emu Plains. (Figure 1)

To evaluate the traffic impact of the rezoning application a typical subdivision layout was developed in concept only. This concept indicates that approximately 14 hectares (140,000m²) of saleable land may be able to be achieved from the total 20 hectare site (200,000m²). All Vehicle access is proposed to be via Old Bathurst Road.

This report examines the traffic implications of the proposed development and will assess the:

- Estimated traffic generation of the proposal.
- Impacts of the estimated traffic generation on the existing road network and in particular Old Bathurst Road and the existing roundabout at Russell Street.



LOCATION

Fig 1

2. PROPOSED DEVELOPMENT

SITE

The site is located on the north side of Old Bathurst Road and eastern side of Russell Street and does not include lot 10 on north eastern corner of the intersection. The site is described as Lot 4 in DP 574650, has a total area of 20 Ha, a 165m frontage to Old Bathurst Road and is currently vacant land.

DEVELOPMENT PROPOSAL

The rezoning application proposes an industrial subdivision and a conceptual typical lot layout, estimates the available land that can be built upon at approximately 140,000m².

The applicant proposes to provide all vehicle access directly to Old Bathurst Road and a site inspection indicates that this will be possible if provided towards the eastern boundary of the site.

3. EXISTING CONDITIONS

Old Bathurst Road is classified a Regional Road under the Roads and Traffic Authority's "*Sydney and Surrounding State and Regional Roads plan – 1993*".

A review of the Roads and Traffic Authority's approved "*B-Double Routes Plan – May 2001*" indicates that Old Bathurst Road between Russell Street and Great Western Highway is a 25m B-double approved route.

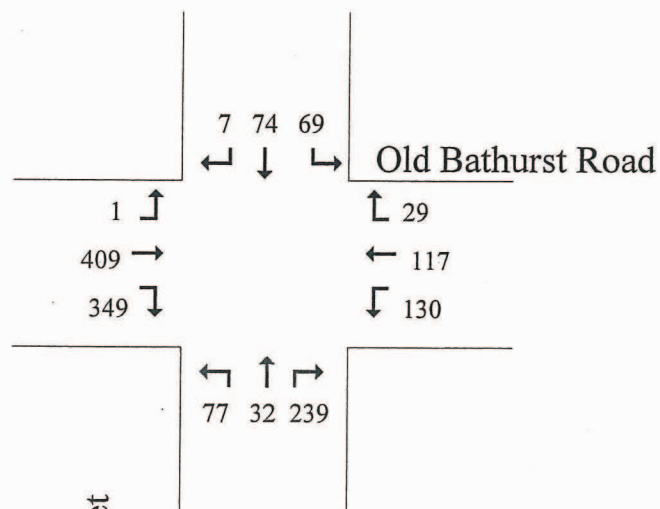
The main features of the existing traffic and parking controls in the vicinity of the site are:

- A single lane roundabout at the intersection of Old Bathurst Road and Russell Street.
- A right turn bay in Old Bathurst Road for the turn into the McDonalds and Caltex development.
- Old Bathurst Road has a speed limit of 70 km/h along the frontage of the site reducing to 50 km/h at the Russell Street roundabout.
- Double white centrelines in Old Bathurst Road approaching the roundabout in Russell Street.
- Separation lines along Old Bathurst Road to the east of the subject site that permit overtaking.

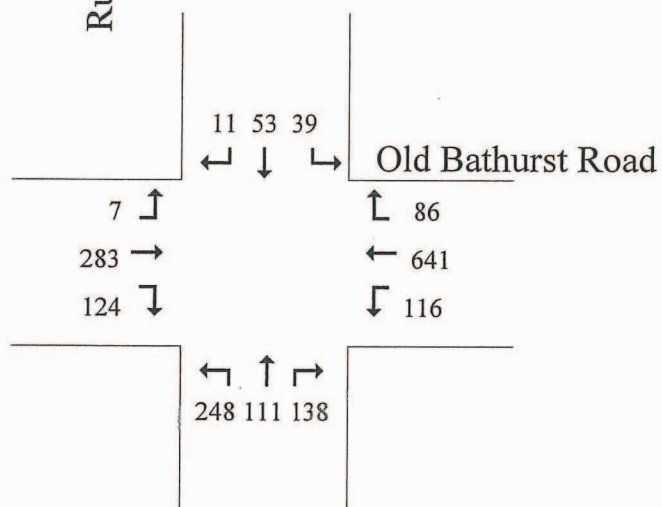
Data on the traffic movements in the vicinity of the subject site have been collected by surveys undertaken by Corner Counters as part of this study from 6.30am - 9.00am and 3.00pm - 6.00pm on Tuesday 22nd November 2005 at the intersection of Old Bathurst Road and Russell Street. Conditions on this day were described by the traffic counting firm as fine with no unusual circumstances encountered.

The detailed results of the surveys are attached as appendix A. The peak hour flows at the intersection are depicted in Figure 2 on the following page.

AM Peak Hour
7.45am – 8.45am



PM Peak Hour
4.45pm – 5.45pm



**EXISTING
 FLOWS**

Fig 2

4. KEY ISSUES

ACCESS AND SIGHT DISTANCE

Vehicular access is proposed directly to Old Bathurst Road via an internal estate road. An inspection has revealed that the location of the proposed intersection will provide very good sight lines in both directions along Old Bathurst Road.

The operation of the intersection of Old Bathurst Road and the proposed estate road will be assessed in the following section of this report.

TRAFFIC

Potential traffic generation rates are generally linked to Gross Floor Areas (GFA), particularly when the type of development is unknown. It is expected that any development Floor Space Ratio (FSR) for these lots would be in the order of 0.5 to 1.

The likely uses for this industrial rezoning are warehouses, factories and possibly road transport terminals and for the purposes of this assessment a FSR of 0.5 to 1 will be utilised to calculate the GFA's possible for this rezoning.

An estimation of the traffic generation of the proposed rezoning can be calculated by reference to the Roads and Traffic Authority's *'Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation'* of October 2002. The guide specifies the following peak hour generation rates applicable to this rezoning:

Warehouses

Daily vehicle trips = 4 per 100m² gross floor area
Morning peak hour vehicle trips = 0.5 per 100m² gross floor area

Factories

Daily vehicle trips = 5 per 100m² gross floor area
Evening peak hour vehicle trips = 1 per 100m² gross floor area

Road Transport Terminals

Daily vehicle trips = 5 per 100m² gross floor area
Peak hour vehicle trips = 1 per 100m² gross floor area

For the purposes of this assessment the generation rate of 0.5 vehicle trips per 100m² will be utilised for this assessment. In addition the potential peak hour trips will be assumed to be generated in both the morning and afternoon peak hours.

The potential GFA is calculated as:

$$140,000\text{m}^2 \text{ @ FSR of 0.5 to 1} = 70,000\text{m}^2$$

The estimated traffic generation of this rezoning calculates as:

$$70,000\text{m}^2 \text{ warehouse/factory @ 0.5 trip/100m}^2 = 350 \text{ peak hour trips}$$

Accordingly, the potential traffic generation of the proposed rezoning is in the order of **350** vehicle trips in the peak hours.

For the purposes of this assessment it is assumed that this traffic will also be generated in the morning peak and 70% of the calculated potential traffic generation of subject development proposal will approach and 30% will depart the site in the morning peak hour (245 in and 105 out) and that this situation will reverse in the evening peak hour. This percentage breakdown is typical of industrial precincts recorded by this practice.

To assess the impact of the development on the existing intersection of Old Bathurst Road and Russell Street and the proposed intersection of Old Bathurst Road and the new estate road the estimated peak hour approach and departure vehicle trips have been assigned in proportion to these intersections on the basis of existing traffic movements along Old Bathurst Road past the site.

Using INTANAL a software programme developed by Sims Varley Pty Ltd for the purpose of analysing signalised, roundabout and sign controlled intersections, the effect of the estimated traffic generation of this development on the existing roundabout controlled intersection has been modelled. Tabled below are the results of the intersection modelling and the INTANAL output files are attached as Appendix B. A brief guide on evaluating the results of the INTANAL analysis is reproduced in the following pages:

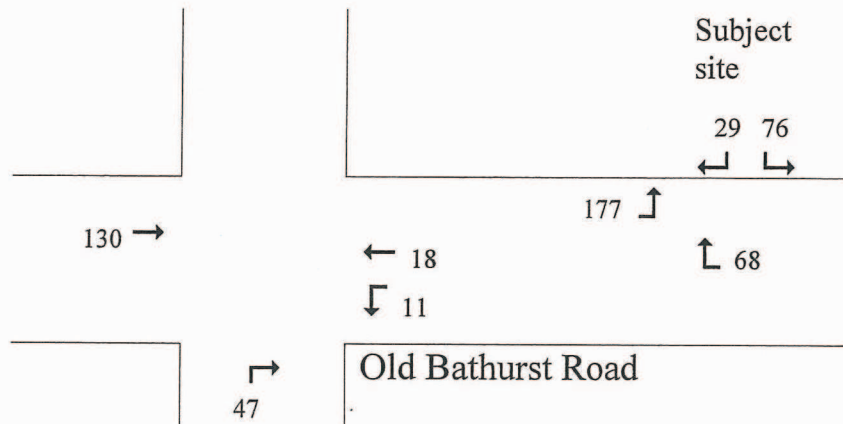
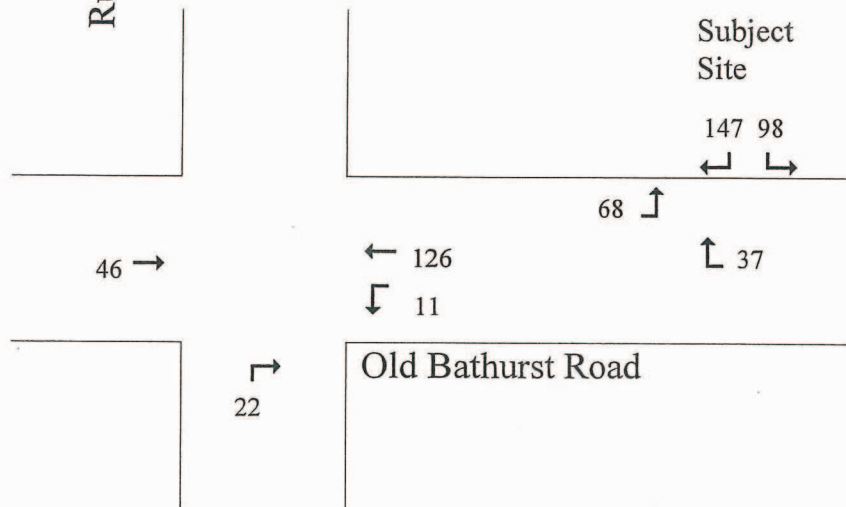
	Intersection of Old Bathurst Road and Russell Street, Emu Plains (Roundabout control)			
	Existing		Proposed	
	AM	PM	AM	PM
Level of Service	A	C	A	D
Degree of Saturation	0.50	0.55	0.55	0.64
Total Average Delay	6.9	12.4	8.0	18.4

In addition the proposed intersection of Old Bathurst Road and the new estate road has been modelled revealing the following results. The intersection modelling has assumed that a right turn bay would be provided in Old Bathurst Road.

	Intersection of Old Bathurst Road and proposed estate Road, Emu Plains (Give Way control)	
	AM	PM
Level of Service	B	B
Degree of Saturation	0.26	0.47
Total Average Delay	8.2	10.5

The results of the INTANAL analysis reveals:

- Should the estimated traffic generation of the proposal be realised the Level of Service at the intersection of Old Bathurst Road and Russell Street will reduce slightly in the evening peak hour, however, will continue to operate satisfactorily.
- The additional traffic demand on the intersection of Old Bathurst Road and Russell Street, as a consequence of the proposed rezoning will only marginally increase the Degree of Saturation and Total Average Delays.
- The proposed intersection of Old Bathurst Road and the proposed estate road will operate at a good level of service with minimal delays and space capacity.

AM Peak Hour**PM Peak Hour**

**POTENTIAL
ADDITIONAL
FLOWS**

Fig 3

EVALUATION OF THE RESULTS OF INTANAL

LEVEL OF SERVICE

THE LEVEL OF SERVICE FOR TRAFFIC SIGNALS, ROUNDABOUTS AND SIGN CONTROL INTERSECTIONS IS SHOWN BELOW, THIS IS BASED ON THE AVERAGE DELAY IN SECONDS PER VEHICLE:

AVERAGE DELAY PER VEHICLE	LEVEL OF SERVICE	TRAFFIC SIGNALS & ROUNDABOUTS	SIGN CONTROL
< 14	A	GOOD	GOOD
15 - 28	B	GOOD WITH MINIMAL DELAYS AND SPARE CAPACITY	ACCEPTABLE DELAYS AND SPARE CAPACITY
29 - 42	C	SATISFACTORY WITH SPARE CAPACITY	SATISFACTORY BUT ACCIDENT STUDY REQUIRED
43 - 56	D	SATISFACTORY BUT OPERATING NEAR CAPACITY	NEAR CAPACITY AND ACCIDENT STUDY REQUIRED
57 - 70	E	AT CAPACITY: AT SIGNALS INCIDENTS WILL CAUSE EXCESSIVE DELAYS, ROUNDABOUTS REQUIRE ANOTHER CONTROL MODE	AT CAPACITY AND REQUIRES ANOTHER CONTROL MODE
> 70	F	UNSATISFACTORY	UNSATISFACTORY

DEGREE OF SATURATION

THE DEGREE OF SATURATION IS ANOTHER MEASURE OF THE OPERATIONAL PERFORMANCE OF INDIVIDUAL INTERSECTIONS.

FOR TRAFFIC SIGNAL CONTROLLED INTERSECTIONS BOTH QUEUE LENGTH AND DELAY INCREASE RAPIDLY AS THE DEGREE OF SATURATION APPROACHES 1.0, AND IT IS USUALLY ATTEMPTED TO KEEP IT BELOW 0.9.

FOR ROUNDABOUTS OR SIGN CONTROLLED INTERSECTIONS, OVERSATURATION IS INDICATED BY A VALUE IN EXCESS OF 0.8.

AVERAGE VEHICLE DELAY

THE AVERAGE VEHICLE DELAY PROVIDES A MEASURE OF THE OPERATIONAL PERFORMANCE OF AN INTERSECTION AS INDICATED IN THE ABOVE TABLE. THE AVERAGE VEHICLE DELAYS IN THE TABLE SHOULD BE USED AS A GUIDE ONLY AS LONGER DELAYS COULD BE TOLERATED IN SOME LOCATIONS.

5. CONCLUSIONS

The preceding analysis has demonstrated that:

- The proposed intersection of the new estate access road and Old Bathurst Road will provide very good sight lines in both directions.
- The proposed rezoning has the potential to generate approximately 350 vehicle trips in the peak hours.
- Should the estimated traffic generation of the proposal be realised the Level of Service at the intersection of Old Bathurst Road and Russell Street will reduce slightly in the evening peak hour, however, will continue to operate satisfactorily.
- The additional traffic demand on the intersection of Old Bathurst Road and Russell Street, as a consequence of the proposed rezoning will only marginally increase the Degree of Saturation and Total Average Delays.
- The proposed intersection of Old Bathurst Road and the proposed estate road will operate at a good level of service with minimal delays and space capacity.

APPENDIX A

Corner Counters

A Division of Joray Enterprises Pty Ltd
ABN 80 061 513 933

Telephone and Fax: (02) 9621 1221
1 Ajax Place, Blacktown, NSW 2148

Count 1377 Client TRAFFIC SOLUTIONS PTY LTD
Locatio OLD BATHURST RD / RUSSELL ST
Weathe Fine
Comments

All Traffic Surveys
and
Traffic Supplies

Count Tuesday 22 November 2005
Suburb EMU HEIGHTS
Job 05.06.089

Combined

Time Period	NORTH Russell St			EAST Old Bathurst Rd			SOUTH Russell St			WEST Old Bathurst Rd			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
6:30 - 6:45	24	19	4	21	16	3	11	2	46	1	107	68	322
6:45 - 7:00	15	6	1	16	16	2	6	1	50	0	89	37	239
7:00 - 7:15	17	14	0	39	22	1	12	4	47	1	106	71	334
7:15 - 7:30	13	24	2	41	31	7	12	2	56	0	128	82	398
7:30 - 7:45	9	21	1	34	27	3	7	6	43	0	115	80	346
7:45 - 8:00	19	19	2	33	35	6	20	5	58	0	137	111	445
8:00 - 8:15	14	15	2	25	21	6	10	5	43	1	82	65	289
8:15 - 8:30	22	18	1	38	27	7	18	10	85	0	88	100	414
8:30 - 8:45	14	22	2	34	34	10	29	12	53	0	102	73	385
8:45 - 9:00	15	17	0	40	41	19	35	9	49	1	81	97	404
Period Ending	162	175	15	321	270	64	160	56	530	4	1035	784	3576

Time Period	NORTH Russell St			EAST Old Bathurst Rd			SOUTH Russell St			WEST Old Bathurst Rd			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
6:30 - 7:30	69	63	7	117	85	13	41	9	199	2	430	258	1293
6:45 - 7:45	54	65	4	130	96	13	37	13	196	1	438	270	1317
7:00 - 8:00	58	78	5	147	115	17	51	17	204	1	486	344	1523
7:15 - 8:15	55	79	7	133	114	22	49	18	200	1	462	338	1478
7:30 - 8:30	64	73	6	130	110	22	55	26	229	1	422	356	1494
7:45 - 8:45	69	74	7	130	117	29	77	32	239	1	409	349	1533
8:00 - 9:00	65	72	5	137	123	42	92	36	230	2	353	335	1492

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Vehicle Class	Russell St			Old Bathurst Rd			Russell St			Old Bathurst Rd			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Lights	67	71	7	85	113	27	72	31	181	0	407	346	1407
Heavy	2	3	0	45	4	2	5	1	58	1	2	3	126
Total	69	74	7	130	117	29	77	32	239	1	409	349	1533

PEDESTRIAN	Russell St			Old Bathurst Rd			Russell St			Old Bathurst Rd			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
All Pedestrians	2			1			1			0			4
Total	2			1			1			0			4

Peak Hour - 8:45

Peak Hour 7:45 - 8:45

Rus
sell
St

N

4	5	0	3	2
58	145	7	71	87
62	150	7	74	89

Old Bathurst Rd

1	0	1
2	407	409
3	346	349
6	753	759
9	192	201

Old Bathurst Rd

717	655	62
276	225	51
29	27	2
117	113	4
130	85	45

77	32	239	348	553
72	31	181	284	502
5	1	58	64	51

Rus
sell
St

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Combined

Time Period	NORTH Russell St			EAST Old Bathurst Rd			SOUTH Russell St			WEST Old Bathurst Rd			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
15:00 - 15:15	22	6	0	47	97	23	42	25	47	0	79	51	439
15:15 - 15:30	11	16	3	38	115	21	38	21	53	1	77	39	433
15:30 - 15:45	13	11	1	65	89	14	34	20	44	0	61	23	375
15:45 - 16:00	8	11	3	42	124	21	54	28	32	0	60	30	413
16:00 - 16:15	8	7	1	33	114	17	51	27	46	0	52	33	389
16:15 - 16:30	9	3	1	38	134	14	65	28	57	4	61	29	443
16:30 - 16:45	7	13	2	44	108	10	56	24	56	1	54	38	413
16:45 - 17:00	15	15	4	26	164	23	70	25	35	2	71	39	489
17:00 - 17:15	7	13	2	38	157	19	66	27	42	1	68	32	472
17:15 - 17:30	4	12	4	18	134	19	49	29	28	2	52	24	375
17:30 - 17:45	13	13	1	34	186	25	63	30	33	2	92	29	521
17:45 - 18:00	11	5	3	23	107	12	67	14	25	0	64	24	355
Period Ending	128	125	25	446	1529	218	655	298	498	13	791	391	5117

Time Period	NORTH Russell St			EAST Old Bathurst Rd			SOUTH Russell St			WEST Old Bathurst Rd			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
15:00 - 16:00	54	44	7	192	425	79	168	94	176	1	277	143	1660
15:15 - 16:15	40	45	8	178	442	73	177	96	175	1	250	125	1610
15:30 - 16:30	38	32	6	178	461	66	204	103	179	4	234	115	1620
15:45 - 16:45	32	34	7	157	480	62	226	107	191	5	227	130	1658
16:00 - 17:00	39	38	8	141	520	64	242	104	194	7	238	139	1734
16:15 - 17:15	38	44	9	146	563	66	257	104	190	8	254	138	1817
16:30 - 17:30	33	53	12	126	563	71	241	105	161	6	245	133	1749
16:45 - 17:45	39	53	11	116	641	86	248	111	138	7	283	124	1857
17:00 - 18:00	35	43	10	113	584	75	245	100	128	5	276	109	1723

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Weathe Fine

Count Tuesday 22 November 2005
Suburb EMU HEIGHTS
Job 05.08.089

Comments

Vehicle Class	Russell St			Old Bathurst Rd			Russell St			Old Bathurst Rd			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
Lights	39	51	11	101	637	86	244	108	121	7	279	123	1307
Heavy	0	2	0	15	4	0	4	3	17	0	4	1	30
Total	39	53	11	116	641	86	248	111	138	7	283	124	1357

PEDESTRIAN	Russell St			Old Bathurst Rd			Russell St			Old Bathurst Rd			Total
	L	T	R	L	T	R	L	T	R	L	T	R	
All Pedestrians	1			0			0			0			1
Total	1			0			0			0			1

Peak Hour - 17:45

Peak Hour 16:45 - 17:45

Rus
sell
St

N

3	2	0	2	0
201	101	11	51	39
204	103	11	53	39

Old Bathurst Rd

0	7	7
4	279	283
1	123	124
5	409	414
8	892	900

Old Bathurst Rd

460	439	21
843	824	19
86	86	0
641	637	4
116	101	15

Rus
sell
St

248	111	138	497	293
244	108	121	473	275
4	3	17	24	18

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APPENDIX B

VOLUME DATA SCREEN

AM PEAK						PM PEAK						BUSINESS					
AM	Vol	Sat	Phse	Yval	Utrn	Vol	Sat	Phse	Yval	Utrn	Vol	Sat	Phse	Yval	Utrn		
1L	1	41		A 0.02		7	47		A 0.15		3	43		A 0.07			
1T	409	997		A 0.41		283	1265		A 0.23		242	1826		A 0.13			
1R	349	1083		S 0.33		124	225		S 0.56		166	572		S 0.29			
2L	77	1304		B 0.07		248	921		B 0.28		114	1285		B 0.09			
2T	32	545		B 0.07		111	414		B 0.28		50	564		B 0.09			
2R	239	1693		S 0.17		138	1171		S 0.12		132	910		S 0.15			
3L	130	972		A 0.16		116	254		A 0.46		86	453		A 0.19			
3T	117	877		A 0.16		641	1406		A 0.47		265	1396		A 0.19			
3R	29	78		S 0.43		86	329		S 0.27		40	258		S 0.16			
4L	69	893		B 0.08		39	787		B 0.05		38	857		B 0.04			
4T	74	956		B 0.08		53	1062		B 0.05		44	992		B 0.04			
4R	7	77		S 0.09		11	38		S 0.29		6	41		S 0.15			

A	Min	ELT	H%AM	H%PM	H%B	L/S	PD-L	PD-R	Sign	Hold	LKph
1	5	4.0	1	1	0	0'	0	0			25
2	5	4.0	18	5	0	0'	0	0	G	N	25
3	5	4.0	18	2	0	0'	0	0			25
4	5	4.0	3	2	0	0'	0	0	G	N	25

File = OLDRUSEX

Type = COCO

PLATOON DATA				PEDESTRIAN VOLUME			WALK-CLEARANCE	
App	P%AM	P%PM	P%B	P#AM	P#PM	P%B	Walk	Clear
1	R0	R0	R0	0	0	0	0	0
2	R0	R0	R0	0	0	0	0	0
3	R0	R0	R0	0	0	0	0	0
4	R0	R0	R0	0	0	0	0	0

LANES DATA SCREEN

Approach 1				Approach 2				Approach 3				Approach 4			
Down	Lanes	Grade	Down	Lanes	Grade	Down	Lanes	Grade	Down	Lanes	Grade	Down	Lanes	Grade	Down
Type	0	1	0	0	1	0	0	1	0	0	1	0	1	0	0
COCO															
Lane	Type	Lngh	Sat	Type	Lngh	Sat	Type	Lngh	Sat	Type	Lngh	Sat	Type	Lngh	Sat
1	LTR	9999	1849	LTR	9999	1849	LTR	9999	1849	LTR	9999	1849	LTR	9999	1849
2															
3															
4															
5															
6															
7															
8															
No Parking				No Parking				No Parking				No Parking			
Approch	AM	PM	BUS	Approch	AM	PM	BUS	Approch	AM	PM	BUS	Approch	AM	PM	BUS
Depart	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Roundabout				Roundabout				Roundabout				Roundabout			
TCS#	Ent	Cir	Wdth	Ent	Cir	Wdth	Ent	Cir	Wdth	Ent	Cir	Wdth	Ent	Cir	Wdth
0	1	1	6	1	1	6	1	1	6	1	1	6	1	1	6

File = OLDRUSEX

DELAY - STOPS - CYCLE LENGTH - PHASE SPLITS DATA SCREEN

AM PEAK				PM PEAK				BUSINESS			
Phse	PT%o	CLo	Yo	PT%o	CLo	Yo	PT%o	CLo	Yo		
A	61.9	45	0.67	65.9	140	0.87	60.9	23	0.44		
B	38.1			34.1			39.1				
C											
D	Peds	@ CLm=	140	Peds	@ CLm=	140	Peds	@ CLm=	140		
E	Delo	DSm=	0.73	Delo	DSm=	0.91	Delo	DSm=	0.52		
F	0	Ym=	0.69	0	Ym=	0.87	0	Ym=	0.50		
G		Delaym=	16.49		Delaym=	21.47		Delaym=	10.36		
Seq	AB			AB			AB				
	Signals	Signs	Round	Signals	Signs	Round	Signals	Signs	Round		

Delo 9.0 85.5 3.2 21.5 17.1 6.6 3.4 2.2 1.9
 Stpo 1349 696 362 1383 714 629 835 213 166
 D/So 0.82 1.36 0.50 0.91 1.75 0.55 0.66 0.63 0.25
 L/So B F A F F C A C A
 File = OLDRUSEX

Required Bays
 A RHT Lanes LHT Lanes
 Length No. Length No.
 1 16 1 10 1
 2 14 1 19 1
 3 10 1 10 1
 4 10 1 10 1

VOLUME DATA SCREEN

AM PEAK					PM PEAK					BUSINESS					
AM	Vol	Sat	Phse	Yval	Utrn	Vol	Sat	Phse	Yval	Utrn	Vol	Sat	Phse	Yval	Utrn
1L	1	41	A	0.02		7	47	A	0.15		3	43	A	0.07	
1T	539	1121	A	0.49		329	1323	A	0.25		304	1831	A	0.17	
1R	349	921	S	0.38		124	194	S	0.64		166	514	S	0.32	
2L	77	361	B	0.25		248	921	B	0.28		114	1285	B	0.09	
2T	32	151	B	0.25		111	414	B	0.28		50	564	B	0.09	
2R	286	1446	S	0.23		138	1200	S	0.12		148	1100	S	0.13	
3L	141	944	A	0.18		136	255	A	0.55		97	441	A	0.22	
3T	135	905	A	0.18		752	1405	A	0.55		310	1408	A	0.22	
3R	29	67	S	0.51		101	337	S	0.31		45	234	S	0.19	
4L	69	893	B	0.08		39	787	B	0.05		38	857	B	0.04	
4T	74	956	B	0.08		53	1062	B	0.05		44	992	B	0.04	
4R	7	27	S	0.25		11	38	S	0.29		6	45	S	0.13	

A	Min	ELT	H%AM	H%PM	H%B	L/S	PD-L	PD-R	Sign	Hold	LKph
1	5	4.0	1	1	0	0'	0	0			25
2	5	4.0	18	5	0	0'	0	0	G	N	25
3	5	4.0	18	2	0	0'	0	0			25
4	5	4.0	3	2	0	0'	0	0	G	N	25

File = OLDRUSPR
 Type = COCO

PLATOON DATA				PEDESTRIAN VOLUME			WALK-CLEARANCE	
App	P%AM	P%PM	P%B	P#AM	P#PM	P%B	Walk	Clear
1	R0	R0	R0	0	0	0	0	0
2	R0	R0	R0	0	0	0	0	0
3	R0	R0	R0	0	0	0	0	0
4	R0	R0	R0	0	0	0	0	0

LANES DATA SCREEN

Approach 1			Approach 2			Approach 3			Approach 4			
Down	Lanes	Grade	Down	Lanes	Grade	Down	Lanes	Grade	Down	Lanes	Grade	
Type	0	1	0	0	1	0	0	1	0	0	1	0
COCO												
Lane	Type	Lngh	Sat	Type	Lngh	Sat	Type	Lngh	Sat	Type	Lngh	Sat
1	LTR	9999	1849	LTR	9999	1849	LTR	9999	1849	LTR	9999	1849
2												
3												
4												
5												
6												
7												
8												
No Parking			No Parking			No Parking			No Parking			
AM	PM	BUS	AM	PM	BUS	AM	PM	BUS	AM	PM	BUS	
0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	
Roundabout			Roundabout			Roundabout			Roundabout			
Ent	Cir	Wdth	Ent	Cir	Wdth	Ent	Cir	Wdth	Ent	Cir	Wdth	
0	1	1	6	1	1	6	1	1	6	1	1	6

File = OLDRUSPR

DELAY - STOPS - CYCLE LENGTH - PHASE SPLITS DATA SCREEN

AM PEAK					PM PEAK					BUSINESS				
Phse	PT%o	CLO	Yo		PT%o	CLO	Yo			PT%o	CLO	Yo		
A	62.5	70	0.79		68.9	140	0.96			64.0	25	0.46		
B	37.5				31.1					36.0				
C														
D		Peds	@ CLm=	140	Peds	@ CLm=	140			Peds	@ CLm=	140		
E		Delo	DSm=	0.84	Delo	DSm=	1.01			Delo	DSm=	0.57		
F		0	Ym=	0.79	0	Ym=	0.96			0	Ym=	0.54		
G			Delaym=	20.74		Delaym=	28.61				Delaym=	11.32		
Seq	AB				AB					AB				
	Signals	Signs	Round		Signals	Signs	Round			Signals	Signs	Round		
Delo	15.1	197.9	4.2		28.6	94.0	10.8			3.9	4.1	2.2		
Stpo	1590	861	485		1678	915	809			912	270	212		
D/So	0.89	1.97	0.55		1.01	2.09	0.64			0.67	0.75	0.30		
L/So	C	F	A		F	F	D			A	F	A		
File = OLDRUSPR														
Required Bays														
A RHT Lanes LHT Lanes														
Length No.Length No.														
1 19 1 10 1														
2 20 1 22 1														
3 10 1 10 1														
4 10 1 10 1														

VOLUME DATA SCREEN

	AM PEAK					PM PEAK					BUSINESS				
AM	Vol	Sat	Phse	Yval	Utrn	Vol	Sat	Phse	Yval	Utrn	Vol	Sat	Phse	Yval	Utrn
1L	177	346	A	0.56		68	224	A	0.32		86	302	A	0.28	
1T	717	1404	A	0.56		460	1526	A	0.32		412	1448	A	0.28	
1R															
2L															
2T															
2R															
3L															
3T	276	1900	A	0.17		843	1900	A	0.45		392	1900	A	0.21	
3R	68	139	S	0.58		37	111	S	0.34		37	120	S	0.31	
4L	76	1750	B	0.05		98	1750	B	0.07		61	1750	B	0.03	
4T															
4R	29	1850	B	0.02		147	1850	B	0.10		62	1850	B	0.03	
			A	Min	ELT	H%AM	H%PM	H%B	L/S	PD-L	PD-R	Sign	Hold	LKph	
			1	5	4.0	9	5	0	0'	0				25	
			2												
			3	5	4.0	18	2	0	0'		0				
			4	5	4.0	20	20	0		0	0	G	N	25	

File = OLDESTAT

Type = T4

PLATOON DATA				PEDESTRIAN VOLUME			WALK-CLEARANCE	
App	P%AM	P%PM	P%B	P#AM	P#PM	P%B	Walk	Clear
1	R0	R0	R0	0	0	0	0	0
2	R0	R0	R0	0	0	0	0	0
3	R0	R0	R0	0	0	0	0	0
4	R0	R0	R0	0	0	0	0	0

LANES DATA SCREEN

Approach 1				Approach 2				Approach 3				Approach 4			
Down	Lanes	Grade	Down	Lanes	Grade	Down	Lanes	Grade	Down	Lanes	Grade	Down	Lanes	Grade	Down
Type	0	1	0				0	2	0			2	0		
T4															
Lane	Type	Lngh	Sat	Type	Lngh	Sat	Type	Lngh	Sat	Type	Lngh	Sat	Type	Lngh	Sat
1	LT	9999	1750				T	9999	1900	L	9999	1750			
2							R	50	1850	R	9999	1850			
3															
4															
5															
6															
7															
8															

	No Parking				No Parking				No Parking				No Parking		
	AM	PM	BUS		AM	PM	BUS		AM	PM	BUS		AM	PM	BUS
Approch	0	0	0						0	0	0		0	0	0
Depart	0	0	0						0	0	0		0	0	0
	Roundabout				Roundabout				Roundabout				Roundabout		
TCS#	Ent	Cir	Wdth		Ent	Cir	Wdth		Ent	Cir	Wdth		Ent	Cir	Wdth
0	1	1	4						1	1	4		1	1	4

File = OLDESTAT

DELAY - STOPS - CYCLE LENGTH - PHASE SPLITS DATA SCREEN

Phse	PT%	AM PEAK			PT%	CLO	Yo		PT%	CLO	Yo		PT%	CLO	Yo
A	86.2	65	0.68		76.4	42	0.55		83.6	55	0.35				
B	13.8				23.6				16.4						
C															
D		Peds	@ CLm=	140		Peds	@ CLm=	140		Peds	@ CLm=	140			
E		Delo	DSm=	0.72		Delo	DSm=	0.58		Delo	DSm=	0.37			
F		0	Ym=	0.68		0	Ym=	0.55		0	Ym=	0.34			
G		Delaym=		5.69		Delaym=		8.78			Delaym=	3.84			
Seq	AB				AB				AB						
	Signals	Signs	Round		Signals	Signs	Round		Signals	Signs	Round				
Delo	4.2	0.9	1.8		5.0	1.2	2.7		2.4	0.5	1.2				
Stpo	664	34	97		990	111	190		388	15	45				
D/So	0.77	0.26	0.58		0.68	0.47	0.64		0.39	0.12	0.30				
L/So	A	B	A		A	B	A		A	A	A				

File = OLDESTAT

Required Bays

A	RHT Lanes	LHT Lanes
	Length No.	Length No.
1		10 1
2		
3	11 1	
4	16 1	13 1