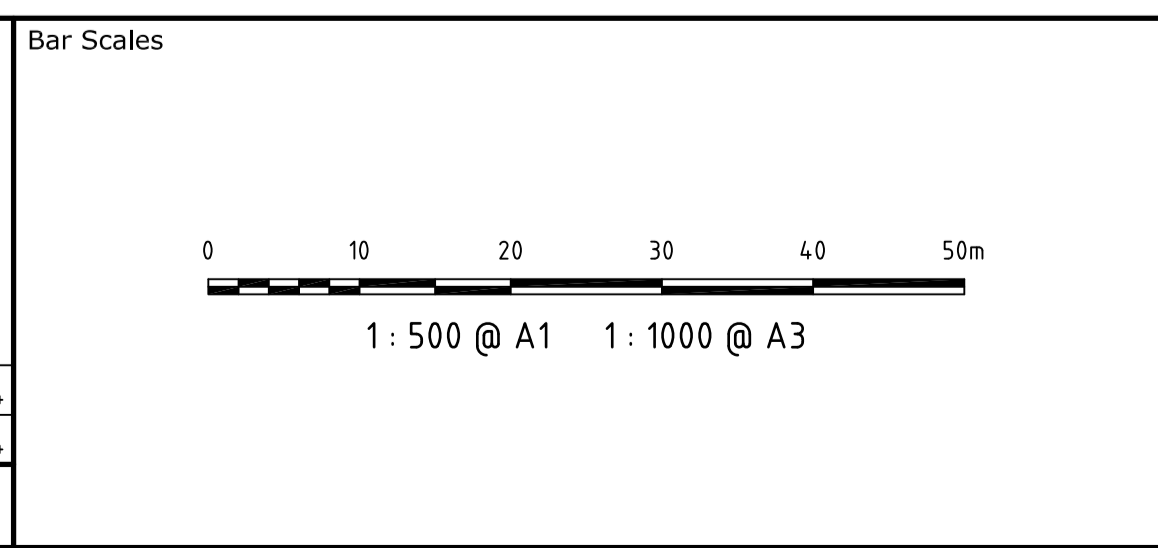


NOTE
 PROVISION OF BUS BAYS
 SUBJECT TO STATE
 TRANSIT CONCURRENCE.

Issue	Description	Date
P2	ISSUED FOR INFORMATION	25-08-14
P1	ISSUED FOR INFORMATION	25-08-14



THIS DRAWING CANNOT BE COPIED OR REPRODUCED IN ANY FORM OR USED FOR ANY OTHER PURPOSE OTHER THAN THAT ORIGINALLY INTENDED WITHOUT THE WRITTEN PERMISSION OF AT&L

Client
MIRVAC

Scales	1 : 500 @ A1	Drawn	GB
		Designed	MM
Grid	MGA	Checked	MM
Height Datum	AHD	Approved	

Project
**60 WALLGROVE ROAD,
 EASTERN CREEK
 INTERSECTION**

Title
**WALLGROVE ROAD
 LEFT TURN
 REVISED OPTION 3**

Civil Engineers and Project Managers

at&l

Suite 702, 154 Pacific Hwy
 St Leonards NSW 2065
 ABN 96 130 882 405
 Tel: 02 9439 1777
 Fax: 02 9460 8413
 www.atl.net.au
 info@atl.net.au

Status	PRELIMINARY ONLY	A1
NOT TO BE USED FOR CONSTRUCTION		
Drawing No.	SKC46	Issue
Project No.	12-108	P2

Julie Singh

From: Fabian Nager [fabian.nager@mirvac.com]
Sent: Thursday, 18 September 2014 1:03 PM
To: James McKew; Michael Guinane; Anthony McLandsborough; Ross Nettle
Cc: Stuart Penklis
Subject: FW: 20140818 RMS Response: Response to RMS Letter 22 MAY 2014 - SYD13/00348/04
Attachments: 14-09-02 - Response to Pre DA Letter 22 May 2014.pdf

Gents,

See below from the RMS.

A very good outcome for the project! Thank you for your help in getting this outcome.

Regards,



Fabian Nager
Senior Development Manager
Commercial
Development

Level 26, 60 Margaret Street Sydney NSW 2000 Australia
T +61 2 9080 8473 M 0415 291 708
fabian.nager@mirvac.com www.mirvac.com
[Electronic Data Transmission Disclaimer](#)

Please consider the environment before printing emails and attachments

From: MALLOCH Angela [<mailto:Angela.MALLOCH@rms.nsw.gov.au>]
Sent: Thursday, 18 September 2014 11:33 AM
To: Fabian Nager
Subject: 20140818 RMS Response: Response to RMS Letter 22 MAY 2014 - SYD13/00348/04

Hi Fabian,

Thank you for your letter dated 2 September 2014, Roads and Maritime Services (Roads and Maritime) has reviewed the letter and traffic lights plan (Drawing Number SKC46 issue P2) and advises Roads and Maritime previous concerns/items have now been addressed.

Roads and Maritime provides in principle agreement to the proposed traffic lights as shown in Drawing Number SKC46 issue P2.

I will forward this plan to Roads and Maritime Project Manager for their record in relation to the existing Works Authorisation Deed.

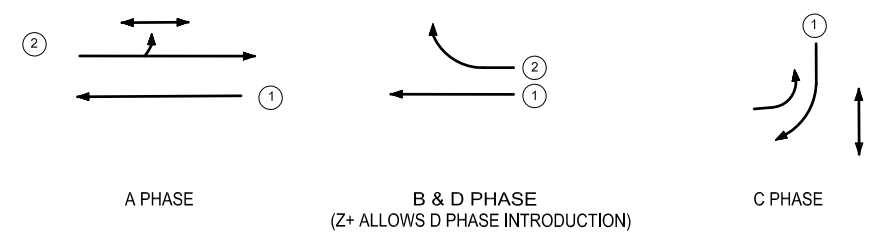
Regards,
Angela Malloch
Senior Land Use Planner
Network Management | Journey Management
T 02 8849 2041
www.rms.nsw.gov.au
Every journey matters

Roads and Maritime Services
27 Argyle Street Parramatta NSW 2150

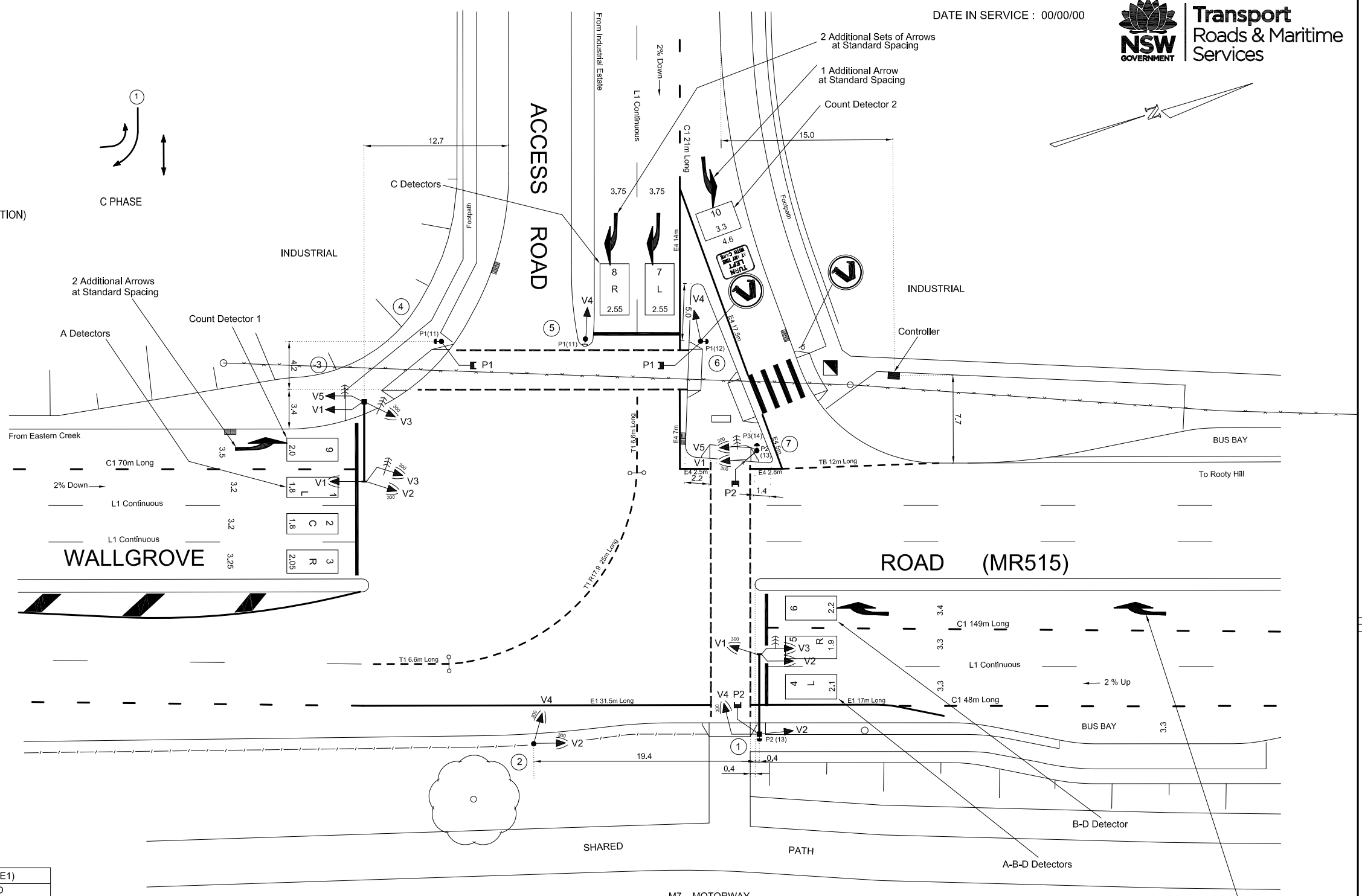


DRAWN BY CADD
DO NOT AMEND MANUALLY

DATE IN SERVICE : 00/00/00



MOVEMENTS



SIGNAL GROUP/PHASE CHART

SIGNAL GROUP	PHASES WHEN GREEN				STANDARD TABLE	REMARKS
	A	B	C	D		
V1	X				1	
V2	X	X		X	3	
V3		X		X	34	
V4			X		1	
V5	C		X		77	R.A Protection for P1 Extended by PB on Post 6
P1	X				2	
P2			X		1	

DETECTOR SPECIFICATION

Detector	Specifications				
	FN	A(L)	A(E1)	B(E1)	D(E1)
A	FN	A(L)	A(E1)	B(E1)	D(E1)
	SG/PS	A	A		
A-B-D	FN	A(L)	A(E1)	B(E1)	D(E1)
	SG/PS	B.D	B(NEXT),D(NEXT)	A(NEXT),D(NEXT)	A(NEXT),B(NEXT)
B-D	FN	B(L)	D(L)	B(E2)	D(E2)
	SG/PS	V3	V3	B	D
C	FN	C(L)	C(E1)		
	SG/PS	C	C		
P1 P.B.	FN	A(PB)	C(L)		
	SG/PS	P1(WALK)	A.P1(WALK)		
P2 P.B.	FN	C(PB)	A(L)		
	SG/PS	P2(WALK)	C.P2(WALK)		

POSTS

POST	TYPE	LENGTH	REMARKS
1	9	-	New 7.0m Outreach
2	2	4.1	New
3	9	-	New 7.0m Outreach
4	2	3.2	New
5	2	4.1	New
6	2	4.1	New
7	2	4.1	New

NOTES:

- This site is SCATS linked
- Audio tactile push buttons are provided on posts 1, 4, 6, and 7.
- Special STOP sign (R1-4) attached to post 5 and 6.
- Kerb ramps to be constructed at all pedestrian crossings in accordance with Model Drawing MD.R173.B01.A1.
- Supply to be determined at site by a level 2/3 service provider.
- Roadworks in accordance with A.T&L road construction drawings number DS2014/006429
- Provision to be made in ducts and cabling for future pedestrian crossing across the southern arm of Wallgrove Rd.

A ORIGINAL ISSUE

PUBLIC UTILITY LEGEND		REFERENCE PLANS		U.B.D. Ref. Map 187 G11	
HYDRANT	□	SYMBOLS/ABBS.	VD003-6	I.S.G.	E: 286 400
STOP VALVE	△	STD POST	VD001-5	CO-ORDS	N: 1 259 290
GAS VALVE	#	PRES. DETECT	VC005-17	DESIGNED	CT
SEWER MANHOLE	⊕	VEH. GROUP OP	TS-TN-019	CHECKED	JS
TELECOM PIT	⊕	DET. LOGIC OP	TS-TN-020	SITE CHECKED	JS
ELECT LIGHT POLE	⊕	PED. MOVEMENT OP	TS-TN-021	DESIGN PREPARED BY	R. NETTLE
POWER POLE	⊕			DIRECTOR	
STAY POLE	⊕			DATE	28.04.2015
TELEPHONE BOX	⊕	SURVEYOR: LOCKEY SOLUTIONS		RECOMMENDED	BL
TELECOM PILLAR	⊕	DATE: 2013			

DESIGN APPROVAL	RMS ACCEPTANCE
APPROVED	RECOMMENDED
ACCEPTED	ACCEPTED

ROADS AND MARITIME SERVICES
BLACKTOWN COUNCIL AREA
TRAFFIC SIGNALS AT THE INTERSECTION OF
WALLGROVE ROAD (MR515)
AND ACCESS ROAD
MINCHINBURY
DESIGN LAYOUT TCS No 4618

EXISTING	PROPOSED
<input type="checkbox"/>	<input checked="" type="checkbox"/>
CADD FILE: VV4618_1A.dgn	
SCALE 5 0 (1:200) 5 10	ISSUE A
FILE SF2014/015917	SUPERSEDES SHEET/ISSUE -
REGN. DS2014/000189	TCS No. 4618
	SHEET 1

APPENDIX D

TRAFFIC SURVEY RESULTS



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : T.T.P.A

Job No/Name : EASTERN CREEK Wallgrove Rd

Day/Date : Tuesday / 8th April 2014

All Vehicles Time Per	NORTH Rooty Hill Rd			WEST Great Western Hwy			SOUTH Wallgrove Rd			EAST Great Western Hwy			TOT
	L	I	R	L	I	R	L	I	R	L	I	R	
	0630 - 0645	115	185	17	3	317	123	61	91	181	7	97	
0645 - 0700	108	192	16	2	309	125	72	98	190	5	108	16	1241
0700 - 0715	112	220	18	1	314	140	69	101	201	8	114	13	1311
0715 - 0730	127	205	14	2	275	169	56	112	177	11	127	8	1283
0730 - 0745	112	217	12	2	280	111	71	116	163	10	129	17	1240
0745 - 0800	109	193	17	3	317	100	82	112	171	14	142	26	1286
0800 - 0815	111	186	30	1	328	119	73	110	182	16	153	21	1330
0815 - 0830	122	189	27	4	301	140	64	105	172	19	187	18	1348
0830 - 0845	116	206	34	1	290	92	75	97	147	13	178	22	1271
0845 - 0900	87	153	31	1	324	122	77	104	133	14	185	29	1260
0900 - 0915	62	124	36	3	387	123	64	106	109	17	161	21	1213
0915 - 0930	63	121	29	1	312	149	61	112	93	10	158	15	1124
Period End	1244	2191	281	24	3754	1513	825	1264	1919	144	1739	217	15115

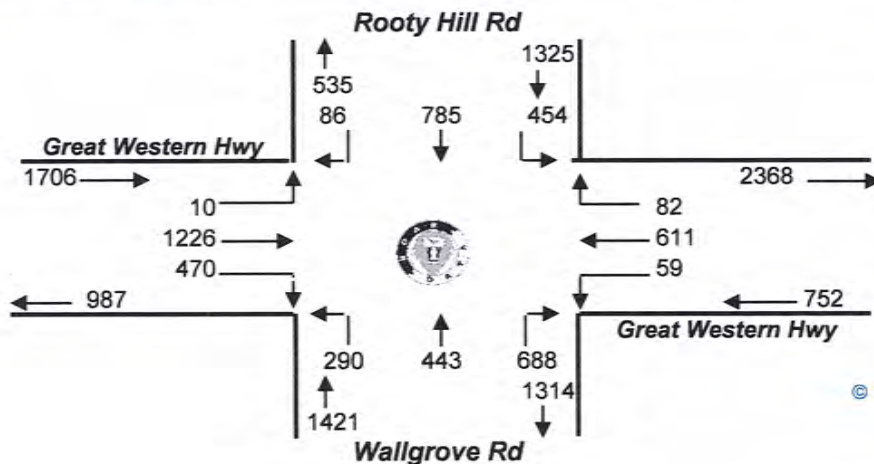
All Vehicles Time Per	NORTH Rooty Hill Rd			WEST Great Western Hwy			SOUTH Wallgrove Rd			EAST Great Western Hwy			TOT
	L	I	R	L	I	R	L	I	R	L	I	R	
	1530 - 1545	26	131	25	6	175	122	71	143	58	41	311	
1545 - 1600	23	127	30	7	161	144	88	197	71	54	325	81	1308
1600 - 1615	38	150	32	4	173	108	93	161	67	47	321	67	1261
1615 - 1630	31	141	27	8	177	127	130	150	62	67	365	76	1361
1630 - 1645	23	151	35	2	199	123	117	169	61	58	327	69	1334
1645 - 1700	21	138	27	6	179	119	121	191	72	61	356	83	1374
1700 - 1715	19	132	30	2	181	125	91	163	58	60	329	71	1261
1715 - 1730	16	119	24	5	201	123	95	174	63	74	386	94	1374
1730 - 1745	10	125	25	4	224	119	87	162	58	52	310	73	1249
1745 - 1800	14	117	20	6	210	120	116	202	66	42	322	76	1311
1800 - 1815	16	105	19	2	189	74	102	210	51	41	313	58	1180
1815 - 1830	12	97	17	2	178	71	111	197	42	36	325	41	1129
Period End	249	1533	311	54	2247	1375	1222	2119	729	633	3990	847	15309

Peak Time	NORTH Rooty Hill Rd			WEST Great Western Hwy			SOUTH Wallgrove Rd			EAST Great Western Hwy			TOT
	L	I	R	L	I	R	L	I	R	L	I	R	
	0630 - 0730	462	802	65	8	1215	557	258	402	749	31	446	
0645 - 0745	459	834	60	7	1178	545	268	427	731	34	478	54	5075
0700 - 0800	460	835	61	8	1186	520	278	441	712	43	512	64	5120
0715 - 0815	459	801	73	8	1200	499	282	450	693	51	551	72	5139
0730 - 0830	454	785	86	10	1226	470	290	443	688	59	611	82	5204
0745 - 0845	458	774	108	9	1236	451	294	424	672	62	660	87	5235
0800 - 0900	436	734	122	7	1243	473	289	416	634	62	703	90	5209
0815 - 0915	387	672	128	9	1302	477	280	412	561	63	711	90	5092
0830 - 0930	328	604	130	6	1313	486	277	419	482	54	682	87	4868

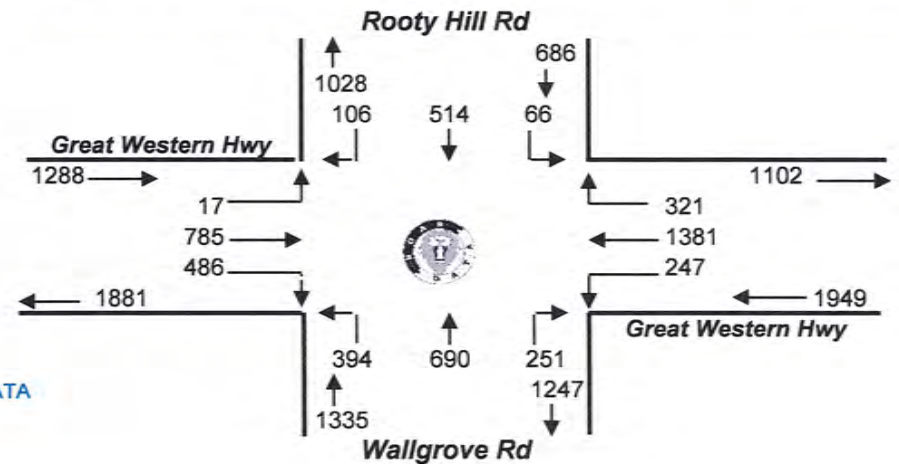
Peak Time	NORTH Rooty Hill Rd			WEST Great Western Hwy			SOUTH Wallgrove Rd			EAST Great Western Hwy			TOT
	L	I	R	L	I	R	L	I	R	L	I	R	
	1530 - 1630	118	549	114	25	686	501	382	651	258	209	1322	
1545 - 1645	115	569	124	21	710	502	428	677	261	226	1338	293	5264
1600 - 1700	113	580	121	20	728	477	461	671	262	233	1369	295	5330
1615 - 1715	94	562	119	18	736	494	459	673	253	246	1377	299	5330
1630 - 1730	79	540	116	15	760	490	424	697	254	253	1398	317	5343
1645 - 1745	66	514	106	17	785	486	394	690	251	247	1381	321	5258
1700 - 1800	59	493	99	17	816	487	389	701	245	228	1347	314	5195
1715 - 1815	56	466	88	17	824	436	400	748	238	209	1331	301	5114
1730 - 1830	52	444	81	14	801	384	416	771	217	171	1270	248	4869

PEAK HOUR	454	785	86	10	1226	470	290	443	688	59	611	82	5204
-----------	-----	-----	----	----	------	-----	-----	-----	-----	----	-----	----	------

PEAK HOUR	66	514	106	17	785	486	394	690	251	247	1381	321	5258
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APPENDIX E

TRANSPORT SERVICES

Bus routes

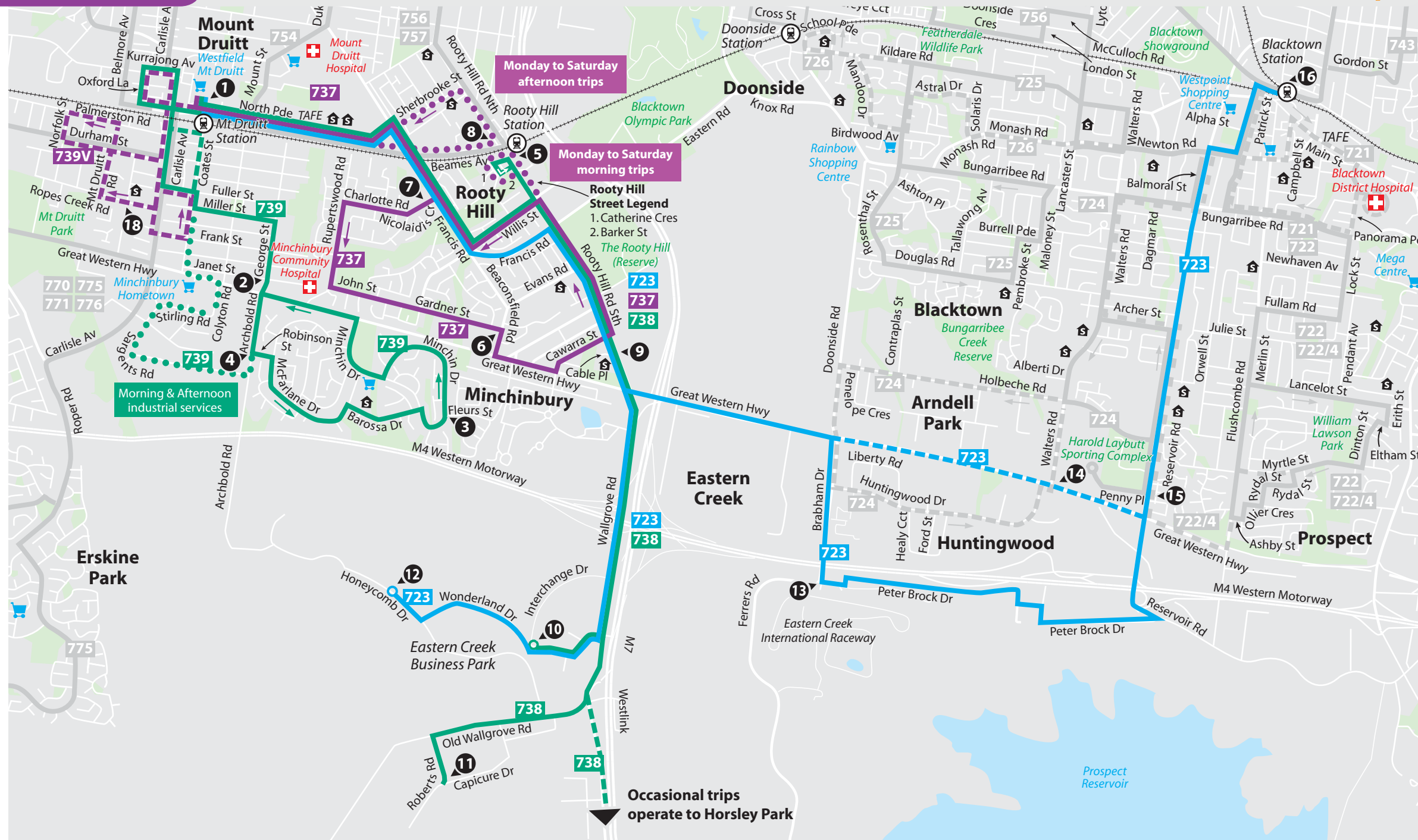
- 723** Mt Druitt - Blacktown via Eastern Creek Business Park
- 737** Mt Druitt - Eastern Creek
- 738** Mt Druitt - Eastern Creek Business Park
- 739** Mt Druitt - Minchinbury
- 739V** Mt Druitt - Mt Druitt South

For Westpoint, Blacktown and Mt Druitt Station bus diagrams please see page 10

- Bus routes covered by other Region 1 timetables
- Occasional trips
- Occasional diversions
- Timing Point

Legend

- Shopping Centres
- Hospitals
- Schools



APPENDIX F

EXTRACT FROM RMS STUDY



in association with
GENNAOUI CONSULTING PTY LTD

Address PO Box 215, Bondi NSW 2026
Phone 021 9332 2024 / (02) 9523 9212
Fax (02) 9332 2022
Mobile 0414 978 067 / 0414 554 523
e-mail o.s@tefconsult.com.au / s.s@tefconsult.com.au
www http://www.tefconsult.com.au



Transport
Roads & Maritime
Services

ROADS AND MARITIME SERVICES

TRIP GENERATION SURVEYS

BUSINESS PARKS AND INDUSTRIAL ESTATES

ANALYSIS REPORT

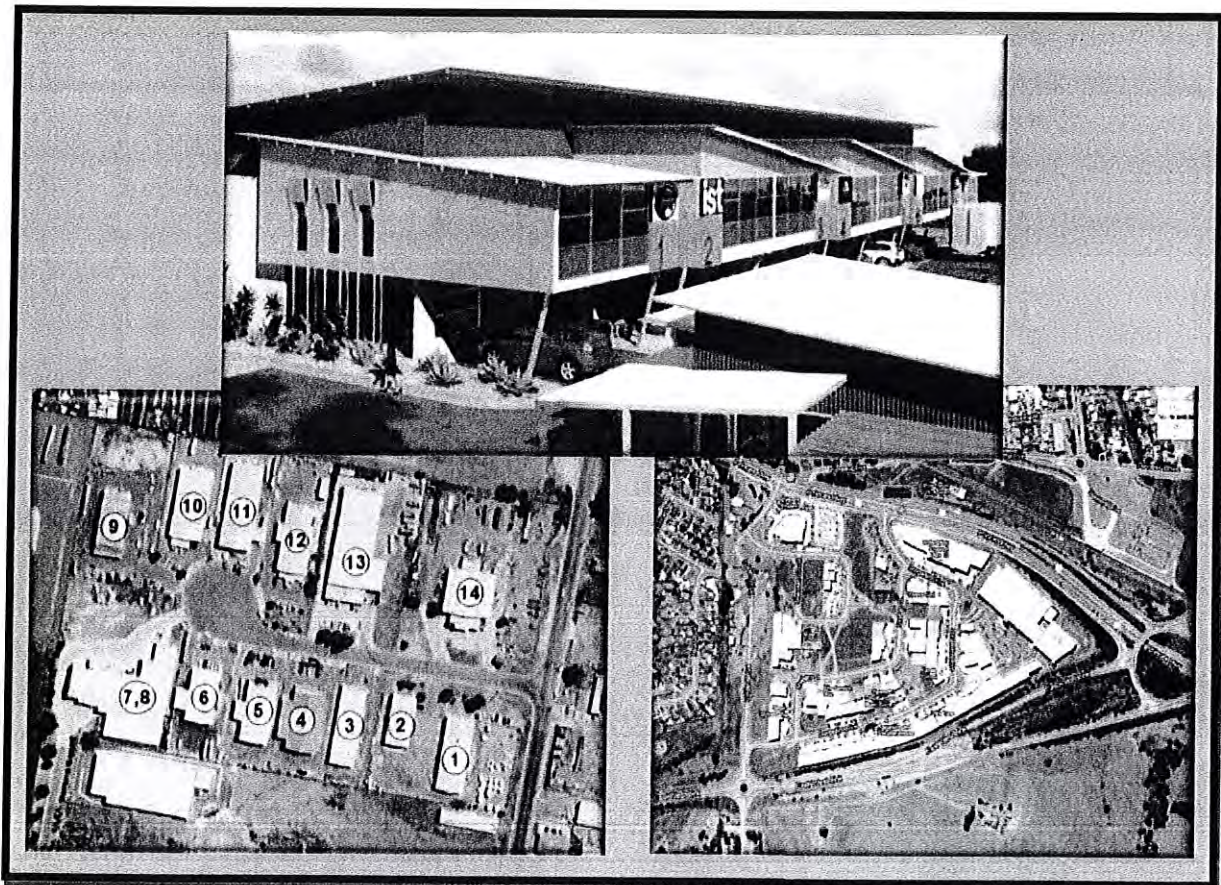


Table 2.1 Details of the selected survey sites.

Traffic results summary

Survey area ID	Sydney areas				Non-Sydney areas					
	Site 1 Erskine Park Industrial Estate, Erskine Park, 28/03/2012, Thursday, 06:00-18:00	Site 2 Helensburgh Business Park, Helensburgh, 28/03/2012, Wednesday, 07:00-19:00	Site 3 Warradfield Business Park, Eastern Creek, 28/03/2012, Thursday, 07:00-19:00	Site 4 Riverview Business Park, Riverview, 28/03/2012, Wednesday, 07:00-19:00	Site 5 Tuggerah Business Park, Tuggerah, 17/05/2012, Tuesday, 07:00-19:00	Site 6 Central Business Park, Albion Park Rail, 8/05/2012, Tuesday, 07:00-19:00	Site 7 Anarabah Business Park, Rutherford, 2/05/2012, Wednesday, 06:00-18:00	Site 8 Freeway Business Park, Berrisfield, 1/05/2012, Tuesday, 07:00-19:00	Site 9 Shearwater Business Park, Stephens Industrial Estate, Taylors Park, Dubbo, 2/05/2012, Wednesday, 06:00-19:00	Site 10 Port Stephens Industrial Estate, Taylors Park, Dubbo, 2/05/2012, Wednesday, 06:00-19:00
Surrounding landuse (eg residential, commercial, open space, etc)	Commercial	Residential	Residential	Residential	Commercial	Open space	Commercial	Open space	Open space	Residential
Indicative Public Transport Accessibility Score	2	2	2	2	48	10	0	0.5	0.5	0
Principal adjacent road - AM peak period (weekday)	8.00 to 9.00 am	8.30 to 9.30 am	7.30 to 8.30 am	8.15 to 9.15 am	8.00 to 9.00 am	8.00 to 9.00 am	7.00 to 8.00 am	8.00 to 9.00 am	8.00 to 9.00 am	8.00 to 9.00 am
Principal adjacent road - PM peak period (weekday)	3.30 to 4.30 pm	4.30 to 5.30 pm	4.15 to 5.15 pm	3.00 to 4.00 pm	4.00 to 5.00 pm	4.00 to 5.00 pm	5.00 to 6.00 pm	4.00 to 5.00 pm	4.00 to 5.00 pm	4.00 to 5.00 pm
Principal adjacent road - daily peak period (weekend)	1.00 to 2.00 pm	11.00 am to 12.00 pm	1.15 to 2.15 pm	1.15 to 2.15 pm	11.00 am to 12.00 pm	11.00 am to 12.00 pm	12.00 pm to 1.00 pm	11.00 am to 12.00 pm	11.00 am to 12.00 pm	10.00 to 11.00 am
Estimate characteristics:										
Year opened	2003	2007	2004	2004	2006	2000-2005	2008-2010	2005	2002-2005	2001-2005
Total site area (hectares)	369.9	0.6	114.6	4.7	52.2	14.6	17.5	32.5	10.3	32.5
No. of units/lots (including vacant units/lots)	38	21	26	16	229	79	18	58	93	42
Predominant business types within estate	36	13	22	16	184	66	18	52	44	27
no. of factories/warehouses	5	0	0	0	6	0	0	1	5	0
no. of warehouses	27	0	0	0	2	0	0	2	0	0
no. of offices	1	9	20	15	41	13	5	23	5	3
no. of retailers	0	0	0	1	63	4	3	7	7	1
no. of workshops	1	0	0	0	16	25	1	2	12	6
no. of manufacturers	0	3	2	0	0	9	3	7	6	1
no. of others commercial businesses	0	1	0	0	23	15	2	2	2	10
Gross Floor Area in estate m ² (occupied)	693,895	1,605	406,600	29,983	136,737	42,699	29,766	89,291	16,022	19,891
% of employees	Incomplete data from businesses	Incomplete data from businesses	231	231	Incomplete data from businesses	182	Incomplete data from businesses	Incomplete data from businesses	Incomplete data from businesses	14,419
Person Type:	1294	29	927	173	1459	519	204	575	285	97
Peak 1-hour person-tips	14:45-15:45	14:45-15:45	14:00-15:00	08:15-09:15	16:30-17:30	16:15-17:15	15:00-16:00	07:00-08:00	16:15-17:15	15:00-16:00
Peak person-tips per business	35.9	4.2	4.2	10.9	8	7.9	11.3	11.1	6.5	3.6
Peak person-tips per hectare	0.187	1.807	0.228	37.0	28	35.6	11.6	17.7	27.7	16.5
Peak person-tips per 100 m ² of GFA	Incomplete data from businesses	Incomplete data from businesses	0.577	Incomplete data from businesses	1.066	1.210	0.885	0.844	1.779	0.488
Total daily person-tips	14056	169	9629	1410	12066	4205	2064	6399	2389	975
Total daily person-tips per business	390.4	13.0	451.3	68	65.6	63.7	114.6	123.1	54.3	26.1
Total daily person-tips per hectare	43.0	287.0	301.5	86.6	231.4	288.7	117.6	197.1	232.0	165.5
Total daily person-tips per 100 m ² of GFA	2.028	10.492	2.442	4.703	6.824	9.802	6.933	7.167	14.910	4.904
Total daily person-tips per employee	Incomplete data from businesses	Incomplete data from businesses	6.103	6.103	Incomplete data from businesses	11.339	Incomplete data from businesses	Incomplete data from businesses	Incomplete data from businesses	9.129
Person-tips during adjacent road AM peak	976	24	789	94	1408	270	123	575	176	93
Person-tips during adjacent road PM peak	1073	7	658	94	1060	470	160	386	258	54
Vehicle Type:										
Peak 1-hour vehicle-tips	1128	24	620	129	1256	418	173	504	269	78
Peak vehicle-tips per business	31	1.8	37.3	8.1	6.8	6.3	9.6	9.7	6.5	2.9
Peak vehicle-tips per hectare	0.163	1.495	0.202	27.6	24.1	28.7	9.8	15.5	20.3	13.2
Peak vehicle-tips per 100 m ² of GFA	Incomplete data from businesses	Incomplete data from businesses	0.558	Incomplete data from businesses	0.910	0.974	0.581	0.564	1.304	0.382
Total daily vehicle-tips	13125	188	9394	1116	10383	4619	2251	5076	1921	751
Total daily vehicle-tips per business	364.6	12.9	425.5	66.75	55.4	70.0	98.6	133.0	43.7	27.8
Total daily vehicle-tips per hectare	40.1	286.3	81.9	238.6	199.1	317.2	102.2	181.0	186.5	197.7
Total daily vehicle-tips per 100 m ² of GFA	1.892	10.467	2.308	3.722	7.593	10.767	6.024	6.581	11.960	3.777
Total daily vehicle-tips per employee	Incomplete data from businesses	Incomplete data from businesses	4.83	Incomplete data from businesses	Incomplete data from businesses	9.35	Incomplete data from businesses	Incomplete data from businesses	Incomplete data from businesses	6.642
Vehicle-tips in adjacent road AM peak (Average)	1165	126	2749	1806	2544	131	112	1645	670	670
Vehicle-tips in adjacent road PM peak (Average)	972	149	2593	1813	2844	131	150	1789	805	805
Vehicle-tips during adjacent road AM peak	929	19	724	123	1255	236	111	495	147	64
Vehicle-tips during adjacent road PM peak	965	5	714	69	794	362	127	354	187	42
Average vehicle occupancy	1.10	1.10	1.12	1.16	1.17	1.16	1.17	1.17	1.26	1.19
% of total trips by principal mode:										
% Car (as driver)	62.5%	61.9%	65.2%	68.8%	79.1%	76.5%	70.0%	69.1%	74.3%	71.1%
% Car (as passenger)	8.0%	8.3%	8.3%	12.3%	11.2%	13.4%	18.4%	9.6%	15.5%	10.9%
% Commercial Vehicles	28.3%	4.2%	25.9%	12.8%	4.9%	6.2%	16.5%	16.3%	4.3%	21.8%
% Bus	0.8%	0.0%	2.1%	0.5%	3.2%	0.3%	0.0%	2.2%	0.0%	0.0%
% Cycle	0.1%	0.0%	0.3%	0.1%	0.3%	0.6%	0.2%	0.4%	0.8%	1.3%
% Motorcycle	0.1%	0.0%	0.0%	0.0%	0.3%	0.4%	0.3%	0.3%	0.9%	0.2%
% On foot	0.1%	5.6%	0.2%	5.7%	1.1%	0.8%	0.6%	0.6%	3.8%	0.9%
% Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.4%

Trip Generation Surveys—Business Parks and Industrial Estates

TEF Consulting in association with Gemmaoui Consulting – ABN 65 092 476 143

3 SURVEY ANALYSIS

3.1 Survey Output Requirements

The data was analysed with the key parameters needing to be established being

- Weekday survey site peak hourly generation AM & PM
- Weekday hourly generation in adjacent network AM & PM peak
- Weekday daily trip generation

3.2 Average Trip Rates for Business Parks and Industrial Estates

The trip generation calculation that was to be performed would depend upon the variable that was interrogated, in this case the total floor area by type of land use.

The summary of the survey data for each of the surveyed areas is shown in Table 3.1. Average trip generation rates for sites in the Sydney area are summarised in Table 3.2 together with those for non-Sydney area. The detailed results are contained in a separate "Data Report".

Table 3.1 Traffic survey results summary.

Site ID	Sydney areas				Non-Sydney areas						
	Site 1 Erskine Park Industrial Estate, Erskine Park	Site 2 Helensburgh Business Park, Helensburgh	Site 3 Wonderland Business Park, Eastern Creek	Site 4 Riverwood Business Park, Riverwood	Site 5 Tuggerah Business Park, Tuggerah	Site 6 Central Business Park, Albion Park Rail	Site 7 Anambah Business Park, Rutherford	Site 8 Freeway Business Park, Beresfield	Site 9 Sheanwater Business Park, Taylors Beach	Site 10 Port Stephens Industrial Estate, Taylors Beach	Site 11 Johnson Street Business Park, Dubbo
Gross Floor Area in estate m ²	693,605	1,605	406,600	29,983	138,737	42,899	29,766	89,291	16,022	19,881	14,419
Person-based trips											
Site AM peak hour	1148	28	885	173	1416	294	168	575	244	94	120
Trips per 100 m ² of GFA	0.17	1.74	0.22	0.58	1.04	0.69	0.56	0.64	1.52	0.47	0.83
Site PM peak hour	1294	29	927	157	1458	519	204	555	285	97	149
Trips per 100 m ² of GFA	0.19	1.81	0.23	0.52	1.07	1.21	0.69	0.62	1.78	0.49	1.03
Vehicle network AM peak hour	976	24	743	173	1408	270	123	575	176	93	120
Trips per 100 m ² of GFA	0.14	1.50	0.18	0.58	1.03	0.63	0.41	0.64	1.10	0.47	0.83
Vehicle network PM peak hour	1073	7	822	94	1060	477	160	396	258	54	136
Trips per 100 m ² of GFA	0.15	0.41	0.20	0.31	0.78	1.11	0.54	0.44	1.61	0.27	0.94
Daily total person trips:											
During Survey Times	0600 to 1900	0700 to 1900	0700 to 1900	0700 to 1900	0700 to 1900	700 to 1900	0600 to 1900	0700 to 1900	0600 to 1900	0600 to 1900	0600 to 1900
24 hours	11750	144	7654	1344	10796	3590	1898	5210	2253	931	1227
Trips per 100 m ² of GFA (24hrs)	14056	168	9929	1410	12066	4205	2064	6399	2389	975	1316
Trips per 100 m ² of GFA (24hrs)	2.03	10.49	2.44	4.70	8.82	9.80	6.93	7.17	14.91	4.90	9.13
Vehicle-based trips											
Site AM peak hour	1046	21	820	129	1256	368	145	504	193	64	108
Trips per 100 m ² of GFA	0.15	1.31	0.20	0.43	0.92	0.62	0.49	0.56	1.20	0.32	0.75
Site PM peak hour	1128	24	763	123	1222	418	173	481	209	78	116
Trips per 100 m ² of GFA	0.16	1.50	0.19	0.41	0.89	0.97	0.58	0.54	1.30	0.39	0.80
Network AM peak hour	929	19	679	129	1256	246	111	495	147	64	108
Trips per 100 m ² of GFA	0.13	1.18	0.17	0.43	0.92	0.57	0.37	0.55	0.92	0.32	0.75
Network PM peak hour	965	5	703	69	794	382	127	354	187	42	116
Trips per 100 m ² of GFA	0.14	0.31	0.17	0.23	0.58	0.89	0.43	0.40	1.17	0.21	0.80
Daily total vehicle trips:											
During Survey Times	0600 to 1900	0700 to 1900	0700 to 1900	0700 to 1900	0700 to 1900	700 to 1900	0600 to 1900	0700 to 1900	0600 to 1900	0600 to 1900	0600 to 1900
24 hours	11036	146	7327	1059	9271	2822	1640	4831	1813	714	1164
Trips per 100 m ² of GFA (24hrs)	13125	168	9384	1116	10383	3351	1793	5876	1921	751	1246
Trips per 100 m ² of GFA (24hrs)	1.89	10.47	2.31	3.72	7.59	7.61	6.02	6.58	11.99	3.78	8.64

Table 3.2 Trips rate summary.

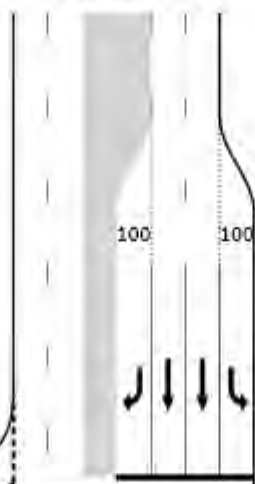
Site ID	Sydney areas				Non-Sydney areas				All survey sites				Avg Non-Sydney / Sydney %
	Site 1 to Site 4				Site 5 to Site 11				Site 1 to Site 11				
Trips per 100 m ² of GFA	Min	Max	Avg	St Dev	Min	Max	Avg	St Dev	Min	Max	Avg	St Dev	
Person-based trips													
Site AM peak hour	0.17	1.74	0.68	0.74	0.47	1.52	0.82	0.36	0.17	1.74	0.77	0.50	122%
Site PM peak hour	0.19	1.81	0.69	0.76	0.49	1.78	0.98	0.44	0.19	1.81	0.88	0.56	143%
Vehicle network AM peak hour	0.14	1.50	0.60	0.63	0.41	1.10	0.73	0.27	0.14	1.50	0.68	0.41	122%
Vehicle network PM peak hour	0.15	0.52	0.32	0.19	0.27	1.61	0.83	0.45	0.15	1.61	0.65	0.44	259%
Daily total person trips	2.03	10.49	4.92	3.90	4.90	14.91	8.81	3.16	2.03	14.91	7.39	3.79	179%
Vehicle-based trips													
Site AM peak hour	0.15	1.31	0.52	0.54	0.32	1.20	0.70	0.29	0.15	1.31	0.63	0.38	133%
Site PM peak hour	0.16	1.50	0.56	0.63	0.39	1.30	0.78	0.31	0.16	1.50	0.70	0.43	139%
Network AM peak hour	0.13	1.18	0.48	0.49	0.32	0.92	0.63	0.24	0.13	1.18	0.57	0.34	132%
Network PM peak hour	0.14	0.41	0.25	0.13	0.21	1.17	0.66	0.32	0.14	1.17	0.51	0.33	263%
Daily total vehicle trips	1.89	10.47	4.60	3.99	3.78	11.99	7.49	2.53	1.89	11.99	6.44	3.28	163%

APPENDIX G

SIDRA RESULTS

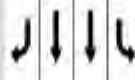


ROOTY HILL RD

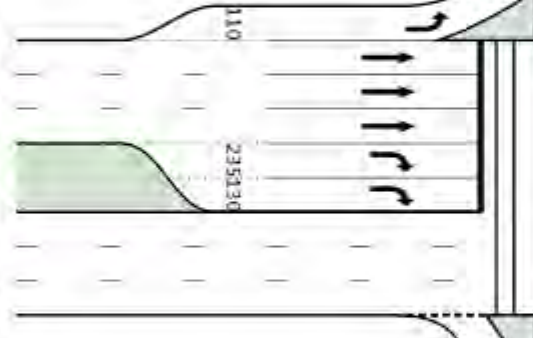


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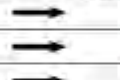


GREAT WESTERN HWY

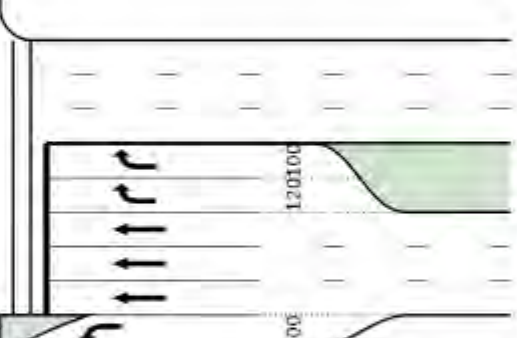


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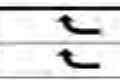


GREAT WESTERN HWY



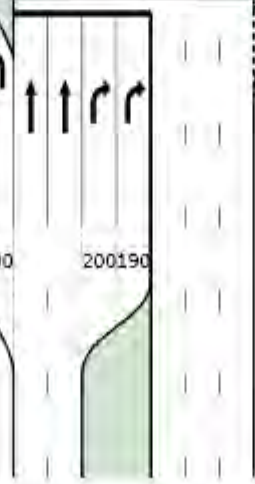
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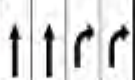


500

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WALLGROVE RD



MOVEMENT SUMMARY

Site: GREAT WESTERN HWY
WALLGROVE AM DEV

Signals - Fixed Time Cycle Time = 120 seconds (Optimum Cycle Time - Minimum Delay)

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: WALLGROVE RD											
1	L	296	5.0	0.240	9.8	LOS A	1.0	7.1	0.07	0.66	50.8
2	T	447	5.0	0.364	22.6	LOS B	7.4	54.3	0.61	0.51	35.7
3	R	693	5.0	0.966	72.0	LOS F	24.4	178.3	1.00	1.02	22.2
Approach		1436	5.0	0.966	43.8	LOS D	24.4	178.3	0.69	0.79	28.8
East: GREAT WESTERN HWY											
4	L	82	5.0	0.082	11.2	LOS A	0.2	1.8	0.06	0.67	55.8
5	T	611	5.0	0.539	35.2	LOS C	9.2	67.5	0.81	0.67	35.5
6	R	82	5.0	0.457	70.9	LOS F	2.4	17.8	0.98	0.73	22.1
Approach		775	5.0	0.539	36.4	LOS C	9.2	67.5	0.75	0.68	34.7
North: ROOTY HILL RD											
7	L	397	5.0	1.000 ³	55.5	LOS D	22.4	163.2	1.00	0.87	26.0
8	T	859	5.0	0.884	57.3	LOS E	28.0	204.1	1.00	1.03	22.4
9	R	86	5.0	0.360	61.5	LOS E	4.7	34.3	0.95	0.78	24.5
Approach		1342	5.0	1.000	57.0	LOS E	28.0	204.1	1.00	0.97	23.6
West: GREAT WESTERN HWY											
10	L	10	5.0	0.011	10.4	LOS A	0.0	0.2	0.05	0.66	56.9
11	T	1226	5.0	0.742	41.7	LOS C	20.8	152.0	0.92	0.81	32.3
12	R	510	5.0	1.004	107.2	LOS F	20.8	151.8	1.00	1.08	16.2
Approach		1746	5.0	1.004	60.7	LOS E	20.8	152.0	0.94	0.89	25.6
All Vehicles		5299	5.0	1.004	51.6	LOS D	28.0	204.1	0.86	0.85	26.9

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

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

³ x = 1.00 due to short lane. Refer to the Lane Summary report for information about excess flow and related conditions.

Movement Performance - Pedestrians									
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped	
P1	Across S approach	53	54.2	LOS E	0.2	0.2	0.95	0.95	
P3	Across E approach	53	50.4	LOS E	0.2	0.2	0.92	0.92	
P5	Across N approach	53	42.5	LOS E	0.2	0.2	0.84	0.84	
P7	Across W approach	53	43.4	LOS E	0.2	0.2	0.85	0.85	
All Pedestrians		212	47.6	LOS E			0.89	0.89	

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: GREAT WESTERN HWY
WALLGROVE PM DEV

Signals - Fixed Time Cycle Time = 110 seconds (Optimum Cycle Time - Minimum Delay)

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: WALLGROVE RD											
1	L	439	5.0	0.414	10.4	LOS A	1.9	14.2	0.10	0.66	50.1
2	T	710	5.0	0.738	32.2	LOS C	16.3	119.3	0.89	0.78	30.4
3	R	277	5.0	0.850	64.6	LOS E	7.9	58.0	1.00	0.89	23.8
Approach		1426	5.0	0.850	31.8	LOS C	16.3	119.3	0.67	0.77	32.8
East: GREAT WESTERN HWY											
4	L	252	5.0	0.236	10.9	LOS A	0.8	5.8	0.07	0.67	56.1
5	T	1381	5.0	0.865	27.0	LOS B	22.0	160.8	0.91	0.83	39.9
6	R	321	5.0	0.547	47.7	LOS D	7.2	52.9	0.86	0.80	28.9
Approach		1954	5.0	0.865	28.3	LOS B	22.0	160.8	0.79	0.80	39.0
North: ROOTY HILL RD											
7	L	166	5.0	0.377	46.9	LOS D	7.5	54.6	0.88	0.81	28.6
8	T	519	5.0	0.560	39.5	LOS C	12.3	89.8	0.93	0.78	27.6
9	R	106	5.0	0.723	67.2	LOS E	6.0	44.0	1.00	0.85	23.2
Approach		791	5.0	0.723	44.7	LOS D	12.3	89.8	0.93	0.80	27.1
West: GREAT WESTERN HWY											
10	L	17	5.0	0.018	11.9	LOS A	0.1	0.7	0.12	0.67	54.7
11	T	785	5.0	0.492	35.6	LOS C	10.8	78.9	0.81	0.69	35.3
12	R	493	5.0	0.840	64.3	LOS E	13.9	101.7	1.00	0.91	23.8
Approach		1295	5.0	0.840	46.2	LOS D	13.9	101.7	0.88	0.77	30.3
All Vehicles		5466	5.0	0.865	35.8	LOS C	22.0	160.8	0.80	0.78	33.1

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

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

SIDRA Standard Delay Model used.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	42.8	LOS E	0.1	0.1	0.88	0.88
P3	Across E approach	53	49.2	LOS E	0.2	0.2	0.95	0.95
P5	Across N approach	53	41.0	LOS E	0.1	0.1	0.86	0.86
P7	Across W approach	53	48.2	LOS E	0.2	0.2	0.94	0.94
All Pedestrians		212	45.3	LOS E			0.91	0.91

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.