
M^CLAREN TRAFFIC ENGINEERING

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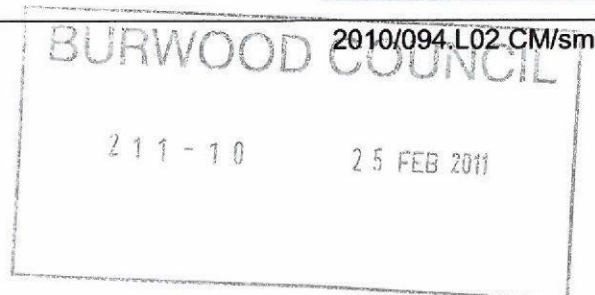
15 February 2011

Mr George Matsos

C/o Olsson & Associates Architects
Level 5, 68-72 Wentworth Avenue
SURRY HILLS NSW 2010

Attention: George Matsos

Dear George,



**TRAFFIC & PARKING STUDY: RESIDENTIAL / RETAIL /
COMMERCIAL DEVELOPMENT : 15 DEANE STREET, BURWOOD
REPLY TO COUNCIL & RTA CONCERNS DATED 5 JANUARY 2011**

Further to your request, the undersigned has reviewed the concerns raised by Council and the RTA (dated 5 January 2011) and provides the following responses under each item raised:

ON-SITE CAR PARKING ALLOCATION

The on-site car parking allocation will be in accordance with the lodged plan DA01 (Issue "A"), as follows with a total of 90 spaces (47 non-residential spaces and 43 resident / visitor spaces):

- ☐ Retail – 7 spaces.
- ☐ Commercial – 39 spaces
- ☐ Gymnasium – 1 space.
- ☐ Resident – 37 spaces.
- ☐ Residential Visitors – 6 spaces.

The issue raised by Council with respect to the visitor spaces on B3 has been resolved by relocating the visitor parking spaces to level B2 prior to the boom gate.

The mobility parking spaces have been relocated closer to lifts.

INTERSECTION DEGREE OF SATURATION

The morning peak hour performances have been modelled at the request of Council, as shown on the following page based upon recent February 2011 traffic counts.



Traffic counts have been undertaken at nearby key intersections, on Thursday 3rd February 2011 from 7am to 9am. The intersections at which traffic counts were taken are:

- George Street & Burwood Road
- Shaftesbury Road & George Street
- Deane Street & Burwood Road
- Shaftesbury Road & Deane Street

Table 1 below compares the existing intersection performances (based on traffic count data) with the future AM peak hour intersection performances (with the predicted traffic numbers and assignment added). The test was conducted using SIDRA Intersection version 5.0. The traffic count data is provided in **Annexure A**.

**TABLE 1: WORST CASE INTERSECTION PERFORMANCES
(SIDRA INTERSECTION 5.0)**

Intersection	Peak Hour	Degree of Saturation ⁽¹⁾	Average Delay ⁽²⁾ (sec/vehicle)	Level of Service ⁽³⁾	Control Type
EXISTING PERFORMANCE					
Burwood Rd / George St	7.45-8.45A M	0.23	1.8 (8.9)	A (Worst: A)	Giveway / Yield
Shaftesbury Rd / George St	8-9AM	0.64	3.4 (66.6)	A (Worst: E)	Giveway / Yield
Burwood Rd / Deane St	7.45-8.45A M	0.38	11.0 (22.9)	A (Worst: B)	Signals
FUTURE PERFORMANCE					
Burwood Rd / George St	7.45-8.45A M	0.26	2.2 (9.2)	A (Worst: A)	Giveway / Yield
Shaftesbury Rd / George St	8-9AM	0.74	4.3 (82.5)	A (Worst: F)	Giveway / Yield
Burwood Rd / Deane St	7.45-8.45A M	0.40	11.1 (23.0)	A (Worst: B)	Signals

NOTES :

- (1) Degree of Saturation is the ratio of demand to capacity.
- (2) Average delay is the delay experienced on average by all vehicles.
- (3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst

It can be seen from **Table 1** that none of the nearby intersections will be significantly impacted by the additional traffic from the proposal. Indeed, the level of service does not fall below an "A" (i.e. "Excellent") condition for any of the intersections. Hence, the proposal is supportable on traffic impact grounds.

It is reiterated that the above analysis is for an extreme worst case scenario. Even for this worst case the intersections still perform at an 'excellent' level of service. However it is noted that the traffic generation to and from the site will be significantly less than that estimated. The site is located in the middle of Burwood town centre. As such a much higher percentage of trips to the site will be by public transport, or will be linked trips such as people visiting multiple retail shops in the shopping district.

Indeed, Council's car parking rate for retail and commercial developments in this area is 60% less than that commonly adopted for other developments around NSW, which suggests there will be 60% less traffic for the retail and commercial parts of the development. Also, the traffic generation rate adopted for the residential component is high (0.4), and in reality the rate will be lower such as the RTA's suggestion of 0.3 for metropolitan sub-regional centres.

Table 1 is a useful analysis of a worst case scenario for sensitivity testing, and shows that even for this case the development will have no significant impact on the surrounding intersections. As the actual traffic volumes to and from the site will in reality be much less than this, there will be no residential amenity issues or impacts on the surrounding road network.

With reference to the expressed concern over the degree of saturation being above the acceptable level for an unsignalised intersection, it should be noted that this only occurs for the junction of Shaftesbury Rd / George St. The degree of saturation reported is for the worst movement, being the right turn out of George Street only.

The qualifications to the assessment are:

1. that the assessed traffic generation is an extreme worst case outcome for the development;
2. that available gaps within Shaftesbury Road are higher than reported in the SIDRA analysis due to the platooning of traffic caused by nearby traffic signals at Railway Parade and Victoria Road East; and
3. that alternative routes for traffic turning right out of George Street using Waimea Street or by simply turning left out of George Street and using other available routes to head south.

In view of the above the proposed development will not require any ameliorative treatments to the intersection of Shaftesbury Rd / George St.

Mountable Median within Loading Dock / Car Park Entrance

The Council's requested low profile (50mm) mountable median is included in the revised plans.

Pedestrian Activity

The current traffic peak hourly traffic flows along Mary Street are less than 50 vehicles per hour and pedestrian activity is moderately low. The forecast peak hourly traffic flows along Mary Street, associated with the subject development, is in the order of 110 vehicles per hour (under an extremely worst case trip rate). With the system of ONE WAY streets with a LOW SPEED condition around the site it is expected that the warrant for zebra crossings would not be met by the existing plus subject development impact. Therefore any condition for raised thresholds to be fully funded by the subject development should be refuted.

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It is recommended that Council consider implementing a 40km/h PRECINCT SPEED LIMIT within all local roads within a 300m walking distance of the Burwood Train Station.

Construction Management Plan

A more detailed Construction Management Plan can be provided at Construction Certificate stage outlining:

1. The approach / departure routes for vehicles to limit impacts on residents.
2. Concrete truck queuing and other plant location(s).
3. Work Zone application.
4. Impact on existing on-street parking.
5. Pedestrian flow management.

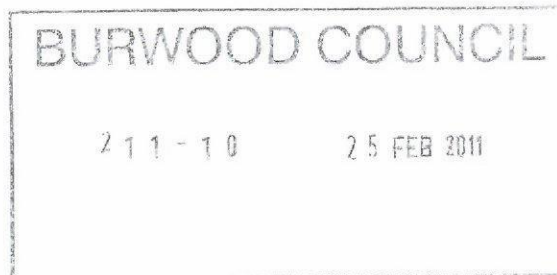
Please contact the undersigned should you require further information or assistance.

Yours faithfully

M^cLAREN TRAFFIC ENGINEERING



Craig M^cLaren
Director

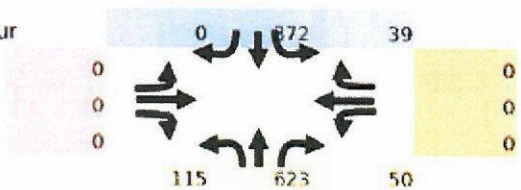


ANNEXURE A: AM PEAK TRAFFIC COUNTS (Sheet 1 of 4)

Curtis Traffic Surveys

Turning movement count
 Job: 110201mcl
 Day, date: 03/02/11
 Location: Burwood Rd & George St
 Weather: Fine (humid, overcast)
 Client: McLaren Traffic Engineering
 All motor vehicles

Peak Hour
 N
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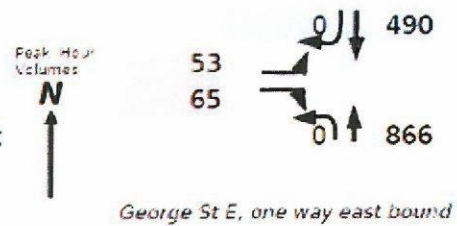
Time Period	From Burwood Rd north			From George St west			From Burwood Rd south			From George St East			Total vehicle movements
	left	through	right	one way west bound			left	through	right	one way east bound			
07:00 to 07:15	3	73	0	0	0	0	0	16	98	6	0	0	196
07:15 to 07:30	7	74	0	1	0	0	0	10	112	10	0	0	214
07:30 to 07:45	7	84	0	0	0	0	0	12	128	11	0	0	242
07:45 to 08:00	6	109	0	0	0	0	0	29	148	11	0	0	303
08:00 to 08:15	10	92	0	0	0	0	0	27	148	12	0	0	289
08:15 to 08:30	15	87	0	0	0	0	0	38	165	11	0	0	316 Peak
08:30 to 08:45	8	84	0	0	0	0	0	21	162	16	0	0	291
08:45 to 09:00	7	87	0	0	0	0	0	22	159	16	0	0	291
Totals	63	690	0	1	0	0	0	175	1120	93	0	0	0
07:00 to 08:00	23	340	0	1	0	0	0	67	486	38	0	0	955
07:15 to 08:15	30	359	0	1	0	0	0	78	536	44	0	0	1048
07:30 to 08:30	38	372	0	0	0	0	0	106	589	45	0	0	1150
07:45 to 08:45	39	372	0	0	0	0	0	115	623	50	0	0	1199 Peak Hour
08:00 to 09:00	40	350	0	0	0	0	0	108	634	55	0	0	1187

ANNEXURE A: AM PEAK TRAFFIC COUNTS (Sheet 2 of 4)

Curtis Traffic Surveys

Turning movement count

Job: 110201mcl
 Day, date: 03/02/11
 Location: Shaftesbury Rd & George St East
 Weather: 0
 Client: McLaren Traffic Engineering

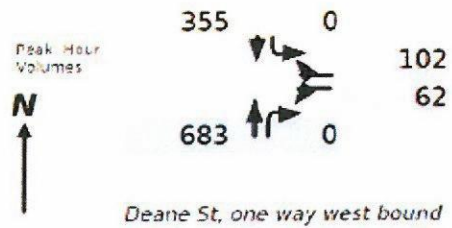


	From Shaftesbury Rd north		From George St East Rd south		From Shaftesbury Rd south		
Time Period	1	2	3	4	5	6 Total	
07:00 to 07:15	79	0	6	5	0	89	179
07:15 to 07:30	74	0	10	9	0	92	185
07:30 to 07:45	91	0	14	13	0	107	225
07:45 to 08:00	115	0	8	20	0	143	291
08:00 to 08:15	151	0	14	12	0	157	334
08:15 to 08:30	115	0	20	21	0	254	410
08:30 to 08:45	127	0	9	21	0	261	418 peak
08:45 to 09:00	97	0	10	11	0	194	312
Total	849	0	91	112	0	1302	
Hourly summary							
07:00 to 08:00	359	0	38	47	0	436	880
07:15 to 08:15	431	0	46	54	0	504	1035
07:30 to 08:30	472	0	56	66	0	666	1260
07:45 to 08:45	508	0	51	74	0	820	1453
08:00 to 09:00	490	0	53	65	0	866	1474 peak hour

ANNEXURE A: AM PEAK TRAFFIC COUNTS (Sheet 3 of 4)

Curtis Traffic Surveys

Turning movement count
Job: 110201mcl
Day, date: 03/02/11
Location: Burwood Rd & Deane St
Weather: Fine
Client: McLaren Traffic Engineering



	From Burwood Rd south		From Deane St		From Burwood Rd north		
Time Period	1	2	3	4	5	6 Total	
07:00 to 07:15	109	0	13	5	0	74	201
07:15 to 07:30	124	0	15	11	0	79	229
07:30 to 07:45	132	0	18	18	0	83	251
07:45 to 08:00	162	0	22	23	0	110	317 peak
08:00 to 08:15	161	0	18	26	0	86	291
08:15 to 08:30	176	0	15	35	0	77	303
08:30 to 08:45	184	0	7	18	0	82	291
08:45 to 09:00	162	0	8	20	0	88	278
Total	1210	0	116	156	0	679	
Hourly summary							
07:00 to 08:00	527	0	60	57	0	346	998
07:15 to 08:15	579	0	73	78	0	358	1088
07:30 to 08:30	631	0	73	102	0	356	1162
07:45 to 08:45	683	0	62	102	0	355	1202 peak hour
08:00 to 09:00	683	0	48	99	0	333	1163

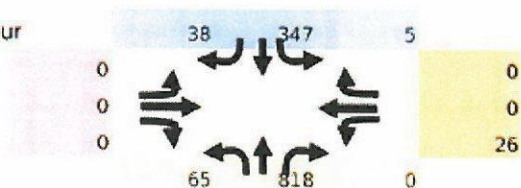
ANNEXURE A: AM PEAK TRAFFIC COUNTS (Sheet 4 of 4)

Curtis Traffic Surveys

Job: 110201mcl
Day, date: 03/02/11
Location: Shaftesbury Rd, Deane St & Albert Cr
Weather: 0

Client: McLaren Traffic Engineering
All motor vehicles

Peak Hour
N
↑



Deane St, one way west bound

Time Period	From Shaftesbury Rd north			from Deane St			From Shaftesbury Rd south			From Albert Cres			Total vehicle movements
	left	through	right	left	through	right	left	through	right	left	through	right	
07:00 to 07:15	3	71	7	0	0	0	9	69	0	6	0	0	165
07:15 to 07:30	0	68	11	0	0	0	7	86	0	8	0	0	161
07:30 to 07:45	2	84	17	0	0	0	12	113	0	6	0	0	213
07:45 to 08:00	1	92	20	0	0	0	20	120	0	9	0	0	220
08:00 to 08:15	2	89	15	0	0	0	12	145	0	7	0	0	206
08:15 to 08:30	0	95	8	0	0	0	21	241	0	6	0	0	261
08:30 to 08:45	2	84	9	0	0	0	21	257	0	8	0	0	381 Peak
08:45 to 09:00	1	79	6	0	0	0	11	175	0	5	0	0	272
Totals	11	662	93	0	0	0	113	1206	0	55	0	0	
07:00 to 08:00	6	315	55	0	0	0	48	388	0	29	0	0	841
07:15 to 08:15	5	333	63	0	0	0	51	464	0	30	0	0	846
07:30 to 08:30	5	360	60	0	0	0	65	619	0	28	0	0	1137
07:45 to 08:45	5	360	52	0	0	0	74	763	0	30	0	0	1284
08:00 to 09:00	5	347	38	0	0	0	65	818	0	26	0	0	1298 Peak Hour