
Colston Budd Hunt & Kafes Pty Ltd

as Trustee for C & B Unit Trust
ABN 27 623 918 759

Our Ref: SK/7675/ek

5 May, 2010

Mirvac
Level 26
60 Margaret Street
SYDNEY NSW 2000

Transport Planning
Town Planning
Retail Studies

Attention: Adrian Checchin
Email: Adrian_Checchin@mirvac.com.au

Dear Sir,

RE: HOXTON PARK INDUSTRIAL DEVELOPMENT
CONFIGURATION OF SOUTHERN SITE ACCESS
INTERSECTION WITH COWPASTURE ROAD

1. This letter sets out the additional information requested by the Roads and Traffic Authority at a meeting with the Department of Planning and Mirvac on Monday 3 May 2010. The RTA requested a copy of the SIDRA intersection analysis for the intersection of Cowpasture Road and the southern site access road.
2. The southern site access is located north of the M7 interchange on Cowpasture Road and will replace the existing airport entrance. The intersection is being constructed in association with the current upgrading of Cowpasture Road, between North Liverpool Road and Westlink M7. The intersection is being constructed by the RTA contractors to the design prepared by URS/RTA.
3. As set out in our traffic report that supported the project application, construction of the industrial area will be staged, with Stage 1 access provided via the southern site access. A second signalised access onto Cowpasture Road will ultimately be provided to the north of the site across Hinchinbrook Creek. The second access will be located approximately 500 metres south of Green Valley Road.
4. In order to assess the operation of the intersection of the southern site access and Cowpasture Road and to assess the need for a left turn lane along the southern access road, forecast traffic flows through the intersection have been

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prepared for the Stage 1 development and for 2026 traffic flows. The forecast traffic flows are based on the traffic assessment and distribution set out in SKM September 2006 report and the RTA's emme/2 traffic volume forecasts for Cowpasture Road. The Stage 1 and 2026 traffic flows are shown on Figures 1 and 2, and summarised in Table 1.

Table 1 – Peak Hour Two-Way (sum of both directions) Traffic Flows				
Roads	Stage 1		2026	
	Morning	Afternoon	Morning	Afternoon
Cowpasture Road				
- north of site access	3170	3155	3540	3470
- south of site access	3170	3155	3890	4000
Southern site access				
- west of Cowpasture Road	690	690	730	910

5. It can be seen from Figures 1 and 2 that Cowpasture Road will carry some 3100 to 3200 vehicles per hour two-way during the morning and afternoon peak periods during Stage 1 of the development and some 3500 to 4000 vehicles per hour two-way by 2026.
6. The southern site access road will carry Stage 1 development traffic flows of some 650 to 700 vehicles per hour two-way during the morning and afternoon peak periods. Flows for 2026 will be some 700 to 900 vehicles per hour two-way.
7. The intersection of Cowpasture Road and the southern site access road has been analysed using SIDRA. The SIDRA program simulates the operations of intersections to produce a number of measures. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle. Based on average delay per vehicle, SIDRA estimates the following levels of service (LOS) for signalised intersections:

- For traffic signals, the average delay per vehicle in seconds is calculated as delay/(all vehicles), equivalent to the following LOS:-

0 to 14	=	"A"	Good
15 to 28	=	"B"	Good with minimal delays and spare capacity
29 to 42	=	"C"	Satisfactory with spare capacity
43 to 56	=	"D"	Satisfactory but operating near capacity
57 to 70	=	"E"	At capacity and incidents will cause excessive delays.
>70	=	"F"	Unsatisfactory and requires additional capacity

8. The results of the SIDRA analysis are summarised in Tables 2 and 3 for the Stage 1 development and 2026 traffic flows. Electronic copies of the SIDRA analysis will be provided separately to the RTA.

Cowpasture Road/ Southern Access	Morning				Afternoon			
	LOS	D/S	Average Delay (sec/veh)	Queues ⁽¹⁾ (metres)	LOS	D/S	Average Delay (sec/veh)	Queues ⁽¹⁾ (metres)
No Left Turn Lane	B	0.84	24	35	B	0.67	20	109
With Left Turn Lane	B	0.84	24	25	B	0.61	18	97

(1) Traffic Queue for Southern Access Road

Cowpasture Road/ Southern Access	Morning				Afternoon			
	LOS	D/S	Average Delay (sec/veh)	Queues ⁽¹⁾ (metres)	LOS	D/S	Average Delay (sec/veh)	Queues ⁽¹⁾ (metres)
No Left Turn Lane	B	0.86	20	64	B	0.79	23	137
With Left Turn Lane	B	0.86	20	51	B	0.73	18	100

(1) Traffic Queue for Southern Access Road

9. It should be noted that our analysis found that for Stage 1 (prior to the opening of the second access) the optimal configuration of the southern access approach is separate left and right turn lanes (rather than right turn lane and shared left/right turn lane). This is due to the left and right turn volumes onto Cowpasture Road being similar, as shown on Figure 1. Once the second access is operating the configuration should be changed to right turn lane, shared right turn/left turn lane as the volume of left turn traffic is much lower than the right turn traffic, as shown on Figure 2.
10. The analysis found that the intersection of Cowpasture Road and the southern site access road with Stage 1 traffic flows and without a left turn lane, will operate with average delays some 20 to 24 seconds per vehicle during the morning and afternoon peak periods. This represents level of service B, which is a good level of intersection operation. The 95% back of queue was found to be some 35 metres during the morning and some 109 metres during the afternoon. With a left turn lane, the average delay would also be some 18 to 24 seconds. The 95% back of queue would be some 24 metres during the morning and some 97 metres in the afternoon. Hence, the level of service is the same and the queues only reduce by some 10 to 12 metres.
11. The analysis found that the intersection of Cowpasture Road and the southern site access road with 2026 traffic flows and without a left turn lane, will operate with average delays of some 20 to 23 seconds per vehicle during the morning

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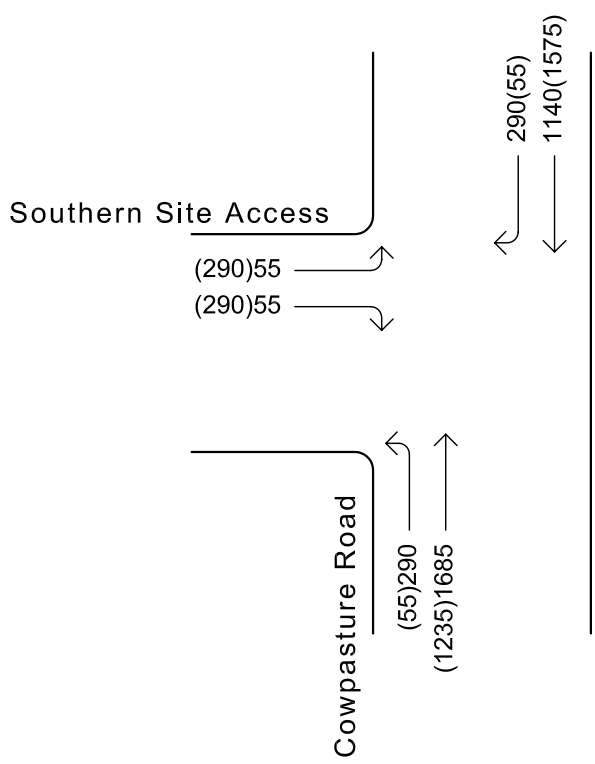
and afternoon peak periods. This represents a level of service B, which is a good level of intersection operation. The 95% back of queue was found to be some 64 metres during the morning and some 137 metres during the afternoon. With a left turn lane the average delay would also be some 18 to 20 seconds. The 95% back of queue would be some 51 metres during the morning and some 100 metres in the afternoon. Hence, the level of service is the same and the queues only reduce some 13 to 37 metres.

12. Hence, there would only be marginal benefits in providing the left lane. Such marginal benefits would not warrant the significant costs involved in providing a left lane. As discussed in the attached ADW Johnson letter, the left lane would be difficult to build (due to site contracts) and expensive to construct.
13. We trust this provides you with the information you require. Finally, if you should have any queries, please do not hesitate to contact us.

Yours faithfully,
COLSTON BUDD HUNT & KAFES PTY LTD

A handwritten signature in black ink that reads "Stan Kafes". The signature is written in a cursive, flowing style.

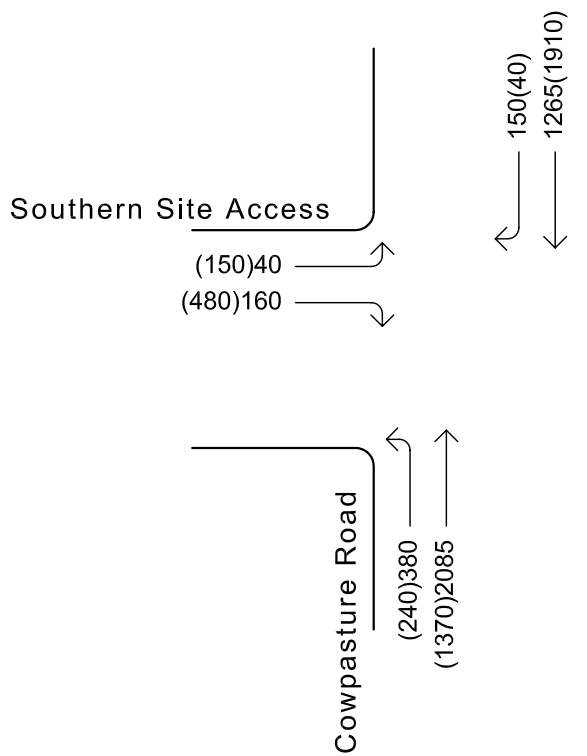
S. Kafes
Director



LEGEND

- 100 - Morning Peak Hour Traffic Flows
- (100) - Afternoon Peak Hour Traffic Flows

Morning and afternoon stage 1 development peak hour traffic flows



LEGEND

- 100 - Morning Peak Hour Traffic Flows
- (100) - Afternoon Peak Hour Traffic Flows

Morning and afternoon 2026 development peak hour traffic flows