

Memorandum

To: Merc Capital and Affiliated Companies

From: Fred Gennaoui

Date: 12 July 2017

Job N^o: 13561.003

Subject: Cecil Ave Planning Proposal – Traffic Assessment with No Signals at Intersection of Old Northern Road with Francis Street

Background

In our Parking and Traffic Study (PTS) dated June 2017, we (TDG) have indicated that traffic signals are currently required at the intersection of Old Northern Road with Francis Street in Caste Hill.

Further analysis indicates that the intersection will continue to operate at a poor level of service upon the completion of the proposed development. The installation of traffic signals with the provision of an additional exclusive right turn lane in the northbound direction would considerably improve conditions at this location.

It is understood that Council is concerned about whether the installation of signals at the intersection of Francis Street and Old Northern Road will be supported in consultation with NSW Roads and Maritime Services.

We have assessed the impact of not providing signals at the intersection of Francis Street with Old Northern Road on the overall road network but more particularly critical intersections.

Options Tested

The following two options were tested:

Option 1 – All northbound development traffic anticipated to turn into Francis Street would redirect to Parsonage Street, Hume Avenue, Cecil Avenue before right turning onto Old Northern Road to access Francis Street from the north.

Option 2 – All northbound development traffic anticipated to turn right into Francis Street would remain along Old Northern Road before turning right into Cecil Avenue, travel northbound along Terminus Street before right turning into Crane Road then use Orange Grove to access the development from either Cecil Avenue or Francis Street.

Analysis of Option 1

An analysis of the operation of all critical intersections in the vicinity of the site for Option 1 was carried out using the SIDRA computer modelling program. The results of this analysis are summarised in **Table 1**.



Intersections	With Signals at Francis*				Without Signals at Francis Option 1			
	AM Peak		PM Peak		AM Peak		PM Peak	
	D sec/v	LoS	D sec/v	LoS	D sec/v	LoS	D sec/v	LoS
Traffic Signals								
Old Northern Road with Cecil Avenue	32.0	C	39.7	C	33.0	C	40.8	C
Terminus Street with Crane Street	54.4	D	46.3	D	54.4	D	46.3	D
Old Northern Road with Francis Street	10.9	A	13.3	A				
Roundabout								
Cecil Avenue with Orange Grove	8.9	A	8.6	A	8.9	A	8.6	A
T-Junction Rule								
Francis Street with Roger Avenue	6.2	A	5.6	A	6.2	A	5.6	A
Old Northern Road with Francis Street					>70	F	>70	F

Table 1: Option 1 Operation of Intersections with Proposed Development

*SOURCE: TDG (2017)

The redirection of the northbound traffic destined to the proposed development to Hume Street and Cecil Avenue west would marginally impact the traffic signals at its intersection with Old Northern Road which will continue to operate at a satisfactory level of service “C” during the morning peak and the afternoon peak hours. All other intersections would not be impacted upon.

The intersection of Francis Street with Old Northern Road would continue to operate at a very poor level of service “F” as is currently the case.

The Option 1 traffic route is within the traffic carrying and environmental capacities of Parsonage Street and Hume Street.

Analysis of Option 2

An analysis of the operation of all critical intersections in the vicinity of the site for Option 2 was carried out using the SIDRA computer modelling program. The results of this analysis are summarised in **Table 2**.

The redirection of traffic destined to the proposed development from the south Terminus Street would have a marginal impact on the traffic signals controlling the intersection of Cecil Avenue with Old Northern Road and the intersection of Terminus Street with Crane Road which will continue to operate at a satisfactory level of service “C” and “D” respectively.

The roundabout controlling the intersection of Cecil Avenue with Orange Grove would continue to operate at a very good level of service “A” during the morning and afternoon peak periods.

Intersections	With Signals at Francis*				Without Signals at Francis Option 2			
	AM Peak		PM Peak		AM Peak		PM Peak	
	D sec/v	LoS	D sec/v	Los	D sec/v	LoS	D sec/v	Los
Traffic Signals								
Old Northern Road with Cecil Avenue	32.0	C	39.7	C	32.5	C	40.4	C
Terminus Street with Crane Street	54.4	D	46.3	D	54.7	D	46.5	D
Old Northern Road with Francis Street	10.9	A	13.3	A				
Roundabout								
Cecil Avenue with Orange Grove	8.9	A	8.6	A	9.1	A	9.1	A
T-Junction Rule								
Francis Street with Roger Avenue	6.2	A	5.6	A	6.1	A	5.6	A
Old Northern Road with Francis Street					>70	F	>70	F

Table 2: Option 2 Operation of Intersections with Proposed Development

*SOURCE: TDG (2017)

The intersection of Francis Street with Old Northern Road would continue to operate at a very poor level of service “F” as is currently the case. The Option 2 traffic route is mostly along Old Northern Road and Terminus Street, both arterial roads. The additional traffic along Crane Road and Orange Grove would not affect within the traffic carrying and environmental capacities of these streets.

Conclusions

Our assessment indicates that without the installation of traffic signals at the intersection of Francis Street with Old Northern Road, the road network would not be significantly impacted by the Planning Proposal with all nearby intersections continuing to operate at the same level of service as if traffic signals were in place at Francis Street. The Planning Proposal can easily be accommodated by the existing road network including the nearby intersections as shown in Tables 1 and 2 above.

Yours sincerely

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