

MCLAREN TRAFFIC ENGINEERING

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10 May 2012

2010/166.L01 CM/sm

Bluestone Property Solutions Pty Ltd
Suite 1, Level 6
71 Macquarie Street
SYDNEY NSW 2000

Attention: Mr Ben Fairfax

Dear Ben,

PROPOSED INTERIM SHUTTLE BUS FOR SHARKS MASTERPLAN

The likely patronage and bus usage by proposed land use scale is as follows:

1. Residential only (refer to **Annexure A** for bus patronage usage). This is based on the assumption of 2 people per unit with a 10% bus travel mode implemented. While the graphs show even distribution, it is likely that a peak will be experienced. The final amount of 600 units will most likely require 2 shuttle buses.
2. Retail only (Refer to **Annexure B** for required number of buses). Refer to the Traffic Management and Accessibility Plan dated March 2012 for the retail bus usage. The graph shown is based on 22 seat bus however the bus patronage validates the usage of a 50 seat (standard) bus in the near future.

The shuttle bus route options for Woollooware & Caringbah Railway Stations are presented in **Annexure C**. The minimum frequency of service for the return trips to each station based on an average travel speed of 40km/h or 30km/h is shown in **Table 1** below.

TABLE 1 : MINIMUM BUS FREQUENCY

Return Route	Return Time
Woollooware	6-7 minutes ⁽¹⁾
Caringbah	12-15 minutes ⁽²⁾

Notes:

⁽¹⁾40km/h is a low speed to include the time taken to set down/ pick up patrons

⁽²⁾30km/h is a low speed to include the time taken to set down/ pick up patrons plus delays at signals

Annexure D shows the shuttle bus timetable by day of the week. Based on this time table and the possible land use phases of the development, the Masterplan will require the following:

1. For residential only, one to two shuttle buses will be required
2. If the land use includes the development of residential and retail components at the same time then 4 or more shuttle buses will be required (note Sharks have an existing courtesy bus that can be utilized). In initial years when the retail component is



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operational, it is plausible to run a minimum of 2 shuttle buses (plus the Sharks club courtesy bus during weekdays and Saturday mornings).

The frequency during peak and off peak is shown in **Annexure D** and will be effective to align with train timetables, dependent on which route outlined in **Annexure C**.

We trust this information suits your needs at present and we ask that you contact the undersigned should you require further assistance or information.

Yours faithfully,

M^CLAREN TRAFFIC ENGINEERING



Craig M^CLaren
Director

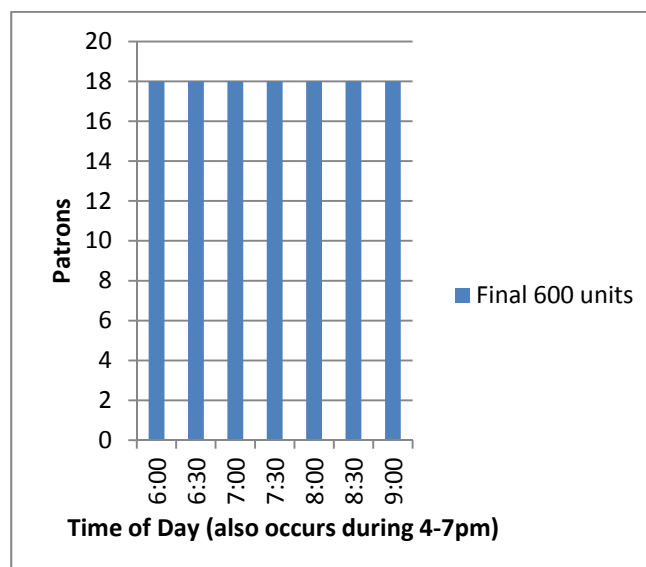
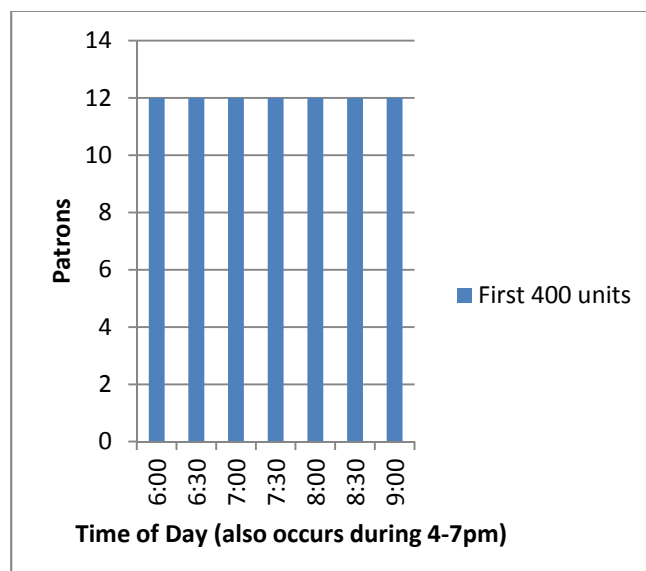
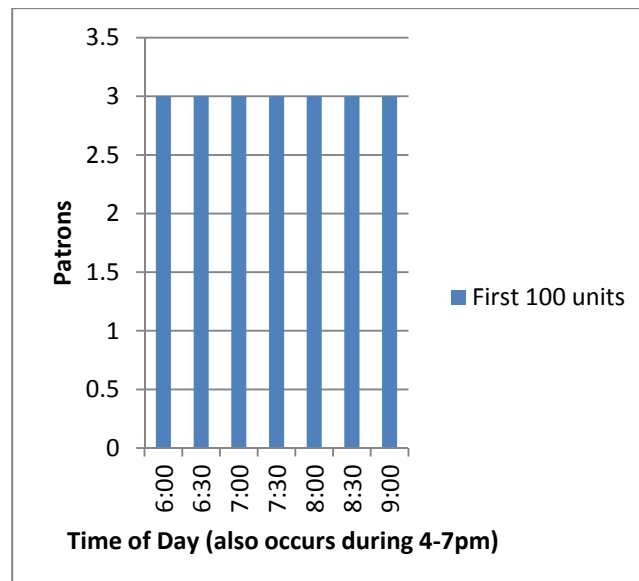
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RTA Accredited Level 3 Road Safety Auditor

RTA Accredited Traffic Control Planner (Orange Card)

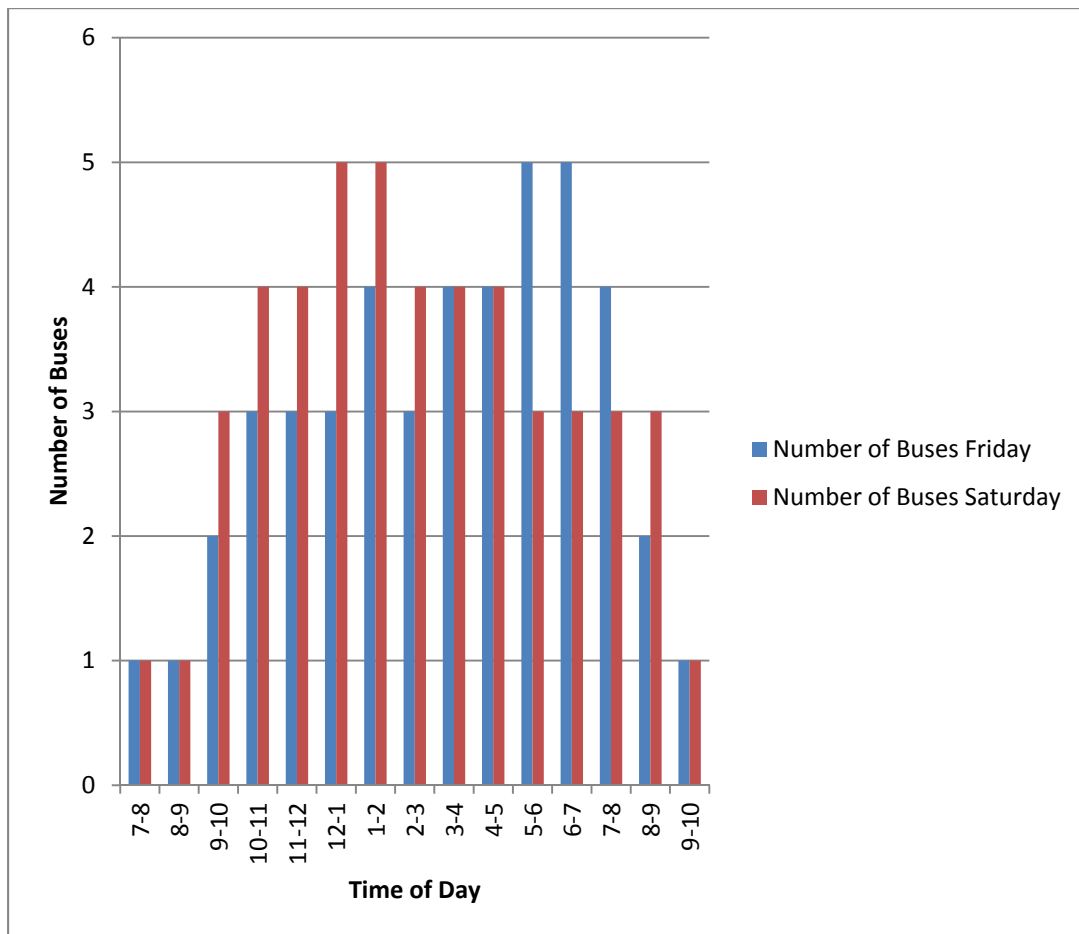
Website: www.mclarentraffic.com.au

ANNEXURE A: RESIDENTIAL BUS* USAGE



*Based on a 22 seat bus

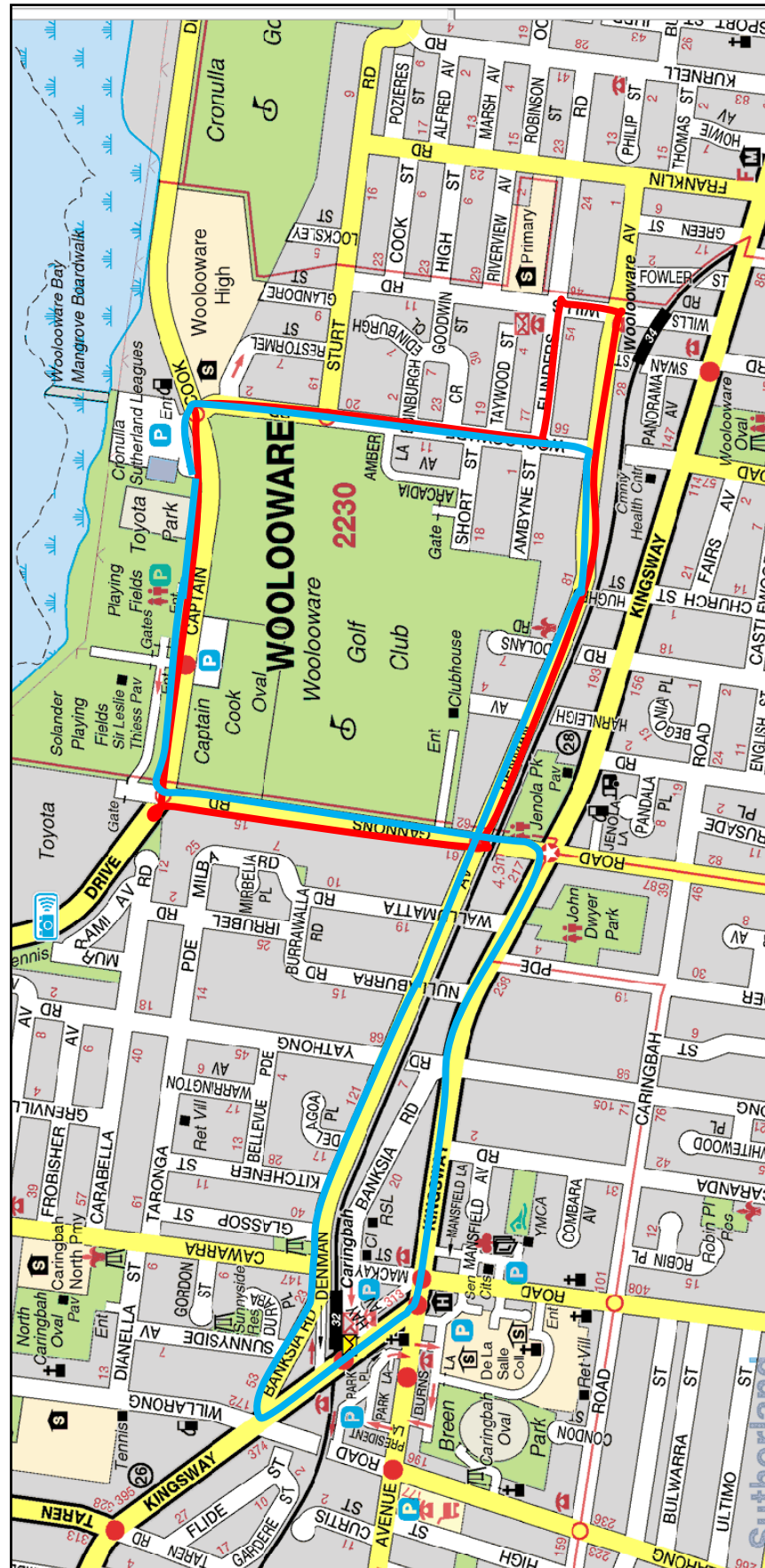
ANNEXURE B: RETAIL BUSES*



*Based on a 22 seat bus (the Sharks Club bus could be one of these)

Note if a standard 50 seat bus is used, similar to those used by Veolia, then the number of buses in the above chart would reduce by 56%

ANNEXURE C: BUS ROUTES



RED- Woollooware only circular route (entire length = 4km)

BLUE- Caringbah only route (entire length = 6km)

ANNEXURE D: BUS TIMETABLE

Scale of Use	Monday to Friday								Saturday		Sunday	
	Bus	Frequency 6-9am	Bus	Frequency 9am-4pm ⁽¹⁾	Bus	Frequency 4-7pm	Bus	Frequency 7-9pm	Bus	Frequency 8am-9pm	Bus	Frequency 9am-2pm
<400 units	1	30min	1	30min	1	30min	1	60min	1	60min	1	60min
600 units	2	30min	1	30min	2	30min	1	60min	1	60min	1	60min

Notes:

⁽¹⁾ To align with train timetable