



## M<sup>C</sup>LAREN TRAFFIC ENGINEERING

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Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

1st October 2015

Reference: 15084.04FA

Bluestone Property Solutions  
Suite 1, Level 6, 71 Macquarie Street  
Sydney NSW 2000  
Attention: Adam Lucas

### **RESPONSE TO REFERRALS OF WBTC - RESIDENTIAL PRECINCT AT CAPTAIN COOK DRIVE, WOOLLOOWARE**

Dear Adam,

Reference is made to your request for response to referrals of the Woollooware Bay Town Centre – S75W application to modify to the residential precinct GFA and parking rates. Summaries of the referral queries and our responses are shown below.

#### **1 Department of Planning and Environment**

##### **1.1 Shuttle Bus Capacity for new residents**

As part of the concept plan there was a requirement to operate a shuttle bus, commencing prior to occupation of the first residential unit. This has led to an agreement between the applicant and a local bus operator (Veolia), to be a privately funded public bus service including servicing by a regular 50 seater bus. When estimates were previously conducted of bus capacity the shuttle bus was intended to be only a 22 seater bus, accommodating up to 600 or so residential units and hence there is committed to be more than double the capacity previously assessed as adequate. With an increase in residential units of less than 10%, the bus provision is adequate for the scale and will indeed be sufficient for a much higher patronage drawn from the surrounding precinct.

## 1.2 Provide parking schedule according to yield, maximum capacity and land uses

Modified Concept Plan (including approved Stages 1 and 2)								
Stage	Apartments/commercial floor space				Car Parking			
	One bedroom	Two bedroom	Three bedroom	Commercial GFA (sqm)	Residential	Non-Residential	Visitor (1/5 apartments)	Visitor (1/5 apartments excl. 50% retail share)
1	83	122	21	605	249	17	45	37
2	52	105	22	43	199	2	36	35
3	97	113	28	348	266	12	48	42
sub total	232	340	71		714	31	129	114
Total	643				874			859

## 2 Sutherland Shire Council

### 2.1 Off-site carparking should be included in any parking assessment

McLaren agrees with this notion and has maintained that all parking demand for the development will be on the site, including the newly created access road within the residential precinct.

### 2.2 Maximum Parking Capacity as deterministic of maximum scale

The notion of maximum parking supply being the scale limiting device due to the maximum parking demand is in some form correct. It follows then that since the maximum parking demand at any one time is met, and not exceeding the set limit, the scale is within the limit.

### 2.3 Dual Use of parking

The parking demand study, submitted as part of the application, showed a demonstrative analysis of the changing parking demand throughout the day and week. Conservative estimates were placed on the assumption that 100% of residential visitors arrive at 6pm though in reality this is not that case. Dual Use parking is commonplace in town centres and mixed use development, both from an operational stand point and in the development approval process.

Examination of the streets surrounding Council's own office in Sutherland reveals the following uses throughout the day of shared/dual use public parking:

- Rail commuters
- Business hours commercial/retail visitors
- Pub/Hotel/Nightclub/Restaurant visitors
- Primary and High school parents
- Entertainment Centre visitors
- Residential Visitors
- 24 hour Gymnasium Visitors
- Place of worship visitors

For the town centre to operate, shared dual use parking is the most efficient way to effectively balance the variable demand for parking throughout the day and week. This is also true for individual developments with multiple uses on the site. McLaren Traffic Engineering has extensive experience with mixed use developments and it is standard

practice to account for a reasonable dual use allowance for any shared/pooled parking being created on the site. Some previous projects with dual use parking include:

- 127 Princes Highway, Wolli Creek
- 341 Condamine Street, Manly Vale
- 29-47 Forest Road, Arncliffe
- 8-20 Sarsfeld Circuit, Bexley North
- 48-54 Court Road, Fairfield
- 1364 Botany Road, Botany
- Corner of Good Street/Parramatta Road, Granville

This approach is consistent with Sutherland Shire Council's, as seen in *SSDCP2014 Policy Approach – Car Parking Provisions* (ref: *DAP007-15*) dated 7<sup>th</sup> July 2014, which in reference to visitor parking for residential flat buildings, states the following:

*“...most visitors arrive outside of commercial peak periods when there is typically ample availability of parking in centres.”*

While Council's document was not the basis of the dual-use parking demand study, the council's approach is consistent with that taken by the applicant. The utilised rate of 50% demand of residential visitors prior to 6pm on weekdays is more conservative than Council's suggestion. It must be emphasised that the proposed sharing of parking equated to only 15 parking spaces out of 129 visitor spaces or 12%. Reference is made the DCPs of Parramatta City Council and Rockdale City Council which respectively allow for up to 40% and 50% of residential visitor spaces to be used by other land uses on a site during 8am to 6pm.

The proposed modification included specific parking rates as these were the method of control in the concept approval. Perhaps the more appropriate way to modify the rates is a limit on the percentage of residential visitor parking which can be allowed to absorb the office use parking in business hours. It is recommended that if this were the case then previous experience with similar developments would suggest a maximum rate of 50% of residential visitor spaces to be permitted to absorb the commercial parking demand. Nonetheless, the modification proposed only 12% to be shared and is certainly within reasonable assumptions, noting council themselves suggest greater than 50% of residential visitors arrive outside commercial periods.

In any case, the applicant neither intends nor desires for any retail (besides an ancillary café and corner store/neighbourhood shop) to be placed in the residential precinct as this would detract from the retail centre and as a result the 'commercial' tenancies are desired to be offices with operating hours restricted to within 8am to 6pm. The previously proposed child care centre, which was accurately shown to have a different peak parking profile to the commercial tenancies and had sufficient parking available, has been withdrawn from the application. The restriction of trading hours for the commercial tenancies, and the removal

of the Child Care Centre should address council's concern over peak commercial usage times.

It is considered then that the dual-use approach, including its method and assumptions, is consistent with standard practice and Council's own approach, and that the clarification of commercial operation addresses councils concern.

#### **2.4 Clarification of maximum parking capacity of 883 spaces**

The Planning Assessment Commission conditioned the approval on 883 spaces or GFA, not on the number of apartments. It is reasonable then that if the design efficiencies as well as and the increased required scale of commercial GFA to activate the ground level are taken into account, it is possible to achieve additional numerical unit scale while staying under the conditioned maximum of 883 parking spaces off-street plus the parking on the proposed street.

#### **2.5 Allocation, distribution and opportunity for parking on the site**

To date there has been 548 spaces provided on the site. A total of 874 would be required under the approved rates or 859 under the proposed rates. Stage 3 is the final stage in the residential precinct and plans show opportunity for 321 spaces. Therefore, the total of 859 can be met on the site being the sum of the approved 548 and 321.

#### **2.6 Traffic increase will constrain traffic network**

The change in unit numbers has increased traffic generation by twelve (12) trips in the peak hour, though the onerous activation at ground level has increased commercial floor area to account for a further thirty four (34) trips. The total of forty six (46) trips represents less than 5% of the total traffic generation of the approved Woollooware Bay Town Centre and it is particularly important to note that the turning movements are occurring at the residential signals which have ample spare capacity, based on the post-development Degree of Saturation of 0.584 with Level of Service A.

The applicant is aware of other traffic generating developments within the precinct, such as the residential subdivisions in the Kurnell Peninsula and the potential of the 'Toyota' site to redevelop. The capacity of the road network was not increased by the Kurnell Subdivisions but is being increased by the applicant with significant works on Captain Cook Drive. Public transport accessibility levels were not increased by the Kurnell Subdivisions but are being increased by the applicant through the 100% funding of a public bus route including stops at major destinations of the Woollooware Bay Retail Precinct, Cronulla Beach, Woollooware Railway Station, Cronulla Railway Station and Caringbah Railway Station. The applicant welcomes the potential of the 'Toyota' site to increase its intensity only if such development is accompanied by funding for similar major works including road network capacity increases and public transport accessibility increases.

Council pose the question "*Should the sharks be given more residential units, and therefore another portion of the capacity available in the road network...*", however are not giving due

consideration to the residential traffic generation change of 12 trips in the peak hour, equating to 1 car per 5 minutes.

## **2.7 Shuttle Bus Capacity for new residents**

See Section 1.1.

The North Woollooware and Woollooware Bay precincts are not being provided a “small shuttle bus” service as the Council has described and instead are being given a full size bus by the applicant, operated by the local public bus company Veolia, including numerous key stops to distribute existing and future residents to transport hubs and retail destinations. The bus provision is in accordance with and exceeds that which was agreed for the concept plan and as such this concern is considered addressed.

## **3 Transport for NSW**

### **3.1 No objections Raised**

We believe this is evident of previous positive consultation resulting in an agreed public bus service, privately funded, and serving both the new residents of Woollooware Bay and the local community.

## **4 Road and Maritime Services**

### **4.1 No objection raised to traffic generation or subsequent assessment of impacts**

We believe this is evident of previous positive consultation resulting in 3 sets of traffic signals to disperse the traffic smoothly onto the existing road network. Further, it would appear RMS recognise the ample spare capacity of the residential traffic signals to accommodate the minor change in traffic generation at the newly created road.

### **4.2 Adequate parking to be provided**

McLaren agrees that adequate parking should be provided for the land uses of the site. Further, McLaren supposes that this parking could be provided according to the ‘Dual Use’ clause of SSDCP to account for non-overlapping peak demand of each land use.

## **5 Concerned Resident – Mr James McLachlan**

### **5.1 Traffic Generation**

The traffic generation rates used are those which were most recently available at the time of the original concept application, including 0.29 trips per hour per residential unit for high density residential in a sub-regional centre. It is both standard and sound traffic engineering practice to utilise these rates throughout Sydney for developments of this nature and not the residential dwelling rates. While more recently published data is available from the RMS, being 0.19/0.15 trips per unit in the AM/PM peak, as a conservative approach the previously utilised higher rates were maintained as a worst case.

Weekend reduction to 25% of the weekday peak was used in the TMAP for the concept application and not objected to by the RMS at that time nor for the current application.

## 5.2 Traffic Assignment

It is standard and sound traffic engineering practice to estimate assignment based on reasonable desire lines. In this case the journey to work determined residential trip assignments and an economic study determined retail trip assignments. It is true that a number of trips were estimated for Woollooware Road south of Captain Cook Drive. For the purpose of assessment these were estimated to be additional trips on top of the existing intersection counts however in reality the new town centre would re-direct many of the existing trips already occurring within the Woollooware North precinct.

## 5.3 Traffic Impact

In effect the trip assignment was used for intersection modelling and 'stress testing' the impacts however the eventual traffic network will respond to the various road capacities and treatments. In any case, of the additional 46 peak hourly trips for the current application only 8 trips are anticipated to be either south or east of the precinct and no noticeable change will occur because it only equates to 1 car every 7 minutes which is negligible.

The intersection of Gannons Road and Captain Cook Drive is a roundabout with two circulating lanes. Performance measured by the SIDRA intersection analysis program previously found that modification of the intersection to signals would improve the weekday situation though would worsen the weekend situation. It was apparent during the software conversion that actually the weekday existing is better than previously analysed and therefore both major time periods would worsen as a result of signalisation. The case for retention of the existing treatment is actually strengthened by the new analysis and in any case the cause for this is the existing high volume of traffic turning right from the western approach which the subject development is not causative of nor does it alter this volume.

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

Yours faithfully  
M<sup>c</sup>Laren Traffic Engineering

A handwritten signature in black ink, appearing to read 'C McLaren', is written over the typed name.

**Craig M<sup>c</sup>Laren**  
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