
Colston Budd Rogers & Kafes Pty Ltd

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

Our Ref: TR/10419/jj

Transport Planning
Traffic Studies
Parking Studies

20 July, 2017

Frasers Property Australia
PO Box 4148
SHELLHARBOUR NSW 2529

Attention: Glenn Colquhoun
Email: Glenn.Colquhoun@frasersproperty.com.au

Dear Sir,

RE: SHELL COVE BOAT HARBOUR PRECINCT S75W
TRAFFIC REVIEW

1. As requested, we have reviewed the traffic implications of the S75W to modify the approved concept plan for the Shell Cove Boat Harbour Precinct.
2. The findings of our review are set out through the following sections:
 - proposed modifications;
 - previous traffic assessments;
 - traffic effects of proposed modifications;
 - parking; and
 - summary.

Proposed Modifications

3. With respect to traffic, the S75W includes the following modifications:
 - an increase of 318 dwellings (129 residential lots, 85 medium density dwellings and 104 apartments);
 - relocation of the hotel to the northern edge of Precinct D and reclassified to permit service apartments and residential apartments; and
 - refinement of the road pattern.
4. The modified road network is shown in the Revised Concept Plan Design Report (Figure 4.2) prepared by Cox. The major change is within Precinct D, where a new road (Road 12), runs parallel to Road B (northern section renamed Road 10) and the deletion of the southern section of Road B (south of Cove Boulevard). This allows the retail precinct to be integrated with the adjacent foreshore development.

The eastern section of Cove Boulevard (east of Road 12) will be a shared zone. This change to the road network within Precinct D results in:

- better pedestrian connectivity between the retail and foreshore developments;
 - Road 12 providing the same traffic function as Road B;
 - diversion of traffic away from the foreshore, with less pedestrian/vehicular interaction;
 - more direct vehicular access to the retail precinct; and
 - an appropriate road network to provide access to the Boat Harbour Precinct.
5. Elsewhere within the Boat Harbour Precinct, the general layout and road hierarchy of the approved concept plan has been retained with the S75W providing more minor roads as shown on the modified concept plan. Overall to refined road network as proposed in the S75W will function in a similar manner to the approved road network and accommodate the traffic generated by the S75W.
6. The traffic effects of the proposed modifications to the road network are discussed in the following sections.

Previous Traffic Assessments

7. Development within Shell Cove has been the subject of a number of traffic studies. The traffic effects of the approved Shell Cove Masterplan were assessed in the Shell Cove Boat Harbour Precinct Traffic Study (Maunsell 2009). Subsequent traffic studies by Christopher Hallam and Associates (CHA) provided an updated traffic assessment of the Boat Harbour Precinct (2015) and a traffic assessment of the Shell Cove Boat Harbour Precinct Road Network (2016). The CHA reports were based on the modified road layout shown in the Revised Concept Plan Design Report (Figure 4.2) prepared by Cox and relocation of the hotel to the northern part of the site.

Traffic Effects of Proposed Modifications

8. As noted above, the traffic effects of the proposed modifications to the road network and relocation of the hotel have been assessed in the CHA traffic reports. This assessment found that with these changes, the road network would operate at a good level of service in the weekday morning and afternoon peak periods.
9. The S75W includes an increase of 318 residential dwellings (from 1,238 dwellings to 1,556 dwellings). The concept approval provides 190 residential lots, 374 medium density dwellings and 674 apartments. The S75W is for 319 residential lots, 459 medium density dwellings and 723 apartments. The approved concept plan was estimated to have a traffic generation of some 4,000 vehicles per hour (two-way) in the weekday afternoon peak hour. For the residential component this was based on RTA traffic generation rates as set out below:

- 0.85 trips per residential lots;
 - 0.6 trips per medium density dwelling; and
 - 0.4 trips per apartment.
10. Using these rates the residential component of the approved concept plan would generate some 655 vehicles per hour (two-way) in the weekday afternoon peak hour.
11. In 2013 the RMS published updated weekday afternoon peak hour traffic generation rates for residential development (RMS TDT 2013/04a). For regional areas, these are set out below:
- 0.78 trips per residential lots; and
 - 0.32 trips per apartment.
12. The 2013 TDT does not include a rate for medium density dwellings. Given that the other two rates have dropped by 8% and 20% respectively, a 10% reduction to the medium density rate has been applied (0.55 trips per medium density dwelling). Applying these rates, the residential component of the S75W would generate some 750 vehicles per hour (two-way) in the weekday afternoon peak hour. This is an increase of some 95 vehicles per hour (two way) compared to the approved concept plan or a 2% increase in overall traffic generation. Such a minor increase would not be noticeable in the context of traffic generation of the approved concept plan (4,000 vehicles per hour, two-way).
13. The reclassification of the hotel to allow serviced apartments or residential units would not materially change the traffic generation of the hotel.
14. As noted above the refined road network as proposed in the S75W will function in a similar manner to the approved road network. This combined with the level of traffic generation of the S75W resulting in only a minor increase in traffic generation (some 2%), indicates that the S75W road network will operate satisfactorily.

Parking

15. Parking requirements for precinct D (excluding the apartment hotel) were assessed in the updated traffic assessment of the Boat Harbour Precinct (CHA 2015). This assessment estimated a peak parking requirement of some 578 spaces at midday on a Saturday (taking into that different uses would generate peak parking requirements at different times).
16. The CHA assessment is summarised in Table 1.

Table 1 : CHA Calculation of Peak Parking Requirements at Saturday Midday				
Land use	Size	Rate	Adjustment	Parking Required
Supermarket	3,600m ²	1/20m ²	100%	180
Shops	1,323m ²	1/35m ²	100%	38
Tavern	966m ²	15/100m ²	90%	131
Restaurants	817m ²	15/100m ²	90%	111
Community	1,595m ²	1/40m ²	70%	28
Marina	300 berths	0.3/berth	100%	90
Total				578

17. We have updated the parking requirements in Table 2 based on the revised land use for Precinct D.

Table 2 : Revised Calculation of Peak Parking Requirements at Saturday Midday				
Land use	Size	Rate	Adjustment	Parking Required
Supermarket	3,746m ²	1/20m ²	100%	187
Shops	1,445m ²	1/35m ²	100%	41
Tavern	1,103m ²	15/100m ²	90%	149
Restaurants	817m ²	15/100m ²	90%	111
Community	1,595m ²	1/40m ²	70%	28
Marina	268 berths	0.3/berth	100%	80
Total				596

18. Examination of Table 2 reveals a parking requirement of some 596 spaces. This is similar to the previous requirement of some 578 spaces.
19. For the residential units, as per the previous CHA report, parking will be provided in accordance with Council DCP rates for the residents (1 space per one bed unit and 1.5 spaces per 2 and 3 bed unit) with no separate visitor parking (to be accommodated within public on and off street parking).
20. For the apartment hotel a minimum of 209 spaces are required. This is less than previously suggested and takes into account its use as serviced apartments (with dual keys) and shared use of the hotel facilities. An assessment of parking

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requirements for the apartment hotel is set out in the attached report (dated 17 November 2016).

21. For the technology/business park located on to the south of Boat Precinct, parking will be provided in accordance with Council's DCP (as per the previous assessment) at one space per 40m². With 30,000m², 750 spaces would be required.

Summary

22. In summary our review of the traffic implications of the S75W modifications to the approved Shell Cove Harbour Precinct Concept Plan has found that:
- to refined road network as proposed in the S75W will function in a similar manner to the approved road network and accommodate the traffic generated by the S75W;
 - the level of traffic generation of the S75W results in only a minor increase in traffic generation (some 2%) and thus the S75W road network will operate satisfactorily; and
 - an updated parking assessment has been undertaken.
23. We trust the above provides the information you require. Finally, if you should have any queries, please do not hesitate to contact us.

Yours faithfully,

COLSTON BUDD ROGERS & KAFES PTY LTD

A handwritten signature in black ink, appearing to read 'T. Rogers', with a stylized flourish at the end.

T. Rogers
Director