



*Consequently, the proposal is unlikely to increase the parking demand of the marina.*

*However, if it does increase the demand, this increase is likely to be extremely minor, and this increase could easily be accommodated on Parthenia Street without generating any adverse parking or traffic impacts.*

*The Department agrees with this assessment, and does not believe that the proposal would generate any significant parking impacts...*

The current proposal is clearly more substantial than the previous proposal, with an increase from 51 to 91 boats. The starting point in the traffic and parking assessment is the derivation of the most appropriate parking demand rates. This is discussed in great detail in the Appendix. In essence, since we undertook our surveys of marinas in 2000 and 2001 we have undertaken extensive additional surveys, of Rose Bay, Point Piper RMYC and Double Bay Marinas. Parking rates that emerged from these surveys and analysis were applied to major development applications for Rose Bay and Double Bay Marinas. The Rose Bay Marina proposal was refused consent by Woollahra Municipal Council, and subsequently appealed to the NSW Land & Environment Court. The traffic expert employed by Woollahra Council – Alastair Burns, SKM – agreed with the parking rates derived and recommended by Christopher Hallam, for the applicant, Addenbrooke Pty Ltd. For large boats in excess of 20 metres in length, Mr Burns recommended further sensitivity tests, but for boats less than 20 metres, the rates derived by Mr Hallam were agreed.

At first glance, the parking rates derived in surveys of Dolans Bay Marina in 2000/2001 might appear more appropriate than rates based on several marinas in the Sydney region. However the surveys that have been undertaken have shown some variability in boat usage and parking demand. The most appropriate way to deal with this variability is to maximise the survey sample size, and use all survey results in the derivation of the peak parking rates. This is similar to collating data from surveys of several shopping centres, to derive traffic generation and parking rates that are appropriate to apply in the Sydney region, rather than selecting the centre nearest to the proposed centre and using the results of one site survey only. This is the methodology employed in the Roads & Traffic Authority's *Guide to Traffic Generating Developments*.

The basic peak parking rates for Summer weekends are:

- Swing moorings 0.224 cars/mooring
- Marina berths 0.166 cars/berth

Note that the swing moorings referred to here are for moorings controlled by a marina, as distinct to the "public" moorings issued to individual members of the public by Waterways.

In the Rose Bay Marina project, the base marina berth rate of 0.166 cars/berth was increased for the proposed future situation, to reflect a substantial increase in the



average length of boats. For all boats at Rose Bay and Point Piper, in both berths and moorings, the current average length was 10.4 metres, while the proposed average length was projected to increase to 16.3 metres. There is considerable variability in the ratio of parking demand to boat length. To conservatively assess the future situation, for the Rose Bay/Point Piper situation, the base rate of 0.166 cars/berth was increased by 20%, to 0.200 cars/berth.

However for Dolans Bay Marina, we have assessed the future boat length distribution to average 10.7 metres, which is less than 3% longer than the average for Rose Bay/Point Piper, of 10.4 metres. Thus, no increase for longer boats is appropriate.

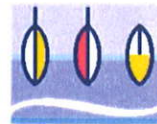
Applying these standard Summer weekend rates to Dolans Bay Marina, the following peak parking demands are indicated:

|                 |          |                           |
|-----------------|----------|---------------------------|
| <u>Current</u>  | Moorings | 22 x 0.224 = 4.93         |
|                 | Berths   | 29 x 0.166 = 4.81         |
|                 | Total    | = 9.74 spaces             |
| <u>Proposal</u> | Moorings | 0                         |
|                 | Berths   | 91 x 0.166 = 15.11 spaces |

The Current situation is thus covered by the current boat user parking area with 10 spaces. The expansion of the marina will result in an additional parking demand of 5 cars. These cars would need to be parked on Parthenia Street.

As shown by the results of the surveys of on-street parking in Parthenia Street near the marina, there is ample vacant parking on weekends. In the parking zones closest to the marina – A,D,E and H – on Saturday 6<sup>th</sup> January 2001 there were a minimum of 24 vacant spaces between 9am and 5pm, while on Sunday 7<sup>th</sup> January 2001 there were a minimum of 26 vacant spaces over the same period. On Saturday 2<sup>nd</sup> August 2008 there were a minimum of 65 vacant on-street spaces in the 9am to 5pm period, while on Sunday 3<sup>rd</sup> August 2008 there were a minimum of 64 spaces over the same period. In the marina parking area there were a minimum of 5 vacant spaces on the Saturday and 6 vacant spaces on the Sunday in August 2008.





### **3.3 Traffic Assessment**

There will not be any increase in marina staff on the site, so the only reason for additional traffic to be generated by the marina will be the additional boat users. With the peak Summer weekend parking demand projected to increase from 10 to 15 cars, the additional traffic generation will be 5 cars to the marina and 5 cars from the marina on a Summer weekend, a total additional traffic generation of 10 vehicles per day. Such a minor change would not be noticed and is of little consequence in Parthenia Street.



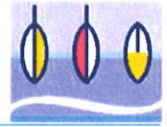
## 4.0 CONCLUSIONS

1. The proposal is to expand Dolans Bay Marina from 29 berths to 91 berths, and at the same time, relinquish the existing 22 swing moorings controlled by the marina.
2. The best method of estimating the parking demand, and hence traffic generation, of marinas is to base the assessment on surveys of existing marinas. The Roads & Traffic Authority's guidelines are not based on such surveys. This methodology has been accepted in a recent Appeal in the Land & Environment Court, for Rose Bay Marina.
3. The Appendix sets out a detailed assessment of car parking demands, and the rates ultimately used in the Rose Bay case. These rates are appropriate to use in Dolans Bay. The resulting peak Summer weekend parking demand figures are:

|                |          |            |               |
|----------------|----------|------------|---------------|
| <u>Current</u> | Moorings | 22 x 0.224 | = 4.93        |
|                | Berths   | 29 x 0.166 | = 4.81        |
|                | Total    |            | = 9.74 spaces |

|                 |          |            |                |
|-----------------|----------|------------|----------------|
| <u>Proposal</u> | Moorings | 0          |                |
|                 | Berths   | 91 x 0.166 | = 15.11 spaces |

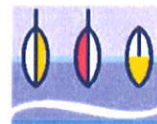
4. The proposal is thus expected to result in up to 5 cars needing to park on Parthenia Street near the site, on Summer weekends. Surveys of the current on-street parking demands have shown that there is ample spare on-street parking near the marina.
5. With the peak Summer weekend parking demand increasing by just 5 cars, the additional daily traffic generation will be 10 vehicle movements in a day. Such a small increase would not be noticed or have any impact on residential amenity in Parthenia Street.



## **APPENDIX MARINA PARKING ANALYSIS**

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## 1.0 INTRODUCTION

We prepared the report dated February 2001 titled "*Traffic and Parking Impact Assessment of Proposed Alterations to Dolans Bay Marina, 72-74 Parthenia Street, Dolans Bay*", for the previous alterations to this marina. This provided surveys of boat usage, car parking demand by marina patrons and car parking demand in Parthenia Street on Summer weekends. Since that report was prepared, we have undertaken very extensive surveys and analysis of the traffic and parking characteristics of marinas in Sydney, initially with a research study for the Boating Industry of New South Wales, a research paper to an International Marinas Conference and subsequently, extensive surveys of marinas on Sydney Harbour, at Rose Bay and Double Bay.

We have prepared this Appendix to present the results of our surveys and analysis of marina parking demands, to provide guidance in the assessment of the proposed alterations to Dolans Bay Marina.





## 2.0 SURVEYS OF BOAT USAGE AND DEMAND

### 2.1 Standards and Guidelines

#### Australian Standard 3962

We have previously undertaken detailed surveys of marinas in the Sydney region. In April 2001 we prepared a report for the Boating Industry Association of New South Wales on the subject "*The Car Parking Implications of Marina Developments*".

This research for the Boating Industry Association concluded that there was not a significant difference between the parking demands of swing moorings and marina berths. General findings included:

- Swing moorings are used more for yachts, with owners more likely to use their boats than those on marina berths
- On marina berths, there is some potential for larger group size per boat, but this is tempered by a lower usage rate

The research recommended that when a new marina or a change in the configuration of an existing marina is proposed, the best method of analysis is to survey a similar, or the same marina, to assess current usage patterns and car parking demands. Where comparisons cannot be drawn, the recommendation was:

- |                                      |                     |
|--------------------------------------|---------------------|
| • Wet marina berths & swing moorings | 1 space/3 boats     |
| • Dry berths                         | 1 space/5 boats     |
| • Employees                          | 1 space/2 employees |

The results of this research were forwarded to Standards Australia, with a request to review the parking requirements in AS3962-1991. This Standard was revised in 2001, with AS3962-2001 recommending the following car parking rates:

- |                  |                      |
|------------------|----------------------|
| • Wet berths     | 0.3-0.6 spaces/berth |
| • Dry berths     | 0.2-0.4 spaces/berth |
| • Swing moorings | 0.3-0.6 spaces/berth |
| • Employees      | 0.5 spaces/employee  |

The key point is that the Standard has the same parking requirement for swing moorings as it does for wet marina berths. It follows that the replacement of swing moorings with wet marina berths would not change traffic generation and parking demands. In reality, the surveys have shown that boats on swing moorings have higher usage and car parking rates than boats in marina berths.



### **The Roads & Traffic Authority's *Guide to Traffic Generating Developments***

This Guide recommends that surveys be undertaken of similar developments, but in the absence of such a survey, parking be provided at the following rates:

- 0.6 spaces per wet berth
- 0.2 spaces per dry storage berth
- 0.2 spaces per swing mooring
- 0.5 spaces per marina employee

These rates were inserted in the RTA Guide based on the current Australian Standard of the time, the 1991 version of AS3962, with the only difference being that this Standard had ranges in parking rates for wet berths, averaging out at about 0.6 spaces per berth. The following comment is made:

*"Parking demands at marinas vary substantially depending on the season, the type of berth or mooring and the type of boat. Ideally, surveys should be undertaken of similar developments, over summer weekends. Boats parked in wet marina berths are more accessible and therefore more likely to be used than boats in dry berths or on swing moorings. Use also varies with boating purpose. While a typical marina might have 30% of boats used on a summer weekend, racing yachts are more highly utilised with an average of over 60% at one club surveyed. The size of the boat affects the number of crew or passengers, while the location of the marina affects the crew's transport mode."*

The section of the RTA *Guide* dealing with traffic generation suggests daily vehicle trips of 2.7 per fixed berth and 1.4 per swing mooring *"based on a marina with a mix of boat types (both power boats and yachts); the design is based on a summer weekend day. These rates also include an allowance for shore-based facilities such as boat sales and repairs."* This section repeats the general comments made in the parking section:

*"The two key factors in the traffic generation of marinas are the level of usage and the transport mode of boats [boat users presumably]. Boats that are more accessible (in wet marina berths) are more likely to be used than boats in dry berths or on swing moorings. Use also varies with boating purposes. For example, yachts which engage in regular racing, are used more often than yachts used only for social outings. Surveys of four marinas in Pittwater in 1978 over the summer weekend/public holidays found an average utilisation of 30% over all berths. Surveys of racing yachts at one club on Middle Harbour in 1990/91 found an average utilisation on summer racing days of 65%."*

*Traffic generation also varies with the boat crew numbers. Larger boats, that are often in wet marina berths, can accommodate larger numbers of crew/passengers than smaller boats that might be stored in dry berths or on swing moorings."*