Ballina Shire Council

Lower Richmond River Recreational Boating Study

Report

April 2005

Ballina Shire Council

Lower Richmond River Recreational Boating Study

Report

April 2005

Contents

Table Index

Figure Index

Photo Index

Chart Index

Appendices

Executive Summary

GHD are pleased to present this report on the recreational boating needs of the Lower Richmond River. The Richmond River is an amazing asset for recreational boating on the north coast. This study provides a strategic plan to ensure that the development of boating infrastructure occurs in a planned and focused manner.

This report has identified that:

- The current infrastructure is inadequate to provide the expected level of service for the local and visiting boats.
- That there is likely to be up to a 50% increase in demand for boating infrastructure in the next 10 years.
- That improved services and infrastructure are desperately required in order to assist growth in this market.

This report has identified short and long-term strategies to provide development of the infrastructure requirements for boating in the area.

Community involvement has been a crucial element of this study. Strong community support was felt for the development of better boat ramps and a marina in Ballina.

The support and development of the recommendations provided in this report will no doubt establish Ballina as a premier recreational boating destination and service centre on the New South Wales Coast.

Lower Richmond River Recreational Boating Study

Part A – Study Context, Existing Conditions and Community Consultation

1. Introduction

1.1 Study Background and Purpose

The town of Ballina is located approximately 740 km north of Sydney on the far north coast of New South Wales. The town is located adjacent to an extensive estuary and the mouth of one of the larger river systems of the north coast, the Richmond River.

Recreational boating contributes to the liveability, character and appeal of the Ballina community. The commercial boating industry is also a significant part of Ballina's history and economic base.

The development of maritime infrastructure along the river has been episodic over time. In more recent years, most non-trailerable craft operating within the river were berthed at a number of private waterfront jetties and a marina known as the Ballina Quays Marina – this was closed in mid 2002.

Prompted by increasing recreational boating activity, population growth and implications of the marina closure for the recreational boating community, Ballina Shire Council resolved to prepare the **Lower Richmond River Recreational Boating Study**. Consultants GHD Pty Ltd were commissioned to assist Council with the study.

The overall management objective of the study is:

> *"To formulate an integrated short term and long term strategy, comprising strategic options that will address the current and future needs and requirements of recreational boating within the lower Richmond River Estuary (ie. the Study Area), including a program of works and actions to establish Ballina as a premier recreational boating destination and service centre."*

The study area generally includes all areas from the Wardell Bridge extending downstream to the mouth of the Richmond River, and North Creek upstream to Prospect Bridge.

1.2 Study Process

To achieve the overall management objective, the study process has been underpinned by the following tasks:

- The identification of the current and future boating infrastructure requirements for recreational boating within the Study Area generated from within the Region.
- The identification of potential tourist and recreational boating linkages with other upstream areas such as Broadwater, Woodburn, Swan Bay, Coraki, Wyrallah and Lismore.
- The identification of levels of maritime infrastructure required within the Study Area to promote Ballina as a desirable destination and servicing centre for recreational boating from outside the region.
- Consultation with all relevant boating user groups in making an assessment of boating infrastructure requirements.

- A review of existing boating infrastructure within the Study Area and an assessment of its adequacy in meeting the current and future boating infrastructure.
- The assessment of the potential for the development of a maritime precinct that will foster the growth of marine services in accordance with recognised best practice principles.
- The formulation of a strategy for Council that will canvas a number of options to meet the study's overall aim as above.
- The identification of the order of costs in implementing individual strategic options.
- The identification of staging for individual options.

The study has been prepared in consultation with State Government agencies, the recreational boating industry, interested residents and other stakeholder groups. It will provide a strategic direction for future planning, management and enhancement of recreational boating activity on the Lower Richmond River.

Study outcomes will also dovetail with other Council and State Government planning frameworks, such as the Richmond River Estuary Management Plan, and form the basis for a boating management plan for the Richmond River

1.3 Report Structure

This report is comprised of eight sections that consider the Lower Richmond River study area, existing recreational boating infrastructure and activity, environmental conditions, stakeholder needs and expectations, and recommendations for future planning, management and infrastructure.

The report is structured into three major parts, as follows:

PART A - Study Context and Existing Conditions:

- **Section 1** identifies the study's aims and objectives. It also defines the study area and synergies with other planning and management initiatives.
- **Section 2** sets the regional context for this study, and provides an historic overview of maritime activity on the Richmond River. It also provides a snapshot of local climatic conditions and their implications for recreational boating.

PART B - Assessment of Existing and Future Needs:

- **Section 3** provides a snapshot of the study area's population dynamics and future growth. Recreation and tourism participation trends are also considered to identify future needs for boating access and infrastructure in the study area.
- **Section 4** describes the study's community consultation program and its results, highlighting needs, demands and priorities for future boating activity on the Lower Richmond River.

- **Section 5** examines existing and potential options for the dry storage of vessels within the study area, including the results of site reconnaissance to assess the adequacy of existing boat ramp infrastructure.
- **Section 6** examines existing infrastructure for wet stored vessels in the study area. It also provides a preliminary assessment of potential sites for future marina development in Ballina – these sites have been identified through field work, discussions with Council and State Government officers, stakeholder consultation with the local boating community and other research.

PART C - Analysis and Recommendations:

- **Section 7** is a synthesis of study findings. The results provide the framework for final recommendations.
- **Section 8** presents the study's recommendations in the form of short and long term priorities, to establish Ballina as a premier recreational boating destination and service centre. Key actions include targeted boat ramp upgrades and options for future marina development.

2. The Study Area

2.1 Location and Regional Context

Ballina is strategically located on the Northern Rivers of New South Wales. By road it is 740 km North of Sydney and 200 km South of Brisbane. Figure 1 shows the location of the Richmond River and the extent of its catchment and tributaries.

From the ocean, Ballina is located 58 and 43 nautical miles respectively, south of the Gold Coast Seaway and Tweed River entrance, and 36 nautical miles north of Yamba (Alan Lucas, 2000).

An average recreational sailing vessel will travel at speeds of between 4 and 8 knots. This means that a comfortable daylight sail is between 40 – 80 miles.

Powered vessels can achieve higher average speeds, with displacement vessels averaging around 9 knots and plaining hulls around 20 knots.

Ballina is well located for vessels that wish to "day sail" down the New South Wales coast hopping between ports. These vessels may stay for a day or two, a weekend or longer. Ballina provides a safe haven for vessels if heavy weather is expected on the coast, although the bar will restrict vessel entry if poor weather has already developed.

2.1.1 Upstream Linkages

Located upstream of Ballina on the navigable reaches of the river are the towns of Wardell, Broadwater, Woodburn, Coraki, and Lismore. These centres (shown in Figure 1) all have a rich maritime history, and have developed as a direct result of the River. Photo 1 shows various elements of the Richmond River upstream of Ballina.

Due to flooding, these towns have often looked at the river as a threat rather than an asset, and therefore riverside areas were sometimes forgotten. In recent years significant work has been undertaken to increase the amenity and use of these riverfront areas as their recreational and aesthetic values were identified.

Masted vessels can navigate as far south as Woodburn, 21 nautical miles (39 km) upstream through lifting bridges at Wardell and Broadwater. Further upstream bridges restrict navigation to vessel less than 8.8 m high. Vessels under this height are capable of navigating the entire waterway from Ballina to Lismore, a total of 61 nautical miles (110 km). Twenty-three historic sites have been identified along this journey with a rich maritime history of the area awaiting discovery (Lois Kelly – LCC, 2004)

The Richmond River has high cultural heritage value to the local indigenous community. Monuments depicting these important links are located in Coraki. Lismore City Council has plans for a cultural heritage display as part of its foreshore redevelopment.

Improvements in infrastructure further upstream from Ballina are also seen as an important drawcard for tourists travelling by land-based vehicle and boat. Maritime facilities in Ballina will provide an important drawcard for visitors to the region. Subsequent studies to this one could improve infrastructure and linkage to upstream

ports on the Richmond River. Improved infrastructure would facilitate increased utilisation of this resource further upstream.

Figure 1 Richmond River Catchment (EPA, 2005)

Photo 1 Upstream linkage on the Richmond River.

(From top left: Woodburn Park, Coraki – meeting of the waters, Coraki Aboriginal monument depicting turtles in pathway, Wardell - Historic Wharf, Lismore's new boat ramp and Jetty, Lismore riverside park, Coraki - lifting bridge, Riley's Hill Dry dock).

2.2 Historic Overview

The Lower Richmond River, from the mouth to Wardell has a rich maritime history. The area was settled in the 1880's as a commercial port for vessels. These vessels shipped primarily timber, however agriculture followed with dairying and sugarcane prospering. Ballina was also an industrial shipbuilding centre. The operation of the port ceased in the late 1960's with the advent of better rail and road transport links.

Sir John Coode designed the current river estuary layout in 1892 (shown in Figure 2) . Construction of the breakwaters and training walls was initially undertaken between 1889 and 1911. Work has continued to repair storm damage and to extend breakwaters seaward. (Coltheart / James, 1987)

Significant dredging works were undertaken in the Lower Richmond and entrance bar prior to 1911. Ballina Island was created when a channel (Fisheries Creek – North Creek Canal) was constructed between North Creek and the Richmond River in 1890 (Webb, 1993). Further maintenance dredging was completed between 1911 and 1974 across the entrance bar and upstream for navigation purposes. Much of the dredged material was used as landfill in Ballina. Wide scale dredging was discontinued in 1974, however some dredging of North Creek was undertaken during the construction of the Prospect Bridge and its abutments in the 1990's.

The trawler Harbour was constructed in 1966 - 1967 to house the commercial fishing fleet. In the 1970's, fleet numbers were around 33 vessels. Today only about 8 active trawlers remain.

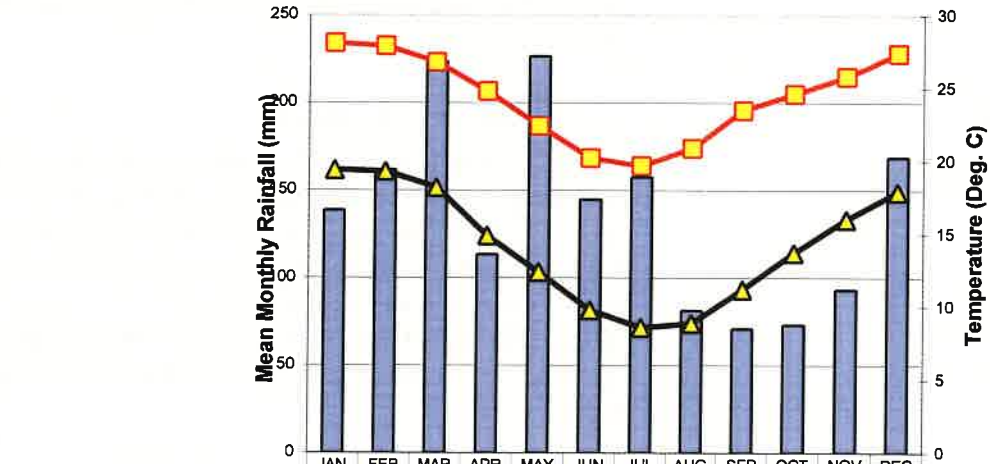
A number of slips and construction facilities also existed along the foreshore in Ballina until the late 1970's. Industrial shipbuilding activity was contracted in the town and is now located primarily along Emigrant Creek and Smith Drive. The dry dock at Riley's Hill was also decommissioned in the 1990's.

Figure 2 Aerial view of Ballina (DLWC, 1999)

2.3 Climatic Conditions

Ballina Shire has a mild subtropical climate, with an average annual daily temperature of 24.1 °C. The warmest summer month is January with an average daily temperature of 28.1 °C., July is the coldest month, having a mild daily temperature of 19.7 °C, with relatively cool nights (8.6°C). The hottest recorded temperature of 42°C was recorded in the month of January and the lowest recorded temperature was recorded in July at –2.0°C (BOM 2004). Chart 1 shows the mean monthly rainfall and maximum and minimum temperatures for Ballina Shire.

Chart 1 Climate Averages in Ballina Shire (BOM, 2004)



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean Monthly Rainfall (mm)	138.6	161.7	223.7	113.5	226.5	144.7	157.5	81.4	70.9	73.1	93.2	168.9
Mean Daily Max Temperature (C)	28.1	27.9	26.8	24.8	22.4	20.2	19.7	20.9	23.5	24.6	25.8	27.4
Mean Daily Min Temperature (C)	19.4	19.3	18.2	14.9	12.4	9.8	8.6	8.9	11.2	13.7	16	17.9

Relative humidity ranges from a high of 79% in March to a low of 62% in September. Rainfall is strongly seasonal with a high proportion of the annual average rainfall (of 1653.7mm) falling in the months of January to May (BOM 2004). The average annual evaporation is 1574.5mm (BOM 2002)

2.3.1 Flooding

The Richmond River has a catchment of 6,900 km^2. The major local creeks, Maguires, Emigrant and North all enter the Richmond River near its mouth (WBM, 1998).

Three types of flooding are currently experienced at Ballina

- Rainfall over the Richmond River catchment causing swelling and overtopping of the Richmond River.
- Localised falls over the Maguires, Emigrant and North and other minor creeks.
- Elevated ocean levels and storm wave conditions from a low or cyclonic depression.

Each of these three types of flood has a different 'time to peak' and may interact to provide a peak flood level for the catchment.

Historical flooding records for the Richmond River are available for Coraki from 1857. Any flood that records a hight exceeding 4.5 m on the Coraki gauge is deemed a moderate to major flood.

A moderate to major flood generally occurs once every two or three years (BOM, 1972). These floods are usually a result of a cyclonic depression centred just off the coast.

A major concern for boat owners is the debris mobilised with the floodwater. This can get trapped under and damage boats, jetties and other infrastructure. Local catchment flooding can occur in a matter of hours with little warning in order to move boats. A flood peak from the upper catchment may take up to 7 days to travel from Lismore to the river mouth. Therefore, an opportunity may exist to ensure vessels are protected from debris, brought downriver.

2.3.2 Storms and Cyclones

Tropical cyclones are normally experienced along the eastern coast of Australia about three times in every cyclone season (December to April). Cyclonic depressions bring gale force winds and torrential rains. The number likely to affect the Ballina area is indicated in Table 1. In January, a tropical cyclone may seriously affect the coast in 6 out of every 100 years. Overall, a tropical cyclone is likely occur once every two cyclone seasons (BOM ,1972). More recent mapping shows the potential impact of tropical cyclones occurring off our coast to be approximately 0.2 (1 cyclone every 5 years) as shown in Figure 3. (BOM, 2004).

Table 1 Potential for a Tropical Cyclone Endangering Coastal Areas of the Region (BOM, 1972)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
6%	16%	16%	6%	-	-	-	-	-	-	-	-	44%

Tropical cyclones subside if the supply of water vapour is cut off, so they quickly lose intensity when they move over land or colder waters. The ocean temperature required to sustain a cyclone is approximately 26 °C. Large-scale low-pressure systems outside the tropics are called extra-tropical cyclones. This type of cyclone is more likely to be experienced on the Northern Rivers Region.

East coast cyclones are about the same size as tropical cyclones, but are further south and not as intense. Their clockwise air circulation typically brings gales and heavy rains near the coast to the south of the cyclone's centre, while the weather north of its centre often clears quickly (BOM, 2004).

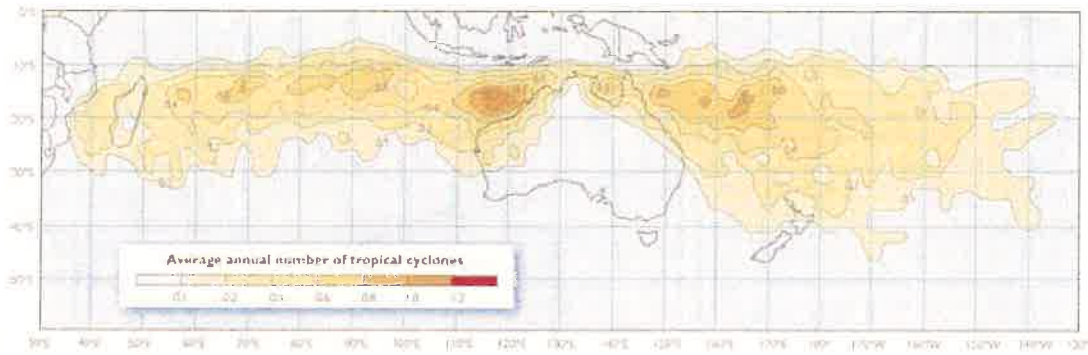


Figure 3 Average Annual Number of Tropical Cyclones (BOM, 2004)

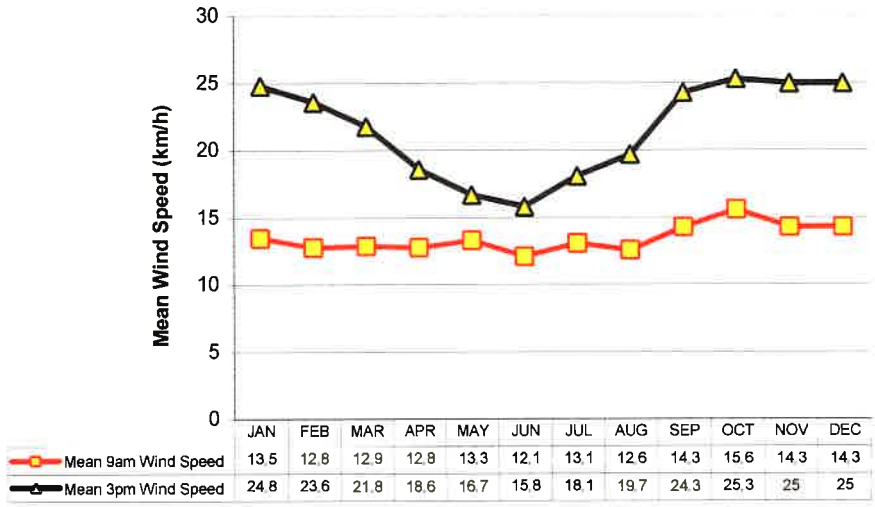
Severe local storms accompanied by strong winds, hail, intense rain and possibly tornados can affect the region. The frequency of this storm type affecting any one part of the region is relatively low, however the damage caused over a small area can be very severe (BOM 1972). Severe storms are most likely over the late spring / summer period (BOM, 2004).

2.3.3 Wind

Some general observations about wind in the coastal region have been made using data from Cape Byron (BOM, 1972), as follows:.

- In the mornings, particularly in the cooler months the wind tends to be westerly.
- Winds blow most frequently from the NE to SE in the period November to April inclusive and from NW to SW in the months of June, July and August. The remaining months are generally a transition of one wind regime to the other.
- Winds are strongest on the coast and decrease inland, with the greatest difference between coastal and inland stations occurring in the summer months. Wind speeds are greater in the afternoon than the morning.
- Morning and afternoon average wind speeds for Ballina have been provided in Chart 2

Chart 2 Mean Wind Speed for Ballina (BOM, 2004)



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean 9am Wind Speed	13.5	12.8	12.9	12.8	13.3	12.1	13.1	12.6	14.3	15.6	14.3	14.3
Mean 3pm Wind Speed	24.8	23.6	21.8	18.6	16.7	15.8	18.1	19.7	24.3	25.3	25	25

Strong wind gusts affect the region from time to time in association with meteorological phenomena such as tropical cyclones, severe local storms and the passage of cold fronts. Estimates of the extreme wind gusts and specified return period are shown in Table 2 (BOM, 1972).

Table 2 Estimated Extreme Wind Gust to be Expected for a Given Return Period (BOM, 1972)

Return Period (Years)	10	20	50	100
Extreme Gust Equalled or Exceeded (knots)	70	75	78	83

2.3.4 Ballina Bar

The entrance of the Richmond River is strongly influenced by the prevailing coastal processes of tides, waves, floods and longshore sand transport system. Natural coastal processes hamper navigation of the lower reaches of the Richmond River and through the entrance to the ocean and at times navigation may be dangerous under certain conditions despite the presence of the river training walls.

The entrance training walls or breakwalls have stabilised or fixed the river entrance and have had the effect of moving the entrance bar to the end of the walls or slightly offshore. The depth of the outside bar is around 3.5 m below the Lowest Astronomical Tide (LAT). An inner bar (which is located upstream of the Coast Guard tower), presents a second restriction, which at approximately 2.5 m LAT often causes breakers to form, particularly on an ebb (out flowing) tide. These bars have currently maintained their current depth for a number of years without dredging. The location of the bars is not stationary, requiring care and due caution during all crossings.

One-off or occasional dredging of the river entrance is costly and generally does not provide significant long-term improvements in navigation, as the dredged areas infill from the longshore sand transport system.

An Entrance Sand Bypassing system similar to those operating at the Tweed River and Southport seaway would require detailed investigations to determine its application to the Richmond River and large capital investment for its construction and ongoing operation.

The entrance bar of the Richmond River should not limit the development of recreational and commercial boating. Consideration of the vessel type, weather conditions, and navigational limitations together with the practice of good seamanship however need to be considered by the master a vessel prior to crossing the entrance bar and the lower Richmond River shoals.

2.4 Estuary Management Process

The Estuary Management of the Richmond River is currently being investigated (DIPNR, 2004). Boating plays an important role in both the access and use of the estuary; it also has the potential to negatively impact on the estuary. It is envisaged that this boating study be used identify the future direction of boating on the Richmond River, and therefore be used to assist in impact assessment on the estuarine environment.

2.5 Organised Events to Promote Ballina

As part of the promotion of Ballina as a regional boating centre, an annual yachting and or power boat race could be inaugurated such as the "Pittwater to Ballina", or "Brisbane to Ballina" along with local races such as the "Ballina to Byron Ocean Classic".

Marina facilities are also ideal places to host on and off shore fishing competitions and other related boating activities. Community groups such as Sailability – sailing for the disabled, have already expressed an interest in operating boats out of any potential marina in Ballina.

The Ballina Tourist Information Centre is another asset which could be used to promote boating activity on the lower Richmond River – this could be achieved by having a marine directory to showcase maritime industry and tourist facilities in the region, maps showing boatramps, facilities, suggested mooring sites and potential water based activities.

2.6 Bridges

Bridge construction can severely limit the ability of some types of vessels to utilise a waterway, effectively sterilising the reaches upstream of the bridge. Currently masted vessels can navigate the river as far as Woodburn, through lifting span bridges at Wardell and Broadwater.

Lifting span bridges can solve some of these issues, however long term factors such as design, maintenance and cost of opening for the general public need to be considered.

Bridge upgrades may be required for the Pacific Highway at Wardell, as well as a Burns Point bridge to provide access to South Ballina. It is considered that bridges at these locations may require lifting spans to provide access for vessels to upstream waters.

2.7 Funding Options

Funding options available for the development of marine infrastructure in Ballina include state and local government agencies, as well as private consortiums and developers.

This report has been prepared to indicate the support of both the community and the Council in actively supporting marine infrastructure development.

2.7.1 Government Funding

NSW Maritime Boating Facilities Program (BFP) provides a 50/50 funding for suitable maritime-based projects. Typically these projects have included:

- Boat ramps;
- The provision for upgrading of public wharves and jetties;
- Installation of navigation aids and public moorings; provision of public sewage pump out sites.

A three-stage assessment process is required for approval of funding:

- First stage involves Regional evaluation of applications and stakeholder discussions;
- Second stage involves a review of forwarded regional applications by the Manager, BFP including technical reports, proponent priorities and the preparation of documentation for committee assessment; and
- Third stage involves the BFP assessment committee reviewing applications with the outcomes documented by the Manager, BFP for submission via line managers to the Chief Executive.

A total annual budget of $2M is available for suitable projects.

2.7.2 Private Sector Funding

Private sector funding is probably the best way to appropriate funds for large-scale projects such as marina developments. The best way to attract private sector funding is to have a defined site and plan for the development, including appropriate land tenure, development controls, infrastructure, roads and services.

Recent examples of marinas developed in this way include the Gold Coast City Marina. Gold Coast City Council and the Department of State Development initially planned the development of this site which was then released for public tender.

3. Demographic, Recreation and Tourism Trends

3.1 Overview

Sections 3 and 4 seek to provide a "snapshot" demographic, recreation and tourism trends to identify implications for recreational boating activity in the study area. This analysis involved complimentary quantitative and qualitative assessments, as follows:

- A brief review of population characteristics, published recreation participation statistics and visitor data for the study area.
- A brief review of boat ownership records, to assess boating activity trends and potential demand for new or upgraded infrastructure in future.
- Consultation with the boating interest groups, community representatives and other stakeholders to establish their needs, priorities and aspirations for recreational boating in Ballina Shire and the Lower Richmond River study area.

Key findings are presented below.

3.2 Key Population Characteristics

Population Growth

Ballina Shire has a current population of about 40,000 persons. As shown in the table below, population growth has been very strong since 1991 and considerably higher than State and regional averages.

The Shire's population and migration levels are high, as measured by comparison of residency changes in the last two Census counts (ie. numbers of people living at the same address in 1996 and 2001). About 50% of the total population was enumerated at a different address in 1996, suggesting an influx of new residents, particularly in coastal communities.

Table 3 Recent Population Change

	1991	1996	2001	Annual Average Growth 1991-2001
Ballina Shire	30,120	34,702	37,218	2.14%
Richmond-Tweed Statistical Division (SD)	179,776	202,635	213,264	1.72%
New South Wales	5,732,032	6,038,696	6,371,745	1.06%

Source: ABS Census, 2001

Estimates of future population, although they can only be indicative, are a key consideration in community infrastructure planning, and to determine emerging recreational characteristics and needs. Council's population projections confirm that future growth will remain solid – by 2026, it is anticipated that the Shire's resident population will increase significantly by about 20,000 persons at a growth rate of 1.7%p.a,

out-pacing State and regional averages. Growth "hotspots" will include the communities of Wollongbar, Lennox Head, West Ballina, Wardell and Cumbalum.

Table 4 Population Projections 2001-2026

	Year						2001-2026	
Locality	***2001***	***2006***	***2011***	***2016***	***2021***	***2026***	***Pop'n Change***	***Ann. Avge Growth 2001-26***
Ballina Island	7,557	7,749	7,639	7,457	7,276	7,094	-463	-0.42%
West Ballina	3,773	4,325	5,012	5,731	6,450	7,169	3,396	2.6%
East Ballina	5,722	6,178	6,723	7,289	7,854	8,420	2,698	1.56%
Lennox Head	6,301	7,892	9,336	10,746	12,156	13,565	7,265	3.11%
Alstonville	4,904	5,234	5,149	4,967	4,784	4,602	-301	-0.25%
Wollongbar	2,013	2,404	2,887	3,391	3,896	4,400	2,387	3.18%
Wardell	496	543	638	744	850	955	459	2.66%
Cumbalum	-	210	1,315	2,630	3,945	5,260	5,260	-
Rural	7,470	7,701	7,538	7,282	7,026	6,769	-700	-0.39%
Ballina Shire	**38,236**	**42,236**	**46,236**	**50,236**	**54,236**	**58,236**	**20,000**	**1.7%**
Richmond-Tweed SD*	216,300	228,900	241,300	253,300	265,500	277,700	61,400	1.0%
NSW*	6575200	6868900	7164700	7450400	7734900	8012600	1437400	0.79%

*Source: Ballina Shire Council, 2004, *Medium Series Projections – DIPNR, 2004.*

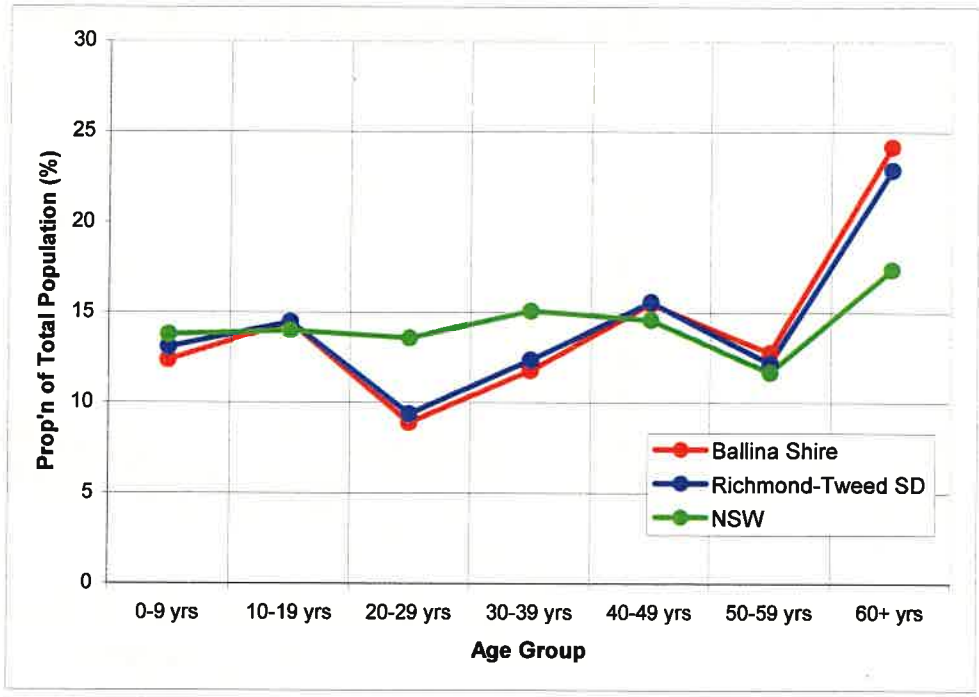
Age Structure

As shown in Chart 3, Ballina Shire has a more mature age profile when compared with the Richmond-Tweed SD and NSW as a whole. Key characteristics include the following:

- Nearly 40% of the Shire's residents are aged over 50 years old, reflecting the high retiree population.
- The proportion of children and teenagers generally reflects State and regional trends.
- There is a low representation of adults in the 20-40 year old age group.

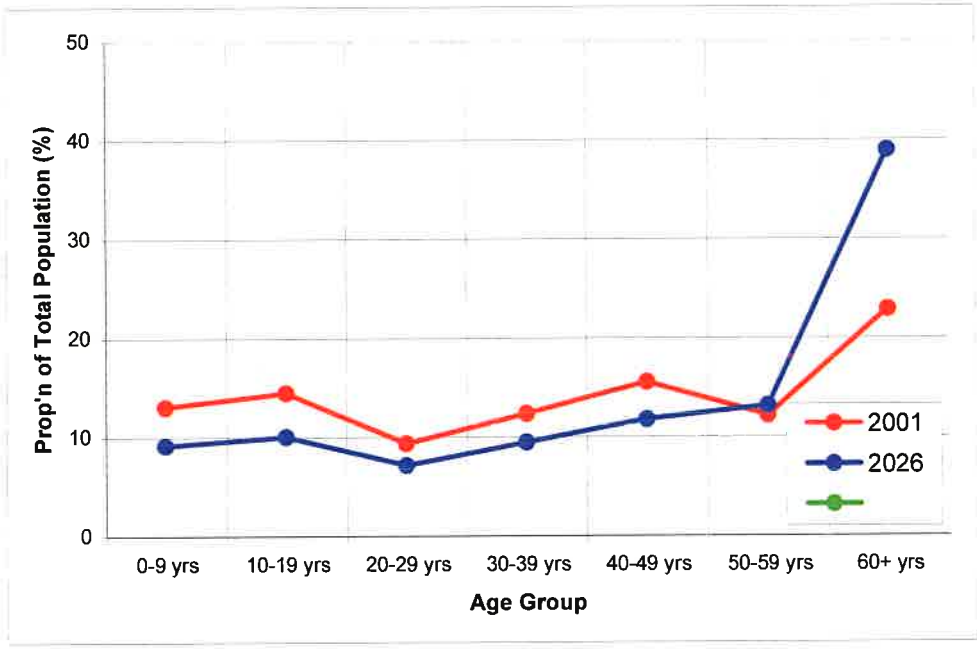
Future projections for the Richmond-Tweed region indicate that the retiree population (50+ years) will continue to experience very solid growth up to 2026 (Chart 4).

Chart 3 Age Profile Comparison (2001)



Source: ABS 2001 Census

Chart 4 Future Age Projection – Richmond-Tweed SD (2026)



Source: DIPNR, 2004

3.3 Recreation and Tourism Activity

3.3.1 Recreation Participation Trends

There is limited information available on leisure participation rates for Ballina Shire, particularly with respect to water-based recreation activities.

State and National statistics highlight some broad participation trends which may be useful for forward planning in the Ballina Shire and more specifically, the Lower Richmond River study area. The limitations of this data should be noted, as certain activities may not be indicative of the local community.

In 2003, the Australian Sports Commission conducted an Exercise, Recreation and Sport Survey (ERASS), in conjunction with State / Territory Governments. The ERASS revealed the following key points:

- Not surprisingly, the most popular sports and physical activities for persons aged over 15 years in NSW are traditional pursuits – walking (36%), swimming (17.5%) and aerobics / fitness (16.2%). These results are similar at the national level.
- Water-based activities registered a participation rate of about 5% for NSW, including fishing (2.1%), water-skiing / power boating (1.0%), sailing (0.9%) and canoeing / kayaking (0.6%). It is anticipated that participation rates would be much higher for Ballina Shire.

- Participation in sport and physical activity is increasing in Australia and NSW – in 2003, the State registered a participation rate of 81.5%, representing an increase of 7.2% from the previous year of 76%.
- At a national level, participation in "non-organised" activities is higher than "organised" activities for males and females of all ages – this suggests a growing demand for informal recreation opportunities and settings.
- In NSW, participation in sport and physical fitness activities decreases with age, and is higher amongst males than females (83.2% and 79.8% respectively).

3.3.2 Tourism Activity

Based on a brief review of data for the region, tourism is a growing contributor to Ballina's local economy.

In 2002, the "Northern Rivers" region was amongst the "top ten" most popular regional destinations for international visitors to Australia (ie. non capital city regions / persons aged over 15 years). It ranks seventh on the list, with the Gold Coast, Tropical North Queensland and Petermann (NT) being the most popular (International Visitor Survey, Bureau of Tourism Research, 2002).

The "Holiday Tracking Survey" for 2003 published by Tourism NSW, provides a snapshot of the regional travel market. Findings of relevance to this study include the following:

- A majority of the region's visitors are from NSW and Brisbane. It is a particularly popular destination for short trips.
- There is solid repeat visitation – approximately 52% of survey respondents planned to make a return visit within 12 months.
- The visitor profile is dominated by married persons aged 35-49 years old. Interestingly, there is a growth in visitation by older adults aged over 50.
- Many visitors are seeking nature-based tourism opportunities and settings that are away from crowds, and opportunities to enjoy local culture and relax.
- A majority of visitors travelled to the region by car (about 80%), and approximately 3% travelled by boat or ferry.

It is anticipated that development of a new marina could become a significant tourism activity hub and drawcard for Ballina.

3.4 Boat Ownership

Registration details and Industry, Trade and Employment statistics were obtained from the Boating Industry Association (BIA) of New South Wales.

3.4.1 NSW Boat Registrations

In 2003, vessel registrations in NSW totalled 191,200 – from a total population base of approximately 6.5 million – therefore, over 2.9% of the State's population owned a registered vessel.

A summary of the most popular vessel types is shown in Table 5. In NSW, 79% of boats are open and cabin runabouts. This type of vessel is typically trailerable. The total number of non-trailerable vessels (ie. sailing vessels, sailing cats, fishing vessels, motor cruisers) that would typically require berthing either at a mooring or marina equates to approximately 20,000.

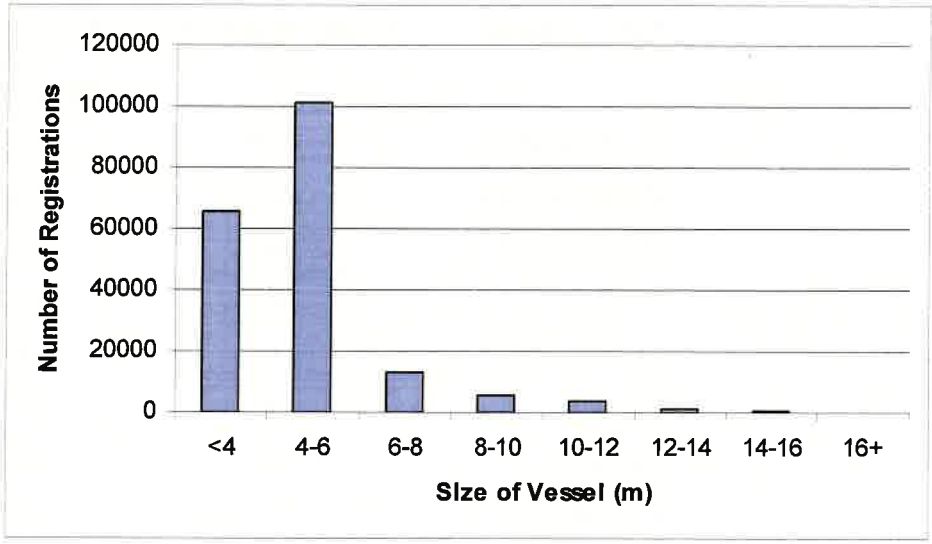
Table 5 Vessel Registration in New South Wales (2003)

Type of Vessel	Number Registered	Proportion of Total Registrations
Open Runabout	124 974	65.36%
Cabin Runabout	25 719	13.45%
Sailing Vessel	10 495	5.49%
Punt	9 248	4.84%
Motor Cruiser	8 311	4.35%
PWC	7 155	3.74%
Inflatable	2 399	1.25%
Cat – Power	1 038	0.54%
Fishing vessel	465	0.24%
Cat – Sail	407	0.21%
Other	989	0.53%
Total	**191 200**	**100%**

Source: BIA, 2003

Registration data also gives the size of the vessel. The number of registrations for each size category is presented in Chart 5 – almost 90% of vessels are shorter than 6 m in length. Again, this demonstrates that a large proportion of boats are trailerable.

Chart 5 Size Distribution of Vessels in NSW (NSW Maritime, 2003)



3.4.2 Local Boat Registrations

NSW Maritime provided boating statistics for the Ballina Shire postcodes including Ballina, Lennox Head, Alstonville, Wardell and Tintenbar. Results are presented in Table 6.

From the total Shire population of approximately 40,000 persons, there are 1,670 registered boat owners – equating to 4.2% of Shire residents owning registered boat. This is 1.3% more than the NSW average of 2.9%.

Typically both sailing vessels and motor cruisers require berthing at moorings, marinas or private jetties. These statistics (highlighted below) show that both sailing vessel and motor cruiser registrations in Ballina Shire are below the State average. This could be attributed in part, to the lack of marine based infrastructure within the Shire.

Table 6 Vessel Registration Data for Ballina Shire 2003-2004

Type of Vessel	Number Registered	Proportion of Total Registrations	NSW Average (2003)
Open Runabout	1195	71.56%	65.36%
Cabin Runabout	159	9.52%	13.45%
Sailing Vessel	36	2.16%	5.49%
Punt	108	6.47%	4.84%
Motor Cruiser	25	1.50%	4.35%
PWC	80	4.79%	3.74%
Inflatable	24	1.44%	1.25%
Cat – Power	26	1.56%	0.54%
Fishing vessel	0	0.00%	0.24%
Cat – Sail	6	0.36%	0.21%
Other	11	0.66%	0.53%
Total	**1670**	**100%**	**100%**

Source: BIA, NSW Maritime.

3.4.3 Marine Industry Employment

Marine industry employment is also an important consideration. Statistics supplied by the Boating Industry Association for NSW highlighted the following state trends:

- Employment is provided by over 1,800 small and medium sized boating-related businesses in NSW, employing over 14,000 people.
- Marinas, boat storage and repair facilities employ over 9,000 people.
- Registered boat ownership has increased by 25% in the last 10 years. This equates to an annual increase in registration of 2.3%.
- Boat license holders have increased by 62.4% in the last 10 years.
- Studies have shown that every floating marina berth provides approximately 0.3 jobs in the local community.

3.5 Implications for Future Planning and Recreational Boating

The demographic, recreation and tourism statistics above highlight a number of emerging trends which may influence future demands for water-based recreation participation in the

study area. These need to be considered by Ballina Shire Council in its forward planning, funding allocation and management activities:

- Significant population growth is forecast for Ballina Shire and the Richmond-Tweed region over the next 10-20 years. A high influx of new residents, particularly in coastal communities, will potentially increase the already high demand for public access to recreation infrastructure, including water-based opportunities.
- The provision of new and improved support infrastructure at major waterfront public access nodes will be required to meet the demands of increased population growth.
- The Shire and regional populations have an older age profile. This equates to increasing demand for facilities and lower impact activities that cater for the needs of older age groups (eg. boating, fishing, picnicking, walking). At the same time, many retirees have the time, inclination and commitment to focus on their physical fitness and leisure time (including greater flexibility in leisure time / use of facilities).
- Outdoor recreation and tourism activities that take place in natural settings are growing in popularity, such as bushwalking, camping, boating, fishing and interpretive facilities. The demand for natural settings / destinations which are close to urban populations will be substantial in future.
- Boating activity in Ballina is likely to increase due to the increase in resident population, increase in age profile and increase in outdoor recreation and tourism activities.
- The implications of this increase is that essential services to boating in the region will need to expand to cater for the increase in demand for services.
- Growth of boating in the region will provide growth in marine related industries.

4. Community Needs Assessment

4.1 The Consultation Program

Community consultation was an integral part of this study. It aimed to encourage input from a broad range of stakeholders, including the boating industry, boating clubs, local residents and special interest groups, together with Council officers and the State Government agencies.

The consultation program aimed to:

- Identify existing and future recreational boating needs within the study area over the next 10-20 years to provide the basis for short, medium and long term strategy recommendations.
- Ensure that a useful and realistic strategy can be formulated, guided by community needs and aspirations.
- Promote a partnership approach, community ownership and support for the study's outcomes.

4.1.1 Who Participated in the Study?

Stakeholders consulted during the study included:

Government:

- Ballina Shire Council – Officers and Councillors.
- NSW Waterways Authority.
- NSW Department of Infrastructure, Planning & Natural Resources.
- NSW Department of Lands
- NSW Department of Primary Industries – Fisheries.
- Adjoining Local Government Authorities (Richmond Valley, Lismore City Council).

Boating Industry Stakeholders:

- Ballina Fishermen's Co-operative Pty Ltd.
- York Marine.
- Lismore Outboard Sales and Service.
- Ballina Marineland.
- Ballina Recreation Mart.
- Watsons' Trimming and Marine.
- Peter's Bait and Tackle.
- Dave's Bait Shop.
- Richmond River Cruises.

- Ballina Ocean Tours.
- Ballina Adventure Kayaks.

Community / Special Interest Groups:

- Ballina Cruising Yacht Club.
- Ballina Volunteer Coastguard.
- Surf Life Saving and Jet Boat.
- Richmond River Sailing and Rowing Club.
- Fishing Clubs; Italio – Australian, Lismore Angling Club, Lismore Fishing Club, Northern Rivers Hotel Fishing Club, Lismore Deep Sea Fishing Club, Ballina RSL Amateur Fishing Club.
- Northern Rivers Regional Development Board.
- Water Inc.
- Ballina Environment Society Inc.
- Jali Aboriginal Land Council.
- Ballina Seabird Rescue.
- Member for Page, Member for Ballina.

Other Stakeholders:

- Ballina Shire residents and visitors.
- Local media – The Northern Star, North Coast Advocate and North Coast ABC Radio, 2LM.

Missing Stakeholders

Due to the low number (and non-existence) of yacht and other displacement and wet berthed boats (house boats etc) on the Richmond River, there were few stakeholders at the public meeting from this boating community. These boats have different needs from other users which may have been missed at the community meeting.

4.1.2 Consultation Activities

The community consultation program comprised the following major activities:

(1) Raising Public Awareness and Call for Public Submissions

At the start of the study, a number of initiatives were implemented to raise awareness and encourage community involvement in the consultation program. Feature stories were included in the Northern Star and Advocate newspapers, and the local ABC and 2LM radio stations, to promote the study and its consultation activities .

10 written submissions were received in response to these features.

(2) Public Meeting

A public meeting was conducted on Monday 6 December 2004 at the Ballina RSL Club. All interested groups and stakeholders were encouraged to attend the meeting via a public invitation featured in the local media. Participants included representatives of Ballina Shire Council, NSW Waterways, community groups and interested residents. In total, approximately 50 persons attended the meeting.

The meeting provided a forum to identify and discuss the community's recreational boating access and infrastructure needs, together with related issues, concerns, opportunities and constraints. It was also an opportunity to inform participants on the study's purpose and preliminary findings.

Meeting participants were asked to consider the following major issues:

- Existing Boat Ramps – Utilisation rates, satisfaction levels and upgrade needs.
- New Marina Development – Site selection, infrastructure requirements, community support or objections.
- Other Boating Infrastructure Needs – Wharves and moorings, commercial and tourist vessel facilities, rescue facilities, regional linkages etc.
- Other Issues and Considerations – Environmental, the Ballina Bar, cultural heritage, dredging, social considerations etc.

(3) Consultation with Council and State Government Officers

Discussions were also conducted with a range of Council and State Government officers responsible for the planning, management and maintenance of both local boating infrastructure and the Richmond River environs. A summary of the key discussion points is presented below.

Local Government (Lismore City and Richmond Valley)

- Contacted about existing and planned infrastructure for recreational boating in their municipalities – upstream linkage opportunities.
- Both Councils support further studies into providing linkage with upstream areas.
- Lismore City Council is currently undertaking significant riverfront works to upgrade facilities.

Department of Lands

- The administrators of much of the land holdings investigated as part of this report.
- Look after minor ports and sand bypassing systems throughout NSW
- Infrastructure such as training walls.

Department of Fisheries

- Highlighted the needs of professional fisherman.
- Only eight trawlers remain in Ballina – support the ongoing provision of facilities for trawlers.

- Highlighted fish habitat destruction and key protection areas – including Shaws Bay, upstream of North Creek, Mobbs Bay and the Mouth of Emigrant Creek. These are the key seagrass communities – The Department of Fisheries will not permit dredging in any of these areas.

NSW Maritime

- Local history with regard to moorings, flooding and current status of boating on the river.
- Input from experience on sustainable marina sizing.
- Infrastructure requirements – holding tank pump-out, refuelling.
- Moorings have not been placed in the Richmond River due to a lack of suitable sites. Moorings cannot be placed in Navigation Channels.
- Safety and navigation – hire boat limit may need to be reviewed to allow access to Mobbs Bay.
- Flooding impacts and requirements – vessels and pontoons in the River experience debris. Advance warning is given to Ballina residents with 7 days travel time required for flood peaks to arrive in Ballina from Lismore.

4.2 Identification of Stakeholder Needs, Issues and Priorities

4.2.1 Overview

A summary of the key issues identified by stakeholders during the consultation phase is presented below. This is intended as a broad indication of the community's existing and potential future recreational boating needs in the study area.

Much of the feedback focussed on improved access for boating and fishing activities, together with enhanced opportunities for waterfront recreation and tourism (eg. walking, picnicking, swimming, skiing, kayaking, jet skiing, water viewing, commercial activities).

The preservation and enhancement of conveniently located public access points catering for shore- and water-based activities in urban areas is highly valued by the Shire's residents. However, it is evident that there is considerable concern for levels of service / capacity at local boat ramps, relative to current and emerging community demands.

Based on community feedback, the top priorities for recreational boating activity in the study area appear to be:

- Identify and secure new sites for public boat ramps coinciding with future population growth and to service future needs.
- Improve a majority of existing public boat ramps and achieve more balanced use of these facilities. Suggested improvements focussed on both the boat ramps and their support facilities.
- Development of a new marina to service the Ballina community and its visitors.
- Preservation of public open space in foreshore precincts.

- Implement management initiatives to minimise incompatibilities and potential conflicts between different recreational uses of the Lower Richmond River, such as boating, swimming water-skiing and jet skiing.

Stakeholders who did not respond to the call for submissions or attend the public meeting or who may not be present locally and therefore may not be adequately represented by this plan include:

- Marina managers/owners.
- Houseboat industries.
- Cruising Yachtsmen.
- Commercial shipping/dredging/defence forces.

4.2.2 Existing Boat Ramps

Given Ballina's relatively high boat ownership, coastal location, solid population growth and tourist appeal, the adequacy of public boat ramp facilities was regarded as a significant issue. Priorities and concerns associated with existing ramps included:

- Over-utilisation at key sites, particularly at ramps in close proximity to the town centre such as Fishery Creek Canal Ramp.
- Poor ramp conditions or level of service.
- Limited provision of support facilities (eg. car and trailer parking, public amenities, rubbish bins, lighting, cleaning tables).
- Security of unattended vehicles.
- Achieving a more balanced distribution of ramp usage, particularly at peak periods.
- Provision of new boat ramps coinciding with population growth over time.

Based on community feedback, it appears that priorities for ramp upgrades and improvements should be directed at those sites in closer proximity to town.

Specific issues and needs for each ramp are summarised in the table below.

Table 7 Community Suggestions for Improved Boat Ramps / Facilities

Site	Current Utilisation / Issues	Community Priorities / Future Needs
Fishery Creek Canal Ramp	• Very high levels of public use, particularly at weekends. • Attributes – access to protected waterway, close to town, cleaning table. • Constraints – silt, slime on ramp, difficult to use at low tide, security problems.	• Security cameras and night lighting for parking area and cleaning table. • Extend ramp 1-1.5m to improve usability. • Public toilet block. • Implementation of traffic management scheme for local residential area.

Site	Current Utilisation / Issues	Community Priorities / Future Needs
Trawler Harbour Ramp	◗ Attributes – protected zone.	◗ Some residents do not support increased recreational and traffic activity at this site – implications for residential amenity.
Faulks Reserve Ramp	◗ High levels of public use (daily). ◗ Constraints – steep, difficult to use the ramp at low tide, silt and slime problems, vehicle / trailer parking conflicts.	◗ Improved access for use of ramp eg. raised concrete walkway adjacent to one side of ramp. ◗ No reduction in ramp width. ◗ Improved on-site parking and loading arrangements. ◗ Water-ski zone.
Mobbs Bay	◗ Unpleasant conditions when water skiers are nearby. ◗ Important sea grass area.	◗ Implement "ski-free" zone or 4 knot speed limit. ◗ Beach erosion on eastern side should be investigated – fallen trees hazardous for recreation activities.
Richmond River Sailing Club Ramp	◗ Very high use and congested at peak times. ◗ Lack of support facilities (eg. public toilets, rubbish bins). ◗ On-site parking and access is problematic – lack of vehicle and trailer parking, high pedestrian activity. ◗ 4-Wheel drive required for access	◗ Better delineation of vehicle access and parking areas (note – limited room for car park expansion) ◗ More signage. ◗ Public toilets. ◗ More regular removal of rubbish from site. ◗ Plan of Management for reserve required. – cycleway conflicts
Wardell Bridge Ramp	◗ Reasonably popular facility. ◗ In poor condition according to public feedback. ◗ Potholes. ◗ Limited parking – not adequate to meet demand.	◗ Community stakeholders highlighted upgrade needs for all aspects of ramp standard and performance.

Site	Current Utilisation / Issues	Community Priorities / Future Needs
Emigrant Creek Ramp	◗ Ramp is narrow and steep. ◗ Only used by small boats due to shallow depth of creek. ◗ Limited space available at peak times. ◗ Parking area is not sealed (grass) – problematic during wet weather. ◗ Slime on ramp – very slippery.	◗ Community stakeholders highlighted upgrade needs for all aspects of ramp standard and performance.
South Ballina Ramp	◗ Tidal ramp. ◗ Not a formally designated ramp (located within Caravan Park). ◗ Silt problems. ◗ Nature reserve.	◗ Not Stated
Old Burns Point Ferry Ramp	◗ Exposure to the southerly winds and mud. ◗ Very slippery ramp. ◗ Located in tidal zone. ◗ Constrained site – limited scope for future expansion of facilities.	◗ Not Stated

4.2.3 Proposed Marina Development

Community representatives expressed strong support for the development of a new marina in Ballina. There was consensus that the facility should be accessible and affordable for local residents, strengthen Ballina's economic base and tourism profile, and be developed in stages to provide sufficient capacity over a 20-30 year period.

In terms of the overall "vision" for development, community representatives supported a *marina facility*, rather than a larger scale *maritime precinct* integrated with industrial uses. If industrial uses were to be considered, it was suggested that these be separated from the marina. This was due to the size constraints identified by most of the publicly supported sites.

Site Attributes and Facilities

Based on community feedback, the preferred site attributes and facilities of a new marina development in Ballina include the following:

Marina Location and Access:

◗ Accessible to the general public.

- Accessible 24 hours a day.
- Located within reasonable walking distance to town – this will encourage visitors to utilise local businesses, and encourage residents to use marina facilities.
- Located within a basin / protected zone.
- Disabled access provisions.
- Limit impacts of increased vehicular traffic on residential neighbourhoods.

Marina Capacity:

- Up to 400 berths – marina development should have sufficient capacity for long term use.
- Capacity to accommodate boats up to 40 ft with a 2m draft.

Marina Facilities:

- Secure car park (including lock up facilities).
- Refuelling facilities.
- Pump-out facilities.
- Ship-lift areas – will give any marina a competitive advantage.

The community also expressed a number of concerns associated with marina development, as follows:

- Affordability for local boat owners – limit high marina fees.
- Loss of public open space in foreshore precincts.
- Potential impacts on residential areas, particularly if light industry, medium-high density residential apartments and / or commercial outlets are to be considered.
- Environmental impacts, such as encroachment on local wetlands.

Assessment of Potential Marina Sites

During the consultation phase, nine sites were assessed in collaboration with community representatives to determine their suitability for marina development. The sites that the community selected as possible sites for a marina include:

- Trawler Harbour / RTA Site.
- Martin Street boat harbour.
- Burns Point West (Near Emigrant Creek).
- Mobbs Bay East.
- Missingham Bridge.
- Shaws Bay.
- Emigrant Creek / Ag Research Station.
- South Ballina Greenfield.
- Smith Drive.

There was also some discussion of an alternative strategy, involving the development of two (2) separate, complementary facilities. It was proposed that each site cater for different marine activities, as follows:

- Site 1 – Overnight facility / cruising in and out.
- Site 2 – Larger scale facility, with more permanent mooring area.

Community feedback on the suitability for potential sites is summarised below.

Table 8 Community Assessment of Candidate Sites for New Marina Development

Site	Community Comments / Suggestions
Trawler Harbour / RTA Site	◗ Close to town. ◗ Spatially constrained site. ◗ Local residents do not support development of waterfront open space for marina-related uses (noted that many participants were not aware that subject land is not public open space, but zoned for industrial use). ◗ Concern that marina development could alter regime of river.
Martin Street boat harbour / extend into river	◗ Spatially constrained site. ◗ Would require an enclosed area for protection from southerly winds.
Burns Point West (Near Emigrant Creek)	◗ Sufficient area for large scale development. ◗ Environmentally sensitive area – wetlands. ◗ Not within reasonable walking distance of town. ◗ Bad mosquito problem.
Mobbs Bay East	◗ Access constraints.
Missingham Bridge	◗ Potential visual amenity impacts. ◗ Marina development would require a break wall in this location.
Shaws Bay	◗ Site not exposed – protected from southerly winds, waves and main currents. ◗ Not located in main navigation channels. ◗ Quite close to town. ◗ Potential visual amenity impacts
Emigrant Creek / Ag Research Station	◗ Bad silt problems. ◗ Low water / shallow drafted estuary. ◗ Limited capacity – only suitable for smaller recreational vessels.
South Ballina Greenfield	◗ Tenure and access constraints – private land.

Site	Community Comments / Suggestions
	◗ Not within reasonable walking distance of town. ◗ Bad mosquito problem.
Smith Drive	◗ Only accessible by larger vessels at high tide. ◗ Suitable for vessels requiring maintenance, but not suitable for regular trips.

The level of support for each site was measured at the Public Meeting with a simple "show of hands" – the results show that the community's support for a marina site is (in order):

1. Burns Point West
2. Old Trawler Harbour
3. Martin Street Boat Harbour

Table 9 Level of Community Support / Preferred Marina Option

Site	Rank	No. of Votes
Burns Point West	1	30
Trawler Harbour	2	20
Martin Street Boat Harbour	3	10
Missingham Bridge	4	8
Mobbs Bay East	5	1
South Ballina Greenfield	6	1
Shaws Bay	-	0
Smith Drive / Ag research	-	0
West Ballina Greenfield	-	0

4.2.4 Other Facilities / Initiatives to Support Recreational Boating

Although improved boat ramps and a new marina appear to be high priorities for future planning, a range of other recreational boating facilities / initiatives were highlighted by the community, to meet current and future needs:

- **Ballina Bar** – The Ballina Bar is problematic for recreational boating. There is strong community support to "fix the Bar" through dredging or extension of the breakwall with a curve to the north. Advice from NSW Waterways Department indicated that dredging would not provide a long-term solution; extension of the breakwall may increase the danger for boats.

- **Small Recreational Vessels** – Users of kayaks, dinghies and other small recreational vessels highlighted the need for support facilities conveniently located near the water's edge, such as pontoons (eg. Mobbs Bay), public toilets, hoses and wash down areas.
- **Ski Zones** – There is support to designate "activity zones" within the study area, to better manage water-based recreational activities such as water skiing and jet skiing. Some respondents proposed that water / jet skis be excluded from North Creek. This is in response to safety concerns and environmental impacts expressed by community members. Water skiers and jet ski users also supported initiatives that minimise potential conflicts and improve conditions for their activities.
- **Education and Awareness** – Community feedback highlighted the need to protect the environmental values of the study area. Many respondents supported the implementation strategies to raise public awareness, particularly through the deployment of interpretive signage and signage to designate "prohibited zones" for certain uses.

4.3 Conclusion

Overall, it appears that community support for both improved boat ramp facilities and the development of a new marina in Ballina is very strong. Stakeholder feedback reflects site investigations, confirming that existing infrastructure provision is not adequately servicing community demand.

It is evident that the community's needs range from small to large scale projects. The practicalities of achieving some of these outcomes will be constrained by economic realities, population trends and human resources.

While not all of the issues raised during the consultation phase can be considered in this study, the study's findings will better inform Council, State Government and the private sector of the full range of needs and concerns held by residents, community groups and other stakeholders.

Lower Richmond River Recreational Boating Study

Part B – Assessment of Existing and Future Needs

5. Dry Storage

5.1 Overview

For the purposes of this study, vessels have been broken up in to two categories:

- Dry Storage - Trailerable boats.
- Wet Storage - Non-trailerable Vessels.

Existing dry and wet storage infrastructure available for public use in the study area is examined in Sections 3 and 4.

5.2 Typical Users

Dry storage vessels are stored on dry land and transported to the water. Two types of storage are undertaken:

- On a trailer, stored at a private residence.
- At a dry storage facility at a marina (either stacked or on a trailer).

There are no dry storage facilities at a marina presently in Ballina. Therefore it is safe to assume that 100% of the dry stored boats on the Richmond River arrive on a trailer. These vessels use boat ramps to access the waterways and have requirements for parking of cars and trailers. Dry stored vessels come in a range of sizes, however the maximum size is dictated by what can be legally and safely towed on the road.

Dry stored vessels are more likely to be used for day trips only. Some owners travel large distances towing their boats to explore different waterways, with the majority utilising land-based accommodation.

Trailerable vessels may be powered by inboard or outboard engines, may be sail powered or human powered such as kayaks or canoes.

5.3 Existing Infrastructure

Based on a list provided by Ballina Shire Council, there are 11 existing boat ramp facilities in the study area, as follows:

1. Cawarra Park.
2. Richmond River Sailing Club.
3. South Ballina.
4. Riverview Park.
5. Fishery Creek Canal
6. Faulks Reserve.
7. Old Burns Point Ferry.
8. Emigrant Creek.
9. Old Ferry Landing, South Ballina.
10. Wardell.

11.Bingal Creek Boatramp

The main infrastructure required by trailerable vessels is located at these sites – their distribution is shown in Figure 4.

A comprehensive assessment of each site was conducted by GHD staff on 11 and 12 November 2004. The assessment sought to determine the adequacy of facilities for recreational use, guided by the following criteria:

- Ramp condition.
- Support facilities available at the site (eg. vehicle and trailer parking, amenities, night lighting).
- Ramp capacity and level of public use.
- Opportunities and constraints for future expansion or improvement.

Results of the boat ramp assessment are provided in the following sections.

Richmond River Recreational Boating Study

Figure 4 Boatramp Locations

Legend:

Existing Boat Ramps

0 2.5 5

kilometres

North

Source Information: BSC

GHD MANAGEMENT ENGINEERING ENVIRONMENT

g:\22\12006\GIS\Figure 1.wor

5.3.1 Site 01 – Cawarra Park

Site Location and Land Use Context

Cawarra Park boat ramp is located at the Northern end of Martin Street. The surrounding land use includes residential and parkland. Cawarra boat ramp provides access to North Creek.

The Existing Facility

The existing marine facilities comprise:

- A one lane ramp of concrete construction with direct access to North Creek.
- A queuing beach on each side of the ramp.

The existing landside facilities provided by Council comprise:

- Parking for 6 -10 car and trailer units.
- Parking for 6 single vehicles nearby.
- Toilet block.
- Lighting in street only.
- Rubbish bins and refuse collection.
- Picnic facilities nearby.

Capacity

These facilities provide a **Daily Ramp Capacity** of **20** boats per day at an acceptable level of service. The capacity of this facility is restricted primarily by the availability of car and trailer parking.

Observed Constraints and Problems

On the basis of the inspections and stakeholder consultations, the following issues have been identified:

- There is no traffic flow system apparent to arriving traffic.
- There are no rigging / securing areas.
- There is no queuing lane.
- There is insufficient manoeuvring area at the head of the ramp.
- The ramp sides consist of vertical rock revetments providing an unsuitable surface for laying alongside for most boats.

Observed Opportunities and Needs for Upgrading of Facilities

- This is a useful facility for small boats to access North Creek, but due to the shallow waters of the creek, it is not expected that this facility would experience high demand.
- On this basis, future development / upgrading is not considered suitable.

5.3.2 Site 02 – Richmond River Sailing Club

Site Location and Land Use Context

The sailing club boat ramp is located at the eastern end of River Street. Surrounding land use includes a Caravan Park and swimming pool.

The Existing Facility

The existing marine facilities comprise:

- A two lane ramp of concrete construction with direct access to the river.
- A queuing beach each side of the ramp.

The existing landside facilities provided by Council comprise:

- Parking for 10 car and trailer units (further parking is available nearby).
- Parking for 6 single vehicles.
- Toilet block.
- Lighting (in street only).
- Rubbish bins and refuse collection.
- Picnic facilities nearby.

Capacity

These facilities provide a **Daily Ramp Capacity** of **30** boats per day at an acceptable level of service. The capacity of this facility is restricted primarily by the availability of car and trailer parking. There would be further restrictions when preferred departure times coincide with low tide.

Observed Constraints and Problems

On the basis of site inspections and stakeholder consultations, the following issues have been identified:

- There is no traffic flow system apparent to arriving traffic.
- There are no nominated rigging / securing areas.
- There is no queuing lane.
- Sand is encroaching on the ramp at each side.
- There is a discontinuity in the surface of the ramp, consisting of a 100mm to 150 mm step near the level of HW.

Observed Opportunities and Needs for Upgrading of Facilities

- Due to the shifting nature of the sandbars in this section of the river, all-tide access to the deeper water is not guaranteed. It is expected that larger trailerable boats would use this facility only when the tide levels are sufficiently high.
- The car and trailer parking capacity could be increased by delineating spaces.
- The policy of parking the trailer on the grassed area needs to be more clearly outlined.
- 4-Wheel Drive access only (when there is sand on ramp)

5.3.3 Site 03 – South Ballina

Site Location and Land Use Context

South Ballina boat ramp is located on south Ballina Beach Road. There are residential, caravan park and agricultural land uses on adjoining properties. The ramp also adjoins the Richmond River Nature Reserve.

The Existing Facility

The existing marine facilities comprise

- A one lane ramp with a gravel surface with access to the river via a drainage channel.

There are no support facilities at the site, however, space is available for 3 to 5 car and trailer units on the roadside.

This boat ramp is not an approved ramp. Council has an agreement with the ramp users to submit a DA to formalise the presence of the ramp. Other conditions for the ramp are that it will remain a small facility and that Council will maintain rather than the users.

The boat ramp is being used by permanent residents of the caravan park as a means of accessing Ballina by the river.

Capacity

These facilities provide a **Daily Ramp Capacity** of **5-10** boats per day at an acceptable level of service. The amount of car and trailer parking available, the quality of the ramp surface, and the lack of a structured flow pattern for use, restrict this capacity. It is suitable for small dinghies only and would require a 4-wheel drive vehicle for towing.

Land owned by the Caravan Park is currently being used for parking.

Observed Constraints and Problems

On the basis of site inspections and stakeholder consultations, the following issues have been identified:

- There is no traffic flow system apparent to arriving traffic.
- There are no signs indicating the rigging / securing areas.
- There are no signs indicating a queuing lane.
- There is insufficient manoeuvring area at the head of the ramp.
- The parking area does not have delineated car and trailer parks.
- There are no queuing facilities.

Observed Opportunities and Needs for Upgrading of Facilities

- The area does not contain sufficient land for expansion into a useful small facility.
- The proximity to the caravan park is probably the main contributor to public utilisation of this site.
- There is no place to leave a boat once in the water.
- Is within the Richmond River Nature Reserve
- On this basis, this area is not considered suitable for future development

Additional Comments

This ramp has been the subject of some very heated encounters. The adjacent resident has had problems with people using his land in the process of launching and landing boats and he does not want this to happen. He has fenced his land and this matter now seems to have been addressed to his satisfaction.

The creek passes through the Richmond River Nature Reserve and NSW NPWS were requesting the closure of the ramp as it was not approved. The ramp is located within the road reserve and so becomes the responsibility of Ballina Council.

Ballina Council closed the ramp following complaints from the adjoining resident and at the request of the NPWS. This resulted in the community protesting the closure of the ramp. A stakeholder meeting was held that included the residents, boat ramp users, NPWS, Dept of Lands, DIPNR, Fisheries and Council. As a result of this meeting the ramp was reopened with the following conditions:

- A one year trial and if there are no further problems in that time a DA would be submitted to formalise the ramp and the relevant state agencies would give the ramp their approval.
- The ramp would be retained as a small ramp.
- The ramp users would cease their maintenance work on the ramp.
- The ramp users would not enter the private property adjacent to the ramp.

The Caravan Park owners are aware that their land is used for parking and at this stage are happy for that to happen.

While the location of the ramp is unsuitable for the boat ramp, the demand for it is very strong and its retention in its present size is required. As part of the boating study process and in the ensuing actions it is recommended that the formalisation of the ramp be recommended and the DA prepared for approval.

5.3.4 Site 04 – Riverview Park

Site Location and Land Use Context

Riverview park boat ramp is located at the southern end of Brunswick Street. The surrounding land uses are residential and public reserve (park).

The Existing Facility

The existing marine facilities comprise:

- A one lane ramp of concrete construction with direct deep water access to the river.
- A concrete jetty on the upstream side of the ramp.

The existing landside facilities provided by Council comprise:

- Street parking for 5-6 car and trailer units.
- Parking for 10-15 single vehicles.
- Toilet block.
- Lighting (in street).

- Rubbish bins and refuse collection.
- Picnic facilities nearby.

Capacity

These facilities provide a **Daily Ramp Capacity** of **10** boats per day at an acceptable level of service. The capacity of this facility is restricted primarily by the lack of parking.

Observed Constraints and Problems

On the basis of site inspections and stakeholder consultations, the following issues have been identified:

- There is no traffic flow system apparent to arriving traffic.
- There are no rigging / securing areas.
- There is no queuing lane.
- There is insufficient manoeuvring area at the head of the ramp.
- The street space must be used as part of the ramp infrastructure.
- There is limited parking available.

Observed Opportunities and Needs for Upgrading of Facilities

- This site, together with the park and beach nearby, provides a pleasant facility for a short boating excursions and informal recreation (eg. picnicking).
- Nearby Beach is popular with for water-skiing.
- There is little opportunity to develop this facility without encroaching on the park.
- On this basis, future development is not considered suitable.

5.3.5 Site 05 – Fishery Creek Canal

Site Location and Land Use Context

Fishery Creek Canal boat ramp is located off Boatharbour road. It is adjacent to the pacific Highway. Adjacent sites are zoned public utility (RTA Site) with residential land use on the opposite side of North Creek Canal / Fishery Creek Canal.

The Existing Facility

The existing marine facilities comprise:

- A three lane ramp of concrete construction (grooved) with direct deep water access via Fishery Creek Canal.
- A queuing beach to the south and a pontoon to the north.

The existing landside facilities provided by Council comprise of:

- Parking for 45 car and trailer units plus 'informal' parking for an additional 10 to 15 units.
- Wash down taps.
- Fish cleaning table.
- Lighting.
- Rubbish bins and refuse collection.

Capacity

These facilities provide a **Daily Ramp Capacity** of **100** boats per day at an acceptable level of service. The capacity of the facility is restricted primarily by the amount of car and trailer parking currently available and the lack of a structured flow pattern of use.

Observed Constraints and Problems

On the basis of site inspections and stakeholder consultations, the following issues have been identified:

- The parking area adjacent to the ramp does not have delineated car and trailer parking areas.
- There is no traffic flow system apparent to arriving traffic.
- There are no signs indicating the queuing lane.
- There are no signs indicating the rigging / securing areas.
- As there is no easy connection from the pontoon to the ramp, users would need to paddle or start their engine to move the boat from the pontoon to the ramp and vice versa.
- The ramp sides consist of rock revetments providing an unsuitable surface for laying up to with most boats. It appears that there is limited opportunity to improve this situation.

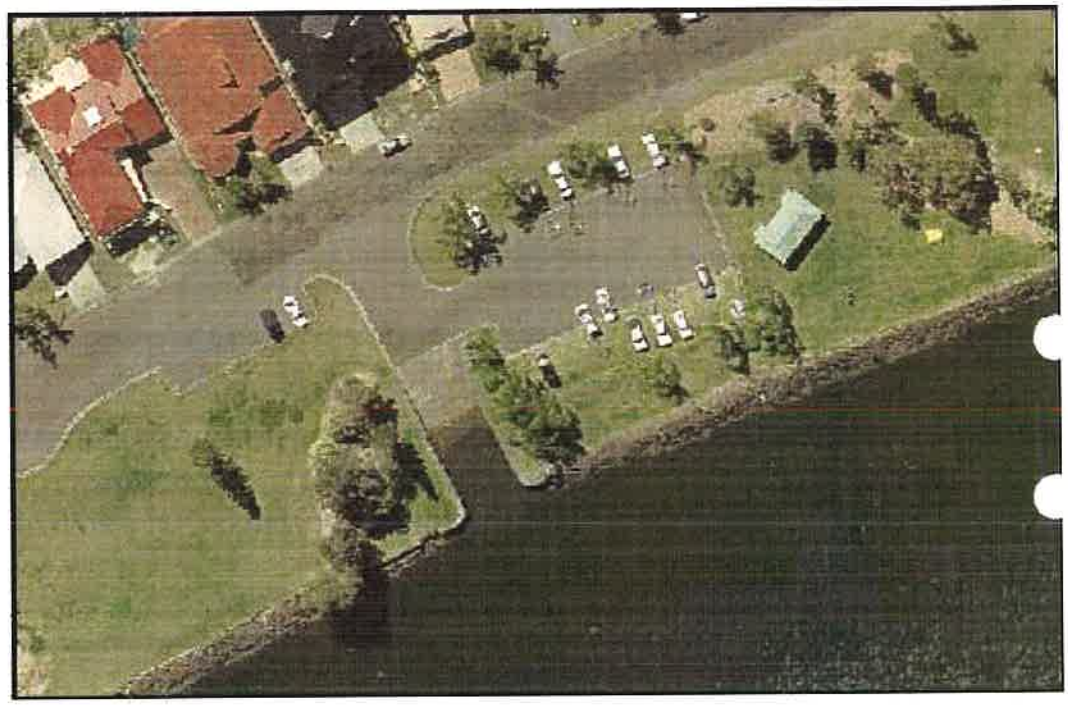
Observed Opportunities and Needs for Upgrading of Facilities

It is considered that this facility has the most functional configuration and greatest capacity in Ballina Shire. It has good access to deep water and is in a sheltered location. The capacity can be readily increased with the following improvements:

- Trailer and car parking areas should be formally delineated, including the installation of signs indicating the preferred method of parking (trailer not car onto grass). Car only spaces may be defined where trees impede trailer parking.
- Signs indicating the rigging / queuing area (Rigging only – limit 15 minutes) should be placed on either side of the area provided for that purpose.
- Additional parking areas (particularly car only) should be identified in the area towards the mouth of the creek.
- A toilet block would be an advantage at this facility.

This site presents a significant opportunity for future development.

5.3.6 Site 06 – Faulks Reserve



Site Location and Land Use Context

Falks reserve is located along Riverside Drive. The adjoining land uses are public open space (park) and residential dwellings.

The Existing Facility

The existing marine facilities comprise:

- A two lane ramp of concrete construction (with horizontal grooves) with direct deep water access to the river.

The existing landside facilities provided by Council comprise:

- Parking for 24 car and trailer units (channelised).
- Parking for 10 single vehicles nearby.
- Wash down taps.
- Toilet block.
- Lighting (in street only).
- Rubbish bins and refuse collection.
- Picnic facilities nearby.

Capacity

These facilities provide a **Daily Ramp Capacity** of **30** boats per day at an acceptable level of service. The capacity of this facility is restricted primarily by the lack of boat queuing facilities.

Observed Constraints and Problems

On the basis of the site inspection and consultations, the following issues have been identified:

- There is no traffic flow system apparent to arriving traffic.
- There are no rigging / securing areas.
- There is no vehicle queuing lane.
- There is insufficient manoeuvring area at the head of the ramp. This area is shared with traffic entering / departing the car park area.
- The ramp sides consist of vertical rock revetments providing an unsuitable surface for laying alongside for most boats.
- There is no place other than on the ramp to leave the boat whilst parking / retrieving the car and trailer.

Observed Opportunities and Needs for Upgrading of Facilities

- The layout of this site suffers from a lack of traffic flow inbound. Once patrons have turned into the ramp area, they are required to perform a 3-point turn to enable them to reverse down the ramp.
- The facility is located at the western end of Riverside Drive, consequently there is very little passing traffic and the street space may be used as part of the ramp infrastructure.
- A rigging area should be indicated on the roadside adjacent to the car and trailer parking area. Patrons should rig boats for launching on the roadside and use the roadway as the manoeuvring area to get into position to reverse down the ramp. Signs indicating the rigging/securing area (**Rigging only – limit 15 minutes**) should also be placed at each end of the section of road nominated for that purpose.

5.3.7 Site 07 – Old Burns Point Ferry

Site Location and Land Use Context

Burns Point Ferry boat ramp is locates at the southern end of Burns Point Ferry Road. The local land uses are vacant land to the west, with a future residential development planned for the north of the ramp.

The Existing Facility

The existing marine facilities comprise:

- A one lane ramp with a concrete surface, with direct deep water access to the river. The ramp is the old facility used by the cross-river vehicular ferry.
- The ramp has steel rails cast in longitudinally that stand proud of the surface.

The existing landside facilities provided by Council comprise:

- Parking for 20 car and trailer units.
- Toilet block.
- Rubbish bins and refuse collection.

Capacity

These facilities provide a **Daily Ramp Capacity** of **20** boats per day at an acceptable level of service. This capacity is primarily influenced by a lack of public utilisation.

Observed Constraints and Problems

On the basis of site inspections and stakeholder consultations, the following issues have been identified:

- There is no traffic flow system apparent to arriving traffic.
- There are no signs indicating the rigging / securing areas.
- There are no signs indicating a queuing lane.
- There is insufficient manoeuvring area at the head of the ramp.
- The parking area does not have delineated car and trailer parking areas.
- The site contains an overhead obstruction - stay wires for the poles carrying the cross-river power lines.
- There is no place other than on the ramp to leave the boat whilst parking / retrieving the car and trailer.

Observed Opportunities and Needs for Upgrading of Facilities

- The area does contain sufficient land to be developed into a useful small facility.
- The presence of the stay wires would need to be addressed, possibly with barricades to warn and ensure a safe minimum height clearance.
- The proximity of superior ramps nearby precludes the development of a major facility, though it may be useful to ease congestion at the ramps nearby.
- The rails do not obstruct the use greatly and do not need to be removed.
- Queuing is a problem with both sides of the ramp consisting of rocky shores – probably all that can withstand the current flows experienced during floods.
- On this basis, future development is not considered suitable.

5.3.8 Site 08 – Emigrant Creek

Site Location and Land Use Context

Emigrant Creek boat ramp is accessed via the Pacific Highway. The car park is also part of Emigrant Creek Lane. Adjoining land uses are the highway and a caravan park.

The Existing Facility

The existing marine facilities comprise:

- A two lane ramp of concrete construction with direct deep water access via Emigrant Creek.
- A queuing 'beach' each side of the ramp.

The existing landside facilities provided by Council comprise:

- Parking for 20 car and trailer units.
- Rubbish bins and refuse collection.

Capacity

These facilities provide a **Daily Ramp Capacity** of **30-40** boats per day at an acceptable level of service. The capacity is restricted by the amount of Car + Trailer parking currently available and the lack of a structured flow pattern of use.

Observed Constraints and Problems

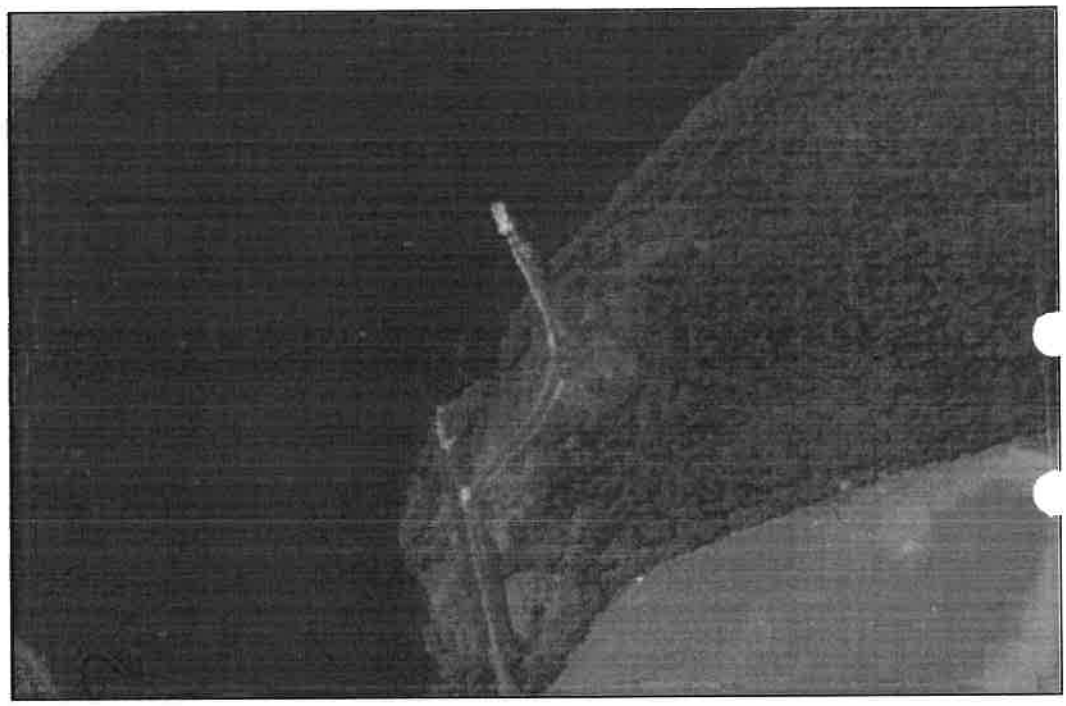
On the basis of site inspections and stakeholder consultations, the following issues have been identified:

- There is no traffic flow system apparent to arriving traffic.
- There are no signs indicating the rigging / securing areas.
- There are no signs indicating a queuing lane.
- There is insufficient manoeuvring area at the head of the ramp – this area is shared with traffic entering and exiting the facility.
- The parking area does not have delineated car and trailer parking area.
- There are rocks scattered in the queuing areas (creek bank) on each side.
- There are overhead power lines in close proximity to the ramp (though outside the manoeuvring and parking area).
- The ramp exits directly onto the Pacific Highway (up hill) with no opportunity for a vehicle towing a boat / trailer to gather speed before joining the traffic.

Observed Opportunities and Needs for Upgrading of Facilities

- This facility provides useful access to Emigrant Creek and has sufficient available area to be developed into a larger facility (possibly 80 boats per day).
- This would require the repositioning of either the ramp or the main road access, as the juxtaposition of both, at the narrow end of the available land, would lead to congestion at the head of the ramp and restrict the capacity.
- A layout with a bitumen car parking area and designated parking would use the available space to the best advantage.
- Removal of rocks and debris from the queuing areas (beach) is required to improve safety and useability.

5.3.9 Site 09 – Old Ferry Landing South Ballina



Site Location and Land Use Context

The old ferry landing at south Ballina is located on River Drive. It is adjacent land zoned "public recreation" – with Council the trustee to the west and no trustee to the east.

The Existing Facility

The existing marine facilities comprise:

- A one lane ramp with a concrete surface and direct deep water access to the river. The ramp is the old facility used by the cross-river vehicular ferry and has steel rails cast in longitudinally which stand proud of the surface.
- There are no specific support facilities at the site.
- Parking exists for approximately 5-6 car and trailer units.

Capacity

These facilities provide a **Daily Ramp Capacity** of **10** boats per day at an acceptable level of service. This capacity is restricted primarily by the amount of car and trailer parking currently available and the lack of a structured flow pattern of use.

Observed Constraints and Problems

On the basis of site inspections and stakeholder consultations, the following issues have been identified:

- There is no traffic flow system apparent to arriving traffic.

- There are no signs indicating the rigging / securing areas.
- There are no signs indicating a queuing lane.
- There is insufficient manoeuvring area at the head of the ramp.
- The parking area does not have delineated car and trailer parking areas.
- The area contains wire stays that support the poles carrying the cross-river power lines.
- Security is poor due to limited pubic surveillance / site visibility from the surrounding area.
- There is no place other than on the ramp to leave the boat whilst parking / retrieving the car and trailer.

Observed Opportunities and Needs for Upgrading of Facilities

- The area does not contain sufficient land for expansion into a larger facility.
- The presence of the stay wires would need to be addressed.
- The lack of ramps in the area is generally due to the inaccessibility of the river and this is the optimum site in this regard.
- Adequate manoeuvring area is a problem, with insufficient room to turn with a trailer at the head of the ramp.
- The rails do not obstruct use greatly and do not need to be removed.
- The upstream side of the ramp consists of rock revetment and the downstream side consists of muddy mangrove riverbank.

5.3.10 Site 10 – Wardell

Site Location and Land Use Context

Wardell boat ramp is located on Byron Street. The surrounding land is generally vacant, while the Pacific Highway runs to the west of the ramp. Highway upgrade options should be considered with reference to this ramp development.

The Existing Facility

The existing marine facilities comprise:

- A one lane ramp with a bitumen surface with direct deep water access to the river.

The existing landside facilities provided by Council comprise:

- Parking for 10 car and trailer units.
- Rubbish bins and refuse collection.

Capacity

These facilities provide a **Daily Ramp Capacity** of **20** boats per day at an acceptable level of service. The capacity is restricted by the amount of car and trailer parking currently available, together with the lack of a structured flow pattern of use.

Observed Constraints and Problems

On the basis of site inspections and stakeholder consultations, the following issues have been identified:

- There is no traffic flow system apparent to arriving traffic.
- There are no signs indicating the rigging / securing areas.

- There are no signs indicating a queuing lane.
- There is insufficient manoeuvring area at the head of the ramp.
- The parking area does not have delineated car and trailer parking areas.
- There are overhead power lines in close proximity to the ramp (though outside the manoeuvring and parking area).

Observed Opportunities and Needs for Upgrading of Facilities

- This facility, whilst providing useful access to the river, lacks sufficient available area for expansion into a larger facility. Any expansion would require the lease / acquisition of adjoining land.
- The location of the ramp adjacent to the bridge presents constraints due to the lack of manoeuvring area, and low clearance under the bridge (approximately 2.0 to 2.5m).

5.3.11 Bingal Creek Reserve and Informal Boat Ramp – Wardell

Bingal Creek boat ramp is accessible via a sealed road that is the extension of Creek street. This road leads to a closed bridge. As this ramp is outside the study area, it was not inspected as part of this study.

The ramp is part of an old Wharf Reserve that is now being transferred to Crown Land. Upon transfer, Ballina Council will become the trust manager.

Currently the reserve is maintained by the residents and is being used to access the Richmond River via Bingal Creek. The access into Bingal Creek is suitable for dingies canoes etc.

There is good access to the reserve and parking is available. This would be suitable for the launching of small craft in reasonably low numbers.

5.4 Other Dry Storage Options

New marinas often provide dry storage within large sheds, as part of a marina complex. In these sheds, boats are stacked three or four high, and placed into the water with a forklift. On the return, vessels are picked out of the water and returned to their storage cradle.

These facilities negate the requirement for a registered trailer, towing vehicle, undercover storage area and backing down a boat ramp. The owner books time that the boat is required, and it is in the water ready to go when they arrive.

Currently there are no formal dry storage options for boats in Ballina. The existing marina had a parking area for boats in a yard, however a towing vehicle was required to launch and retrieve these vessels and boat ramp facilities in the area were not suitable for many trailer-sailer boats.

Other dry storage options need to be considered for Ballina to augment the boat ramp upgrades. Each boat held within a dry storage shed will be one less boat utilising boat ramp facilities.

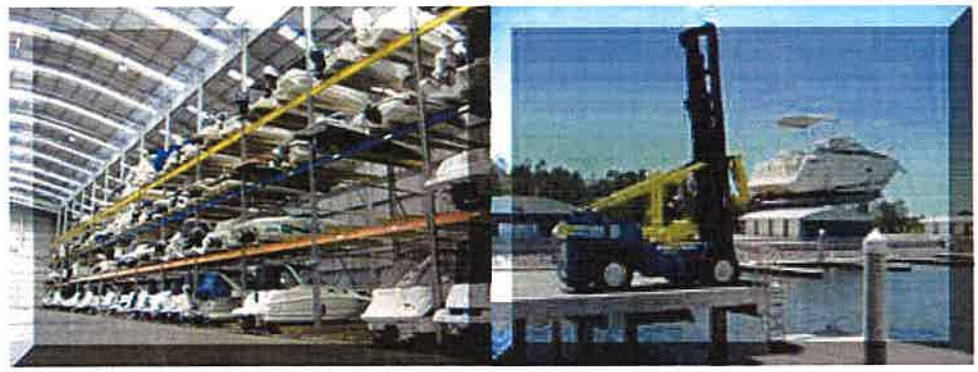


Photo 2 Boat Stacking Facilities at Gold Coast City Marina

5.5 Summary

The boat ramp facilities on the Lower Richmond River at Ballina fall below the Boat Launching Guidelines 1996 standard required for good service. Constraints and problems have been identified at all ramps.

All ramps could be improved with the provision of:

- A traffic flow system apparent to arriving traffic towing boats.
- Signage indicating the rigging / securing areas (and maximum time limits).
- Signage indicating queuing lanes.
- Improving manoeuvring area at the head of the ramp by ensuring No Parking areas are kept clear.
- Delineated car and trailer parking areas.

- Improving and making boat and people friendly queuing areas on the river banks, by removing rocks and rubble or the provision of a pontoon with access directly to the ramp.
- No ramps are located in close proximity to the overhead power lines or obstructions.
- Provision of deceleration and acceleration lanes for cars towing boats be made for accessing arterial roads (eg Pacific Highway).
- Provision of basic services such as toilets, refuse collection and adequate lighting.

6. Wet Storage

6.1 Requirements of Wet Stored Vessels

Vessels kept in the wet storage are often too large to be kept on trailers. They require infrastructure for access and berthing, as well as specialised facilities for their running, upkeep and maintenance. A marina is an area where many of these facilities are provided in one place.

These vessels can be a variety of sizes, however most private vessels on the Richmond River are generally 7-20 m in length. These vessels may have all facilities necessary aboard to provide comfortable accommodation.

Vessels of this type can be used specifically on the Richmond River Estuary, or well-found vessels may travel between ports along the east coast of Australia, or indeed the rest of the world.

There are a large variety of vessel types. These can be propelled with motors or sails. The majority of sailing vessels also contain an auxiliary motor to aid manoeuvring.

Commercial vessels (ie. fishing, tourist and hire vessels) due to their size, are often larger and require wet berths. These vessels generally require similar infrastructure, however, some have specialised access requirements.

6.2 Existing Infrastructure

6.2.1 Existing Marina

The former marina in Ballina had approximately 50 wet berths. It also contained a dry storage area and informal boat ramp, which was used by trailer sailers. Prior to its closure in 2002, plans existed for the marina including an expansion to approximately 200 wet berths. The former marina was well patronised by both local and visiting vessels.

Constraints on the marina, such as exposure to the tidal stream and wind, debris during flooding, and limited capacity, were contributing factors impacting on its commercial viability and decision to decommission in 2002.

The site is now undergoing planning for residential development with a small private 25-berth marina (December 2004).

Since closure of the marina, remaining berthing infrastructure at Martin Street and the Trawler Harbour have been utilised to capacity. Many local boats were displaced to Yamba, Evans Head, and Southport. In some cases, vessels were sold due to lack of available facilities in the local area.

6.2.2 Other Infrastructure

The capacity of Martin Street facility is 18 boats, with all berths currently utilised. This harbour is owned and operated by NSW Maritime. Most of these berths are on long-term leases. This harbour has private shower and toilet facilities.

The Trawler Harbour is run by the Ballina Fishermens Co-op on lease from the State Government. Half of the 34 berths are reserved for trawlers with the others being utilised by yachts. There are no shower or toilet facilities available.

There are also private jetties located along the river and canals.

Smith Drive is located on Emigrant Creek. It has been the Richmond River's base of marine industry for many years. There is a slipway with hardstand facilities and a number of industrial sheds with private slips. Access for deep drafted vessels is limited to high tides only, with shoaling evident on the mouth and halfway up the creek. No dredging works have been undertaken on Emigrant Creek for several years.

There are two short stay moorings in Mobbs Bay (ie. 2 hours).

There is one public floating jetty and one public fixed jetty at Fawcett Park with a total capacity of two boats. This area is designated for short stays, to allow the embarkation and disembarkation of passengers.

There is also an existing (now decommissioned) Dry Dock facility located at Rileys Hill (Photo 1) and York Marine is located upstream at Swan Bay (shipbuilding facility and slipway).

6.3 Potential Marina Sites

Twelve potential sites have been identified for development as possible marina sites in future, as follows:

1. Shaws Bay
2. Missingham Bridge
3. North Creek
4. Kingsford Smith
5. Mobbs Bay East
6. Martin St Boat Harbour
7. Trawler Harbour
8. Burns Pt West
9. Ag Research Station
10. Smith Drive
11. Greenfield
12. South Ballina Greenfield

These sites have been identified through:

- Discussions with Council and State Government officers.
- Consultation with the local boating community and other interest groups.
- Site investigations.
- Other research and desktop analysis.

Potential sites are illustrated in Figure 5, extending from the river mouth to Wardell. General sites outside Ballina have been classified "Greenfield", for the north / western bank of the river and "South Greenfield" for the southern / eastern bank.

No specific sites have been identified for the Greenfield areas. All other sites have been named from local landmarks, or common names.

Richmond River Recreational Boating Study

Figure 5
Potential Marina Sites

Marina Locations Legend

Marina Location

North

Source Information:BSC / GHD

GHD MANAGEMENT ENGINEERING ENVIRONMENT

g:\22\12006\GIS\Figure 5.mxd R

6.3.1 Multi-Criteria Matrix Development

The twelve sites were assessed on the Richmond River and its tributaries, to ascertain their suitability for a possible future marina development. Each site was visited by the study team and visually assessed against 17 criteria, as follows:

- Bank stability.
- Vegetation condition.
- Presence of acid sulphate soils.
- Presence of threatened species.
- Habitat quality.
- Accessibility.
- Safety.
- Heritage.
- Rehabilitation potential.
- Proximity to open space.
- Proximity to commercial district.
- Neighbourhood impacts.
- Servicing / Infrastructure.
- Visual impacts.
- Planning.
- Presence of sea grasses.
- Dredging.
- Deep water access.

Table 10 highlights the results of the assessment for each site. Squares have been used to depict the suitability for marina development, relative to each particular criterion. Larger squares represent a higher level of suitability; smaller squares represent a lower level of suitability. For example, at Mobbs Bay East the condition of the existing vegetation was good and therefore any future development would significantly impact on native vegetation. Thus, Mobbs Bay East rated poorly for "Vegetation Condition" when compared to South Ballina Greenfield, where there was no existing native vegetation and therefore impacts were rated as less significant.

In summary, a site with a higher density of black squares is more suitable for development. A site with lower density does not necessarily preclude its development into a marina, however, it indicates that there may be greater planning assessment, environment considerations, engineering and associated costs required to develop the site.

It is noted that this site analysis was undertaken without regard to existing planning frameworks, land availability or other considerations not mentioned here. Furthermore, detailed feasibility work to identify specific requirements will be required in future, to fully establish all opportunities and constraints.

Table 10 Multi Criteria Analysis – site suitability for marina development

Criteria	Location											
	Shaws Bay	Missinghams	North Creek	Kingsford Smith	Mobbs Bay East	Martin St Boat Harbour	Trawler Harbour	Burns Pt West	Ag Research Station	Smith Drive	Greenfield	South Ballina Greenfield
	Suitability for development	*Suitability for development*	*Suitability for development*	*Suitability for development*	*Suitability for development*	*Suitability for development*	*Suitability for development*	*Suitability for development*	*Suitability for development*	*Suitability for development*	*Suitability for development*	*Suitability for development*
Bank stability	■	■	■	■	■	■	■	■	■	■	■	■
Vegetation condition	■	■	■	■	■	■	■	■	■	■	■	■
Acid sulphate soils	■	■	■	■	■	■	■	■	■	■	■	■
Threatened species	■	■	■	■	■	■	■	■	■	■	■	■
Habitat quality	■	■	■	■	■	■	■	■	■	■	■	■
Accessibility	■	■	■	■	■	■	■	■	■	■	■	■
Safety	■	■	■	■	■	■	■	■	■	■	■	■
Heritage	■	■	■	■	■	■	■	■	■	■	■	■
Rehabilitation potential	■	■	■	■	■	■	■	■	■	■	■	■
Open space	■	■	■	■	■	■	■	■	■	■	■	■
Proximity to commercial district	■	■	■	■	■	■	■	■	■	■	■	■
Neighbourhood impacts	■	■	■	■	■	■	■	■	■	■	■	■
Servicing / Infrastructure	■	■	■	■	■	■	■	■	■	■	■	■
Visual Impacts	■	■	■	■	■	■	■	■	■	■	■	■
Planning	■	■	■	■	■	■	■	■	■	■	■	■
Sea Grasses present	■	■	■	■	■	■	■	■	■	■	■	■
Maintenance Dredging	■	■	■	■	■	■	■	■	■	■	■	■
Deep water Access	■	■	■	■	■	■	■	■	■	■	■	■

Key: ■ Low suitability for development (when compared to medium and high) reflecting significant constraints and potential impacts against the criteria,

■ Medium suitability for development (when compared to low and high) reflecting a medium level of constraints and potential impacts against the criteria,

■ High suitability for development (when compared to medium and low) reflecting some constraints and potential impacts against the criteria.

6.4 Marina Sites Constraints and Opportunities

Broad constraint and opportunities have been identified for each site. Issues have also been included from visiting each site, feedback from written submissions and the community meeting. GHD staff undertook an inspection of each site. GIS (cadastral and planning) and aerial photographs information has been also been used for analysis and presentation purposes.

Overlayed on each aerial photo are indicative development scenarios. These are visual references to possible design outcomes to aid the discussion of options. A formal sizing / spacing layout and yield (number of berths) has not been undertaken. Included also for discussion are indicative surrounding land uses. The legend for the development scenarios is presented in Table 11 below.

Table 11 Legend for Development Scenarios

A Sites classification as "close to town" is one that is within walking distance of the Ballina CBD. As many travelling boat owners do not have transport, facilities further away require alternate transport options for patrons.

6.4.1 Site 1 – Shaws Bay

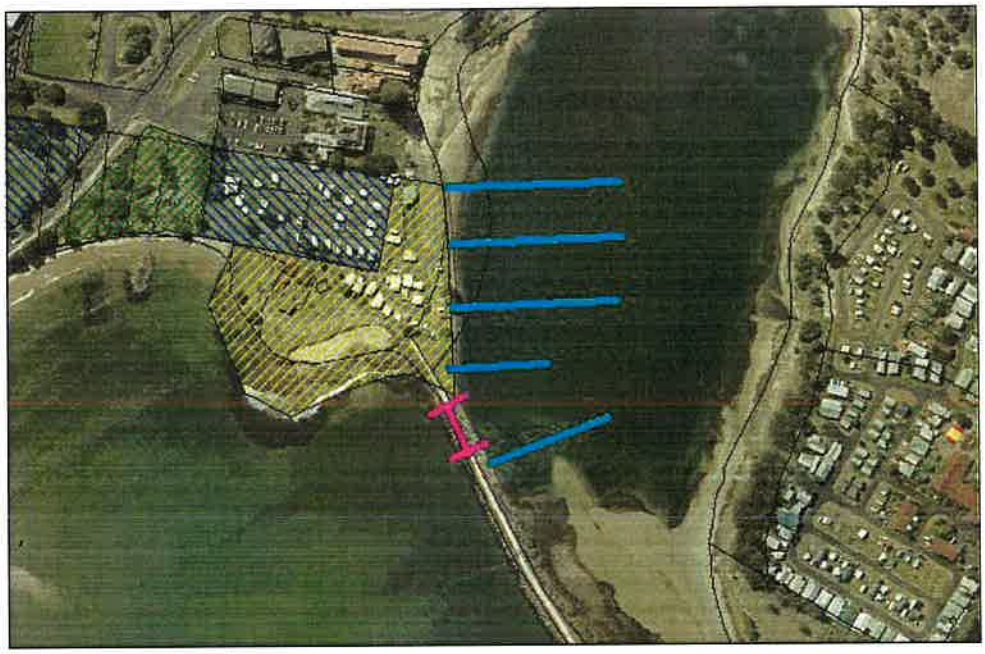


Photo 3 Shaws Bay

Table 12 Opportunities and Constraints for Site 1

Opportunities	Constraints
Proximity to the river mouth	Visual amenity – highly visible from residents of east Ballina
Opportunity to Improve facilities at Shaws bay (possible retail area etc)	Recreation setting – existing use for swimming and safe boating - off the main river
Existing open water – minimise dredging requirements	Sea grass communities have become established within bay
Opportunity to improve flushing and water quality in bay	Requires access through North Wall – existing pedestrian access point.
High commercial appeal from road	Limited land area available for infrastructure – Caravan Park
North side of river. Close to beaches, town and rivermouth – deep water access	

Synopsis: Shaws Bay is ideally situated for a Marina, however existing recreational and environmental values are large constrains to its development.

6.4.2 Site 2 – Missingham Foreshore

Photo 4 Missingham foreshore

Table 13 Opportunities and Constraints for Site 2

Opportunities	Constraints
Proximity to the river mouth	Visual amenity – highly visible from both Missingham bridge and east Ballina
Opportunity to Improve facilities at Shaws bay (possible retail area / restaurants)	Marina would require protection from wave action requiring construction of a break wall. Entrance to North Creek cannot be constricted further limiting the size of the marina.
Good access to deep water	Limited land area available for infrastructure – Caravan Park
High commercial appeal from road	Existing historical and recreation use.
Close to beaches, town and rivermouth – deep water access	Significant rock in the area limits dredging potential.
North side of river	

Synopsis: Missingham foreshore is ideally situated for a Marina. It is on the north side of the river, close to beaches and the rivermouth for boat access. This site however is

constrained by the size due to both the requirements for flushing of North Creek, the requirement for breakwall construction and due to the fact that the site is situated on bed rock, requiring limiting the depth without drilling and blasting.

6.4.3 Site 3 – North Creek

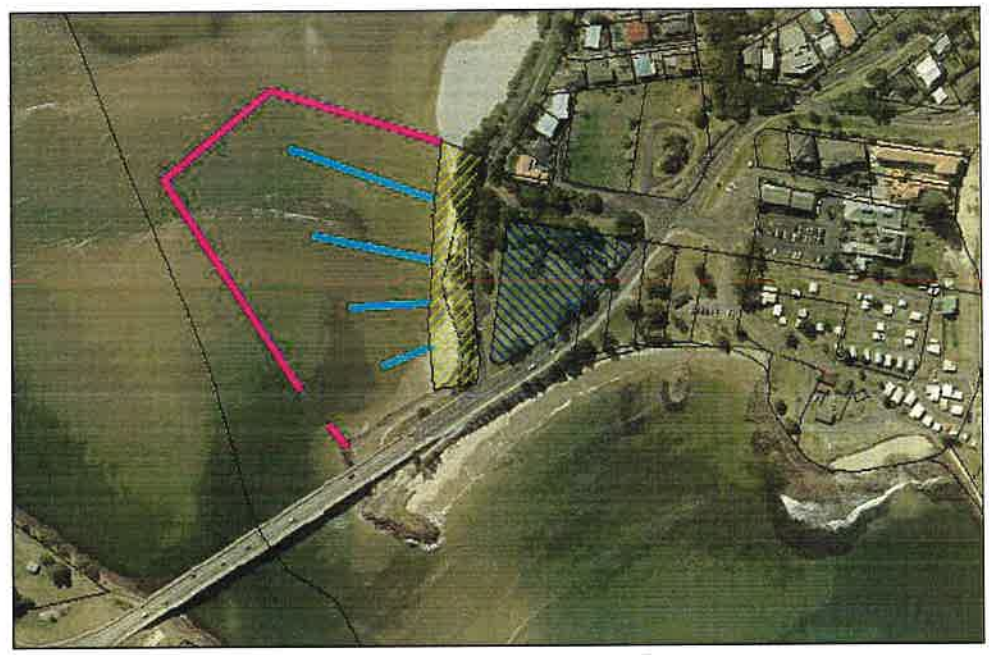


Photo 5 North Creek

Table 14 Opportunities and Constraints for Site

Opportunities	Constraints
Proximity to the river mouth	Missingham Bridge severely limits access to many boats. Clearance 4.9m HAT.
North side of river	Limited land area available for infrastructure
Large expanse of water	Visual amenity – highly visible
	Wave action through bar
	Shoaling and dredging requirements

Synopsis: This site is severely limited by clearance under Missingham Bridge.

North Creek can be excluded from further consideration due to the low existing bridge across North Creek which would preclude any type of sailing vessel or large motor yacht from gaining access to a potential marina development upstream of the bridge.

6.4.4 Site 4 – Kingsford Smith Drive

Photo 6 Kingsford Smith Drive

Table 15 Opportunities and Constraints for Site 4

Opportunities	Constraints
Proximity to the river mouth	Shoaling limitations
High commercial appeal from road	Wave action though bar
Large expanse of water available	Marina would require protection from wave action requiring construction of a break wall.
Proximity to the river mouth	Migratory bird habitat

Synopsis: The Kingsford Smith Drive marina site could be located anywhere along Kingsford Smith Drive from the swimming pool to the location shown above. There is land available along this route for shore-based amenities. This site is an active sand deposition area and hydrodynamic modelling would be required to prove that a marina would not detriment the current hydraulic regime present in the lower reaches of river. Wave action would also need to be considered in this area.

6.4.5 Site 5 – Mobbs Bay East

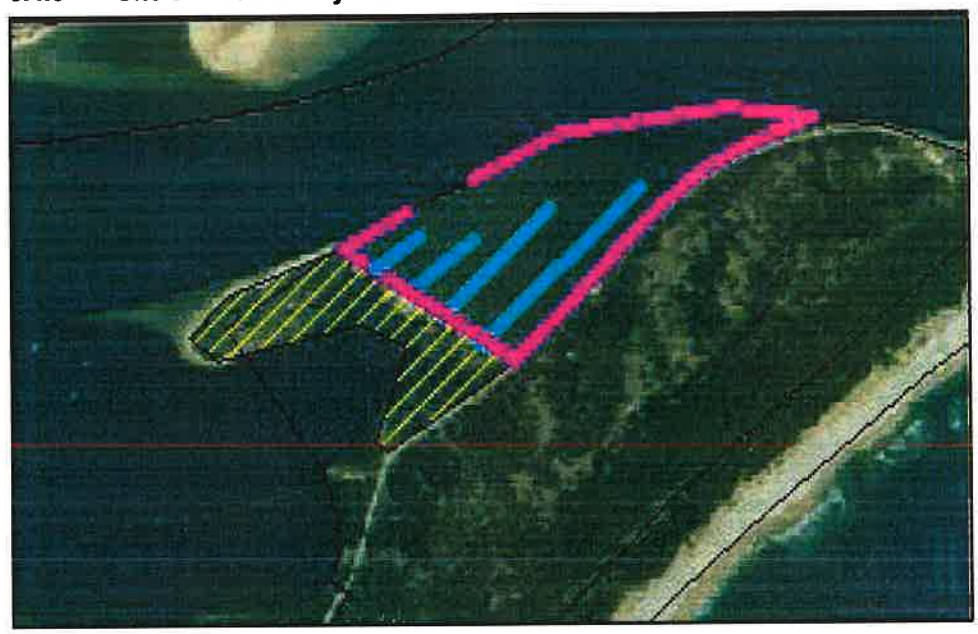


Photo 7 Mobbs Bay East

Table 16 Opportunities and Constraints for Site 4

Opportunities	Constraints
Proximity to the river mouth	South side of river
Opportunity to encourage development on the south side of river	Limited access to services – water / sewer / electricity
Large expanse of water available	Dredging of area required
Deep water access available	Wave action though bar
	Adjacent to Nature Reserve

Council to develop the South Ballina area. Presently the access to services and distance from Ballina commercial centres is this site's largest constraint. Mobbs Bay East lies at the southern entrance of the Richmond River. The Bay is protected by a low-lying training wall and is adjacent to an existing nature reserve. This site did not rate well on the multi-criteria analysis.

6.4.6 Site 6 – Martin Street Boat Harbour

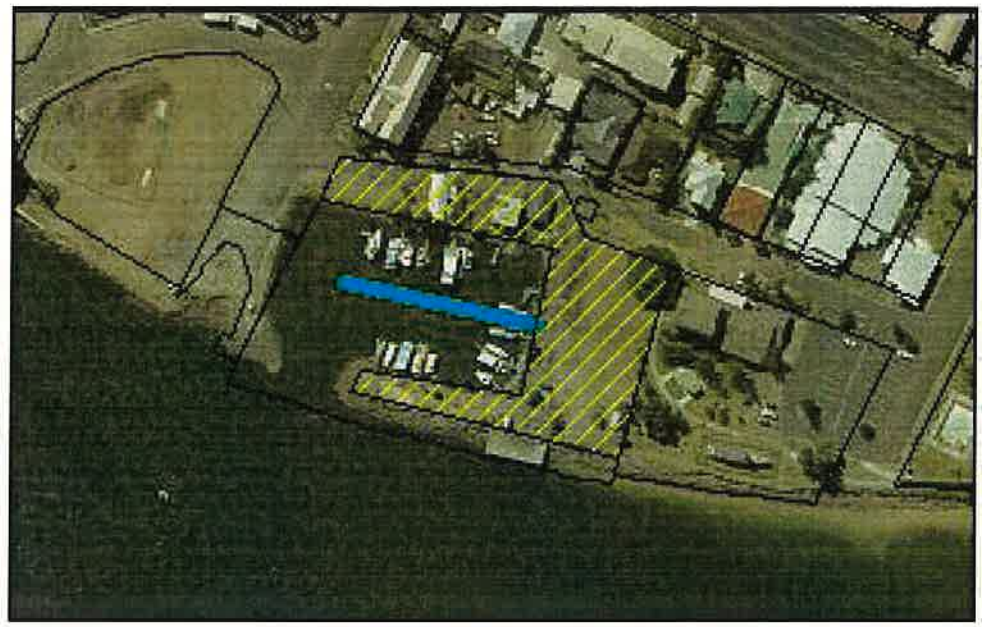


Photo 8 Martin Street Boat Harbour

Table 17 Opportunities and Constraints for Site 5

Opportunities	Constraints
Proximity to town and services	Currently at capacity for land use
North side of river	Limited expansion possible
Planned for refurbishment – NSW Maritime	Native title issues – expansion into river
Existing boat Harbour	

Synopsis: This site is presently undergoing a separate feasibility study for development by NSW Maritime. Martin Street Boat Harbour rates highly in terms of its overall suitability for development. Ballina Shire Council should actively facilitate the development of this site in conjunction with NSW Maritime. This may involve the installation of additional facilities on Council controlled land in the vicinity (such as the end of Martin Street, or the Museum site). Additional infrastructure and services such as moorings, refuelling, sewage pump out facilities and public amenities may be added.

6.4.7 Site 7 – Trawler Harbour

Photo 9 Trawler Harbour

Table 18 Opportunities and Constraints for Site 6

Opportunities	Constraints
Existing Boat Harbour	Residential areas close by
Close proximity to town and services	Area currently used by commercial fishermen
Harbour area could be expanded onto adjacent land RTA depot could be resumed for land requirements	Resumption of RTA land may prove difficult
North side of river	
Close to boat ramp	
Highway frontage – good exposure	

Synopsis: opportunity exists for marine precinct development close to all amenities in Ballina using existing boat harbour. The Trawler Harbour lies on the northern bank of the Richmond River approximately two and a half kilometres west of the Ballina CBD. The site is an existing trawler harbour adjacent to Ballina's RTA compound. The site rates highly suitable for development for 12 out of the 17 criteria assessed. The site rated medium suitability for 4 criteria and rated low suitability for only one criterion. The criterion for which Trawler Harbour rated low was neighbourhood impacts due to the proximity of the Harbour to a residential area to the east, although this may be

mitigated somewhat from the fact that the site is currently used for boating related activities.

6.4.8 Site 8 – Burns Point West

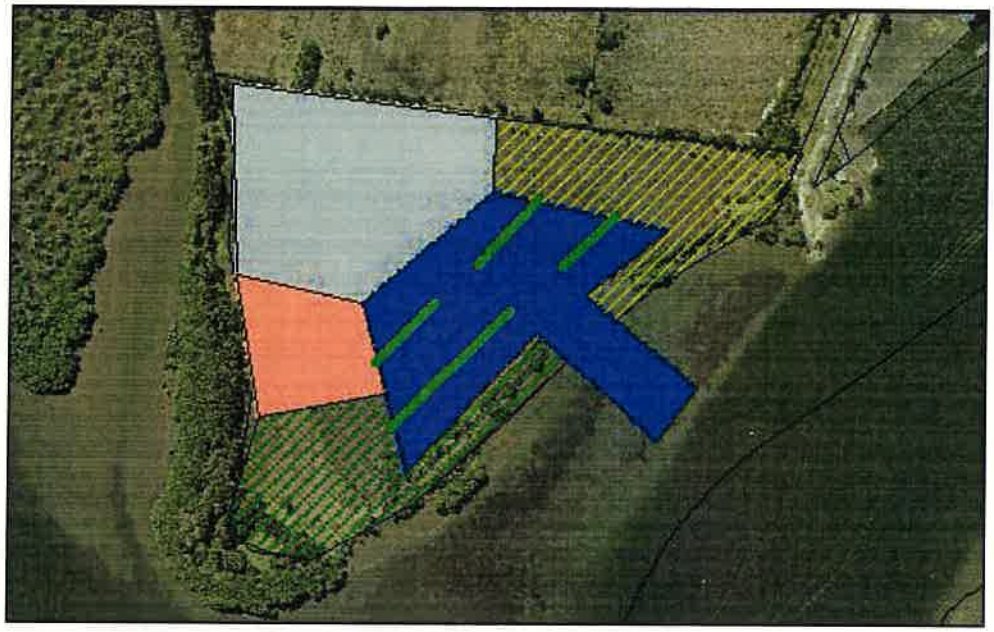


Photo 10 Burns Point West

Table 19 Opportunities and Constraints for Site 7

Opportunities	Constraints
North Side of river	Distance from the centre of town
Large landholding able to incorporate marine precinct. Landholding requires filling – compatible with borrowing fill from a marina basin.	High level of environmental constraints – Seagrass communities, Mangroves and salt marsh communities.
Greenfield site (No existing infrastructure)	On outside of river bend – flooding debris / shoaling
Close to existing Marine industry on Emigrant Creek	Upstream of burns point ferry – implications for bridge options
Existing services located in area	Possibly flood prone – require filling
Public Support for Development	
Subsequent residential development possibilities	

Synopsis: Burns Point west is a Greenfield opportunity for a substantially sized marine precinct and residential development.

Burns Pt West rated poor to medium suitability for development for all of the criteria. There are mangroves on the site as well as a salt marsh community. Sea grass beds also limit access to the main river channel

Whilst the site is on the northern bank of the River its accessibility is hindered by it being a relatively long way from the Ballina CBD.

6.4.9 Site 9 – Agricultural Research Station

Photo 11 Ag Research Station

Table 20 Opportunities and Constraints for Site 8

Opportunities	Constraints
North Side of river	Distance from the centre of town
Large landholding able to incorporate marine precinct.	Access to services
Greenfield site (No existing infrastructure)	Possibly flood prone
Subsequent residential development possibilities	Low lying – may require filling
	Shoaling at entrance to emigrant creek may require regular dredging. Issues with seagrass present

Opportunities	Constraints
	Upstream of burns point ferry – implications for bridge options

Synopsis: Greenfield marine precinct and residential development opportunity, further from town and existing services. Constrained by distance and shoaling on emigrant creek which would require regular dredging.

6.4.10 Site 10 – Smith Drive

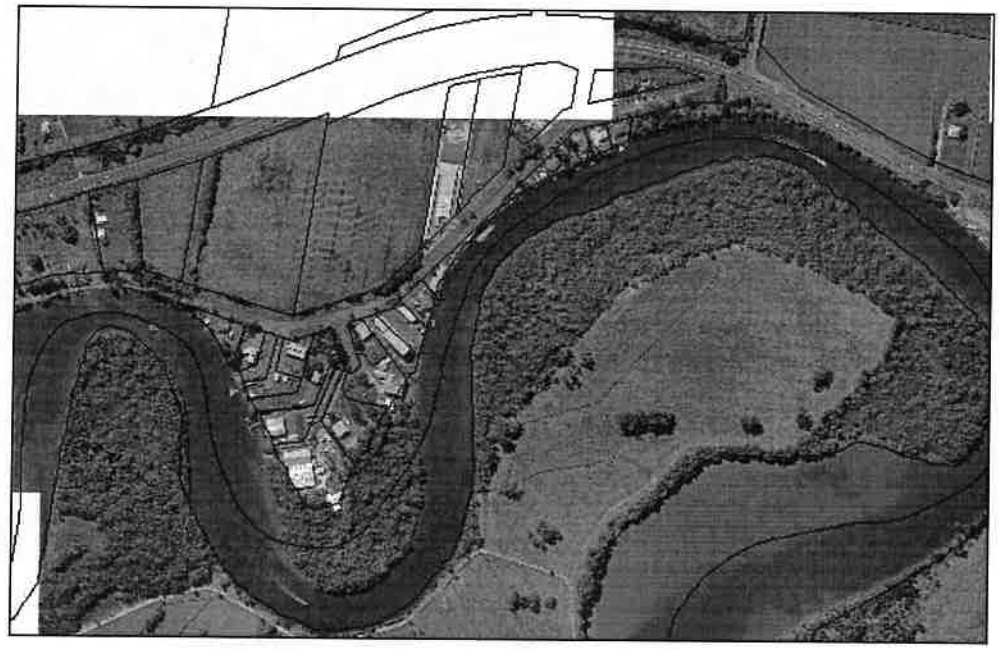


Photo 12 Smith Drive

Table 21 Opportunities and Constraints for Site 9

Opportunities	Constraints
Existing industrial area	Distance from the centre of town
Infrastructure already provided	Linkage with services
Good access from road	Flushing
Highway frontage	Shoaling of emigrant creek would require regular dredging to maintain all tide access
Private ownership	Upstream of burns point ferry – implications for bridge options
	Flooding

Synopsis: Existing marine industry area. Its distance from town and the continual shoaling of emigrant creek are biggest constraints to development.

Whilst there are some criteria for which Smith Drive rated highly in terms of its suitability for development, the site can be discounted based on its distance from Ballina, the fact that dredging would be required and that sea grass beds down stream of the proposed site would also require dredging.

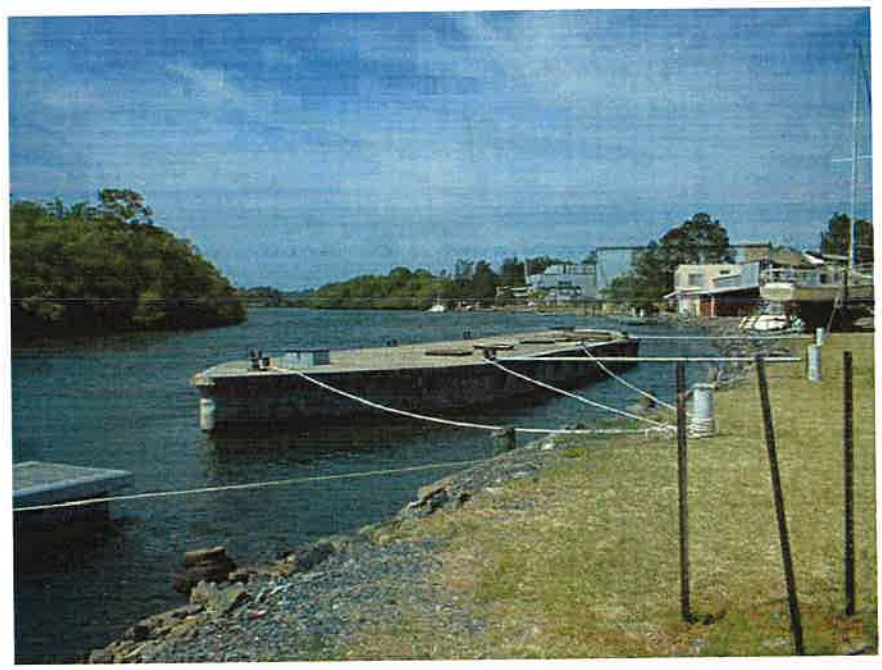


Photo 13 Smith Drive - Emigrant Creek

6.4.11 Site 11 – West Ballina Greenfield

Photo 14 Greenfield Development

Table 22 Opportunities and Constraints for Site 10

Opportunities	Constraints
Large landholding	Distance from the centre of town
Deep water frontage (Depending on site selection)	Unknown services (water / sewerage / electricity)
Number of site options	Upstream of burns point ferry – implications for bridge options
Subsequent residential development possibilities	Access from highway presently difficult

Synopsis: Greenfield development on the western bank of the river has many site options between Ballina and Wardell. This area is remote from central Ballina and access from the highway is currently difficult. A site should be chosen which facilitates deep-water access, which is found on the outside of bends.

A Greenfield development has the benefit of providing unlimited expansion potential. This provides space for a regional hub for boat building industry and related services.

6.4.12 Site 12 – South Ballina Greenfield

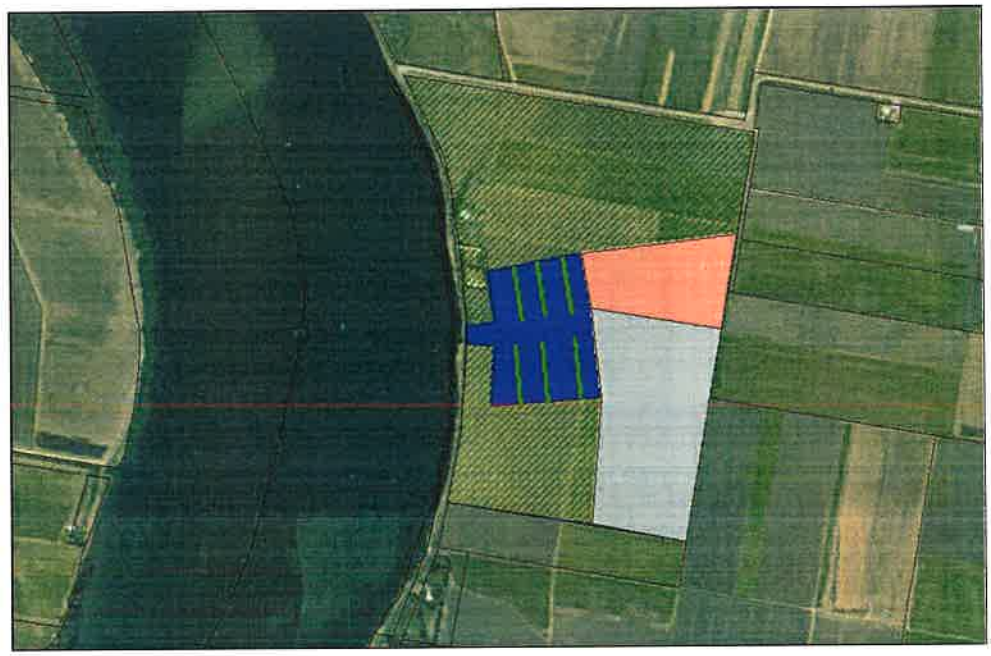


Photo 15 South Ballina Greenfield

Table 23 Opportunities and Constraints for Site 11

Opportunities	Constraints
Large landholdings in area	South side of River
Deep water frontage	Distance from the centre of town
Number of site options	Linkage with services (water / sewerage / electricity)
Large areas of cleared land with little riparian vegetation	Upstream of burns point ferry – implications for bridge options
Subsequent residential development possibilities	Access requires using Burns Point Ferry

Synopsis: Another Greenfield development option with many possible sites along river. Is remote from Ballina and provides access difficulties across river.

South Ballina Greenfield rated high suitability for development in relation to vegetation condition, threatened species and habitat quality due to the paucity of native vegetation on the site. It also rated high suitability for development in relation to heritage as it would be unlikely that heritage items are present on the site. The site rated low suitability for development in relation to accessibility as it is on the southern bank of the

Richmond River and it is only accessible by car ferry from Ballina. A site should be chosen which facilitates deep-water access, which is found on the outside of bends.

A Greenfield development has the benefit of providing unlimited expansion potential. This provides space for a regional hub for boat building industry and related services.

6.5 Location of Moorings in the Richmond River

In recent History, very few moorings have been located in the Richmond River within the study area. Currently there are two public moorings located in Mobbs Bay.

Moorings (either public or private) are required to:

- Be away from navigation channels
- Be in sufficient depth to allow for under keel clearance at low tide
- Be mindful of sensitive areas such as those containing sea grass
- Have sufficient swing room to avoid other vessels.
- A dingy is required to provide access to moored boats. Secure dingy tie up areas must therefore be also provided close enough to mooring areas to allow rowing ashore.

Moorings come in three typical forms:

1. Swing Moorings

Swing moorings are constructed of either a large weight (engine block, rail car wheel, concrete block), screw pile, or anchor system which is set up on the sea bed and attached by either a rope or chain with a float on the surface. To allow for tidal changes, and to reduce the wave load on the mooring, there is significant slack in the mooring line. Due to this each mooring requires swing room to prevent collision with subsequent moorings. The slack in mooring ropes can lead to damage to surrounding benthic communities (such as sea grass) if not designed to account for this.

2. For-and-aft Moorings

Fore-and-aft or pile moorings are piles driven into the bed, upon which the vessel can be tied at its for and aft extremities (bow and stern). These piles are usually driven in line with the tidal streams.

3. Moored Pontoon

Anchored pontoons are another way of increasing the mooring capacity of a small area. An anchored pontoon can accommodate 2-4 boats simultaneously (depending on design), reducing the mooring area footprint and increasing the number of boats which can be moored in a particular area. More details on swing mooring pontoons are available in Appendix B.

6.5.1 Potential Mooring Sites on the Richmond River

Four potential mooring sites have been identified on the Richmond River between the mouth and Wardell. The sites are located in Figure 6. Details on the proposed mooring are presented below:

Site 1

Mobbs Bay already contains two public swing moorings, which have been provided by NSW Maritime. These are temporary moorings which have a time limit of 12 hours. It is proposed that mooring options be investigated here to increase the number of vessels which can be accommodated. This would reduce the damage caused by ground tackle on the local sea grass community.

There are often 4-6 boats anchored in the deep-water part of Mobbs Bay. Therefore a total of 4 – 6 moorings would prevent significant damage to seagrass caused by ground tackle. Anchored pontoons could also be utilised in this area.

Site 2

Site two is located alongside the rock wall from Martin Street Boatharbour to the swimming pool. The water in this are is relatively deep (3-5 m LAT) and could be provided with for-and-aft moorings and a secure dingy tie up area on a pontoon (with freshwater source for topping up water tanks). These berths could be designated for a short-term (maximum 2-weeks) stay.

Site 3

Opposite the Trawler Harbour the river is relatively deep. This area could be provided with swing moorings. Tenders could be left within the Trawler Harbour. Alternatively this area could be nominated as a designated anchoring area on charts, utilising on board ground tackle. There are no significant seagrass present in this area.

Site 4

The Wardell Reach of the river could also be provided with fore-and-aft pile moorings. There is also an existing jetty which could be fitted to provide secure dingy storage. The Wardell reach is predisposed to high flows and debris loading and therefore fore-and-aft moorings would require debris deflectors

Richmond River Recreational Boating Study

Figure 6
Potential Mooring Sites

Legend:

Potential Mooring Sites

North

Source Information: BSC / GHD

GHD
MANAGEMENT
ENGINEERING
ENVIRONMENT

g:\22\12006\GIS\Mooring.wor

Lower Richmond River Recreational Boating Study

Part C – Analysis and Recommendations

7. Synthesis and Future Directions

The Richmond River is an incredible resource for recreational boating. It is a major river system, embodied with interesting landscapes, flora and fauna, good fishing and sailing; with inherent maritime history and exploration potential. The river caters for different vessel types, with both road and ocean access available from major centres such as Brisbane and Sydney. Once in Ballina, boats and crews have easy access to much of the North Coast, including regional and tourist centres such as the Lismore and Byron Bay.

Ballina enjoys a mild subtropical climate. Which facilitates boating activity. Storms, flooding, winds and bar conditions provide hazards to boating, however the Richmond River offers safe and secure boating for all different types of craft given good seamanship is practiced.

This report identifies that:

- The current infrastructure is insufficient to provide a satisfactory level of service for the local boating community.
- That there is likely to be an increase in future demand for boating infrastructure.
- We need to provide improved services and infrastructure to facilitate growth in this area.

7.1.1 Demographic Recreation and Tourism Trends

The impact of demographic, recreation and tourism trends on recreational boating activity has been explored. The growth of population in Ballina is occurring at rate of 2.1% over the last 10 years. This is double the state average. The age of citizens of the shire is also likely to increase. And older population is likely to have an increased amount of recreation time, which could include boating.

Recreation trends in NSW show that approximately 5% of all people are directly involved with water-based activities including boating. These activities included: Fishing, water-skiing / power boating, sailing and canoeing / kayaking. Due to the proximity and availability of a water resource, it is expected that participation rates in Ballina would be above the state averages given.

The Northern Rivers of NSW is amongst the top ten most popular regions visited by international tourists. On a regional scale, most visitors to the region come from Sydney or Brisbane and approximately 3% of these come by boat or ferry. Encouragingly, over 50% are planning to make a return trip within 12 months.

Data collection to show the precise number of visiting boats which frequent our waterways has not been undertaken. It is recommended that a boat ramp survey be undertaken, possibly over a holiday time such as Easter to determine the level of visiting boats. It has not been possible to determine these rates from existing data sources.

Boat registration statistics show that the number of boats registered in the Shire is 4.2% - 1.3% higher than the state average of 2.9%. The demand on boating infrastructure in the Shire will be much higher than the state average.

Data showing the exact number of wet and dry stored vessels has not been available in the statistics acquired. There is however a marked reduction in the number of sailing and motor cruisers registered in Ballina – making up 3.6% of all boats registered in Ballina compared to 9.8% of all registered boats in NSW. This clearly shows that the lack of infrastructure and facilities is having a huge impact on the type of boats registered in the region.

Boat ownership has increased by 25% in NSW over the last 10 years. If the increase in both population and boating continue then it is estimated that there will be there will be over 2500 boats registered in Ballina by 2024 – A 50% increase on current registration numbers - around 900 more boats.

Employment from boating related business is providing over 14,000 people with jobs in NSW with Marinas providing another 9,000 Jobs. It has been calculated that every wet berth created in a marina provides 0.3 jobs in the local community. Development of a marina in Ballina could provide a large number of jobs and related industry boost to the local community.

7.1.2 Community Consultation

The consultation of the community was an important and integral part of this study. A range of stakeholders were contacted and invited to make written submissions or take part in a public meeting.

Meetings were held with other stakeholders such as government departments to discuss the issues related to Marina Development which relate to their department.

The most critical information for the development of a marina was received from Department of Fisheries, particularly dredging of sea grass areas. Any form of dredging is unlikely to be able to be approved within 4 areas of the Richmond River – Mobbs Bay west and Shaws Bay, Upper North Creek and the mouth of Emigrant Creek. This last area is the most critical. Development of Burns Point West, the Ag – Research Station and Smith Drive would all require dredging in this area. It also would be difficult to develop Shaws Bay.

Boat Ramps

The public consultation meeting was well attended by a wide cross section of stakeholders. Feedback on usage of boat ramps concluded that the existing ramps are at capacity. There is minimal maintenance, that limited support facilities are provided, and that security of unattended vehicles is a problem. The public would like to see more efficient utilisation of ramps at peak periods and provision of improved facilities. The most utilised ramps are located in close proximity to town.

A 50% increase in boating registrations has been forecast to occur in the next 10 years. Therefore a corresponding 50% increase in boat ramp facilities is required to provide the current level of service to the community. This would require the

augmentation or development of further boat ramps with a capacity of 150 boat movements per day.

Marina Development

Strong community support exists for the development of a new marina. The expectation exists that a marina should have the capacity to cater for demand (or be developed in stages) over the next 20-30 years. More support for a marina was given over a marine precinct – leaving the industrial marine facilities at Emigrant Creek.

Key points were that a marina needed to be close to town, protected by a basin / walls and also limiting impacts on neighbours such as increased traffic. Most people agreed that up to 400 berths could be utilised and that vessels of around 12 m (40') with a 2 m (6' 6") draft be catered for.

Community feedback on potential sites for a marina was that the preferred sites were:

- Burns Point West.
- The Trawler Harbour.
- Martin Street Boat Harbour.

A "boutique marina" with substantial shore based components (residential / commercial development) to provide revenue, can provide a sustainable marina with less berths. This type of development may suit some of the sites identified above.

The considerations for Burns Point West were that it had sufficient room to provide extended capacity and development over a number of years, where the other two had land availability constraints. The environmental, flooding and dredging requirements for the Burns Point West site were not discussed during the public meeting. Consideration of these issues and other constraints however limit the development potential of this site and therefore it has been discounted.

Other facilities and initiatives to support regional boating were also highlighted at the meeting. These issues supported the formation of a Boating Management Plan possibly as a part of the Estuary Management Process which could address some of the management issues such a where particular vessels are allowed, education and environmental awareness.

7.1.3 Dry storage

There are currently no formal or stacked dry storage facilities available for vessels on the Lower Richmond River. Informal dry storage utilising a garage style is available at Smith Drive and the Industrial Estate. It is not apparent whether this is currently being utilised by boat owners. The majority of all dry stored vessels are currently stored on trailers and utilise boat ramps to access the River. The existing infrastructure on the river includes 10 boat-ramps. These boat ramps were inspected as part of this report. The key findings of this include:

- Many ramps have no formal traffic flow system apparent to arriving traffic. This is required to allow traffic flow through the boat ramp maximising the efficiency of each ramp lane.

- Lack of rigging / securing areas. These areas are for setting up and securing boats for travel before and after use. These areas require specific signage to prevent people parking in them.
- Lack of queuing lanes for vehicles waiting to launch or retrieve a boat.
- Delineation of car-parking spots and providing guidance to the direction (ie. trailers only over grass) and areas for parking with without trailers etc.
- Insufficient manoeuvring areas at the head of the ramp. Sufficient manoeuvring room aids the reversing of trailers down the ramp. A well-designed ramp provides one-way flow of traffic, which maximises the ramp efficiency.
- Rock revetments on edges of existing ramps prevent the laying alongside of boats for easy access to the shore. In these circumstances a pontoon with access to the ramp is required for queuing while awaiting retrieval.
- Limited parking means that the capacity of the ramp cannot be fully utilised.

The total capacity of all the ramps surveyed is shown in Table 24 is 290 boat movements per day during daylight hours.

Table 24 Boat Ramp Capacity

Ramp Name	Existing Ramps Maximum Daily Capacity (Boats per day)
Cawarra Park	20
Richmond River Sailing Club	30
South Ballina	10
Riverview Park	10
Fishery Creek Canal	100
Faulks Reserve	30
Old Burns Point Ferry	20
Emigrant Creek	40
Old Ferry Landing South Ballina	10
Wardell	20
Total	**290**

Other facilities at these boat ramps increase the safety, convenience and enjoyment of boating for all participants. These can include: toilet blocks, wash-down taps, sufficient lighting, rubbish bins and refuse collection, fish cleaning tables, as well as BBQ and picnic facilities. Security could be improved by the improved visual design and lighting.

Recommendations for the suitability of improving each of these facilities have been made. Capacity upgrades of the Fishery Creek Canal, Emigrant Creek, South Ballina boat ramp and Wardell sites are proposed.

Boat Stacking is another option to reduce the demand on boat ramp facilities. By implementing measures such as this, the demand on boat ramps could be reduced. A new marina precinct should investigate the installation of a dry boat stacking system.

7.1.4 Wet Storage

Wet storage is required for larger vessels, which cannot be removed from the water. Wet storage is usually in the form of mooring or berthing facilities. As these vessels are large enough to live aboard, they have specific requirements for waste reception (liquid and solid), storage, security, refuelling and maintenance. These facilities are usually found grouped together in a structure called a marina.

A Marine Precinct however also includes more involved maintenance and repair facilities, as well as significant refit, boat building facilities and related industries. Marine precincts are more suitable in large, Greenfield developments away from existing residential developments.

Ballina's only marina was closed in 2002, therefore, the town does not have many of the facilities required of boats requiring wet storage – key limitations include:

- A shortfall in supply of wet berths. Some boat owners have been required to relocate or sell d their vessels.
- No public refuelling facilities for either petrol or diesel.
- No safe dingy storage areas for vessels anchored in the river.
- No public showers, toilets and washing / drying facilities for travelling yachts.
- no public waste reception facilities for liquid (sullage) or solid waste.

Feedback from this study has determined that a marina must satisfy these criteria:

- Provide a facility in which owners feel safe to leave their boats.
- Be located off stream, or protected from the tidal stream, waves, flood debris and wind.
- Large enough to be economically viable (at least 200 berths).
- Contain fuel and vessel sewage pump out facilities.
- Provide necessary services such as showers, toilets, washing and drying facilities as well as key maintenance, reprovisioning, and equipment requirements.

Currently, the total number of wet berths available on the Lower Richmond River (apart from at private residences) is 52.

In total eleven marina sites were analysed by GHD as a result of community consultation, stakeholder input, and discussion with Council, Department of Lands and DIPNR. A multi-criteria matrix has been developed to help identify which sites would facilitate development into a marina. As a result of this assessment, the two existing

boat-harbours at Martin Street and the Trawler Harbour have been selected as the best candidates for development, with the least number of planning, community, environmental and engineering constraints identified. It is recognised that these sites may not provide a long-term sustainable number of berths, and therefore a Greenfield development at either south or north Ballina may provide a long-term sustainable solution.

Constraints and opportunities were listed for each site. This identifies the best and worst points of every potential site.

One site is unlikely to provide all requirements for a long-term marina strategy on the Lower Richmond River, especially with the pressing need to get basic infrastructure in place. Therefore both short and long -term strategies have been recommended.

This analysis has by no means been an exhaustive look at the planning, legislative and environmental requirements for each site. From the recommendations made here, a more focused study will be required to provide a definitive site recommendation. However it is hoped that this assessment will provide a foundation on which to base the required studies and planning processes.

Traditionally NSW Maritime has not encouraged moorings on the Lower Richmond River, however the addition of some moorings is seen as an opportunity to increase the capacity of wet berths easily and relatively cheaply until other berthing options such as a marina can be realised.

Maximising the number of moorings within Mobbs Bay, and restricting ground tackle use (anchoring) is seen as a way of limiting the damage caused by anchors on sea grass beds. Appropriately designed moorings need not drag over the seagrass at all.

Further facilities for travelling yachts between the sailing club and Martin Street Boat Harbour such as for-and-aft pile moorings would also provide needed capacity for travelling boats. A secure dingy mooring area (pontoon) would also be required adjacent to such a site. Vessel sewage pump out facilities could also be located in this area.

During floods debris moves down river this can damage boats and moorings in the river. Fortunately there is ample warning of flooding, and sites such as Mobbs Bay could be used at these times for off stream mooring.

Wardell could utilise fore-and-aft pole moorings along the foreshore Council wished to attract travelling boats to the area.

8. Recommended Strategies and Actions

8.1 Overview

This section provides the framework for the implementation of the recreational boating infrastructure needs identified in this report.

Based on a synthesis of study findings, site assessments and stakeholder input, a number of key sites have been identified in the study area for infrastructure development and / or improvement, to service growth in the regional population base and boating activity over the next 15 years.

Individual recommendations are set out in a prioritised Action Plan at the end of the report. The Action Plan also identifies the primary agencies / groups who should be involved in subsequent decision making activities and implementation of recommended actions.

8.1.1 Action Plan

All recommendations are important, however, organisational and resource constraints mean the Action Plan will need to be implemented over several years. Accordingly, actions have been prioritised so that they can be implemented in a logical and useful progression, over a 15-year period, as follows:

- **Short Term**: to be implemented within 3-4 years.
- **Medium Term**: to be implemented within 5-10 years.
- **Long Term**: to be implemented within 15 years.

Management strategies and actions have been grouped into the following categories:

- Dry Storage
- Wet Storage

8.2 Dry Storage

It has been demonstrated that there is likely to be a 50% increase in the registration of recreational boats in Ballina Shire over the next 10 years.

An increase in the capacity of the boat ramps by 150 movements per day is required to maintain the current level of service and to meet future demands.

8.2.1 Upgrading of Boat Ramps

Through study investigations, it is recommend that four boat ramps be selected for upgrading works in the study area:

- Fishery Creek Canal
- Wardell
- Emigrant Creek

- South Ballina Boatramp

The prioritisation of works at each site should be undertaken by Council, based on further site assessments and costing analysis together, with some assessment of the proportion of usage between Ballina and Wardell (It should be noted that improved facilities will encourage use from other parts of the Shire).

Site 1 - Fishery Creek Canal

Significant expansion of Fishery Creek Canal Ramp is dependant on the acquisition of the adjacent RTA site. This site is highly suitable for a regional standard ramp, which, together with the potential establishment of a marina on the adjacent site, would become a major boating focal point for Ballina and the surrounding district. Figure 7 depicts the recommended concept plan for Fishery Creek Canal development.

With the addition of a second two or three lane ramp and adequate parking this facility could feasibly provide 100 – 150 additional boat movements, subject to land availability.

Being located off the main river, Fishery Creek Canal boat ramp is protected from waves, currents and the wind – these attributes make it the logical choice upgrading.

Fishery Creek Canal Ramp, however, would require addressing access issues onto the highway and visual amenity / local residents issues identified. Increased usage may have an impact on nearby residents. Security of vehicles is an existing issue at this site. Increased lighting, visual surveillance from the bridge and different vegetation may aid the security of parked vehicles.

Action:

1. Investigate further the availability of land at the RTA Depot. This would be in conjunction with current owners and possible marina partners.
2. Prepare a concept design and available capacity assessment.

Site 2 - Wardell

Wardell Boat Ramp is currently constrained by its size and available facilities. Discussions with Council indicate that further land may be available on lots adjacent to the ramp. The upgrading of this facility is recommended on the following grounds:

- It disperses the boating community and provides access further upstream from Ballina.
- It is an under-utilised site at present.
- It provides a great place for water-skiing due to the natural blockage of wind by the reached of the river. Facilities such as floating pontoons or beach access to the water with adjacent parks would enable higher utilisation of this area. This would also reduce the activity and ramp congestion closer to Ballina.
- It provides much needed infrastructure upgrades in Wardell.

It is recommended that a new ramp, formalised car park and the provision of facilities and associated park be considered for this site. Flooding issues for any structures proposed will need to be identified and planned for at this site.

Depending on the timing of works at other regional standard ramps (eg. Fishery Creek Canal), the Wardell Ramp may provide good interim supplementary boat movement capacity until other options are implemented. These options should be further investigated before the capacity of the Wardell ramp is determined. A facility for 100 boats per day could be achieved.

Action:

3. Confirm availability adjacent land for the purpose of extending boat ramp and park area.
4. Determine capacity requirements with relation to other ramp upgrades.
5. Prepare concept designs and layout.

Site 3 - Emigrant Creek

Emigrant Creek Boat Ramp could be improved to double its capacity to around 80 boat movements per day. These upgrades would require:

- the realignment of either the existing ramp or the existing entry point onto the highway;
- upgrading and / or extension of the existing ramp into the creek;
- the extension / formalisation of the car parking areas;
- the possible provision of toilet / facilities; and
- the removal of rocks on the queuing beach.

The proposed upgrades for Emigrant Creek may provide a solution for improving the capacity of Ballina boat ramps.

Action:

6. Investigate options for improve access to the Highway, especially with proposed Pacific Highway upgrades in area.
7. Prepare concept design and layout.

Site 4 - South Ballina Boat Ramp

At present, South Ballina does not have an official boat ramp. As requested, a formal design and submission for DA and subsequent construction is required to ensure that the existing ramp is retained.

Formalising parking within the road reserve and / or caravan park may also be required. It is anticipated that a facility of this nature would provide a capacity of about 10 boats per day.

Action:

8. Confirm results of the ongoing trial arrangements and the requirement with South Ballina residents for an official boat ramp.
9. Prepare concept design, costing and layout.
10. Submit plans for DA in consultation with referral agencies.

8.2.2 Other Dry Storage Options

A marina or marine precinct may provide an ideal venue to install a dry storage operation. This would reduce the demand on existing boat ramp infrastructure. Larger boats can also be dry stored with advantages of shelter, security, decreased maintenance, slippage activity, eco friendly and a reduction of wet berth requirements.

Action:

11. Ensure that any proposed marina development identifies dry storage options

Richmond River Recreational Boating Study

Figure 7
Proposed Fishery Creek Boatramp Upgrade

Boatramp Facilities

Ramp

Park / Open Space

North

Source Information: BSC / GHD.

GHD MANAGEMENT ENGINEERING ENVIRONMENT

g:\22\12006\GIS\Boatramps_design.wor

Richmond River Recreational Boating Study

Figure 8
Wardell Boatramp

Boatramp Design

- Ramp Area
- Parking Area
- Toilet Facilities

North

Source Information: BSC / GHD.

GHD MANAGEMENT ENGINEERING ENVIRONMENT

g:\22\12006\GIS\Short_term.wor

Richmond River Recreational Boating Study

Figure 9
Emigrant Creek Boatramp

Boatramp Design

- Toilet Facilities
- Boat Ramp
- Carpark

North

Source Information: BSC / GHD.

GHD MANAGEMENT ENGINEERING ENVIRONMENT

g:\22\12006\GIS\Figure 9.wor

Richmond River Recreational Boating Study

Figure 10
South Ballina Boatramp

South Ballina Boatramp

- Toilet Facilities
- Ramp Area
- Parking Area

North

Source Information: BSC / GHD

GHD MANAGEMENT ENGINEERING ENVIRONMENT

g:\22\12006\GIS\Long_Term.wor

8.3 Wet Storage

This report has demonstrated a lack of wet storage berths in Ballina. It is evident that current shortfalls are impacting on boat ownership and activity, as follows:

- The nature / type of boats owned of boats owned in the Shire;
- Constraints on tourism potential and patronage from travelling boats; and
- Constraints on job creation opportunities and benefits to the local economic base.

To fully address the shortage of wet storage on the Lower Richmond River is likely to be a long term process. Community, planning, environmental and engineering issues need to be fully assessed.

The recommendations presented in this study have been identified as short, medium and long-range actions. This approach will facilitate the staged consolidation of services and patronage over time, while keeping Ballina "on the map" for travelling boats.

8.3.1 Short Term Action Plan 2005 - 2008

Short-term improvements are targeted at achieving basic facilities to encourage travelling and recreational boats to visit Ballina. These facilities are to be provided at strategic sites along the foreshore, rather than inside a marina development. Longer-term solutions focus on marina provision options.

It is recommended that visiting boating facilities be provided, centred on the river between the Sailing Club and Martin Street Boat Harbour. The upgrades are shown on Figure 11 below, and comprise the following:

- Provide a number of fore and aft pole moorings for short stay along the waters edge between Martin Street and the Sailing Club.
- Provide a secure (locked – security card access) pontoon adjacent to the maritime museum / tourist information office for alighting passengers, loading supplies and refilling water tanks (taps supplied). This facility should be linked with commercial use for loading and unloading passengers (with disabled access), or launching kayaks and canoes.
- Storage of tenders should be permitted on the landward side of the pontoon.
- Provide a toilet block 24-hour security card access, with hot showers and a coin operated laundry and clothes drying facilities located adjacent to the pontoon. Security cards could be available from the tourist information centre. This toilet block could also be used by commercial operators.
- Provide waste reception facilities.
- The Tourist Information Centre could then also be used to provide informative material / brochures on local "boating facilities and services", together with guidance on local conditions and boating rules (eg. appropriate anchoring areas

- etc). This could also provide historical information and provide linkages with upstream communities and historical sites.

The next steps required by Council to facilitate this option are undertake a concept design and costing, prepare a budget for works, obtain relevant development and environmental approvals to then allow construction to commence.

Other short-term actions recommended for implementation are:

- Support NSW Maritime in the planned redevelopment of Martin Street Boat Harbour, with a particular emphasis on the provision of both sewer pump out and refuelling facilities. It is recommended that Council owned assets be utilised to facilitate the development of both these services if possible (eg. utilising the vacant land at the end of Martin Street, or utilising the Museum Site).
- Install swing moorings in Mobbs Bay (provide at least 6-8 more berths) and prohibit anchoring to protect the sea grass community.
- Assign a designated mooring area in Ballina on charts where vessels can utilise on-board ground tackle to anchor, such as south of the Trawler Harbour. Investigate whether permanent swing moorings can also be placed there. Implement a mooring management plan to consider "safe" mooring areas in certain weather conditions.

8.3.2 Medium Term Action Plan 2005 - 2015

The focus of medium term improvements is to establish a new marina at the existing Trawler Harbour / RTA Depot Site. This proposed development concept is illustrated in Figure 12, incorporating a 200-berth marina and boat ramp complex.

The following actions are recommended to support this strategy:

- Facilitate discussions with interested parties on the development of the Trawler Harbour / RTA marina with consideration to the commercial trawling interests.
- Discuss land use options with the Department of Lands to investigate whether residential / commercial land-uses may offset the cost of developing the site.
- Actively encourage and support marine industry to set up in the Smith Drive area.

8.3.3 Long Term Action Plan 2005 – 2020+

The following actions are recommended to support long-range objectives for recreation boating in the study area:

- Investigate the economic feasibility of a large-scale Greenfield marine precinct at an upstream location.
- Commence planning procedures to accommodate industrial, residential and commercial land uses at this site.
- Identify site options.
- Investigate funding opportunities from a range of public and private sector sources.

Photo 16 **Long Term Actions: Marine Precinct Site such as Horizon Shores Marina**

Richmond River Recreational Boating Study

Figure 11
Martin Street Boatharbour Short Term Action Plan

Legend:

- Fore and Aft Moorings
- Boats
- Toilet and Shower Block
- Floating Jetty Structure

North

Source Information: BSC / GHD.

GHD
MANAGEMENT
ENGINEERING
ENVIRONMENT

g:\22\12006\GIS\Figure 11.wor

Richmond River Recreational Boating Study

Figure 12
Trawler Harbour
Medium Term Action Plan

Legend

- Wet Berths
- Boatramps
- Floating Queing Berth
- Boat Ramp Car Park
- Open Space
- Commercial
- Marina Basin
- Car Parking
- Other

North

Source Information: BSC / GHD

GHD MANAGEMENT ENGINEERING ENVIRONMENT

g:\22\12006\GIS\Figure 12.WOR

Richmond River Recreational Boating Study

Figure 13
Greenfield Site
Long Term Action Plan

Legend:

- Pontoons
- Park / residential area
- New Marina basin
- Insustrial use
- Commercial use
- Hardstand

North

Source Information BSC / GHD

GHD
MANAGEMENT
ENGINEERING
ENVIRONMENT

g:\22\12006\GIS\Figure 13.wor

8.4 Costing

Preliminary costing for the strategies recommended in this report have been prepared based on square metre rates obtained from Rawlinsons (2000). These "order of magnitude" estimates have been developed solely for the purpose of comparing and evaluating options. They are sufficiently accurate to serve this purpose. They cannot be used for budget-setting purposes because, while allowances for common elements have been made they may or may not include all the works required under this project. A functional design is recommended if a budget estimate is required.

A summary of the preliminary cost estimates and contingencies is presented in Table 25 and Table 26 below. Further details of the preliminary costing estimates are presented in Appendix C.

Table 25 Preliminary Costing for Boatramp Development

Option	Preliminary Cost Estimate
Fishery Creek Canal	$1,750,000
Wardell Boatramp	$400,000
Emigrant Creek Boatramp	$350,000
South Ballina Boatramp	$42,000

Table 26 Preliminary Costing for Marina Development

Option	Preliminary Cost Estimate
Short Term -Martin Street	$0.4M
Medium Term – Trawler Harbour	$33.5M
Long Term - Greenfield Development	$104M

8.5 Action Plan Summary

A summary of key actions is presented in Table 27 below. This prioritises and provides responsibilities for implementation of each action:

Table 27 Action Plan Summary

Infrastructure	Priority	Lead Agencies	Action
Boat Ramps	Short	BSC Dept of Lands DIPNR NSW Waterways	◗ Prioritise implementation of the four proposed ramps ◗ Review land, environmental and planning requirements ◗ Prepare concept design and costing ◗ Identify government funding opportunities.
Dry Storage	Medium - Long	BSC	◗ Integrate dry storage into marina / marine precinct proposals.
Basic Mooring Facilities – Martin Street	Short	BSC Dept of Lands	◗ Organise a meeting with NSW Waterways to integrate plans for Martin Street boat harbour with short-term goals set out in this report ◗ Review land, environmental and planning requirements ◗ Prepare concept design and costing ◗ Identify government funding opportunities.
Trawler Harbour Development	Medium	BSC Dept of Lands DIPNR Private partnerships	◗ Develop discussions with RTA about possible relocation requirements of existing depot. ◗ Investigate ways to encourage site development – Review land, environmental, services and planning requirements. ◗ Prepare concept design and costing ◗ Identify funding / marketing opportunities and potential partnerships
Greenfield Marine Precinct Development	Long	BSC Dept of Lands DIPNR Private partnerships	◗ Investigate ways to encourage site development – Review land, environmental, services and planning requirements. Initiate planning changes to facilitate future development opportunities. Integrate into DCP. ◗ Prepare concept design and costing. ◗ Identify funding / marketing opportunities and potential partnerships

9. References

L Coltheart, C James, 1987. *Dates of Construction of Breakwaters and Training Walls By the Public Works Department of New South Wales 1856 – 1986.* NSW Public Works Department

Webb, McKeown & Associates Pty Ltd, 1993. *Lower Richmond River – North Coast Estuaries Sedimentological Studies.* NSW Public Works.

A Lucas, 2002. *Cruising NSW Coast*

DLWC, 2004. http://www.dlwc.nsw.gov.au/care/water/estuaries/Inventory/richmond.html (Accessed December 2004).

BOM, 1972. *Climatic Survey Richmond – Tweed. Region 1 - New South Wales.* Bureau of Meteorology, Department of the Interior.

BOM 2004, http://www.bom.gov.au (Accessed December 2004)

DLWC 1976, *Boat Launching Ramp Guidelines.* Department of Land and Water Conservation

Australian Standards 3962- 2001. *Guidelines for design of marinas.* Standards Australia.

Rawlinsons, 2000. *Australian Construction Handbook.* Eighteenth edition. Rawlhouse publishing.

Australian Sports Commission, 2003. *PARTICIPATION IN EXERCISE, RECREATION AND SPORT SURVEY*
(ERASS)

Department of Public Works NSW, 1976. *Boat Launching Ramp Guidelines*

BIA 2003 Vessel Registration Statistics for NSW

Lois Kelly – LCC, 2004

DIPNR, 2004, *Estuary Management Plan*

The Australian Sports Commission, *Exercise, Recreation and Sport Survey (ERASS)*, 2003

BIA 2003

Appendix A

Written Submissions

Richmond River Boating Study

Customer Feedback Form

Date: 09/11/04 Time: .....

Name: KEVIN & CROUCH

Nature of Feedback (full details to be supplied)

- MUD MAPS FOR RIVER
- MARINA – (A) EASY ACCESS
  (B) REASONABLE O/NIGHT FEES
  (C) TIDE CHANNEL @ LEAST 3 MTRS
- BETTER SIGNAGE
- "WHATS IN BALLINA" MAP OF ON A MONTHLY BASIS
- EVENT INFO "SHOW BAG"

Feedback Received By: .....

Feedback Referred To: .....

Signature of Reporting Officer: ..... Date: .....

ballina
visitor
information
centre

corner of river street
& las balsas plaza
po box 28 ballina
new australia 2478

tel: 02 6686 3484
fax: 02 6686 0136

email:
ballinfo@balshire.c

To Fax 6681 6277

Pg 1 of 2

Richmond River Sailing & Rowing Club Inc

James Foster
Environmental Engineer
GHD Pty Ltd
2/90 Tamar St
Ballina NSW 2478

December 10, 2004

Dear James,

As discussed the club would like to submit comment relating to the Recreational boating study.

I have discussed the matter with a number of members and the committee and some initial thoughts are below:-

As mentioned previously the RRSC has recently expanded to include rowing and will shortly be renamed the Richmond River Sailing & Rowing Club inc. The rowing committee has recently applied for a grant to allow extension of the club on the Eastern side (almost to the car park) to allow storage of rowing boats.

The club runs about 18 sailing race days per year including at least one annual regatta, the rowing section is just starting up and probably won't start holding events until later next year although they do row every Sunday and it is proving popular.

Members have commented on the future use of the car park area and we would be interested in being involved in future planning of this area along with the use of the ramp. The way the ramp is at the moment definitely limits its use but also probably brings its use in line with the capacity of the car park and it's heavy use of sailing days. They have also commented on the need for landscaping in the area of the car park and the club.

On the western side the pool fence and palms (cocas I think and if so weeds) block vision from the clubhouse including the tower of the upstream direction. The pool fence is some distance from the pool and blocks any view of the river from the pool area itself. If the fence were moved parallel to the pool and closer it would probably allow better use of the riverfront in that area.

Concerning the Martin Street harbour we thought expanding this area to be a good idea and it may allow berthing of more trailer sailor type yachts which race at our club. Another ramp in this area may be a useful alternative to the one at the sailing club.

As indicated above the club is most interested in being involved in the study and there are no doubt other ideas for the future use of this area that will be suggested.

Yours sincerely

Graeme Fleming
0414281699 b/h
Commodore

Norman Rogers
<rogbal@nor.com.au>
06/12/2004 01:22 PM

To james_foster@ghd.com.au
cc
bcc
Subject Recreational boating study

I am a life member of the now virtually defunct Ballina Cruising Yacht Club which was formed in 1982.

The club was located adjacent to the Burns Point Ferry on the site occupied by the Ballina Quays Marina - a private marina. The Yacht Club was obliged to vacate the clubhouse when the marina was sold.

Including vessels moored at the floating pontoons and those 'on the hard' for storage or careening etc. there were up to eighty or so craft on site at various times.

The floating pontoons were not protected by an outer wall and were therefore subject to extensive damage during cyclonic weather and when the river carried much debris following flooding upriver.

Yachts moored at the pontoons were also subject to damage when a swell was accompanied by large waves during strong southerly winds - sometimes adjacent yachts would interlock masts and rigging.

Excepting at slack tides and in light winds berthing was not always easy.

Management did not enthusiastically promote the marina which was allowed to deteriorate and when the land immediately adjacent to the marina was subdivided for housing trailable yachts stored in the compound with masts erected were denied access to the nearby protected launching ramps in the canal.

The Marina provided diesel, regular, and outboard petrol and incorporated a chandlery and workshop with a mechanic.

There was sufficient riverside space to double the pontoon area.

The general feeling in the club was that a well run much larger marina with added weather protection would have been attracted patronage from district boat owners who were preferring berths at Yamba or Southport.

There was also a conviction that a sophisticated complex would attract mariners who sail the east coast and need a 'stop over' anchorage for R & R, fuel, and provisions. Ballina is a comfortable sailing distance from Southport and could attract pleasure cruisers and yachts wishing to spend a long weekend or so away from home waters.

It would seem that such a complex would need accommodation for at least 100 vessels of various sizes with a potential for double that number in the future.

There are two limiting factors to the success of a large marina.

If located reasonably close to the township it would need to be sited on the northern bank and therefore subject to the prevailing southerly winds

and bad weather. This would mean adequate sheltered protection by a walled perimeter.

The other problem is more serious in that it determines the availability of access to the 'Port of Ballina'. I refer to the bar at the entrance to the Richmond River.

To attract tourists and encourage mariners to berth their boats at Ballina we need to be able to ensure them safe entry and exit from 'the Port' at any and all times with sensible exceptions. Yachting parties intent on putting to sea for a journey to Byron Bay, for example, should not be constricted by the tide times or conditions 'at the bar' - as at present. People visiting from Southport etc need to know that they can enter the river at the time they choose to arrive and have a similar assurance about leaving on the return trip.

A solution, advance by Evans Paddon of Evans Head, is for the south wall to be extended in a curve to the north so that vessels enter the river from the north parallel to the shoreline. He maintains the south to north inshore counter current and the outgoing tides would ensure that the river mouth was bar free and the river accessible in almost all weather conditions and at any condition of the tide.

An hydraulic study would test the validity of this theory. The local Southern Cross University has advised me that they do not have such a capability at present. I believe an enthusiastic body should be formed to pursue this matter and, if the tests proved successful, promote the project with the necessary authorities. I understand this could be a stumbling block as a number of entities have some control over the river.

Not the least deterrent would be the 'political' cost as other east coast river communities are likely to then become interested in this solution for their river.

A 'flat bottomed' naval vessel was recently obliged to over stay its visit to Ballina for several days because of the bar conditions! Virtually every year we have vessels founder or capsize at the bar, sometimes with loss of life.

It would seem that recreational boating and the bar are, to a large extent, inseparable quite apart from the need of an adequate marina complex.

Like many others I was obliged to sell my boat when the marina closed.

Norman Rogers.

Norman Rogers
<rogbal@nor.com.au>
07/12/2004 12:52 PM

To james_foster@ghd.com.au
cc
bcc
Subject Recreational boating study

Added thoughts following the meeting.

Yacht Club.

An adequate marina would likely be the site for a resurrected Yacht Club. Two types of racing activity should be catered for:

a) open water (eg. turning mark Julian Rocks). We had several vessels of 16 metres in the club.

b) enclosed water - a return to river racing by trailable yachts and shallow draft keel boats.

The former require wet berths whilst most of the latter will require dry berths where boats can be stored with masts stepped and thereby need easy access to a ramp, preferably within the complex. Those members who would trail their boats 'home' after racing would require adequate parking in the vicinity of the club.

Fouling of hulls is rapid in the river.

Ramps.

My launching experience is with a 24' fibreglass trailer-sailer (at various times we had about twenty of these craft in the BCYC).

Launching or recovering from a lee shore in swiftly flowing currents is not easy exercise especially when there is not a nearby sandy beach (as is the case at Faulks Park & the disused ferry ramp).

The 'beach' near the relatively protected ramp in Fishery Creek is not immediately adjacent, is narrow, and was littered with rocks meaning that only one or two boats could beach without damage ie when not already occupied by 'tinnies'. Vandals are active in this location during the week.

The ramp at Brunswick St (Riverview Park) is well used (I live beside it) especially by visitors. Small trailable yachts are launched. Whilst it has the advantage of sandy beaches on either side of the ramp these are rendered hazardous to use because of the oyster rocks covering the surface. Council was in the habit of periodically adding sand to overcome this problem but ceased doing so several years ago. The nearby park facilities are very popular for family picnics, games and fishing from the wall.

It is also used by ski boats, jetskis, & canoeists. Parking can become confused during times of heavy usage. The vehicle access to the park is frequently blocked by parked cars and trailers.

Consideration could be given to confining jetskis and ski boats

to the
smooth water area on the southern side of the port channel marker.
The ramp rapidly becomes slippery and there is a sudden drop off at low
tides. It is therefore not preferred in adverse conditions.

It should not be forgotten that Ballina owes its existence to being a
significant port. Fawcett Park waterfront was one long large wharf less
than 50 years ago. Small coastal freighters sailed up to the Broadwater
mill and Lismore. Vessels from the South Pacific were refitted at the yards.
The sight of masts should be synonymous with the Port of Ballina. That
they be visible at more than one location would fit this image.
There has been a gradual downgrading of the significance of the river
since. A surprising number of residents and visitors are not aware of the
river. Visiting yachts and yacht owners have been regarded as
'silvertails' and therefore not meriting the spending of rate revenue on
necessary facilities.

Norman Rogers

Richmond River Recreational Boating Study

Ballina Cruising Yacht Club Inc.
C/- 2/72-74 Fenwick Drive
Ballina
NSW 2478
5th December, 2004

James Foster
Environmental Engineer
GHD Pty Ltd
2/90 Tamar St
Ballina
NSW 2478

Dear Sir,

The Ballina Cruising Yacht Club has a twenty year history of sailing on the Richmond River. However the removal of the Ballina Quays Marina and associated facilities once home to this club have seen the yachts sold or moved to other marinas and only a few trailer sailers still sail with the Richmond River Sailing Club and experience great difficulty launching and retrieving with extreme difficulty mostly and sometimes impossible. Facilities for larger boats are totally inadequate – both for locally owned boats and visiting boats.

Navigable Depths

Since Ballina lost its official port status back in the seventies, dredging ceased and now sandbars and silting have reduced depths creating problems – i.e. at the bar, between the RRSC and Mobbs Bay and particularly the channel in Emigrant Creek which is impassable at low tide for keel boats to access the facilities there. In Mobbs Bay now there is only a very small area where visiting yachts have adequate depth to moor.

Existing infrastructure for launching larger trailer sailers and power boats.

Boat Ramps at Faulks Park and Fisheries Creek have been used regularly but with some problems which could be overcome with relatively inexpensive and simple modifications.

Faulks Park Ramp

- Good parking
- Good toilets
- Relatively safe to leave cars.
- Good slope on ramp.
- Could be much wider – only takes two boats at once.
- **Risky approach** with strong cross currents and dangerous rocks each side.
- Shallow entry at low tide with a **hump of mud** that catches rudders, keels & motors.

- **Lack of a jetty** to tie up to for loading passengers or gear.(a floating dock parallel to shore would be nice – Yamba has one in the canals area and Grafton also has one)
- Rock walls of ramp **need vertical fenders** (polyurethane) to prevent boats being damaged against the rock.
- No means of tying a boat to hold it securely whilst fetching the tow vehicle & trailer – **some cleats at the top or rings on the vertical face** of the rock walls would be good to attach ropes to.
- **Debris accumulates** on the ramp after floods and needs to be removed.

Fisheries Creek Ramp.

- Good size parking area.
- **No toilets**
- **Not safe to leave cars – our members have had too much damage to vehicles and theft from vehicles is a deterring factor from using this ramp.**
- Inadequate lighting at night.
- Tree growing over the ramp has broken a mast causing over $1500 damage.
- **Needs a safe holding area** – a jetty parallel along the bank for boats to tie up while waiting to use the ramp which can be busy – the current one is good but more is needed and on the approach side of the ramp, not past it. .
- The area **adjacent the ramp is rocky** and damages the hull if a boat is beached to allow people to alight. We have asked for sand to be dumped or rocks removed but to no avail.
- No means of tying a boat to hold it securely whilst fetching the tow vehicle & trailer – **some cleats at the top or rings on the vertical face** of the rock walls would be good to attach ropes to.
- Rock walls of ramp **need vertical fenders** (polyurethane) to prevent boats being damaged against the rock.
- Only takes two boats at a time – could be widened.
- Boaters using the ramp often have **conflict situations with people fishing** from the rock wall as boats come in. There are plenty of areas to fish away from boat ramps.
- Swimmers, usually youths put themselves at risk by swimming around the boats and even climb on them to dive off against the wishes of the boaters. There are no signs about this danger.
- Depth of water in Fisheries creek is too little at low tide for rudders of trailer sailers.

The ramp adjacent the Richmond River Sailing Club

- Only suitable for lightweight boats
- Off the beach sailing dinghies are fine.
- The sand covers the ramp and constant dredging would be required to keep the concrete ramp uncovered.
- The dynamics of the nearby sandbar prevent major improvements here but it would be good to have a channel to the ramp maintained as vehicles often get bogged whilst retrieving boats on trailers.

- We do launch some lighter trailer sailers here when tide and sand allow but it is risky and at times a daisy chain of 4 wheel drives is needed to get them out.

Indicators of a good ramp

- **Still water** away from strong currents – in Ballina this means digging a small basin well in from the edge of the river.
- **Access to deep water**
- **Wide ramps** to take 3 or 4 boats at once.
- **Free from sand and mud.**
- Pontoons alongside or sandy beaching areas.
- Illuminated and signed for boats returning after dark.
- Have good facilities for flushing motors and wash down of boats.
- Good refuse disposal.
- Good fish cleaning facilities and disposal.
- Separated from fishing and swimming areas.
- Cleats for tying boats to pontoons or walls.
- **Safe parking** for boat & tow vehicle combinations.
- **No overhead wires or tree branches to foul masts.**
- Lighting and good visibility.
- Preferably with some **associated boating businesses alongside** – eg bait & fishing shop, boat hire, chandlery, café, **fuel supplies**.
- Close to town –part of tourist development.

Possible Marina Sites and expected infrastructure

- When the Ballina Quays Marina closed our club investigated several sites along the northern bank of the river close to town.
- Most successful marinas are located close to the CBD and become an integral part of the culture of the community with associated marine services as well as leisure and entertainment facilities nearby.
- **Bellingham Marine Australia** – is a major marina construction company and could well be consulted about issues of marina development – 22 Sinnamon Rd, Seventeen Mile Rocks, Queensland, 4073 Telephone 1800 655 539

- **Suitable Crown land exists adjacent to the current trawler harbour** which could be expanded or a pleasure boat harbour constructed alongside with **room for a marine services complex**. This is reclaimed land and as such any development would not be destroying a natural ecosystem of importance. Also the Dept of Transport depot could possibly be relocated to allow further expansion of Fisheries Creek for inclusion in a larger development.
- **Fuel facilities** already exist here for diesel and other fuels could be added perhaps in a **lock type structure** so that when boats are refuelling they are in a contained area

whereby accidental spills can be contained and removed without spreading into the general waterway.

- **The small Waterways harbour on Martin St is a shambles of unsafe and unsightly jetties** which has room for expansion as it is surrounded by Crown land and it probably currently does not meet guidelines for existing marinas. It could be modernised, deepened and provide a pick up and set down place for recreational boaters to access the CBD as well as facilities for institutional boats (police, coast guard, surf rescue) as it does now.
- **Tour boat operators also need a permanent dock to operate from.**

The Fawcett Street Wharf and pontoon.

- **Whilst this is a commendable development for large ocean going vessels to use and very popular for fishing it offers little for the recreational boater as it is far too high and the floating pontoon is good but far too short.**
- **Conflict exists between people fishing and boaters trying to dock and secure mooring lines as there are no signs indicating who has priority.**
- **Ballina could benefit from a lot more floating pontoons and boardwalks along the riverside.**

Facilities needed for larger power boats and yachts urgently

- **Refuelling facilities**
- **Sewage pumpout facilities.**
- **Public mooring buoys.**
- **More channel markers – especially on the training wall and the sand bars out from Missingham Bridge.**
- **A marina with haul out facilities and repair workshops.**

Yours faithfully,
Kerry Benson
Commodore
Ballina Cruising Yacht Club.

We've travelled the NSW coast – visiting every estuary between borders. Ballina has to rate as the most decrepid, with the least facilities for recreational boaters and fishers of any estuary we have seen, including coastal villages smaller than Wardell.

NORTH CREEK

Whilst generally used very lightly, and mostly by locals who know what they're doing, North Creek contains important habitat for Migratory Waders, which are generally protected the international treaty.

The sea-grass areas of North Creek are also utilised by juvenile Green turtles which are classified as a vulnerable species.

Migratory waders travel 11,000 km from the Arctic – arriving in September/October and departing in March/April May, depending on the species.

They feed on invertebrates in the intertidal zone, feeding for 8 hrs then resting for 4 hrs.

Their ability to recover from their long flight when they arrive depends on how much rest they can get, as does their ability to successfully moult and build up enough body fat for the journey back to the Arctic.

Bird-watching tourism is growing, along with other eco tourism, as seen by the many eco-tourist operations emerging in the past decade. Bird watchers are generally fairly affluent people, enjoying retirement or semi-retirement.

The North Creek sand flats are extremely important habitat for the migratory waders, for both resting and feeding – and are currently subject to constant disturbance by dogs.

We recommend that:

- jet skis be excluded from North Creek; and
- interpretave signage be established to help people understand the importance of keeping dogs under control.

RICHMOND RIVER

Insomuch as **Mobbs Bay** supports sea-grasses – an especially vulnerable habitat, and feeding ground for marine turtles, we recommend that all of Mobbs Bay be a 4 knot zone.

FISHERY CREEK – cleaning fish attracts birds, which are entangled if people are there fishing.

No fishing allowed from the boat ramp and adjacent feeding table and beach.

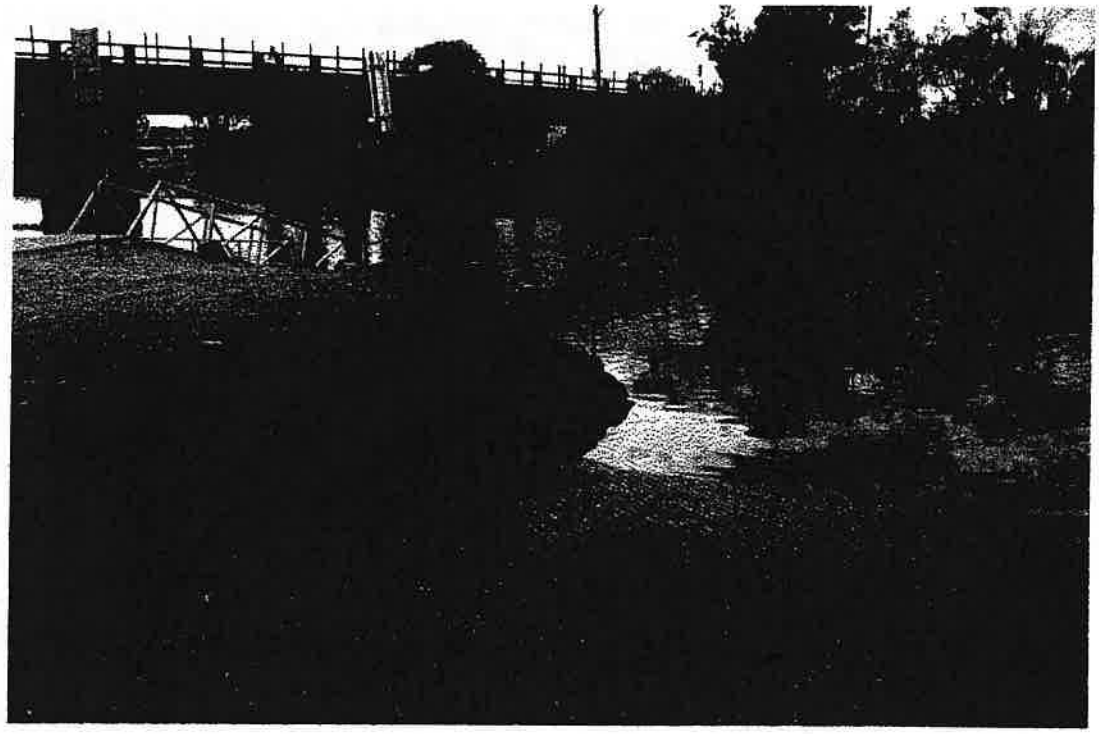
In conclusion, if nothing else, we urge the relevant management authorities to ensure that every boat ramp has adequate garbage disposal facilities.

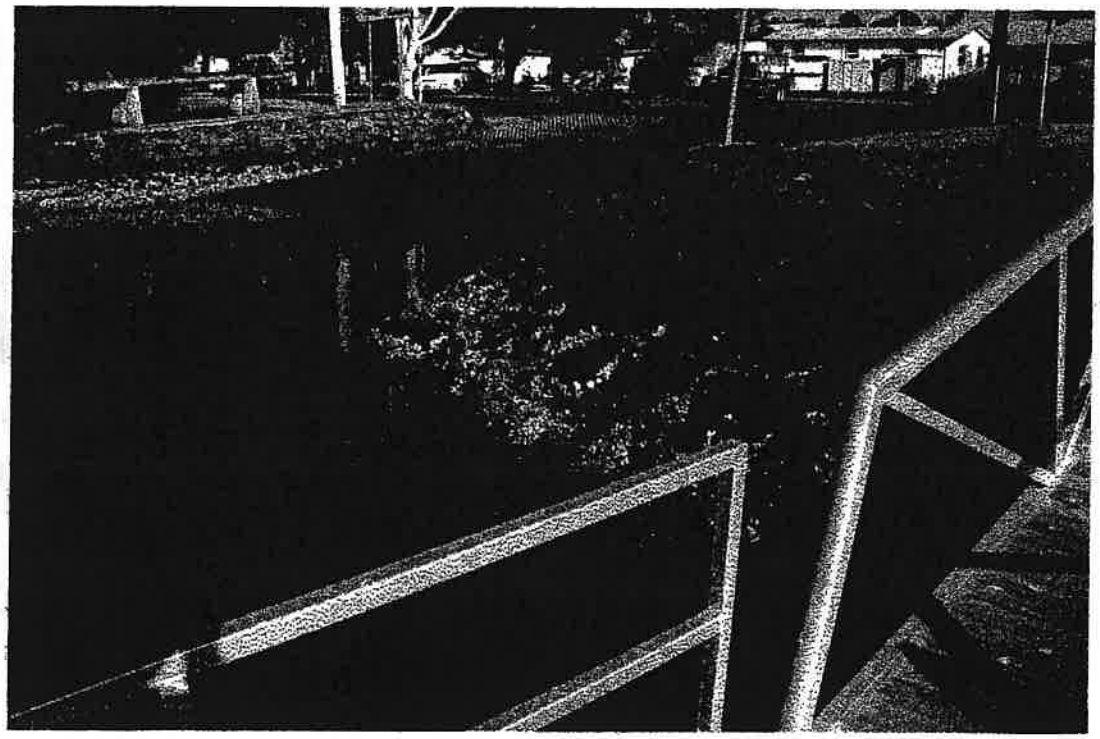
Fisheries Creek Ramp Area Upgrades

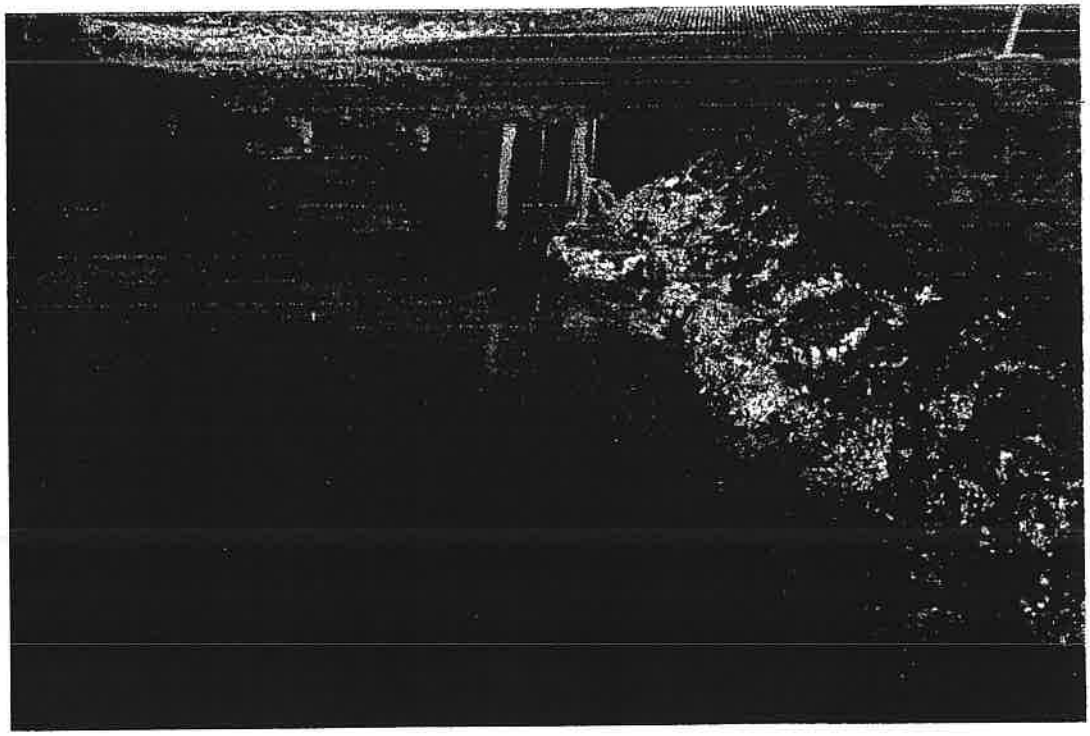
1. Install toilet facilities.
2. Improve the water pressure at the cleaning table and tap.
3. Extend the boat ramp by 1 – 1.5 metres.
4. Add a pontoon to the South side of the ramp, with access from the ramp.
5. Relocate the pontoon on the North side of the ramp such that there is access to it directly from the ramp (while holding a line attached to a boat) and room for a boat on the north side of the pontoon.
6. Improve the overhead lighting in the car park area and over the cleaning table.
7. Provide a 5 - 10 minute parking area with a tap for motor flushing.
8. Regarding the "Backing Bay" we are finding that some patrons are parking there, (arguably) not realising that it is a "No Parking" area. The result of this creates some considerable difficulty for other patrons who need this lane to reverse their trailers back to the ramp. To address this we would suggest:

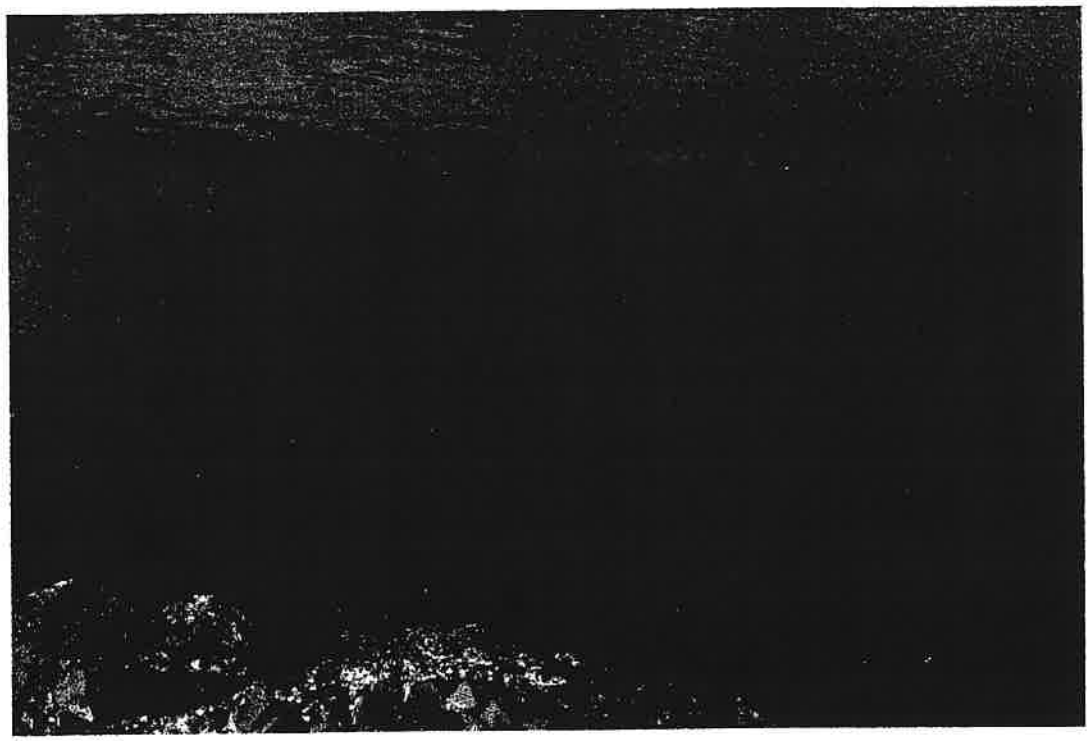
    a. Re-painting "No Parking" on the road in front of the backing bay.
    b. Install a larger "No Parking At Any Time" sign at the front of the backing bay.
    c. Trim back the tree growth over the "No Parking" signs.
    d. Install parking barriers on either side of the backing bay so patrons cannot park across that area.

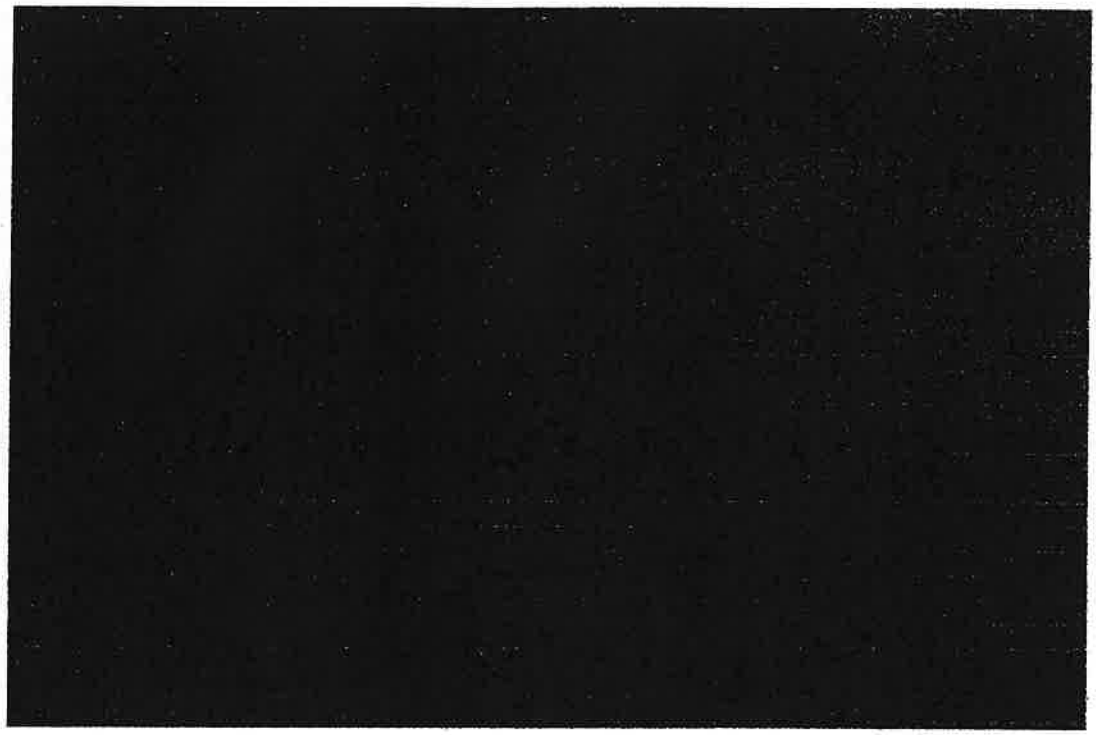
9. Install a covered cleaning table.

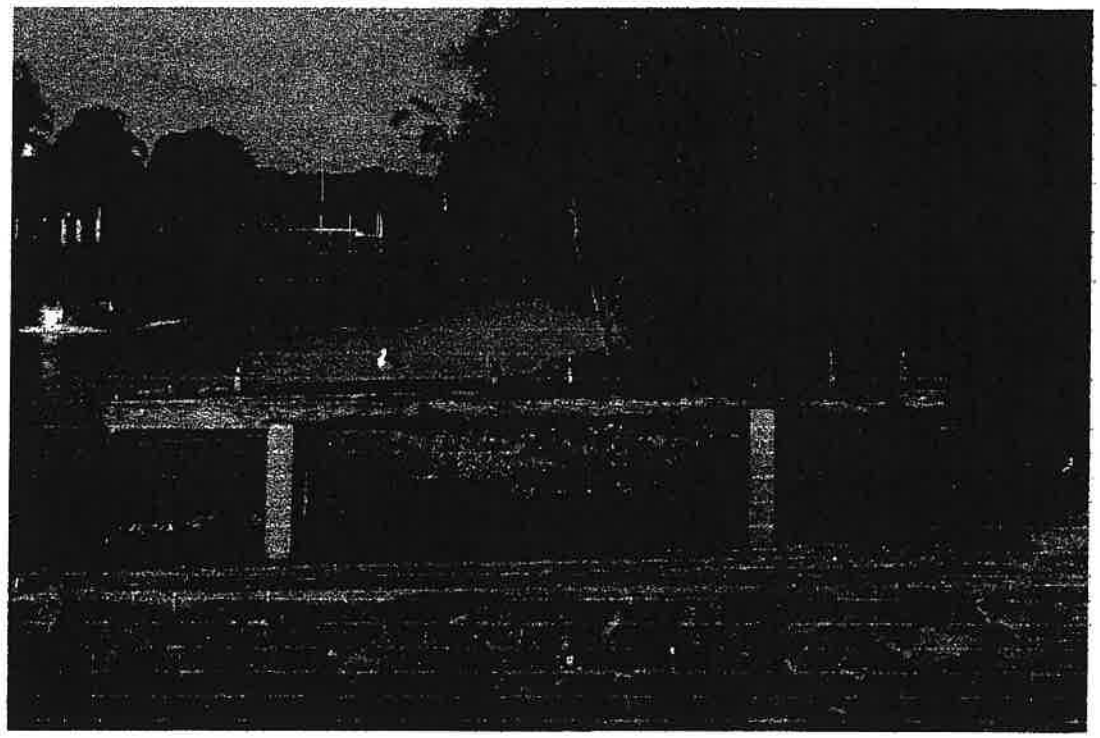


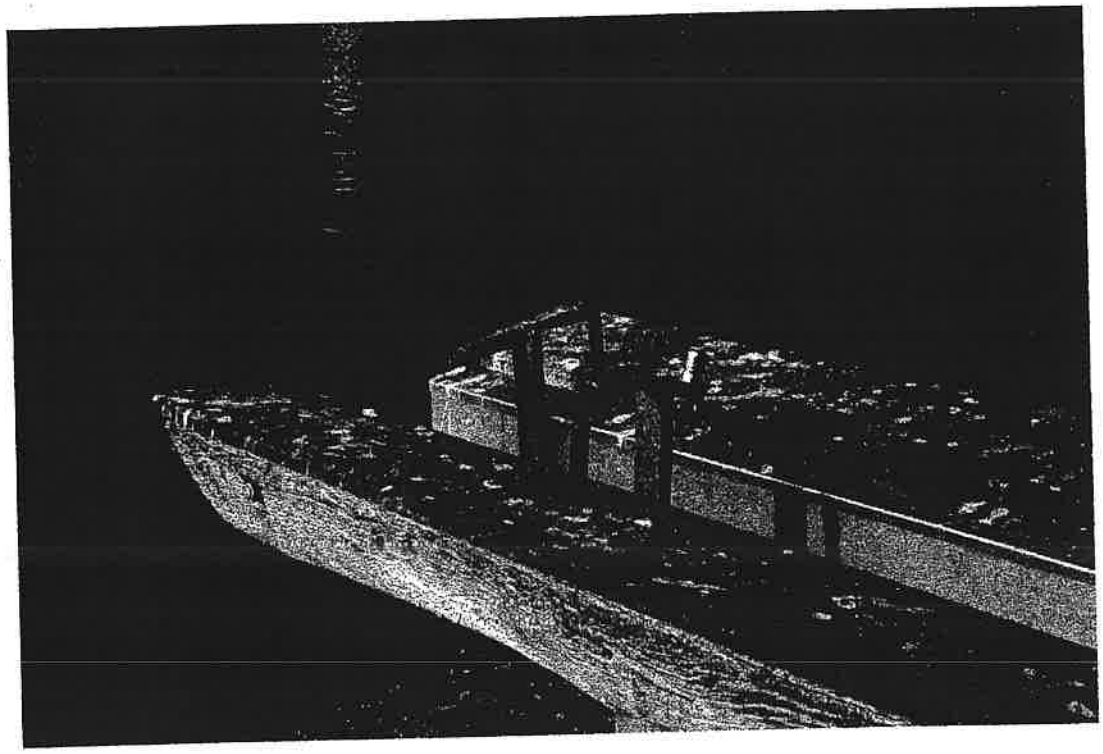












Record of Phone Contacts:

Name:	Mal Turner
Organisation	Private
Key Interest	Having Boat Built at Gold Coast.
Contact Number	66874532 0427 102168.
Email	
Postal Address	Lennox Hd. PO Box 528 Lennox 2478.
Boat Owner	
Boat Type / size	38' Catamaran. lightware
Comments	CYC - like to see Marina Built.

Name:	lee Pender
Organisation	Ballina Ocean Tours.
Key Interest	Increasing tourism Potential
Contact Number	
Email	
Postal Address	
Boat Owner	4.
Boat Type / size	2x tour vessel.
Comments	. Council seen to block tourism Potential . tourist information Centre won't sell tickets. . lack of infastructure warfs etc.

Record of Phone Contacts:

Name:	David Roweta
Organisation	Sand Piper Environmental
Key Interest	Water Birds
Contact Number	66288223
Email	
Postal Address	
Boat Owner	
Boat Type / size	
Comments	Potential impacts of Water birds, boat activities as well as walking, jogging, 4x4's.
	→ Estuary POM should incorporate Ecological Impacts

Name:	Wade Kent.
Organisation	Retailer. — Ballina Recreation Mart.
Key Interest	Sells recreational watercraft kayaks etc.
Contact Number	02 6 975875.
Email	
Postal Address	
Boat Owner	No
Boat Type / size	
Comments	Interested in commercial Opportunities in Marina.

Record of Phone Contacts:

Name:	Norman Rogers
Organisation	Life member of yacht club.
Key Interest	
Contact Number	
Email	
Postal Address	
Boat Owner	
Boat Type / size	
Comments	

Name:	ken Downes.
Organisation	Individual
Key Interest	
Contact Number	66878112.
Email	
Postal Address	Ballina / Lennox.
Boat Owner	Would build Houseboat if facility Existed
Boat Type / size	
Comments	Mobile Home Dump Site.

Splash Safari

Record of Phone Contacts:

Name:	Sue.
Organisation	Ballina Adventure Kayaks.
Key Interest	Kayaks.
Contact Number	
Email	
Postal Address	
Boat Owner	
Boat Type / size	
Comments	Sailing Club launch ~~BSC~~ Julian Pratten $5.50 ↑ $2000 BSC. Tourist information Sppotre.

Name:	Shane Watters
Organisation	Byron Gatee Protection Co-ordin.
Key Interest	Earthmovers Pty Ltd.
Contact Number	66845571. 0407160306.
Email	
Postal Address	
Boat Owner	
Boat Type / size	
Comments	Underutilisation; possibly wrong used Identifying + preserving ecological sens. area . wake damage – more boats.

1st December 2004

GHD Pty Ltd
P.O.Box 372
Ballina NSW 2478

Dear Sir,

Re : Richmond River Boating

Further to the article in the *Advocate* on 1/12/04, I would like to make the following points in regard a marina.

- A marina would be a huge financial benefit for Ballina. Like a caravan park on water, it would bring people and their money to town.
- A marina, if constructed and located tastefully, can create a local ambiance that promotes leisure and lifestyle benefits for the public. For example, people walking along the boardwalks, kids fishing, couples tossing a frisby, or families having a picnic
- A marina can become a promotional tool for Ballina's tourism industry, being a backdrop for advertising, photo shoots, TV interviews etc.
- A marina can enhance the image of its near vicinity, promoting foot traffic, and attracting business such as restaurants and coffie shops.
- A marina can increase the value of real estate in its close proximity.

The benefits of a marina are numerous. We must have one. However, a marina often is associated with several light industries. These are, ship building and repair, fueling, waste disposal, ships chandleries and such. These light industries should not be located at or near any CBD located marina. Ballina is fortunate that such industries are already located at Smith Drive , West Ballina, and need not be duplicated at the new marina site.

The location of the marina will be a contentious issue. As an owner of a 35ft yacht, I can guarantee that anywhere is better than nothing, however the following might be worth consideration;

- In Shaws Bay. Open the breakwall, construct an opening footbridge across the breakwall opening and develop some of the foreshore.
- In the triangle between Messingham Bridge, the (now demolished) kiosk, and the western end on the North breakwall. This location would require a new breakwall extending from the bridge to the North Wall.
- At the sandspit east of the sailing club. A breakwall would need to be constructed.
- Extend the existing trawler bay to the north and west

- In Mobs Bay. This option would need to be accompanied by a displacement ferry/tourist boat service.

Some things to consider, apart from the mountain of greenie objections;

- Boaties will spend more money if the marina is located with access to the CBD.
- The marina cannot tolerate residual sea swell
- The marina is best located in an area with no current
- The marina must not be exposed to passing flood debris
- The marina site must be able to be made secured
- The marina is best located away from normal river traffic, e.g. trawlers, as their wake damages moored boats.

I would like to see Baling Council adopt the best solution available. In doing so, finances may become an obstacle. If this occurs, the Council should consider supplementing their finances by selling a proportion of available berths to the public. This would not only help finance the project, but Council could create an ongoing income stream by retaining management and letting rights of the privately owned berths.

Good luck with your task.

Regards,

Tom Newton
7 Killarney Crescent
Skinners Head
NSW 2478

General Manager
Ballina Shire Council
Traffic

Dear Sir/ Madam

How are you?

I am writing in again to express my concerns on speeding traffic in Moon St, Ballina, particularly the section between Crane St and Tamar St.

Living at 24 Moon St I observe every day near misses for parking cars and pedestrians as speeding vehicles (some up to 80 km/hr) particularly coming out of the Tamar St roundabout . Speaking to some of the local residents I have been told of numerous accidents over the years and yesterday I had to observe 3 kids under ten having to run hard across Moon St to avoid a speeding bus coming out of Tamar St travelling at least 60 km/hr going north.

Elderly slow people have the same problem of having to cross a wide street in a hurry.

Compounded with this is a congested area where there are up to 30 cars parked or being parked.

I know there is talk of parking changes but at the very least could the council at least drop the speed down to 40 km between Crane and Tamar street before some child gets killed. Police can only be there to enforce the current 50km speed limit a fraction of the time and something needs to be done now.

As an afterthought, with Moon St being so open (and with little cause for speeding motorist to suspect speed cameras) maybe the planting of trees along the street would give Moon St the look of a suburban road instead of a freeway, if that makes any sense. It would also be an attractive gateway entry in to Ballina CBD for tourists entering from Byron Bay area.

Best Wishes
Wayne Lewin
24 Moon St
Ballina
Ph 66813769

PS On a different subject could council discuss one day the implementation of no go areas for speed craft such as speed boats and jet skis on the Richmond River. At the moment it is bedlam out there for small fishing craft and people swimming or canoeing.

NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Now incorporating NSW Fisheries
ABN 51 734 124 190-002

Mr James Foster
GHD
PO Box 372
BALLINA NSW 2478

30 November 2004

Dear Mr Foster

Re: Lower Richmond River Recreational Boating Study

Thank you for your letter of 19 November 2004 inviting DPI Fisheries to attend the community meeting to be held in Ballina on 6 December. Unfortunately I am unable to attend.

DPI Fisheries is responsible for managing fish (including aquatic invertebrates), and fish habitat throughout NSW. The Department's goals encompass protecting wetlands, mangroves and seagrasses, and promoting rehabilitation of degraded aquatic environments. This includes protecting rare and threatened species and maintaining aquatic biodiversity. DPI Fisheries also aims to provide quality recreational and sustainable and viable commercial fishing opportunities.

Cognisant of this charter DPI Fisheries would anticipate an opportunity to discuss with GHD aspects of the plan. Specifically fish habitat areas within the Richmond and North Creek such as seagrass, mangrove and saltmarsh areas that can be vulnerable to the impacts of boating, or more directly establishment of inappropriate siting of infrastructure.

I encourage you to contact me on (02) 6686 2018.

Yours sincerely

Patrick Dwyer
Conservation Manager (Far North Coast and Border Rivers)

John Bath & Associates
ABN 64 009 457 116
72 Burnet Street (PO Box 478) Ballina NSW 2478
Tel: (02) 66863129 Fax: (02) 66860150

Accredited Building Designers, Planning & Co-ordination Services

25 November 2004

David Kitson
Ballina Shire Council
Cherry Street
Ballina NSW 2478

Dear David

RE: MARINA PROPOSAL

In March last year when the marina finally closed I proposed a new site for a marina, using the RTA land alongside the trawler harbour. The idea received positive acknowledgment from the boating community after the *Northern Star* featured the story in their pages on 27.3.03. (Refer Attached).

As the council is now considering the feasibility of a new location for a marina, I trust you might include this material.

Background
I was a partner temporarily in the Marine business at the Ballina Quays Marina when it opened but moved the business back into Fawcett Street because it was too far from town. The Marina subsequently failed for a number of reasons and is now removed.

I think I am well qualified to say the old site was unsuitable for both small and large craft.

Waves, tide and wind action killed the location and the timing was also premature. There are more potential boat users now, visitors, local owners and, as the town grows, there will be a better environment in future for a successful marina.

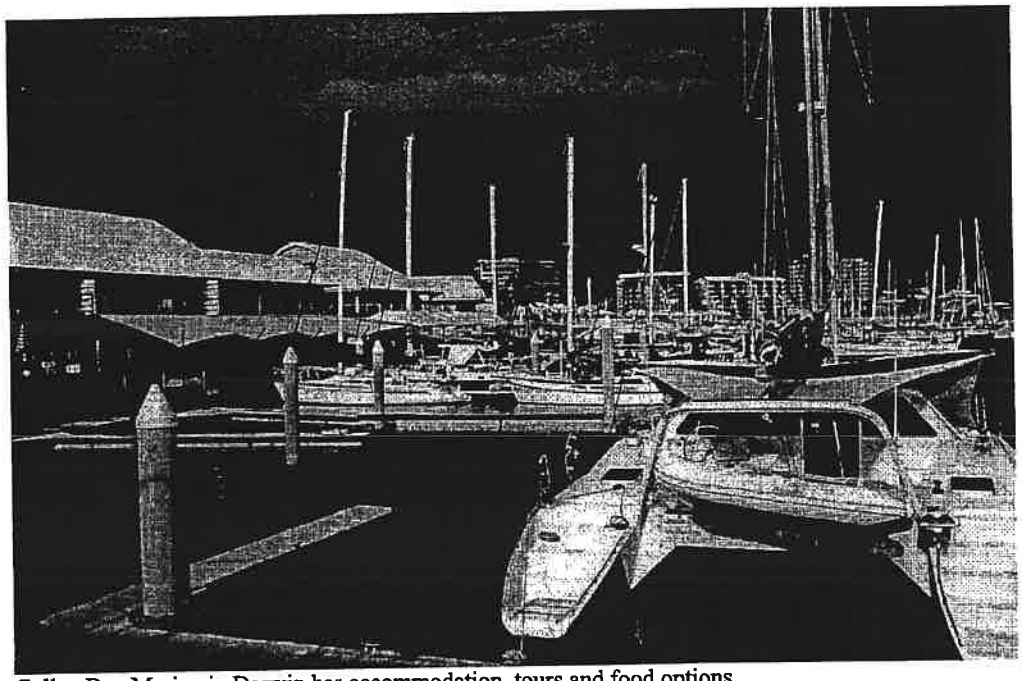
The town is crying out for boat storage, fuel and service all of which need to be in a protected location, like the RTA site in the canal in Fishery Creek.

Why the RTA Site?
It is currently underutilised. The RTA can easily operate on a site out of town along the new highway or in an industrial zone. The land has zoning for possible use as a marina, with residential. It is next to a harbour. It is close to town. Although tidal, it has safety, protection from the wind and direct access to the River.

Fellow Building Designers Association of NSW Inc.
www.ozemail.com.au/~johnbath www.3dview.com.au
Email: jbath@nor.com.au

How it might work.
The land could be swapped for more suitable land for the RTA in an alternative location. They do not need to be on the water.

The site would be excavated for the marina and some surrounding land allocated for housing in apartments overlooking the marina. There could be tourist facilities, restaurant, fuel, marina repairs and chandlery.



Cullen Bay Marina in Darwin has accommodation, tours and food options.

Why it could work.
Marinas need to be located where water is generally calm, free of wave action, out of surge influences, protected, settled and wind free, where boat owners can feel safe in the knowledge that their investment is protected. The site has such attributes.

Local residents near the RTA site have been used to boats launching a retrieving so human impact of a larger facility will not be great. Boat speeds are already restricted in the Creek.

A river Cruise might be initiated from the site, away from the lower influence of the Richmond River Bar.

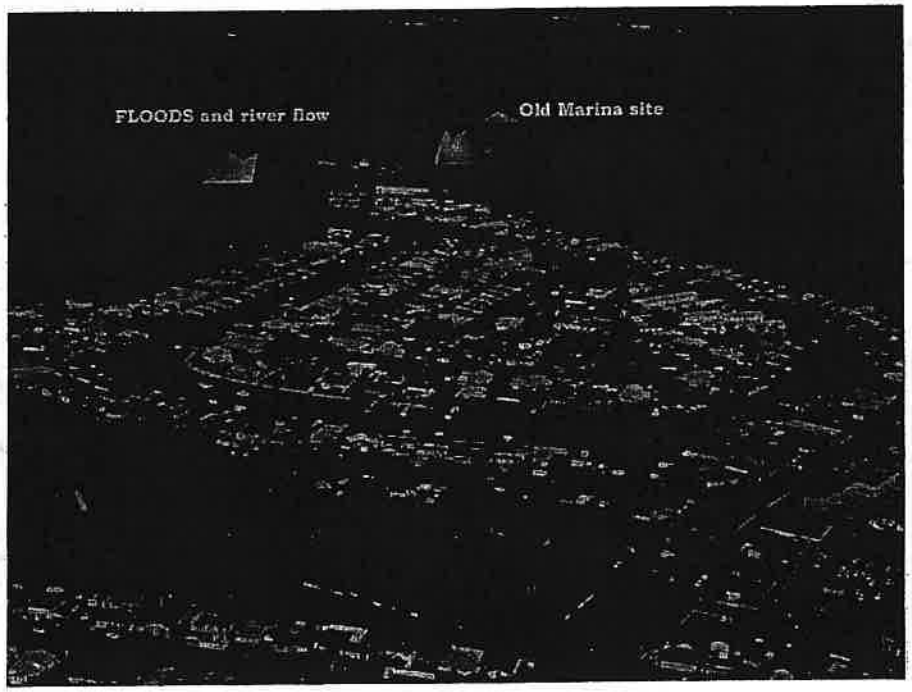
A safe access to North Creek and property along the way is also possible.

Along our coastline marinas are key tourist places to visit and to be seen. I have personally looked at Yamba, Coffs Harbour, Port Macquarie, (where now you can shop off your boat), Maloolabar, St Kilda, Vic, Roslyn Bay, Yeppoon, Gladstone and the many Gold Coast locations around Jacobs Well. They are all in calm locations and out of strong current.

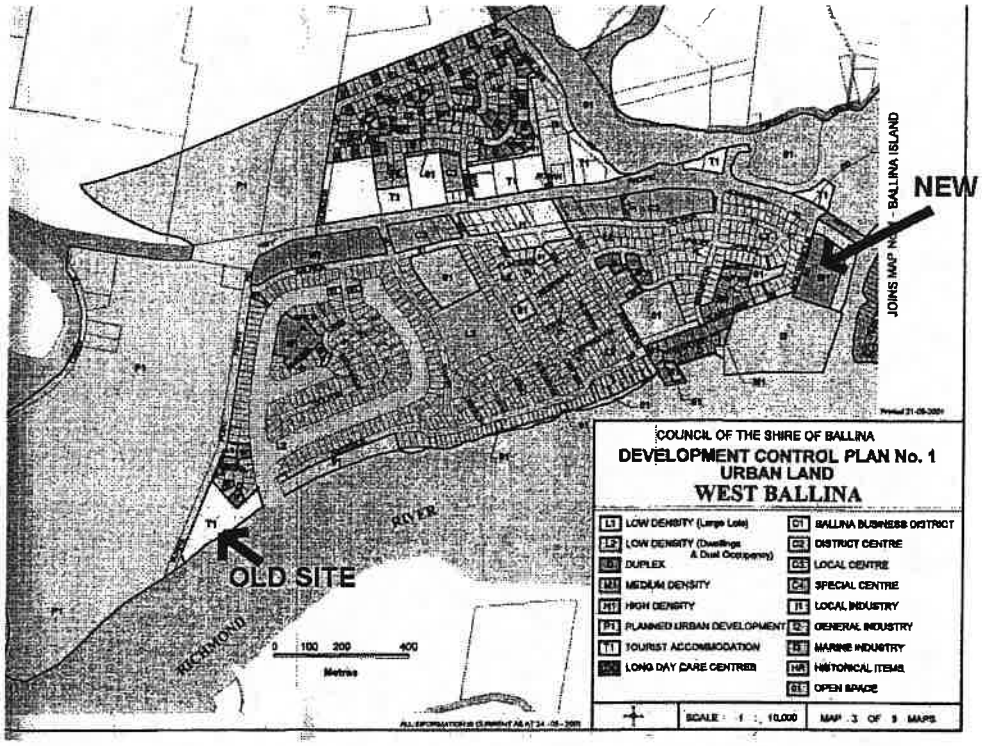
Why the old marina failed.

I tied up a 35ft Marina cruiser at Ballina Quays Marina one afternoon in a developing storm. When waves got so large and breached the pontoons, the boat was in danger of breaking loose. The pontoons were jumping and almost broke away. I then left the marina in the dark and rode out the storm in the middle of the river. Not Nice! As well…

- Fueling facilities were difficult and dangerous.
- Navigation into the pontoons was hazardous due to tide and wind.
- The location was on a bend in the river where flooding caused debris to build up under boats and get caught in propellers.
- There was no boat ramp worth using.
- There was little to keep people at the location.
- Most visiting yachts preferred to stay in Mobbs Bay, where they could take their dinghy across the river into town.
- The unsafe conditions inhibited ownership of larger craft.



Why the new location is preferable.
Attached are photos of the location. The temporary buildings occupied by the RTA can be moved to another site out of town or in an industrial zone. The whole area can become a Mecca for local boating and visiting yachts.



Location Map

The RTA site is zoned M1, Medium Density, enabling a residential component to compliment the marina. The canal is safe and free of wind in most conditions.

Tours of the river could emanate from the Fishery Creek location boosting tourism. This Cat is unloading an afternoon cruise serving tea and cakes.

Conclusion
A new marina for Ballina will boost tourism and complete the picture on our River system that is stating to be noticed.

The location of a new facility needs to be close to town to be successful and very few locations are available with the proper safety attributes.

As an ex boating business proprietor I am happy to assist Council in developing a working party if necessary. Unfortunately, I will not be in Ballina for your general meeting, I will be in Tasmania from 3 December, but suggest you might discuss this proposal with your audience in my absence.

Yours sincerely

John Bath

Attached Reports.

Marina site proposed

By LIZ BELLAMY

BALLINA residents have proposed an alternative site for the town's now defunct marina.

Former Ballina boatshop owner John Bath wants to extend a NSW Roads and Traffic Authority depot to the trawling harbour near Boatharbour Road.

"The site is not being used; there's just a lot of stuff lying around," the building designer said. "It's a pity someone can't fix it up."

Mr Bath said the old Ballina Quays Marina at the end of Burns Point Ferry Road was too far from town, dangerous to launch from, and left vessels at the mercy of tidal waters.

He said the new site was close to an existing boat launch and car park, and in calmer waters.

Mr Bath's proposal comes after the former marina was closed last April to make way for a $15-million residential development by local developer Chris Condon.

However, there are concerns about the viability of the proposed site, with claims that nearby riverbank sediment is contaminated with heavy metals, making redevelopment costly and time consuming.

Local business and tourism groups say the town is desperate for a new marina.

"It's a crying shame that we call ourselves the Port of Ballina when you can't even hire a tinny," Ballina Shire Tourism Network chairperson Sharon Cadwallader said.

"There's nowhere for yachties to moor and there's no facilities at all."

Without a marina, visiting boats are being forced to moor in Mobbs Bay in the Richmond River, which left them at the mercy of strong tides and too far from town.

"Tourism has suffered in the drought. We need to have everything in top gear," she said.

MARINA PROPOSAL: Ballina man, John Bath, pictured above, has put forward a possible site for a new marina. The map, left, shows [illegible] the old site as well as the site proposed for a new facility.

21.3.03

Northern Star

Editorial *Opinion*

More moves for marina

THE vexed question of a marina for Ballina has occupied many minds in recent months.

It is an accepted fact that the now-defunct Ballina Quays Marina was not totally satisfactory.

However, without a marina, visiting boats are being forced to moor in Mobbs Bay in the Richmond River, leaving them at the mercy of strong tides and on the opposite side of the river from the town.

Now a building designer, John Bath, has come up with a proposal to use a disused piece of government department land near the town's trawler harbour for a new marina.

His proposal has the support of local business and tourism groups.

They are embarrassed that the port of Ballina has almost no maritime facilities.

It seems strange that a town built along the edge of a magnificent river seems to have turned its back on it and not capitalised on its attractions.

Skippers of yachts sailing along the east coast will learn to avoid Ballina once word gets around that the town has no facilities for visiting craft.

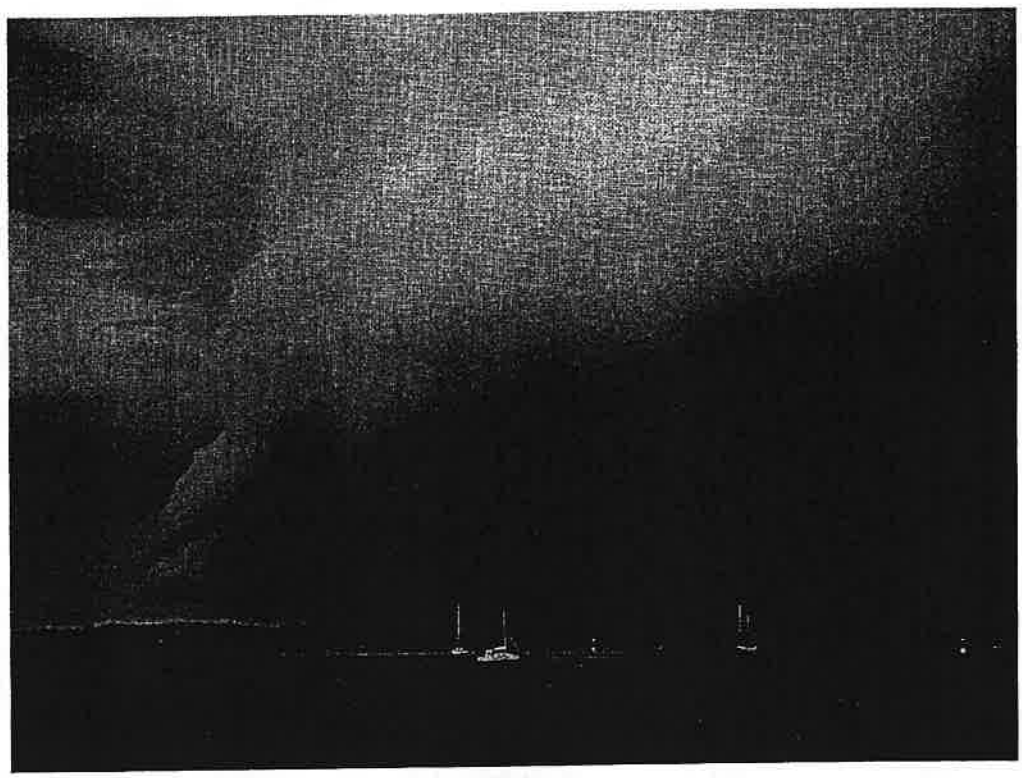
Even locals with sailing or motor boats who would be prepared to rent berths at a marina are being disadvantaged by a lack of such facilities.

If the defunct marina is replaced by a residential development, is there any will in Ballina Shire Council to seek replacement facilities?

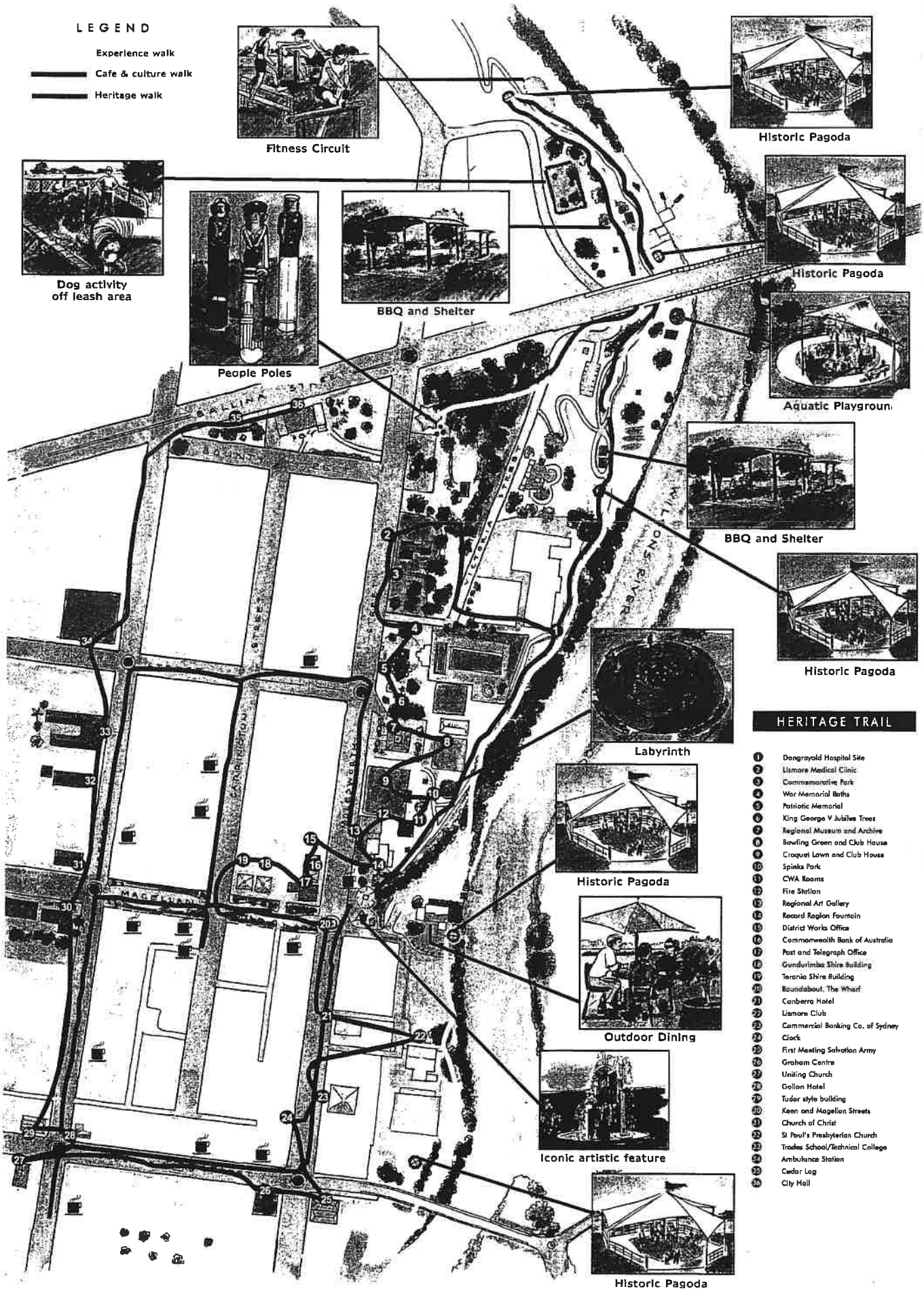
Or will Ballina become known as the town that forgets it has river and ocean access?

Editorial *Contacts*

E-mail **News:** staredit@northernstar.com.au
Sport: sport@northernstar.com.au
Letters: opinions@northernstar.com.au
Mail: PO Box 423, Lismore, 2480
Fax: (02) 6624 7265
Telephone enquiries:
General: (02) 6620 0500
News - **Lismore:** (02) 6620 0538
Ballina: (02) 6686 0020
Byron Bay: (02) 6685 8863
Sport - **Lismore:** (02) 6620 0549
Editor: Russell Eldridge



Where do you go in a storm?

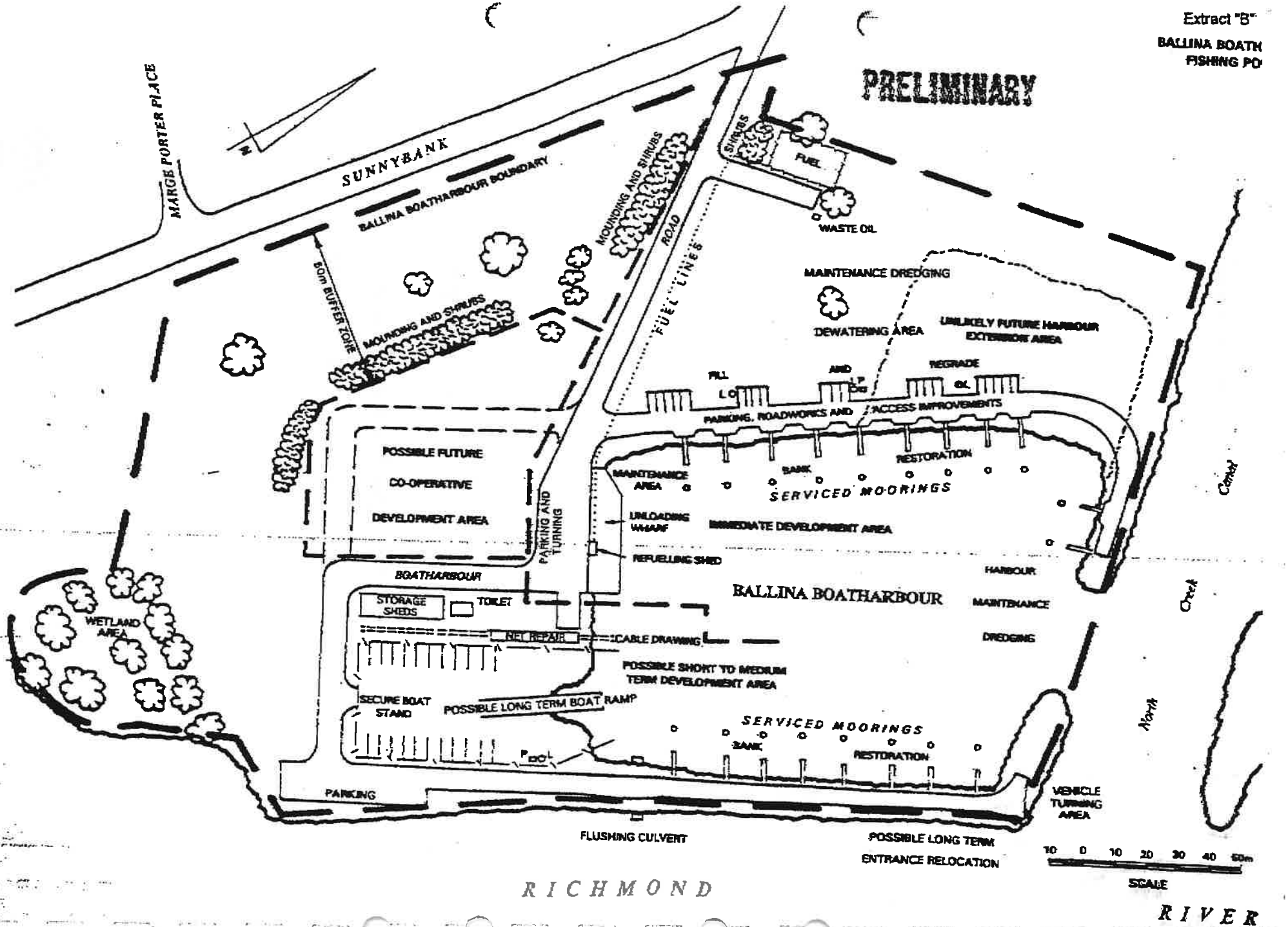


HERITAGE TRAIL

1. Dongrayald Hospital Site
2. Lismore Medical Clinic
3. Commemorative Park
4. War Memorial Baths
5. Patriotic Memorial
6. King George V Jubilee Trees
7. Regional Museum and Archive
8. Bowling Green and Club House
9. Croquet Lawn and Club House
10. Spinks Park
11. CWA Rooms
12. Fire Station
13. Regional Art Gallery
14. Record Region Fountain
15. District Works Office
16. Commonwealth Bank of Australia
17. Post and Telegraph Office
18. Gundurimba Shire Building
19. Terania Shire Building
20. Roundabout, The Wharf
21. Canberra Hotel
22. Lismore Club
23. Commercial Banking Co. of Sydney
24. Clock
25. First Meeting Salvation Army
26. Graham Centre
27. Uniting Church
28. Gollon Hotel
29. Tudor style building
30. Keen and Magellan Streets
31. Church of Christ
32. St Paul's Presbyterian Church
33. Trades School/Technical College
34. Ambulance Station
35. Cedar Log
36. City Hall

Extract "B"

BALLINA BOATH
FISHING PO



Appendix B

Swing Mooring Pontoons

Further Details

COFFS HARBOUR PORT

RECREATIONAL MOORING OPTIONS

COFFS HARBOUR WORKING GROUP

MARITIME SUB-COMMITTEE

JUNE 2003

Buoyed moorings

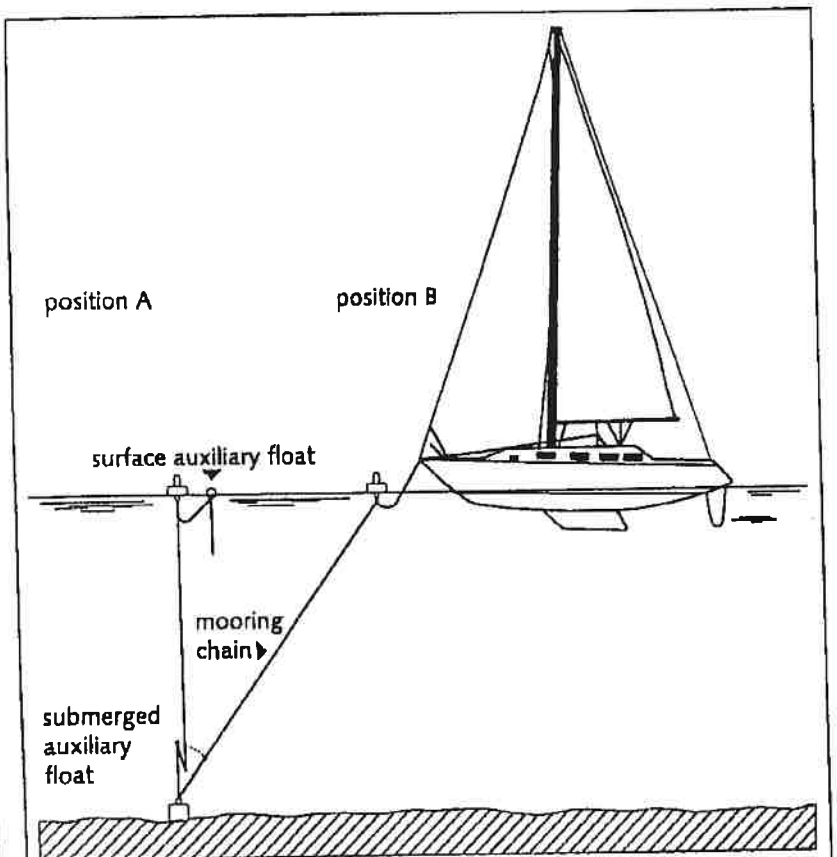


Figure 1 Single point buoyed mooring
Installation shown suitable for tidal installations
Surface auxilliary float usually taken on board craft

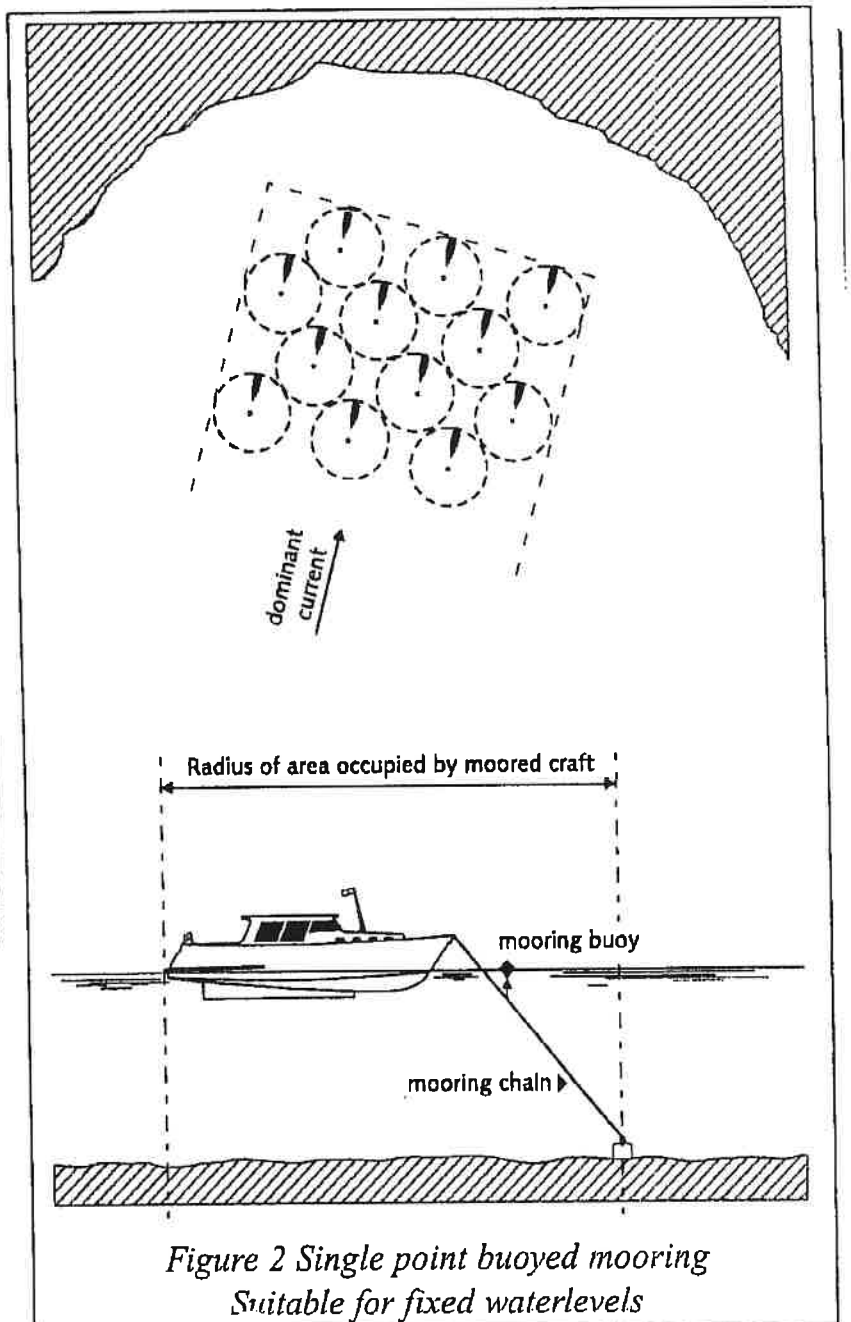


Figure 2 Single point buoyed mooring
Suitable for fixed waterlevels

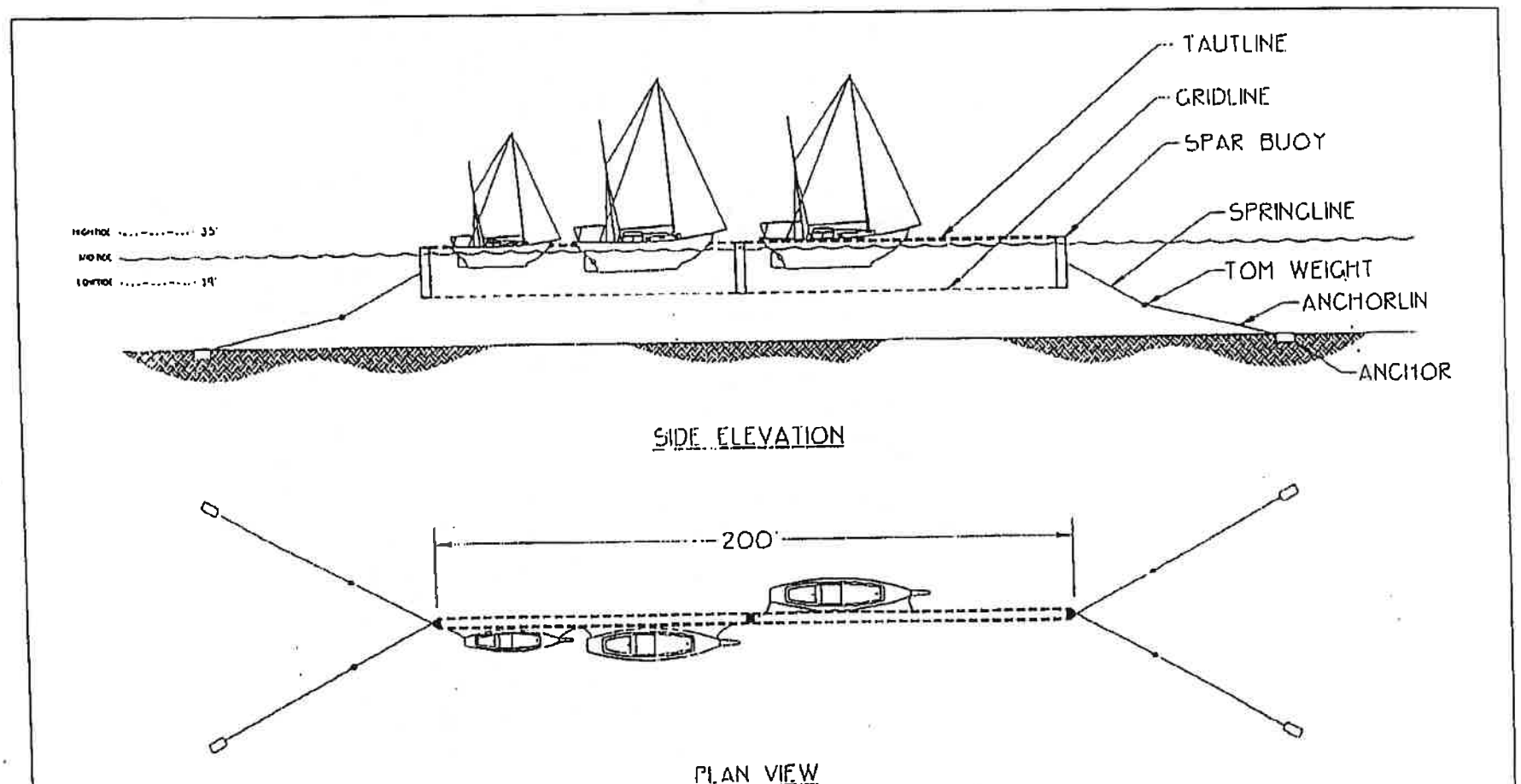


Figure 15 Net system

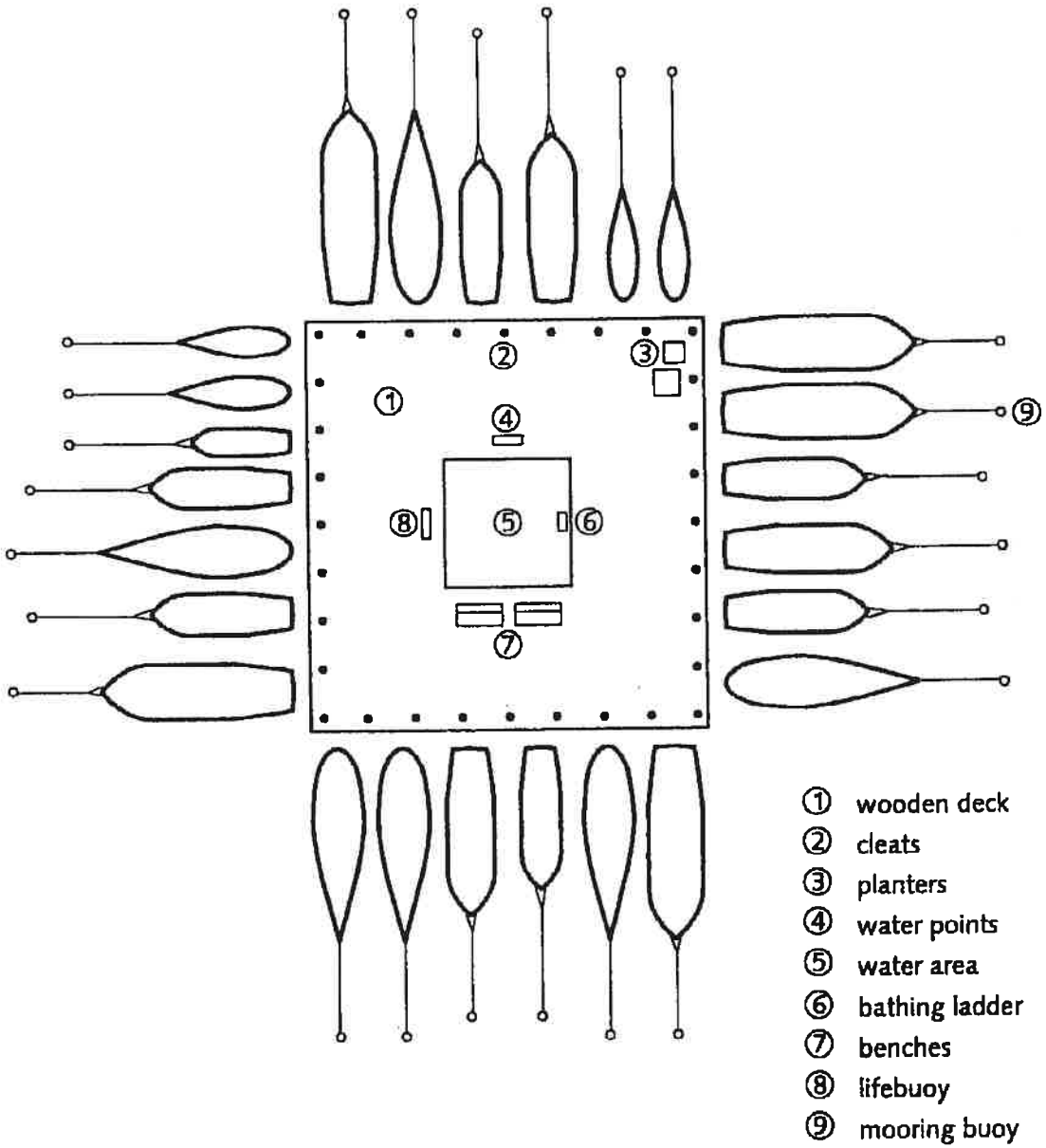


Figure [illegible]: Moorir islands, Mahon, Menor

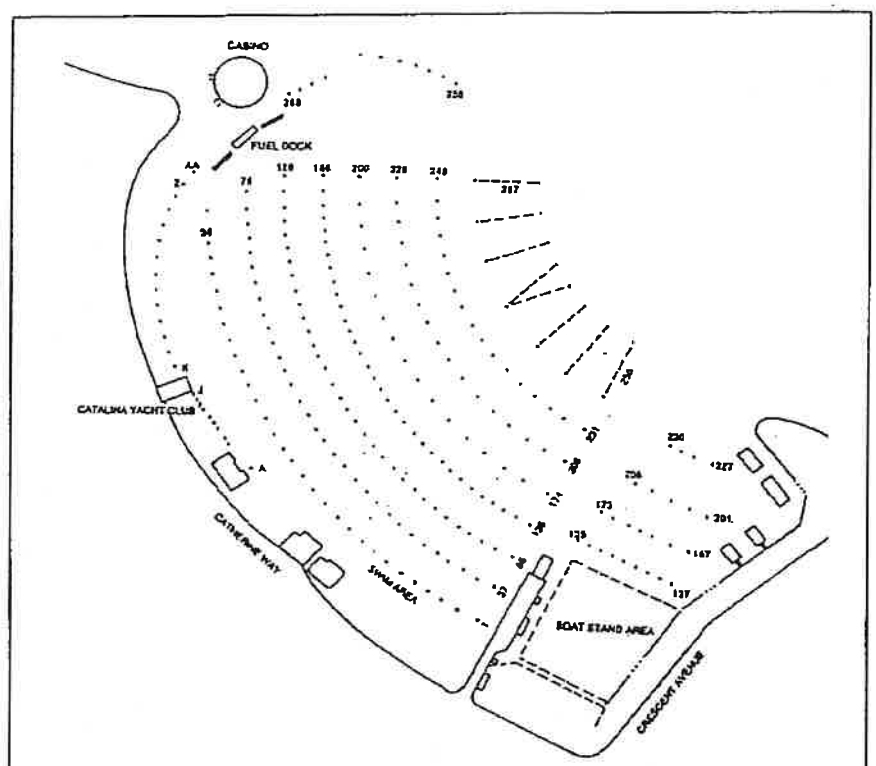
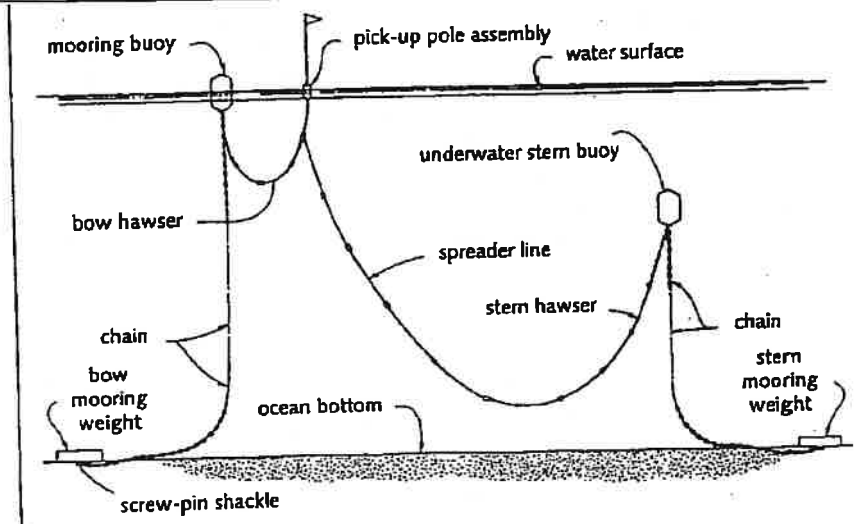
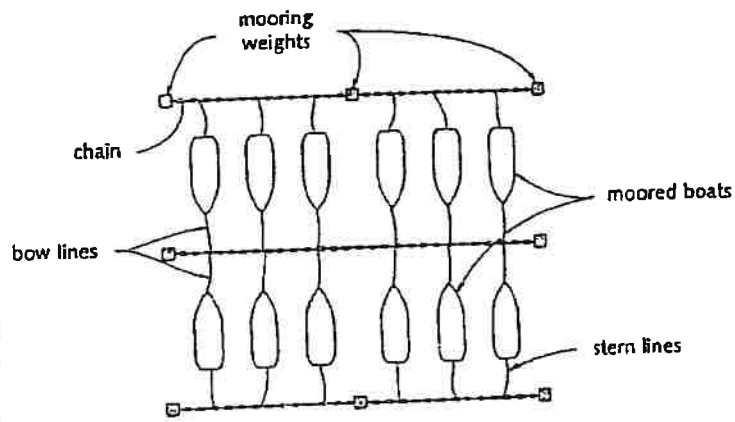


Figure 18 Mooring lay-out at Catalina Island



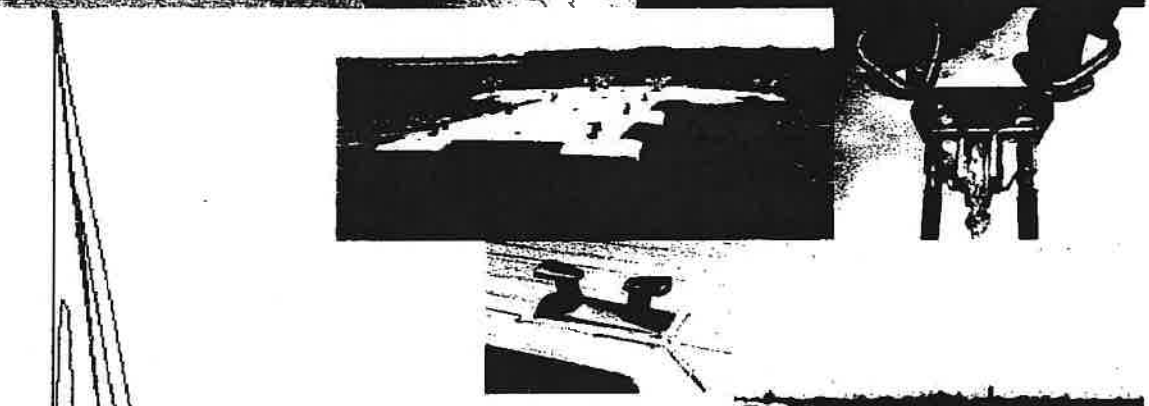


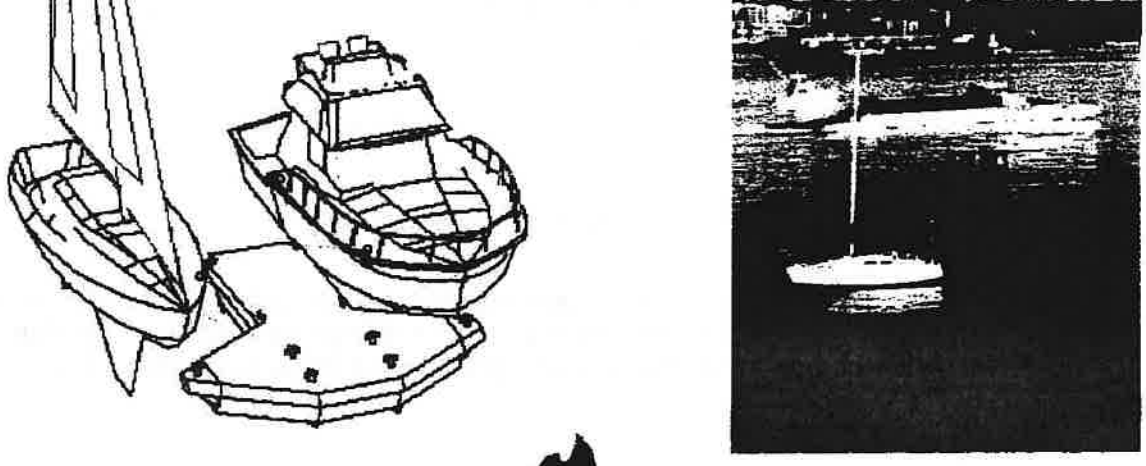
Catalina Deep Water moorings

Table 2: Arguments for selection of a mooring for a particular location			
MOORING LOCATION	**OPTIONS**	**SUITABILITY** Y = yes N = no P = possible	**NOTE** These notes are not intended to be comprehensive and should only be regarded as just some of the factors that have to be considered
Exposed Coastal and Estuarial Waters	Anchorages	Y	Limited by anchor scope, space, available depth of water and exposure
	Buoyed Moorings	Y	Can be used to overcome water depths beyond the scope of normal pleasure craft anchor scopes
	Pile moorings	P	Need sheltered waters
	Pontoons	P	Usually in sheltered water limited by wave heights
	Drying berth	Y	For estuaries & sheltered waters
	Net systems	Y	Consult manufacturers as engineering design will be necessary
	Jetties & stagings	N	Problems of design, tidal range, grounding and exposure

MOORING LOCATION	**OPTIONS**	**SUITABILITY** Y = yes N = no P = possible	**NOTE** These notes are not intended to be comprehensive and should only be regarded as just some of the factors that have to be considered
	Opportunist moorings	Y	High risk involved
	Marina berths	Y	Require sheltered waters
	Dry Stacking	Y	
	Stern to pier (Mediterranean)	Y	Need for sheltered site in non-tidal waters or areas of limited tidal range
	Alongside	N	Except in non-tidal and sheltered conditions

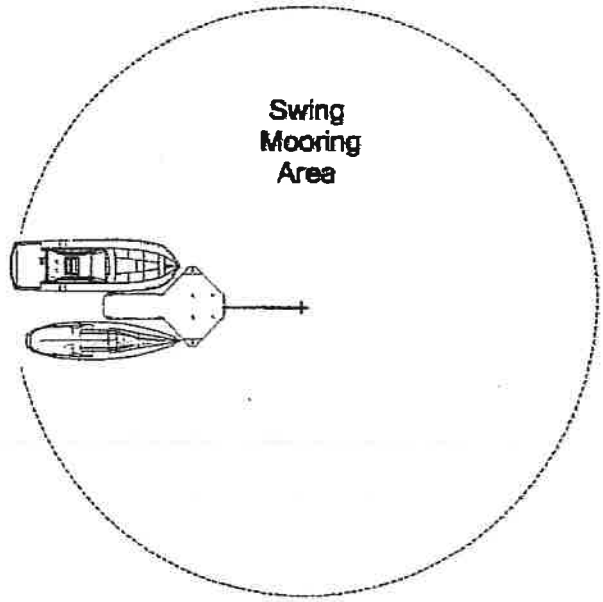
SWING MOORING PONTOONS



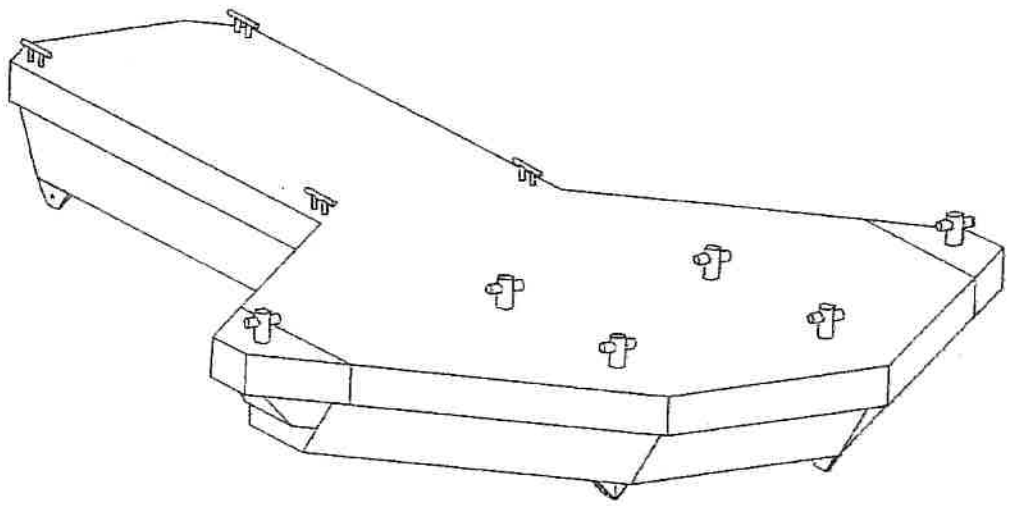


Swing Mooring Pontoons

This Australian design relates to a boat mooring that requires a circular area known as a "Swing Mooring". Typically vessels over five meters are moored on swing moorings in rivers, harbours and the like.

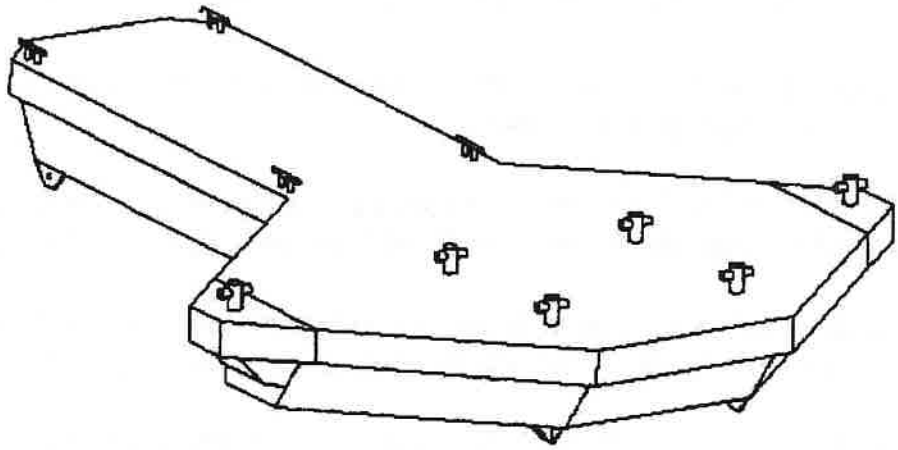


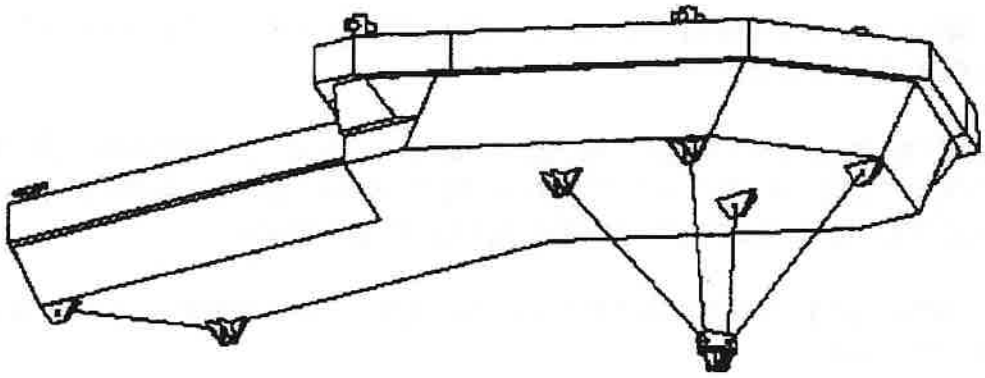
The object of the design is to allow a greater number of vessels to be securely moored in a given area. Alternately the design can be employed to reduce the area occupied by swing moorings for navigational, environmental or planning reasons while maintaining the established ceilings for vessel numbers.

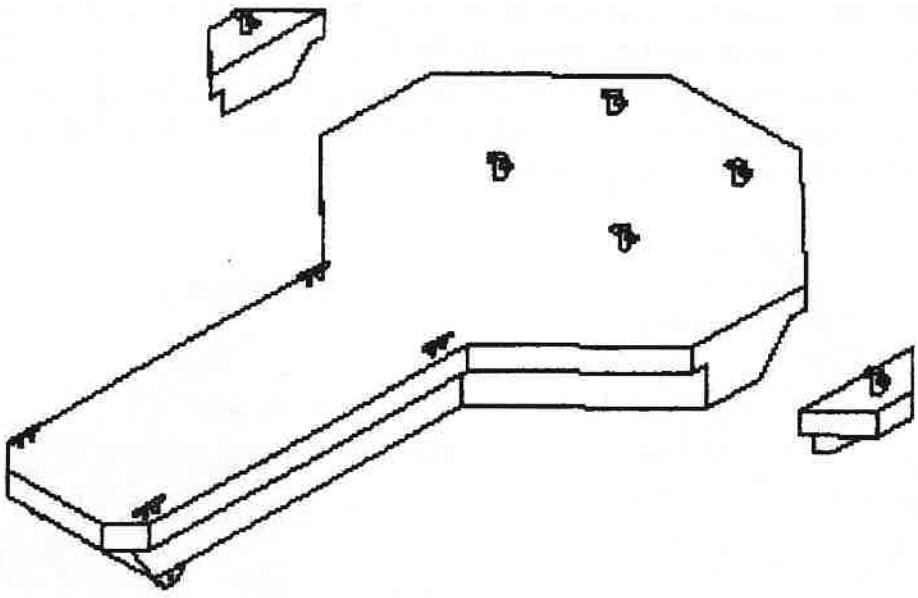


Swing Mooring Pontoon

A swing mooring pontoon may be described as a cross between a punt and a floating marina finger, the size and scale of the design can vary to accommodate vessels of different length, beam and displacement without departing from the scope of the design.







Some of the Advantages of Swing Mooring Pontoon's (SMP's)

SMP's can allow two vessels to be moored within the same swing area currently required by one vessel.

SMP's can double the mooring capacity of an area or enable the same number of vessels to be moored in half the area they presently occupy.

SMP's can create a greater area for navigation between vessels in crowded mooring areas without effecting the established ceilings for vessel numbers.

SMP's can offer Government Agencies, Commercial Operators, Clubs and Private Owners with two vessels on swing moorings the opportunity to moor their vessels together at the one location.

SMP's can be employed to reduce the damage to sensitive marine environments caused by mooring chains and blocks.

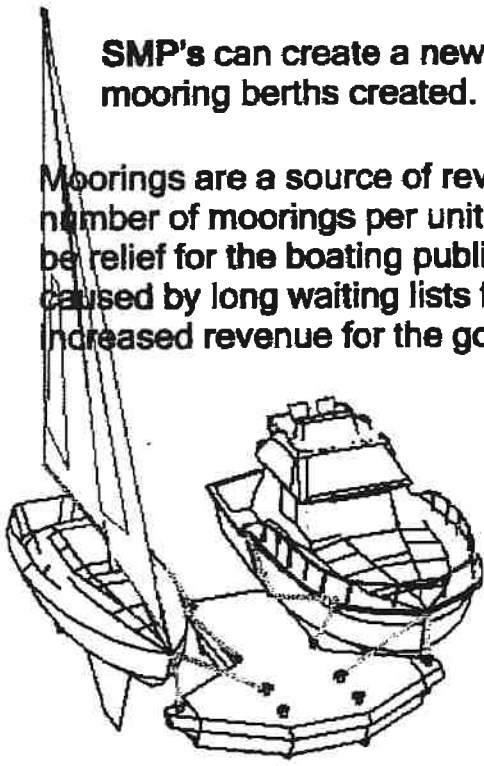
SMP's can provide temporary moorings for Yacht Races, Boat Shows and Major Aquatic Events.

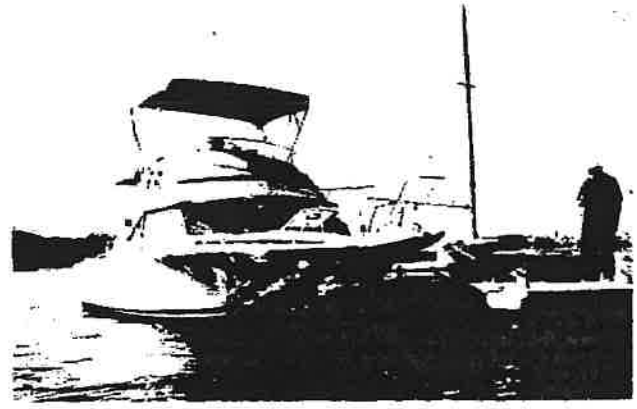
SMP's can offer Marine Authorities, Marina Operators and Clubs a method of reducing existing waiting lists and provides an ongoing opportunity to re structure swing mooring areas.

SMP's can provide additional moorings in popular areas with long waiting lists.

SMP's can create a new source of revenue from the additional swing mooring berths created.

Moorings are a source of revenue for the government, thus it follows, if the number of moorings per unit area could be increased, not only would there be relief for the boating public and industry concerned about the constraints caused by long waiting lists for swing moorings, there would also be increased revenue for the government.





Appendix C

Preliminary Cost Estimates

Calculation Spreadsheets

RTA / Fishery Creek Canal Ramp

Inflation 3%

Item	Unit	No.	Rate 2000	Rate 2005	Cost	Reference	Notes:
Parking area	m2	12690	59	68	867,960	60	Area shown on plan
Ramp area	m2	250	200	232	57,964		keep existing ramp
Queing pontoon Heavy Duty	Berth	3	12400	14375	43,125	63	3 new pontoon
Toilet Facilities, shower / change	m2	50	1660	1924	96,220	61	Approx area
Professional Fees	%	15			159,790	791	Architecture, Engineering, Planning and Approvals
GST	%	10			122,506		
		30%	Contingency		404,269		
			Total		**$1,751,834**		

Wardell Boatramp

Item	Unit	No.	Rate	Rate 2005	Cost	Reference	Notes:
Parking area	m2	2031	59	68	138,915	60	As shown on plan
Ramp area	m2	143	200	232	33,155		Area Shown
Toilet Facilities	m2	40	1515	1756	70,252	61	toilet block only
Professional Fees	%	15			36,348	791	Architecture, Engineering, Planning and Approvals
GST	%	10			27,867		
		30%	Contingency		91,961		
			Total		**$398,498**		

Emigrant Creek

Item	Unit	No.	Rate	Rate 2005	Cost	Reference	Notes:
Parking area	m2	1581	59	68	108,136	60	As shown on plan
Ramp area	m2	139	200	232	32,228		Area Shown
Toilet Facilities	m2	40	1515	1756	70,252	61	toilet block only
Professional Fees	%	15			31,592	791	Architecture, Engineering, Planning and Approvals
GST	%	10			24,221		
		30%	Contingency		79,929		
			Total		**$346,358**		

South Ballina Boatramp

Item	Unit	No.	Rate 2000	Rate 2005	Cost	Reference	Notes:
Carpark	m2	200	59	68	13,679	60	Note carpark location requires investigation
Ramp area	m2	50	200	232	11,593		Nominated Size
Professional Fees	%	15			3,791	791	Architecture, Engineering, Planning and Approvals
GST	%	10			2,906		
		30%	Contingency		9,591		
			Total		**$41,560**		

Martin Street Boatharbour

Inflation 3 %

Item	Unit	No.	Rate 2000	Rate 2005	Cost	Reference	Notes:
Floating pontoon	m	40	2495	2892	115,696	64	40m long floating pontoon
Services to berth	m	40	340	394	15,766	64	
Piles - Fore and Aft assume 8m L	each	12	1432	1660	19,921	219	10 fore-and aft berths
Toilet Facilities, shower / change	m2	50	1660	1924	96,220	61	Approx Area
Professional Fees	%	15			37,140	791	Architecture, Engineering, Planning and Approvals
GST	%	10			28,474		
		30%	Contingency		93,965		
			Total		**$407,182**		

Trawler Harbour Marina

Item	Unit	No.	Rate 2000	Rate 2005	Cost	Reference	Notes:
Marina Berth	Berth	200	10000	11593	2,318,548	63	Design Berths
Services to berth	Berth	200	2245	2603	520,514	63	
Dredging	cum	63000	4.5	5	328,654	649	Area x 2m average dredge depth
Disposal	cum	63000	2.45	3	178,934	650	disposed of as on-site fill
Carpark	m2	3360	59	68	229,814	60	Area shown
Clubhouse / operations / shops	m2	5688	475	551	3,132,127	69	Area shown
Commercial / retail / residential	m2	24671	475	551	13,585,214	69	Area shown
Landscaping	m2	14832	5	6	85,972	64	Open Space
Professional Fees	%	15			3,056,967	791	Architecture, Engineering, Planning and Approvals
GST	%	10			2,343,674		
		30%	Contingency		7,734,126		
			Total		**$33,514,544**		

Greenfield

Item	Unit	No.	Rate 2000	Rate 2005	Cost	Reference	Notes:
Marina Berth	Berth	400	10000	11593	4,637,096	63	Nominated No. Berths
Services to berth	Berth	400	2245	2603	1,041,028	63	As above
Excavation marina basin	cum	250000	15.1	18	4,376,260	214	Area by nominated depth
Carpark	m2	5000	59	68	341,986	60	Area as shown
Industrial	m2	79000	385	446	35,259,321	55	Area as shown
Commercial	m2	36000	475	551	19,823,587	69	Area as shown
Landscaping	m2	58000	5	6	336,189	64	Area as shown
Professional Fees	%	15			8,364,162	791	Architecture, Engineering, Planning and Approvals
GST	%	10			6,412,525		
		30%	Contingency		24,177,646		
			Total		**$104,769,800**		

GHD Pty Ltd ABN 39 008 488 373

2/90 Tamar Street Ballina NSW 2478
PO Box 372 Ballina NSW 2478
T: 02 6681 6255 F: 02 6681 6277 E: bnkmail@ghd.com.au

Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
Draft	J. Foster, S Oldroyd, N Watts, R Chemke	S. Oldroyd		V. Joseph		Feb 2005
Final	J. Foster	V. Joseph		V. Joseph		April 2005