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BRUNSWICK HEADS BOAT HARBOUR MASTERPLAN REPORT No. 1 SMALL BOAT LAUNCH & RETRIEVAL

Brunswick Heads Boat Harbour, Brunswick Heads

for:

NSW Industry
Department of Primary Industries – Crown Land

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1 Introduction

This report relates to Small Boat Launch and Retrieval Options in the Brunswick Heads Boat Harbour Masterplan Project. The report forms part of the response to the Masterplan brief from the NSW Industry Department of Primary Industries – Crown Lands (DPI) to Ardill Payne and Partners (APP) to investigate a range of land and marine based issues for preparation of a Masterplan.

In detail the following deliverables are required for investigation and evaluation of small boat launch and retrieval.

- 1a) Assessment of demand for launching small motorised and non-motorised vessels
- 1b) Assessment of constraints and opportunities
- 1c) Establish design parameters for each option including identification of relevant standards
- 1d) Consult user group/s on site and provide a record of meeting / conversation
- 1e) Prepare sketches with annotations to illustrate concepts including boat ramp design, access and circulation, parking and other infrastructure to support a contemporary boat launching facility
- 1f) Assess the suitability of the concrete ramp as a boat launching ramp and recommend modifications if necessary
- 1g) Integrate design with other components of this assignment
- 1h) Conduct an assessment of options in consultation with user groups, including logical stages for construction.

The study area defined in the brief is for:

- Existing area
- Expanded area
- Expanded area including slipway

For the purposes of this report small boat launch and retrieval is divided into two categories. The first refers to power and sail boats on trailers whilst the second refers to paddle craft; kayaks, skis and paddle boards of different types.

This report is focused on the maritime aspects of small boat launch and retrieval issues, as outlined in Item 1.1.1 in the Introduction in the Masterplan Scope, Vision and Planning Objectives document (MSZPO). Other site issues identified in Section 1.1 of the Introduction in the MSZPO document such as large boat launch and retrieval as well as land based uses, are included herein as reference or for the purpose of integration of issues. Any other matters outlined in Section 1.1 of the Introduction in the MSZPO document are discussed in detailed reports by APP under separate cover.

2 Site Details: Current Situation

The Site location and cadastral features are identified in Figures 1 and 2. The site constraints and opportunities are identified in Figure 3 and discussed below.

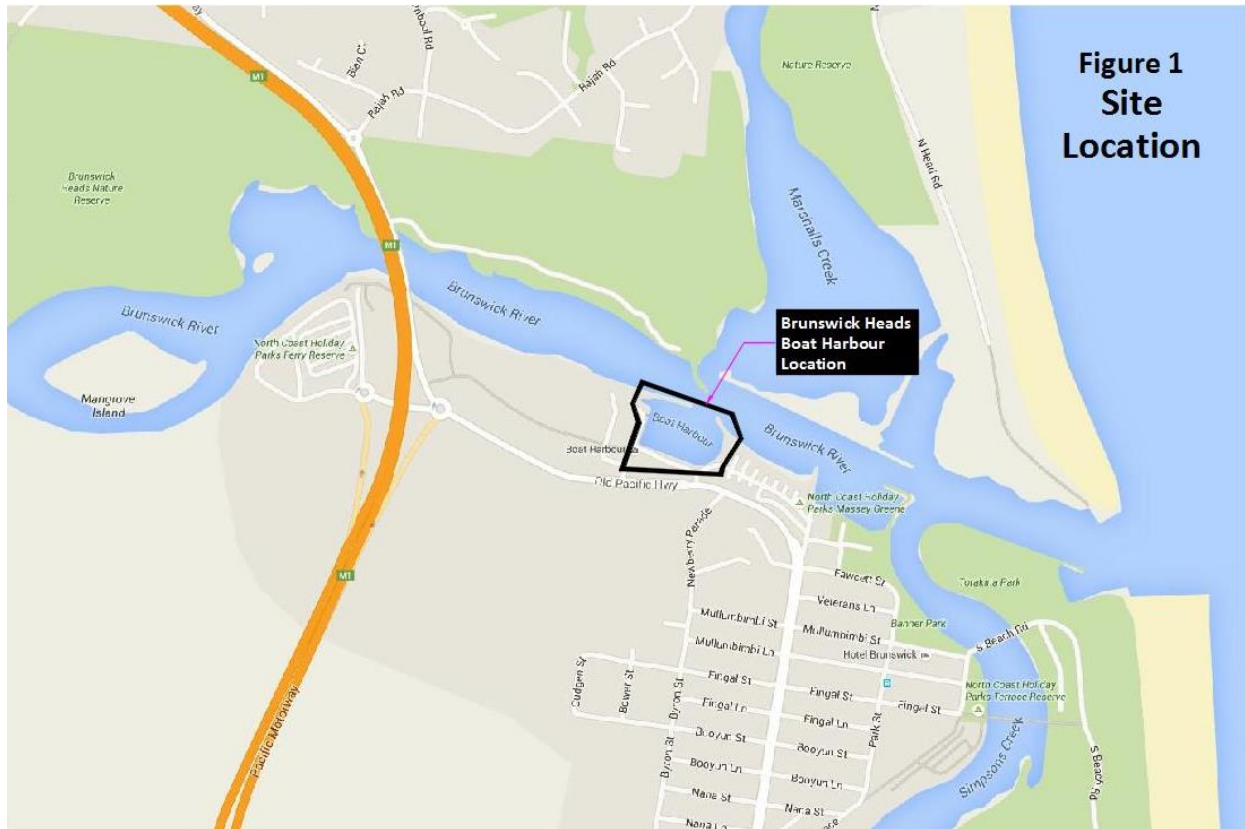


Figure 1 Site Location

The Existing Area for Small Boat Launch and Retrieval is principally restricted to the Boat Ramp on the West side of the Boat Harbour. All trailer boats and most paddle craft use this ramp. This is referred to herein as the River Ramp and includes adjacent land associated with the Ramp controlled by Byron Shire Council. This area is described as Area 1 in Figure 2 and labelled as Item 6 in Figure 3.

A much smaller informal facility is available on the river at the disused boat ramp to the East of the Boat Harbour. The Eastern ramp is only suitable for paddle craft and is referred to as the Beach Ramp as it is a form of beach. It is within the Existing Area 1a on Figure 2 and labelled as Item 3 in Figure 3.

There is a decommissioned commercial slipway which may provide opportunities as a still water boat ramp. This facility lies within the Expanded Area of the Study and is identified as Item 4 in Figure 3.

Figure 2 Cadastral Land Holdings and Summary

Figure 3 Constraints & Opportunities

2.1 River Ramp

The River Ramp falls within the Existing Area of Boat Launch and Retrieval facilities. It is located on land adjacent to the Boat Harbour site and is controlled by Byron Shire Council. The ramp is approximately 8 metres wide and 30 metres long. The sides of the ramp slope to natural ground, and this makes the overall concrete width a total of 10 metres. The concrete is badly cracked and finished as a rough surface.



Existing River Ramp

The ramp grades at 10% for the first 10 metres, then changes to 12.5% for the remainder of the ramp. A comparison of its geometrical properties compared to RMS Guidelines is provided below in Table 1. The RMS Guideline design parameters are discussed in section 5.

| Parameter | Unit | Site Detail | RMS Guidelines |
|----------------------------------------------------------------|------|--------------------------|----------------|
| General User Description. Two lane rural concrete boat ramp | | | |
| Width | m. | 8 | 8 |
| Length | m. | 30 | |
| Grade | - | 1 in 10 to 1 in 8 | 1 in 8 |
| Toe Depth at Low Tide | m. | Approx. 1 | 1 |
| Trailer Manoeuvring Distance | m. | 20 | 20 |
| Trailer Parking | No. | Between 9-16 | 40 |
| Car Parking | | <4 | 8 |
| Surface Finish | | Rough finish and cracked | Grooved |

Table 1 River Ramp Properties

The general properties of the River Ramp are depicted in Figure 4.

Council has recently installed a floating pontoon between the ramp and Emergency Services launch Slipway and Boat Shed. The pontoon is 10m x 3m and anchored with two concrete piles. A 14m long aluminium ramp provides shore access to the pontoon.



Existing River Ramp and new Pontoon



Emergency Services Slipway beside New Pontoon

Figure 4 General Arrangement

2.2 Water Based Constraints

Whilst the River Ramp has some properties which comply with the Guidelines, significantly it has sufficient width for double boat launches, its performance is constrained by other factors. The main water based restriction to dual lane performance is the river current which causes the boat being launched or retrieved to veer across the water space provided for a second concurrent launch or retrieval. This mainly occurs on an outgoing tide and effectively reduces the ramp to a single ramp except for experienced users. This is a considerable safety issue.

The river ramp's length is unsuitable for large trailer boats as there is insufficient length of ramp and depth of water to float or retrieve large trailer boats (i.e. up to 27 feet) at low tide.

2.3 Land Based Constraints

The space in front of the ramp conforms to the recently updated NSW Boat Ramp Facility Guidelines (RMS Issue) for manoeuvring area. However, due to approach angles and turning circles the area in front of the ramp is not wide enough or long enough for high frequency queuing and launch and retrieval events. Congestion through the area is apparent even under moderate traffic load.

There are no formalised car or trailer parking spaces. Informal parking is relatively chaotic with a capacity of around 15 trailers. This is a major constraint to appropriate levels of access and safety. During high use levels queuing times of 45 minutes were recorded by APP.

Expansion or formalisation of the trailer parking is limited by the land available to Byron Shire Council under the existing Area definition. Figure 4 shows limited space available.

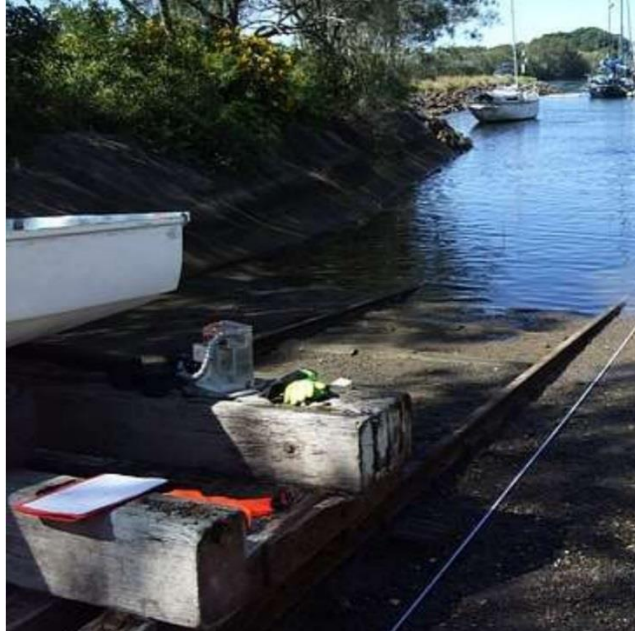
The ramp also currently provides for surf boat, kayak and paddle boards etc. launches. It is reported that, if there is a club launch of paddle craft whilst trailer boats are queuing for access, people can become impatient and APP are advised that this causes weekend "ramp rage".

2.4 Beach Ramp

The Beach Ramp lies in the eastern extremity of the Boat Harbour Precinct and is identified in Figure 3 as Item 3. It could be also considered an existing area but appears to be used infrequently, and then only by paddle craft. It has no formalised ramp with launching and retrieval facilities consisting of a beach embayment. It has poor car access but good launch/retrieval characteristics, being at the low grade of a beach and out of the river current. It is only suitable for low frequency paddle craft launch and retrieval.

2.5 Slipway Ramp

The Slipway is a decommissioned commercial slipway. It lies in the Expanded Area section of the Site for Small Boat Launch and Retrieval. It was used to maintain the fishing trawlers of the old fishing fleet. A thorough investigation of it was undertaken on the 22nd of April 2015 by Commercial Diving Solutions Pty Ltd.



Slipway Ramp

In summary this report advised that:

- The steel and timber ways and rails for the slipway were damaged beyond repair
- The concrete ramp is 24m long and 6m wide
- The filling beyond the ramp extends for some additional 9m

The geometrical properties of the slipway are tabulated below in Table 2. RMS Guideline design parameters are discussed in section 5.

| Parameter | Unit | Site Detail | RMS Guidelines |
|----------------------------------------------------------------|------|--------------------------------------|----------------|
| General User Description. Two lane rural concrete boat ramp | | | |
| Width | m. | 6 | 4.5 |
| Length | m. | 24-33 | |
| Grade | - | 1 in 10 | 1 in 8 |
| Toe Depth at Low Tide | m. | >1 | 1 |
| Trailer Manoeuvring Distance | m. | >20 | 20 |
| Trailer Parking | No. | Nil | 25 |
| Car Parking | No. | Nil | 5 |
| 20 | | Rough finish broom and cracked | Grooved |

Table 2 Slipway Ramp Properties

The slipway has excellent boat ramp attributes except that the concrete ramp is relatively smooth and therefore would require re-topping or reconstruction to provide a non-slip grooved finish to meet RMS Guidelines and Australian Standards.

As is the case for the River Ramp, there are no formalised car or trailer parking facilities in the area. However the slipway is not constrained by land availability, as there is ample flat ground around it which could be transformed into trailer and car parking.

Being a commercial slipway of some antiquity, the foundation conditions below the ramp loading area are unknown. Similarly some degree of contamination in the seabed beyond the slipway's concrete ramp might be expected.

However, diving studies included in the above referred report refer to relatively deep ballast beyond the ramp indicating stable founding material. Re use of the existing concrete ramp and slipway ballast as a founding material should therefore be considered a viable alternative after further foundation studies are completed in detailed design.

In 2015 DPI commissioned dredging works in the Boatharbour and their Review of Environmental Factors identified no contaminants of concern but noted the occurrence of acid sulphate in the sediments. Works were extended to include the dredging of sediments from the slip rails and ballast as well as the complete removal of the slip rails and sleepers.

3 Demand

The main users of the access-to-water facility provided by the Brunswick Heads Boat Harbour are the trailerable boat and paddle craft using public. The larger boats moored in the Marina rarely move with the charter boats providing the most frequent passages in and out of the river mouth.

As part of their commercial evaluation Jones Laing Laselle (JLL) undertook a study of underlying boat usage based on boat registrations in the area. The study sourced registrations from Roads and Maritime Services (RMS) records. Table 3 below is a summary of these registrations and is extracted from the JLL report.

| Local Boat Registrations as sourced from Roads and Maritime Services Records | | | | | | |
|-------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| New Boat Registrations within Catchment by size & year | | | | | | |
| Boat Length | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Up to 3.0m | 14 | 8 | 7 | 7 | 9 | 5 |
| 3.01-4.0m | 224 | 197 | 201 | 208 | 209 | 94 |
| 4.01 – 4.5m | 179 | 164 | 170 | 184 | 167 | 60 |
| 5.01-6.0m | 86 | 76 | 57 | 57 | 67 | 21 |
| 6.01-8.0m | 33 | 32 | 41 | 40 | 27 | 9 |
| 8.01-10.0m | 5 | 8 | 7 | 3 | 9 | 3 |
| 10.01-12.0m | 8 | 6 | 6 | 10 | 6 | 4 |
| 12.01-15.0m | 12 | 7 | 5 | 4 | 5 | 0 |
| 15.01-18.0m | 5 | 0 | 0 | 0 | 5 | 1 |
| 18.01-20.0m | 1 | 1 | 0 | 0 | 0 | 0 |
| 20.01-25.0m | 0 | 0 | 0 | 0 | 0 | 0 |
| Over 25.0m | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 567 | 499 | 494 | 513 | 504 | 197 |

Within the catchment, very few new registrations have been recorded for new vessels that would most likely require a berth (vessels over 10m). This is largely a supply-led issue with a lack of available marina berths in the immediate area, as well as the boating conditions themselves, with limited protected boating locations being a factor in limited vessel demand.

Table 3 Local Boat Registration Trends

From Table 3 it can be seen there is a consistently high level of small new boat registrations in the area. Statistics for 2015 are obviously incomplete.

During site inspections on non-weekend days up to fifteen trailers were recorded using the parking surrounding the current River Ramp. APP observations during peak demand (mackerel season, flat water, good bar crossing) indicate 35 trailers may be parked on and off site at any one time. Off-site parking consists of random parking along the main road passing the site.

The Stakeholder Workshop and One on one meetings with the Fishing Club and other major stakeholders support these observations.

That is, with the recent addition of the new pontoon (boat holding structure) the theoretical capacity of the single rural ramp is between 30-40 car and trailer spaces.

Based on the above it is assumed at this stage that at least 35 trailer parks are required for the existing facility and it is likely that such demand will grow if improvements are made due to the shortage of alternate ramp sites. To this point it is noted that Byron Shire has virtually no recreational trailer boat launch capacity whilst Ballina Shire, which has at least three, is 45 minutes away by road.

Logically then Trailer and Car Parking Capacity should be expanded to meet increased demand. This will require expansion of parking into the Boat Harbour Precinct defined as Lot 1 DP 811063 in Figure 2.

This step was canvassed in and subsequent directions grew out of the Stakeholder Workshop. The proposals put forward involved increasing the width of the existing ramp or providing a separate still water launch facility in the Boatharbour whilst maintaining the River Ramp as a separate launch facility. This was further expanded into separating launch facilities for powered and non-powered craft within the Boatharbour. This progress of ideas was based on the inadequate capacity, safety and amenity of the existing River Ramp for all but experienced users. It was also apparent that powered and non-powered (paddle) craft should be separated for reasons of safety and clashes of launch procedures and land uses.

Anecdotally kayaking and school paddle groups have arrived on weekends to launch a trailer-load of paddle craft on the River ramp taking from one half to three quarters of an hour to park and unload on the ramp which can cause spates of “ramp rage”.

Quantified demand for paddle craft launching is not available. During interviews with surf rescue organisations they advised that they used the Brunswick Boat Harbour as a training facility for senior and junior members during summer. Such training events could include 20 to 30 members training 2 – 3 times per week.

4 Summary of Constraints and Opportunities (Refer to Figure 3)

4.1 Constraints

Existing areas

- The River Ramp, although designed as dual ramp, has single lane capacity due to the river current and mooring limitations. The ramp is only usable as a dual ramp in its current state when used by experienced users.
- No formal parking arrangement limits trailer parking to single lane capacity. The informal parking only allows for up to 8 car and trailer spaces.
- Land tenure for the existing facilities limits parking redevelopment and does not allow for the expansion of trailer and car parking capacity to meet demand.
- Inadequate manoeuvring and amenity provisions exist for River Ramp
- Grade and Length of River Ramp limits larger boat with trailer launch and retrieval to high tides
- Ability to expand around River Ramp constrained by proximity to SEPP55 vegetation
- Inadequate access, car parking and launch and retrieval facilities exist for the Beach ramp

Expanded Area

- Slipway surface requires textured finish

In summary the small boat launch and retrieval facilities are constrained from providing an appropriate level of service to existing demand due to river current, inadequate ramp length and grade, land tenure, inadequate parking and inadequate amenities. Due to these constraints the current facilities provide for a single lane capacity whereas the location and public demand require a dual lane capacity.

4.2 Opportunities

- Limited alternative launch sites
- River Ramp is in fair condition
- Slipway has excellent grade, length, width and depth characteristics
- There is no river current related constraints when considering the slipway as an alternative option
- If Council and Crown Land site is combined there would be ample room around all of the site to provide formalised, landscaped parking and amenities to meet the dual lane demand.
- The Boat Harbour Precinct is on sandy level terrain with little environmental constraints and is close to main roads and town facilities. Expansion of facilities is therefore not constrained by buildability issues.
- Small boat ownership in the catchment continues to grow at a steady rate of about 500 boats per year and thus demand for boat launching will continue to grow.

5 Design Standards & Parameters

The two main reference documents for Marina and Boat Ramp Design are:

- NSW RMS Boat Ramp Facility Guidelines (September 2015)
- Australian Standard AS 3962 Marina Design Guidelines

Both reference documents provide advice on desirable properties for the Boat Ramps. The NSW Boat Ramp Facility Guidelines provide details of geometry, structural design, construction details and parking. AS 3962 provides commentary on provisions of services and trailer parking numbers. These documents should be considered the technical reference documents for the Small Boat Launch and retrieval Design Investigations and Documentation.

The RMS Guidelines are an updated version of the original 1980's PWD Guidelines for Boat Ramps and they are considered to provide the most comprehensive resource document for Boat Ramp analysis and Design. Key design and operational parameters are reproduced in Table 4 below.

Extracts from the RMS guidelines below provide geometric requirements for spatial planning. The guidelines also provide substantial information on parking layout, amenity provisions, circulation and environmental aspects of design.

Parking and car circulation become a major consumer of land. Trailer-with-car parking spaces require up to 12.5 metre parking spaces. The guidelines provide examples of sympathetic car parking designs to suit this demand. Examples are provided overleaf.

| Parameter | Unit | Median requirement |
|----------------------------------------------------------------|------|--------------------|
| General User Description. Two lane rural concrete boat ramp | | |
| Width | m. | 8 |
| Length | m. | |
| Grade | - | 1 in 8 |
| Toe Depth at Low Tide | m. | 1 |
| Trailer Manoeuvring Distance | m. | 20 |
| Trailer Parking | No. | 20-30 / lane |
| Car Parking | | 5 / lane |
| Surface Finish | | Grooved |

Table 4 Summary of key RMS Design Guidelines

Car and trailer parking provisions reproduced from AS 3962-2001 are provided in Table 5 below.

| Area | Number of car and trailer spaces per boat ramp lane | | |
|-------|-----------------------------------------------------|------------------------------|--------------------------------------------|
| | Ramp only | With Boat holding structures | With separate rigging and de-rigging areas |
| Urban | 30-40 | 40-50 | 50-60 |
| Rural | 20-30 | 30-40 | 40-50 |

Table 5 Number of car and trailer parking spaces for boat ramp facilities



Figure 5 Typical car and trailer parking space geometry dimensions
(RMS NSW Boat Ramp Facility Guidelines)

| Parking Angle | Dimensions (metres) | | | |
|---------------|---------------------|------|-----|-----|
| | 'A' | 'B' | 'C' | 'D' |
| 90 degrees | 3.5 | 12.5 | 7.5 | - |
| 60 degrees | 3.5 | 12.3 | 6.5 | 1.7 |
| 45 degrees | 4.2 | 11.0 | 5.3 | 3.0 |

Table 6 Typical car and trailer parking space geometry dimensions
(RMS NSW Boat Ramp Facility Guidelines)



Grassed car and trailer spaces

6 Stakeholder Inputs

6.1 Stakeholder Workshops and One-on-One Meetings Input Methodology

A major part of the Masterplan process has been to interview Stakeholders at a preliminary workshop to capture their ideas and observations about shortcomings of existing facilities and requirements for future facilities. From this information ideas were captured on the Stakeholder Worksheets and subsequent one on one interviews were held to confirm what had been presented. Stakeholders ranged from the Public to Private domain, industry, community and services sectors.

The Masterplan is then developed by distilling these ideas into Strategic Objectives and Design Principles. Constraints, Opportunities, Design requirements and feasibility are used to filter Objectives in an Options appraisal. From these options single or preferred options are developed for subsequent review in a further Stakeholder Workshop.

To date one Stakeholder Workshop and a series of one-on-one meetings have been undertaken. A further Stakeholder Workshop will be held to discuss the outcomes of this report.

A record of the First Stakeholder Workshop is provided in Appendix 1.

6.2 Feedback from Stakeholder Workshop One

Stakeholder inputs concerning marine based development were summarised on Stakeholder Worksheets 1-3. Copies are provided in Appendix 2. In summary the Stakeholder Workshops produced the following proposals for small boat launch and retrievals.

- a) Maintaining and improving the existing River Ramp by the addition of a pontoon system. Note that Byron Shire Council had funding and plans for installing a pontoon to the River Ramp and that this is now complete. This will improve the operational aspects of the Ramp but will not greatly assist in launch/retrieval events, as the river current and ramp length are still major shortcomings.
- b) Provision of a second Ramp for boat and trailer launch and retrieval in the western portion of the Boat Harbour. This would provide a still water ramp.
- c) Replacing the River Ramp with a larger Ramp excavated into the existing River Ramp and manoeuvring area so as to minimise impact of river current.
- d) Providing a recreational paddle craft launch/retrieval location remote to the trailer boat launch/retrieval location.
- e) Provide a paddle craft launch/retrieval location for surf club rescue training of senior and junior club members.
- f) Due to its tendency to naturally accrete sand and estuarine deposits the eastern side of the boat harbour around the existing mooring pens was nominated as being suitable for all paddle craft launch/retrieval events. The Beach Ramp was also considered to be suitable. Both sites satisfied the desire to separate motorised and non-motorised boats for safety reasons.

- g) Maintaining the existing fish cleaning table at the river ramp and not in the boat harbour due to run off effects. The impact of attracting sharks to the area because of fish cleaning should be investigated and discussed at the next Stakeholder Workshop.
- h) Providing a rapid launch facility for marine rescue for offshore rescues.

6.3 Feedback from One-on-One Meetings.

The Stakeholder Worksheets were used as discussion points in subsequent one-on-one meetings with Stakeholders to confirm that Stakeholder opinions had been captured in the options. Records of these meetings are provided in Appendix 3.

Most Stakeholders advised that their views had been captured by the Stakeholder Worksheets. A summary of the meetings is provided overleaf in Table 7. This summary only refers to the Small Boat Launch and Retrieval Study. Comments made by the stakeholders to other issues pertaining to the Masterplan are not included in this Table.

| Small Boat Launch & Retrieval Feedback | | | | | | | | |
|------------------------------------------------------------------------|------------------------------|-----------------------|-------------------------------------|-----------------------|--------------------------------|-------------------------------------------|---------------------------------|---|
| Group | A | B | C | D | E | F | G | H |
| Issue | | | | | | | | |
| River ramp | Maintain Existing | | Upgrade and Make safer | | | Upgrade and Make safer | | |
| River Pontoon | required | | | | required | | | |
| Trailer Parking | Extra req'd as per WS 1 | | | | | | | |
| Car Parking | Extra req'd as per WS 1 | As per W/S 1 | As per W/S 1. | | | | | |
| Ramp Capacity | 3 lanes req'd | | | | | | | |
| Ramp Options | Provide calm water launch | Calm water launch | | | | | | |
| Amenities specific | Maintain exist fish cleaning | | | | | | | |
| Amenities general. Toilets, showers etc | | Improvements required | Improvements required | Improvements required | | Improvements required | Improvements req'd | |
| Paddle Craft Launching | | | Strong support for eastern facility | | Prefer existing beach | Improve ease & safety at eastern location | | |
| Boat/ Ski Storage | | | For rescue organisations | | | For rescue organisations on west side | | |
| Jet ski rescue storage | | | | | Method to be clarified | | Dry dock near paddle craft area | |
| Direct Launch Access for Emergency Launch | | | | | Use existing river launch site | | Very important | |
| Ambulance Pickup | | | | | Very important | | Required | |
| Helicopter | | Maintain Existing | | | Desirable | | Required | |
| Sheds | | | | | No | | No | |
| Shared rescue Facilities for Emergency Services | | | | | Preferred | | No | |
| A is Byron / Brunswick Angling & Deep Sea Fishing Club | | | | | | | | |
| B is Brunswick / Byron Fisherman's Co-operative | | | | | | | | |
| C is Community representatives 1 | | | | | | | | |
| D is Brunswick Heads Cruising Yacht Club Association | | | | | | | | |
| E is Group Emergency Services: Branch and Local SLSC & Marine Rescue 1 | | | | | | | | |
| F is Community Representative 2 | | | | | | | | |
| G is Group Emergency Services: Branch and Local SLSC & Marine Rescue 2 | | | | | | | | |
| H is College of Marine Studies | | | | | | | | |

Table 7 Summary of One on One Meetings

7 Options

A set of Options for Small Boat Launch and Retrieval development has been prepared. See the figures as outlined below and overleaf.

The Options discussed below represent a progressive expansion of capacity and amenity and hence cost. For all options it is assumed that the eastern edge of the Boat Harbour will be eventually turned over to paddle craft launch and retrieval facilities co-incident with construction stage 1 of a new floating facility. Refer to Figure 11 for this detail. The Options proposed are:

Figure 6 Option 1 Existing Ramp & Formalised Parking

Maintain the status quo and do a low level parking upgrade. This is a “tidy up” solution only using land controlled by Byron Shire Council within the existing area. It does not address the underlying problems of limited ramp capacity due to river currents and parking shortfalls.

Figure 7 Option 2A Upgrade Existing Ramp & Parking

Minimal Upgrade with Council’s new Pontoon and additional parking provided by expansion into the adjacent Boat Harbour Precinct. This provides parking to meet existing demand. Problems with river current are not addressed and full amenity not achieved.

Figure 8 Option 2B New Embayment & Formalised Parking

As for 2A but new River Ramp constructed as an embayment solution. This involves excavating the ramp into the side of the river with the tow of the ramp at the river’s edge. The embayment should address river current issues and therefore additional parking would be required. Full car parking and amenity is not achieved. The unresolved issue with an embayment solution is that it pushes the 20m manoeuvring space required in front of the ramp marginally into the SEPP55 boundary.

Figure 9 Option 3A Upgrade Existing Ramp, Slipway and Parking

Improvements to River Ramp as for Option 2 but provide still water ramp access over existing Slipway site. Formalise and expand parking to meet demand and provide full amenities.

Figure 10 Option 3B New Embayment and Parking

As for 3A but embayment ramp replaces River Ramp and Slipway redevelopment not required.

A discussion on the Options follows in Sections 7.1 – 7.3.

Figure 6 Option 1 Existing Ramp & Formalised Parking

Figure 7 Option 2A Upgrade Existing Ramp & Parking

Figure 8 Option 2B New Embayment & Formalised Parking

Figure 9 Option 3A Upgrade Existing Ramp, Slipway and Parking

Figure 10 Option 3B New Embayment and Parking

Figure 11 Common Arrangement for Paddle Craft to all Upgrades

7.1 Upgrades to Existing River Ramp

All Stakeholders considered the River Ramp should be maintained and/or upgraded with the proposed pontoon. Despite its shortcomings (principally surface finish and exposure to currents) it is in fair condition and is considered to be worth retention. The option therefore is to retain it in its existing location or expand it as an embayment style ramp. Ideally the ramp would be re constructed to a greater length and depth.

Option 1 is considered to be of little value as underlying deficiencies are not addressed.

Option 2A acknowledges the capacity restrictions of the ramp and provides parking to meet that capacity. Option 2B addresses the ramp capacity issue and would require additional parking.

Expansion of the parking available is considered essential as the current limited capacity restricts use of the facility. Minimal upgrade solutions only lift parking numbers to meet the number required for the existing ramp used as a single lane ramp only. If full two lane ramp capacity is to be provided, then parking will have to grow into the Expanded Study area as described in Options 3A and 3B.

It is noted that a new embayment ramp replacing the existing conventional River Ramp pushes the 20m manoeuvring space required in front of the ramp marginally into the SEPP55 boundary.

7.2 Construction of Still Water Boat Ramp

All Stakeholders considered a second still water ramp to be of great benefit. It is noted that most boat ramps are constructed in relatively calm waters. The location of a still water ramp is determined by the boat harbour layout, the manoeuvring areas required on ground and the effect of the ramp on other water borne and land based activities. Three possible locations were proposed by stakeholders and shown on the two Stakeholder Worksheets. If the Still Water Boat Ramp was to be adopted then the location shown in Option 3A was most preferred by the Stakeholders interviewed. The location shown on Stakeholder Worksheet 2 is considered inferior to that on Stakeholder Worksheet 1 for small boat launch/retrieval because

- It requires a longer passage from the marina entrance to the ramp
- Has less on shore manoeuvring room for vehicles, boats and trailers
- Requires power boats to traverse the paddle craft launch/retrieval area hence compromising the separation of paddle craft and trailer boats

This location has been abandoned as a still water ramp site.

7.3 Separate Paddle Craft Launch/Retrieval Space

All Stakeholders considered the eastern side of the Boat Harbour and Beach Ramp provided the ideal location for a Paddle Craft Launch and Retrieval area.

This feedback is reproduced on the Stakeholder Worksheets one and two with a floating pontoon and wide floating ramp access to be provided in the eastern section of the Boat Harbour for both Stakeholder Worksheets. The detail is replicated on Figure 11.

The Beach Ramp is included as an informal paddle craft launch/retrieval facility. Car parking to both is provided close by with the formalisation of access to the site as summarised on Figure 11.

7.4 Rapid Launch Facility for Marine Rescue

Rescue organisations have indicated a variety of needs for launch and retrieval. In summary these are:

- Rapid response and recovery craft
- Training Craft
- Deep Water response craft

Possible locations were shown on the Stakeholder Worksheets.

8. Scope of Engagement

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