

# DRAFT

## Ballina Marina Master Plan



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**ballina**  
shire council

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# THE PROJECT

The Ballina Marina Master Plan aims to encourage and guide redevelopment of the area commonly known as the Trawler Harbour site in West Ballina.

The Master Plan was commissioned by Ballina Shire Council to assist Government and private interests in considering the site for investment and redevelopment. The Ballina Marina Master Plan project includes a number of sub-projects. These are:

- 1. Redevelopment Concept Master Plan;
- 2. A Boating and Maritime Demand Analysis;
- 3. Feasibility Analysis of the Ballina Marina Master Plan; and
- 4. Community and Stakeholder Engagement.

This document addresses the Redevelopment Concept Master Plan, however, will be referred to as the Ballina Marina Master Plan. The Boating and Maritime Demand Analysis and Community and Stakeholder Engagement informed the preparation of the Master Plan. The Feasibility Analysis had an integrated relationship with the Master Plan. It informed the design process at the commencement of the project and, later, provided a review of the Master Plan options to direct the evolution of the preferred Marina Master Plan. The relationship between the sub-projects is summarised in Figure 1.

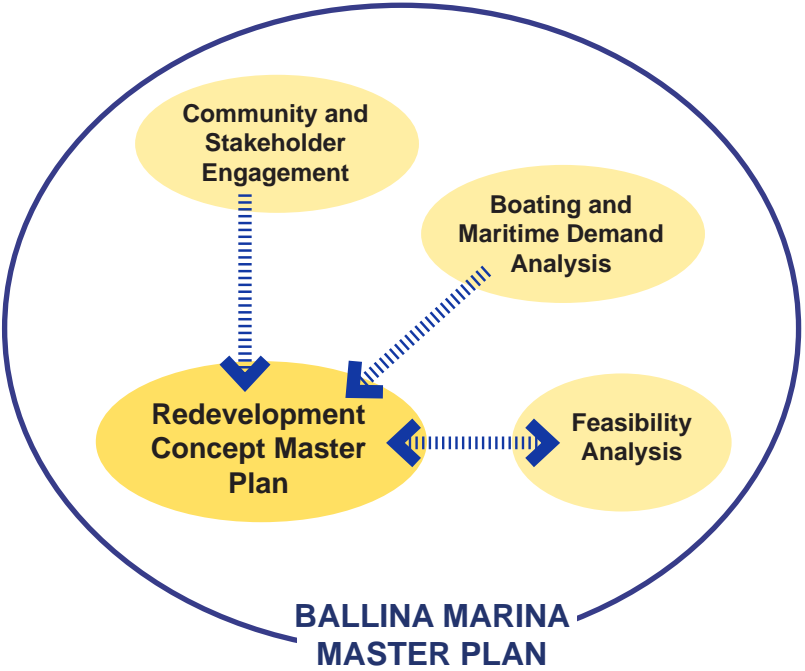


Figure 1: Ballina Marina Master Plan sub-projects

# LOCATION



Figure 2: Ballina Trawler Harbour Study Area

The site includes three parcels of Crown Land and an area under the ownership of the NSW State Government. Ballina Shire Council is not a land owner within the study area, but has had a long standing interest in its potential redevelopment and the economic benefits that could be derived from expanded marine infrastructure in the shire. The Ballina community has, over many years, expressed an interest in a greater range of marine infrastructure in Ballina.



The Trawler Harbour site is approximately 9.2 hectares in area and is located 2km west of the Ballina CBD at West Ballina. The site is reached by Boatharbour Road off River Street. The site is bounded to the east by Fishery Creek and to south by the Richmond River. There are residential areas to the west of the site, and to the east, along Fishery Creek. River Street is immediately to the north of the site and provides a connection between the Pacific Highway and Ballina.

The site currently includes an operational NSW Roads and Maritime Services depot, a working harbour with access to Fishery Creek and the Richmond River administered by the Ballina Fisherman's Co-operative and a public boat ramp and associated infrastructure on Fishery Creek. There is an area of mangroves in the southwest corner of the site and an area of open, vacant land, on the northern and western sides of the harbour.

# PROJECT OBJECTIVES

to identify preferred land uses for the Ballina Trawler Harbour site as the basis for decision making and redevelopment;

to produce a master plan that encourages investment in the site for the purpose of redevelopment;

to determine site constraints and opportunities, environmental values, planning issues and community views relevant to the site;

to involve key stakeholders in the preparation of the master plan.

THE SITE

The project site is comprised of the following land parcels.

- Lot 1 DP 791628

Crown Land

Devolved to Council for management.  
Includes licence areas for Ballina Fishermans Co-operative to manage the harbour area.
- Lot 1 DP 755684

NSW State Government

Occupied by NSW Roads and Maritime Services depot.
- Lot 458 DP 728654

Crown Land
- Lot 459 DP 728654

Crown Land

Council appointed as Reserve Trust Manager.

Ballina Local Environmental Plan 2012

The Ballina Local Environmental Plan 2012 applies to the study area. The land is affected by the following land use zones.

- RE1 Public Recreation - Lots 458 and 459 DP 728654

Crown Land to the north of the RMS depot and along Fishery Creek;
- R3 Medium Density Residential - Lot 232 DP 755684

RMS depot;
- IN1 General Industrial - Lot 1 DP791628

Boat harbour and vacant land.

Zone Objectives and Land Use Tables:

RE1 Public Recreation

Zone Objectives:

- to enable land to be used for public open space or recreational purposes;
- to provide a range of recreational settings and activities and compatible land uses;
- to protect and enhance the natural environment for recreational purposes;
- to provide for a diversity of development that meets the social and cultural needs of the community.;
- to provide for public access to open space and natural

- recreation areas;
- to protect and conserve landscapes in environmentally sensitive areas, particularly in foreshore and visually prominent locations;
- to provide for development that is consistent with any applicable plan of management;
- to encourage development that achieves the efficient use of resources such as energy and water.

Permitted without consent:

Environmental protection works, flood mitigation works and roads

Permitted with consent:

Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Child care centres; Community facilities; Emergency services facilities; Entertainment facilities; Environmental facilities; Extensive agriculture; Forestry; Function centres; Heliports; Information and education facilities; Jetties; Kiosks; Markets; Public administration buildings; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Respite day care centres; Restaurants or cafes; Sewerage systems; Signage; Take away food and drink premises; Water recreation structures; Water supply systems; Wharf or boating facilities

Prohibited:

Any development not specified as permitted with or without consent.

R3 Medium Density Residential

Zone Objectives:

- to provide for the housing needs of the community within a medium density residential environment;
- to provide a variety of housing types within a medium density residential environment;
- to enable other land uses that provide facilities or services to meet the day to day needs of residents;
- to provide development that is compatible with the character and amenity of the surrounding neighbourhood;
- to encourage housing and infrastructure that supports the

- ageing population;
- to provide for development that meets the social and cultural needs of the community;
- to encourage development that achieves the efficient use of resources such as energy and water.

Permitted without consent:

Environmental protection works, home-based child care and home occupations

Permitted with consent:

Attached dwellings; Boarding houses; Child care centres; Community facilities; Extensive agriculture; Group homes; Home industries; Kiosks; Markets; Multi dwelling housing; Neighbourhood shops; Places of public worship; Respite day care centres; Roads; Roadside stalls; Seniors housing; Any other development not specified as permitted with consent or prohibited.

Prohibited:

Advertising structures; Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Boat building and repair facilities; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Dairies (pasture-based); Depots; Eco-tourist facilities; Farm stay accommodation; Forestry; Freight transport facilities; Heavy industrial storage establishments; Highway service centres; Industrial retail outlets; Industrial training facilities; Industries; Marinas; Mooring pens; Moorings; Mortuaries; Recreation facilities (major); Restricted premises; Rural industries; Rural workers' dwellings; Service stations; Sex services premises; Storage premises; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Wharf or boating facilities; Wholesale supplies



## Zone Objectives:

- Permitted without consent:**

**Permitted with consent:**

**Prohibited:**

This information has been extracted directly from the Ballina LEP 2012. (Ballina Shire Council). Figure 3 indicates the current zonings and land parcels across the project site.

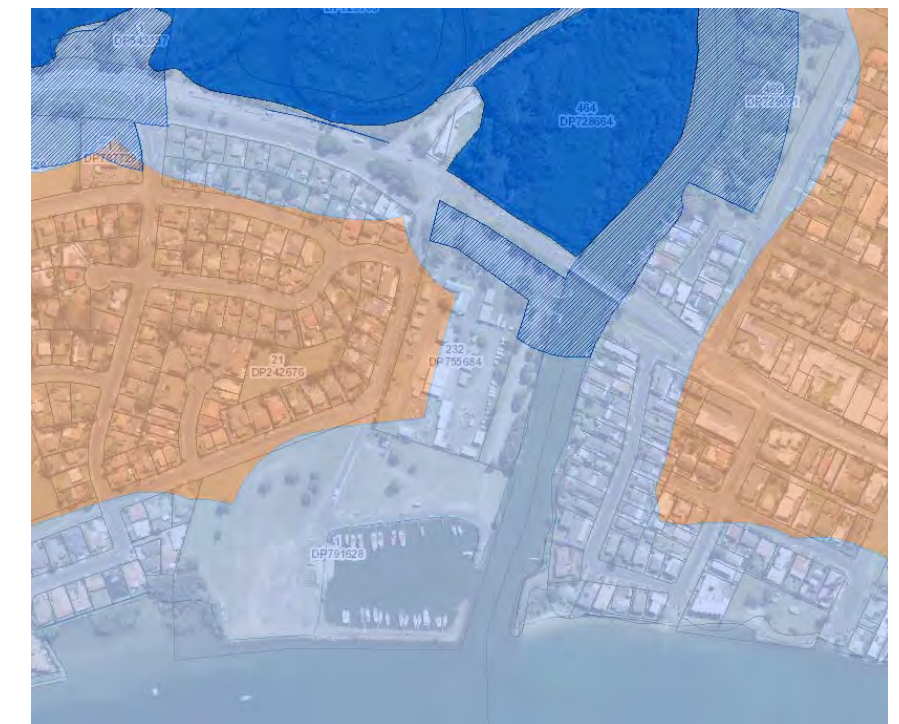
Part of the project site is Crown Land. The Crown Lands Act 1989 and the “Principles of Crown Land Management” are relevant when considering proposals for the site.



### Figure 3: Ballina Trawler Harbour Study Area - Land Use Zoning and Land Parcels

## State Environmental Planning Policies

The site is mapped as within 100 metres of a State Environmental Planning Policy (SEPP) 14 Coastal Wetland. The site is within the coastal zone and is identified as a sensitive coastal location pursuant to SEPP71 Coastal Protection.



#### Figure 4: Ballina Trawler Harbour Study Area - State Environmental Planning Policies



# THE PROCESS

The preparation of the Ballina Marina Master Plan involved a range of inputs and considerations including:

- a review of relevant, previous studies and reports;
- a review of relevant statutory and policy framework;
- site investigations; and
- Council input.

Other sub-projects including the Boating and Maritime Demand Analysis; the Community and Stakeholder Engagement and the Feasibility Analysis as well as a preliminary site contamination assessment and investigation into Native Title considerations have also directly informed the master planning process.

## Background Research

A number of studies, master plans and strategies have been completed over the last 10 years with relevance to the Ballina Marina site. Most recently, the *Ballina Major Regional Centre Strategy 2016 (BMRCS)* expressed the need to identify a preferred site for a large marina and the need to augment existing marina facilities at Ballina to improve the availability of mooring, storage and servicing facilities.

The *Marine-Based Industry Policy - Far North Coast and Mid North Coast NSW*, prepared by the NSW Department of Planning and Environment, aimed to facilitate the development of marine-based industry in appropriate locations. The strategy identified a range of criteria to determine appropriate locations for marine based industry.

The Trawler Harbour site was studied for redevelopment as an expanded marina in 2010 when Worley Parsons considered the feasibility of redeveloping the site for the NSW Land and Property Management Authority and prepared *The Redevelopment of Ballina Trawler Harbour Feasibility Study*. This study explored a variety of redevelopment options for the marina and considered the financial viability of redevelopment.

In 2005, GHD prepared *The Lower Richmond River Recreational Boating Study* for Ballina Shire Council. This study considered the needs of Ballina in regards to recreational boating. The Trawler Harbour site was one of the sites considered and was found to be important to the Ballina community in terms of what it

did, and could, offer for recreational boating. The study identified the Trawler Harbour site as a strong candidate for redevelopment in relation to marine infrastructure.

In 2007, GHD prepared *The Ballina Foreshore Masterplan* for Ballina Shire Council. The study considered foreshore areas between Burns Point Ferry and Missingham Bridge, including the Trawler Harbour site. The plan considered the current use of the site and available public facilities. It identified parts of the site as having potential for future development.

In 2008, the *Ballina Boat Harbour - Development Feasibility Overview* was prepared by the Department of Lands, Ballina Project Office, Port and Coastal Engineering Services. This study assessed the feasibility for the possible expansion of the Trawler Harbour and was based on GHD's indicative layout included in the *Lower Richmond River Recreational Boating Study*.

In 2015, Geolink Consulting prepared the *Martin Street Boat Harbour Precinct Master Plan* to guide redevelopment of the Martin Street Harbour precinct. Outcomes of the Master Plan have relevance to the Ballina Marina in relation to maritime uses and opportunities for the integrated redevelopment of the two sites.

The *Ballina Local Environmental Plan 2012* describes the current zoning for the site. The site includes Crown Land. The Crown Lands Act 1989 and the “Principles of Crown Land Management” are relevant when considering the site.

## Site Investigations and Council Input

The Master Plan process was informed by detailed site investigations. Council has made available its knowledge of the site and existing base information including survey material for the harbour.

## Sub-Projects - Community Consultation

The community has expressed visions for the site in a number of previous studies. Community and stakeholder consultation was undertaken at the commencement of the master planning process by Dr Elizabeth Baker. Stakeholders were given the opportunity

to participate in face-to-face meetings. Postcards were delivered to residents in the vicinity of the Trawler Harbour site with an invitation to complete a written survey or participate in an on-line survey. The broader community was made aware of the same survey via print and broadcast media. The outcomes of this initial consultation have informed the preparation of the Master Plan.

## Sub-Projects - Boating and Maritime Demand Analysis

At the project commencement, Hill PDA prepared a Boating and Maritime Demand Analysis. This specifically considered the community's requirements for recreational boating at the Trawler Harbour site. The study provided an indication of physical requirements for any harbour redevelopment such as mooring numbers and servicing requirements. This analysis is integrated into the Hill PDA Feasibility and Demand Analysis Report.

## Sub-Projects - Feasibility Analysis

Hill PDA were also commissioned to prepare a Feasibility Analysis associated with the Ballina Marina Master Plan. This analysis provided some information at the start of the master planning process as a guide to potentially viable development options. Following the exploration of the Master Plan options, the Feasibility Analysis provide feedback into these options. As a result of this feedback, two Master Plan options were developed. The Feasibility Analysis then identified the viability of one of these options and this plan has evolved to become the preferred Ballina Marina Master Plan. Together the Demand Analysis and Feasibility Assessment form the Hill PDA Feasibility and Demand Analysis Report.

## Other Information – Preliminary Site Contamination Assessment

Tim Fitzroy and Associates were engaged to undertake a preliminary site contamination investigation in relation to the study area. The purpose of the study was to identify any contamination issues requiring further consideration as part of the master planning process and also determine the need for more detailed investigations as part of the redevelopment of the land.

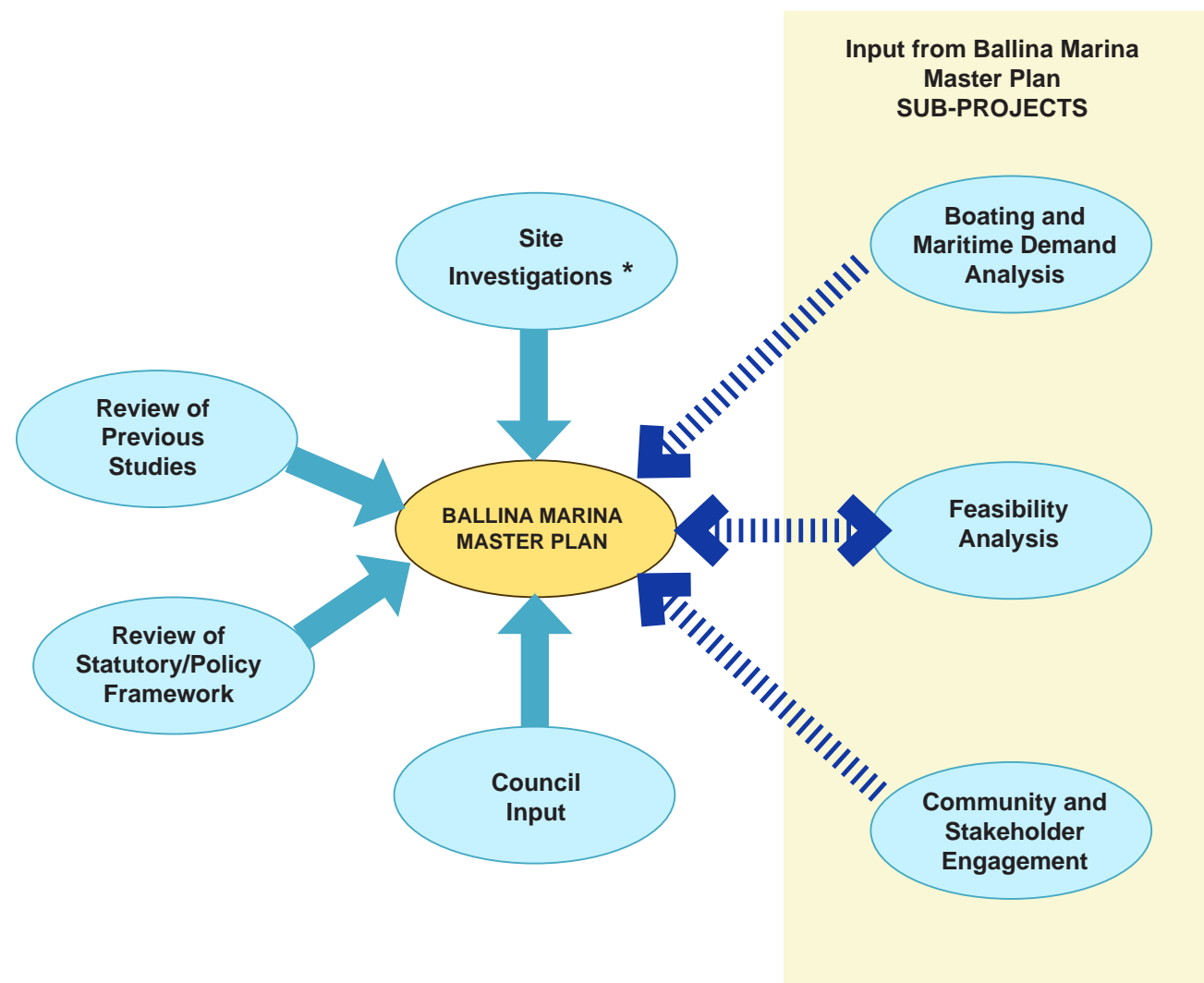
The report identified a number of potential site contamination issues that should be subject to further investigation where the redevelopment of the site is to be progressed (i.e. post master planning). Such investigations should include establishment of a sampling strategy for a detailed site investigation that defines the extent and status of contaminants on the site, assesses potential risk, determines whether further investigation is necessary and addresses the need for a remedial action plan.

**Other Information – Native Title Considerations**

The Department of Primary Industries Crown Lands assisted Council in the consideration of Native Title matters in relation to the study area. On review of the land parcels within the study area (Lot 1 DP 791628, Lot 232 DP 755684, Lot 458 DP 728654 and Lot 459 DP 728654), it is considered that Native Title rights and interests have been validly extinguished in relation to the land having regard for the relevant legislation.

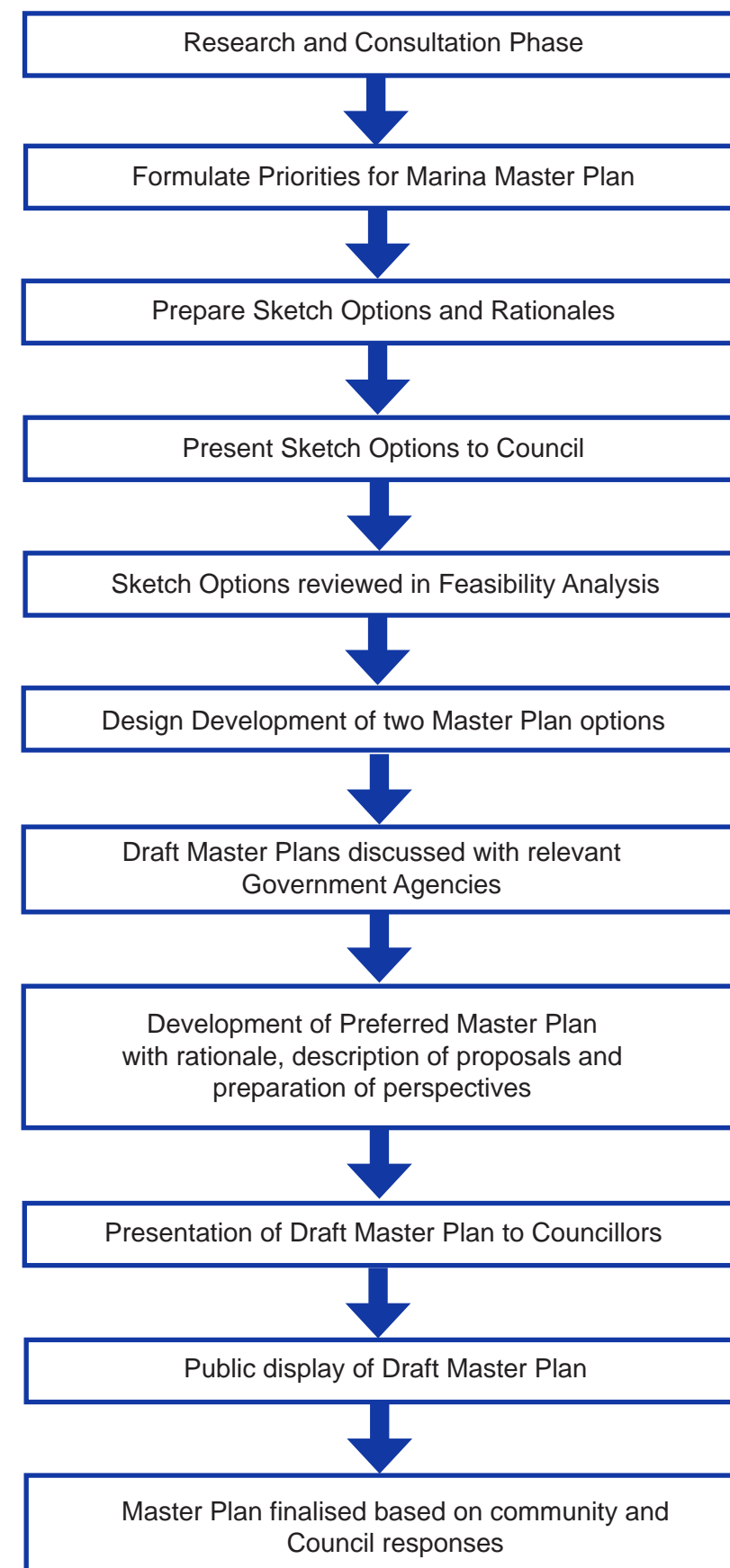
On reviewing all information gained from the research phase of the project, and the input provided by the sub-projects, a set of guiding priorities were formulated for the Ballina Marina Master Plan. These priorities were explored in a series of sketch designs. These designs, along with a rationale for each, were presented to Council and considered by Hill PDA as part of their Feasibility Analysis. The findings of these reviews were then applied in the design development of two Master Plan Options. Further review by Hill PDA and Council identified a preferred Marina Master Plan. This preferred Master Plan was explored in more detail as perspectives, written rationale and illustrated master plan proposals.

Figure 5 summarises the sources of input into the master planning process. Figure 6 illustrates the process undertaken in the master plan preparation.



\* including information from preliminary site contamination assessment and Native Title considerations

**Figure 5: Inputs for the Master Planning process for the Ballina Marina Master Plan**



**Figure 6: Master Planning Process for the Ballina Marina Master Plan**



# BACKGROUND RESEARCH

## Lower Richmond River Recreational Boating Study

The Lower Richmond River Recreational Boating Study was prepared in 2005 by GHD for Ballina Shire Council. The study established short and long terms goals in response to Ballina’s existing and growing needs relative to recreational boating. The study considered:

- existing and potential infrastructure requirements for recreational boating;
- potential tourist and boating linkages upstream;
- maritime infrastructure that would promote Ballina as a destination and servicing centre; and
- the potential for the development of a maritime precinct.

The study provides contextual and historic information about Ballina’s maritime history. Ballina is a comfortable “day sail” for vessels travelling along the NSW coast. It sits between the Tweed River entrance and Yamba. Historic towns upstream on the Richmond River are potential drawcards for visiting boats. (GHD 2006, p 5)

Ballina was settled in the 1880s as a commercial port. The trade was initially in timber, then agricultural produce. The port stopped working in 1960s as rail and road transport dominated. The breakwater was established in 1889 and 1911. Ballina Island was established in 1890 when the channel was made between the Richmond River and North Creek. The Trawler Harbour was constructed in 1966 - 1967 for commercial vessels and in the 1970s stored around 33 boats. Shipbuilding activity today is mostly along Emigrant Creek and at Smith Drive. (GHD 2006, p 8)

The study identified that Ballina’s population growth, particularly in retirees with plenty of recreation time, and the growing popularity of nature based recreation is contributing to a greater need for maritime infrastructure. With a growth in boating comes a need for maritime based industries. (GHD 2006, p 23)

Consultation with interested community groups identified the need for new and upgraded boat ramps and the development of a new Ballina marina as priorities. The community also expressed a desire for foreshore open space. (GHD 2006, p 27)

The study identified a Ballina marina could provide benefits beyond boat storage including:

- supporting an new annual yachting or power boat race with Ballina as the destination or starting point;
- hosting off shore fishing competitions and boating activities;
- use by specific Community Groups with a specific focus e.g. sailing for the disabled;
- as a tourist destination, activity hub and drawcard for Ballina

Boats can be stored by dry or wet storage. Wet storage relates to a boat being stored in the water. Dry storage is either on a trailer at a private residence or in a dry storage at a marina. No dry storage currently exists at Ballina. New marinas can include dry storage. This storage typically provides for boats to be stacked three to four vessels high. The facility operator puts the vessel in the water when required and returns it to storage when not in use.

All vessels dry stored at Ballina have to use one of the eleven public boat ramps to access the water. The Fishery Creek Canal boat ramp is one of the most popular boat ramps. The study noted the following about this boat ramp.

- the grooved ramp has good access to deep water;
- capacity for boats to queue for the boat ramp as well as a pontoon to the north;
- capacity for 45 car and trailer units plus additional informal parking;
- existing facilities include wash down taps, fish cleaning table, lighting and rubbish bins;
- the capacity of 100 boats a day using the ramp is largely restricted by available parking;
- there is an issue with the flow of traffic with a lack of signage identifying the right of way or queuing lane;
- no easy connection between the pontoon and ramp;
- rock revetment either side of the ramp is unsuitable for laying up to by boats.

Recommendations for the boat ramp included:

- formally delineating parking areas;
- signage;
- additional park
- a toilet block.

(GHD 2006, pp 36-47)

Wet storage is used for larger vessels. On the Richmond River

these boats are generally in the range of 7 - 20m in length and are motor boats or sailing boats. Commercial vessels also often require wet storage due their size. Wet stored vessels require a range of services for running and maintenance. Ballina’s former marina was closed in 2002. It provided 50 wet berths and include some dry storage. The Martin Street Boat Harbour and the existing Trawler Harbour have been used to capacity since the closing of the marina. Martin Street provides 18 berths and has shower and toilet facilities. The Trawler Harbour is run by the Ballina Fishermens Co-op on lease from the State Government. It provides 17 berths for trawlers and 17 berth for yachts. It has no shower or toilet facilities.

Other maritime facilities at Ballina include private jetties, two short stay moorings at Mobbs Bay and short stay jetties at Fawcett Park. Industrial maritime activities are focused at Smith Drive and York Marine upstream at Swan Bay. (GHD 2006, p 61)

Community sentiment supported a marina facility rather than a marina precinct integrated with industrial uses. The preference was for industrial uses to be separated from the marina. The community identified the following as important to a marina:

- must be accessible to the general public;
- must be accessible 24 hours;
- able to be walked to from the Ballina CBD;
- include provisions for disabled persons;
- have minimal impact on adjacent neighbourhood;
- have up to 400 berths with capacity for long term use and to accommodate boats up to 40 foot with a 2m draft;
- include a secure, lock up car park;
- include servicing facilities such as refuelling, pump-out facilities and ship-lift areas;
- be affordable for local boat owners;
- retain open space at foreshore;
- have no environmental impacts.

(GHD 2006, p 31)

The study assessed twelve potential marina sites against a range of environmental, social, visual and planning criteria. The study identified the Martin Street and Trawler Harbour as the best candidates for redevelopment, but also suggested that one site is unlikely to provide all requirements for a long-term marina strategy on the Lower Richmond River and a future Greenfield



development may be a long term solution.

The study provided the following recommendations strategies and actions relevant to the Trawler Harbour site

- expand the Fishery Creek Canal Ramp (on acquisition of the RMS site) as a regional standard ramp and integrate with a new marina on the adjacent site;
- provide a second two or three lane ramp and adequate parking to accommodate 100 to 150 additional boat movements;
- address access issues off the old highway and visual amenity for local residents;
- establish a new marina at the existing Trawler Harbour/ RTA Depot site incorporating a 200 berth marina and boat ramp complex (GHD 2006, p 100)
- facilitate discussions with interested parties on the development of this 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.

The following specific requirements were identified as necessary to a new marina.

- boats in wet storage have specific requirements for waste reception (liquid and solid), storage, security, refuelling and maintenance;
- a marine precinct typically includes more involved maintenance and repair facilities as well as significant refit, boat building facilities and related industries;
- a marina needs
  - to be safe place to leave boats;
  - be located off stream with protection from the tidal stream, waves, flood debris and wind;
  - be 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, laundry facilities as well as key maintenance, reprovisioning and equipment requirements.
- consider the provision of dry storage options as part of new marina or marine precinct. (GHD 2006, pp 85

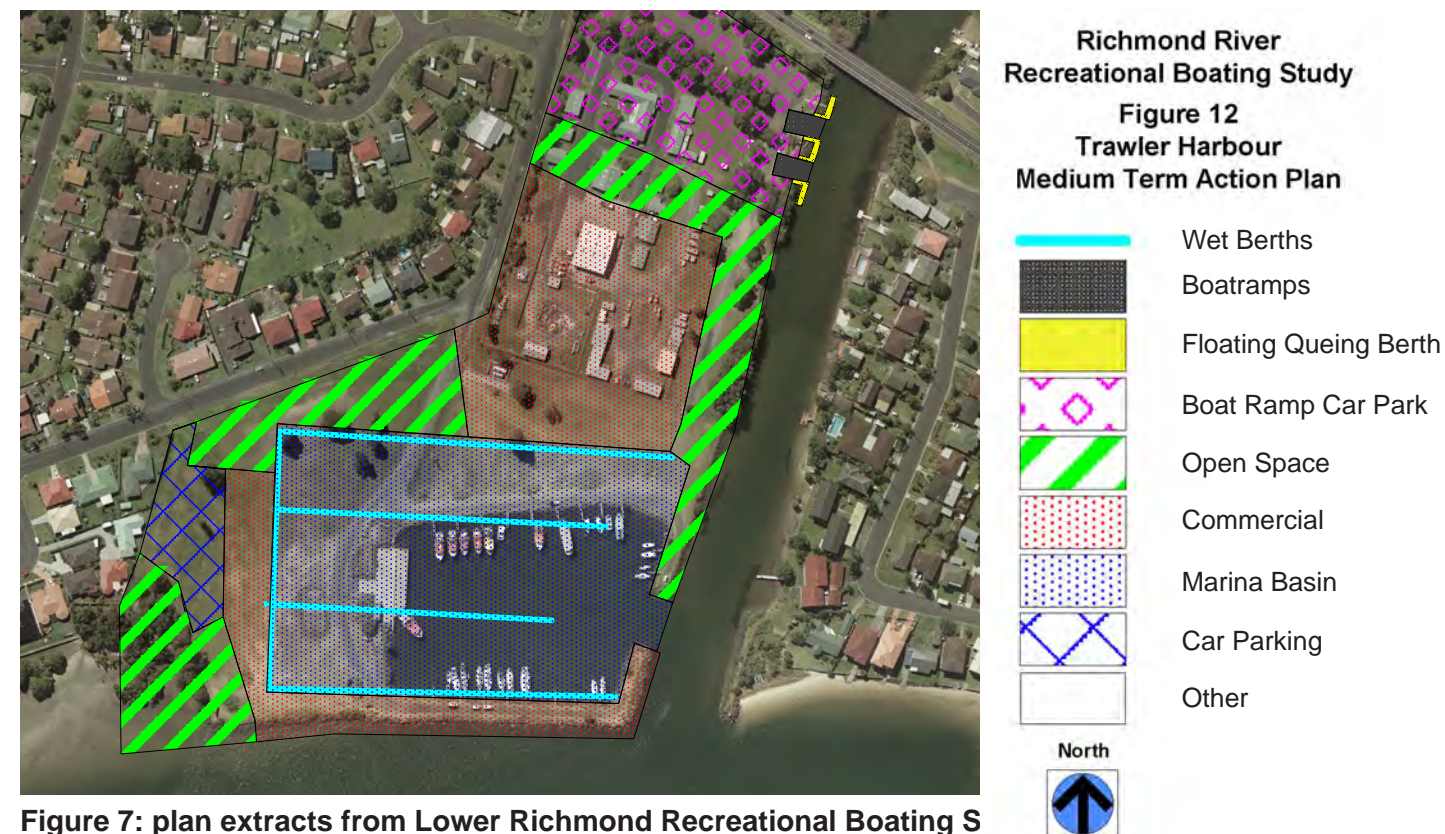
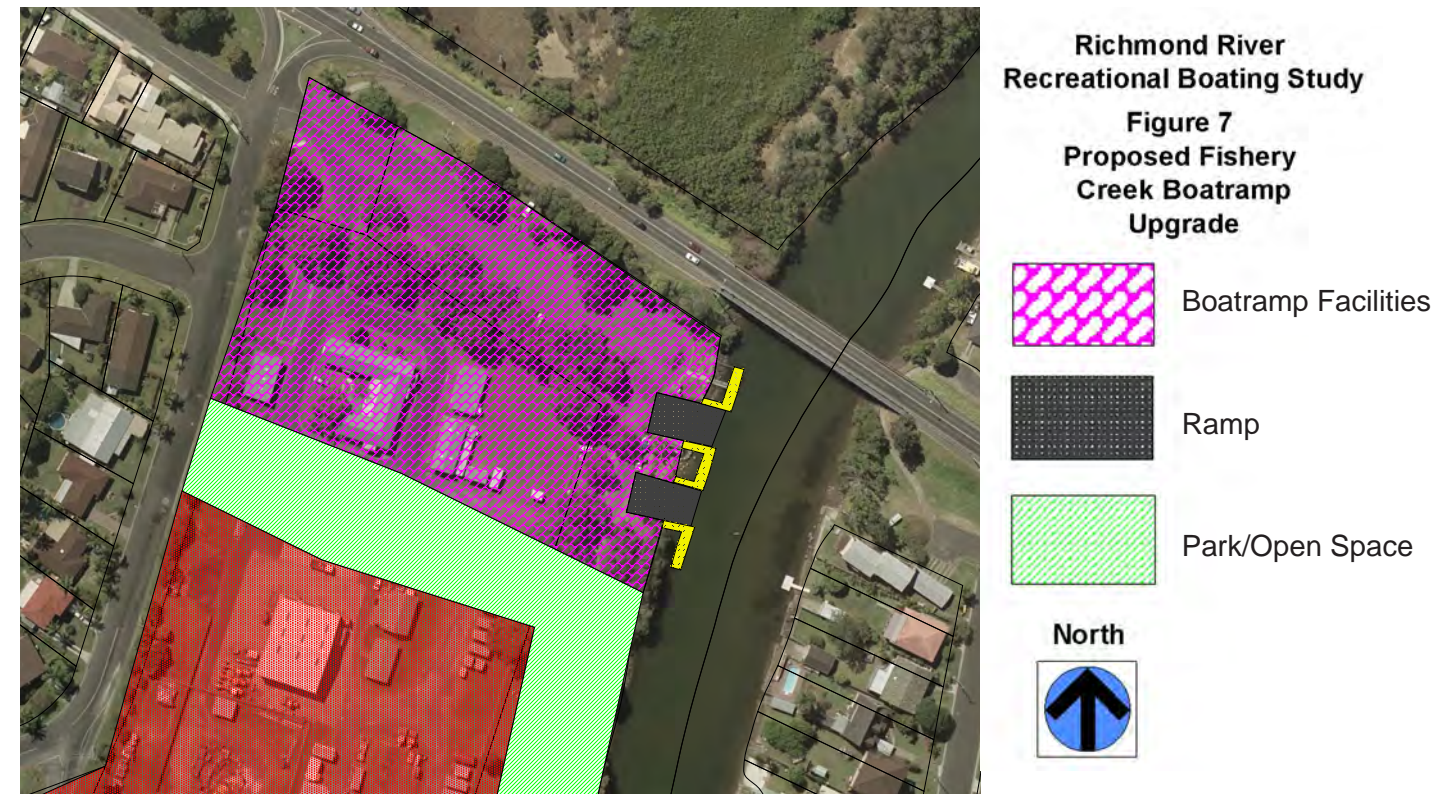


Figure 7: plan extracts from Lower Richmond Recreational Boating S



The Ballina Foreshore Masterplan was prepared by GHD in 2007 and considered foreshore areas between Burns Point Ferry and Missingham Bridge. This is a mix of Crown and Council land. The plan determined preferred land use and management strategies for these areas. The plan was to build upon the sustainability framework, *People, Place and Prosperity: A Framework for a more Sustainable Ballina Shire 2025*. The Master Plan established 15 key planning principles, extracted from *People, Place, Prosperity*, to evaluate proposals including:

- good access in public areas and infrastructure that works for people;
- more options for employment;
- better quality of life;
- cleaner water in the Richmond River and the ocean;
- increased visual amenity;
- protection of native plants, animals and their habitats;
- safer swimming, boating and fishing;
- provision of opportunities for walking and cycling and for enjoying natural areas;
- long term protection of cultural values associated with landscape and land use;
- building reconciliation;
- healthier happier people;
- more opportunities for social interaction;
- creating a sense of community;
- development of new industries and industry sectors; and
- better co-ordination across and within levels of government.

Options considered for the foreshore land included:

- land use options;
- Aboriginal art and symbolism in public spaces;
- heritage plaques in historic locations;
- habitat rehabilitation;
- walkways and cycle ways;
- boating facilities; and
- amenities and facilities

The Master Plan noted the more planning principles a foreshore proposal could positively address the greater chance the proposal would move towards sustainability.

The Master Plan included the Trawler Harbour site. It noted this as Crown land including the RMS depot, the existing Trawler

Harbour and the open space to the west of the harbour. The plan described current public facilities at the site as including boat ramps, toilets and fish cleaning facilities. It identified the foreshore area as under utilised and the RMS site as suitable for a mixed use commercial and residential development. It noted Fishery Creek seagrass beds and a stand of Casuarina regrowth on the creek bank for preservation. Specific proposals for the site achieved 13/15 of the key planning principles and were:

1. expand the marine facilities;
2. retain the existing trawler berths;
3. include commercial development such as chandlery, boat dry stack storage, laundry, restaurant, cafe;
4. include fuel facility for all boats;
5. include pump out sewage facility for boats;
6. permit residential and tourism development;
7. expand trailer parking for the boat ramp;
8. provide an additional pontoon for the boat ramp;
9. allow for boat hire business with riverside pontoons;
10. relocate RMS Depot;
11. embellish creek bank vegetation along Fishery Creek;
12. preserve seagrass beds in Fishery Creek;
13. extend existing boat ramp by 1 metre;
14. provide a riverside walkway connection to the west;
15. relocate the existing entrance to the Richmond River to minimise shoaling; and
16. identify potential for environmental education at the site.

GHD undertook consultation with key stakeholders with specific input received relevant to the Ballina Marina site as follows:

*Richmond River Fisherman’s Co-operative*

- the fisherman’s co-operative owns the lease/licence for the existing trawler harbour and has an ongoing interest in remaining the lease owner for the commercial harbour;
- the co-op pay the Department of Lands for the lease/licence and recoup that by charging mooring costs to commercial and recreational boat owners;
- it costs about \$ 80 000 to run the boat harbour;
- they sell fuel from on an site facility and would like to retain this to keep fuel costs down to members;
- the harbour has a problem with siltation at the mouth and on the bed of the harbour;
- have had little complaint from neighbours regarding noise, light or smell;

- don’t have an issue with the site being redeveloped as a major commercial marina but stress that:-
  1. business costs for professional fisherman must be under the control of the co-operative’s members including leasing costs and fuel sales if they are to remain a viable industry; and
  2. there has to be some separation within the marina between the private boat owners and users from commercial operators and trawlers.

*NSW Marine Authority*

- support the location of a sewage pump out facility in a location suitable for recreational boating; and
- have no objection in principle to an expanded marina site at the existing trawler harbour.

*Ballina Boat Hire*

- would consider an external riverside location near the trawler harbour and proposed marina and would consider this might yield a viable option as long as was able to have river based pontoons and could be separated from the yachts and professional fishing boats that would use the marina.

*Commercial River Users Group*

- fishery creek ramp needs an extra pontoon and longer ramp to use at low tide;
- support proposed marina at trawler harbour site as a commercial marina with fuel facility, sewage pump out, access for cruising yachts and boats, permanent moorings and associated commercial development such as chandlery, laundry etc.

*Ballina RSL Fishing Club*

- support picnic tables and BBQ areas at the Fishery Creek boat ramp;
- need more car and trailer parking at the Fishery Creek boat ramp;
- support increasing the existing marine to include public moorings, refuelling and extra parking;
- support an increase in the size of the Fishery Creek boat ramp to accommodate increased use.

*NSW Department of Primary Industries*

- commercial fisheries rely on the trawler harbour and boat ramps and access to these should be maintained. (GHD 2007, pp 26-31)

Marine-Based Industry Policy - Far North Coast and Mid North Coast NSW

The Marine-Based Industry Policy - Far North Coast and Mid North Coast NSW was prepared by the NSW Department of Planning and Environment. The policy aims to facilitate the development and operation of marine-based industry in appropriate locations. Marine-based industry is identified as that which depends on access to a navigable waterway. The Richmond River is noted as such a river.

The policy identifies marine-based industry should meet the following criteria:

- 1. the industry is dependent on access to a navigable waterway;
- 2. the size of the vessel or product can pass safety through the waterway and the entrance to the sea;
- 3. the size or bulk of the vessel or product to be built requires transport by water.
- 4. new dredging required would not adversely affect estuarine habitats, marine vegetation, fisher resources and water quality;
- 5. site development would not adversely affect water quality or tidal regimes;
- 6. site development would not adversely affect oyster aquaculture and commercial and recreational fishing activities;
- 7. the site is not in a high flood risk precinct;
- 8. access to the site is practicable given river currents and tidal movements;
- 9. the site does not contain high risk acid sulfate soil that could be disturbed;
- 10. the main industrial complex could be set back to avoid bank erosion;
- 11. native vegetation would not be disturbed;
- 12. the development would not conflict with neighbouring land uses;
- 13. services and infrastructure could be provided.

The policy indicates marine-based industry should be clustered in a precinct to maximise the efficiency of infrastructure and to minimise environmental impacts.

The policy identifies that rezoning may be appropriate to facilitate suitable marine-based industry and that councils may prepare Development Control Plans to customise controls recognising local conditions.

Ballina Boat Harbour - Development Feasibility Overview, Department of Lands (Ballina Project Office Port and Coastal Engineering Services)

This report prepared in 2008, assessed the physical, technical, environmental, social and planning constraints and feasibility for the possible expansion of the Trawler Harbour site. It is based on GHD's indicative layout included in the *Lower Richmond River Recreational Boating Study*. It considers provision of a 200 wet berth marina accommodating vessels 5 to 20m long and commercial marine facilities. All major shipwright activities, hull maintenance and refits would be undertaken elsewhere.

The report identified the site constraints and provides information regarding a number of constraints that is of relevant to the Ballina Marina Master Plan.

- vehicle access to a new marina would require an upgraded intersection and as a minimum would need to accommodate rigid bodied fuel trucks in excess of 10 tonnes;
- the proximity of residential development would require an appropriate layout to the redevelopment;
- the existing harbour approach requires a “hard to port” steer which can be made even more difficult with a falling tide, strong southerlies and strong river currents. The Fishery Creek tides are quite small, however, during large tides (1.9m to 2m) the river currents which are typically .2m increase to .5m and more. The tidal range in the harbour is approximately 1.8m;
- on-going shoaling of the harbour and entrance will require future maintenance and dredging. At low tide trawlers “sit” on the harbour floor;
- an expanded marina would result in greater noise generation from maintenance activities, hydraulic equipment, vessel and vehicle movements. Trawler activity generally commences from 1am to 2am in the morning. Mitigation strategies could include bunds, sound barriers, limits on operation hours, traffic calming devices and quiet road pavements;
- additional port lighting could cause light pollution;
- expansion of facilities at the Fishery Creek boat ramp would require additional car/trailer parking that may utilise prime waterfront land for parking. The boat ramp expansion may also be dependant on improved access from the old highway and shoaling in the creek. Consideration may be given to the provision of a boat ramp with the expanded harbour facilities;
- the high water table and low lying land offer poor

- foundations;
- potential for acid sulphate soil and contamination of boat harbour sediments;
- the site varies from RL 1.85m AHD at the harbour to RL 1.46m AHD at the Boatharbour Road/Sunnybank Drive intersection. The 100 year ARI inundation level at this site is RL1.9m. Flooding issues could include flooding from the Richmond River, damage to vessels, debris deposition, the need for flood buoyancy pontoons, siltation and potential fuel spillage;
- potential impacts on seagrass and mangrove habitats;
- potential visual impacts and loss of river/harbour views for neighbouring residents;
- Native Title will be a consideration;
- RMS depot and timing/cost associated with relocation.

This study found that, in relation to technical, environmental and planning constraints, it was feasible to expand maritime facilities at the Trawler Harbour site, that there were no technical aspects not typical of such a setting, that there were no planning constraints that would prevent the expansion and that the most challenging constraint was designing with consideration to the immediate neighbours.



Worley Parsons  
Redevelopment of Ballina Trawler Harbour  
Feasibility Study

In 2010 Worley Parsons considered the feasibility of redeveloping the Ballina Trawler Harbour site for the NSW Land and Property Management Authority. The study explored three options for the harbour. Option 0b was to retain the existing harbour with no redevelopment. Option 1E involved the expansion of the harbour to the north and siting land based facilities west of the harbour. Stage 2 of this option replaced the RMS depot with residential development and an expanded car park for the public boat ramp. Option 5d extended the harbour to the north and west and sited land based facilities to the west and north of the harbour. Stage 2 of this option replaced the RMS depot with residential development and relocated the public boat ramp to another location nearer the Ballina town centre.

The study identified the following site constraints:

- boat harbour mooring limitation;
- navigability and vessel access;
- proximity to residential development;
- noise generation - maritime activities and vehicle noise;
- impact of port lighting;
- regional boat launching ramp;
- poor foundation conditions;
- potential acid sulphate soil;
- contamination;
- river flooding;
- poor site drainage;
- sea grasses;
- mangrove habitat;
- aesthetic impacts; and
- native title;
- current RMS works depot.

The study prepare a number of options for redevelopment of the trawler harbour based on:

- maintaining the current harbour position;
- expanding the harbour but with one option that retained the existing loading wharf;
- maintaining the existing boat ramp;
- applying a 60%/40% water area/land use proportion to the total trawler harbour facility;
- retain the RMS depot, develop the harbour and open space to the west as stage one and develop the depot, boat ramp and Fishery Creek open space as stage two;

- excluding relocation costs for the RMS depot.

The study considered 8 redevelopment options determined as most appropriate for the site. These options were various combinations of approaches to the harbour expansion/retention, the RMS depot and the boat ramp. These options were:

1. retain the existing harbour layout, boat ramp and RMS depot;
2. expand the harbour north and west, relocate the boat ramp off-site and retain the RMS depot;
3. expand the harbour north and west, in 5 years replace the RMS depot with an expanded boat ramp and residential development;
4. expand the harbour north and west, in 5 years replace the RMS depot with residential development and relocate the boat ramp off-site;
5. expand the harbour north and add residential development to the harbour, retain the RMS depot and relocate the boat ramp off-site;
6. expand the harbour north and add residential development to the harbour, in 5 years replace the RMS depot with an expanded boat ramp and residential development;
7. expand the harbour north and add residential development to the harbour, in 5 years replace the RMS depot with residential development and relocate the boat ramp off-site;
8. expand the harbour north and add residential development to the harbour, in 5 years replace the RMS depot with residential development and relocate the boat ramp off-site. All works to be undertaken as a single stage development.

The financial analysis found that if monetary cash flows resulting directly from the development are the only criterion, the favoured option would be the without-project Option 0b - 0b.

The financial analysis identified that given the significant non-monetary and excluding monetary benefits of a development of the boat harbour, development may be favoured over the without-project option. In this case, the best with-project outcome was determined to be Option 1e - 5d being the smaller harbour expansion with residential development at the harbour and the

RMS depot and the boat ramp relocated off-site.

The study also assessed the options against a range of non-financial criteria and found that the smaller harbour expansion combined with the complete redevelopment of the RMS depot for residential/commercial use had positive benefits in terms of contributing to a marine precinct, providing economic stimulus and providing improvements to vessel access. (Worley Parsons 2010, p 29)

Feasibility Study update (WorleyParsons 2011)

In 2011 Worley Parsons undertook an update to the feasibility study. The update included:

- updated construction costs for 2-storey and 3-storey development in line with Rawlinsons 2010;
- adjusted floor space ratios for residential construction to more conservative values;
- inclusion of a 5.6% inflation rate for future costs and benefits; and
- maintained a discount rate of 13% for the net present value calculation.

The study found:

- the best with-project outcome is from Option 1e - 0b;
- the best overall financial outcome is the *Status Quo Minimum Works* situation, Option 0b - 0b. This does however not involve any redevelopment at the site; and
- the worst financial outcome is from Option 5d - 1e.

Martin Street Boat Harbour Precinct Master Plan

This masterplan was prepared in 2015 by Geolink Consulting, ENV Solutions and Red Belly Landscape Architecture to guide the redevelopment of the harbour precinct. Project aims were:

- to enhance and increase boat moorings and passenger exchange facilities for private, community, government and commercial operators;
- to create a vibrant and attractive foreshore precinct;
- to improve pedestrian and vehicle access; and
- to create a tourist hub and generate economic potential.

The Martin Street Boat Harbour Precinct includes the riverside land from the Ballina Memorial Olympic Pool to Martin Street, the boat harbour, the Richmond River, the Ballina Naval and Maritime Museum, infrastructure along the foreshore, the car park and Regatta Avenue and the southern ends of Martin and Norton Streets. The east of the precinct is Council managed. The western area, including the harbour, is managed by NSW Crown Lands.

The harbour, known as the ‘little boat harbour’ had a development linked with the history of Ballina including its cedar getting industry, the development of the town centre and government services and management of the river entry and channel. Other changes affecting the harbour included the reclamation of parts of the river front, development of the river front in the nineteenth century, river transport and its decline, recognition of the heritage sites and the development of recreational and cultural facilities including the baths and the Ballina Naval and Maritime Museum.

The precinct includes a large area of public park on the river front and around the museum and harbour. The park has unrestricted car access, a path along the river front and limited facilities. The harbour is a small artificial inlet located within the reclaimed shoreline of the Richmond River. It has berths for recreational boat owners, government agencies, commercial operators and a surf rescue organisation. The harbour is owned and operated by NSW Crown Lands and is currently leased to the Regatta Avenue Boatharbour Association. The harbour has moorings for 15 to 20 boats and these have been occupied for many years. There are boat sheds on the northern side of the harbour and a public toilet and shower block next to the NSW Maritime shed. The precinct includes the Ballina Maritime and Naval Museum.

Surrounding land uses include the Ramada Hotel, shops,



Figure 8: Martin Street Boat Harbour precinct

restaurants and alfresco dining. At the western end of Regatta Avenue are properties occupied by NSW statutory and departmental offices. Other land uses include a residence, a child care centre, Ballina Library and the Ballina Visitor Information Centre. The precinct is accessed from River and Martin Streets and Las Balsas Plaza and Regatta Avenue border the northern side of the precinct. There is a large public car park at the junction of Las Balsas Plaza and Regatta Avenue.

The master plan identified the following site issues and potentials:

- there is greater demand for berths than those available;
- there is a variety in type and condition of mooring infrastructure;
- the eastern wall of the harbour caters poorly for vehicles and pedestrians;
- lack of coordination of management of the site compromises public access at the harbour;
- the harbour could be a key destination for tourists;
- low tide reveals unattractive infrastructure;

- an existing fig has potential as a site feature;
- Regatta Avenue is not working as an access;
- the historical significance of the site could be explored and enhanced;
- the Ramada Hotel is a busy focus with an interface with the precinct;
- uncontrolled vehicular movement is negatively affecting the foreshore;
- the foreshore walk and park lacks infrastructure;
- the car park occupies a large are of foreshore land;
- the museum entry is ineffective and cluttered;
- the museum turns its back on the river;
- poor legibility and connectivity across the precinct; and
- there are limited views to the river.

The master plan included consultation with key stakeholders. Consultation occurred with the Ballina Naval and Maritime Museum, the Ballina Chamber of Commerce, NSW Maritime, the Ballina Visitor Information Centre, Ballina Shire Council, the Regatta Avenue Boatharbour Association and additional Boat Harbour Members, MV Richmond Princess, the Ballina Memorial Olympic Pool, the Ramada Hotel, NSW DPI Fisheries, Telstra and the River Street Children’s Centre. The stakeholders identified the following values, issues, ideas and opportunities for the site:

Values

- the harbour is an important visual, commercial, recreational and tourism resource to Ballina;
- the proximity of the harbour to the river bar is an advantage;
- proximity to the town centre is an advantage for visitors and shoppers as well as boat harbour users;
- the foreshore park is a valuable asset for passive relaxation;
- stakeholders value the mix of private and public users in the harbour;
- the harbour has historical importance;
- the museum is a unique facility and is enhanced by its proximity to the harbour;
- low mooring costs are important in sustaining the viability of the local boating community;
- the harbour is a quiet, intimate water setting allowing interaction with marine life; and
- the capacity of the carpark is important at peak times.



## Issues

- the harbour is too small with too few berths;
- siltation affects the harbour's depth and use;
- stormwater pipes add to the siltation;
- there is a range of mooring and marine infrastructure;
- the harbour lacks basic infrastructure such as navigational lights;
- short term tenure affects the likelihood of investment;
- the harbour lacks services and facilities for the boating community and for visitor interest;
- there is illegible pedestrian/cycle access in the precinct;
- Regatta Avenue is in poor condition;
- the park is under utilised with few facilities;
- the museum is not integrated with the precinct;
- there is a lack of historical reference; and
- many properties back onto the precinct

## Ideas and Opportunities

- redevelop and reorganise the precinct;
- increase the harbour capacity and moorings
- incorporate new boating services;
- consider the expansion of the harbour;
- install new consistent, contemporary maritime infrastructure in the harbour;
- incorporate commercial and recreational opportunities to increase visitor interest and vibrancy in the precinct;
- provide a continuous walkway along the foreshore;
- explore opportunities for residential uses as part of redevelopment options;
- upgrade the foreshore park;
- connect the maritime museum to the park and harbour;
- consider installing outdoor displays or public art to enhance public interest in museum exhibits;
- explore opportunities to interpret the site's maritime history;
- feature the existing fig as part of redevelopment works;
- upgrade Regatta Avenue;
- provide amenities for visiting boat owners;
- consider allowing RVs to use the large car park; and
- encourage property owners at the edge of the precinct to improve their presentation to the adjoining public domain.

Two master plan options were prepared. Option A included the retention of the museum at its current location. Option B included a new purpose-built mixed use building providing for new uses and existing uses such as the museum. Council endorsed the master planning outcomes in October 2016.

### 3. MASTER PLAN: OPTION A



### 4. MASTER PLAN: OPTION B



Figure 9: Martin Street Boat Harbour Precinct Master Plans

The NSW Government’s Far North Coast Regional Strategy identified Ballina as a developing major regional centre. The Ballina Major Regional Centre Strategy (BMRCS) was prepared to assist Council in determining strategies to achieve balance between prosperity, social wellbeing, lifestyle and environmental outcomes for Ballina over the next 20 years. The strategy involved community consultation to ensure it reflected the community’s sentiment for Ballina’s future. Actions were identified to support the economic future, to preserve the environment and sense of place, to support social cohesion and cultural expression and to facilitate healthy lifestyles. The strategy considered key issues including housing density and affordability, urban design, an ageing population, economic development, healthy living, infrastructure, recreation opportunities, open space, natural assets and environmental management. The strategy addresses the following six key themes:

- Open Space and Healthy Living
- Economic Development
- Character, Culture and Amenity
- Community Facilities and Infrastructure
- Environment
- Housing

Community consultation identified a number of aspirations. Those with relevance for the Ballina Marina site are:

- a desire to preserve the natural and scenic qualities that contribute to Ballina’s amenity and character;
- a desire for enhanced recreational opportunities associated with open space area, the coast and waterways, through improved infrastructure and amenities;
- recognition that the community’s wellbeing will be underpinned by economic opportunities and employment growth and that these require us to support creativity, innovation and entrepreneurship;
- a need to ensure public places and facilities, beaches and waterways, commercial areas and our pathway network are connected and accessible by all;
- a desire for enhanced cultural expression through more public art, interpretive signage, community events and activities;
- a recognition that the nature of housing stock will need to change to ensure we have a variety of dwelling types

suitable for a wide range of households. (BSC, p 19)

The strategy identifies a number of key drivers in planning for Ballina’s future. Those drivers particularly relevant to the Ballina Marina site include:

- the **Ballina Byron Gateway Airport** and the opportunity it represents as a gateway to the region and new economic opportunities,
- **Maritime Opportunities** and the need for appropriate investment in infrastructure and embellishments to promote community and business opportunities associated with access to the coast and waterways; and
- **Visitor Economy** and the harnessing of opportunities for local businesses associated with the growth of the visitor economy whilst maintaining a sense of place for the local community. (BSC, p 24)

The BMRCS includes specific strategies that are relevant to master planning for the Ballina Marina Master Plan. These are under the theme of **Community Facilities and Infrastructure**. Objective D3 says *Ensure that maritime infrastructure keeps pace with the needs of our community, tourism and maritime industry*. Actions to achieve this objective include:

- *Augment existing marina facilities to improve the availability and standard of boat mooring, storage and servicing facilities.*
- *Identify a preferred site for a large upstream marina facility and/or maritime industry precinct.* (BSC, p 46)

The BMRCS includes a range of other actions that are not site specific, but are also relevant to planning for the Ballina Marina as a significant facility including public open space. Those actions have been listed according to the associated BMRCS theme.

**Open Space and Healthy Living**

- Objective A1 - Provide improved amenities and facilities in association with key foreshore and open space areas.*
- *Ensure the accessibility of change rooms and public amenities at key locations in the open space network (activity nodes).* (BSC, p 27)

- *Extend the shared pathway network.* (BSC, p 27)
- *Progressively embellish the shared pathway network to incorporate improved public amenities, exercise stations, shelter, drinking fountains, public art, play spaces, pop-up activity spaces and bicycle and mobility scooter parking at key activity nodes.* (BSC, p 27)

**Character, Culture and Amenity**

- Objective C1 - Foster social cohesion and build our community’s capacity to respond to change.*
- *Encourage healthy lifestyle culture through the provision and promotion of open space infrastructure that encourages outdoor activity.* (BSC, p 37)
- Objective C2 - Provide public spaces and facilities that contribute to the cultural identify of Ballina and enhance sense of place.*
- *Facilitate networking within the public domain, through, the provision of infrastructure and activities that encourages people to linger.* (BSC, p 38)

- Objective C4 - Protect and enhance the qualities that contribute to the amenity and character of Ballina.*
- *Preserve the natural assets that contribute to the amenity of Ballina, including natural stands of vegetation, wetlands and waterway features.* (BSC, p 40)
  - *Enhance the amenity of the shared pathway network and improve public access to waterways by extending riparian pathways and boardwalks at key locations.* (BSC, p 41)

**Housing**

- Objective F1 - To ensure that the future housing stock is appropriate, accessible and affordable.*
- *Ensure suitable and adequate housing opportunities are available to cater to the diverse needs of our community.* (BSC, p 53)



# Ballina Shire Local Growth Management Strategy

The Ballina Shire Growth Management Strategy establishes Council's strategic planning policy for urban development in Ballina Shire for the period 2012 to 2031. The strategy sets out local growth management arrangements for each of the shire's urban localities. The strategy outlines the desired future character for a particular locality, identifies key locality objectives and proposed actions to achieve those objectives.

The strategy refers to marine-based commercial activity and notes that marine related industry is already clustered around the Smith Drive Industrial Estate. The strategy recommends the investigation of further enhancing this hub of marine-based industry either at, or adjacent to the Smith Drive Industrial Estate. (BSC, p 16)

The strategy identifies West Ballina as a locality that is a hub for recreational boating activities. It recognises that West Ballina currently provides a mixture of residential opportunities and that the type and character of existing land uses has largely been driven by the previous existence of the Pacific Highway through the locality. The strategy identifies that the removal of the highway is likely to change the mix of commercial activities at West Ballina.

The strategy identifies that proposals for West Ballina should recognise the natural and economic values of the Richmond River and associated waterways. It includes objectives to investigate the broadening of marine based activity in the Smith Drive locality and to investigate potential locations for a marina facility.

The Trawler Harbour site is identified as a Strategic Urban Growth Area.

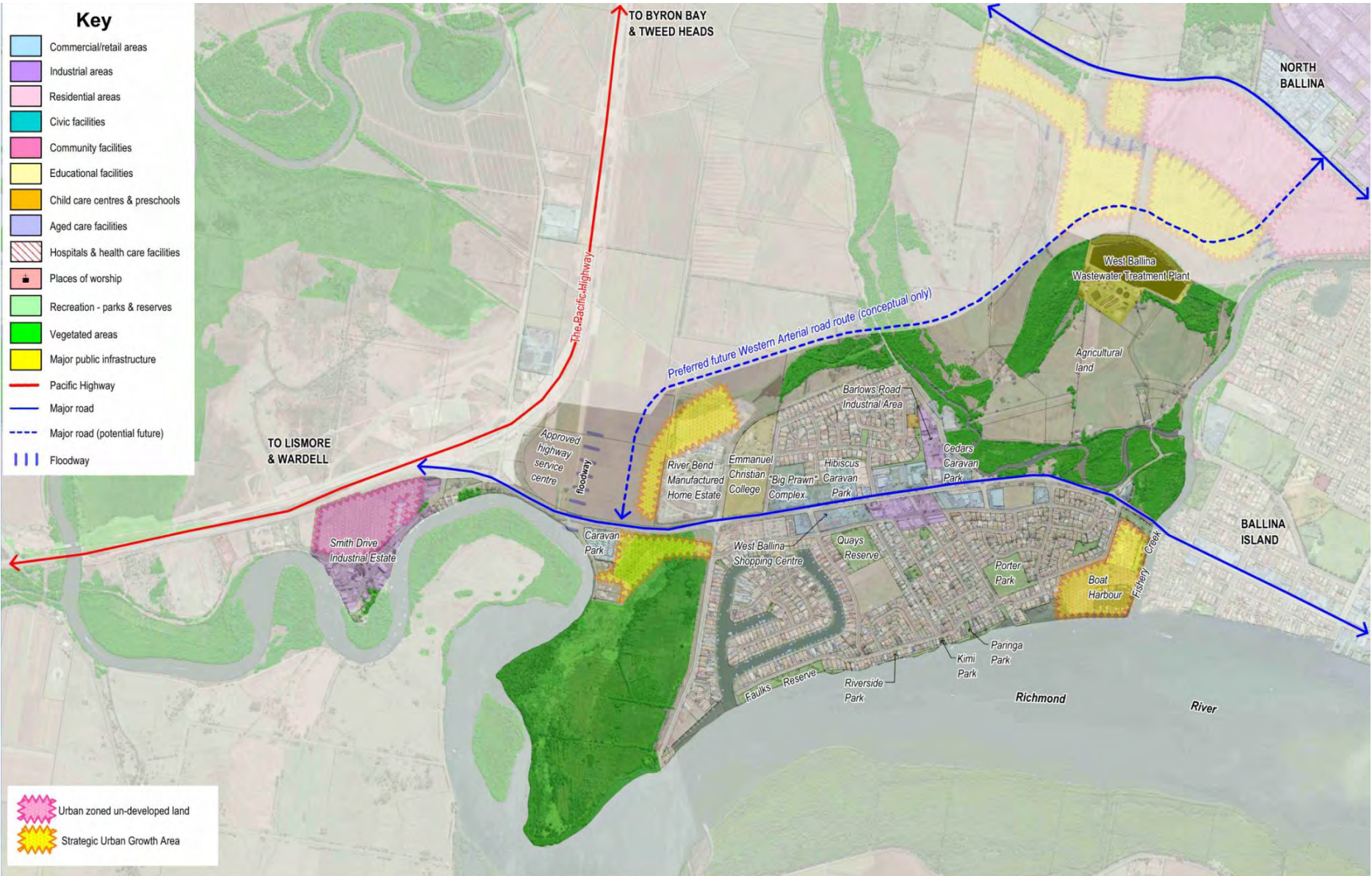
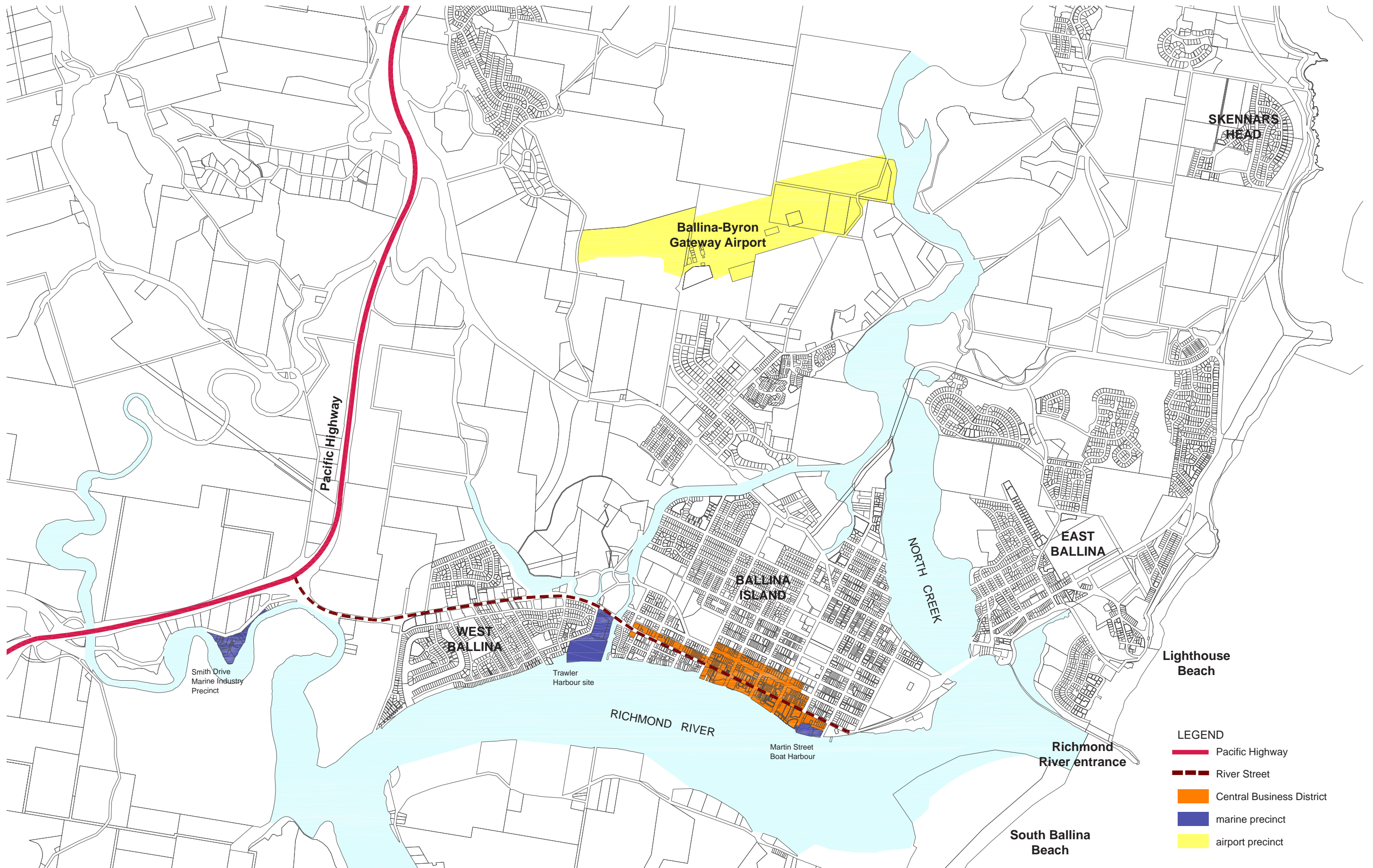


Figure 10: Ballina Shire Local Growth Management Strategy - West Ballina locality





# Ballina Marina Master Plan

## Site Context

16



# SITE INVESTIGATIONS

## SITE ELEMENTS

- |  |   |
|--|---|
| <span style="display:inline-block; width:15px; height:15px; background-color:lightcoral; border:1px solid black;"></span> existing RMS works depot   | <span style="display:inline-block; width:15px; height:15px; background-color:lightcyan; border:1px solid black;"></span> existing public toilets  |
| <span style="display:inline-block; width:15px; height:15px; background-color:lightgreen; border:1px solid black;"></span> Crown Reserve  | <span style="display:inline-block; width:15px; height:15px; background-color:lightpurple; border:1px solid black;"></span> existing fish cleaning facility  |
| <span style="display:inline-block; width:15px; height:15px; background-color:lightpink; border:1px solid black;"></span> Crown Reserve   | <span style="display:inline-block; width:15px; height:15px; background-color:darkred; border:1px solid black;"></span> existing fuel storage  |
| <span style="display:inline-block; width:15px; height:15px; background-color:lightblue; border:1px solid black;"></span> existing trawler and boat harbour   | <span style="display:inline-block; width:15px; height:15px; background-color:darkgrey; border:1px solid black;"></span> existing concrete wharf   |
| <span style="display:inline-block; width:15px; height:15px; border:1px solid black;"></span> existing boat ramp  | <span style="display:inline-block; width:15px; height:15px; border-bottom:2px solid blue; border-bottom:2px solid blue; border-bottom:2px solid blue;"></span> existing jetties                   |
| <span style="display:inline-block; width:15px; height:15px; background-color:yellow; clip-path: polygon(50% 0%, 60% 30%, 90% 60%, 60% 90%, 50% 100%, 40% 90%, 10% 60%, 30% 30%, 50% 0%);"></span> existing pontoon | <span style="display:inline-block; width:15px; height:15px; background-color:lightyellow; border:1px solid black;"></span> residential precinct   |
| <span style="display:inline-block; width:15px; height:15px; background-color:orange; border:1px solid black;"></span> existing car & trailer parking   | <span style="display:inline-block; width:15px; height:15px; border-bottom:2px dashed yellow; border-bottom:2px dashed yellow; border-bottom:2px dashed yellow;"></span> interface with residences |



## SERVICES AND INFRASTRUCTURE

- |  |  |
|--|--|
| <span style="display:inline-block; width:15px; height:15px; background-color:red; border:1px solid black;"></span> River Street (connection to Pacific Highway & CBD)                              | <span style="display:inline-block; width:15px; height:15px; background-color:blue; clip-path: polygon(50% 0%, 60% 30%, 90% 60%, 60% 90%, 50% 100%, 40% 90%, 10% 60%, 30% 30%, 50% 0%);"></span> existing bus stop            |
| <span style="display:inline-block; width:15px; height:15px; background-color:orange; border:1px solid black;"></span> Boatharbour Road   | <span style="display:inline-block; width:15px; height:15px; background-color:red; clip-path: polygon(50% 0%, 60% 30%, 90% 60%, 60% 90%, 50% 100%, 40% 90%, 10% 60%, 30% 30%, 50% 0%);"></span> existing sewer pump station   |
| <span style="display:inline-block; width:15px; height:15px; background-color:yellow; border:1px solid black;"></span> Sunnybank Drive  | <span style="display:inline-block; width:15px; height:15px; border-bottom:2px dashed orange; border-bottom:2px dashed orange; border-bottom:2px dashed orange;"></span> existing bitumen accesses                            |
| <span style="display:inline-block; width:15px; height:15px; border:1px solid red; border-radius:50%;"></span> vehicular/pedestrian bridge to Fishery Creek   | <span style="display:inline-block; width:15px; height:15px; border:1px solid blue; border-radius:50%;"></span> access to site from River Street  |
| <span style="display:inline-block; width:15px; height:15px; border-bottom:2px dashed red; border-bottom:2px dashed red; border-bottom:2px dashed red;"></span> future bridge & highway duplication | <span style="display:inline-block; width:15px; height:15px; background-color:blue; clip-path: polygon(50% 0%, 60% 30%, 90% 60%, 60% 90%, 50% 100%, 40% 90%, 10% 60%, 30% 30%, 50% 0%);"></span> access from harbour to river |
| <span style="display:inline-block; width:15px; height:15px; background-color:blue; border:1px solid black;"></span> pedestrian connection  | <span style="display:inline-block; width:15px; height:15px; background-color:yellow; border:1px solid black;"></span> rock wall  |
| <span style="display:inline-block; width:15px; height:15px; background-color:yellow; border:1px solid black;"></span> power pole with overhead power lines   |  |





# SITE INVESTIGATIONS

## NATURAL, ENVIRONMENTAL AND VISUAL FEATURES

- existing planted trees
- existing vegetation (*Casuarina*, *Eucalyptus* spp)
- existing Mangroves
- open grassed area
- ➔ high amenity views to river
- ➔ high amenity views to creek
- ➔ filtered views to creek through vegetation
- ➔ vista along road to Richmond River



## TOPOGRAPHY

- ➔ direction of fall
- stormwater swale
- /// steep bank
- relatively level area
- low lying mud bank
- \* low point





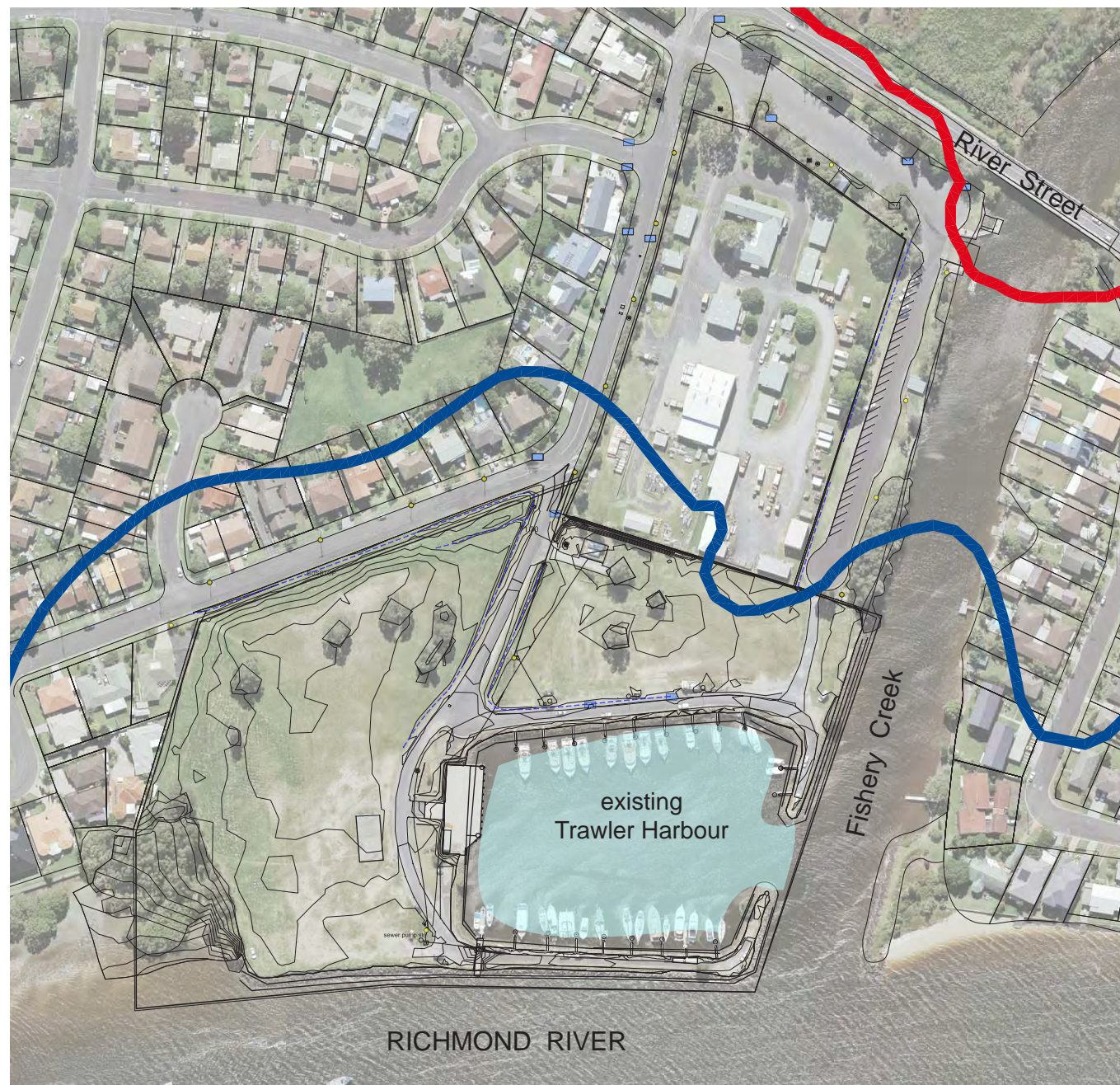
# SITE INVESTIGATIONS

## FLOODING

50 Year ARI flood level for 2050

50 Year ARI flood level for 2010

- inclusive of consideration of predicted climate change impacts





## SITE ISSUES



## CURRENT SITE ISSUES

- 1 large area of river side open space is underutilised
- 2 works depot utilises large waterfront site without being dependant upon or maximising its proximity to the water
- 3 river and creek frontage represents a substantial length of water frontage that is under utilised with limited public facilities
- 4 lack of visual and physical connection to the waterfront
- 5 no public connection along the waterfront
- 6 the popular Fishery Creek boat ramp experiences congestion
- 7 there is limited surveillance of the site
- 8 the future bridge/road duplication may have impacts on the current functions of the boat ramps/pontoons
- 9 potential conflicts between residential precinct and current land uses
- 10 limited capacity for existing intersection
- 11 the existing trawler harbour is small and has limited berths
- 12 there are inadequate refueling facilities and limited marine facilities at the existing harbour
- 13 trawler catches have to be transported off site
- 14 very limited facilities for visitors with recreational vessels and no facilities for visitors to stay overnight



## SITE OPPORTUNITIES



## SITE OPPORTUNITIES

- ① opportunity for physical and transport connection to CBD
- ② opportunity for transport link to Ballina-Byron Gateway Airport
- ③ access upstream and downstream for vessels
- ④ access to creek and river for water based recreation
- ⑤ native vegetation as feature to redevelopment
- ⑥ create strong visual and physical connection water
- ⑦ opportunity for public foreshore parkland
- ⑧ opportunity for strong links between neighbourhood and redevelopment site to create integrated precinct (visual and physical)
- ⑨ opportunity to create precinct with a focus on marina and waterfront
- ⑩ opportunity to expand and enhance harbour
- ⑪ opportunity to expand/upgrade boat ramp facilities



# SITE PHOTOGRAPHS



A looking north along Boatharbour Road with RMS site to right of photo



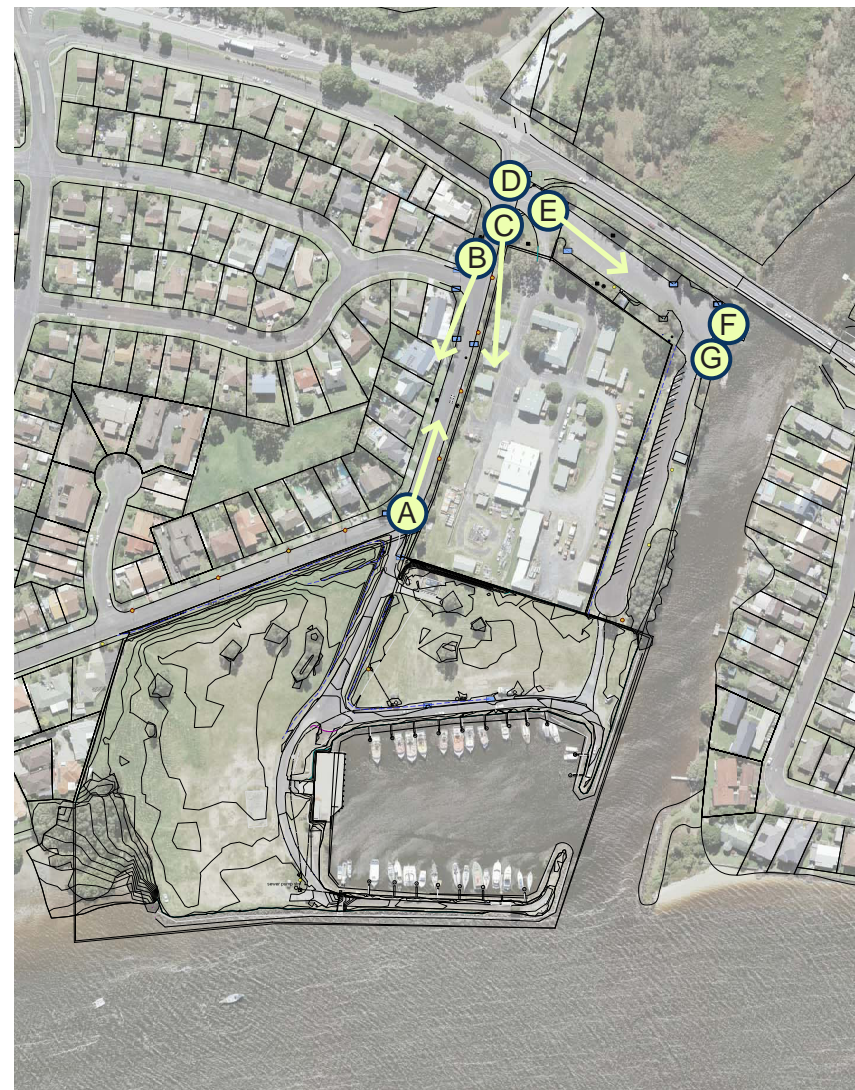
B looking south along Boatharbour Road with existing residences to right of photo



C looking south along Boatharbour Road to RMS works depot



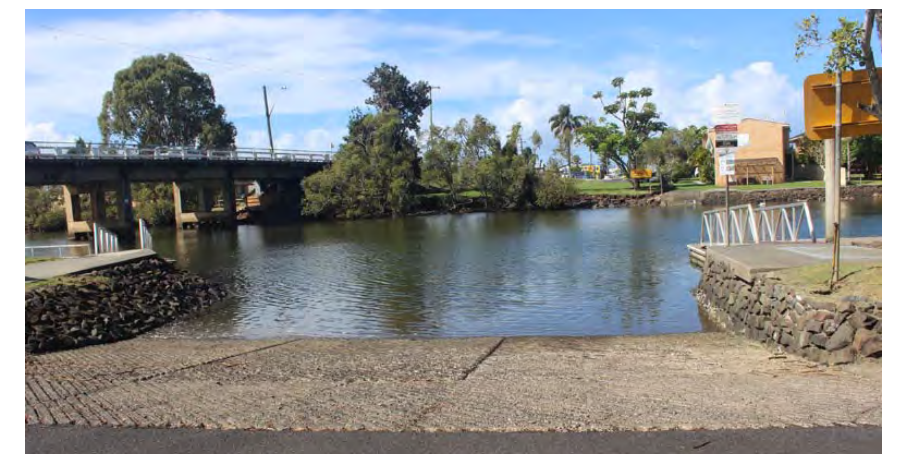
D River Street and Boatharbour Road intersection



F existing pontoon and Fishery Creek



E carpark at the northern extent of the RMS works depot



G existing boat ramp and Fishery Creek



SITE PHOTOGRAPHS



H looking north along Boatharbour Road with RMS site to right of photo



I creek side open space and Fishery Creek



J creekside open space and boat trailer parking



K vehicular access northern side of harbour



L existing fuel storage and southern extent of RMS depot



SITE PHOTOGRAPHS



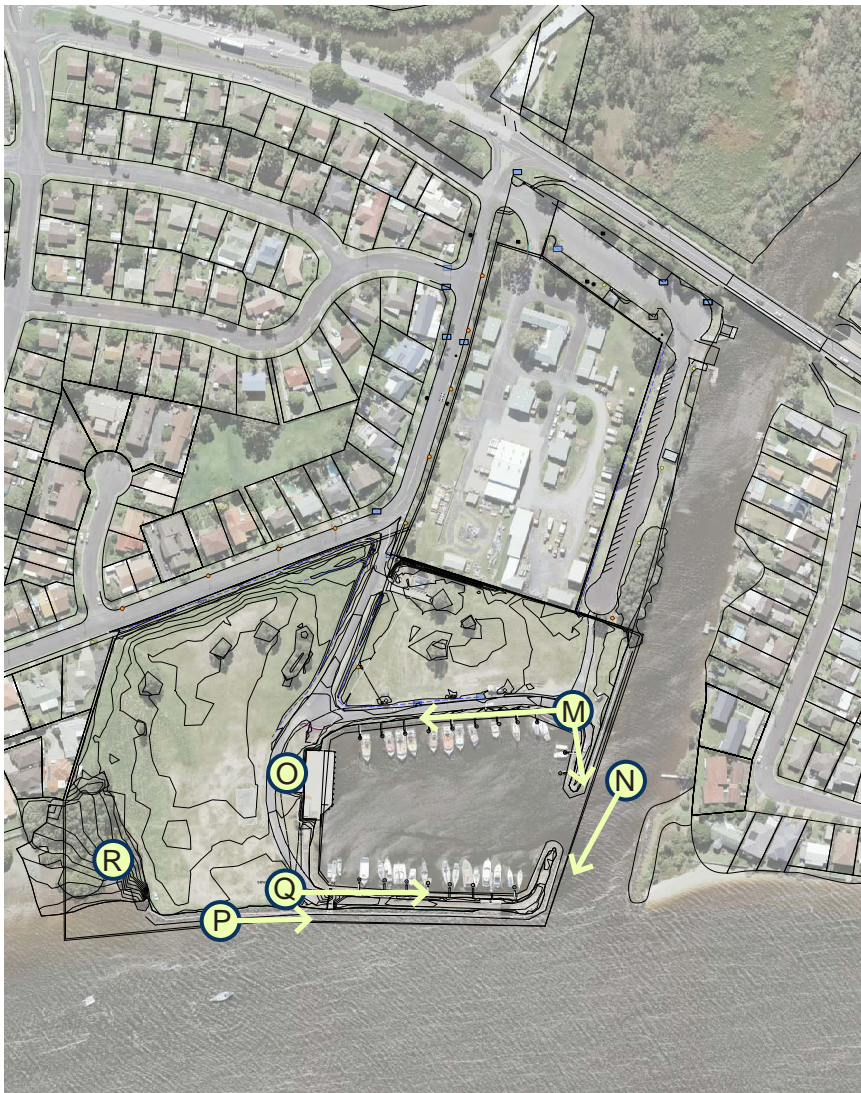
M view across harbour from northeast corner of harbour



N harbour entrance and access to the Richmond River



O existing concrete wharf at the harbour



Q vehicular access along the southern harbour wall



P south wall to the harbour, adjacent to the Richmond River



R existing mangroves in the southwest corner of the site



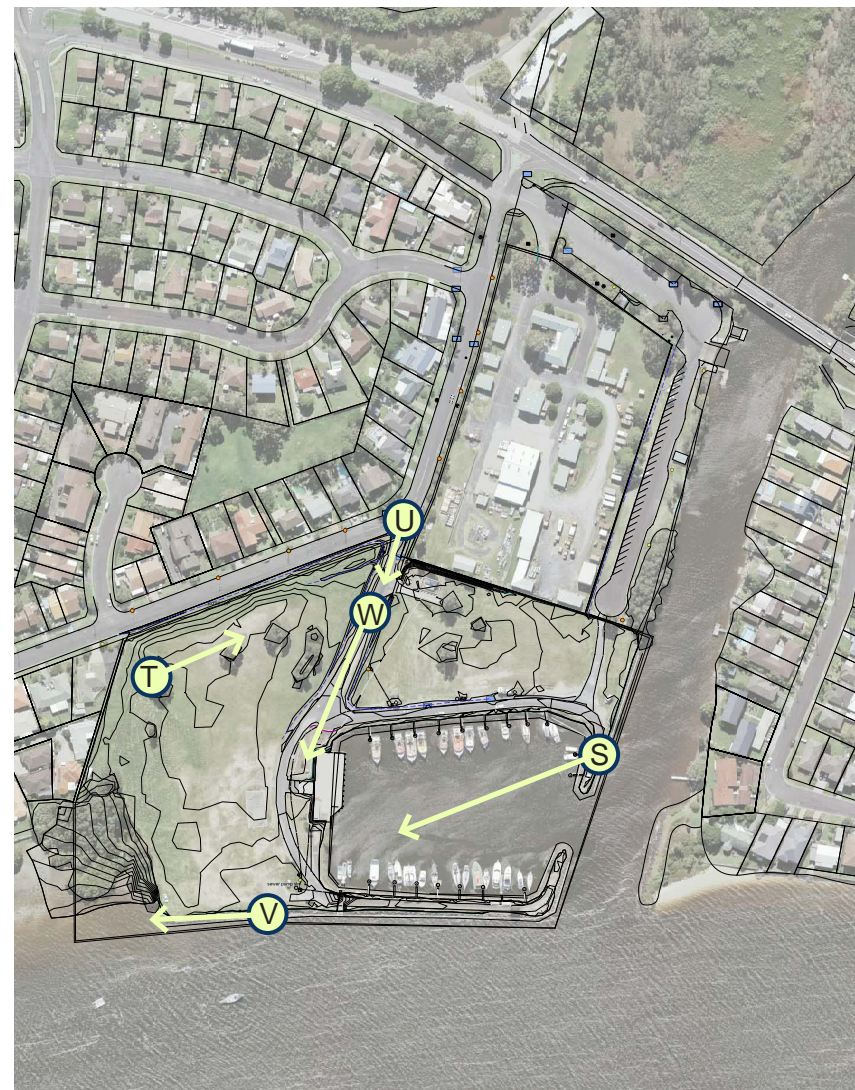
# SITE PHOTOGRAPHS



S south side of existing harbour with Richmond River behind



T vacant land at foreshore



V rock wall along the Richmond river and vacant land



U access to harbour and vacant land to west



W view along access road to harbour and the Richmond River