NORTHERN BEACHES
COUNCIL

ATTACHMENT BOOKLET 8

ORDINARY COUNCIL MEETING

TUESDAY 27 JUNE 2017

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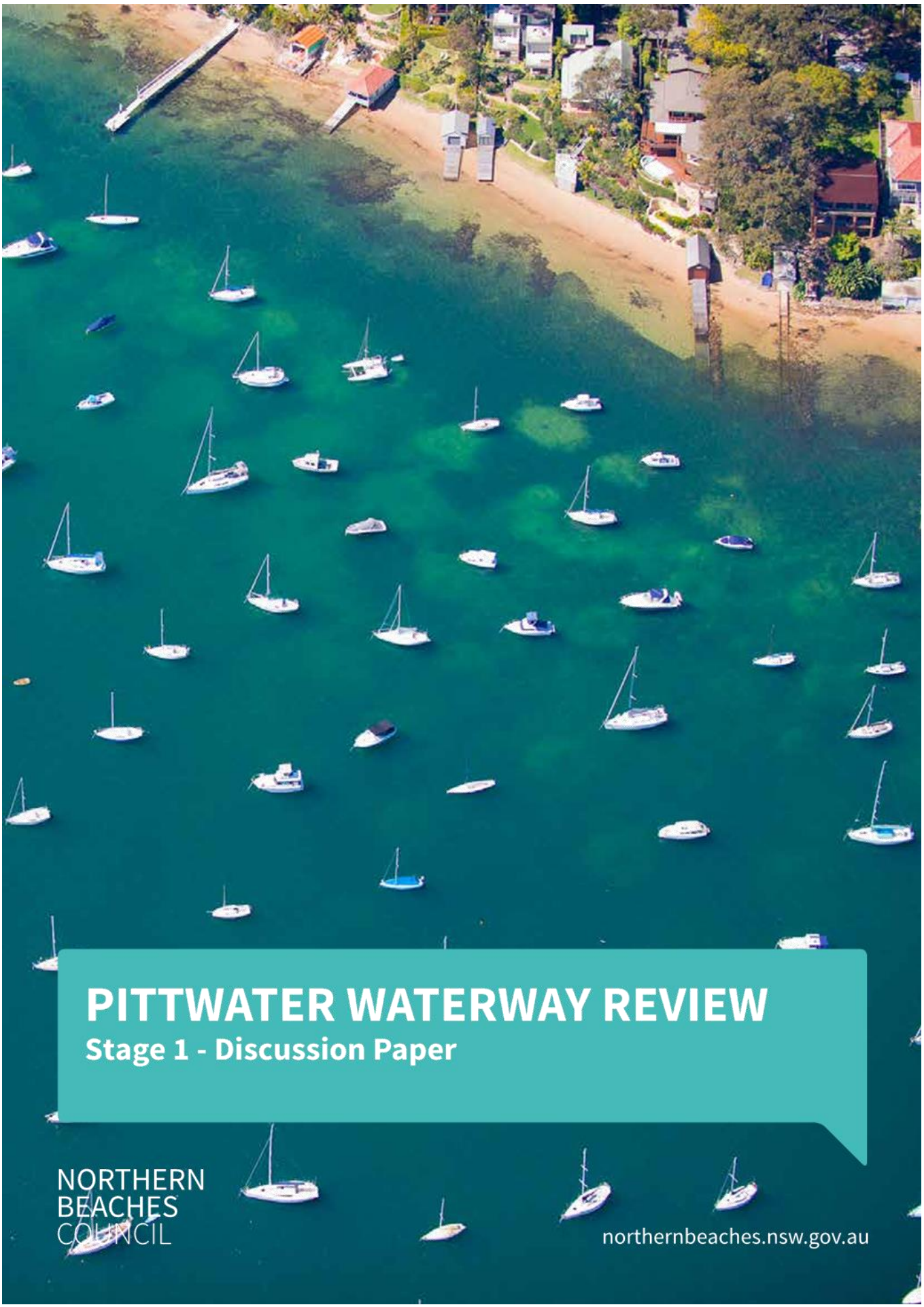

PITTWATER WATERWAY REVIEW

Stage 1 - Discussion Paper

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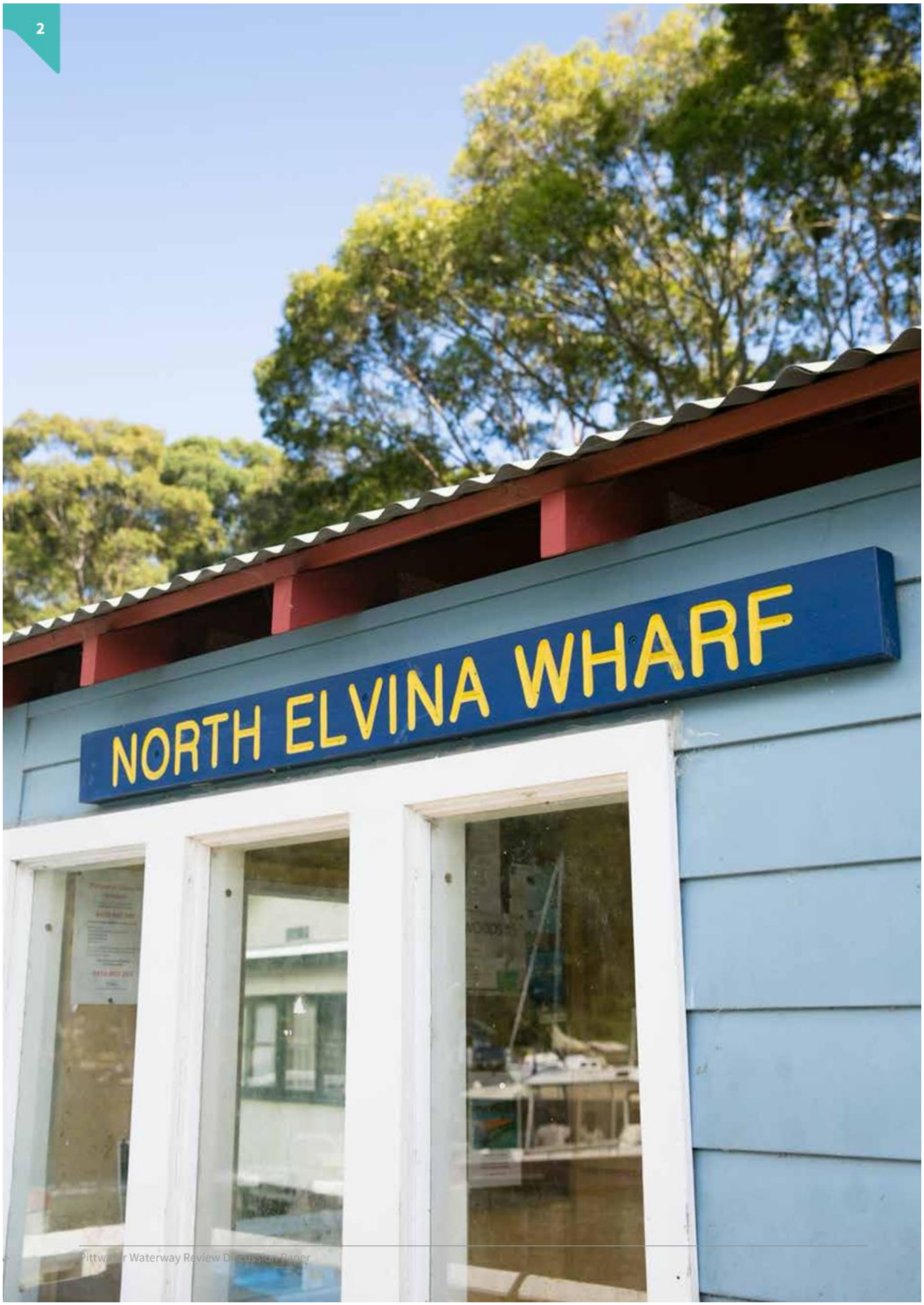
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NORTH ELVINA WHARF
Pittwater Waterway Review Discussion Paper

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What is the Pittwater Waterway Review?

The Pittwater waterway is iconic and one of the Northern Beaches most significant natural assets. It fundamentally embodies the spirit and character of the Northern Beaches and makes the area such a beautiful place to live, work and visit.

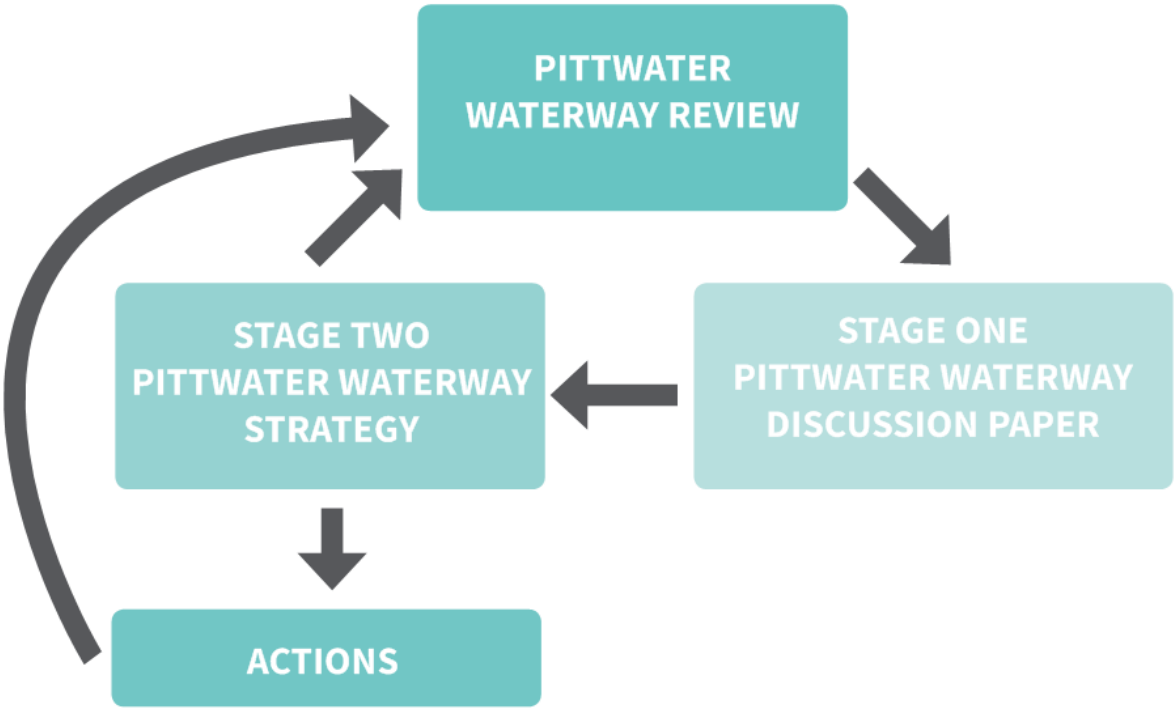
The Pittwater waterway (referred to as Pittwater or the Waterway in this paper) is highly valued, locally and regionally, for its varied marine biodiversity, delicate estuarine habitats, unique environmental setting, recreation value, natural picturesque setting, contribution to the local economy and community and means of access for offshore communities.

These diverse and competing pressures highlight the need to manage Pittwater sustainably now and into the future.

To achieve this, Council has embarked on a holistic review of the waterway to ensure it is sustainably managed.

The Pittwater Waterway Review (the Review) will seek to identify and assess all issues impacting the waterway and potential opportunities to address and balance the array of competing interests. The Review will then form the basis for the development and implementation of strategies and specific actions to guide the management of the waterway over the next 10-15 years.

The Pittwater Waterway Review



The Pittwater Waterway Review Process

1. PITTWATER WATERWAY REVIEW

- Community consultation of draft PLEP 2014
- Submissions received relating to the Pittwater waterway
- Council recommends commencement of Pittwater Waterway Review (the Review) in July 2015

2. DISCUSSION PAPER

- Review Commences July 2015
- Existing studies identified
- Community and Stakeholder engagement
- Independent Demographic & Economic Study commisioned
- Review information / data received and feed into discussion paper
- Draft Discussion Paper reported to Council
- Public Exhibition of Discussion Paper for six weeks

3. STRATEGY

- Review of submissions received for Discussion Paper
- Commence the Strategy based on outcome of Discussion Paper
- Present draft Strategy and outcome of Public Exhibition to Council
- Public Exhibition of the Strategy

4. OUTCOMES OF REVIEW

- Report to Council the outcome of the Public Exhibition of the Strategy
- Recommend to Council that the adopted recommendations of the Strategy be implemented
- Commence a comprehensive planning process to implement any amendments to planning policy and controls within the LEP and DCP (if recommended)
- Commence negotiations with relevant authorities where recommendations fall outside of Council's remit
- Monitor the implemention of the Strategy

As set out, stage 1 of the Review (the Discussion Paper), provides information and an overview of key issues impacting Pittwater, with possible strategies suggested. Council will work with the community and relevant stakeholders to develop appropriate responses to the diverse range of competing demands impacting Pittwater and deliver a Pittwater Waterway Strategy (the Strategy) which will set the framework for future planning and decision making. The Strategy (stage 2 of the Review) will provide the strategic framework to guide and inform future direction, decisions and actions associated with the Pittwater waterway, including allocation of specific actions to relevant stakeholders, such as state agencies and Council.

At its meeting on 5 August 2013 Council resolved to undertake a strategic review of the land use planning provisions relating to the Pittwater waterway. The primary driver for the review was the large number of submissions received during the preparation of the Pittwater Local Environmental Plan 2014.

These submissions were the catalyst for the development of the Pittwater Waterway Review and cover many of the key issues that this discussion paper explores.

The Review has also been recognised in the Draft North District Plan, November 2016 as, '….a useful template for the planning and management of major waterways'.

What is the purpose of this Discussion Paper?

The discussion paper (the paper), which represents stage 1 of the Review, provides information and an overview of key issues impacting the Pittwater waterway, with possible strategies suggested. The information outlined in the paper has been gathered from existing studies, online community surveys and targeted community and stakeholder consultation undertaken in 2015 and 2016.

Council invites your comments on the identified issues and possible strategies set out in the discussion paper to guide the sustainable management of Pittwater waterway.

This review is:

- A review promoted by the community, written with the community, and developed for the community.
- A strategic review of planning controls associated with Pittwater waterway, including land and water based.
- A strategic document encompassing the sustainability pillars of environment, economic, social and governance.
- A strategic document guiding the management of Pittwater waterway over the next 10-15 years.
- A document that will make recommendations for zoning, zone objectives and development control.
- A non-legislative document which establishes a framework for future planning and decision making associated with Pittwater waterway.
- An evidence based strategic planning document that will utilise data and community input in the development of strategies for the future of Pittwater waterway.
- A strategic tool to assist the decision making process and recommendations to state government for action.

This review is:

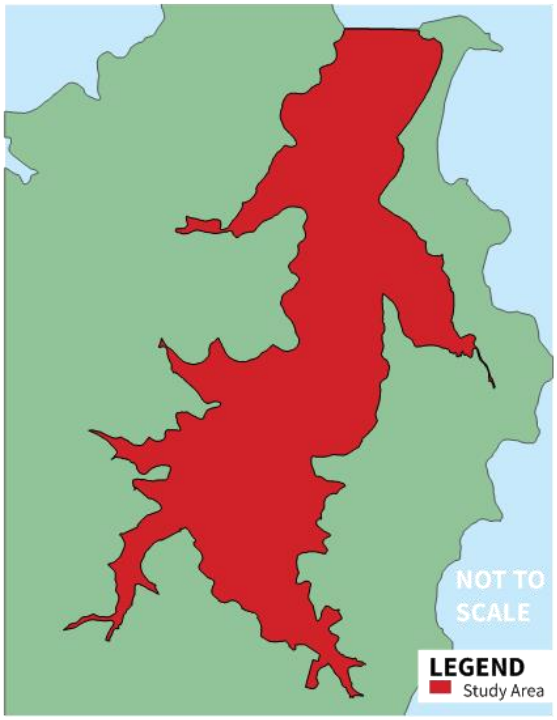
- **NOT** a coastal zone management plan or Coastal Management Plan.
- **NOT** a document that can require specified state government actions.
- **NOT** an amendment to Pittwater Local Environmental Plan 2014 that makes zoning or planning control changes.
- **NOT** a document that incorporates the coastal fringe, Middle Harbour, Narrabeen or Dee Why Lagoon.
- **NOT** an environmental assessment or audit of the health and condition of Pittwater waterway.
- **NOT** a Plan of Management as mandated under the Crown Lands Act 1989 or the Local Government Act 1997.

Study area

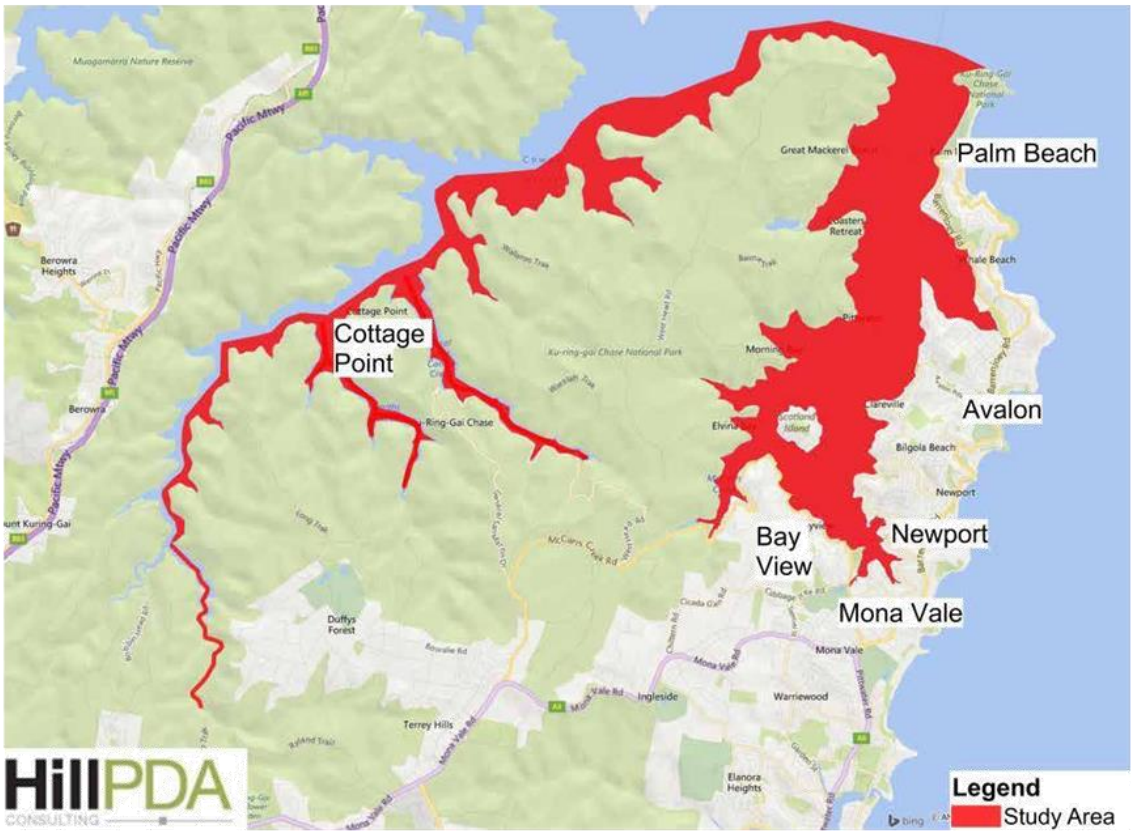
Initial community consultation and stakeholder engagement has been undertaken within the former Pittwater Local Government Area (LGA). However, the Review and associated supporting report (Hill PDA Consulting, 2016), have been revised post amalgamation to incorporate the Northern Beaches Council LGA, excluding the Manly locality due to recognition that Sydney and Middle Harbour play a pivotal role in meeting the boating and recreational pursuits of this area. This discussion paper seeks the views and opinions of the Northern Beaches community and will form an essential consultation tool for the Review.

The study area for the purpose of this discussion paper is the Pittwater waterway, as shown in Map 1, and is referred to as Pittwater or the Waterway in this paper.

MAP 1. Pittwater Review Discussion Paper study area



MAP 2. Demographic & Economic Study area



Hill PDA Consulting, 2016 (MapInfo)

How to use the Discussion Paper?

Pittwater waterway is enjoyed by a diverse range of users, so we are interested in hearing about your vision, ideas, concerns and priorities for the waterway.

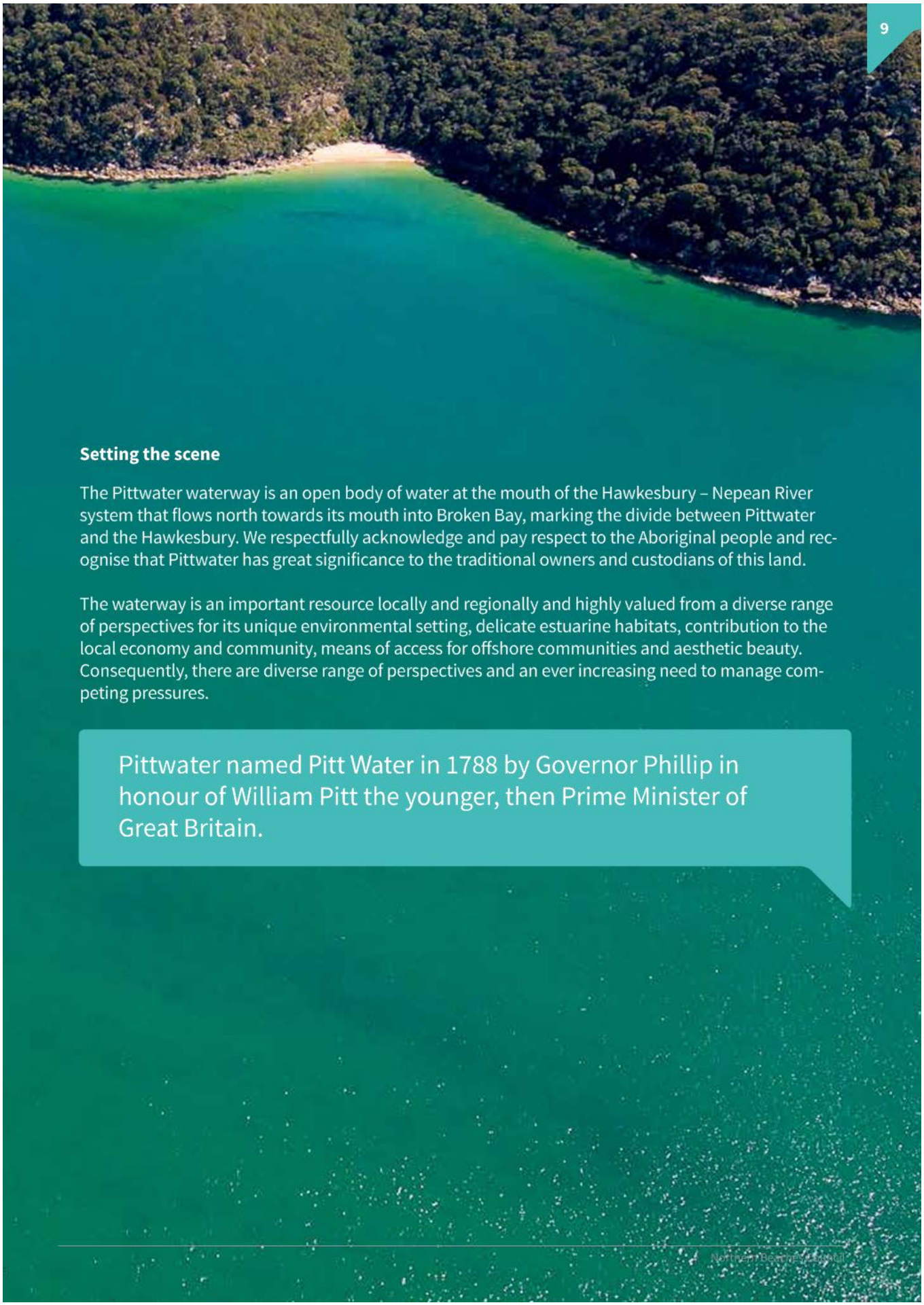
As you read through the discussion paper, think about what Pittwater waterway means to you, how you use and access the waterway and whether it affects your life, work, business or principals. Think about what is important to you now and into the future.

Your involvement will help set the groundwork for the development of the Pittwater Waterway Strategy and the sustainable future of the waterway.

How to get involved?

- You can respond to all questions raised in the discussion paper or only to those that interest you.
- You can respond to the issues and proposed strategies, or if your issue or proposed strategy is not addressed you can submit your own.
- You can submit as an individual, on behalf of a business or community group.
- Send written submissions to Northern Beaches Coucil, 1 Park Street, Mona Vale NSW 2103.
- Make your submissions via yoursay.northernbeaches.nsw.gov.au/WaterwayReview'

If you would like more information on the Discussion Paper to inform your submission you can email Council's Strategic Planning team via pittwater@northernbeaches.nsw.gov.au or call on (02) 9970 1111.



Setting the scene

The Pittwater waterway is an open body of water at the mouth of the Hawkesbury – Nepean River system that flows north towards its mouth into Broken Bay, marking the divide between Pittwater and the Hawkesbury. We respectfully acknowledge and pay respect to the Aboriginal people and recognise that Pittwater has great significance to the traditional owners and custodians of this land.

The waterway is an important resource locally and regionally and highly valued from a diverse range of perspectives for its unique environmental setting, delicate estuarine habitats, contribution to the local economy and community, means of access for offshore communities and aesthetic beauty. Consequently, there are diverse range of perspectives and an ever increasing need to manage competing pressures.

Pittwater named Pitt Water in 1788 by Governor Phillip in honour of William Pitt the younger, then Prime Minister of Great Britain.

Ownership, management and controls: who owns and manages what?

The Pittwater waterway and its foreshore fringe is governed and controlled by a number of groups and state agencies, resulting in a complex overlay of ownership, management and controls. These groups and agencies are highlighted below:

- Department of Primary Industry (Lands) – Responsible for the control and management of the bed of Pittwater waterway (defined as the mean high water mark and below); Crown land and Crown reserves.
- Transport for NSW – Responsible for transport on and around the waterway.
- Roads and Maritime Services (RMS) - Regulates a range of waterway activities, including moorings and mooring numbers and enforce rules and regulations on the waterway.
- NSW Police Marine Area Command /Water Police (Broken Bay) - Enforcement of rules and regulations relating to the waterway.
- NSW National Parks and Wildlife Service - Owns and manages Ku-ring-gai Chase National Park.
- Northern Beaches Council - Regulates and controls land uses on and adjacent to the waterway through Pittwater Local Environmental Plan 2014 (Pittwater LEP 2014) and Pittwater 21 Development Control Plan (Pittwater 21 DCP).
  - Controls and owns reserves (road, natural and open space)
  - Prepares and implements Plans of Management (POMs).
  - Maintain seawalls on public land where Council has care or control of the land.
  - Maintain public wharfs, jetties and boat ramps.
- Private property landowners - own land to the mean high water mark of their property, jetties, ramps and pontoons.

Existing Strategic Planning Framework

Environmental Planning and Assessment Act 1979
The Environmental Planning and Assessment Act 1979 (EP&A Act) is NSW State legislation that deals with environmental assessment of both development within the built environment and development in endangered ecosystems. An Environmental Planning Instrument (EPI) is made under the EP&A Act. An example of an EPI is the Local Environmental Plan (LEP).

Environmental Planning and Assessment Regulation 2000
The Environmental Planning and Assessment Regulation 2000 is the NSW legislation that sets out the regulations under the EP&A Act 1979.

State Environmental Planning Policies (SEPP): SEPP's are planning controls (EPI's) put in place by the State Government to deal with issues considered to have state significance. The SEPPs currently considered relevant to this review (subject to Coastal Reform detailed below) include - 14 (Coastal Wetlands); 71 (Coastal Protection) (Major Projects) 2005 and (Infrastructure) 2007.

Coastal Reform - Coastal Management Act, Draft Coastal Management Manual and the draft Coastal Management SEPP: Coastal Reform aims to utilise the Coastal Reform Act, Manual and SEPP to manage coastal risks associated with climate change, coastal protection, foreshore development, coastal wetlands, lakes and littoral rainforests, catchment runoff and impact on estuaries and access to beaches and headlands. Public consultation on draft Coastal management SEPP which aims to supersede SEPP 14 (Coastal Wetlands), 26 (Littoral Rainforests) and 71 (Coastal Protection) closed on the 20th January 2017. The Coastal Management Act, although made, is not yet in force. Further information can be found via the following link: environment.nsw.gov.au/coasts/coastreforms.htm

A Plan for growing Sydney, 2014: A strategic plan for Metropolitan Sydney through visions, goals and actions across the six Sydney districts which includes the Northern Beaches Local Government Areas (LGA) in the north.

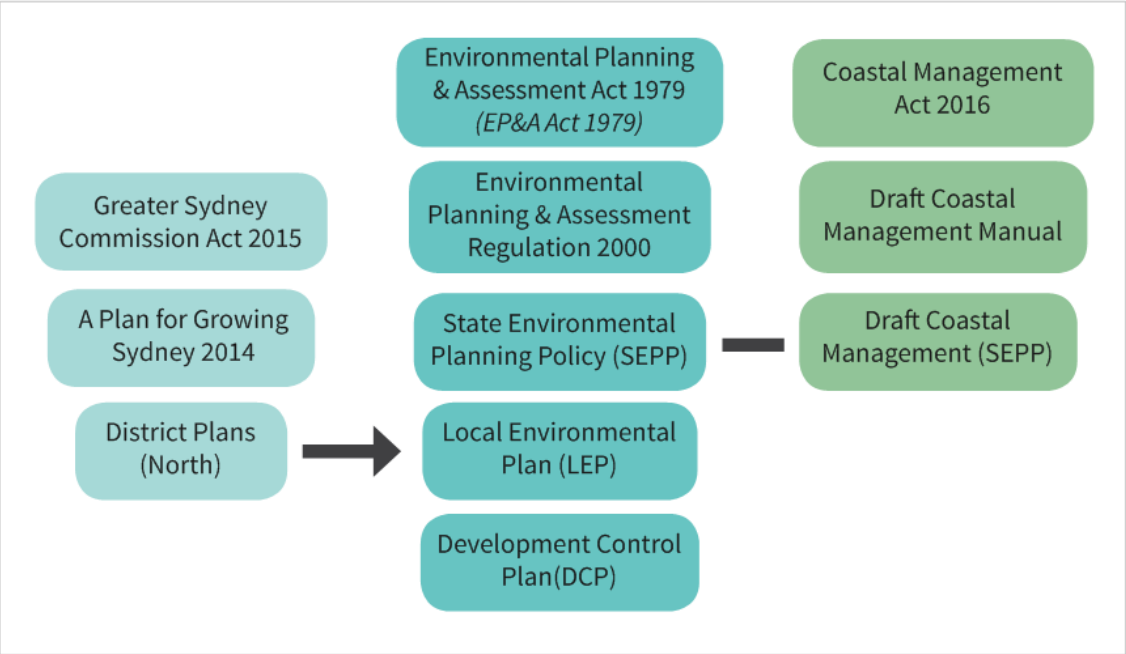
Draft North District Plan, November 2016: This strategic plan is currently out on formal public exhibition until March 2017 and is due to be finalised towards the end of 2017. This strategic document supersedes the former North East Subregion – Draft Subregional Strategy 2007 and identifies priorities and actions for the District which includes the Northern Beaches LGA.

Pittwater Local Environmental Plan 2014: This document guides development through land use zonings and a range of planning provisions. The primary land use zonings affecting waterway development in Pittwater are: IN4 Working Waterfront; E2 Environmental Conservation; W1 Natural Waterways; W2 Recreational Waterways and Schedule 1, Clause 23 – Additional Permitted Uses of certain land in Zone W1 Natural Waterways.

A list of the zones and their objectives is provided in Appendix 1. Extract from Pittwater LEP 2014 Zoning Tables and Schedule 1, Clause 23 – Additional Permitted Uses of certain land in Zone W1 Natural Waterways.

Pittwater 21 Development Control Plan (Pittwater 21 DCP): Pittwater 21 DCP sets the controls, standards, and regulations that apply when carrying out development or building work. It supports Pittwater LEP 2014, by providing additional detailed information. Section D15 of Pittwater DCP, at Appendix 2, regulates the waterway locality and covers topics ranging from scenic protection (D15.2) to Waterfront development (D15.15) and moorings (D15.17).

NSW Legislative Strategic Planning Framework

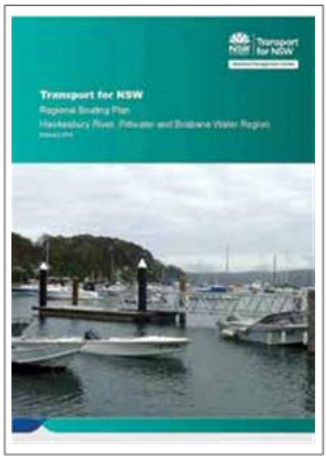


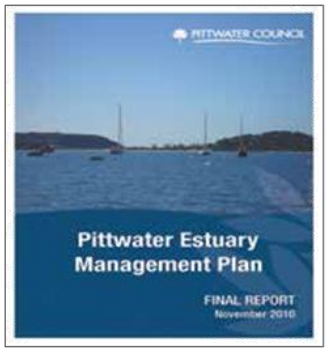
Supporting background reports

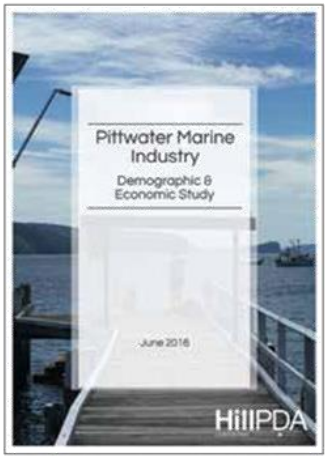
An extensive list of background reports and studies have been examined and considered as part of the Review. You can view the complete list at Appendix 4. The Review should also be read in conjunction with the *Pittwater Marine Industry - Demographic and Economic Study (2016)* (the Study) at appendix 3. Section 2 of the Study outlines key findings.

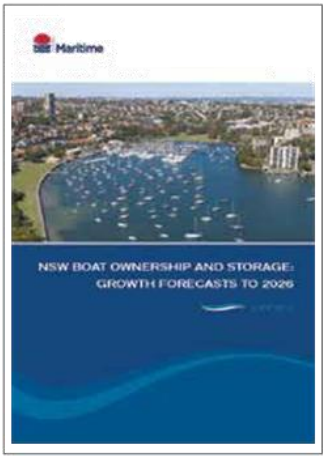
Whilst the list of reports is extensive, we recognise that new reports and studies are frequently being released, so please feel free to make suggestions beyond those studies currently listed.

Images of some key documents









"The Pittwater waterway will continue to be a place of natural wonder and beauty. It will be a place that balances the majesty of nature with vibrant and diverse activity. A place for all to enjoy."

Consultation - Our conversation so far

Community involvement in all aspects of the Review is essential and we have sought your ideas, information and feedback via:

- Two online community surveys (363 total respondents)
- A mobile phone/ Facebook campaign
- An informational stall at Avalon Market Day
- Interviews with targeted users
- Nine targeted workshops with key stakeholders (Appendix 5)

One of the most significant inputs from the community to date has been through the online surveys. The majority of the 363 respondents were former Pittwater Council residents over the age of 25 (38% onshore and 46% offshore) and were made up of people who use the Pittwater waterway for a wide range of activities including but not limited to recreation swimming, boating, unpowered watercraft, businesses, foreshore recreational users, etc. A youth targeted Facebook campaign was also released with a short survey to target residents under 24 and this was relatively well received.

Further to this, the nine targeted workshops focused on key stakeholders including marina operations, off-shore residents, state agencies, recreational user groups, internal council departments and the Currawong Art and Science project.

This feedback will help shape a community vision for the waterway which will inform and guide the development of strategies and actions.

Conversations so far have provided additional insight into the complexity of issues and threats impacting the waterway. Suggested approaches and actions have been offered in response to the challenges and issues, including their perceived priority. These are highlighted throughout the Discussion Paper.

The community was asked to list their aspirations for the waterway during the online survey. The following quotes provide an insight into the key issues.

"A clean, healthy waterway that maintains its natural beauty, wildlife and habitats and to ensure these unique features are protected and enhanced now and into the future."

"A safe waterway that is accessible for all and caters for a wide variety of activities."

"Assurance that facilities are maintained and improved upon so this wide number of activities can continue and expand in variety. This includes boating, kayaking, paddle-boarding and swimming as well as a number of other activities."

"Ensuring growth in use of the waterway and associated conflicts that will arise in relation to demand, are acknowledged and managed."

"Ensure the responsible and reasonable use of the waterway now and into the future."

"Allow and promote future development on and adjacent to the waterway to more adequately reflect and be appreciative of the waterways natural splendour."

A commitment to sustainability

Council is committed to sustainability. This commitment was reflected by all former Council's through a variety of adopted strategies and policies, including 2006 Manly *Sustainability Strategy - for today and future generations, Warringah Environmental Sustainability Strategy* 2012 and Pittwater *Sustainability Policy (2006)* and *Strategy (Pittwater 2025 – Our Community Strategic Plan)*. Each approach has endorsed the goal of Australia's National Strategy for Ecologically Sustainable Development (the National Strategy).

The National Strategy defines Ecological Sustainable Development (ESD) as, *"development that improves the quality of life, both now and into the future, in a way that maintains the ecological processes on which life depends"*.

Sustainability matters and the Review will attempt to balance the four key elements of sustainability, economic, environmental, social and governance, in accordance with Council's strategic objectives.

How can we achieve a Sustainable Pittwater Waterway future?

This section of the discussion paper will set out emerging trends; issues, challenges and possible strategies, as identified through existing studies and recent consultation.

The issues and challenges identified follow six key themes of the waterway: Economy; Environment; Reserves and Recreation; Development; Activation (access) and Regulation. Each theme is structured with regard to one or more of the four elements of ecological sustainable development (ESD). The issues and challenges, overlap as do the themes. How we manage the issues will be crucial to the success of the Review, and its fundamental goal of ensuring a sustainable future for Pittwater waterway.

EMERGING TRENDS: Population, boating use and seasonal demand

Population increase in proximity to the waterway

Total population in the Northern Beaches LGA is projected to increase from 265,250 people in 2016 to 310,800 in 2031, or an increase of 45,500 people (NSW Planning & Environment, 2014) placing additional pressure on the waterway. The population increase will be greatest in the 35 - 49 and 60-69 age group (NSW Planning & Environment, 2014), with residents over 50 years projected to increase by 40% (Hill PDA Consulting, 2016). These age groups are reported to have an impact on increasing boating demand due to entering the boating market and an increase in disposable income / leisure activities. This increase in ageing population trend, is set to continue (Hill PDA Consulting, 2016). Demographic findings are set out in full in Section 3 of the *Pittwater Marine Industry – Demographic & Economic Study* (2016) at Appendix 3.

Boating Use - Increasing boat numbers, size, type and associated impacts

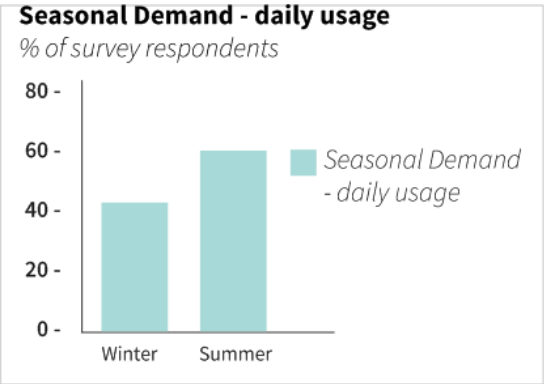
The Hawkesbury/Broken Bay region (which includes Pittwater waterway), has the second highest number of registered recreational and commercial vessels in New South Wales with a predicted growth of an additional 67% or 5,854 boats over six metres between 2009 – 2026 (NSW Maritime, 2010).

Boat sharing was also identified as having a significant impact on the waterway. This approach gives people greater opportunity than ever before to access boating, including potentially larger and faster boats.

Predicted growth in boating and boat size from 2008 - 2031 is estimated to increase boat storage space requirements in the region by 2068 spaces or a 13% increase (HillPDA, 2009). This will have direct impact on boat and associated infrastructure, wait lists for marina berths, moorings, demand for larger berthing spaces, on land implication arising from trailer boat parking and increased use of boat ramps, etc.

Seasonal demand variance

The survey results have highlighted greater use of the Pittwater waterway in the summer months with 62% of responses indicating they use the waterway on a daily basis in comparison to 45% during the winter months. Seasonal variation places alternating pressures on the waterway, making planning for the growth in demand and usage a challenge.



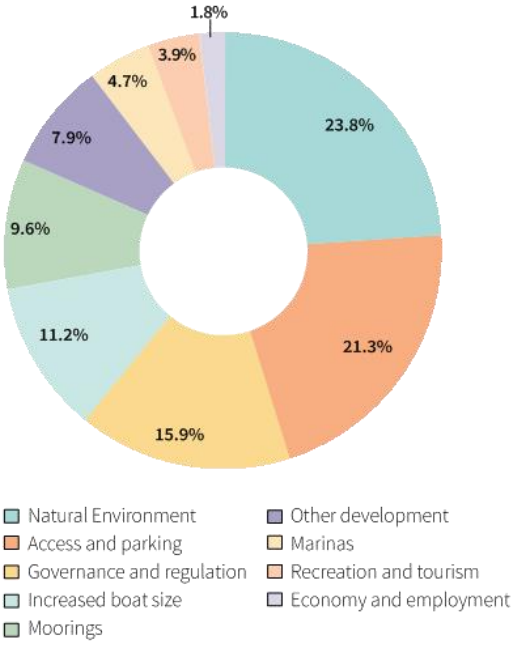
Survey Results

Waterways demand changes depending on the seasons. Summer months see a much greater usage of the waterway.

ISSUES AND CHALLENGES: What you have told us

During the preliminary consultation period, we asked the community to identify the single biggest challenge facing Pittwater waterway. Responses identified natural environment, access and regulation as the highest priorities; this corresponded and mirrored the key areas identified in the community's vision. Some of the challenges identified covered more than one main area or more than one major issue was listed, hence they are recorded twice. All challenges listed are categorised into the following nine key areas.

What is the single biggest challenge facing the waterway now and into the future?



Survey Results

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Theme 1: The Economics of the Waterway

The Pittwater waterway is a working waterway and an economic hub, home to a diverse range of businesses and industries including marinas, commercial fishing, sailing clubs, restaurants, cafes and tourism facilities. Increasing usage in boating, recreation, tourism and marina activities provide significant opportunities to increase the economic potential of the waterway. There are many pressing issues that need to be addressed and how we manage these will be crucial to the economic sustainability of the waterway and its surroundings.

Economic aspects of marinas and their growth

Marinas in Pittwater provide significant economic benefits for the LGA, including employment; boat sales; maintenance and general boating facilities; infrastructure, such as pump out stations and refuelling stations; restaurants and other club facilities (Hill PDA Consulting, 2016). They also offer a regional and even international draw to the waterway through events, world class boating services and educational and employment opportunities.

> "Out of the nine marinas providing feedback, approximately 80% of the workforce lived in the study area"
>
> *- (Hill PDA Consulting, 2016).*

The evolution of waterway related industry and commerce

Pittwater is a working waterway with marine related industry playing a pivotal role both locally and regionally. The increase in boat numbers and size of vessels is impacting on the waterway's economy and will need to be considered strategically in the future.

Marine related industries contribute over $47.2 billion to the Australian economy, in comparison to agricultural production which contributes $46.7 billion (Hill PDA Consulting, 2016). Local marine industries contribute significantly to the local economy as recognised in the Economic Study (Hill PDA Consulting, 2016) and via feedback.

Estimated retail spend of employees

	Total Workforce	Weekly retail spend	Total retail spend *(p/a)*
Marine workers	751	75	$2.4m

Source: HillPDA

Economic contribution of Marine Industries

- 1,002 residents employed within marine related industries
- Combined marine industries provided an estimated $57 million in industry value add
- 4000 worked within the tourism industry
- Tourism provided an estimated $171 million in wages and a further $330 million in industry value add

HillPDA, 2015 (former Warringah & Pittwater LGA study area)

Marine related industries include:

- marinas
- kayak and paddle boarding,
- shipbuilding and repair services,
- boatbuilding and repair services
- water freight transport,
- marine equipment retailing,
- scenic and sightseeing transport;
- tourism
- commercial fishing

Events

Events on the Pittwater waterway significantly contribute to the social and economic makeup of the region. Race days, boating and sailing events draw visitors from across Sydney, regionally and even internationally. They provide valuable input to the local economy throughout the year. While promoting and creating additional events could increase economic opportunities for the local area, associated noise, traffic and light spill impacts, must be considered and managed appropriately.

The Pittwater SAIL expo hosted by the Royal Prince Alfred Yacht Club attracts 2000 visitors annually. This is one of many events that takes place on the waterway (www.rpayc.com.au/news-events/pittwater-sail-expo).

Tourism

The Pittwater waterway is a primary tourism attraction and potentially more so in the future. Tourism employs 10% of the former Pittwater LGA workforce and approximately 670,000 visitors a year visit the area (Pittwater Council, 2015). In 2011, approximately 4000 people in the study area were employed in tourism with an estimated $171 million in annual wages and contributed around $330 million every year to the local economy (GDP). Approximately $127 million of expenditure captured within the study area was related to marine tourism *(Hill PDA Consulting, 2016).*

Tourism related businesses and activities are vital to the local economy. Feedback during consultation highlighted that that more promotional information on the range of natural attractions and recreational activities available on the waterway should be provided.

Sustainably managing the growth in tourism and its impact on the waterway is imperative. The focus is to establish an effective balance between the economic benefits of tourism growth and the potential environmental pressure due to increased usage .

Management of the Currawong Estate and the Basin Campground

The Currawong Estate, located on the North West foreshore of Pittwater, is nestled into the Ku-ring-gai Chase National Park. It is listed as a State Park and is a unique tourism location, focusing on ecotourism. The park and recreational lands are Crown land under the care and control of the Northern Beaches Council. Ecotourism is defined as, "ecologically sustainable tourism with a primary focus on experiencing natural areas that fosters environmental and cultural understanding, appreciation and conservation" *(Ecotourism Australia in Pittwater Council, 2015).*

The Basin camping ground has also been identified as a significant natural attraction for the area, playing host to numerous recreational activities. However a range of issues have been identified, including conflicting uses; limited boat access; overcrowding; littering and noise.

Further information on Tourism in Pittwater can be found via the following link: www.businessinpittwater.com.au/about-the-region/key-documents/

POSSIBLE STRATEGIES:

- Promote tourism through co-ordinated waterways branding, with associated signage, web information and booklets highlighting café hotspots, natural attractions and activities on the waterway.
- Promote access to the waterway through improved sustainable regional transport networks and consultation with council to appropriately manage potential parking implications
- Promote and establish initiatives focused on tourism accommodation on the waterway, including exploring additional eco-tourism facilities.
- Continue to develop comprehensive management plans for Currawong and for the Basin in consultation with relevant state government agencies, being mindful of community expectations and needs.
- Develop planning strategies that are mindful of growth and demand on the waterway, including consideration of zoning expansion for marinas and additional storage facilities.
- Discuss with RMS the potential need to extend Pittwater's wash free zone north of Longnose Point, Stokes Point and Dark Gully, to minimise the impact of larger boats on other recreational activities and the environment.

YOUR SAY:

A stakeholder concern referenced in the Study Hill PDA, 2016 was that:

'Current W1 zoning within the study area restricts the economic potential of marinas, preventing growth opportunities and ability for operators to adapt and remain valid.'

Do you think that the current W1 land use zoning for the wider waterway in the Pittwater LEP 2014 should be amended to address economic growth within the study area and adapt to increasing demand?

Would you like to see economic growth on the waterway?

Do you think expanding marinas is a practicable option for Pittwater?

Would you like to see more cafes, restaurants and businesses utilising the water's edge?

What economic activities would you like to see in the future on the waterway and its foreshore edge?

What should we be planning for long term to ensure economic sustainability on the waterway?

What events would you like to see more of on the Pittwater Waterway?

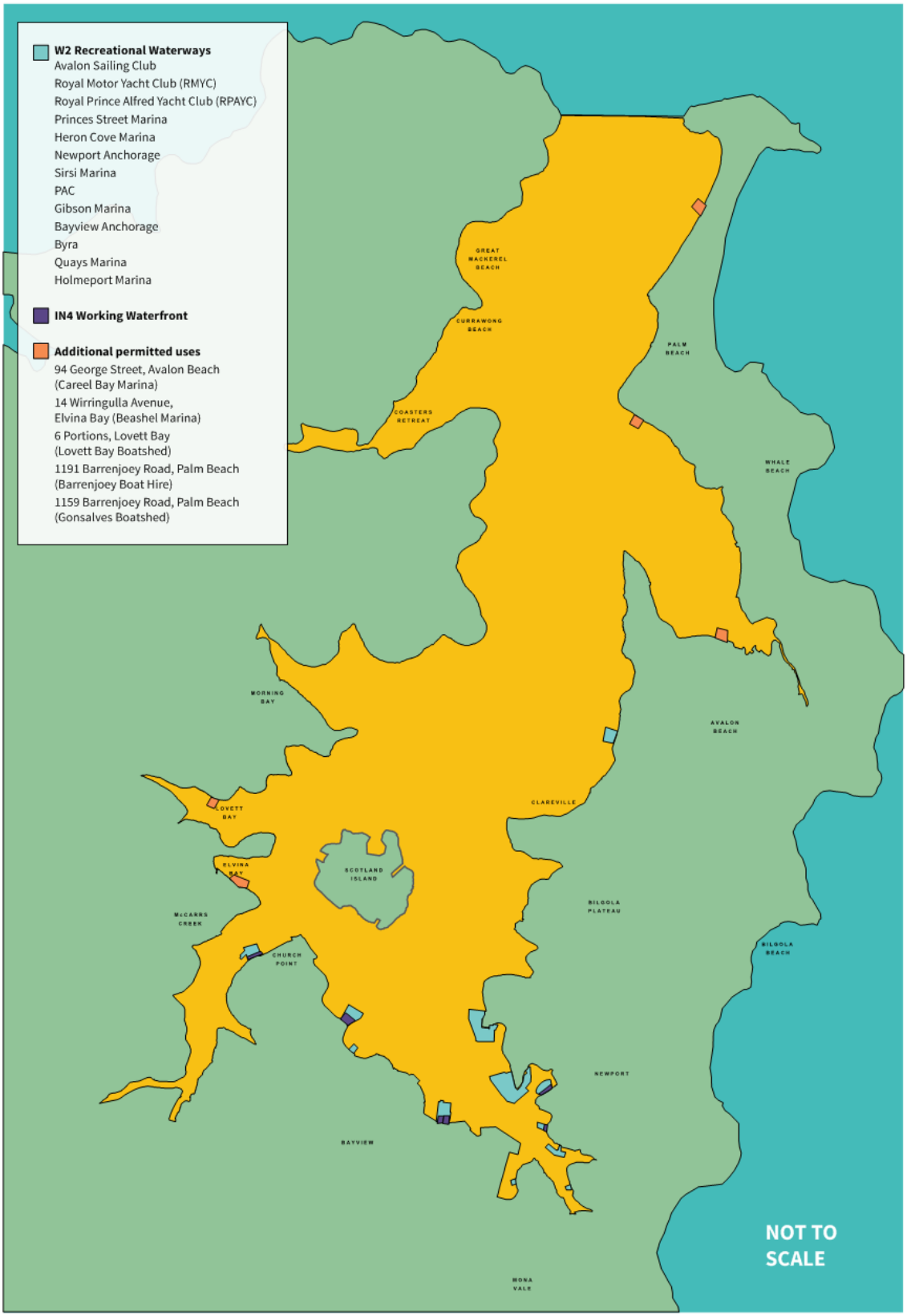
Do you support the Church Point waterfront precinct being considered as a future area of low scale activation, including a hub for café, restaurant and tourism - focused activity.

How do you think Northern Beaches Council should react to the pressure of increased usage and demand?

Should we be lobbying for greater safety measures on the waterway given the increase in demand and use and what are your suggestions?

Have we missed any economic considerations?

Map of Marina Locations and Working waterfront



Theme 2: Natural environment

Consideration and protection of the natural environment is crucial to ensuring a healthy and sustainable waterway and this requires delicate balancing of a range of diverse and often competing pressures.

Feedback via the online survey stated that the natural flora and fauna of the waterway is the most important asset, with the community most satisfied by the natural assets compared with any other aspect. The natural environment was also a priority during the consultation phase of the *Pittwater Estuary Management Plan* (2010).

Achieving sustainability and protecting the waterway's unique natural beauty is becoming more complex due to an unprecedented increase in boat usage, tourism and population.

This section will outline some of the current pressures the natural environment is facing, as well as recreational facilities.

Scenic Amenity

The waterway is iconic and highly valued for its natural picturesque setting and environmental assets. This is further reinforced by the magnificent backdrop of Ku-ring-gai Chase National Park and prominent natural features of West Head and Barrenjoey Head. Survey results highlighted that the natural splendour and beauty of the waterway is extremely important to the community and must be considered and protected'.

Ecological diversity

The waterway offers a rich ecological diversity including mangroves; seagrasses; wading birds; intertidal mud flat; rocky shores and sandy beaches. In essence it is a priceless natural resources and valuable from an ecological, social and economic perspective. One of the most important ecological communities found in the waterway is Coastal Saltmarsh which can be found at Winnererremy Bay, Careel Bay, Refuge Cove, Saltpan Cove and Winji Jimmi.

Increasing sea levels

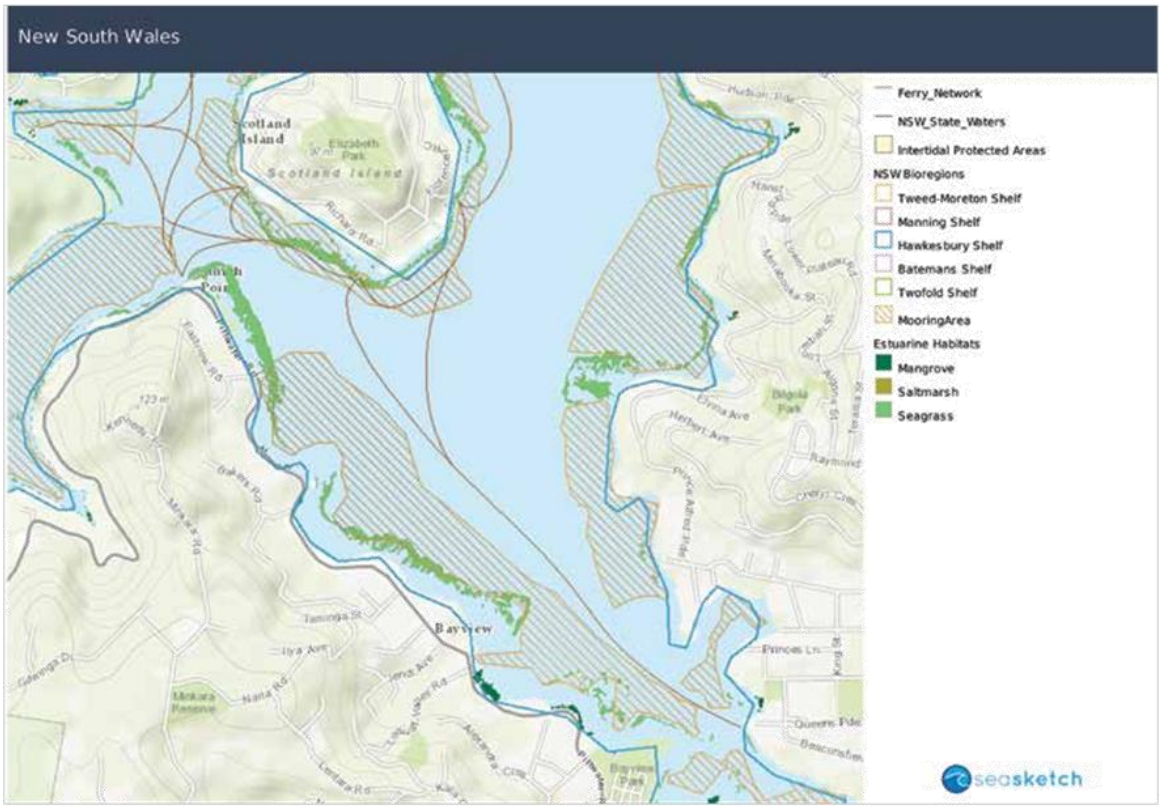
Sea level rise was found to be an important environmental issue to the community as demonstrated in the survey, due to the potential to affect foreshore habitats, ecological diversity and properties on the waterway.

A report prepared by Cardno in 2015 identified estuarine risk areas in the Pittwater locality and is accessible via the following link: portal.pittwater.nsw.gov.au/common/Output/DataworksAccess.aspx?id=SKaPXKEE8qY%253d&ext=pdf

Cardno reported the foreshore areas of the waterway, including properties, are subject to periodic inundation by coastal and estuarine processes. Pittwater 21 DCP (Appendices 7 & 8) establishes the acceptable risk management criteria for a design project life as 100 years, which is consistent with the estuarine management principles contained in the NSW Estuary Management Manual (1992). The development, refinement and enforcement of planning controls to manage development and sea level rise, as it relates to the waterway and foreshore edge, is a continuous and evolving process.

Potential sea warming could also have a significant impact on waterways ecologies, and on the surrounding land based ecologies that the waterway supports. Climate change places comprehensive long term pressure on the waterway requiring appropriate management in the future.

Estaurine Habitat mapping in the southern section of Pittwater Waterway.



Source: Seasketch

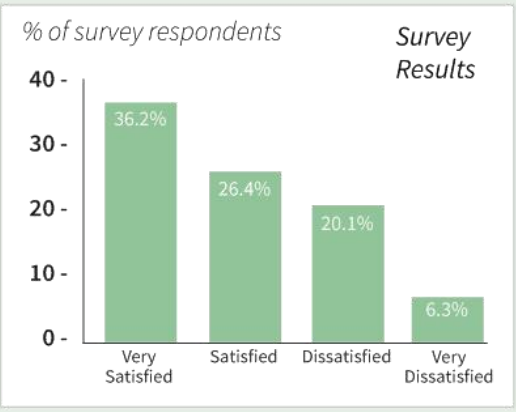
Impact of urbanisation

As urbanisation and development increases, the importance of continual management, maintenance and improvement of water quality becomes increasingly important. Survey respondents highlighted that pollutants, from household sewerage systems and stormwater runoff exceed acceptable levels in specific locations of the waterway, such as Scotland Island and Barrenjoey Beach. Beachwatch Northern Sydney (Pittwater to Manly) State of the Beaches 2015-2016 report, which samples 10 estuarine sites in the Pittwater waterway every sixth day between October and April, graded two sites as poor/very poor. The sites were Barrenjoey Beach and Bayview Baths.

During the consultation process, Lovett Bay was also cited as suffering serious impact from runoff.

Overall 63% of the community indicated, during the online survey, that they were satisfied or very satisfied with the water quality of Pittwater and the natural environment, in comparison to 27% who were dissatisfied or very dissatisfied.

Community satisfaction with water quality in Pittwater



Fishing

Although not within Council's jurisdiction, commercial fishing is an important economic aspect of the regional Hawkesbury inlet as well as Pittwater. As of 2012 there are 83 identified commercial fishing enterprises in the Hawkesbury region.

However, commercial fishing (excluding sustainable recreational fishing charters) has been identified via consultation as having a potential threat to the delicate natural biosphere of Pittwater, creating noise, water pollution and conflicting impacts on other activities. There are regulatory issues surrounding enforcement and provision of licences by the state government, such as restrictions on commercial fishing on weekends around the Coasters Retreat area and Great Mackerel area. While sections of the community are seeking a ban on commercial fishing on the waterway entirely.

The Marine Estate Management Authority (MEMA) released a discussion paper Hawkesbury Shelf Marine Bioregion Assessment, suggested management initiatives which, via Initiative 6 – Reducing user conflicts in Pittwater, seeks to reduce resource-use conflict between commercial fishing and other community user groups by negotiating loss of access rights to commercial fishers in Pittwater. Further information can be found via www.marine.nsw.gov.au/key-initiatives/hawkesbury-shelf-marine-assessment.

Survey respondents and workshop participants stated that commercial fishing was impacting local fish resources and is in direct conflict with recreational fishing pursuits. It was also mentioned that commercial fishing practices, such as offloading of animal matter directly into the waterway and oil slick run-off, are directly impacting water quality.

In comparison, recreational fishing was considered to have less of an impact and is regulated through the NSW Department of Primary Industry (Fisheries) via the imposition of catch limits, although the enforcement of limits was seen as challenging.

The following comments were received via the online survey:

"Ban all commercial fishing";

"No to commercial fishing";

"Stop commercial fishing in Pittwater"

Sample survey respondents.

Environmental impacts and protection of the foreshore

The foreshore edges of the waterway are environmentally sensitive areas which are impacted by a range of diverse processes, including sedimentation, pollution, stormwater runoff and erosion. Developments within the foreshore area, such as seawalls, jetties and wharfs can also have a direct impact on the natural environment, especially if they are constructed inappropriately. Impacts can include disturbance of natural sedimentation processes, causing build up or erosion of the seabed and beaches (BMT WBM Pty Ltd, 2010).

Consultation discussions have suggested that dragging craft along beaches; damaging the existing natural edges of the waterway; increased wakes and wash from boats can speed up erosion on the foreshore edge.

Council has addressed a range of impacts identified above in its Estuary Management Plan.

Environmental protection

Protection of the delicate waterway habitats has been identified, in the survey, as a community priority. Currently, protection of the waterway is achieved through a range of controls, including planning controls like zoning and development control provisions and boating laws and regulations covered by the following legislation:

- *Marine Safety Act 1998*
- *Marine Safety (General) Regulation 2009*
- *Marine Pollution Act 2012*

However certain activities, such as powered vessels entering and moving through areas of seagrass beds; illegal boat tie up and foreshore launching continue to harm the waterway and its foreshore edges.

The waterway has a number of seagrass habitats covering approximately 1.934 km2, including species *Posidonia australis, Halophila sp* and *Zostera sp* (BMT WBM Pty Ltd, 2010). The largest seagrass beds are located at Palm Beach and Careel Bay.

Threat to seagrass beds	Reason for threat
Mooring fields	The main mooring type used in Pittwater is swing moorings. This mooring type consists of a chain and block configuration, in which the chain remains free to move around the block and drag along the waterbed. This action results in seagrass scour where circular patches of seagrass are denuded around the block (Demers, et al., 2013; Maritime Management Centre, 2014).
Human activity	Boating activities, such as power boat propellers, boat wash and fishing practices disturb seagrass beds. While the shade produced by pontoons and jetties cause indirect damage (BMT WBM Pty Ltd, 2010; West et al, 2011).
Caulerpa taxifolia – marine alga	Fast growing marine alga, which is native to tropical Australia and the South Pacific, has spread and colonised extensively outside this natural range and has been recorded in the Pittwater waterway. This species easily spreads between estuaries by boating and fishing activities and within affected estuaries through natural processes such as wind, waves, tides and currents. Caulerpa grows rapidly, allowing the potential to out-compete native seagrass and can spread easily via small fragments (BMT WBM Pty Ltd, 2010; NSW Department of Primary Industries, 2016).

(Demers, et al., 2013; Maritime Management Centre, 2014; BMT WBM Pty Ltd, 2010; NSW Department of Primary Industries, 2016; West et al, 2011)

Domestic animals and impacts on wildlife habitat

The community, via the online survey has raised concerns with the impact of domestic animals on wildlife and wildlife habitat on and adjacent to the waterway. Domestic pets are generally not permitted on land adjacent to the waterway or reserves. However, certain areas, such as, Hitchcock Park at Careel Bay and Rowland Reserve at Bayview permit off leash exercise areas directly adjacent to and within the waterway.

At its meeting on 9th August 2016, Council resolved to undertake a review of the availability of off-leash dog areas on the entire Northern Beaches. This issue is therefore outside the scope of the Pittwater Waterway Review.

Illegal Dumping

Illegal dumping was a common theme raised during the stakeholder workshops, with specific focus around creek line catchments and offshore locations. Boats were also identified as a source of potential litter and illegal dumping via waste pump out systems and general waste.

84% of survey respondents considered littering and illegal dumping to be a very important environmental issue for the Pittwater waterway.

POSSIBLE STRATEGIES:

- Establish 'no go zones' protecting endangered seagrass habitats, such as those off Palm Beach and Careel Bay. This solution would require consultation and approval from Roads and Maritime Services (RMS).
- Provision of reticulated water and connection to sewerage to Scotland Island as outlined in the Council Report Agenda, item 7.3 on the 16th June 2016.
- Promote increased Bushcare management, and increased funding for foreshore reserves and habitats.
- Strengthen environmental protection provisions in Pittwater 21 DCP, specifically Part D15 Waterways Locality, to ensure protection of environmentally sensitive areas such as significant seagrass beds, saltmarsh and mangroves.
- Increased enforcement, in association with an educational program, of the management of pets in offshore communities.
- Regular 'green' bin and waste disposal service for offshore communities.
- Explore opportunities for additional public waste pump-out facilities in Pittwater.
- Continue to pursue opportunities to develop strategies and actions, in association with relevant state authorities, focused on the appropriate environmental management and protection of the waterway.
- Expansion of education campaigns, including stormwater catchment signage 'drains to Pittwater' in association with a public awareness and educational program focused on encouraging best practice behaviour for stormwater run-off.
- Provide more dog waste bins (not just in dog parks).
- Install recycling bins at Council reserve barbeque areas such as Clareville.
- Support initiative 6 which seeks to remove commercial fishing access rights to Pittwater, as proposed in Discussion Paper Hawkesbury Shelf Marine Bioregion Assessment, suggested management initiatives.

YOUR SAY:

Do you agree with the possible strategies?

What are your areas of concern for the natural environment?

Do you agree that ecological sustainability should be given priority over people related demands?

Do you have suggestions on what additional environmental protection controls are required under the LEP and DCP?

Do you think that more bins, especially recycle bins and dog waste bins, should be provided and managed on Council land?

Do you support the establishment of environmental seawalls?

Do you think that environmentally friendly mooring should be used instead of swing moorings?

What do you think can be done to address illegal dumping?

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Northern Beaches Council

Theme 3: Natural reserves and recreation

The community have identified a number of issues and considerations relating to Council and Crown owned nature reserves and parks adjacent to the waterway. The Ku-ring-gai Chase National Park forms part of these considerations.

The survey results indicate that the community is generally satisfied with the recreational facilities in Pittwater, however have identified some suggested improvements.

Reserves – public access and recreation

55% of the survey respondents were satisfied or very satisfied with the recreational facilities at parks and reserves and 91% of the respondents felt that public access to the foreshore and waterway was an important or very important social issue. Comments relating to this issue include the need for more accessibility to foreshore walkways, cafes and retail, recreational foreshore fishing. Some respondents and workshop participants recognised the difficulty providing and linking foreshore access given private ownership implications but options to provide and improve foreshore access was desirable and reflected in response to the survey question, "What are you top three aspirations for the waterway in the future?".

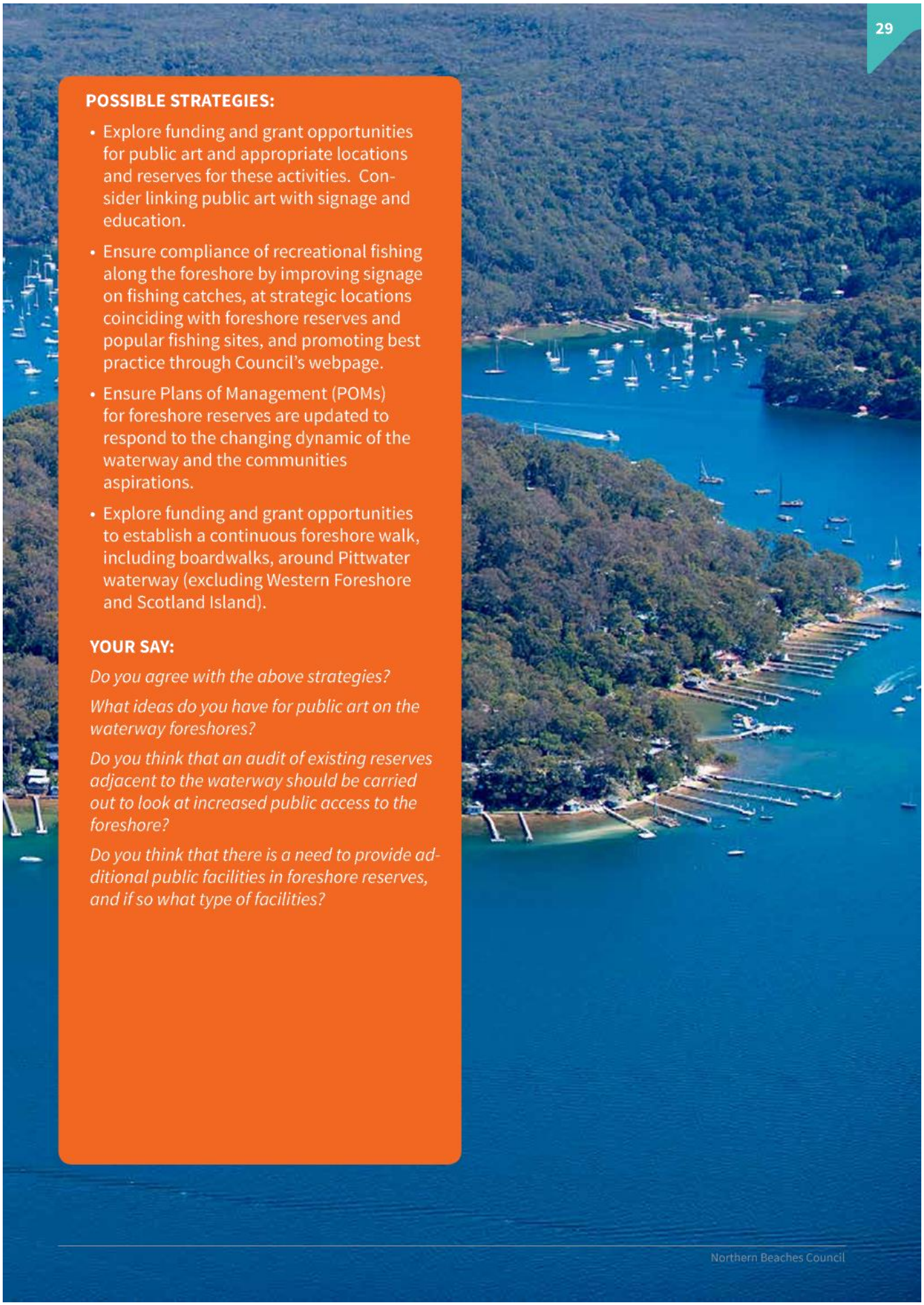
Additionally, 65% of the respondents said that access to the waterway for recreational fishing was an important or very important issue and as discussed in Themes 4 and 5 of this paper, appropriate access, storage and infrastructure for all waterway (and foreshore) recreational users is essential to enable people to utilise and enjoy Pittwater.

Dog Parks

Survey respondents requested greater access and improved dog areas and facilities on the foreshore edges whereas others were concerned with water quality impacts. However, at its meeting on 9th August 2016, Council resolved to undertake a review of the availability of off-leash dog areas on the entire Northern Beaches. This issue is therefore outside the scope of the Pittwater Waterway Review.

Public art

Public art has been identified as a key strategy to activate the waterway and adjacent reserves, bringing a level of vibrancy to the waterway. It could be used to enhance the natural beauty and wonder of the waterway and its surrounds.



POSSIBLE STRATEGIES:

- Explore funding and grant opportunities for public art and appropriate locations and reserves for these activities. Consider linking public art with signage and education.
- Ensure compliance of recreational fishing along the foreshore by improving signage on fishing catches, at strategic locations coinciding with foreshore reserves and popular fishing sites, and promoting best practice through Council's webpage.
- Ensure Plans of Management (POMs) for foreshore reserves are updated to respond to the changing dynamic of the waterway and the communities aspirations.
- Explore funding and grant opportunities to establish a continuous foreshore walk, including boardwalks, around Pittwater waterway (excluding Western Foreshore and Scotland Island).

YOUR SAY:

Do you agree with the above strategies?

What ideas do you have for public art on the waterway foreshores?

Do you think that an audit of existing reserves adjacent to the waterway should be carried out to look at increased public access to the foreshore?

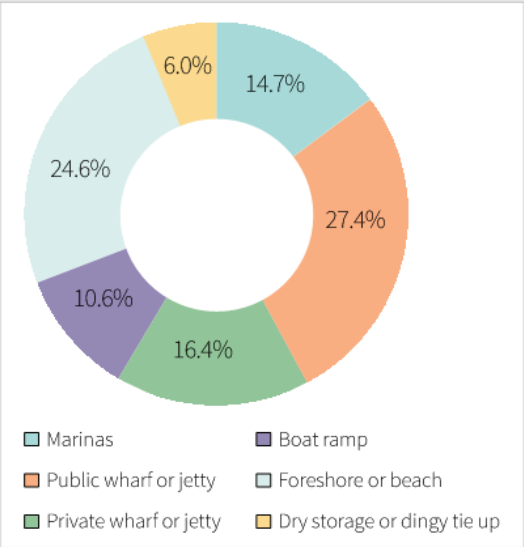
Do you think that there is a need to provide additional public facilities in foreshore reserves, and if so what type of facilities?

Theme 4: Development of the waterway?

The Pittwater waterway is home to a large variety of development types, including marinas, moorings, boat ramps and foreshore development such as jetties, wharves and seawalls. These developments can impact on a number of factors such as employment, public access, environment and amenity. Managing the impacts moving forward is crucial to the continued success of the Pittwater waterway as a hub for land and water based activity whilst respecting and protecting the unique and natural environmental setting.

As set out in the Hawkesbury discussion paper, 'the social and economic benefits from recreational boating are reliant on adequate land-water interface based infrastructure such as boat launching facilities, navigation aids, access points, boat storage facilities, wharfs, [etc. and a lack of such facilities] can reduce the incentive for recreational boating, lessen the enjoyment… and raise the cost of boat ownership.'

Percentage of people that use different infrastructure on the waterway



Survey results

This section will specifically address the two dominant boat storage types which are of greatest concern to the community: marinas and moorings. Other waterway development, such as boat ramps, tie ups, seawalls, wharves and jetties will also be addressed.

During the targeted workshops and online survey, marinas and moorings were consistently raised as a major issue impacting the waterway. Growth in boat ownership was considered to be an important issue to 47% of survey respondents, with 39% highlighting the growth in marina size and 35% the increasing demand for moorings as a very important issue.

Marinas

Marinas are permanent boat storage facilities which provide a variety of amenities, facilities, and services such as:

- *Berthing and mooring structures;*
- *Fuelling and sewage pump-out;*
- *Launching or landing boats, such as slipways or hoists;*
- *Construction, repair, maintenance and hire of boats.*
- *Tourist, recreational and club facilities*

Marinas in Pittwater play a pivotal role in meeting demand for boat storage spaces. Marinas in Pittwater vary in size from 15 to 352 berths. In total the marinas provide 1,224 berths, or 24% of the total boat storage spaces *(Hill PDA Consulting, 2016).*

Increasing demand for marina berths

The Pittwater waterway is predominately used for recreational boating purposes and is one of the busiest in New South Wales. Its popularity stems from the demographic of the locality and its location on the northern edge of Sydney.

Boat ownership in the former Pittwater and Warringah Local Government Areas (LGAs) increased from 8,182 in 2003 to 10,940 in 2015. This represents an increase of 34%, or an annual compound growth of 2.5%. These statistics demonstrate a strong growth in boat ownership and projections estimate that the growth trend will continue with ownership levels projected to increase by 8,950 boats (+82%) over a 26 year period to 2041 (Hill PDA Consulting, 2016).

With strong boat ownership growth and the popularity for on water boating activities, marinas are experiencing high demand and increasing waiting lists for berth and mooring spaces. In additional to growth in boat numbers, the average size of boats is increasing with vessels greater than 6 metres projected to contribute 63% of total growth to 2041 (Hill PDA Consulting, 2016).

During workshop consultation, marina operators told us that they all had waiting lists for berth and mooring spaces.

Half of the marina operators consulted indicated that increased demand for more berths and larger boat storage options was driving upgrades, extensions or new development projects.

However, operators also told us that there is tension between the demands for increased provision of appropriate zoning around marinas to support future expansion and the community's attitude towards marina development, specifically environmental protection and amenity concerns.

This is discussed in more detail in Theme 6 of this paper and consideration of the space efficient provision of marina berths (64 berths per hectare) over swing moorings (7 moorings per hectare) should be taken into consideration.

Community concerns outlined in submi sions received for Development Application (DA) No.240/15, 2A McCarrs Creek Road, Church Point.

- *Increased parking pressure on site, adjacent to and around the proposals*
- *Visual impact increases including glare issues*
- *Obstruction of waterways activity, access and navigation*
- *Noise pollution and wash associated with increased size in boats on new berths*
- *Loss of public ownership of the waterway*
- *Lack of development controls for marina parking and inconsistent parking control requirements across different parking policy documents*
- *Safety issues regarding the navigation of larger vessels in a congested waterway and associated navigational impact from increasing arms of marinas out into navigational channels. Associated safety hazards extend to activities with children.*
- *Serious pollution issues at Horseshoe Cove in light of marina development (sediment testing was seen to show elevated levels of heavy metals and acid sulphate soils in this bay)*
- *Conflicting use with larger vessels and smaller boats and limiting recreational activity*
- *Seagrass damage from swing moorings*
- *Berthing size (16m+) not in line with boating demand projections (6m+)*
- *Increasing social divide for access to the waterway by accommodating very large and expensive yachts*

Management of pump-out and other boating services at marinas

Pump-out facilities allow boats, with on board toilet facilities, to pump out waste to a land based storage facility and subsequently to the sewer. The management and maintenance of pump-out is crucial and as boat numbers and size increase, demand for these facilities will increase. Currently there are only two public pump-out facilities in Pittwater. Some private marinas also have pump out facilities open for public use. This critical lack of facilities can lead to illegal pump out into the waterway, causing preventable pollution.

Strategy 2h) of the Pittwater Estuary Management Plan (2010) stated that all new marina developments over nine berths should have pump outs services.

Marinas on the waterway also provide refuelling services for club patrons and other boat users. However, a range of associated impacts from a health, safety and environmental perspective may be associated with fuel spills and the storage of hazardous substances.

Berthing areas

Berthing areas, specifically marina berths, have potentially significant environmental and navigational impacts upon the surrounding waterway. If the expansion of these areas is not undertaken in a considered manner there is potential to encroach into navigational channels, sea grass beds and aquatic habitats.

Hill PDA Consulting (2016) reports that berth spaces are far more water space efficient than other forms of on-water storage, such as moorings. Swing moorings far exceed marina berths water space usage with one swing mooring accounting for approximately eight marina berths, a ratio of 1:8. Each hectare of water space can accommodate 64 marina berths or alternatively 7 swing moorings.

Having regard for the above, it is evident that marina berths are far more space efficient at meeting expected future boat storage demand than swing moorings.

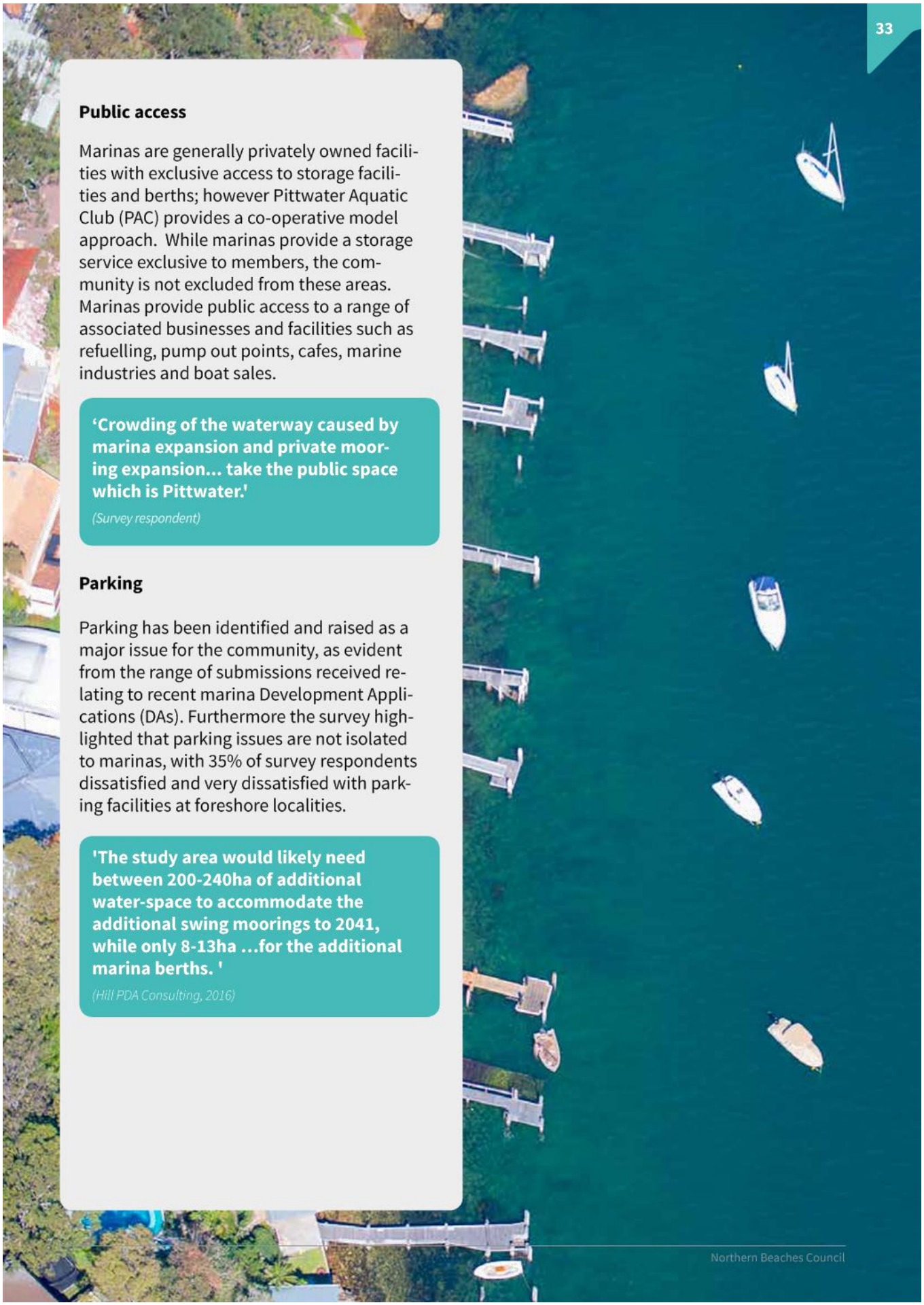
Dry stack storage

Dry stack storage is a land-based facility that can house many boats in a multi levelled structure. The storage operator utilises mechanical means to access stored boats and lower them directly into water prior to use by the owner. Once the boat owner returns to the facility the operator will retrieve the boat from the water and return it to the storage facility.

Dry stack storage is a viable and economical storage solution for medium sized boats, ranging from approximately 5 to 11 metres (18 – 36 ft). Other advantages of dry storage are its ease of use, reduction in maintenance works, safety and security.

A local example of a dry stack facility is d'Albora Marina, Akuna Bay sited on Coal and Candle Creek West of Pittwater.

While dry stack storage is a viable option, there are associated impacts which relate to the height of the building, visual and operational impacts, including noise, traffic and parking.



Public access

Marinas are generally privately owned facilities with exclusive access to storage facilities and berths; however Pittwater Aquatic Club (PAC) provides a co-operative model approach. While marinas provide a storage service exclusive to members, the community is not excluded from these areas. Marinas provide public access to a range of associated businesses and facilities such as refuelling, pump out points, cafes, marine industries and boat sales.

'Crowding of the waterway caused by marina expansion and private mooring expansion... take the public space which is Pittwater.'

(Survey respondent)

Parking

Parking has been identified and raised as a major issue for the community, as evident from the range of submissions received relating to recent marina Development Applications (DAs). Furthermore the survey highlighted that parking issues are not isolated to marinas, with 35% of survey respondents dissatisfied and very dissatisfied with parking facilities at foreshore localities.

'The study area would likely need between 200-240ha of additional water-space to accommodate the additional swing moorings to 2041, while only 8-13ha ...for the additional marina berths. '

(Hill PDA Consulting, 2016)

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MARGARITA
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Pittwater Waterway Review Discussion Paper

POSSIBLE STRATEGIES:

- Review existing and consider additional development controls such as dry, stack storage design and locational controls, increased protection of Posidonia seagrass beds and marina development. Controls should address the increased demand projections for boat usage and storage and potential environmental and amenity impacts, with references drawn from the Review.
- Consider Council led amendment to Pittwater LEP 2014 which reflects relevant outcomes identified in the Review including expansion of marinas where appropriate, considering environmental, navigational, traffic and parking impacts. Expansion subject to trade off which would result in a reduction in commercial moorings held by marinas (increase in boat storage associated with a reduction in water uptake).
- Explore mechanisms and opportunities to inform boat users of boat related services and facilities in Pittwater, including servicing facilities, public amenities, leisure facilities and passenger access points. Investigate incentives for commercial marinas to be involved in the program.
- Ensure all marinas are compliant with relevant standards including Australian Standard (AS) 3962-2001 Guidelines for design of marinas and International Standards Organisation (ISO) 14001 – Environmental Management Systems, or have an appropriate environmental management policy in place.
- Review and re-evaluate parking rates of provision in relation to marina and dry storage development.
- Consider 'sea bin' development close to marinas; to improve waterway cleanliness.

YOUR SAY:

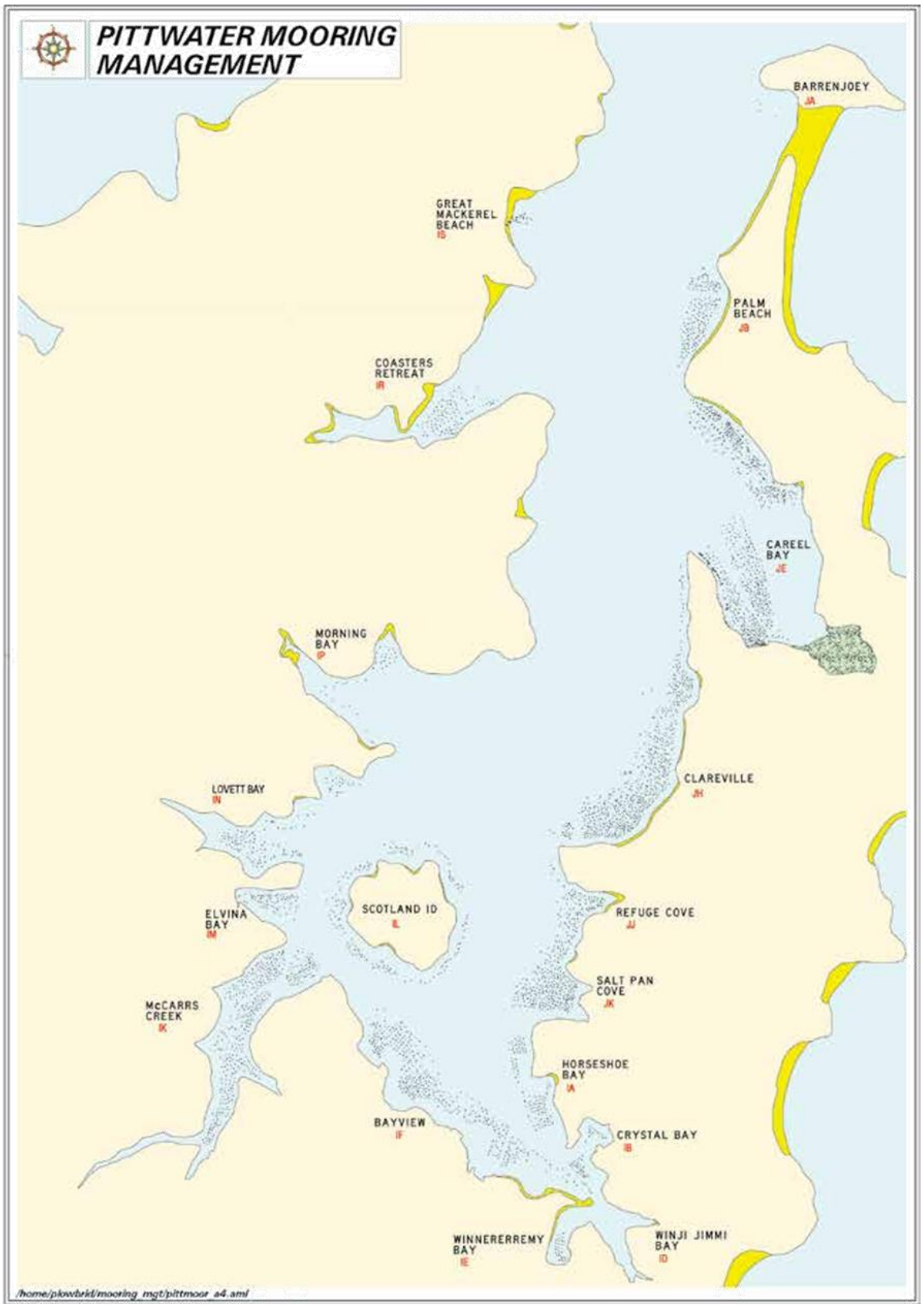
What do you think of the possible strategies outlined above?

Should Council consider establishing a marina reference group with representation from Council, the marina sector, key stakeholders and community representation?

Should Council allow marinas to expand in a considered manner; taking into consideration environmental, navigational, traffic and parking impacts; in the face of increasing boat ownership and usage and economic growth?

Should Council look to new types of technology to clean the waterways in priority areas, such as Seabins etc?

Mooring fields in Pittwater



Moorings

Moorings are defined as: 'a detached or free-standing apparatus located on or in a waterway and that is capable of securing a vessel, but does not include a mooring pen'.

There are four types of moorings; commercial; private; courtesy and emergency.

Moorings provide an easy and affordable method for the public to store medium and larger boats. Pittwater has a high demand for moorings as seen in the private mooring waiting lists with Winji Jimmi and Crystal Bay both having waiting periods of 27 years. These represent the highest waiting lists for moorings in NSW. Moorings are regulated through the Roads and Maritime Services (RMS) and Pittwater 21 DCP (D15.17 Moorings) provides a range of development controls relating to maximum number of moorings and the management of mooring areas.

Pittwater 21 DCP sets an overall maximum cap of 3641 moorings in Pittwater, while individual mooring areas have a maximum number of moorings permitted.

The community has identified a number of issues with moorings, with 82% of survey respondents saying that the enforcement and management of moorings in Pittwater was an important or very important issue.

Water space comparison of marina berths to swing moorings.

'Over' mooring in certain localities

Moorings can have a negative impact on aquatic habitats, seagrasses, visual pollution, navigational and safety issues brought about by inefficient mooring field layouts, systems and equipment.

> "Increase in number and size of vessels and …overcrowding of Pittwater is an on-going concern as the route the ferry takes is being constantly pushed out as more moorings are put in."
>
> (Gray & anor v Pittwater Council [2016] NSWLEC 1176)

Over mooring is also causing conflict with recreational activities such as sailing and small recreational crafts, such as kayaks. These issues are particularly relevant on the southern section of the waterway, from Winnererremy Bay to McCarrs Creek.

"As of 2015, the bays and coves of Bayview, Crystal Bay, Winji Jimmi and Winnererremy Bay contained a total of 51 swing mooring over an area roughly calculated at approximately 70ha of water-space. By comparison the Royal Prince Alfred Yacht Club and Royal Motor Yacht Club provide 572 berths over an estimated 9ha of water-space"
(Hill PDA Consulting, 2016).

Mooring minders

Mooring minders have been identified through several workshops as a key issue impacting Pittwater. Mooring minders is an informal term given to inexpensive and unmaintained boats purchased by a licence holder for the specific purpose of reserving the mooring space. The concern with 'mooring minders' is that they pose a range of impacts, these include:

- Visual amenity of neglected and unseaworthy boats,
- Navigational and safety concerns.
- Potential damage to other vessels and property due to risk of sinking or breaking free from unmaintained moorings.
- Stifle access to potential moorings subsequently increasing mooring wait lists and placing additional demand pressure for boat storage.

> "There are …way too many boats that sit on moorings and never get used."
>
> "Get… rid of mooring minders."
>
> "Too many un-sea worthy and 'mooring minders' taking up valuable space at moorings."
>
> "Need to get rid of unused boats to free moorings instead of getting more new moorings."
>
> *(Survey respondents)*

Mooring limits

RMS has established and allocated a maximum mooring cap for Pittwater of 3641 (maximum limit on mooring numbers) and this is further reflected in restrictions relative to the maximum number of moorings for specific mooring areas throughout Pittwater as indicated in Pittwater 21 DCP (D15.17 Moorings).

The dilemma of establishing specific mooring caps for individual mooring areas is the potential for popular areas having high demand and associated long waiting lists, while other less popular areas remain under-utilised.

As indicated, Pittwater has the highest waiting lists for moorings in NSW and during workshops there were a range of options discussed in relation to addressing boat storage demand now and into the future. Options included increasing mooring numbers in areas of high demand while other options sought reduction in mooring numbers in favour of other boat storage options. RMS has investigated and trialled alternative mooring systems and types in an attempt to potentially increase mooring capacity in some localities, such as multipoint systems, which include star and pontoon moorings.

"Currently [there are] no available mooring for new [residents] who move to Scotland island. This makes daily life incredibly difficult."

(Survey respondent)

Types of moorings in Pittwater

Swing moorings are the most common type of mooring system in NSW consisting of 86% of all private mooring licences. This trend is similar for Pittwater and can be contributed to the ease and low cost of construction of the mooring. Swing moorings are also a much more affordable option than marina berths and therefore provide a crucial cost efficient solution for many boat users (Hill PDA Consulting, 2016).

Unfortunately, as already highlighted in this paper, swing moorings have a number of environmental and navigational issues. The chain in swing moorings scours the seabed around the block, causing significant damage to and potential loss of seagrass beds (Demers, et al., 2013; Maritime Management Centre, 2014). Seagrass form a vital part of waterways ecology; and their protection is vital.

Swing moorings are also space inefficient. Each boat on a swing mooring takes a large amount of space because the chain that ties the boat down moves with tide, current and wind direction.

"Berths [Marina] could provide 64 on-water spaces for every 1ha compared to seven swing moorings per 1ha."

(Hill PDA Consulting, 2016).

"Between 91 to 202ha of additional water space could be required to accommodate the additional swing mooring to 2041, while only nine to 21ha of water space would likely be needed for the additional marina berth"

(Hill PDA Consulting, 2016).

POSSIBLE STRATEGIES:

In conversation with the Roads and Maritime Services and Department of Primary Industry (Lands):

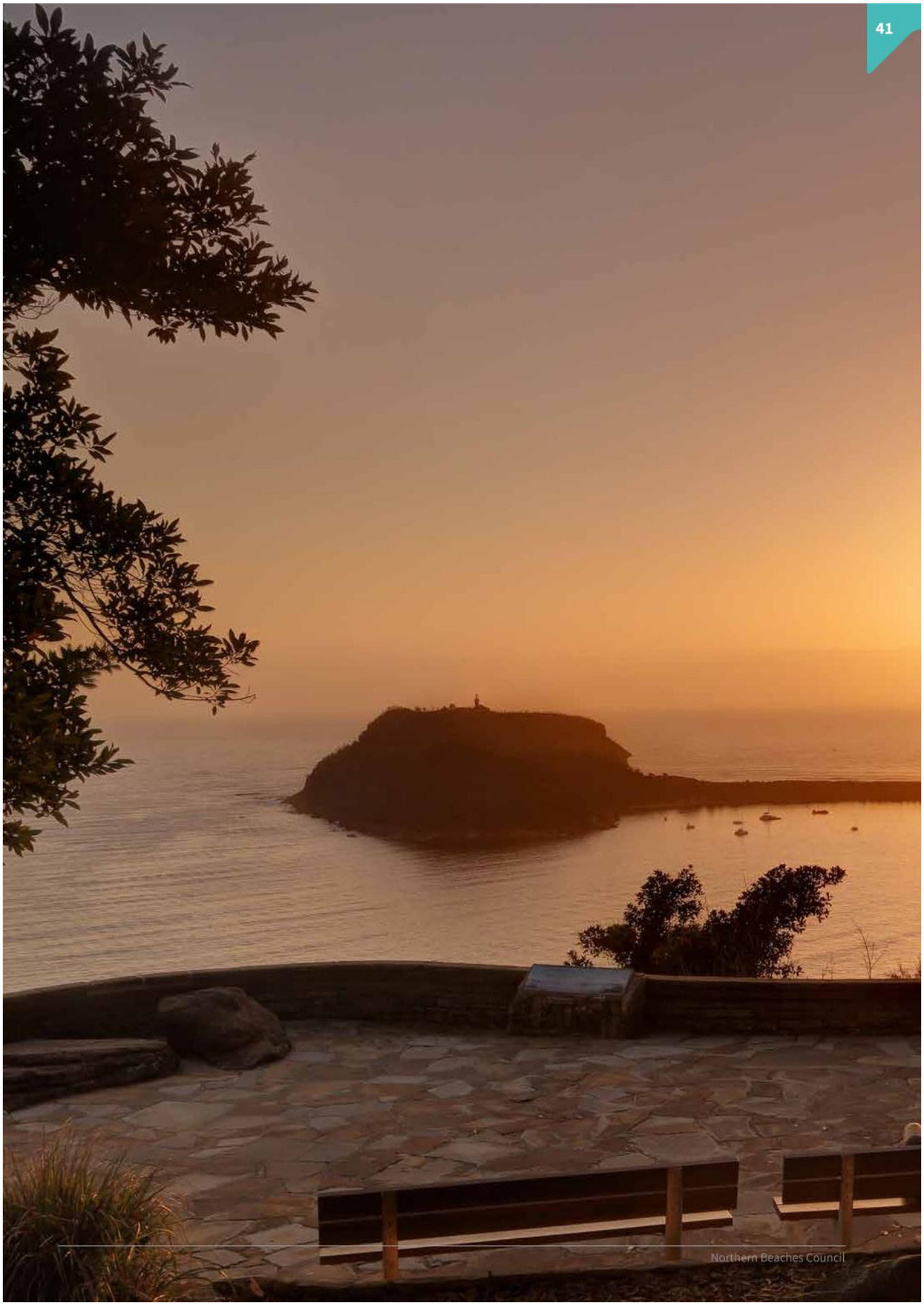
- Encourage consolidating mooring fields by considering denser mooring formations where possible. This could include reorienting mooring fields into more organised formations including considering multipoint systems such as 'pontoon' or 'star' mooring systems in which one mooring can support multi boats in an orderly fashion.
- Review DCP controls and provision, being 15.17 Moorings, and RMS mooring limits to ensure they are appropriate and capable of delivering required environmental, navigational and water safety outcomes in conjunction with meeting increased demand.
- Identify opportunities and investigate feasibility to establish additional mooring and tie-up infrastructure for residents of offshore communities.
- RMS to investigate initiatives and opportunities for the conversion of swing mooring systems to more environmentally friendly systems, with emphasis on mooring fields located in seagrass areas, and/or where denuding of seagrass beds has occurred.
- Discuss options with RMS to increase enforcement of mooring minders and a comprehensive review of how mooring licences are granted, to reduce the number of mooring minders on the waterway.
- Seek support and funding commitment from RMS to implement Environmentally Friendly Moorings (EFMs), specifically in sensitive locations, and multipoint systems in a timely manner to address increasing demand and seek part funding from the mooring fees to cover enforcement and the provision of related storage facilities.

YOUR SAY:

What do you think of the potential strategies outlined above?

Do you think that marinas should be permitted to accommodate part of the additional demand predicted given the advice that they can accommodate the additional demand in a more water space efficient manner?

Survey respondents and workshop participates suggested that a yearly inspection of all boats on moorings be mandatory to ensure that they are sea-worthy and remove mooring minders. What do you think of this suggestion?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Other development

Other types of waterway development include seawalls, jetties, wharves, boat ramps, boat sheds, storage facilities including dinghy / kayak storage areas and dry stack (warehousing) facilities. At a local level these development types are generally regulated through LEP and DCP controls.

Ageing infrastructure

Survey respondents and workshop discussions have highlighted concerns regarding ageing infrastructure, such as public wharves. Council has undertaken wharf upgrades at Bonnie Doon and Bennetts Wharves, Palm Beach, Salt Pan Cove, Yachtsman's Paradise, Tennis Court Wharf. Work is currently being planned at Great Mackerel Beach Wharf. To ensure compliance with the Disability Standards for Accessible Public Transport 2002 additional work will be required, dependent on securing funding support.

Lack of facilities for 'off the beach' small boat sailing

Sailing is a popular activity on the waterway and it has been highlighted that particularly small craft don't have adequate storage facilities. This has been said to lead to erosion on beachfront and foreshore edges due to unauthorised storage. There are also limited designated small craft sailing areas, which can lead to potential navigational/safety issues with larger, more powerful motor craft.

Pasadena and Church Point redevelopment

Workshop discussion and survey respondents highlight that many offshore residents use Church Point as their main hub. There are a number of infrastructure projects underway in this area and development for a variety of uses is important.

Jetties and wharves

There are several issues identified with jetties and wharves in Pittwater and particularly with regard to Scotland Island and the western foreshore due to accessibility requirements.

Jetty issues highlighted include: jetty use (who can use them) and the regulation surrounding enforcement: the visual impact of rows of private jetties and associated boat sheds: jetties in disrepair and responsibility / requirement for maintenance; congestion and encroachment of jetties and restricting public access to the foreshore by private jetties.

Wharf issues identified during consultation include: congestion in front of the ferry wharf at Scotland Island and potentially other locations; illegal boat tie up and enforcement; competing demands affecting public wharf infrastructure on the waterway; including recreational fishing use and general access, maintenance and safety issues and disabled access.

Seawall development

Seawall development, if constructed incorrectly and without consideration of context, may cause significant environmental harm and destruction to local aquatic ecologies. State Government and Council projects are required to go through a 'review of environmental factors' which addresses the environmental impact assessment requirements for activities subject to Part 5 of the Environmental Planning and Assessment Act 1979. Private seawalls, are governed by State Environmental Planning Policy (Infrastructure) 2007 and development controls contained in Pittwater 21 DCP (D15.18 Seawalls). These generally do not permit private seawalls, with variations only considered if there is a potential for erosion from coastal processes.

Dinghy storage and tie-up facilities

Currently the Pittwater waterway has 981 dinghy and watercraft spaces that are available to rent yearly from Council. According to Council figures, this is insufficient, with most storage areas experiencing waiting lists of approximately 50 spaces. It has been identified that more spaces are required north of Avalon and Church Point.

> "Dry storage for dinghies is very important as it promotes access to the waterway for those who cannot afford mega yachts and the waterfront marina lifestyle."
>
> *(Survey Respondent)*

Kayak and paddleboard storage facilities

Kayaking and stand up paddle boarding continues to grow in popularity as a water base activity that can be enjoyed by a variety of ages and experience levels. Due to the growth in popularity, it has been identified that there is a lack of kayaking and paddle boarding storage by the foreshore. This can lead to inefficient, damaged or illegal storage methods and conflicting use at recreational facilities. Kayak and paddleboard storage, according to consultation, is of particular concern as there are limited dedicated facilities in Pittwater. Although additional storage has been provided at Church Point and investigated at Paradise Beach, as the activity becomes more popular, demand for storage may rise and impact on dinghy storage facilities.

This opens a relevant debate about what is the most appropriate use of Council's designated dinghy storage facilities and where does the personal responsibility for storage of smaller water craft, such as kayaks and stands up paddle boats, lie.

68% of survey respondents felt that storage for kayaks, paddleboards and dinghies was important or a very important issue requiring further consideration.

Boat ramps

Boat ramps are the primary access point for boat launching. Pittwater has 12 boat ramps, however not all boat ramps are vehicular accessible. The majority of boat ramps are classed as hand launching areas, such as Snapperman Beach and Church Point boat ramps. Currently there are only two facilities in Pittwater that are large enough to launch medium size boats onto the waterway and both of these are at Rowland Reserve. The lack of facilities for larger boats has led to incidents, with some boat owners attempting to launch larger boats via smaller facilities, causing damage to the boat, boating infrastructure and surrounding aquatic environment. www.pittwater.nsw.gov.au/lifestyle/boating_facilities/boat_ramp_locations

Design considerations for waterway infrastructure projects

The Careel Bay precinct upgrade was identified, via workshops, as a successful example of appropriate and considered waterway design.

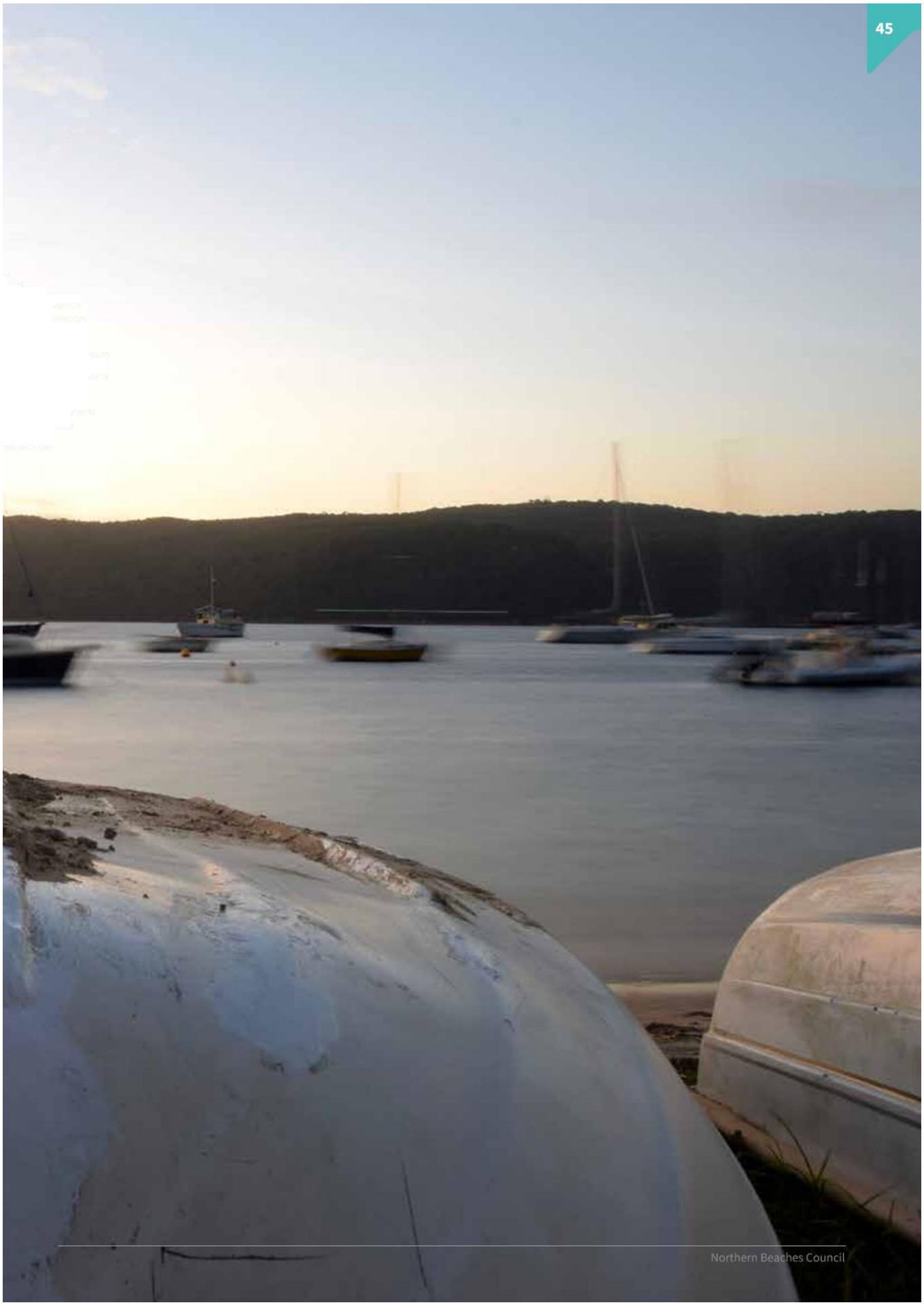
POSSIBLE STRATEGIES:

- Investigate updating signage for tie-up facilities to clearly set out use limits and permitted uses, enforcement provisions relating to illegal tie-up at wharves and non-designated areas.
- Review licencing system for Pittwater boat tie-up facilities, with a focus on innovative approaches and opportunities to cater for more flexible usage.
- Investigate opportunities for additional dinghy storage to cope with demand, both for moorings access and recreational users.
- Review Pittwater 21 DCP planning controls relating to seawall development, with specific reference to exploring opportunities to promoting best practice, innovative and ecologically friendly seawall design.
- Explore opportunities to encourage shared jetty/ pontoon arrangements to reduce proliferation of waterway structures and increase access to vital boating infrastructure to offshore residents.
- Explore and investigate options for new boat ramp development on Pittwater for medium and larger boats.

YOUR SAY:

What do you think of the possible strategies outlined above?

Do you think Council should provide storage facilities for kayaks and paddleboards on foreshore areas?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Theme 5: Activating the Waterway

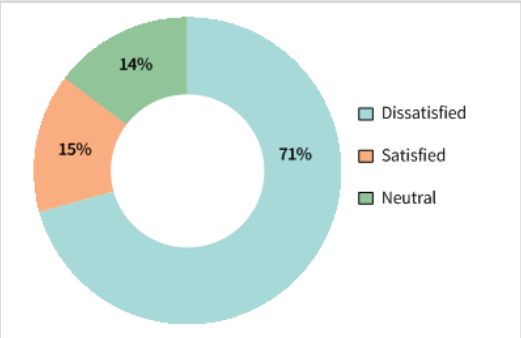
Accessing the waterway: access, parking and navigation

Access and parking is crucial as it ensures the waterway remains a shared, public place that can be enjoyed by everyone.

Many issues discussed so far, particularly in relation to development, storage and increasing demand, will have a significant impact on access to and on the waterway. Access is essential as it activates the area and allows people to utilise and enjoy Pittwater.

Parking has been highlighted during the consultation period as one of the biggest issues. The community has identified that there is a substantial lack of parking for all major stakeholders, including offshore and onshore residents and visitors to the waterway.

How satisfied were you with parking facilities for the Pittwater Waterway.



Survey results

The community is less than satisfied with the current parking arrangement for the Pittwater waterway.

Car Parking

Consultation has highlighted a huge demand for parking across the waterways locality. Governor Philip Park, Palm Beach Ferry Wharf car park and Rowland Reserve face increased demand, at peak times, far in excess of current parking provisions.

The offshore communities rely on public foreshore parking to access their homes and Council operates a permit system to give priority to these residents. Council has initiated the Church Point upgrade which incorporates a new car park with 120 new parking spaces. The northern section of Pittwater, including Great Mackerel and Coasters Retreat residents, do not have access to a parking permit system and have said that they experience great difficulty in accessing and locating parking to access their homes.

Council parking stickers for non-residents

Some Central Coast residents have access to Council parking permits. The Central Coast is a burgeoning area for commuters that work in Sydney. Although not directly within the scope of the Review, consultation responses have shown that this has causes an unsustainable demand for parking at Palm Beach Ferry Wharf car park. Council has committed to undertake a Parking Demand Study (PDS) for the West Palm Beach locality to consider and address a range of parking and transport related issues.

Trailer and boat parking

Trailer and boat parking issues are apparent in most localities and contributes to a number of problems including amenity impact, safety issues, reduced visibility, damage to property and traffic congestion.

Trailer boat parking has special requirements, as significant room is required to safely park

and manoeuvre. Trailer boat parking is prevalent on local roads, and has safety and visibility impacts.

The former Pittwater Local Government Area (LGA) conducting a three month trial which commenced on 15 July 2016. The trial permited Council to impound boat trailers parked on public roads and lands if they have not been moved for a period of 28 days. Further information can be found via: www.pittwater.nsw.gov.au/places/parking

Temporary, fee paying facilities for on-land storage isavailable at Rowland Reserve and Sandy Point, however workshop feedback has confirmed that there is a lack of permanent, cost effective on-land storage options available for boats and trailers.

Ferry and transport integration

Currently there are two independent ferry systems operating on the waterway with individual ferry service timetables. Ensuring the different modes of transport systems, particularly buses, work in an integrated way is crucial.

Active Travel paths

The online survey and workshops have identified bike access to the waterway and foreshore as limited, with few dedicated safe cycle paths provided. However it is recognised that the waterway and its edges present a unique opportunity for increased cycle and pedestrian access, especially to foreshore areas and foreshore bike trails.

Strengthening connections and pathways from village centres and neighbourhoods to the waterway is also extremely important, taking pressure off the road network and parking.

Privatisation of the foreshore

All workshops identified public accessibility to the waterway and foreshore edges as a key issue. Survey respondents highlighted that there is limited public access to the waterway and some workshop discussions questioned whether better access could be made available, via DCP controls requiring unrestricted public access to and around the foreshore is maintained.

Conflicting use on the waterway

Survey results and workshop discussions have indicated conflicting use between non boating recreational users and boat users on the waterway.

91% of survey respondents considered safety on the waterway and foreshore to be an important or very important issue.

Comments received highlighted concerns with powered boat users and recreational users. The community survey identified swimming as a primary use of the waterway and one which must be considered in future planning.

> "Safety on the waterway is often lacking. Too many people don't seem to know the rules or don't care for them, putting other lives in danger and disturbing the tranquillity of the area."
> (Survey respondent)

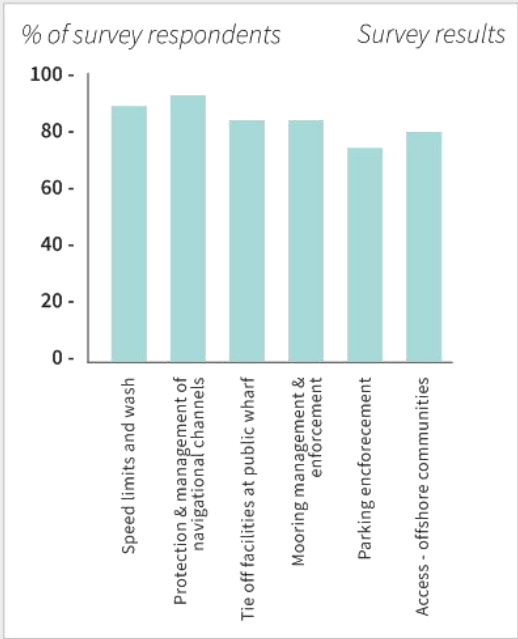
Personal water craft

The use of personal water craft or Jet Ski's (PWCs) was shown in the survey to be very contentious with 89% of respondents considering this an important or very important issue. Commentary contained in the survey sought a ban on the use of PWCs on the Pittwater waterway. In 2001, the NSW Parliament completely banned the use of PWCs in Sydney Harbour due to noise impacts and their impact on the environment. Their use is considered by some to have serious impacts associated with excessive noise, environmental, navigational and safety of the waterway.

"Jet skis should be banned from Pittwater. Their noise totally prevents other visitors and residents from enjoying the peace of this beautiful waterway. It is also plain dangerous given how many commuter boats, kayaks, yachts and kids wakeboarding, etc."

(Survey respondent)

Prior to activation issues associated with Pittwater Waterway.



Illegal dinghy, kayak and paddleboard storage

There are approximately 60 illegal dinghy tie ups at Old Wharf Avalon and illegal storage of kayaks and paddleboards in other foreshore locations. In addition to other issues already addressed, this is having an impact on public access to the foreshore and appropriate access for recreational users.

Sea planes

Seaplanes currently use the waterway for storage and take-off / landing. As a popular tourist attraction, sea planes require a dedicated area for take-off / landing and navigable channels have to be open for these commercial operators.

POSSIBLE STRATEGIES:

- Investigate opportunities to coordinate and integrate public transport timetables, such as ferry and buses, with relevant providers to ensure point-to-point transport availability.
- Investigate options for the zoning of land and creation of appropriate controls for the development of dry stack storage facilities, in appropriate locations subject to consideration of the following criteria:
  - *Visual impact*
  - *Transport and parking*
  - *Environmental attributes*
- Investigate opportunities for additional dinghy storage in priority areas.
- Undertake a comprehensive review of existing procedures in relation to tie up facilities. Review to consider potential strategies focused on increasing enforcement of existing tie up facilities and investigation of new tie up facilities in high demand areas.
- Undertake audit of existing public access thoroughfares to Pittwater foreshore, with focus on improving universal public access. Audit is to incorporate a site inventory which captures site condition, characteristics, infrastructure provisions and opportunities and constraints.
- Investigate impact of PWCs (jet skis) on Pittwater and consider appropriate action to mitigate identified impacts through restrictions, if necessary.
- Explore opportunity to incorporate the investigation of new bike routes that connect key localities to and along the foreshore in Council's Active Travel Strategy.

YOUR SAY:

Do you agree with these strategies outlined above?

What solutions would you like to see Council explore?

Could dry stack storage away from the waterway's edge provide a solution in existing established industrial areas of say Mona Vale and Warriewood?

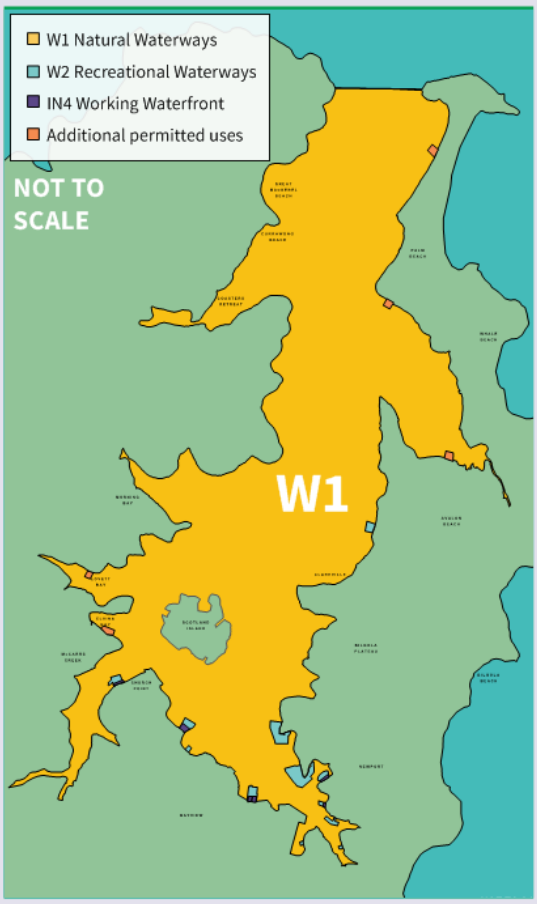
Theme 6: Waterway Regulation

How we regulate our waterway is crucial to how the waterway successfully operates on a day to day basis. A number of issues have been raised during the consultation process relating to the current enforcement and governmental structure surrounding the waterways.

There is a broad range of legislation, regulation and controls relating to the waterway and foreshore edges, including:

- Marine Safety Act 1998
- Marine Safety (General) Regulation 2009
- Marine Pollution Act 2012
- Marine Estate Management Act 2014
- Protection of the Environment Operations Act 1997
- Protection of the Environment Operations Regulation (General) 2009
- Fisheries Management Act 1994
- Environmental Planning and Assessment Act 1979
- Environmental Planning and Assessment Regulation 2000

Zoning map showing w1 and w2 zones



Land Use Planning

Pittwater LEP 2014 defines the area in which marinas can operate, via zoning controls. Zone W2 Recreational Waterways permits, with consent, development for the purpose of marinas.

The preparation of Pittwater LEP 2014 was a 'like for like' translation of Pittwater LEP 1993 into the required Standard Instrument Local Environmental Plan format and therefore the zone boundary surrounding existing marinas was replicated in the new plan. This approach didn't consider or provide for extensions of the zone boundary around marinas; subsequently this resulted in restricting any potential for expansion and growth. Under the current planning controls, the only way for marinas to expand is through a rezoning process, as marina development is prohibited in Zone W1 Natural Waterways, which represents the greater area of the waterway outside Zone W2 in Pittwater LEP 2014.

Stakeholder workshops and the *Pittwater Marine Industry – Demographic & Economic Study* (2016) have stressed that the current restrictive zoning boundaries surrounding marinas on Pittwater is impacting on marina growth and redevelopment required to meet current and predicted boat storage demand.

Two suggestions were identified from the marinas workshop and reported in the Hill PDA Consulting (2016) study:

1) Zoning boundaries should remain flexible (around current W2 zone areas) or land use zoning for the wider waterway should be revised to W2 (Recreational Waterways) in the Pittwater LEP 2014.
2) A buffer system be considered around current W2 zoned land in the Pittwater LEP 2014 which allows development proposals to be lodged as 'assessable development' without being classified as prohibited development. This buffer could extend up to 50 metres around a marina. The purpose would not be for immediate development but to safeguard water space around a marina. This would allow future expansion to accommodate both additional storage and reconfigurations as a result of increasing boat ownership and size of boats.

While the suggestions above were raised and identified as possible solutions, neither are supported by Council as they do not provide an adequate level of certainty or assurance on what type of development can occur and where. The preference is to undertake a detailed investigation of each marina and its surrounding locality, to establish the opportunities and constraints for future expansion.

> "The majority of stakeholders highlighted that regulatory, planning and approval processes needed to be streamlined and simplified to support the growth and prosperity of the marina industry."
>
> *(Hill PDA Consulting, 2016)*

In terms of management demand, dry storage is a favourable option and already in use at Akuna Bay. However, workshop discussions suggested that the visual impact of such a facility may not be supported by the local community (Hill PDA Consulting, 2016).

Land ownership and responsibility

As detailed earlier in the Paper, Pittwater waterway and its foreshore fringe is governed and controlled by a number of groups and State Agencies, resulting in a complex overlay of ownership, management and controls.

Private landowners, Council and State Government agencies are key stakeholders in shaping the waterway, in terms of use, development proposals, integration, control, management and governance. As such, many of the potential solutions highlighted in this Paper fall outside the scope of Council and lie within the realm of State government. Therefore implementing the range of solutions and strategies identified requires collaboration and co-ordination of all tiers of government.

Transport for NSW has actively supported Council in the Review, through provision of key data and by funding the commission of the Pittwater Marine Industry – Demographic & Economic Study (2016) undertaken by Hill PDA Consulting. While other relevant State Agencies have participated in targeted stakeholder workshops and provided essential data.

Native title claim

The former Pittwater Council were provided notice by the National Native Title Tribunal on 16th September 2013 of the native title claim file by the Awabakal and Guringai People (Federal Court Ref. NSD 780/2013). The claim relates to the central coast region of NSW and includes part of the former Pittwater LGA. All freehold land is excluded from the Claim which relates to non-freehold Government land (Crown land) and waters.

Legislative reform

There are a host of legislative reforms surrounding the waterways currently underway. These reforms will have long term impacts on the governance of the waterway, both from a local and state perspective:

- Coastal Reform aims to utilise the Coastal Reform Act, Manual and SEPP to manage coastal risks associated with climate change, coastal protection, foreshore development, coastal wetlands, lakes and littoral rainforests, catchment runoff and impact on estuaries and access to beaches and headlands.
- The Coastal management SEPP will supersede SEPP 14 (Coastal Wetland), 26 (Littoral Rainforests) and 71 (Coastal Protection). Further information can be found via the following link: www.environment.nsw.gov.au/coasts/coastreforms.htm
- The NSW Marine Estate Management Authority (MEMA) was established in 2013 to advise on policies, priorities and directions for the NSW marine estate which includes marine water, estuaries and the coast. The Marine Estate Management Act 2014, provides for strategic and integrated management of the estate. MEMA is currently focusing on the Marine Estate Management Strategy and the Hawkesbury Shelf marine bioregion assessment. Further information on both the Strategy and Assessment can be found via the following links: www.marine.nsw.gov.au/key-initiatives/marine-estate-management-strategy www.marine.nsw.gov.au/key-initiatives/hawkesbury-shelf-marine-assessment
- Department of Primary Industry: Crown Lands Legislation Review: A comprehensive review into streamlining the management of Crown Land. Further information can be found via: www.crownland.nsw.gov.au/crown_lands/comprehensive_review_of_nsw_crown_land_management

Funding for major projects

Approximately $5.3 million has been designated for the Hawkesbury/ Brisbane River Region for infrastructure upgrades as part of Transport for NSW's boating now program. The former Pittwater Council submitted funding applications for a number of projects and was successful in obtaining funding for the following items:

- *Expand commuter vessels facility at Church Point*
- *Increase parking and install pontoons at Rowland Reserve, Bayview.*
- *Install dinghy storage at Paradise Beach, Clareville*
- *Upgrade Bayview Wharf*
- *Install pontoon for boat tie up at Bayview*

Compliance of industries on the waterway

Industry compliance is an important issue, as waterway related industries (Zone IN4 Working Waterfront) poses potential impacts in terms of pollution and foreshore amenity.

96% of survey respondents felt that pollution from marinas, commercial and industrial activities was an important or very important issue. The marina stakeholders engaged in the workshop discussions similarly voiced appreciation of the environmental importance the waterway and identified that the public use of pump out facilities assisted in environmental protection and increased 'good will' and social cohesion. (Hill PDA Consulting, 2016; Marinas workshop)

Marinas must abide by stringent regulations as set under the Marine Pollution Act 2012 and work within recognised and established environmental management programs. The community and workshop participants have highlighted the importance of ensuring compliance so as to avoid potential negative environmental and amenity impacts on the waterway.

"Pollution from commercial and marinas is important, but it is well managed."

"Pollution from use of detergents used to wash boats."

"Not sure we agree that marinas… generate pollution – probably the people…, not the marina itself."

(Survey respondents)

Pittwater's unique offshore locations

46% of the survey respondents were offshore residents. Pittwater is unique and challenging in terms of its special character and the functional role it plays in servicing the needs of the offshore communities. Survey responses have highlighted water pollution from on-site septic systems on Scotland Island; lack of commuter car parking and lack of commuter boat parking / moorings as the key areas of concern for offshore residents.

Council is currently addressing the issue of a reticulated waste water system (sewerage) on Scotland Island and is in the process of improving commuter parking at Church Point. A recent Council report regarding reticulated water and waste water on Scotland Island can be accessed via: portal.pittwater.nsw.gov.au/common/Output/DataworksAccess.aspx?id=fd2d6YjOGhY%253d&ext=pdf

Other issues raised, relating to off shore communities, include safety of commuting, especially at night when moored boats close to the navigational channels aren't appropriately marked (by lights); lack of 24/7 offshore ferry services; lack of recognition that the waterway is the offshore communities only means of access to their homes; wharf tie up facilities limited and increasing in cost; and need for upgrades to commuter wharves.

Speed restrictions on the waterway

There are a number of speed limited zones in the waterway, specifically around mooring fields and high congestion areas. As boat usage increases, there will be a need to review the zones. Many survey respondents have suggested that the entire waterway should be made a no wash zone, to facilitate greater recreational use and reduce environment impacts.

Foreshore signage

Signage on the foreshore was considered by workshop participants and survey respondents to be both restrictive and not informative enough. It was suggested that signage be mindful of its natural surroundings, informative and facilitate safety and best practice on the waterway.

A workshop group suggested using public art on signage to promote and educate good practice rather than purely indicating restrictions and controls.

Recognition of Pittwater's history

Recognition of Aboriginal and European heritage on and adjacent to the waterways was discussed in a number of workshop sessions where participants felt that greater understanding and recognition of the waterways heritage was needed. Historical recognition will contribute to greater community appreciation and understanding of the overall character and uniqueness of the waterway and can be promoted through a variety of media and measures, including websites, signage and public art. Traditional land owners have very close ties to the water and there are a number of registered and listed Aboriginal and European heritage sites within close proximity of the water.

Waterway education

During consultation the lack of education on safe boating practice, heritage and ecological aspects relating to the Pittwater waterway was raised as a major concern. Lack of boating safety knowledge has been broadly attributed to minimal boating licencing requirements, lack of training and understanding of waterway etiquette. Workshop participants identified many water based activities are deregulated with a distinct lack of educational initiatives on offer outside of clubs.

POSSIBLE STRATEGIES:

- Should Council identify and support the need to amend the Pittwater LEP 2014 to expand the W2 zoning around marinas, as recommended and supported by the Review, it must be subject to the requirement that any additional marina berths are offset by the surrender of at least an equal number of moorings.
- Investigate opportunities for dry storage facilities within proximity to the waterway or within the Mona Vale and Warriewood industrial areas.
- Prepare a suite of DCP controls to guide the development of dry storage facilities in order to achieve best practice and exemplary design outcomes while appropriately responding to visual, noise and traffic impacts.
- Consider incorporating an emphasis on Pittwater Waterway through education campaigns and the promotion of eco-tourism.
- Develop a Council website hub, incorporating mobile apps, to promote Pittwater waterway related issues with specific focus on conservation, education, water and boating safety, heritage awareness and identity.
- Discuss additional speed limit zones or no wash zones with the Roads and Maritime Services (RMS), extending north of Stokes Point, Dark Gully and Longnoise Point.
- Investigate development of a Council waterway portal explaining ownership of the waterway, development controls and LEP zoning.
- Look to continue conversation between local and state bodies in the management of the waterways future.
- Explore improved signage options that incorporate public art, to develop a strong brand identity for Pittwater waterway. Signage to incorporate an educational focus informing waterway users on key aspects of the waterway and correct waterway usage, including boat ramp usage, foreshore fishing, etc.
- Audit foreshore development to identify and rectify illegal foreshore works in identified problem areas.
- In consultation with RMS, discuss the requirements and training for boat licenses and / or discuss with marinas the option of whether they could provide additional training courses.
- In consultation with RMS, advocate for legislative reform requiring moored boats to be appropriate lit at night.

YOUR SAY:

Do you agree with these strategies outlined above?

Currently the wider waterway (excluding the existing W2 zoned area) is zoned W1. This means that only environmental protection works are permitted without consent and environmental facilities and mooring pens are permitted with consent. The W1 zone is for Natural Waterways to prohibit commercial development to protect the ecological and scenic values of the waterway amongst other objectives. Do you agree that the current W1 zoning should be reviewed or is it appropriate?

CONCLUSION:

As indicated in the Discussion Paper, there is an array of issues that are directly impacting on the Pittwater waterway today that will have significant consequences for its future. To achieve and ensure a sustainable future, these issues will need to be appropriately managed in a holistic way and will require collaboration and cooperation from all levels of government.

You can have your say on these issues and the potential solutions identified in the paper by lodging a submission to Council. Your submission will help us develop and form meaningful strategies that will guide the waterway to a sustainable future over the next 20 years.

How to get involved?

- You can respond to all questions raised in the discussion paper or only to those that interest you.
- You can respond to the issues and proposed strategies, or if your issue or proposed strategy is not addressed you can submit your own.
- You can submit as an individual, on behalf of a business or community group.
- Send written submissions to
  Northern Beaches Coucil
  1 Park Street
  Mona Vale NSW 2103
- Make your submissions via yoursay.northernbeaches.nsw.gov.au/WaterwayReview'

REFERENCES:

- NSW Planning & Environment, NSW Local Government Area Population, Household and Dwelling Projections, 2014
- NSW Maritime, NSW Boat Ownership and Storage: Growth Forecasts to 2026, July 2010
- Hill PDA 2009, Boat ownership and Storage Study for NSW
- Hill PDA Consulting, Pittwater Marine Industry – Demographic & Economic Study, March 2016
- Cardno (NSW/ACT) Pty Ltd, Pittwater Estuary – Mapping of Sea Level Rise Impacts, Final Report, May 2015
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- NSW Department of Primary Industries, Caulerpa taxifolia, www.dpi.nsw.gov.au/fishing/pests-diseases/marine-pests/found-in-nsw/caulerpa-taxifolia
- Cardno (NSW/ACT) Pty Ltd, Pittwater Overland Flow Mapping And Flood Study, October 2013
- Maritime Management Centre, Transport for NSW, Moorings Review Issues Paper, March 2014
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- Sustainability Policy (2006)
- Pittwater Council, *Pittwater 2025 – Our Community Strategic Plan*, 2013
- Pittwater Council, Tourism in Pittwater – Emerging Issues Paper (Draft), August 2015
- NSW Government, Estuary Management Manual, 1992
- Ecologically Sustainable Development Steering Committee, *National Strategy for Ecologically Sustainable Development*, 1992
- Beachwatch Northern Sydney (Pittwater to Manly) State of the Beaches 2015-2016 report
- *Australian Standard (AS) 3962-2001 Guidelines for design of marinas*, International Standards Organisation (ISO) 14001:2015 – Environmental Management Systems

APPENDIX 1: Extract from Pittwater LEP 2014

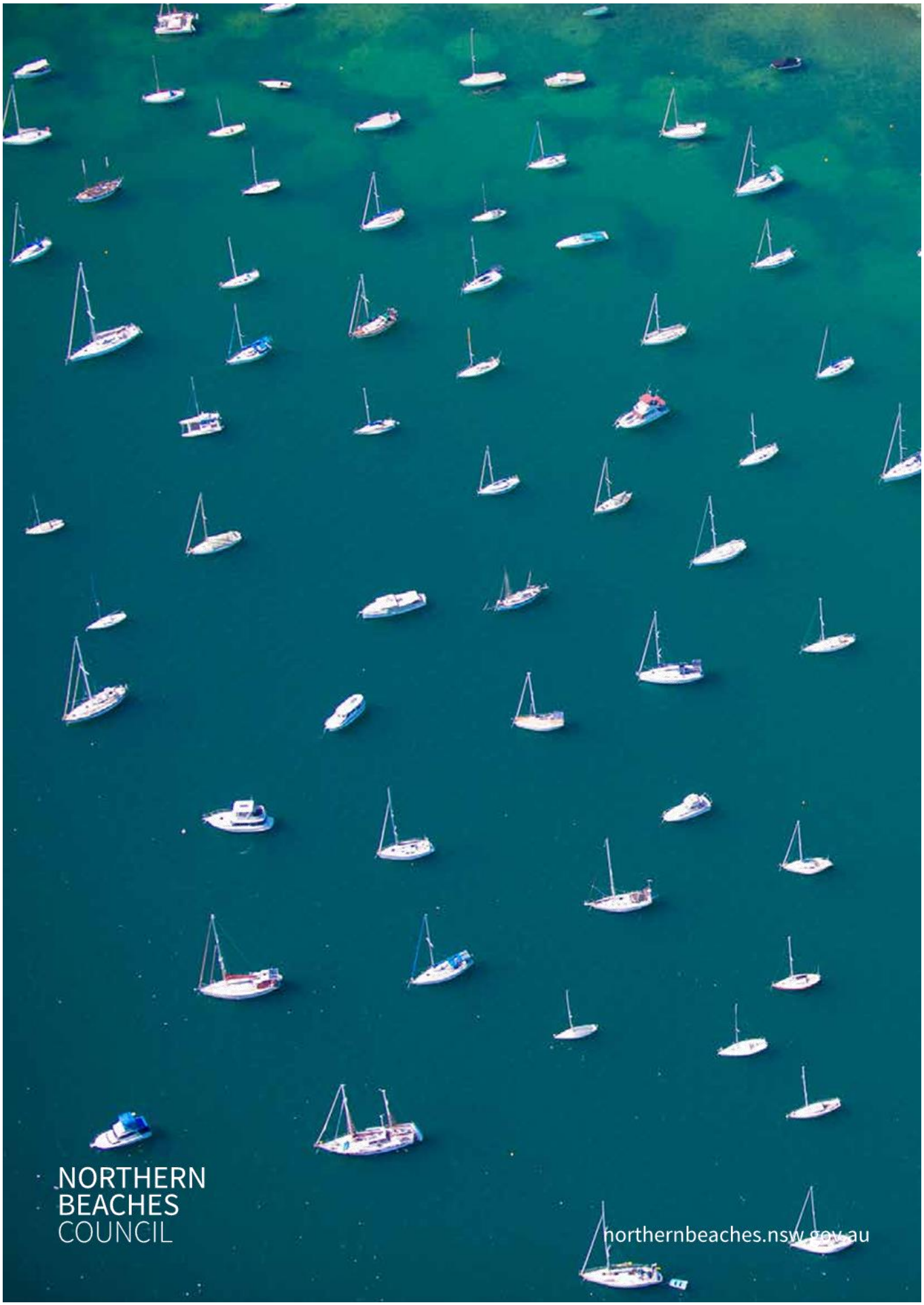
APPENDIX 2: Extract from Section D15 of Pittwater 21 DCP

APPENDIX 3: HillPDA Consulting, Pittwater Marine Industry – Demographic & Economic Study (2016)

APPENDIX 4: List of existing studies and papers

APPENDIX 5: Community engagement reference documents

APPENDIX 6: Reference maps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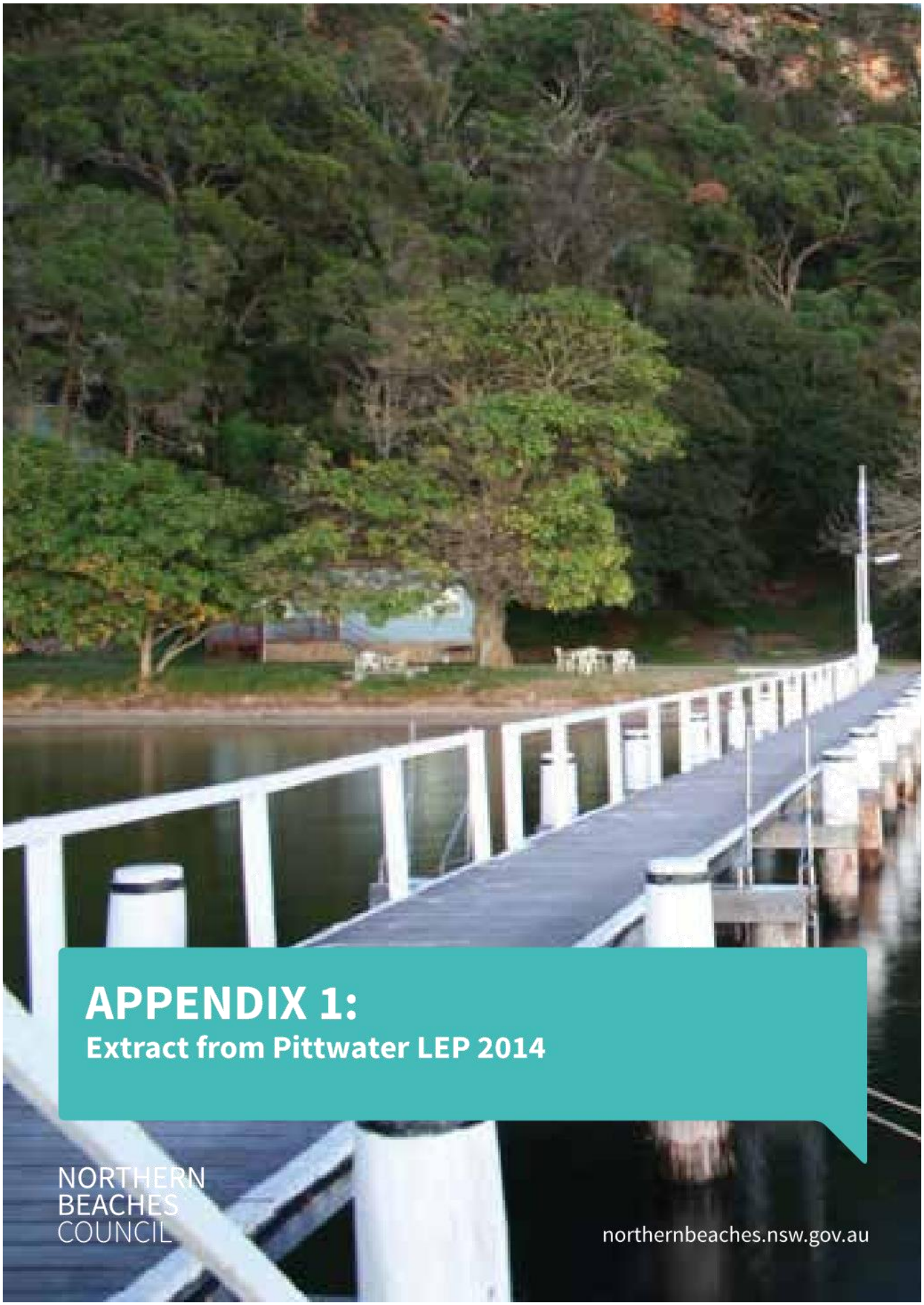

APPENDIX 1:
Extract from Pittwater LEP 2014

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Appendix 1: Extract from Pittwater LEP 2014

Zone IN4 Working Waterfront

Objectives of zone

- To retain and encourage waterfront industrial and maritime activities.
- To identify sites for maritime purposes and for activities that require direct waterfront access.
- To ensure that development does not have an adverse impact on the environmental and visual qualities of the foreshore.
- To encourage employment opportunities.
- To minimise any adverse effect of development on land uses in other zones.
- To provide for water-based business and service facilities that serve Pittwater and the wider region.

2 Permitted without consent

Nil

3 Permitted with consent

Boat building and repair facilities; Boat launching ramps; Charter and tourism boating facilities; Environmental protection works; Industrial retail outlets; Jetties; Kiosks; Light industries; Marinas; Roads; Signage; Water recreation structures; Wharf or boating facilities

4 Prohibited

Any development not specified in item 2 or 3

Zone E2 Environmental Conservation

Objectives of zone

- To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.

- To prevent development that could destroy, damage or otherwise have an adverse effect on those values.

- To ensure the continued viability of ecological communities and threatened species.

- To protect, manage, restore and enhance the ecology, hydrology and scenic values of riparian corridors and waterways, groundwater resources, biodiversity corridors, areas of remnant native vegetation and dependent ecosystems.

2 Permitted without consent

Environmental protection works

3 Permitted with consent

Environmental facilities; Recreation areas; Roads

4 Prohibited

Business premises; Hotel or motel accommodation; Industries; Multi dwelling housing; Recreation facilities (major); Residential flat buildings; Restricted premises; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3

Zone W1 Natural Waterways

Objectives of zone

- To protect the ecological and scenic values of natural waterways.

- To prevent development that would have an adverse effect on the natural values of waterways in this zone.

- To provide for sustainable fishing industries and recreational fishing.

- To ensure development does not adversely impact on the natural environment or obstruct the navigation of the waterway.

- To provide opportunities for private access to the waterway where these do not cause unnecessary impact on public access to the foreshore.

2 Permitted without consent

Environmental protection works

3 Permitted with consent

Environmental facilities; Mooring pens

4 Prohibited

Business premises; Hotel or motel accommodation; Industries; Multi dwelling housing; Recreation facilities (major); Residential flat buildings; Restricted premises; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3

Zone W2 Recreational Waterways

Objectives of zone

- To protect the ecological, scenic and recreation values of recreational waterways.

- To allow for water-based recreation and related uses.

- To provide for sustainable fishing industries and recreational fishing.

- To provide for amateur and professional recreational yachting or boating clubs and the like that serve Pittwater and the wider region.

- To ensure development does not adversely impact on the enjoyment and use of the waterway or adjoining land.

- To provide for a variety of passive and active recreational pursuits and water-based transport while preserving the environmental setting of the waterway.

- To ensure that public access to the waterway and foreshore areas suitable for public recreational and transport purposes is maintained.

2 Permitted without consent

Environmental protection works

3 Permitted with consent

Boat building and repair facilities; Boat launching ramps; Boat sheds; Charter and tourism boating facilities; Emergency services facilities; Environmental facilities; Jetties; Kiosks; Marinas; Mooring pens; Signage; Water recreation structures

4 Prohibited

Industries; Multi dwelling housing; Residential flat buildings; Seniors housing; Warehouse or distribution centres; Any other development not specified in item 2 or 3

Part 7 Additional local provisions – 7.5 – Coastal risk planning

The objectives of this clause are as follows:

(a) to avoid significant adverse impacts from coastal hazards,

(b) to ensure uses of land identified as coastal risk are compatible with the risks presented by coastal hazards,

(c) to enable the evacuation of land identified as coastal risk in an emergency,

(d) to avoid development that increases the severity of coastal hazards.

(2) This clause applies to land identified on the Coastal Risk Planning Map as:

(a) Wave Inundation, or

(b) Coastal Erosion/Wave Inundation, or

(c) Bluff/Cliff Instability.

(3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:

(a) is not likely to cause detrimental increases in coastal risks to other development or properties, and

(b) is not likely to alter coastal processes and the impacts of coastal hazards to the detriment of the environment, and

(c) incorporates appropriate measures to manage risk to life from coastal risks, and

(d) is likely to avoid or minimise adverse effects from the impact of coastal processes and the exposure to coastal hazards, particularly if the development is located seaward of the immediate hazard line, and

(e) provides for the relocation, modification or removal of the development to adapt to the impact of coastal processes and coastal hazards, and

(f) has regard to the impacts of sea level rise, and

(g) will have an acceptable level of risk to both property and life, in relation to all identifiable coastline hazards.

(4) A word or expression used in this clause has the same meaning as it has in the NSW Coastal Planning Guideline: Adapting to Sea Level Rise (ISBN 978-1-74263-035-9) published by the NSW Government in August 2010, unless it is otherwise defined in this clause.

(5) In this clause:
coastal hazard has the same meaning as in the Coastal Protection Act 1979.

Part 7 Additional local provisions – 7.8 – Limited development on foreshore area

The objectives of this clause are as follows:

(a) to ensure that development in the foreshore area will not impact on natural foreshore processes or affect the significance and amenity of the area,

(b) to ensure continuous public access along the foreshore area and to the waterway.

(2) Development consent must not be granted for development on land in the foreshore area except for the following purposes:

(a) the extension, alteration or rebuilding of an existing building wholly or partly in the foreshore area, if the levels, depth or other exceptional features of the site make it appropriate to do so,

(b) boat sheds, sea retaining walls, wharves, slipways, jetties, waterway access stairs, swimming pools, fences, cycleways, walking trails, picnic facilities or other recreation facilities (outdoors).

(3) Development consent must not be granted under this clause unless the consent authority is satisfied that:

(a) the development will contribute to achieving the objectives for the zone in which the land is located, and

(b) the appearance of any proposed structure, from both the waterway and adjacent foreshore areas, will be compatible with the surrounding area, and

(c) the development will not cause environmental harm such as:

(i) pollution or siltation of the waterway, or

(ii) an adverse effect on surrounding uses, marine habitat, wetland areas, fauna and flora habitats, or

(iii) an adverse effect on drainage patterns, or

(iv) the removal or disturbance of remnant riparian vegetation, and

(d) the development will not cause congestion or generate conflict between people using open space areas or the waterway, and

(e) opportunities to provide continuous public access along the foreshore and to the waterway will not be compromised, and

(f) any historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance of the land on which the development is to be carried out and of surrounding land will be maintained, and

(g) in the case of development for the alteration or rebuilding of an existing building wholly or partly in the foreshore area, the alteration or rebuilding will not have an adverse impact on the amenity or aesthetic appearance of the foreshore, and

(h) sea level rise, coastal erosion and recession, or change of flooding patterns as a result of climate change, have been considered.

(4) In deciding whether to grant consent for development in the foreshore area, the consent authority must consider whether and to what extent the development would encourage the following:

(a) continuous public access to and along the foreshore through or adjacent to the proposed development,

(b) public access to link with existing or proposed open space,

(c) public access to be secured by appropriate covenants, agreements or other instruments registered on the title to land,

(d) public access to be located above mean high water mark,

(e) the reinforcing of the foreshore character and respect for existing environmental conditions.

(5) In this clause:
foreshore area means the land between the foreshore building line and the mean high water mark of the nearest natural waterbody shown on the Foreshore Building Line Map.

foreshore building line means the line shown as the foreshore building line on the Foreshore Building Line Map.

Schedule 1 – Additional permitted uses – Clause 18 - Use of certain land at 1151 Barrenjoey Road, Palm Beach

(1) This clause applies to land:

(a) at 1151 Barrenjoey Road, Palm Beach, being Lot 10A, DP 13374 and identified as "Area 18" on the Additional Permitted Uses Map, and

(b) that is subject to PO 1957/170.

(2) Development for the purpose of boat building and repair facilities is permitted with development consent.

Schedule 1 – Additional permitted uses – Clause 19 Use of certain land at 1191 Barrenjoey Road, Palm Beach

(1) This clause applies to land:

(a) at 1191 Barrenjoey Road, Palm Beach, being Lot 298, DP 721572 and identified as "Area 19" on the Additional Permitted Uses Map, and

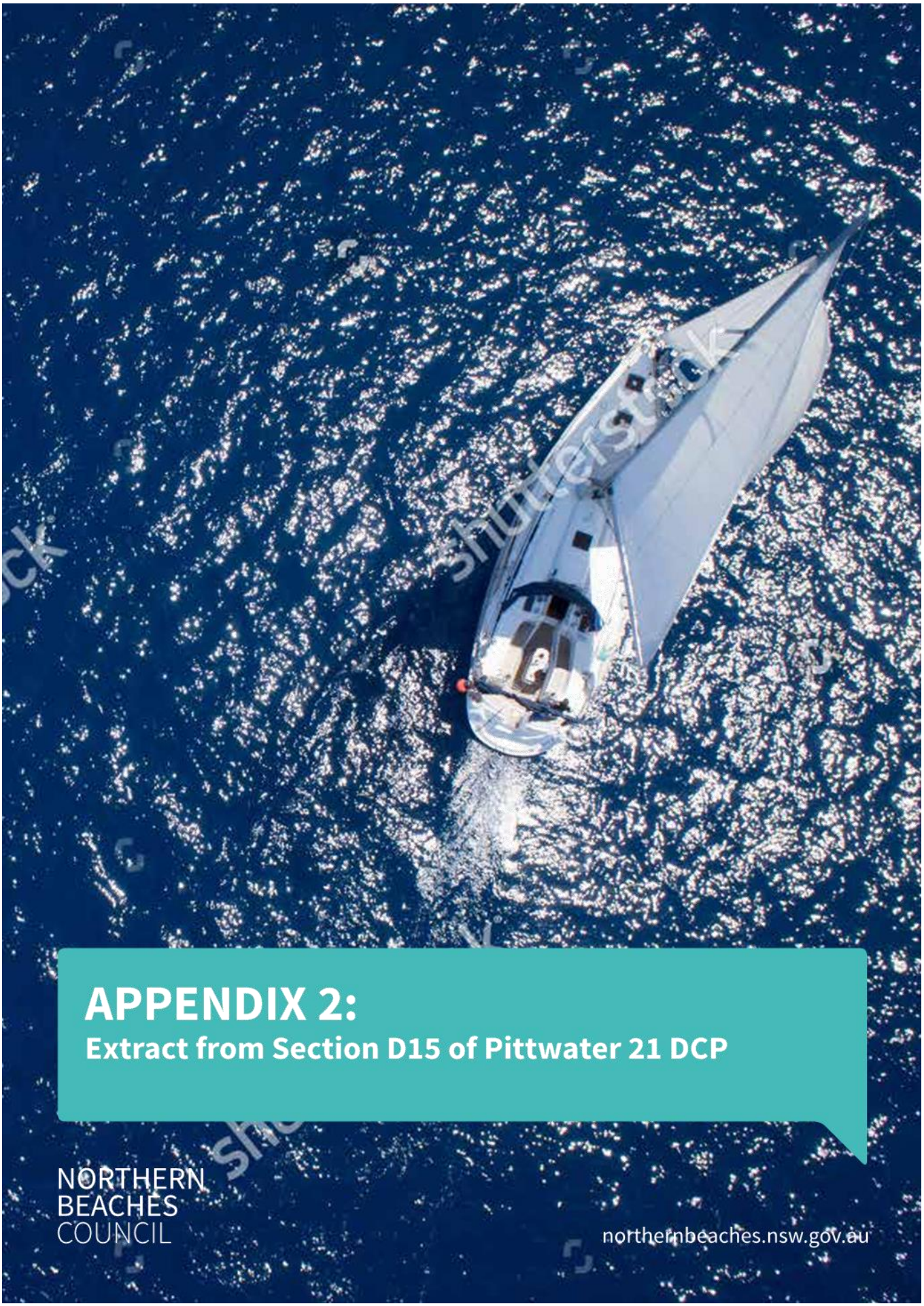
(b) that is subject to Special Lease 1963/86.

(2) Development for the purposes of business premises (but only those associated with use of the waterway), charter and tourism boating facilities, kiosks or restaurants or cafes is permitted with development consent.

Schedule 1 Additionanal permitted uses - Clause 23 - Use of certain land in Zone W1 Natural Waterways

(1) This clause applies to land identified as "Area 23" on the Additional Permitted Uses Map.

(2) Development for the purposes of boat sheds, jetties or water recreation structures is permitted with development consent.



APPENDIX 2:
Extract from Section D15 of Pittwater 21 DCP

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Appendix 2: Extract from Section D15 of Pittwater 21 DCP

D15 WATERWAYS LOCALITY

Contents of this Section:

D15.1 Character as viewed from a public place
D15.2 Scenic protection General
D15.3 Building colours and materials
D15.6 Front building lineD15.7 Side and rear building line
D15.10 Fences
D15.11 Waterfront lighting
D15.12 Development seaward of mean high water mark
D15.13 Lateral limits to development seaward of mean high water mark
D15.14 Minimum frontage for waterfront development
D15.15 Waterfront development
D15.16 Waterfront development - Crystal Bay foreshore area
D15.17 Moorings
D15.18 Seawalls
D15.19 Dredging
D15.20 Commercial waterfront development - pollution prevention
D15.21 Charter boat facilities
D15.22 Masterplan - Careel Bay

D15.1 Character as viewed from a public place

Land to which this control applies

Waterways Locality - P21DCP-D15MDCP750

Uses to which this control applies

Attached dwelling
Boarding house
Business Development
Development ancillary to residential accommodation
Dual occupancy (attached)
Dual occupancy (detached)
Dwelling house
Exhibition home
Industrial Development
Group home
Hostel
Jetty
Multi dwelling housing
Other Development
Residential flat building
Rural worker's dwelling
Secondary dwelling
Semi-detached dwelling
Seniors housing
Shop top housing
Water recreation structure

Outcomes

To achieve the desired future character of the Locality.
To ensure new development responds to, reinforces and sensitively relates to the spatial characteristics of the existing built and natural environment. (En, S, Ec)
To enhance the existing streetscapes and promote a scale and density that is in scale with the height of the natural environment.
To ensure the visual impact of the built form above mean high water mark is secondary to landscaping and vegetation, or in commercial areas and the like, is softened by landscaping and vegetation. (En, S, Ec)
High quality buildings designed and built for the natural context and any natural hazards. (En, S)
Buildings do not dominate the streetscape or waterway and are at human scale. (S)
To preserve and enhance district and local views which reinforce and protect the Pittwater's natural context.
To enhance the bushland vista of Pittwater as the predominant feature of the landscape with built form, including parking structures, being a secondary component.
To ensure that development adjacent to public domain elements such as waterways, streets, parks, bushland reserves and other public open spaces, compliments the landscape character, public use and enjoyment of that land. (En, S)
Built structures are minimised below mean high water mark. (S)
A balance between use of the waterway and conservation of the natural environment is achieved. (En, S, Ec)

Controls

Buildings which front the street and/or the waterway must have a compatible presence when viewed from the waterway and incorporate design elements (such as roof forms, textures, materials, the arrangement of windows, modulation, spatial separation, landscaping etc) that are compatible with any design themes for the locality.

Blank street frontage facades without windows shall not be permitted.

Walls without articulation shall not have a length greater than 8 metres to any waterway frontage.

Any building facade to the waterway must incorporate at least two of the following design features:

1. entry feature or portico;
2. awnings or other features over windows;
3. verandahs, balconies or window box treatment to any first floor element;
4. recessing or projecting architectural elements;
5. open, deep verandahs; or
6. verandahs, pergolas or similar features above garage doors.

The bulk and scale of buildings must be minimised.

Landscaping is to be integrated with the building design to screen the visual impact of the built form. In residential areas, buildings are to give the appearance of being secondary to landscaping and vegetation.

Television antennas, satellite dishes and other telecommunications equipment must be minimised and screened as far as possible from public view.

General service facilities must be located underground.

Attempts should be made to conceal all electrical cabling and the like. No conduit or sanitary plumbing is allowed on facades of buildings visible from a public space.

Garages, carports and other parking structures including hardstand areas must not be the dominant site feature when viewed from a public place. Parking structures should be located behind the front building line, preferably set back further than the primary building, and be no greater in width than 50% of the lot frontage, or 7.5 metres, whichever is the lesser.

Variations

Nil

DA Form and Application Checklist

For proposed developments having a value greater than $1,000,000 a photo montage is to be provided.
For proposed developments having a value greater than $2,000,000 a model is to be provided (either physical scale or electronic (digital) scale, preferably in one or more of the following formats i.e. .avi; .mov; .mpeg.

Information to be shown on the Development Drawings

The elevations are to clearly show the proposal as it presents to public places, including waterways, reserves and roads. These elevations should include trees to be retained and proposed landscaping (as it will be in an established state)

Information to be included in the Statement of Environmental Effects

An analysis of the character of the proposed development as viewed from Public Place(s) demonstrating that the proposal:

- compliments the desired future character of the Locality;
- has a visual impact which is secondary to landscaping and vegetation, or in commercial areas and the like, is softened by landscaping and vegetation; (En, S, Ec)
- is of high quality and is designed to address the natural context of the area and any natural hazards; (En, S)
- does not dominate the streetscape or waterway and is at human scale; (S)
- ensures parking structures are minimised and secondary to the built form, landscaping and vegetation; (S)
- provides access to public places and spaces which is clear and defined; (S)
- ensures built structures below mean high water mark are minimised; (S)
- achieves a balance between use of the waterway and conservation of the natural environment. (En, S, Ec)

Technical Reports and Supporting Information

Proposed development having a value greater than $1 million to be accompanied by a photo montage(s) of the development as it will present to public places including waterways, reserves and roads.

Proposed development having a value greater than $2 million to be accompanied by a model, which may be in the form of a physical scale model or an electronic scale model.

D15.2 Scenic protection - General

Land to which this control applies

Land in the Waterways Locality mapped as Scenic Protection - General - P21DCP-D15MDCP080o

Uses to which this control applies

Attached dwelling
Boarding house
Business Development
Development ancillary to residential accommodation
Dual occupancy (attached)
Dual occupancy (detached)
Dwelling house
Exhibition home
Group home
Hostel
Industrial Development
Jetty
Multi dwelling housing
Other Development
Residential flat building
Rural worker's dwelling
Secondary dwelling
Semi-detached dwelling
Seniors housing
Shop top housing
Water recreation structure

Outcomes

Achieve the desired future character of the Locality.
Bushland landscape is the predominant feature of Pittwater with the built form being the secondary component of the visual catchment. (En, S)

Controls

Development shall minimise any visual impact on the natural environment when viewed from any waterway, road or public reserve.

Variations

Nil

Information to be included in the Statement of Environmental Effects

An analysis of the development in terms of how it impacts on the visual character of the area, demonstrating that the proposal ensures that the bushland landscape is the predominant feature of Pittwater with the built form being the secondary component of the visual catchment. (En, S)

D15.3 Building colours and materials

Land to which this control applies

Waterways Locality - P21DCP-D15MDCP750

Uses to which this control applies

Attached dwelling
Boarding house
Business Development
Development ancillary to residential accommodation
Dual occupancy (attached)
Dual occupancy (detached)
Dwelling house
Exhibition home
Group home
Hostel
Industrial Development
Jetty
Multi dwelling housing
Other Development
Residential flat building
Rural worker's dwelling
Secondary dwelling
Semi-detached dwelling
Seniors housing
Shop top housing
Water recreation structure

Outcomes

Achieve the desired future character of the Locality.
The development enhances the visual quality and identity of the waterway. (S)
To provide attractive building facades which establish identity and contribute to the streetscape.
To ensure building colours and materials compliments and enhances the visual character its location with the natural landscapes of Pittwater.
The colours and materials of the development harmonise with the natural environment. (En, S)
The visual prominence of the development is minimised. (S)
Damage to existing native vegetation and habitat is minimised. (En)

Controls

External colours and materials must be compatible with the waterway climate and shall utilise dark and earthy tones.

External colours and materials shall be dark and earthy tones as shown below:

Black ✓ Dark grey ✓ Dark green ✓
Dark brown ✓ Mid grey ✓ Green ✓
Brown ✓ Dark blue ✓

White, light coloured, red or orange roofs and walls are not permitted:

White ✗ Light blue ✗ Red ✗
Orange ✗ Light grey ✗ Beige ✗

Limited use of corporate colours may be permitted within W2 Recreational Waterways zoned land.

Finishes are to be of a low reflectivity.

Variations

Council may consider lighter coloured external walls (excluding white) only for non-residential development in areas that are not visually prominent.

Heritage items may vary this control where heritage colours and fabrics appropriate to the building are applied.

Advisory Notes

Contact Council to ensure proposed external colours and materials are satisfactory.

DA Form and Application Checklist

A colour and materials sample or scheme is to be provided.

Information to be shown on the Development Drawings

The Development Drawings are to include a clear and unambiguous schedule specifying the external colours and materials to be used.

Information to be included in the Statement of Environmental Effects

A description and explanation of the proposed external colours and materials in terms of minimisation of adverse visual impact demonstrating that the proposal:

- enhances the visual quality and identity of the waterway;
- utilizes colours and materials which harmonise with the natural environment;
- minimises the visual prominence of the development;
- minimises damage to existing native vegetation and habitat.

Technical Reports and Supporting Information

Colour and material samples must be submitted.

D15.6 Front building line

Land to which this control applies

Land in the Waterways Locality landward of mean high water mark - P21DCP-D15MDCP754

Uses to which this control applies

Attached dwelling
Boarding house
Business Development
Development ancillary to residential accommodation
Dual occupancy (attached)
Dual occupancy (detached)
Dwelling house
Exhibition home
Group home
Hostel
Industrial Development
Jetty
Multi dwelling housing
Other Development
Residential flat building
Rural worker's dwelling
Secondary dwelling
Semi-detached dwelling
Seniors housing
Shop top housing
Water recreation structure

Outcomes

To achieve the desired future character of the Locality.
Equitable preservation of views and vistas to and/or from public/private places. (S)
The amenity of residential development adjoining a main road is maintained. (S)
Vegetation is retained and enhanced to visually reduce the built form. (En)
Vehicle manoeuvring in a forward direction is facilitated. (S)
To preserve and enhance the rural and bushland character of the locality. (En, S)
To enhance the existing streetscapes and promote a scale and density that is in keeping with the height of the natural environment.
To encourage attractive street frontages and improve pedestrian amenity.
To ensure new development responds to, reinforces and sensitively relates to the spatial characteristics of the existing urban environment.

Controls

The minimum front building line to a road shall be in accordance with the following table:

Land	Front Building Line (metres)
All land adjoining an arterial road.	10 or established building line, whichever is the greater.
Land zoned R2 Low Density Residential, E3 Environmental Management or E4 Environmental Living except land adjoining an arterial road.	6.5 or established building line, whichever is the greater.
Land zoned B1 Neighbourhood Centre, B2 Local Centre, IN4 Working Waterfront, or RE2 Private Recreation	3.5
All other land	Merit assessment

Built structures, other than driveways, fences and retaining walls are not permitted within the front building setback.

Variations

Where the outcomes of this control are achieved, Council may accept a minimum front building setback to a secondary street of half the front building line.

Where the outcomes of this control are achieved, Council may accept variation to these building lines in the following circumstances:

- considering established building lines;
- degree of cut and fill;
- retention of trees and vegetation;
- where it is difficult to achieve acceptable levels for building;

- for narrow or irregular shaped blocks;
- where the topographic features of the site need to be preserved;
- where the depth of a property is less than 20 metres.

Where carparking is to be provided on steeply sloping sites, reduced or nil setbacks for carparking structures and spaces may be considered, however all other structures on the site must satisfy or exceed the minimum building line applicable.

On-site wastewater treatment systems and rainwater tanks are permitted within the front building setback provided that they do not exceed 1 metre in height above ground level (existing).

Information to be shown on the Development Drawings

Front building setback to be dimensioned on plans.

D15.7 Side and rear building line

Land to which this control applies

Land in the Waterways Locality landward of mean high water mark - P21DCP-D15MDCP754

Uses to which this control applies

Attached dwelling
Boarding house
Business Development
Development ancillary to residential accommodation
Dual occupancy (attached)
Dual occupancy (detached)
Dwelling house
Exhibition home
Group home
Hostel
Industrial Development
Jetty
Multi dwelling housing
Other Development
Residential flat building
Rural worker's dwelling
Secondary dwelling
Semi-detached dwelling
Seniors housing
Shop top housing
Water recreation structure

Outcomes

To achieve the desired future character of the Locality. (S)
The bulk and scale of the built form is minimised. (En, S)
Equitable preservation of views and vistas to and/or from public/private places. (S)
To encourage view sharing through complimentary siting of buildings, responsive design and well-positioned landscaping.
To ensure a reasonable level of privacy, amenity and solar access is provided within the development site and maintained to residential properties. (En, S)
Substantial landscaping, a mature tree canopy and an attractive streetscape. (En, S)
Flexibility in the siting of buildings and access. (En, S)
Vegetation is retained and enhanced to visually reduce the built form. (En)
To ensure a landscaped buffer between commercial and residential zones is established.

Controls

The minimum side and rear building line for built structures including pools and parking structures, other than driveways, fences and retaining walls, shall be in accordance with the following table:

Land	Side & Rear Building Line Setback (metres)
Land zoned R2 Low Density Residential, E3 Environmental Management or E4 Environmental Living	2.5 at least to one side; 1.0 for other side 6.5 rear (other than where the foreshore building line applies)
Land zoned B1 Neighbourhood Centre, B2 Local Centre, IN4 Working Waterfront, or RE2 Private Recreation adjoining land zoned R2 Low Density Residential, R3 Medium Density Residential, E2 Environmental Conservation, E3 Environmental Management, E4 Environmental Living, or RE1 Public Recreation	3.0
Land zoned B1 Neighbourhood Centre, B2 Local Centre, IN4 Working Waterfront, or RE2 Private Recreation adjoining land other than land zoned R2 Low Density Residential, R3 Medium Density Residential, E2 Environmental Conservation, E3 Environmental Management, E4 Environmental Living, or RE1 Public Recreation	Nil

Variations

Where alterations and additions to existing buildings are proposed, maintenance of existing setbacks less than as specified may be considered where it is shown that the outcomes of this clause are achieved.

Where the depth of a property is less than 20 metres, Council may accept a reduced building setback from the rear boundary.

For swimming pools and spas a 1 metre minimum setback from the boundary to the pool coping may be permitted subject to the following:

- satisfactory landscaping within the setback from the pool or spa coping to the side or rear boundary, and
- Council is satisfied that the adjoining properties will not be adversely affected, and
- the pool or spa is not more than 1 metre above ground level (existing), and
- that the outcomes of this clause are achieved without strict adherence to the standards, and
- where the site constraints make strict adherence to the setback impractical, and
- where strict compliance with these requirements will adversely impact on the views of adjoining residential properties.

Advisory Notes

The Foreshore Building Line is as per the Foreshore Building Line Map in the Pittwater Local Environmental Plan 2014. The Foreshore Building Line takes precedence over this control.

D15.10 Fences

Land to which this control applies

Land in the Waterways Locality landward of mean high water mark - P21DCP-D15MDCP754

Uses to which this control applies

Attached dwelling
Boarding house
Business Development
Development ancillary to residential accommodation
Dual occupancy (attached)
Dual occupancy (detached)
Dwelling house
Exhibition home
Group home
Hostel
Industrial Development
Jetty
Multi dwelling housing
Other Development
Residential flat building
Rural worker's dwelling
Secondary dwelling
Semi-detached dwelling
Seniors housing
Shop top housing
Water recreation structure

Outcomes

To achieve the desired future character of the Locality. (S)
To ensure fences compliment and conserve the visual character of the street and neighbourhood
To define the boundaries and edges between public and private land and between areas of different function.
To contribute positively to the public domain.
An open streetscape that allows casual surveillance of the street. (S)
Fences, where provided, are suitably screened from view from a public place. (S)
Safe sight distances and clear view of the street (including to and from driveways) for motorists and pedestrians. (S)
To ensure heritage significance is protected and enhanced. (S)
To ensure an open view to and from the waterway is maintained. (S)

Controls

a. Front fences and side fences (within the front building setback)

Front and side fences (within the front building setback) shall:

- not exceed a maximum height of 1 metre above existing ground level,
- be compatible with the streetscape character, and
- not obstruct views available from the road.

Fences are to be constructed of open, see-through, dark-coloured materials.

Landscaping is to screen the fence on the roadside.

Original stone fences or stone fence posts shall be conserved.

b. Rear fences and side fences (to the front building line)

Fencing is permitted along the rear and side boundaries (other than within the front building setback) to a maximum height of 1.8 metres.

c. Fencing adjoining Pittwater Waterway

Fences are to be setback 3 metres from the property boundary adjacent to the waterway, and shall have a maximum height of 1.8 metres.

Fences are to be constructed of open, see-through, dark-coloured materials. Landscaping is to screen the fence on the foreshore side.

d. Corner lots or lots with more than one frontage

Applicants shall nominate their side, rear and front boundaries if fences are proposed.

e. Fencing on land on Council's Flood Hazard Maps

No masonry fences will be permitted on land identified in High Flood Hazard Areas or on land within a Floodway.

All fences in High Flood Hazard Areas or within a Floodway are to be constructed in 'open' materials, for the full height of the fence, to allow for the passage of floodwaters through the fence.

Variations

Within the front building setback, provided the outcomes of this clause are achieved, fencing to a maximum height of 1.8 metres may be considered where the main private open space is in front of the dwelling, the lot is a corner lot or has more than one frontage or the site is located on a main road with high traffic noise. In such instances, front fencing shall:

1. be setback a minimum of one metre for any fence higher than one metre (in the case of corner lots or lots with more than one frontage this setback may be varied based on merits); and
2. be articulated to provide visual interest and further opportunities for landscaping, and
3. be screened by landscaping within the setback area; and
4. not restrict casual visual surveillance of the street, and
5. provide a 45 degree splay (or equivalent) either side of any vehicular entrance, minimum dimensions of 2 metres by 2 metres; and
6. 50% or more of the fence is transparent.

See also controls relating to gated access points in Part B: Access Driveways and Offstreet Parking

Provided the outcomes of this clause are achieved, where fencing exceeds more than 1 metre in height and abuts a public road, a boundary setback less than the height of the fence may be considered based on merits.

Advisory Notes

For all fencing on land identified in High Flood Hazard Areas or within a Floodway, it is recommended that a minimum of 50% of the area of the fence is 'open', for the full height of the fence, to allow for the passage of floodwaters through the fence.

Information to be shown on the Site Plan

The location of existing fences and walls to be retained, and proposed fences and walls.

Information to be shown on the Development Drawings

The existing fences and walls to be retained and proposed fences and walls, to be clearly shown on the Ground Floor Level Plan and Elevations.

Information to be included in the Statement of Environmental Effects

An analysis of the impact of any proposed and existing fencing and / or walls to be retained demonstrating that :

- an open streetscape that allows casual surveillance of the street is achieved; (S)
- fences, where provided, are suitably screened from view from a public place; (S)
- safe sight distances and clear view of the street for motorists and pedestrians are maintained; (S)
- safe and unhindered travel for native animals is preserved. (En)

D15.11 Waterfront lighting

Land to which this control applies

The Waterways Locality and properties which abut the Pittwater Waterway - P21DCP-D15MDCP751

Uses to which this control applies

Attached dwelling
Boarding house
Business Development
Development ancillary to residential accommodation
Dual occupancy (attached)
Dual occupancy (detached)
Dwelling house
Exhibition home
Group home
Hostel
Industrial Development
Jetty
Multi dwelling housing
Other Development
Residential flat building
Rural worker's dwelling
Secondary dwelling
Semi-detached dwelling
Seniors housing
Shop top housing
Water recreation structure

Outcomes

To ensure that waterfront lighting does not become a navigational hazard or adversely impact upon adjoining public land or residences. (En, S)
To ensure that external lighting is provided for safety and directional purposes only. (S)

Controls

Lighting is to be shielded or located to promote safe navigation and minimise any likely adverse visual impact when viewed from the Pittwater Waterway, any adjoining public land, and adjoining residences. Reflection off the water should be eliminated where possible.

Adequate lighting is to be provided for safe access to waterfront development and safe navigation in and out of commercial and recreational waterfront development, and private facilities associated with a dwelling, where appropriate.

Lighting is to be designed to minimise electricity consumption.

Flood lighting of marine facilities is not permitted.

Variations

Nil

Information to be included in the Statement of Environmental Effects

A statement outlining the impact of any proposed lighting in terms of possible navigation hazard.

D15.12 Development seaward of mean high water mark

Land to which this control applies

The Waterways Locality and properties which abut the Pittwater Waterway - P21DCP-D15MDCP751

Uses to which this control applies

Attached dwelling
Boarding house
Business Development
Development ancillary to residential accommodation
Dual occupancy (attached)
Dual occupancy (detached)
Dwelling house
Exhibition home
Group home
Hostel
Industrial Development
Jetty
Multi dwelling housing
Other Development
Residential flat building
Rural worker's dwelling
Secondary dwelling
Semi-detached dwelling
Seniors housing
Shop top housing
Water recreation structure

Outcomes

To ensure minimal adverse impact on the water quality hydrodynamics and estuarine habitat of Pittwater. (En)
To ensure new buildings are not susceptible to flooding. (S)
To ensure public access is maintained and provided for along the foreshore (En)

Controls

All new buildings are to be located landward of mean high water mark.

Only structures associated either with the accommodation, servicing or provision of access to boats shall be permitted seaward of mean high water mark.

In instances where it is proposed to alter, extend or rebuild existing buildings seaward of mean high water mark, any further encroachment of such buildings onto the waterway is to be minimised. Where development seaward of mean high water mark is proposed to occur, especially during the refurbishment of existing structures, proponents need to ensure that the structure will not harm marine vegetation, and must consult with the Department of Primary Industries.

Developments are required to ensure that public access is maintained and provided for along the foreshore.

Variations

Nil.

DA Form and Application Checklist

Where works are proposed on Crown land below mean high water mark the NSW Government Crown Lands Division must provide owners consent to the lodgement of this development application.

Information to be included in the Statement of Environmental Effects

An analysis of the proposal demonstrating that the proposal does not adversely impact on the visual amenity of the foreshore or water quality or estuarine habitat of the Pittwater waterway.

D15.13 Lateral limits to development seaward of mean high water mark

Land to which this control applies

The Waterways Locality and properties which abut the Pittwater Waterway - P21DCP-D15MDCP751

Uses to which this control applies

Business Development
Industrial Development
Jetty
Other Development
Water recreation structure

Outcomes

To ensure that fair and equitable enjoyment of the waterway is achieved between neighbouring waterfront landowners through restricting unreasonable encroachment of waterfront development in front of adjoining properties. (S)

Controls

Waterfront development shall be constructed perpendicular to the shoreline and within the defined lateral limit lines to development, regardless of the orientation of waterfront properties, where practicable. This is to maximise equitable access to the waterway. (Diagrams 1 and 2).

Waterfront development shall be set back a minimum of 2.0 metres along the full length of the lateral limit lines to development to minimise conflict and the possibility of inaccurate location of structures during construction (Diagram 3). This may be varied where shared facilities are proposed where the adjoining property will benefit from the shared facility.

This setback shall also apply to any vessel that is to be berthed at a wharf or boating facility, marina, water recreation structure or the like. Vessels which cannot meet this criterion are considered to be inappropriate for the site and should be accommodated elsewhere.

Diagram 1: Lateral Limits to Waterfront Development - Curved Shoreline

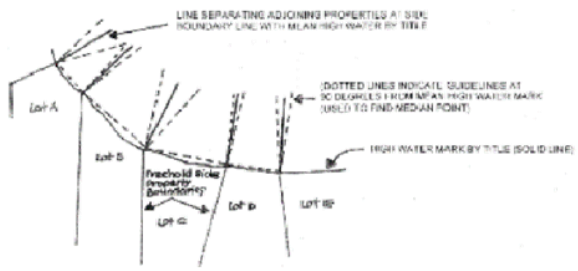


Diagram 2: Lateral Limits to Waterfront Development - Straight Shoreline

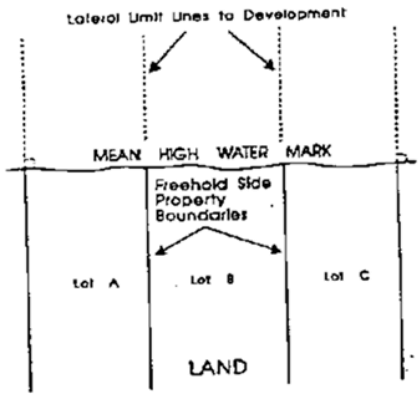
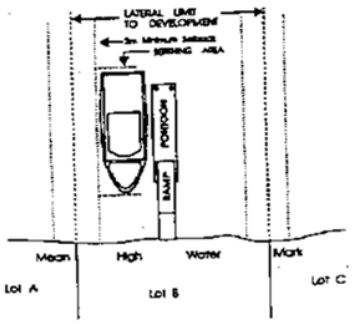


Diagram 3: Setbacks from Lateral Limit Lines to Waterfront Development



Variations

Nil

Information to be shown on the Site Plan

The lateral limit lines.

Information to be shown on the Development Drawings

The location of proposed structures within the waterway in relation to the lateral limit lines.

The properties to benefit from any shared facilities if proposed.

Information to be included in the Statement of Environmental Effects

An analysis of the proposal demonstrating that fair and equitable enjoyment of the waterway is achieved between neighbouring waterfront landowners through restricting unreasonable encroachment of marine facilities in front of adjoining properties.

D15.14 Minimum frontage for waterfront development

Land to which this control applies

The Waterways Locality and properties which abut the Pittwater Waterway - P21DCP-D15MDCP751

Uses to which this control applies

Business Development
Industrial Development
Jetty
Other Development
Water recreation structure

Outcomes

To minimise the individual and cumulative visual impact of waterfront development. (S)

Controls

Waterfront development for private use shall not be permitted on land that does not have a frontage to the Pittwater Waterway (including allotments which only have a right of way to the waterway).

Where an existing allotment has a water frontage of less than 15.0 metres, limited development such as a jetty, ramp and pontoon will generally only be permitted. Multiple facilities below mean high water mark (i.e. boatsheds, jetty and slipway etc.) will not be permitted. Facilities should be shared with neighbouring waterfront properties to minimise the density and visual impact of foreshore development. Where individual facilities are desired, the applicant must demonstrate, to the satisfaction of Council, that shared facilities are not appropriate and that the objectives of this part would not be compromised.

The use of shared boating structures is encouraged for all land, particularly confined embayments and/or embayments characterised by shallow water.

Variations

Nil

D15.15 Waterfront development

Land to which this control applies

The Waterways Locality and properties which abut the Pittwater Waterway excluding Crystal Bay Foreshore Area - P21DCP-D15MDCP752

Uses to which this control applies

Business Development
Industrial Development
Jetty
Other Development
Water recreation structure

Outcomes

Waterfront development does not have an adverse impact on the water quality and estuarine habitat of Pittwater. (En)
Public access along the foreshore is not restricted. (S)
Waterfront development does not encroach on navigation channels or adversely affect the use of ferries and service vessels or use of the waterway by adjoining landowners. (S, Ec)
Structures blend with the natural environment. (S)
Structures are not detrimental to the visual quality, water quality or estuarine habitat of the Pittwater Waterway. (En, S)
To promote a mix of commercial waterfront development for the accommodation of boats, their repair and maintenance, and for organised waterfront development. (Ec)
Waterfront development which does not comply with the outcomes of this clause are removed. (En, S, Ec)

Controls

a) Jetties, Ramps and Pontoons

Ramp and pontoon structures are preferred in place of jetties, where practicable (Diagrams 1A and 1B).

Diagram 1A: Jetty Construction Option - Conventional Jetty

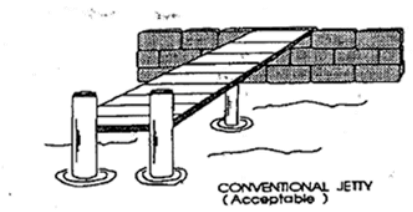
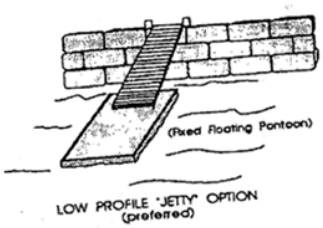


Diagram 1B: Jetty Construction Option - Preferred Configuration



Where provided, jetties, ramps and pontoons shall meet the following criteria:

1. Handrails are to be located only on one side of the structure.
2. Structures shall be located where at a maximum permissible water depth of 2.5 metres at low tide
3. The minimum depth at the end of a jetty/pontoon should be:
   - 600mm at zero tide in the case of a pontoon (as per NSW Department of Primary Industries)
   - 600mm at mean low tide minimum in the case of a fixed jetty end (i.e. no pontoon)
4. Structures shall generally be no greater in length than existing structures, and shall not impede general navigation or equitable access or use of the waterway by adjoining landowners. The length of any jetty is to be minimised. (Diagrams 2A and 2B)
5. The construction of " L" or " T" ends or other types of elongations or steps at right angles to jetties shall not be permitted.
6. The erection of structures above the finished surface of a jetty, ramp or pontoon, including sheds, overhead light fittings, benches and sinks, shall not be favoured, other than a small self contained service modules incorporating low voltage, low level lighting.
7. Gates and like devices shall not be permitted across structures where public access around the foreshore is obstructed, or where such devices are visually obtrusive.
8. Where considered appropriate, jetties shall be supported on piles. Solid fill structures such as groynes, or similar, shall not be permitted.

9. The finished jetty deck height shall be a maximum height of 1 metre above mean high water mark or 1.5 metres AHD.
10. The materials used for construction should not be deleterious to marine life, for example antifouling paints or treated woods must not be used;
11. Structures over Posidonia seagrass or over Zostera, Heterozostera, Halophila and Ruppia species of seagrass beds greater than 5 square metres in area will generally not be permitted unless special circumstances exist. Exemptions may include:
    i. works that are clearly in the public interest (e.g. safe access points for boating or swimming, State significant development),
    ii. proposed works that, by virtue of design and location, are unlikely to have a significant impact, and where the proponent is willing to undertake works to compensate for any aquatic habitat liable to be lost or damaged,
    iii. where property access is only available by water and no other alternative sites exist.
12. Where applicable, pontoons are to be positioned beyond the outer edge of the seagrass and the portion of the jetty, ramp or pontoon crossing seagrass is to be meshed or constructed of a similar material that transmits light to the seafloor. There is to be no covering on top of the mesh;
13. Watercraft are not to be moored over or anchored within seagrass beds, and are not to be stored on the jetty, ramp or pontoon.

Diagram 2A: Design Guidelines for Conventional Jetty, Ramp and Pontoon Structure - Elevation View

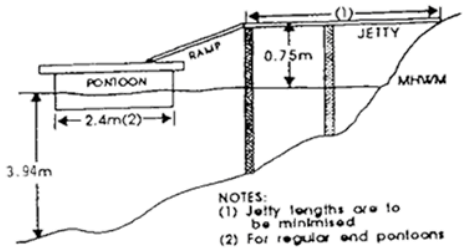
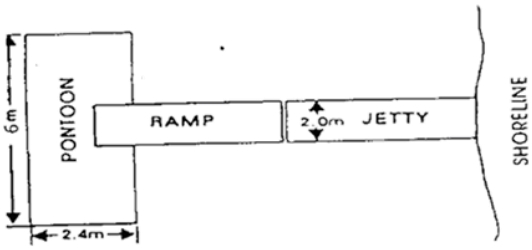


Diagram 2B: Design Guidelines for Conventional Jetty, Ramp and Pontoon Structure - Plan View



b) Berthing Areas

Vessels shall be berthed at right angles to the mean high water mark to minimise visual impact on the foreshore, where practicable. Where this configuration may restrict navigation, vessels may be berthed parallel to mean high water mark provided such vessels are no greater in length than the maximum length of the distance between the lateral limits of the property less 4 metres, and provided that the parallel moored vessel does not restrict navigation. The Department of Primary Industries will generally not approve berthing areas over seagrass.

The maximum dimension for berthing areas perpendicular to shore shall be 5 metres x 9 metres in accordance with Diagrams 3A and 3B.

Mooring licences for a private swing mooring shall be relinquished by any person seeking approval for a berthing area. This is to promote a more equitable use of the waterway's resources.

Where provided, berthing areas shall meet the following criteria:

1. The proponent must demonstrate that they do not already hold, or cannot obtain, a swing mooring, marina berth or boat shed where they could reasonably store their boat;
2. That there is sufficient depth of water below the vessel being 600 mm depth at zero low tide (-1.53 AHD);
3. That it does not extend beyond the seaward face of any related pontoon, piles or jetty steps;
4. That there is sufficient clearance from prolongation of adjoining boundaries (i.e. a minimum of 2.5 metres)
5. That it be designed and located to enable efficient and safe manoeuvring without impinging on adjoining neighbours; and
6. The size of vessel must be accommodated wholly within the lease area.

Diagram 3A: Maximum Dimensions for Berthing Areas -Perpendicular to Shore (As per Department of Infrastructure Planning and Natural Resources requirements)

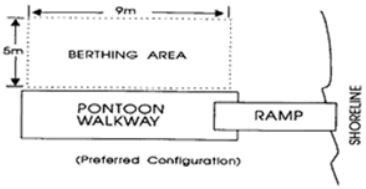


Diagram 3B: Maximum Dimensions for Berthing Areas - Parallel to Shore

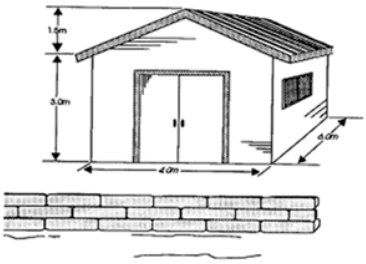
c) Boatsheds

Boatsheds shall meet the following criteria:

1. Boatsheds shall be located above mean high water mark on freehold land, where practicable. Where this cannot realistically be achieved, as much of the proposed boatshed as is practical must be located above mean high water mark to minimise encroachment onto the littoral zone below mean high water mark.
2. Boatsheds shall be one storey and no greater than 4.5 metres in building height above the platform on which it is built, 4.0 metres in width and 6.0 metres in length, as illustrated in Diagram 4. The use of lofts or similar design concepts shall not be permitted.
3. Boatsheds shall not prevent or hinder public foreshore access. Alternative access must be provided where a proposed boatshed is likely to make existing foreshore access below mean high water mark difficult.
4. Boatsheds cannot be used for any other purpose than the storage of small boats and/or boating equipment. The incorporation any internal kitchen facilities, habitable rooms, shower or toilet facilities shall not be permitted. Roof areas of boatsheds shall not be used for recreational or observational purposes.
5. Boatsheds shall be constructed of low maintenance materials that are of a tone and colour which is sympathetic to the surrounding setting. Structures proposed along the western foreshores, McCarrs Creek, Horseshoe Cove, Salt Pan Cove, Refuge Cove, Clareville and Careel Bay are to have specific regard for the natural landscaped character of the area. Reflective materials and finishes for private boatsheds shall not be permitted.
6. The minimum floor level for proposed boatsheds shall be in accordance controls for foreshore development around the Pittwater Waterway.
7. Boatsheds shall be able to be entirely enclosed. Boatsheds which either partially or wholly do not incorporate appropriate wall cladding shall not be permitted, as such structures tend to become visually obtrusive when viewed from the waterway.
8. All electrical equipment and wiring shall be water tight below the designed flood/tidal inundation level.

Boatsheds which cannot meet these criteria are considered out of scale and character with the type of residential foreshore development that exists around the Pittwater Waterway. Boats which cannot be accommodated in the recommended size boatshed are considered inappropriate and should be accommodated using alternative facilities.

Diagram 4: Design Guidelines for Boatsheds



d) Slipways and Launching Ramps

Slipways and launching ramps are generally not favoured.

e) Piles

Freestanding or end piles are generally not favoured.

f) Levitators

Levitators are generally not favoured.

g) Davits

Davits are generally not favoured.

Variations

a) Slipways and Launching Ramps

Council may consider slipways and launching ramps where structures are unlikely to detract from the visual character of the foreshore, will not affect marine vegetation and will not restrict public foreshore access.

In such instances, the following criteria shall apply:

1. Innovative design which incorporates slipping facilities with other existing or proposed structures is encouraged (Diagram 5).
2. Structures, the storage of lightweight boats, and any winch equipment shall be entirely on private freehold land and shall not obstruct public foreshore access.
3. Structures shall be at ground level, where possible. Slipways from boatsheds, or reclamation must be recessed into the subject structure or work to minimise the height of the sliprails or boat ramp above the bed of the Pittwater Waterway. (Diagram 6).
4. Sliprails are to be in the form of two parallel rails, no more than 2 metres width apart, with either locking spreaders between the rails or bolted directly to the surface of the concrete without the use of spreaders or embedded in concrete to facilitate free access. (Diagram 7).
5. Timber construction is preferred for proposed boat ramps. Concrete ramps may be considered at bed level in certain locations such as at Crystal Bay, Winji Jimmi Bay, Palm Beach and Careel Bay or where it can be shown, to the satisfaction of Council, that the aims of this clause are not compromised. Other materials such as steel with bonded rust proof coating will also be considered.

The type of launching and retrieval facilities for marinas or commercial boatsheds will depend on site-specific factors inherent to the particular waterfront facility as well as its role. In this regard, Council is flexible in the type of systems it is prepared to consider including slipways, straddle hoists or travel lifts, floating dry docks, fixed or mobile cranes.

Proposed boat launching and retrieval facilities should not adversely restrict public foreshore access below mean high water mark. In this regard, where an existing structure restricts such access or where a proposed structure is likely to adversely impact upon any existing access, Council may require the applicant to provide alternative means to ensure that such access is maintained after also considering public safety.

Where a launching ramp is included within a marina or commercial boatshed complex, it shall be located so as to minimise interference with boat traffic to and from berthing areas.

Diagram 5: Suggested Dual Purpose Pontoon/Ramp and Slipway Structure for Boat Storage on Private Property.

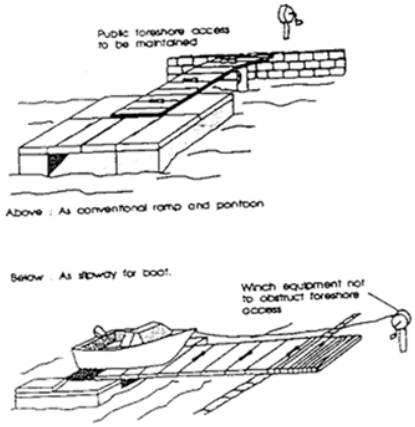


Diagram 6: Design Guidelines for Private Boat Ramps

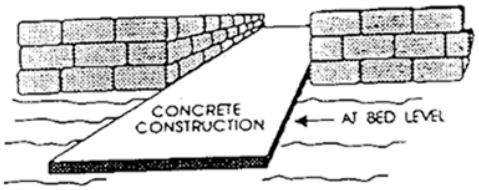
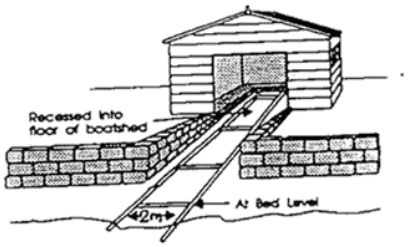


Diagram 7: Design Guidelines for Private Slipways



b) Piles

Council may consider freestanding or end piles where structures are unlikely to have a detrimental visual effect when viewed from the waterway, or in areas subject to heavy wave exposure to stabilise jetties, pontoons and berthed vessels.

In such instances, the following criteria shall apply:-

1. Structures shall not have a height greater than indicated in the following table:

Type of Pile	Above MHWM (metres)	AHD (metres)	Above HAT (metres)*
Jetty end	2.16	2.67	1.5
Pontoon Stabilisation	2.16	2.67	1.5
Berthing	2.16	2.67	1.5
Intermediate (jetty)	0.75	1.26	

2. * Highest Astronomical Tide which is 2.1 metres above zero Fort Denison Tide Gauge or 1.17 AHD.
3. Structures shall be of timber or fibre reinforced concrete. Timber piles shall have a minimum diameter of 250mm and be stripped bare of bark above mean high water mark and be bound at the top by a metal ring to prevent splitting and be capped to prevent long term deterioration.
4. Structures shall be treated in dark, natural colours above mean high water mark. End piles or free standing piles shall be painted white along the top 1 metre of the pile to facilitate visual prominence when viewed from the water at night and minimise any hazard to navigation. The use of alternative measures, such as reflective materials, to facilitate visual prominence may also be supported.
5. Structures should be positioned at least 2 metres away from any Posidonia seagrass.

c) Levitators

Council may consider levitators in some instances.

In such instances, the following criteria shall apply:

1. Only a single levitator unit is to be installed fronting any residential property.
2. Only one boat is to be berthed/stored on or adjacent to any residential waterfront structure (not including levitators) unless part of a shared structure or where an existing approval has been issued.
3. Any boat stored on any levitator must be no greater than 6.0 metres in length and 3.0 metres in height measured from the bottom of the keel to the top of the superstructure, excluding the mast in the case of sailing vessels. Vessels up to 8.5 metres in length will be considered having regard to location, visual impact, bulk of the proposed boat, and impact on the visual quality of the Pittwater waterway.
4. The maximum lift of the levitator platform is to be set at 1.0m above mean high water mark.
5. Levitators are to be used for boat storage purposes only. Maintenance or painting of the hull of any boat stored on the levitator is not to be undertaken.
6. No signage is to be placed on any levitator.
7. A levitator is to be located parallel to a jetty in a manner that ensures the boat does not protrude further into the Pittwater Waterway than the end of the jetty structure.
8. The levitator structure and/or any boat stored on the levitator is to be a minimum of 2.0 metres clear of the perpendicular extension, from the shoreline, of the common side property boundaries below mean high water mark.

d) Davits

Council may consider davits in some instances.

In such instances, the following criteria shall apply:

1. Davits may only be used for the storage of small dinghies or runabouts, particularly in locations susceptible to bad weather or unfavourable wave conditions.
2. Davits shall not store any boat greater than 5.1 metres in length.
3. Davits shall be located parallel to a jetty to minimise the visual impact of any boat stored when viewed from the Pittwater Waterway, and to minimise any further encroachment beyond mean high water mark (Diagram 8).
4. Davits should not shade underlying or adjacent seagrasses.

Diagram 8: Preferred Location for Davits

Advisory Notes

Note: Structures below mean high water mark may require Council approval, and a permit from the Department of Primary Industries. Owners consent may also be required from the Department of Lands.

Information to be shown on the Development Drawings

The drawings shall clearly indicate:

- any moorings to be relinquished and/or any existing facilities including those to be removed or modified; and
- the design, construction and materials of the proposed marine facility.

Information to be included in the Statement of Environmental Effects

Information is to be provided that demonstrates compliance with the requirements of this control. In this regard where marine facilities and the like are proposed, an assessment of the control is required. Where practicle this information should be depicted on the submitted drawings.

D15.16 Waterfront development - Crystal Bay foreshore area

Land to which this control applies

Crystal Bay Foreshore Area - P21DCP-D15MDCP753

Uses to which this control applies

Business Development
Industrial Development
Jetty
Other Development
Water recreation structure

Outcomes

The reasonable expectations of landowners adjoining the foreshore of Crystal Bay are balanced to facilitate water access to the Bay, whilst preserving the amenity of the Bay. (En, S)
Maintenance of an open foreshore appearance with views to the centre and mouth of Crystal Bay. (S)
Public access around Crystal Bay is maximised. (S)
The amenity of the Bay is maintained through the establishment of appropriate development and building guidelines and requirements for structures below original mean high water mark. (S)
The visual intrusion of private facilities is minimised. (S)
Appropriate points within the Bay for public access for the launching of dinghies and sail craft by hand are identified. (S)

Controls

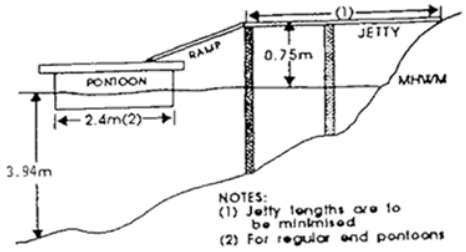
Individual waterfront developments for private residential use shall not be permitted.

Only shared waterfront developments shall be permitted.

Waterfront development shall only be permitted in the form of a low profile jetty with a ramp, pontoon and berthing area. The following criteria shall apply:

1. The height of any jetty deck shall not exceed 0.75 metres above mean high water mark (1.26 Australian Height Datum AHD).
2. The width of any jetty shall not exceed 2 metres.
3. No more than one handrail shall be permitted on a jetty for safety.
4. Waterfront development shall generally be no greater in length than adjoining facilities and shall not impede general navigation or equitable access or use of the waterway by adjoining landowners. The length of any jetty is to be minimised (Diagram 1).
5. Waterfront development shall be designed to permit safe pedestrian traffic to and from the jetty end at low tide; safe mooring of vessels; and the berthing of vessels perpendicular to the shoreline.
6. Pontoons shall be constructed with a minimum buoyancy of 2kPa and shall not exceed 2.4 metres x 3.6 metres.
7. Gates and like devices shall not be permitted across structures where public access around the foreshore is obstructed, or where such devices are visually obtrusive.
8. No more than one berthing area per waterfront property shall be permitted.
9. A berthing area shall be located perpendicular to the shoreline and shall not exceed 5 metres x 9 metres (Diagram 2).
10. A berthing area shall generally have a depth of 1 metre at low tide (1.925 AHD or 2.0 metres below zero (0) Fort Denison Tide Gauge).
11. Waterfront development shall not be used for berthing commercial or commercially used vessels.
12. Any mooring licence held by a landowner in Crystal Bay shall be relinquished, and the mooring structure removed. The mooring relinquished shall not be reallocated.
13. Davits and levitators shall not be permitted.
14. Freestanding piles used for berthing purposes or piles at the end of a jetty shall be no greater than 1.75 metres (2.26 AHD) above mean high water mark. Intermediate piles on jetties shall be no greater than 0.75m (1.26 AHD) above mean high water mark.
15. The top 0.5 metres of free standing piles or piles at the end of a jetty shall be stripped of bark and painted white and properly maintained by repainting.
16. Concrete launching ramps shall be no greater in width than 3.0 metres, and shall be constructed flush with the natural level of the reclaimed foreshore area, between the freehold property boundaries and the outer edge of the reclamation, and are to follow the slope of the existing inter tidal zone. Ramps shall be flush with the top of any seawall (Diagram 3).
17. Slip rails, winches and boat cradles shall not be permitted on ramps.
18. The operation of any approved winches, located on freehold land, shall not hamper public access along the foreshore for any extended period of time.

Diagram 2: Maximum Dimensions for Berthing Areas -Perpendicular to Shore (As per Department of Infrastructure Planning and Natural Resources requirements)



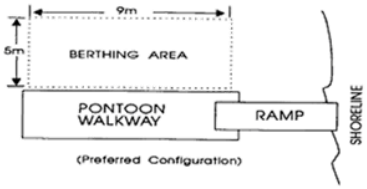
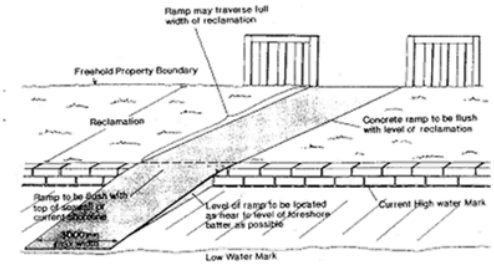


Diagram 3: Concrete Boat Ramp Design Criteria



CRYSTAL BAY

Note
1) Ramp to be of reinforced concrete construction
2) Development Application must be lodged with Council for Councils consent prior to construction

Boat sheds shall only be permitted on freehold land. Where provided, boat sheds shall meet the following criteria:

1. Only single storey boat sheds shall be permitted and shall not exceed 6.5 metres x 4 metres x 3 metres high (to the top of the walls). Low pitch, gable or hip roofs fronting the waterway will be preferred by Council to a maximum height of 1.5 metres above the side walls. Boat sheds exceeding these dimensions shall not be permitted. Boats which cannot be accommodated in a structure of this size should be stored elsewhere.
2. Only a boat storage space and working space shall be permitted in a boat shed. Boat sheds shall not be converted to dwellings or any other use and shall not contain a shower or toilet.
3. Roof areas shall not be used for recreational purposes.
4. Boat sheds may be permitted within the foreshore building line where adequate setback from the foreshore property boundary is not available.

Variations

NIL

Controls

Figure 1

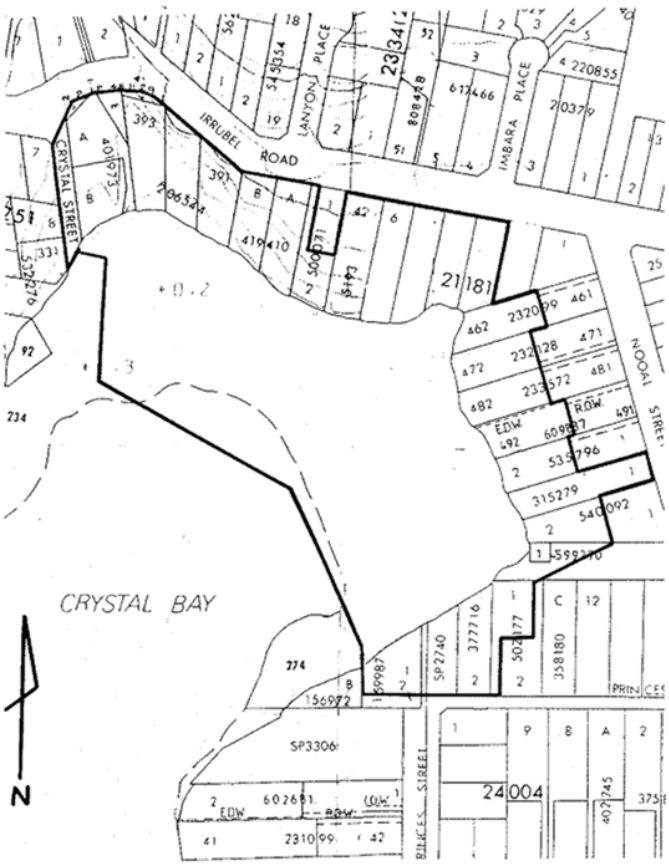


FIGURE 1 LAND TO WHICH THIS PLAN APPLIES

Information to be shown on the Development Drawings

The drawings shall clearly indicate:

- any moorings to be relinquished and/or any existing facilities including those to be removed or modified;
- which properties are sharing the marine facilities; and
- the design, construction and materials of the proposed marine facility.

Information to be included in the Statement of Environmental Effects

Information is to be provided that demonstrates compliance with the requirements of this control. In this regard where marine facilities and the like are proposed, an assessment of the control is required. Where practicle this information should be depicted on the submitted drawings.

D15.17 Moorings

Land to which this control applies

Waterways Locality - P21DCP-D15MDCP750

Uses to which this control applies

Marina
Mooring
Mooring pen

Outcomes

Adverse environmental effects of moorings on the aesthetic appearance of the Pittwater Waterway, its marine flora and fauna, and the impact on navigation, recreational opportunities and safety is minimised. (En, S, Ec)
Regard is had for the visual and physical cumulative effects of moorings and associated boating in the Pittwater Waterway. (En, S, Ec)
Regard is had for persons dependant on private water transport for commuting purposes. (S)
The removal of derelict vessels from moorings to enable a more efficient use of existing moorings in the Pittwater Waterway. (S)
Rationalisation and creation of designated private mooring areas with regard to the relative needs of licence holders for shore based support facilities and the availability of such facilities along the foreshore. (S)
Provision of appropriate levels of mooring numbers based on the real demand for such facilities while having due regard for the need to preserve the existing character of the Pittwater Waterway. (S)

Controls

Mooring areas are identified on the Pittwater Mooring Area Map (Map 1). The maximum number of moorings per mooring area and the management of mooring areas shall be in accordance with the following table:

Mooring Area (refer to Pittwater Mooring Area Map)	Mooring Area Name	Maximum Number of Moorings Permitted
1	Barrenjoey Headland	7
2	Palm Beach	128
3,4	Careel Bay	432
5	Clareville	685
6,7	Refuge Cove	141
7	Salt Pan Cove	290
8	Horse Shoe Cove	126
9,10	Crystal Bay	70
11	Winji Jimmi	66
12	Winnererremy Bay	33
13,14,15,16	Bayview	529
17	McCarrs Creek	433
18	Elvina Bay	67
19,20	Lovett Bay	164
21	Towler's Bay/Morning Bay (resident moorings)	20
22	Towler's Bay/Morning Bay (club moorings)	32
23	Coaster's Retreat	107
24	Great Mackeral Beach	35
25	Scotland Island	276

The maximum number of moorings in the table applies collectively to private, club, commercial and public authority moorings.

The maximum number of moorings in Pittwater shall not exceed the overall capped total of 3641. However, in consultation with NSW Maritime and other stakeholders, the restrictions for individual mooring areas may be increased if needed, with a subsequent reduction from other mooring areas where spare capacity exists.

Additional moorings in areas 17, 18, 19, 20, 21, 23, 24 and 25 are restricted to moorings for local residents in adjacent residential areas only.

Mooring Area 22 shall not be used for long term permanent mooring by chartered pleasure craft and boat/sailing craft.

In the event of a marine development being approved, the change of swing moorings to marina berths shall not alter the capped number of vessels in that area.

Where additional moorings are considered appropriate, moorings must be sited such that navigable water space is optimised and efficiently used and adverse visual impact is minimised and adequate shore-based infrastructure is available, including carparking, dinghy storage facilities, garbage disposal facilities, toilets, and loading and unloading facilities for boats.

Variations

Nil

Advisory Notes

Single swing moorings in association with marinas may constitute designated development under the Environmental Planning and Assessment Regulation 2000.

Information to be shown on the Survey Plan

Surrounding mooring locations and any nearby shoreline features (i.e. jetties etc)

Information to be shown on the Site Plan

The location of the proposed mooring in relation to other moorings and shoreline features.

Information to be included in the Statement of Environmental Effects

An assessment of the mooring proposal in terms of the mooring number restrictions for the mooring area.

D15.18 Seawalls

Land to which this control applies

The Waterways Locality and properties which abut the Pittwater Waterway - P21DCP-D15MDCP751

Uses to which this control applies

Business Development

Industrial Development

Jetty

Other Development

Water recreation structure

Outcomes

Any adverse impact upon the marine flora, fauna or water quality of the locality is minimised. (En)

Development has due regard for other existing water based activities in the locality, particularly those which have recreational, residential or economic significance. (S, Ec)

Alienation of public foreshore land below mean high water mark is minimised. (S)

The impact of development may on the physical processes acting in the locality is minimised. (En)

Development is sympathetic to the natural character of the Pittwater Waterway. (En, S)

The occurrence of dredging in the Pittwater Waterway other than for general navigation purposes is minimised. (En)

Controls

Seawalls shall not be permitted.

Variations

Council may consider the construction of seawalls where there is potential for erosion from coastal process and protection of property is necessary.

In such instances, the following criteria shall apply:

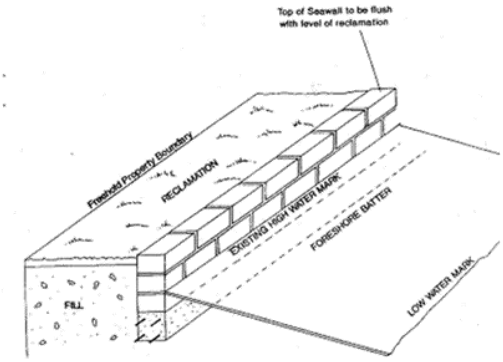
1. where possible, maintain the curvature of the existing shoreline;
2. incorporate low profile walls, battered or stepped back from the foreshore wherever practicable, with a maximum recommended height of 1 metre above mean high water mark. (1.5 metres AHD);
3. constructed of or faced in rectangular shaped sandstone, being either dressed or rough-cut in order to promote a uniform treatment along the foreshore. Alternative building materials, such as reconstructed sandstone concrete blocks or similar, which reflect a sandstone character shall also be suitable, particularly where greater structural strength may be required. Materials such as timber, concrete (including nylon mattress structures) gabions or other materials not in keeping with the character of the area shall not be permitted. Concrete/nylon mattress structures may be suitable for public drainage and associated bank stabilisation works where it can be demonstrated that such structures will not detract from the visual amenity of the locality.
4. only clean fill is to be used behind sea walls.
5. where practicable, sandy beach areas should be incorporated in front of seawalls.
6. be designed so that the existing footprint is maintained (i.e. does not encroach any further into the intertidal zone) and the seawall is sloped back towards the property. There must be no additional reclamation of water land (requires a permit from the Department of Primary Industries) or replacement of the existing wall with a vertical seawall;
7. that there is no mortaring of the seawall and a geotextile fabric is used behind the seawall to prevent loss of sediment through the seawall;
8. should be rock rip rap, boulders or similar complex structures, and where possible incorporate further vertical and horizontal complexity.
9. maximise the incorporation of native riparian and estuarine vegetation;
10. create low sloping seawalls and/or incorporate changes of slope; and
11. it is recommended that proponents consult with both the Coasts & Estuaries section of the Office of Environment and Heritage, and with the Aquatic Habitat Protection unit of the Department of Primary Industries.
12. compliance with Environmentally Friendly Seawalls – A Guide to Improving the Environmental Value of Seawalls and Seawall-lined Foreshores in Estuaries (Sydney Metropolitan Catchment Management Authority 2009).

Within the Crystal Bay Foreshore area, the following controls shall specifically apply:

1. only dwarf seawalls shall be permitted along the foreshore of the Bay.
2. be wholly constructed or faced in regular dressed sandstone blocks, reconstructed sandstone face blocks or reconstructed sandstone tiles; and
3. have a battered slope located in front of it constituting the intertidal beach zone; and
4. be flush to the top of the seawall with the reclamation located behind it (Diagram 1); and
5. not have a height greater than 0.75 metres above mean high water mark (1.26 AHD); and

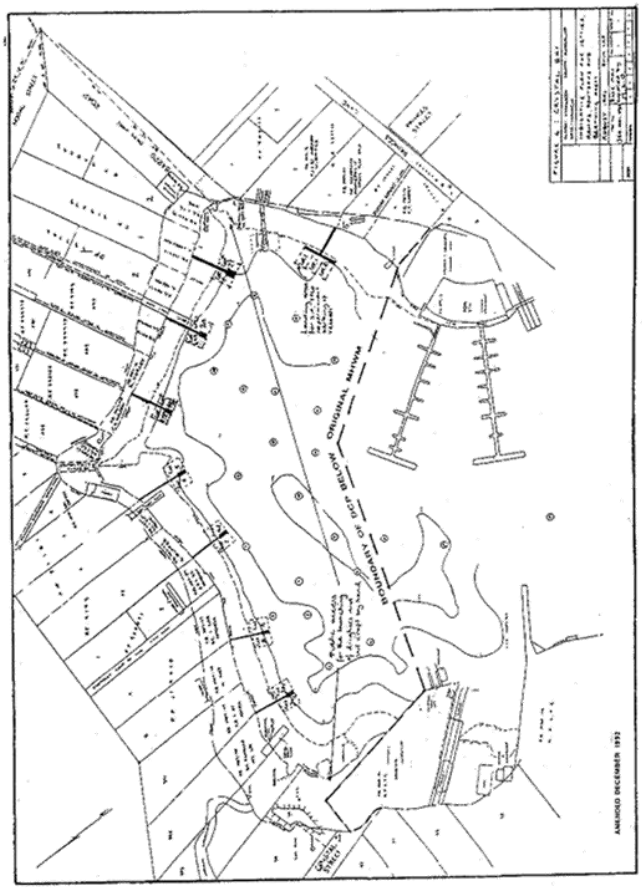
6. be aligned generally in a position which accords with the physical high water mark (Diagram 2) and form a continuous and uniform alignment with any existing adjoining, approved seawall.

Diagram 1



Controls

Diagram 2:



Advisory Notes

For further information on seawalls see Environmentally Friendly Seawalls – A Guide to improving the Environmental Value of Seawalls and Seawall-lined Foreshores in Estuaries from Sydney Metropolitan Catchment Management Authority (SMCMA) available at their website.

Information to be shown on the Development Drawings

Clear details of the location, dimensions and materials to be used in the construction of any seawalls.

Information to be included in the Statement of Environmental Effects

An assessment of the seawalls impact on the visual character and amenity of the waterfront. Reference should be made in the assessment to the control outcomes.

Technical Reports and Supporting Information

A Coastal Engineer's report assessing the impacts of the seawall in protecting the development site and adjoining properties.

D15.19 Dredging

Land to which this control applies

The Waterways Locality and properties which abut the Pittwater Waterway - P21DCP-D15MDCP751

Uses to which this control applies

Business Development
Industrial Development
Jetty
Other Development
Water recreation structure

Outcomes

Any adverse impact upon the marine flora, fauna or water quality of the locality is minimised. (En)
Development has due regard for other existing water based activities in the locality, particularly those which have recreational, residential or economic significance. (S, Ec)
Alienation of public foreshore land below mean high water mark is minimised. (S)
The impact of development on the physical processes acting in the locality is minimised. (En)
Development is sympathetic to the natural character of the Pittwater Waterway. (En, S)
The occurrence of dredging in the Pittwater Waterway other than for general navigation purposes is minimised. (En)
Retention of the existing bed of the Pittwater Waterway, in as natural a state as practicable, where general public boating/recreational opportunities are not adversely affected. (En, S, Ec)

Controls

Dredging shall not be permitted.

Variations

Council may consider dredging for private boat purposes where it can be demonstrated that:

1. the site is or has been susceptible to sediment accretion due to man made influences; and
2. dredging works will not have an adverse impact on the Pittwater Waterway; and
3. adjacent erosion, sediment accretion, weed or litter accumulation or adverse effects upon wave patterns are unlikely to result;
4. the site is not over or in the immediate vicinity of fish hauling grounds, seagrass beds or other significant natural estuarine habitats; and
5. the site is unlikely to require unreasonable continued maintenance.

In such instances, the following criteria shall apply:

1. Dredging to a depth greater than 3.94 metres below mean high water mark (-3.425m AHD) shall not be permitted. This is to ensure that the substrate remains within the euphotic zone while still providing a reasonable depth of water for boat access.
2. A buffer zone of 50 metres to seagrass beds and 30 metres to mangroves shall be maintained between the dredged area and vegetation.
3. The shape of a dredged channel shall be largely determined by the type of bed sediment that is to be dredged and the nature of the currents in the locality, and will be considered on a merit basis.
4. Sediment ponds and/or silt curtains must be incorporated to ensure that entrained silt from dredging operations is not returned to the waterway.
5. Dredged material shall be disposed of in a responsible manner. The disposal of dredged material elsewhere into the Pittwater Waterway shall not be permitted.

Within the Crystal Bay Foreshore area, the following controls shall specifically apply:

1. Dredging shall only be permitted where such dredging is to restore an adequate navigable depth of the Bay in accordance with Part XIIA Consent 78/163, or is associated with the installation of utility services.
2. Dredged material is to be disposed of at approved dumping sites on land or at sea. Redepositing of material in the Bay or elsewhere in the Pittwater waterway shall not be permitted.

Advisory Notes

Consent must be obtained from Council for dredging works. Consent will also be required from State Government agencies, and it is recommended that proponents consult with both the Department of Trade and Investment Crowns Lands and the Department of Primary Industries, as a minimum.

Refer to State Environmental Planning Policy (Infrastructure) 2007, noting that it is still a requirement to obtain all necessary approvals, licenses, permits or concurrences.

Information to be shown on the Survey Plan

Location and depth of all underwater features including existing seabed conditions and proposed changes in seabed conditions (e.g. seagrass areas).

Information to be shown on the Site Plan

Dredging area in relation to shore and surface facilities.

Information to be shown on the Development Drawings

Dredging limit, dredging depths and existing seabed levels. Batter slopes should be clearly shown on sections.

Information to be included in the Statement of Environmental Effects

An analysis of the dredging proposal which clearly details why the dredging is required, and that the proposal does not constitute designated development, and is not prohibited. The analysis should address the control outcomes.

Technical Reports and Supporting Information

- A Coastal Engineer's report assessing the impacts of the dredging proposal.
- A Marine Biologist's report assessing the impacts of the proposal.

D15.20 Commercial waterfront development - pollution prevention

Land to which this control applies

Waterways Locality - P21DCP-D15MDCP750

Uses to which this control applies

Business Development
Industrial Development
Other Development

Outcomes

To minimise any likely adverse environmental impact on the water quality and marine flora and fauna of the Pittwater Waterway. (En)
Development does not adversely affect the amenity or character of adjoining land, particularly residential or public recreation areas. (S)

Controls

Waste material and sewage shall be managed on-site in a manner that is not likely to pollute the environment.

Garbage receptacles are to be provided on all proposed marina walkways and are to have self-closing lids to prevent escape of rubbish by way of wind, birds or other animals. At a minimum, garbage receptacles are to be placed near the head and ends of any marina walkways. A separate appropriate solid waste container is to be provided for any workshop area.

Runoff from hardstand areas shall be treated so that litter and other solid waste materials are not transported to the waterway. Trash racks, sedimentation control structures, or other devices, as considered necessary by Council, are to be installed and maintained by the operator at all times.

Pollution generating activities and any associated wastes, including that from boat scrapings, grease and oil from hard stand areas washing down facilities or workshops shall not be permitted to enter stormwater collection systems.

Where provided, fuel supply systems shall be designed to contain spillage and be provided with flameproof electrical fittings. The location of boat access to such facilities is to be designed for ease of navigation, preferably with a one-way travel direction with minimal travel through any berthing areas.

Appropriate anti-pollution devices will be required to be installed for all development which has the potential to result in pollutants or other waste entering the Pittwater Waterway and which is likely to adversely affect the water quality, flora or fauna of the area. Since the design of such devices can vary through time and with technological advances, Council will require the installation of those devices which are considered to be the most appropriate at the time. As a guide, the minimum type of devices that are likely to be required include the following:

1. Fuelling areas: Spillage containment booms and oil absorbent materials for areas over the water; and pavements graded and drained to oil arrester pits for areas above mean high water mark.
2. Workshops: Pavements graded and drained to oil arrester pits for new proposals and floating boom devices for existing older style boatsheds and the like.

All liquid wastes are to be collected and either removed off site or directed to an approved sewerage management system as is considered appropriate by Council and relevant authorities.

Wastes are not to be directly discharged into the Pittwater Waterway.

Noise from commercial or waterfront facilities is to be controlled in accordance with the "Pollution" Control contained within this document. In particular:

1. public address systems shall not be permitted;
2. operation of machinery (i.e. being part of workshop facilities, air conditioning, generators, compressors or other apparatus) shall only be permitted where it can be demonstrated to the satisfaction of Council, that the amenity of adjoining areas will not be adversely affected;
3. shot/grit blasting of vessels using abrasive particles may be permitted in specified areas where suitably designed protective booths approved by Council are provided and noise levels and operating hours restricted.
4. the repair and maintenance of vessels involving the emission of intrusive noise is to be confined to Monday to Friday 7am to 5pm and Saturday 9am to 1pm local time. No work is to be undertaken on Sundays where such work, in the opinion of Council, is likely to interfere with the amenity of the neighbourhood by the emission of noise, chemical or physical pollutants or otherwise.
5. spray painting, sanding and planing operations shall be carried out in spray painting booths or other approved enclosures with mechanical ventilation to capture airborne paint and particles and with approved noise attenuation controls where required.

Variations

Nil

Information to be included in the Statement of Environmental Effects

An analysis of the proposal demonstrating how it has been designed and will be operated so as to not cause any pollution.

Technical Reports and Supporting Information

A report and plans prepared by a suitably qualified professional outlining the waste holding and pollution control measures to be incorporated into the proposal to achieve the control requirements.

D15.21 Charter boat facilities

Land to which this control applies

Waterways Locality - P21DCP-D15MDCP750

Uses to which this control applies

Boatshed
Charter and tourism boating facility
Marina

Outcomes

To facilitate the opportunity for charter boat facilities in Pittwater. (Ec)
To minimise any adverse impact on the Pittwater waterway and adjoining development. (En)

Controls

Where a commercial marina or boatshed is to be used as the principal location for passengers to embark and disembark from charter boats, on-site facilities are to be provided including:

- Carparking;
- Toilets;
- Garbage and recycling disposal;
- Solid waste disposal; and
- Sewerage pumpout facilities for boats in accordance with any State Government gazetted regulations.
- Vessels used for food preparation and/or service must comply with the Guidelines for Mobile Food Vending Vehicles, published by the NSW Food Authority Regulations (inclusive of the Food Authority Notification requirements).
- All charter boats must dispose of sewerage and wastewater to sewerage pump ashore facilities.
- All charter boats must have a current documented contract which provides for the disposal of waste and recyclable materials generated by its operation.
- The business operation must comply with the Protection of the Environment Operations Act 1997.

On-site facilities required to operate a charter boat business from a marina where the marina berths are privately owned are the responsibility of the owner/applicant of the proposal. The applicant cannot simply propose to increase the demand of the facilities and not expect to provide any additional facilities. This will be assessed on a merit basis.

Variations

Nil

Information to be shown on the Survey Plan

Where charter boat facilities are to be provided as part of a commercial marina or boatshed operation (or other waterfront activity), an analysis is to be provided of the proposal demonstrating that it does not adversely impact on the Pittwater waterway and adjoining development.

Technical Reports and Supporting Information

A report, floor plans and supporting documentation is to be submitted demonstrating that waste disposal and the food premises construction standards will be achieved in accordance with the requirements of the control.

D15.22 Masterplan - Careel Bay

Land to which this control applies

Land in the Careel Bay Study Area - P21DCP-BCMDCP088

Uses to which this control applies

All Uses

Outcomes

To achieve the desired future character of the Locality.

Development addresses the issues identified in the Careel Bay Masterplan. (En, S, Ec)

A sense of place is provided by acknowledging the setting, history, landscaping and character and to give residents a sense of belonging and community pride. (S)

To ensure new development responds to, reinforces and sensitively relates to the spatial characteristics of the existing built and natural environment. (En, S, Ec)

To ensure that development adjacent to Careel Bay compliments the landscape character, public use and enjoyment of the Bay. (En, S)

Controls

Development is to appropriately address the issues identified in the Careel Bay Masterplan.

Variations

Nil

Information to be included in the Statement of Environmental Effects

An analysis of the character of the proposed development in terms of its impact on Careel Bay demonstrating that the proposal:

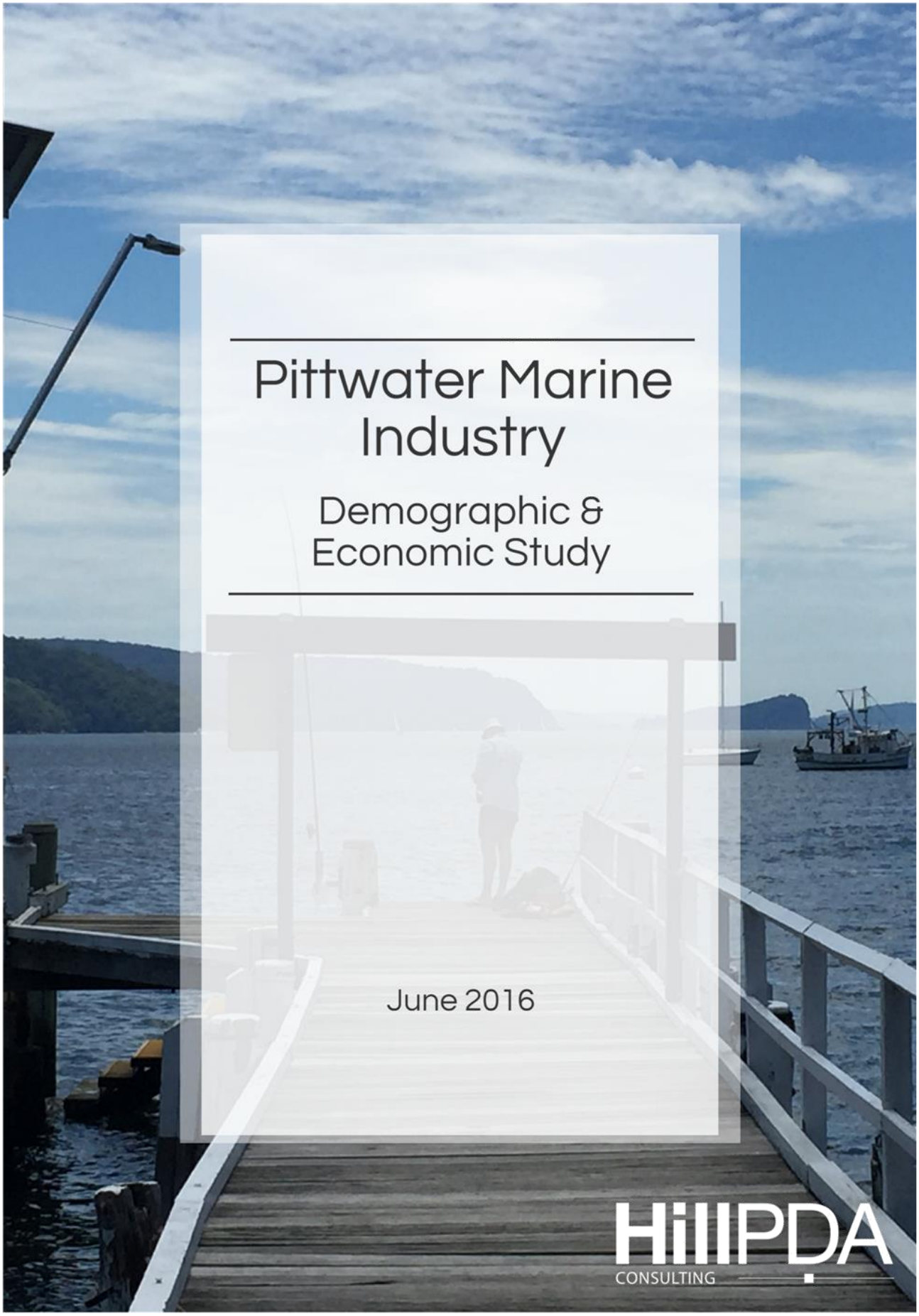
- Achieve the desired future character of the locality. (S)
- The development addresses the relevant issues identified in the masterplan (S, Ec)
- Development acknowledges the setting , history and landscaping and character; (S, Ec)
- The development responds tom reinforces and sensitively relates to the spatial characteristics of the existing built and natural environment. (S, En)

APPENDIX 3:

HillPDA Consulting, Pittwater Marine Industry – Demographic & Economic Study (2016)

NORTHERN
BEACHES
COUNCIL

northernbeaches.nsw.gov.au



Pittwater Marine Industry

Demographic & Economic Study

June 2016

HillPDA CONSULTING

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EXECUTIVE SUMMARY

HillPDA was commissioned by Pittwater Council (Council) and Transport for NSW to undertake an economic review of local marine industries and project the demand for boat storage by category type (swing mooring, wet berth and dry storage) within the Pittwater waterway catchment (study area).

The objective of the study was to aid Council and the local community to better understand the contribution marine industries provide to the local economy and provide commentary on the pressures marine industries may face in the future.

The types of commercial marine related activities reviewed within this study include:

- Marinas;
- Shipwrights and maintenance;
- Water transport, freight and passenger transport;
- Commercial fishing and aquaculture;
- Tourism;
- Recreational fishing; and
- Other industries such as sea plane tours, kayaking facilities, and paddle boarding facilities.

The study area

The Hawkesbury River, Pittwater and Brisbane Water Region (the Region) contained the highest proportion in NSW of boats above six metres

The study area is bounded by Winji Jimmi bay in the south east, McCarrs Creek in the south west and West Head and Barrenjoey Head in the north.

As part of the recent announcement by the State Government relating to council amalgamations, the study area has been expanded to include the waterways adjoining Warringah LGA. This expanded area incorporates the coastal waterways of Cowan Creek, Cottage Point, Coal and Candle Creek, Akuna Bay and Smiths Creek (Figure 1).

Contextual review

Regional policies such as the Regional boating Plan and the 2010NSW Boat Storage Forecasts Study have identified that the Hawkesbury River, Pittwater and Brisbane Water Region (the Region[1]) contained

[1] The Hawkesbury River, Pittwater and Brisbane Water Region covered nine councils these were Gosford, Hawkesbury, Camden, Pittwater, Ku-ring-gai, Hornsby, The Hills Shire, Penrith and Warringah councils

Marinas within the Pittwater Region already experience high occupancy levels and long wait lists for on-water berths

the highest proportion in NSW of boats above six metres. Boats of this category need to be stored predominately in on-water berths.

This highlights the pressure that is currently present on existing storage facilities and boating infrastructure within the area. Marinas within the Pittwater Region already experience high occupancy levels and long wait lists for on-water berths.

As such, there is reasonable evidence and justification to increase the number of on-water berths to meet the current and predicted growth in boat usage within the study area, subject to environmental and social considerations. This projected growth in usage is forecast as high as an additional 67% or 5,854 boats over six metres between 2009 and 2026, with the majority requiring on-water storage[2].

These policies also highlight the high quantum of boating trailers being parked in residential streets, as on-water storage berths are fully occupied.

A 2009 study undertaken by HillPDA found that usage of boats greater than six metres could grow by 61% from 2008 to 2031, representing an increase of about 22,000 boats over the period. This predicted increase in boat usage would result in the potential demand for an additional 16,500 storage spaces by 2031 within NSW, of which 2,068 or 13% would be needed in the Hawkesbury / Broken Bay Region[3].

Demographic Analysis

Forecast increases in the age cohorts of "ageing and retiring population" and "home builders" within the study area, coupled with increased affluence are likely have a corresponding effect of increased boat ownership levels

With more people living and working in the study area, the flow-on demand for marine recreation, transport, storage services and facilities are likely to also proportionally increase.

This demand would be further exacerbated as a consequence of increases in the age cohorts of "*ageing and retiring population*" and "*home builders*" living in the area, who have higher incomes and are more likely to participate in marine related activities. Considering these family sectors are increasing, there is potential that demand for boating and marine services such as on-water storage would also increase.

Historically, the number of young working aged people in the study area has declined. However, this age cohort (15-25 years) is projected to increase over the next few decades.

[2] NSW Government Maritime, 2010, NSW Boat Ownership and Storage: Growth Forecasts to 2026
[3] HillPDA 2009, Boat Ownership and Storage Study for NSW

Marine related industries could provide employment opportunities for the projected increase in the "young workforce" cohort

To reverse this historic trend, more employment opportunities are required for young persons by supporting industries with high worker containment rates. Marine related industries are one of these sectors that have the capacity to provide employment and retain employees in the study area. Consultations with local marina operators identified that young school aged persons were employed as tender drivers and fuel pump operators on the weekend. These young employees often went on to stay within employed marine industries through apprenticeships.

Stakeholder Consultation Overview

HillPDA conducted consultation with a cross-section of stakeholders to establish a user perspective on the importance of Pittwater's waterways and ultimately how they perceive they contribute to the local economy. Comments have been categorised into two stakeholder groups:

1. Marina industries; and
2. Transport and recreation industries i.e. ferries, sea planes, kayaking.

The Chapter summarises the common themes identified during stakeholder engagement. The economic contribution, issues and preferred outcomes identified by the various stakeholders that participated in consultation are further provided within the Chapter.

As further explored in the Chapter, stakeholders believed they economically contributed to the Pittwater economy through:

- Employment;
- Growth and demand;
- Public benefits;
- Secondary commercial operations;
- Indirect contributions;
- Tourism promotion; and
- Delivering transport services.

A number of challenges and preferred outcomes were also identified and discussed. These included:

- Reverse amenity impacts;
- Swing moorings vs marina berth competition;
- Increasing size of boats;
- Parking issues;

- Zoning constraints;
- Dry storage land availability;
- Public use of facilities;
- Long waitlists;
- Swing mooring concentration;
- Wash zone compliance;
- Event traffic; and
- Waterway conflicts.

Economic Contribution

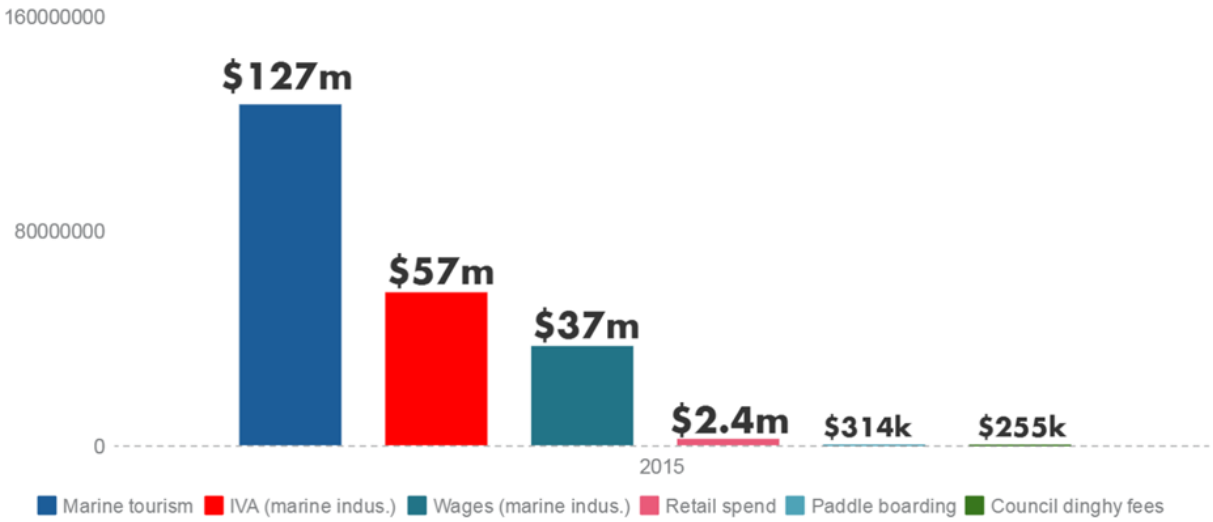
MARINE INDUSTRIES

Key Findings

Resident Employment	As of 2011, 1,002 local residents were employed within marine related industries, regardless of place of work location.
Workforce	751 marine industry related jobs were provided within the study area.
Salary Generation	Combined marine industries provided an estimated $37 million in potential annual worker salaries.
Industry Value Add (IVA)	Combined marine industries provided an estimated $57 million in industry value add annually.
Retail Expenditure	Marine industry related workers spent an estimated $2.4 million annually on surrounding retail services.
Marine Tourism	An estimated $127 million of expenditure was captured annually within the study area which related to marine tourism.
Dinghy Storage	Pittwater Council collected $255,000 within the 2014/15 financial year from dinghy storage and tie up fees.

Paddle Boarding/ Kayaking	Total estimated revenue from paddle boarding and kayak services is estimated at a conservative $313,700 for the peak period (November to April) within the study area.
Fishing	Recreational fishermen, within the study area, potentially provide further stimulus to the local economy in terms of expenditure, job creation and economic output

Economic Contribution Summary



Tourism

4,090 workforce › $171m wages › $330m IVA

Total workforce as of 2014 for the tourism industry within the study area was over 4,000 contributing an IVA of an estimated $330m per annum.

Given the natural attributes of the study area, marine toursim would provide significant stimulus to the local tourism sector.

Paddle boarding & kayaking

Consultation with paddle board and kayaking companies stated that the majority of clients were from outside the local area and stayed on to visit local restaurants and accommodation, providing further stimulus to the local economy.

Recreational fishing

Putting an economic value on the contribution of recreational fishing to the local and wider economy is challenging.
However, a recent study concluded that the economic output for recreational fishing in NSW provides:

- $3.4 billion of economic output;
- $1.6 billion in added value;
- $877.3 million in household income; and
- 14,254 fulltime equivalent jobs.

Boat ownership and storage demand projections

Ownership patterns

Increases in population, affluence and the age cohorts of retirees and home builders has led to a corresponding increase in boat ownership levels across the LGAs of Pittwater and Warringah.

Since the GFC in 2009, boat ownership levels within the study area have increased both in number and as a proportion to the population. This has occurred at an increased rate from 2011 onwards when compared to pre 2009 proportions

This is evident in the number of boat registrations from 2003 to 2015 increasing by 2,758 registrations, with the bulk (78%) of this growth occurring over the last five years. Since the GFC in 2009, boat ownership levels within the study area have increased both in number and as a proportion to the population. This has occurred at an increased rate from 2011 onwards when compared to pre 2009 proportions.

Current level of storage

As of 2015 there was approximately 5,173 storage spaces provided within the study area (excluding trailers and dinghy storage). The bulk of this storage was provided by commercial and private swing moorings (2,992 spaces or 58% of storage spaces) followed by marina berths with 1,224 spaces or 24% of storage spaces[4]. The current number of swing moorings is at 82% of the capacity maximum number of moorings permitted as identified within Pittwater's DCP, which there was found to be growth for an additional 647 swing moorings.

There are almost 2.5 swing moorings to every berth within the area

Swing mooring versus berths in terms of space requirements

Swing moorings contributed the greatest both proportionally and numerically to storage options within the study area. This is evident in there being almost 2.5 swing moorings to every berth within the area.

The larger number of swing moorings has had a corresponding effect of them taking up a larger amount of water-space comparative to other on-water storage options. The large quantity of swing moorings was reinforced during consultation with respondents identifying that the number of swing moorings increasing navigation and manoeuvring difficulties.

Berths could provide 64 on-water-spaces for every 1ha compared to seven swing moorings per 1ha. Furthermore, one swing mooring was the equivalent to approximately eight berths

Analysis revealed that berths could provide 64 on-water-spaces for every 1ha compared to seven swing moorings per 1ha. Furthermore, one swing mooring was the equivalent to approximately eight berths. However, it is noted that swing mooring provides a crucial cost

[4] Regional Boating Plan, Hawkesbury River, Pittwater and Brisbane Water Region, RMS 2016 and HillPDA

efficient solution for many local residents and visitors when compared to berthing rates.

Boat ownership projections

HillPDA has applied a methodology that applies the historic annual growth in boat registrations and population to deduce the real increase in boat registrations over the period from 2003 and 2015.

This "real increase" proportion was then applied to the forecast annual population growth rate within the study area for the period between 2015 - 2031 (which was 0.9%). This then determined the forecast proportion for boats under and over six metres respectively.

From 2015 to 2041 boat ownership levels are likely to increase by approximately 8,950 boats or +82% over the period.

Of this total growth 2,437 or 27% was attributed to boats over 6 meters

It was determined that boats under six metres would increase by 2.50% per annum while boats over six metres would increase by 1.87% per annum.

These proportions were then applied to the 2015 boat registration figures provided by RMS to forecast the number of vessel ownerships within the study area to 2031.

Using this methodology it is estimated that over the period between 2015 and 2041 boat ownership levels are likely to increase by approximately 8,950 boats or +82% over the period.

Of this total growth 6,510 boats or 73% was attributed to boats under six metres while the remaining 2,437 or 27% was attributed to boats over this length.

Boat storage demand projections

The growth in boats over the 6 metre mark was applied to the proportions of various boat storage options (excluding trailers).

Three different scenarios were tested, these were:

i) Scenario 1 – this scenario applies the current proportions of storage within the study area as identified in the 2015 audit;

ii) Scenario 2 – applies a target storage proportion based on the 2009 HillPDA Study known as the *Boat Ownership & Storage Study for NSW* for the at the time NSW Maritime; and

Scenario 3– applies minimal storage growth within swing moorings with additional growth being diverted to marina berths. This is a trend being witnessed in Sydney Harbour locations such as Middle Harbour. Furthermore, swing mooring growth within this scenario was guided by

the maximum number of moorings permitted as identified within Pittwater's DCP, which there was found to be growth for an additional 647 swing moorings.

The proportions for the three scenarios are provided in the table below.

Table 1 - Scenario proportions by storage type

	Private swing moorings	Commercial swing moorings	Commercial marina berths	Private jetties	Dry storage
Scenario 1	39%	19%	24%	12%	6%
Scenario 2	35%	10%	35%	5%	15%
Scenario 3	**20%**	**6%**	**54%**	**5%**	**15%**

Source: HillPDA

The study area would likely need an additional 634 to 1,316 swing moorings and 585 to 1,316 additional marina berths between 2015 and 2041

Applying the above proportions to the five year incremental growth in boats, it was deduced that the study area would likely need an additional 634 to 1,414 swing moorings and 585 to 1,316 additional marina berths over the period from 2015 to 2041.

Table 2 – Total additional storage demanded by type (2015-2041)

	Private swing moorings	Commercial swing moorings	Commercial marina berths	Private jetties	Dry storage
Scenario 1	955	458	585	292	146
Scenario 2	853	244	853	122	366
Scenario 3	244	122	1,584	122	366

Source: HillPDA

Using the take up of water-space for marina berths verse swing moorings discussed earlier the study area would likely need between 52 to 202ha of additional water-space to accommodate the additional swing moorings to 2041, while only nine to 25ha of water-space would likely be need to for the additional marina berths.

Conclusion

Marine industries provide an important role to the study areas economy and social cohesion. This is achieved through the industry providing employment opportunities, transportations, tourism, locations for events, storage of marine vessels and public access to the water.

The study area is a popular destination for both locals and visitors to enjoy water based activities. With this popularity comes the need to store vessels permanently on the water. Storage options within the study area include swing moorings, private and commercial berths,

dry storage, jetties and trailers. The study identified that swing moorings were the most prominent storage option however, one swing mooring was equivalent to approximately eight marina berths in water surface area consumption.

Between 91 to 202ha of additional water-space could be required to accommodate the additional swing moorings to 2041, while only nine to 21ha of water-space would likely be need to for the additional marina berths

The large number of swing moorings, if continued to grow at their previous rate, would likely be unsustainable. HillPDA, when applying storage growth projections to vessels within the area, applied three difference scenarios to boat storage proportions. The first scenario maintained the current storage proportions by type into the future, while the other two, decreased the proportion attributed to swing moorings and increased the proportion attributed to marina berths. This was due to the space requirement for swing moorings discussed earlier, coupled with increasing boat sizes within the area. This trend of reducing swing moorings within an area, while increasing marina berthing options, has been witnessed recently in other locations such as Middle Harbour and Sydney Harbour.

The outcome of these three scenarios was that the study area would likely need an additional 634 to 1,413 swing moorings and 585 to 1,316 additional marina berths over the period from 2015 to 2041. As a result, the study area would likely need between 91 to 202ha of additional water-space to accommodate the additional swing moorings to 2041, while only nine to 21ha of water-space would likely be needed for the additional marina berths.

1.

Introduction

HillPDA was commissioned by Pittwater Council (Council) and Transport NSW to undertake an economic review of local marine industries and project the demand for boat storage by category type (swing mooring, wet berth and dry storage) within the Pittwater waterway catchment (study area).

Pittwater's marine industries contribute to Pittwater's local economy by creating opportunities for employment, production of goods and services, while stimulating other sectors of the economy.

To help Council and the local community better understand this contribution and the pressures on marine industries, the objectives of this study are as follows:

- Undertake a demographic review of Pittwater and Warringah LGAs. This is economic focused in nature;
- Quantify the contribution marine industries contribute to the local economy; and
- Undertake a review of the current supply and projected demand for private vessel storage within the study area.

Study scope

The types of commercial marine related activities reviewed within this study included:

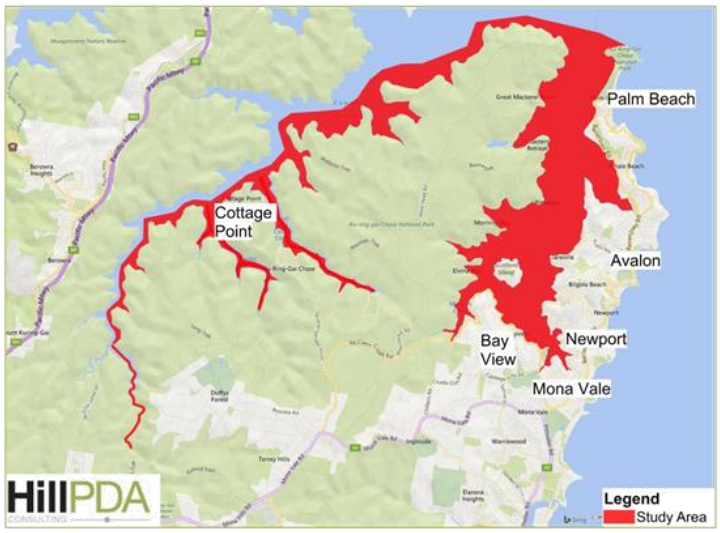
- Marinas;
- Shipwrights and maintenance;
- Water transport, freight and passenger transport;
- Fishing and aquaculture;
- Tourism;
- Recreational fishing;
- Other industries such as sea plane tours, kayaking facilities, paddle boarding facilities.

Study area

The study area is located within the Local Government Area (LGA) known as Pittwater and covers approximately 18km². Furthermore the study area is bounded by Winji Jimmi bay in the south east, McCarrs Creek in the south west and West Head and Barrenjoey Head in the north.

As part of the recent announcement by the State Government relating to council amalgamations, the study area has been expanded to include the waterways adjoin Warringah LGA. This expanded area incorporates the coastal waterways of Cowan Creek, Cottage Point, Coal and Candle Creek, Akuna Bay and Smiths Creek (Figure 1).

Figure 1 - Study Area

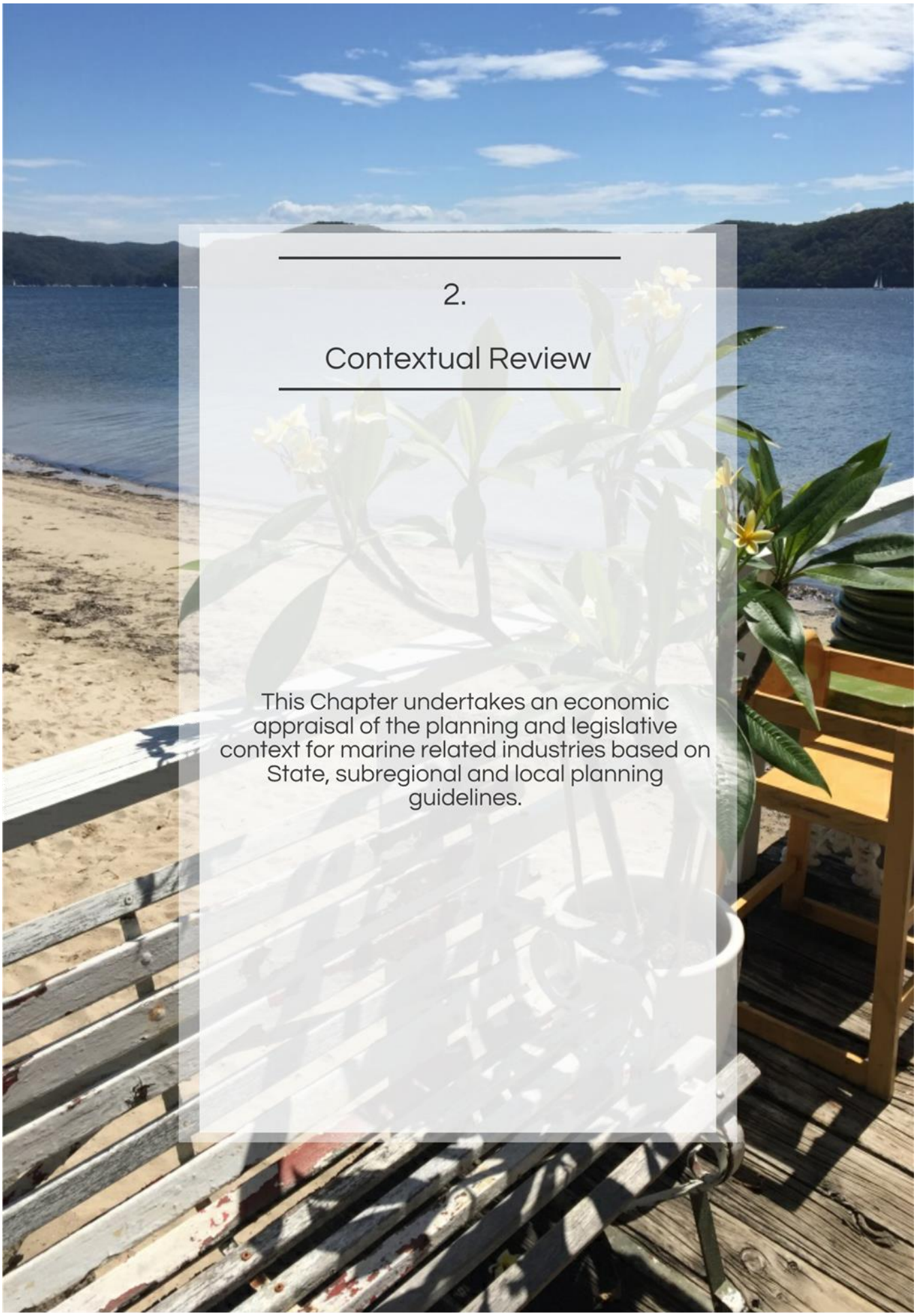


Source: HillPDA, MapInfo

Study structure

To meet the requirements of the project brief and fully consider the economic contribution and future infrastructure need (in terms of boat storage), the study is set out in the following manner:

- **Chapter 2|** undertakes a contextual review of planning and legislative policies of relevance to marine industries and boat usage patterns within the study area;
- **Chapter 3|** undertakes a high level assessment of the socio-demographic characteristics of the study area, with particular focus on characteristics that would influence further level of boat ownership;
- **Chapter 4|** provides commentary on consultation with local industry representatives;
- **Chapter 5|** assesses the economic contribution that marine industries contribute to the local study area economy; and
- **Chapter 6|** undertakes a review of boat ownership patterns and current levels of boat storage within the study area. This analysis is used with State boating projections to forecast the level of boat storage within the study area by specific types.



2.

Contextual Review

This Chapter undertakes an economic appraisal of the planning and legislative context for marine related industries based on State, subregional and local planning guidelines.

Literature Key Findings

Regional policies such as the Regional boating Plan and the 2010 NSW Boat Storage Forecasts Study have identified that the Hawkesbury River, Pittwater, and Brisbane Water Region (the Region) contained the highest proportion in NSW of boats above six metres in length. Boats of this category need to be stored predominately in on-water berths.

This highlights the pressure that is currently present on existing storage facilities and boating infrastructure within the area. This is further evident as marinas within the study area are already experiencing high occupancy rates and long waiting lists for on-water berths.

As such, there is reasonable evidence that an increase in the number of on-water berths is required to meet the current and future demand for boat usage and storage within the Hawkesbury River, Pittwater, and Brisbane Water Region. This projected growth in usage is forecasted as high as +67% or an additional 5,863 boats over six metres between 2009 and 2026 with the majority requiring on water storage[5].

These policies also highlight the high quantum of boating trailers being parked in residential streets, as on-water storage berths are occupied.

The community consultation which contributed to the preparation of the regional policies, highlighted community concerns regarding boat storage and facilities within the area. These concerns included:

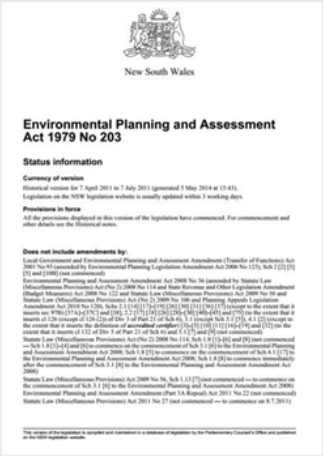
- The low maintenance and minimal amenities available at boating facilities;
- The demand for larger marina berths to accommodate larger boats; and
- The need to phase out swing moorings in favour of berths and dry storage[6].

A 2009 study undertaken by HillPDA found that usage of boats greater than six metres could grow by 61% from 2008 to 2031, representing an increase of about 22,000 boats over the period. This predicted increase in boat usage would result in the potential demand for an additional 16,500 storage spaces by 2031 within NSW,

[5] NSW Maritime 2010, NSW Boat Ownership and Storage: Growth Forecasts to 2026
[6] Transport for NSW 2015, Regional Boating Plan, Hawkesbury River, Pittwater and Brisbane River Region

of which 2,068 would be needed in the Hawkesbury / Broken Bay Region[7].

Environmental Planning and Assessment Act 1979


New South Wales

Environmental Planning and Assessment Act 1979 No 203

Status information

Currency of version

Historical version for 7 April 2011 to 7 July 2011 (generated 5 May 2014 at 15:43).
Legislation on the NSW legislation website is usually updated within 3 working days.

Provisions in force

All the provisions displayed in this version of the legislation have commenced. For commencement and other details see the Historical notes.

Does not include amendments by:

Local Government and Environmental Planning and Assessment Amendment (Transfer of Functions) Act 2001 No 93 (amended by Environmental Planning Legislation Amendment Act 2008 No 123), Sch 2.[2] [3] [5] [3] and [108] (not commenced)

Environmental Planning and Assessment Amendment Act 2008 No 36 (amended by Statute Law (Miscellaneous Provisions) Act (No 2) 2008 No 114 and State Revenue and Other Legislation Amendment (Budget Measures) Act 2008 No 122 and Statute Law (Miscellaneous Provisions) Act 2009 No 56 and Statute Law (Miscellaneous Provisions) Act (No 2) 2009 No 106 and Planning Appeals Legislation Amendment Act 2010 No 120), Sch 2.1 [14] [17]-[19] [26] [30] [31] [36] [37] (except to the extent that it inserts sec 97B) [37A]-[37C] and [38], 2.2 [57] [58] [58] [58]-[58] [40]-[45] and [75] (to the extent that it inserts cl 126 (except cl 126 (2)) of Div 3 of Part 21 of Sch 6), 3.1 (except Sch 3.1 [5]), 4.1 [2] (except to the extent that it inserts the definition of **accredited certifier**) [3a-c] [14] [11] [14]-[19] and [32] (to the extent that it inserts cl 132 of Div 5 of Part 21 of Sch 6) and 5.1 [7] and [9] (not commenced)

Statute Law (Miscellaneous Provisions) Act (No 2) 2008 No 114, Sch 1.8 [1]-[6] and [8] (not commenced — to commence on the commencement of Sch 3.1 [6] to the Environmental Planning and Assessment Amendment Act 2008)

Environmental Planning and Assessment Amendment Act 2008, Sch 1.8 [7] to commence on the commencement of Sch 4.1 [17] to the Environmental Planning and Assessment Amendment Act 2008; Sch 1.8 [8] to commence immediately after the commencement of Sch 3.1 [6] to the Environmental Planning and Assessment Amendment Act 2008)

Statute Law (Miscellaneous Provisions) Act 2009 No 56, Sch 1.13 [7] (not commenced — to commence on the commencement of Sch 3.1 [6] to the Environmental Planning and Assessment Amendment Act 2008)

Environmental Planning and Assessment Amendment (Part 3A Repeal) Act 2011 No 22 (not commenced)

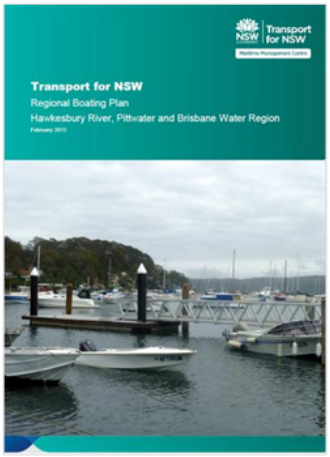
Statute Law (Miscellaneous Provisions) Act 2011 No 27 (not commenced — to commence on 8.7.2011)

This version of the legislation is compiled and maintained in a database of legislation by the Parliamentary Counsel's Office and published on the NSW legislation website.

The objects of the Act that are relevant to this study are as follows:

- The proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment; and
- The promotion and co-ordination of the orderly and economic use and development of land.

Regional Boating Plan, Hawkesbury River, Pittwater and Brisbane Water Region (2015)



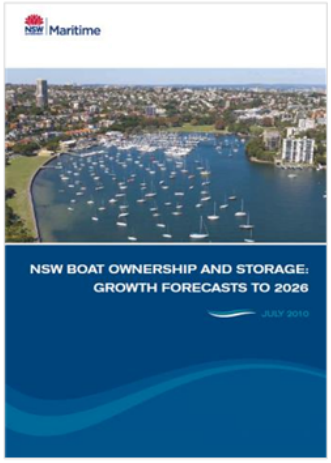
Transport for NSW is currently in the process of developing a number of Regional Boating Plans with the aims of improving the experience of boating across NSW. Of relevance to this study is the Regional Boating Plan, Hawkesbury River, Pittwater and Brisbane Water Region (the Plan). The Hawkesbury River, Pittwater and Brisbane Water Region covered nine council, these were Gosford, Hawkesbury, Camden, Pittwater, Ku-ring-gai, Hornsby, The Hills Shire, Penrith and Warringah councils. The Plan identifies priority projects and actions to keep the waterways safe, improve accessibility, address storage constraints and enhance the overall boating experience within the Hawkesbury River, Pittwater and Brisbane Water Region.

In relation to this study the Plan found that:

- As of 12/03/2014 there were approximately 103,000 boat licence holders in the Hawkesbury River, Pittwater and Brisbane Water Region, representing 19% of all boating licences within NSW;

[7] HillPDA 2009, Boat Ownership and Storage Study for NSW

- The Region contained the highest proportion (25%) of boats over 6m within NSW, this category is predominantly stored in on-water berths or swing moorings;
- There were over 41,000 boats registered in the Region with this number increasing due to a large number of visitor boats throughout the year;
- There was an estimated 8,500 storage spaces on water or at associated facilities within the Region, with an additional 300 dry storage spaces;
- A large proportion of registered recreational boats in NSW are within this Region, with the proportion over 6 metres boats increasing considerably between 1999 to 2009, resulting in a high demand for on-water storage;
- The region requires a balanced combination of additional on-water and dry storage options;
- The high demand for additional on-water boating storage within the region is demonstrated in the long waiting lists, high occupancy rates, dinghy storage waiting lists and the high prevalence of boat trailers parked in residential streets;
- The high demand for boat storage spaces within the Pittwater area has often led to conflict; and
- The community is concerned with the low maintenance and minimal amenities available at boating facilities, the demand for larger marina berths to accommodate larger boats and the need to phase out swing moorings in favour of berths and dry storage.



NSW Boat Ownership and Storage: Growth Forecasts to 2026 (2010)

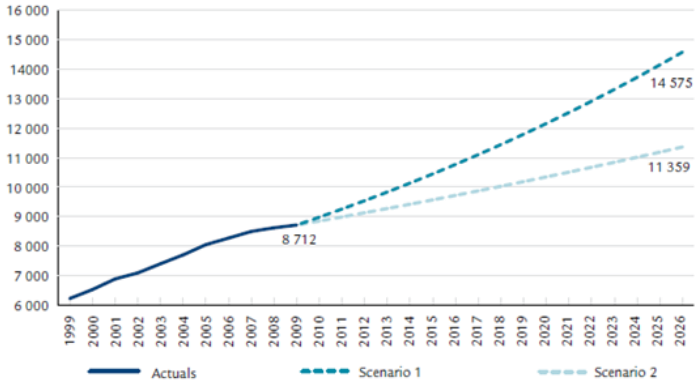
In 2010, the then NSW Maritime undertook a study to project boat ownership and storage within NSW to 2026. Of relevance the Study undertook boat growth forecasts within the Hawkesbury/Broken Bay Region (of which Pittwater is included). The Study found that in 2009 there were 43,935 boats registered within the region of which 8,712 or 20% were boats over 6 metres in 2009.

Projections of boats over 6 metres were achieved through two methods, these were a linear[8] and a population based method. The results forecast that between 2009 and 2026 boats over six metres would increase by 5,854 boats (+67%) or by 2,658 boats (+30%)

[8] The Study suggests the linear method to be the more "superior" method due to the assumptions and lack of data in the population method.

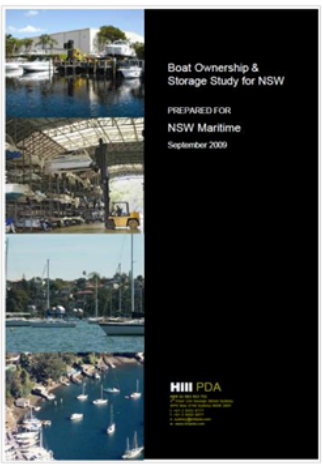
respectively. This Study highlights that boats over six metres within the region are forecast to increase dramatically. Under Scenario 1 (linear growth method), an additional 5,683 boats would require on-water or near-water storage. This increase would put pressure on existing on water storage facilities.

Figure 2 - Projected Increase in Boats over 6 Metres to 2026



Source: NSW Boat Ownership and Storage: Growth Forecasts to 2026

Boat Ownership and Storage Study for NSW



In 2009 HillPDA was commissioned by the then NSW Maritime to undertake a study to quantify the number and types of boats currently stored in NSW, and forecast future trends in storage demand and types.

At the time of the Study, vessel registrations for boats greater than 6 metres were projected to grow by 61% from 2008 to 2031.This was an increase of about 22,000 boats over 23 years. This would be the result of regional growth in registrations for this range of boats of 78% on the North Coast, 80% in Newcastle / Central West, 53% in the Hawkesbury / Broken Bay, 45% in Sydney, 88% on the South Coast and 79% for Murray Inland.

The Study further suggested that the growth in the number of boats would result in potential demand for an additional 16,500 storage spaces by 2031 in NSW. This would be distributed as an additional 2,275 spaces on the North Coast, 4,568 in Newcastle/Central West, 2,068 in the Hawkesbury / Broken Bay (this includes Pittwater LGA), 2,333 in Sydney, 4,127 on the South Coast, 772 for Murray Island and 396 not allocated.

Pittwater Economic Development Plan 2012-2016

Discussion Paper 5: Strengthening the Local Economy of the Pittwater Economic Development Plan 2012-2016, is a paper concerned with developing a framework to strengthen the Pittwater local economy. The aim of the paper is to support local business, make sure businesses are able to remain competitive and support and enable more local residents to work locally rather than commuting long distances for employment.

The Pittwater local economy is comprised of around 8,500 businesses, and contains a workforce of around 24,000 people with around 16,500 jobs being located in the area.

Of relevance to this study are the strategic directions for Council to strengthen the Pittwater economy. These directions include:

- Ensuring that local land resources and planning instruments can accommodate demand for commercial, retail and industrial activities in ways that contribute to Pittwater as a sustainable economy;
- Making a commitment to high-quality service to local businesses, including responding efficiently to development applications, one-stop-shop services to businesses, and aligning plans with investment opportunities in sustainable activities; and
- Planning and developing local infrastructure that supports a vibrant economy.

The Australian marina industry

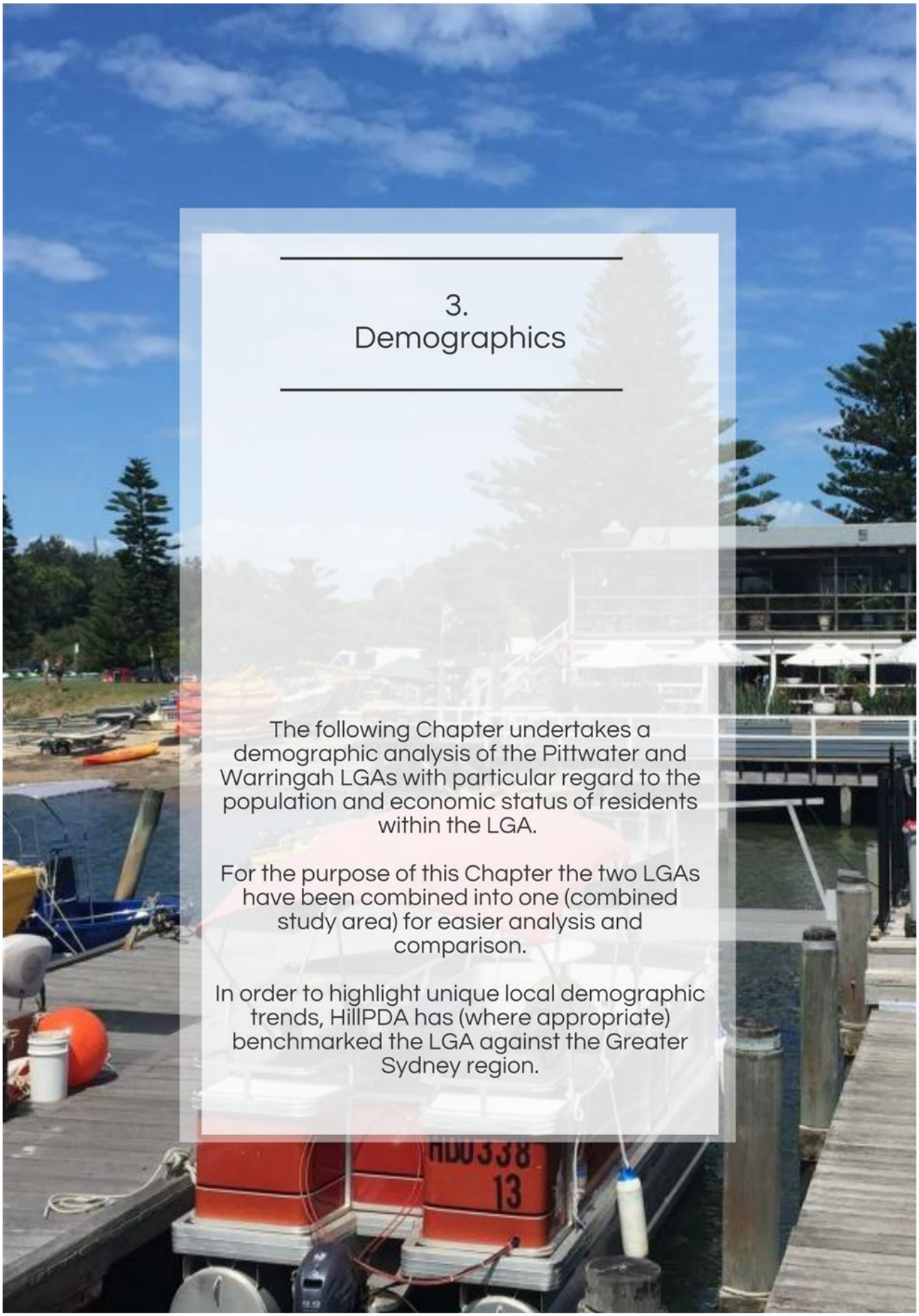
In 2012/13 period the total gross turn over by Australian marinas was $1.4 billion or $4.1 million per marina[9]. A total 10,500 people had employment at Australian marinas with 96% of marinas projecting same or more employment in 2013-14. Boating storage was a core economic function of marinas with the provision of 69,000 storage spaces for an estimated seven percent of all Australian boats. Marinas are also providing environmental leadership with marinas spending on average $9,843[10] on new or improved environmental protection or enhancement of facilities and technologies. This research reveals that marinas are making a valuable contribution to the local and national economy and environmental sustainability

[9] Marina Industries Association - https://www.marinas.net.au/
[10] 2013 Health of the Australian Marina Industry Survey of 347 marinas

through their economic, employment, social, recreational and environmental contributions.

Further to this in 2012/13 the Marina Industries Association of Australia undertook the Australian Marina Value Study. The conclusions of this study were as follows:

- Marinas are an important stimulus for economic development at the local and regional scale;
- Marinas provide a significant community benefit;
- Marinas paid $100m in taxes;
- Employed 10,500 persons;
- Boat storage demand across Australia exceeds supply; and
- Capital investment planned by survey participants exceeded $107m.



3. Demographics

The following Chapter undertakes a demographic analysis of the Pittwater and Warringah LGAs with particular regard to the population and economic status of residents within the LGA.

For the purpose of this Chapter the two LGAs have been combined into one (combined study area) for easier analysis and comparison.

In order to highlight unique local demographic trends, HillPDA has (where appropriate) benchmarked the LGA against the Greater Sydney region.

Demographic Findings

Population demographics

Despite the population of the combined study area increasing at a rate in line with the wider Greater Sydney region, the area has witnessed a decline within persons aged 18-34 (-5,243 persons or -15%), or its young workforce cohort[11] between 2001 and 2011.

Given the high containment rate of persons living and working in the same study areas LGA boundary, it is important to protect and encourage employment opportunities for persons entering the workforce.

The age cohorts that have experienced the greatest increase have been those of 35 to 49 years and 60 to 69 years. The 35 to 49 years age cohort is referred to as the parents / home builders. Informal interviews with local marina operators identified this as a prime age for persons entering the boat market.

The 60 to 69 years age cohort is referred to as empty nesters and retirees whom are more likely to have disposable income and are looking for leisure activities such as sailing.

This age group are more likely to increase the demand for marina berths, as they tend to want convenient access with "hassle-free" berthing options and club facilities.

Population forecasts suggest that the trend towards an ageing population will continue, which is in line with the Greater Sydney region. Residents aged over 50 years are projected to increase by 28,400 persons or 40% (2011-31) within the study area. This would likely place further demand on the need for "hassle-free" berthing options, which marina berths could provide.

Furthermore, residents aged 15-24 years are projected to increase by 6,350 persons or 27%. Considering general trends associated with the wider working population, this age group maybe looking for employment opportunities close to home. Some marine related industries have the capacity to provide persons entering the workforce with employment opportunities close to their place of residence, which is reiterated through the industry workplace containment rate.

[11] ABS Census 2011

Employment and income

Since 2001, residents within the combined study area have increasingly attained a non-school qualification. This has corresponded with an increased rate of residents being employed within "white collar"" occupations and employed within industries related to: retail, health care and social assistance and professional, scientific and technical services.

The higher rate of residents within "white collar" occupations is reflective in the area's higher average household earning potential ($90,720), which is 15% higher than that of Greater Sydney households ($75,088)[12].

The study area generates approximately 70,000 jobs as at 2011. Of available jobs, 73% (51,000) are filled by residents that live in the study area, highlighting a significantly high containment rate.

The two industries that proportionally had the highest containment rate were manufacturing (62%) and accommodation and food services (67%). These two industries are linked to marine related services (explained further in the following Chapter). This may reveal that marine related industries play a key role in providing employment opportunities for local residents.

The combined study area is forecast to accommodate an additional 21,200 jobs between 2011 and 2031[13]. Using the local resident take up rate (73%) for jobs within the study area, of the total employment growth, 15,446 jobs could be occupied by local residents. Local industries such as marine industries could help accommodate this growth and provide opportunities for residents to live and work close to home.

Population and Age Demographics

Total population growth (2003-2014)

Between 2003 and 2014 the population of the combined study area increased by 26,994 persons or by a proportion of 14.1%, representing an annual increase of 1.21%.

This proportional growth was slightly below that of the wider Greater Sydney region which experienced a 15.3% growth over the period.

[12] ABS Census 2011
[13] BTS Employment Projections 2014

Table 3 – Population growth 2003 - 2014

	2003	2014	Total change	% change	Annual increase
Pittwater	55,837	63,338	7,501	13.4%	1.15%
Warringah	135,796	155,289	19,493	14.4%	1.23%
Combined study area	**191,633**	**218,627**	**26,994**	**14.1%**	**1.21%**
Greater Sydney	4,198,543	4,840,600	642,057	15.3%	1.30%

Source: Forecast ID, ABS Time Series Data

Age composition (2001-2011)

Over the period between 2001 and 2011 the combined study area witnessed a significant decrease in the total number of residents within the age cohort of 18 to 34 years (-5,243 persons or -23%). As a proportion of the total population this age cohort decreased from a total proportion of 23% to 19% over the period (-4%).

The age cohorts that witnessed the greatest growth in terms of total number and proportional change were the age cohorts of 35 to 49 years and 60 to 69 years (parents and homebuilders and empty nesters and retirees), which increased by a total of 9,981 persons or 45%.

Table 4 - Age composition (combined study area)

	Pittwater LGA				Warringah LGA				Combined study area	
Age structure - Service age groups	2001		2011		2001		2011		Difference 2001-2011	% change 2001-2011
	#	%	#	%	#	%	#	%		
Babies and pre-schoolers (0 to 4)	3,381	6%	3,825	7%	8,376	6%	10,214	7%	2,282	19%
Primary schoolers (5 to 11)	5,041	9%	5,402	9%	11,034	9%	13,028	9%	2,355	15%
Secondary schoolers (12 to 17)	4,098	8%	4,427	8%	8,910	7%	9,892	7%	1,311	10%
Tertiary education and independence (18 to 24)	4,311	8%	4,063	7%	11,208	9%	10,186	7%	-1,270	-8%
Young workforce (25 to 34)	6,618	12%	4,851	8%	20,275	16%	18,069	13%	-3,973	-15%
Parents and homebuilders (35 to 49)	12,690	24%	12,656	22%	28,886	22%	34,069	24%	5,149	12%
Older workers and pre-retirees (50 to 59)	7,471	14%	8,401	15%	15,941	12%	16,546	12%	1,535	7%
Empty nesters and retirees (60 to 69)	4,428	8%	6,896	12%	10,536	8%	12,900	9%	4,832	32%
Seniors (70 to 84)	4,490	8%	5,113	9%	11,833	9%	11,961	8%	751	5%
Elderly aged (85 and over)	1,052	2%	1,520	3%	2,492	2%	3,876	3%	1,852	52%
Total	**53,580**	**100%**	**57,154**	**100%**	**129,491**	**100%**	**140,741**	**100%**	**14,824**	**8%**

Source: Forecast ID

Non-school qualifications (2001-2011)

Over the period between 2001 to 2011, the resident population of the combined study area increasingly attained a non-school qualification.

This was evident in the increasing proportion of residents attaining a non-schooling qualification at a certificate level and above, with 46% in 2001 increasing to 56% in 2011.

The proportion of residents attaining a non-school qualification in 2011 was also significantly higher than that of the Greater Sydney Area (47%).

Table 5 - Non-School Qualifications

	Combined study area				Greater Sydney
Qualification level	2001		2011		2011
	#	%	#	%	%
Postgraduate Degree Level	3,752	3%	7531	5%	6%
Graduate Diploma and Graduate Certificate	2,296	2%	3140	2%	2%
Bachelor Degree Level	19,159	13%	29168	19%	17%
Advanced Diploma and Diploma Level	13,434	9%	18839	12%	9%
Certificate Level	27,248	18%	27,256	17%	15%
Total	**67,890**	**46%**	**87,945**	**56%**	**47%**

Source: ABS Time Series Data, proportions measured against resident population over 15 years

Population projections 2014-2031

The population of the combined study area is projected to increase by 38,573 persons or 17.6% over the period between 2014 and 2031, representing an annual growth of 0.96%.

In comparison, the wider Greater Sydney region is projected to increase by over 1 million persons or 21.1% over its estimated 2014 resident population, representing an annual growth of 1.13%.

This higher growth rate projected for Greater Sydney would be expected as priority precincts primary around rail and other transit nodes have been identified to accommodate higher density living.

However, a closer look at Pittwater LGA reveals that it is projected to increase at a slightly greater proportion (22.5%) than Greater Sydney.

Table 6 - Population projections 2014-2031

	2014	2031	Total change	Change %	Annual increase
Pittwater	63,338	77,600	14,262	22.5%	1.20%
Warringah	155,289	179,600	24,311	15.7%	0.86%
Combined study area	**218,627**	**257,200**	**38,573**	**17.6%**	**0.96%**
Greater Sydney	4,840,600	5,861,850	1,021,250	21.1%	1.13%

Source: *Forecast ID, ABS, Department of Planning 2014 projections and HillPDA

Age composition forecasts

The study areas' population is forecast to continue to reflect that of an ageing population. This is evident in the proportion of residents aged 70+ years, which are forecast to increase by 66% over the period. This trend is in line with Greater Sydney which is also forecast to experience rapid growth in older cohorts.

However, within the combined study area residents aged 15-24 years are projected to increase by the fourth largest proportion (+ 6,350 persons or 27%). This age cohort typically would be looking for work, which would ideally be located close to home.

The empty nesters, retirees, the older workers and pre-retirees cohort (50-69 years) are forecast to increase by 13,100 persons or 28% over the period. This age cohort would likely be the primary group with expendable capital and time for luxury items such as yachts.

Table 7 - Forecast Age Composition

	Combined study area						Greater Sydney total % growth 11-31
	2011		2031		Total growth 11-31	Total % growth 11-31	
	#	%	#	%			
0-14 years	40,800	20%	47,850	19%	7,050	17%	39%
15-24 years	23,450	11%	29,800	12%	6,350	27%	23%
25-34 years	25,550	12%	27,100	11%	1,550	6%	16%
35-49 years	48,850	23%	53,700	21%	4,850	10%	34%
50-59 years	26,200	13%	32,800	13%	6,600	25%	32%
60-69 years	20,800	10%	27,300	11%	6,500	31%	47%
70-84 years	17,850	9%	29,000	11%	11,150	62%	98%
85+ years	5,460	3%	9,600	4%	4,150	76%	107%
Total	**208,950**	**100%**	**257,150**	**100%**	**48,200**	**23%**	**37%**

Source: Department of Planning Population Forecasts 2014

Employment and Income

As of 2011 there were approximately 70,000 jobs within the combined study area. Of these the top two employment industries were retail trade (9,849 jobs or 14%) and healthcare and social assistance (7,732 jobs or 11%).

Manufacturing, wholesale trade and professional, scientific and technical services all rounded up the third highest employment industries (9%, 9.7% and 9.5% respectively).

Table 8 - Employment by Industry 2011

	Total employment	% of total
Agriculture, Forestry and Fishing	170	0.2%
Mining	53	0.1%
Manufacturing	6,285	9.0%
Electricity, Gas, Water and Waste Services	389	0.6%
Construction	5,610	8.0%
Wholesale Trade	6,773	9.7%
Retail Trade	9,849	14.1%
Accommodation and Food Services	4,699	6.7%
Transport, Postal and Warehousing	1,502	2.1%
Information Media and Telecommunications	1,325	1.9%
Financial and Insurance Services	1,555	2.2%
Rental, Hiring and Real Estate Services	1,349	1.9%
Professional, Scientific and Technical Services	6,621	9.5%
Administrative and Support Services	2,019	2.9%
Public Administration and Safety	2,005	2.9%
Education and Training	5,707	8.2%
Health Care and Social Assistance	7,732	11.1%
Arts and Recreation Services	1219	1.7%
Other Services	3318	4.7%
Inadequately described	1131	1.6%
Not stated	641	0.9%
Total		**100.0%**

Source: BTS JTW Data 2011, Table 8

Resident labour force by occupation

Within the combined study area, residents are more likely to be employed within "white collar" occupations (42%) compared to the Greater Sydney region (37%).

"White collar" occupations proportionally increased over the last three census periods with "blue" and "yellow" collar occupation decreasing over the period.

This trend towards a more professional "white collar" labour force is reflective of the wider Greater Sydney region and an outcome of increased non-school qualification attainment rates discussed above.

Furthermore, unemployment within the combined study area has remained significantly below that of the Greater Sydney region.

Table 9 – Labour force by occupation

	Combined study area		Greater Sydney
	2001	2011	2011
White – professional services	37%	42%	37%
Blue collar – trade and technical jobs	24%	21%	24%
Yellow - Community & sales*	35%	33%	33%
Unemployment	**3.4%**	**3.5%**	**5.9%**

Source: ABS Time Series (not including not sated),*includes community and personal service workers, clerical, administrative and sales workers

Resident labour force industry of employment

The three largest industries that residents were employed within as of 2011 were professional, scientific and technical services; health care and social assistance; and retail, which when combined, employed 32,417 or 33% of residents. The growth industries between 2001-2011 however, were education and training; professional, scientific and technical services; and health care and social assistance.

It must also be noted that as of 2011, 15,050 or 15% of employed residents worked within industries that incorporated marine related services. These industries are manufacturing; transport, postal and warehousing and accommodation and food services.

Table 10 - Resident labour force industry of employment (2001-11)

Industry	Combined study area						Greater Sydney total % growth 11-31
	2001		2011		Growth 01-11	% Growth 01-11	
	#	%	#	%			
Agriculture, forestry and fishing	386	0.4%	224	0.2%	-162	-42%	0.2%
Mining	78	0.1%	147	0.1%	69	88%	0.1%
Manufacturing	8,663	9.2%	6,681	6.7%	-1,982	-23%	6.7%
Electricity, gas, water and waste services	710	0.8%	696	0.7%	-14	-2%	0.7%
Construction	7,676	8.2%	8,786	8.8%	1,110	14%	8.8%
Wholesale trade	6,187	6.6%	6,553	6.6%	366	6%	6.6%
Retail trade	10,846	11.5%	10,163	10.2%	-683	-6%	10.2%
Accommodation and food services	4,981	5.3%	5,430	5.5%	449	9%	5.5%
Transport, postal and warehousing	3,439	3.7%	2,939	3.0%	-500	-15%	3.0%
Information media and telecommunications	4,232	4.5%	3,585	3.6%	-647	-15%	3.6%
Financial and insurance services	5,364	5.7%	5,982	6.0%	618	12%	6.0%
Rental, hiring and real estate services	2,073	2.2%	2,173	2.2%	100	5%	2.2%
Professional, scientific and technical services	10,687	11.4%	11,924	12.0%	1,237	12%	12.0%
Administrative and support services	3,882	4.1%	3,716	3.7%	-166	-4%	3.7%
Public administration and safety	3,464	3.7%	4,182	4.2%	718	21%	4.2%
Education and training	6,093	6.5%	7,817	7.9%	1,724	28%	7.9%
Health care and social assistance	7,836	8.3%	10,330	10.4%	2,494	32%	10.4%
Arts and recreation services	1,404	1.5%	1,776	1.8%	372	26%	1.8%
Other services	4,221	4.5%	4,071	4.1%	-150	-4%	4.1%
Inadequately described/Not stated	1,871	2.0%	2,345	2.4%	474	25%	2.4%
Total	**94,093**	**100%**	**99,520**	**100%**	**5,427**	**6%**	**13%**

Source: ABS Time Series

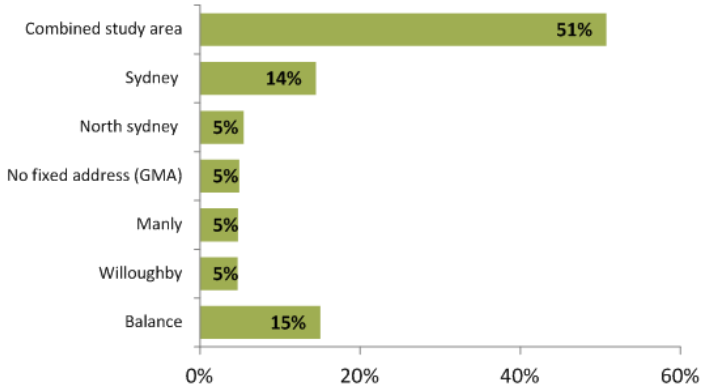
Residents place of work

Of the approximately 100,000 employed residents, 51% lived and worked within the combined study area (containment rate). This containment rate is compared to 21% for Mosman LGA, 23% for Manly LGA and 28% for Hornsby LGA.

A further 25% worked within local LGAs such as North Sydney, Manly and Sydney.

The high containment rate within the combined study area highlights the resident lifestyle preference to live and work within the same area. This provides more time for other pursuits such as family, leisure (including boating) and community.

Figure 3 - Where do residents work (2011)



Source: BTS 2011 JTW, Table 8

Employment containment by industry

The three highest containment industries (proportionally) were retail, manufacturing and accommodation and food services.

As of 2011, 12,187 local residents were employed within these industries with 7,821 or 64% of them being employed within the combined study area.

Table 11 - Employment containment by industry 2011

	Residents employed (total)	Containment	Containment proportion
Agriculture, Forestry and Fishing	234	116	49.6%
Mining	152	38	25.0%
Manufacturing	6,713	4,155	61.9%
Electricity, Gas, Water and Waste Services	706	254	36.0%
Construction	8,847	4,136	46.8%
Wholesale Trade	6,689	3,993	59.7%
Retail Trade	10,230	7,171	70.1%
Accommodation and Food Services	5,474	3,666	67.0%
Transport, Postal and Warehousing	2,953	1,158	39.2%
Information Media & Telecommunications	3,603	911	25.3%
Financial and Insurance Services	6,075	1,256	20.7%
Rental, Hiring and Real Estate Services	2,210	1,142	51.7%
Professional, Scientific and Technical Services	12,130	5,129	42.3%
Administrative and Support Services	3,757	1,613	42.9%

Public Administration and Safety	4196	1,495	35.6%
Education and Training	7,880	4,66	54.1%
Health Care and Social Assistance	10,383	5,635	54.3%
Arts and Recreation Services	1797	990	55.1%
Other Services	4,093	2,576	62.9%
Inadequately described	1,482	804	54.3%
Not stated	885	475	53.7%
Total	**100,489**	**50,979**	**50.7%**

Source: BTS 2011 JTW, Table 8

Gross annual household income

Annual household incomes within the combined study area are comparatively higher than that of the Greater Sydney region. This higher earning potential was reflected in 35% of households earning salaries in excess of $104,000 per annum, compared to 24% for Greater Sydney.

Furthermore, the overall average household income for the combined study area was 15% higher than that of Greater Sydney in 2011. This reflects the higher proportion of "white collar" occupations within the combined study area discussed earlier.

Table 12 - Gross annual income 2011

Annual Income	Combined study area	Greater Sydney
$0 - $20,800	10%	15%
$20,800 - $41,600	14%	17%
$41,600 - $65,000	17%	16%
$65,000 - $104,000	24%	19%
$104,000 - $156000	23%	15%
$156,000+	12%	9%
Average household income	**$90,720**	**$75,088**

Source: ABS time series, HillPDA

Employment projections

Over a 20 year period from 2011, employment within the combined study area is projected to increase by approximately 21,200 jobs or 27%.

The three industries which are forecast to increase the most are health care and social assistance (+5,550 jobs), education and training (+2,243 jobs) and retail trade (+3,653 jobs or 33% increase).

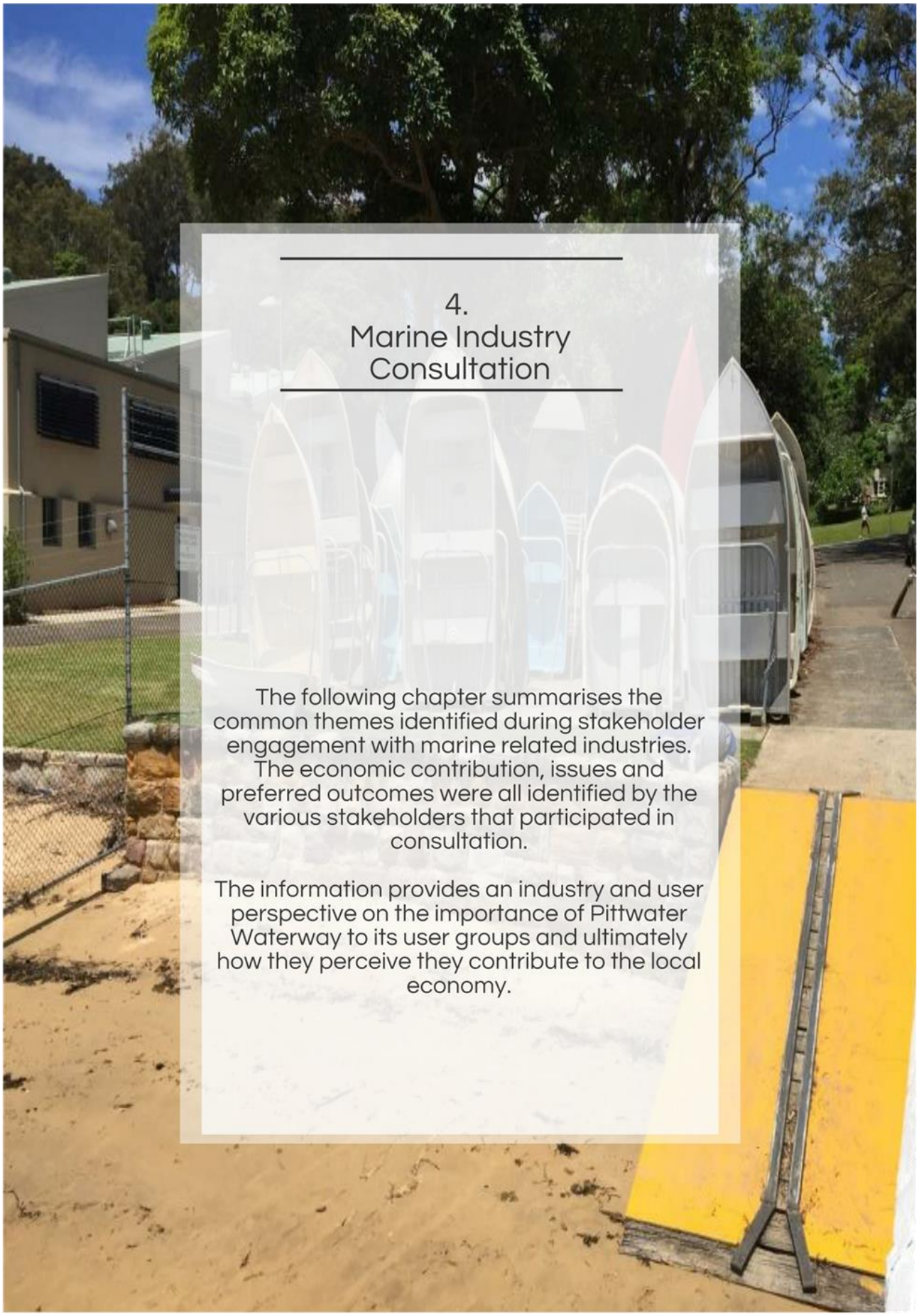
These three industries would provide an additional 11,445 jobs or 54% of total employment growth over the period.

As discussed above, it was found that 73% of jobs located within the combined study area were occupied by residents of the study area. Using this proportion as a base for the 21,200 additional jobs, 15,446 could be filled by local residents.

Table 13 - Employment projections by industry 11-31

	Combined study area			
	2011	2031	Total growth	% growth
Agriculture, Forestry & Fishing	192	188	-4	-2%
Mining	56	70	14	25%
Manufacturing	7,103	7,958	855	12%
Electricity, Gas, Water & Waste Services	429	556	127	30%
Construction	6,374	7,617	1,243	20%
Wholesale Trade	7,670	9,230	1,560	20%
Retail Trade	11,116	14,769	3,653	33%
Accommodation & Food Services	5,375	6,908	1,533	29%
Transport, Postal & Warehousing	1,692	2,063	371	22%
Information Media & Telecommunications	1,451	1,694	243	17%
Financial & Insurance Services	1,786	2,172	386	22%
Rental, Hiring & Real Estate Services	1,515	1,938	423	28%
Professional, Scientific & Technical Services	7,465	8,114	649	9%
Administrative & Support Services	2,251	2,541	290	13%
Public Administration & Safety	2,286	2,971	685	30%
Education & Training	6,486	8,729	2,243	35%
Health Care & Social Assistance	8,751	14,300	5,549	63%
Arts & Recreation Services	1,389	1,594	205	15%
Other Services	3,774	4,611	837	22%
Unclassified	2,034	2,331	297	15%
Total	**79,195**	**100,354**	**21,159**	**27%**

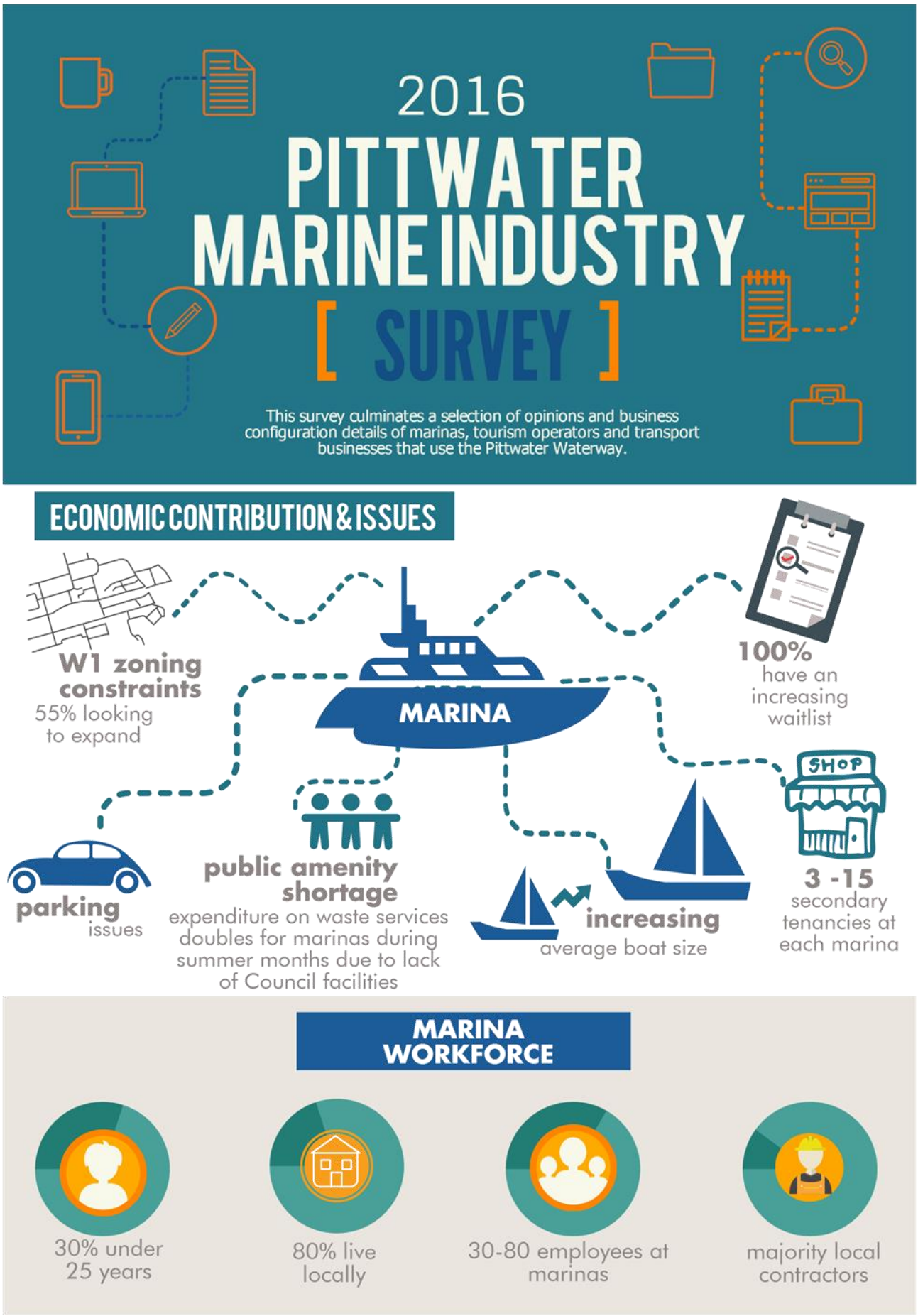
Source: BTS Employment Projections 2014



4. Marine Industry Consultation

The following chapter summarises the common themes identified during stakeholder engagement with marine related industries. The economic contribution, issues and preferred outcomes were all identified by the various stakeholders that participated in consultation.

The information provides an industry and user perspective on the importance of Pittwater Waterway to its user groups and ultimately how they perceive they contribute to the local economy.


2016
PITTWATER MARINE INDUSTRY
[SURVEY]
This survey culminates a selection of opinions and business configuration details of marinas, tourism operators and transport businesses that use the Pittwater Waterway.
ECONOMIC CONTRIBUTION & ISSUES
W1 zoning constraints
55% looking to expand
MARINA
100%
have an increasing waitlist
SHOP
3 -15
secondary tenancies at each marina
parking
issues
public amenity shortage
expenditure on waste services doubles for marinas during summer months due to lack of Council facilities
increasing
average boat size
MARINA WORKFORCE
30% under 25 years
80% live locally
30-80 employees at marinas
majority local contractors

ECONOMIC CONTRIBUTION & ISSUES

TRANSPORT & RECREATION

event traffic
events need to be better advertised to enable businesses to inform clients

High demand
for water and equipment transport services

Private moorings
create congestion on the waterway

Tourism operations
facilitate indirect contributions to the wider local economy

Wash Zones
low speed zones need to be regulated for safety reasons

TRANSPORT & RECREATION WORKFORCE

20% full time
80% part time or casual

majority of businesses have 1-8 employees

majority of employees live locally

65% under 25 years

GENERAL FEEDBACK

- Majority of users were happy with the management of Pittwater Waterway.
- Marinas would like to see more expansion opportunities and less red tape.
- High workforce containment rate within the study area with majority of employees and contractors from the local catchment.
- All businesses say that they would benefit from Pittwater being promoted as more of a tourist destination.

SOURCE: HillPDA 2016 - Stakeholder Engagement Consultation Summary

This Chapter summarises the common themes identified during stakeholder engagement with marine related industries. The economic contribution, issues and preferred outcomes were all identified by the various stakeholders that participated in consultation. Views within this Chapter do not reflect those of HillPDA or stakeholders that did not participate. Comments have been categorised into two stakeholder groups:

1. Marina industries; and
2. Transport and recreation industries i.e. ferries, sea plane, kayaking.

These cross-sections provide an industry and user perspective on the importance of Pittwater Waterway to its user groups and ultimately their perceived contribution to the local economy.

MARINA INDUSTRY

Consultation was undertaken with face to face interviews and via an online survey with representatives from nine marinas all located within the Study Area.

These marinas include:

1. Royal Prince Alfred Yacht Club;
2. Gibson Marina;
3. Royal Motor Yacht Club;
4. The Quays Marina;
5. Careel Bay Marina;
6. Bayview Anchorage;
7. Colin Beachel Marine;
8. Princess Street Marina; and
9. Holmeport Marina.

The following provides an overview of relevant issues and topics raised during consultation. Overall however, the marina stakeholders strongly believe that they significantly contribute to the Pittwater local economy and need to be further supported.

Economic contribution - Marinas

Employment

- The quantum and proximity of marinas in the study area is unique, in that their concentration and relative geographic isolation supports higher workforce retention and enhanced local contractor serviceability.
- On average, out of nine marinas involved in consultation, approximately 80% of the workforce lived in the study area. Of

these employees, on average, approximately 30% were under the age of 25 years.

- These employment statistics have both a direct and indirect positive flow-on effect with knowledge, skills and money being retained in the Region.

Growth and demand

- Over half of the marinas surveyed are currently undertaking or intend to undertake, upgrades, extensions or redevelopment projects in the form of storage expansion, berth size reconfigurations or commercial diversification (i.e. new kiosk).
- Increased demand for more and larger storage options is driving the proposals.
- The majority of stakeholders highlighted that regulatory, planning and approval processes needed to be streamlined and simplified to support the growth and prosperity of the marina industry.

Public benefit

- Over a third of the marinas surveyed identified that they currently undertake education, social or event programs that are currently available to the general public. This can include, sailing and water safety with local schools, learn to sail programs, exhibitions and events.
- The majority of the marinas currently allow public access and use of facilities, including access by emergency services when required.

Secondary commercial operations

- The majority of stakeholders indicated that they had a secondary tenancy operating on their site. The number and scale of these operations varied significantly dependent on the size of the marina.
- Large marinas identified they had between 10-15 secondary commercial operations including, café/functions, boat repairs etc.
- Smaller marinas generally had between 1-5 additional commercial operations including kiosk, fuel services etc.
- Secondary commercial operations generally had between 1-3 employees.

"$350,000 was spent by one super yacht owner in the local economy while moored at a Pittwater marina for two months over the 2015/16 summer."

Royal Motor Yacht Club, 2016

Indirect contributions

- The majority of the marinas indicated that they also indirectly contributed to the economy as their members and visitors were likely to:
  - Frequent restaurants, bars, pubs and cafes in the locality;
  - Visit and entertain friends and relatives – expenditure on ferries, air transport, groceries;
  - Convenience shop i.e. fashion, gifts, fuel, ice, alcohol;
  - Need accommodation – overnight or holiday; and
  - Undertake recreation activities – snorkelling, picnics, bushwalking, kayak tours, learning to sail, fishing etc.

Marina Industry Challenges

Reverse amenity impacts

- Issue: the majority of marinas and sailing clubs were established in the area prior to Pittwater becoming a luxury residential locality. Since the transition, marine activities are now subject to complaints relating to noise, visual amenity, land availability and access opportunity, limiting their capacity to expand and grow their operations.
- Preferred outcome: complaints are measured on their merit and due consideration is given to the economic importance of marine industry to the local economy, along with preserving the opportunity to grow their business.

Swing Mooring vs Marina Berth

- As identified by marine operators and further displayed in Figure 14, a single standard swing mooring and boat takes up eight times the space compared to a single marina berth.
- Swing moorings offer an entry level as they are a more affordable alternative compared to wet berths.
- A marina berth is three times more cost efficient to run from a marina operations perspective than a mooring ($27,000 per annum).
- Compliance issues relating to swing moorings and the need to properly and safely maintain them.

> *People are now entering the boating market with a forty foot boat. This size was considered luxury 10-15 years ago.*
>
> Prince Alfred Yacht Club, 2016

Size of boats

- In majority of cases, the marinas were built at a time when the average boat size was significantly smaller, and forty foot boats were considered a luxury. Since this time, the average size of boats is increasing and the majority of marinas do not have the facilities to cater for the bigger boats. For this reason, waiting lists are significantly high and many marinas are pushing for development permits to expand their existing marinas.
- Expansion of marina facilities to accommodate larger boats would likely require significant capital expenditure. This expense, coupled with legislation compliance obstacles, detracts from the appeal of investing in marinas and makes it more commercially unattractive.

Parking issues

- Residents and the general public are parking in the marina private carparks and preventing access for legitimate marina patrons and visitors. The increased use of these carparks by surrounding residents falsifies the actual parking demand by marina users.
- Preferred action: Council to investigate opportunities to provide more public car parking facilities around waterways to deter residents and visitors parking in marina facilities. Support and encourage appropriately designed multi-deck above ground parking to be developed by marinas.

Zoning constraints

- Current W1 zoning within the study area restricts the economic potential of marinas, preventing growth opportunities and the ability for operators to adapt and remain valid. This is exacerbated due to the growing size of boats and demand for storage.
- The marina representatives appreciate the environmental importance of the Pittwater Waterway; however suggest that zoning boundaries should remain flexible or zoning should be revised to W2.
- A buffer system was suggested that allows development proposals to be lodged as assessable development without being a prohibited use. This buffer could extend up to 50 metres around a marina. The purpose would not be for immediate

Boats stored on land at the Prince Alfred Yacht Club

Destination flag example at Ferguson Marina, Mosman

development but to safeguard water space around a marina. This would allow future expansions to accommodate both additional storage and reconfigurations as a result of increasing in boat sizes.

Dry storage land availability

- In all cases the marina representatives suggested that they have insufficient land capacity to introduce a viable dry storage solution.
- From an operational perspective, dry storage was considered both economically and spatially efficient with the capacity to provide both an entry level storage option and relieve waitlist demand.
- The concept of dry storage was favourable if land could be made available, however it was suggested that the visual impact of such a facility is likely not to be supported by the local community.

Public use of facilities

- Issue: The general public and emergency services use the marina amenity facilities without any compensation, adding operational expense to commercial marinas.
- Due to the lack of public facilities, (car parking, rubbish disposal units, pump out facilities, water, and power) the general public are accessing marina amenities, without consent, resulting in the marina organisations incurring substantial operational and service expenses. However, marina operators were willing to accommodate some of this extra expense in trade for increased "good will" and social cohesion.
- Preferred action: consider the implementation of a 'destinations plan' similar to that established for the Sydney Harbour. The Sydney Harbour Destination Plan aims to:
  - Expand the number of boating destinations on Sydney Harbour;
  - Inform boat users of boat servicing facilities, public amenities, leisure facilities and passenger access points; and
  - Provides incentives for commercial marinas to become involved in the program including potential reduction in current levies.

Waitlist

- The waitlist for all marinas, along with the waitlist for private moorings managed by RMS, suggest that there is significant demand for boating storage facilities in the study area.
- If the storage issue is not addressed, there is a higher likelihood that people may look for storage opportunity in other regions, therefore reducing potential expenditure in the local economy.

TRANSPORT AND RECREATION INDUSTRY

Consultation was undertaken face to face with all the above businesses and via an online survey by seven marine related industries all located within the study area.

These businesses include:

1. Barrenjoey Boating Services
2. Ecotreasures
3. Paddlecraft
4. Church Point Ferries
5. Scenic Seaplane Flights
6. Pittwater Aquatic Club
7. Pittwater Kayak Tours

The following provides an overview of relevant issues and topics raised during consultation. Overall however, the businesses were generally happy with how the waterway was being managed and believed that further promotion of Pittwater as a tourism destination would be favourable to their business.

Economic contribution – transport and recreation

Employment

- The businesses had between one to eight employees, of which, the majority lived in the study area.
- In most instances, 20% worked full time and 80% worked part-time or were casual. The 20% generally included the owner of the business.
- Over 65% of casual employees were under the age of 25, with a high proportion working only on the weekends.

Tourism economy

- The majority of businesses stated that they were a tourism operator or significantly contributed to the local tourism economy.

- The kayak tours and scenic flight businesses indicated that a large proportion of their clientele were from outside of the catchment and generally were overnight or holiday patrons.
- The majority of businesses said that their business would directly benefit from further promotion of the Pittwater Waterway as a tourism destination.
- The majority of the tourism related businesses indicated that they were a seasonal operation with peak demand from November to the end of April.
- Businesses generally catered for the Sydney weekend market with demand generally three times higher on the weekend than during the week.

Service economy

- A smaller proportion of operations stated that they contributed to the service economy, mainly relating to transport.
- A number of residents in the Pittwater catchment depend on water based transport to get to the mainland and subsequently rely on these businesses. Demand for these services is generally all year round.
- Businesses stated that there was a high demand for boats with the capacity to carry construction equipment and services to ferry construction workers.

Indirect economic contribution

- Indirect economic contribution was raised by the tourism and member related operations as their clients or members generally:
  - Frequent restaurants, bars, pubs and cafes in the locality;
  - Visit and entertain friends and relatives – expenditure on ferries, air transport;
  - Convenience shop i.e. fashion, gifts, fuel, ice, alcohol;
  - Need accommodation – overnight or holiday; and
  - Undertake recreation activities – snorkelling, picnics, bushwalking, kayak tours, learning to sail, fishing etc.

Recreation and Transport Industry Challenges

Reverse amenity impacts

- Complaints about noise, visual impact or wash have been received from residents regarding the operation of numerous businesses.
- Businesses were concerned that continued complaints from residents would potentially impact the longevity of their businesses, even though they have generally been operational longer than most residents have been living in the area.

Parking issues

- Parking is under increased demand in the locality and is exasperated on the weekend by day-trippers. Parking for businesses is commonly being used by the general public.
- Preferred action: Council to provide more car parking facilities around waterways to deter non-business related visitors from using business facilities.

Swing moorings

- Swing moorings are beginning to congest the waterway making it more difficult to manoeuvre ferries efficiently.
- Comments raised by numerous businesses indicated that further compliance measures need to be in place around swing moorings to ensure their safety.

Wash Zones

- Some businesses indicated that more signage for low speed zones would be preferable to their operation due to wash being a safety issue.

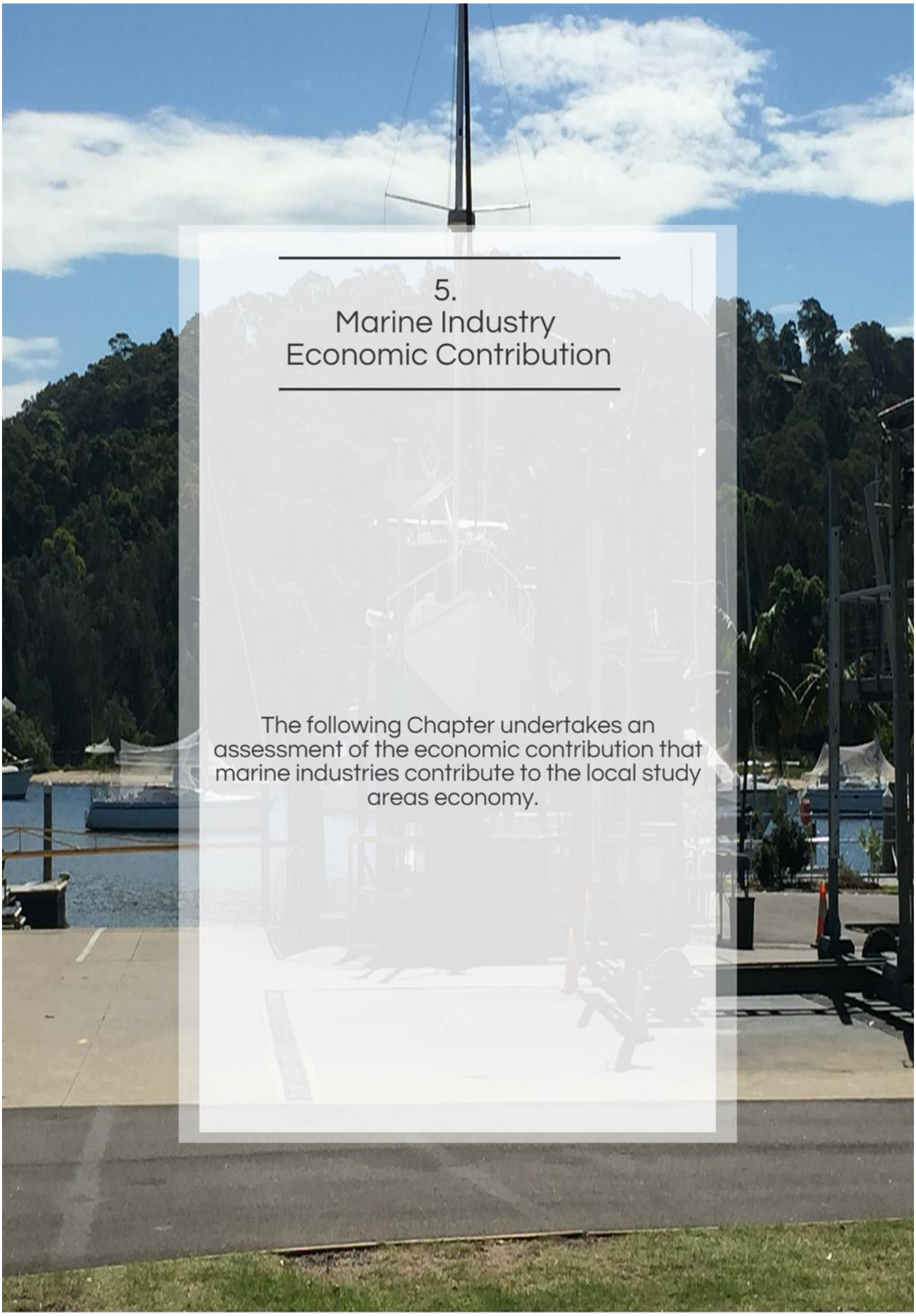
Event traffic

- The communication of events and associated traffic needs to be managed more effectively.
- Local businesses raised that surf carnivals, markets and general events in the location, although good for the economy, need to be better advertised so businesses can inform their clients about traffic delays.

- At present, some customers are missing out on tours or are late for tours, flights or bookings because traffic is bad.

Waterway conflicts

- The majority of businesses stated that they were happy with the current operation of the waterway and that they were exposed to minimal conflicts with other businesses.
- The majority of conflicts were said to arise when private boats were using the waterway with no respect for others users.



5. Marine Industry Economic Contribution

The following Chapter undertakes an assessment of the economic contribution that marine industries contribute to the local study areas economy.

Key findings

It was found that:

- 1,002 residents were employed within marine related industries regardless of location;
- 751 marine industry jobs were attainable within the study area, of these, 22% or 162 persons employed were under the age of 25 years;
- Combined marine industries provided an estimated $37 million in potential annual worker salaries;
- Combined marine industries provided an estimated $57 million in industry value add;
- Marine industry related workers spent an estimated $2.4 million on surrounding retail services during the week (food, drinks e.tc.);
- As of 2011, approximately 4,000 worked within the tourism industry within the study area;
- Tourism provided an estimated $171 million in wages and a further $330 million in industry value add;
- An estimated $127 million of expenditure was captured within the study area related to marine tourism;
- Recreational fishers within the study area provided further stimulus to the local economy in terms of expenditure, job creation and economic output, however further investigation would be needed to quantify this contribution;
- Total estimated revenue from paddle boarding and kayak services is estimated at a conservative $313,700 for the peak period (November to April) within the study area; and
- Pittwater Council collected $255,000 within the 2014/15 financial year from dinghy storage and tie up fees.

The marine industry overview

With approximately 85% of Australia's population living within 50km of the coast, marine industries comprise a significant proportion of Australia's Gross Domestic Product (GDP).

In 2011-2012 for example, marine related industries contributed over $47.2 billion to the economy, when compared to agricultural

production ($46.7 billion) and sales and service income from motor vehicle and motor vehicle part manufacturing ($20.2 billion)[15].

Marine related industries relevant to this study include the following:

- Marinas;
- Shipbuilding and repair services;
- Boatbuilding and repair services;
- Aquaculture;
- Water passenger transport;
- Water transport;
- Water freight transport;
- Commercial fishing;
- Marine equipment retailing;
- Scenic and sightseeing transport;
- Seafood processing;
- Kayaking and Paddle boarding; and
- Tourism.

It must be noted that marine related businesses provide stimulus for a wide range of businesses that would not, at first glance, be seen to be associated. These businesses include those within accommodation, hotel / pubs, retail and restaurants.

However, employment related to these categories is difficult to attribute to marine businesses using traditional industry sources. This is because geographical boundaries used by government and private agencies are typically larger in nature typically including surrounding employment and businesses related centres / precincts.

The inclusion of these centres / precincts would significantly over estimate the number employed within these industries i.e. retail and accommodation related businesses.

To quantify a more specific contribution of marine related industries, broad industries such as retailing (excluding marine retailing), accommodation, food services and hotel/pubs have been excluded. However, it is likely that a proportion of these industries employment and economic contribution would be marine related in nature.

Data sources

Employment generation has been sourced from the 2011 Census (excluding marina employment generation). HillPDA has assumed employment has remained stable since the 2011 Census.

[15] The AIMS Index of Marine Industry 2014

Wages and industry value add have been sourced from Forecast id, IBIS World Reports and 2013 Health of the Australian Marina Industry Survey.

Selected marine economic contribution

Marine industry employment

Within the study area, 1,002 local residents were employed within marine related industries, regardless of place of work location. Of these employed persons, 17% or 169 residents were under the age of 25 years.

Of the approximate 70,000 local jobs within the study area, approximately 751 jobs were related to the below marine industries.

Table 14 - Marine industry employment generation

	Employed Residents[16]			Local workforce (POW)[17]		
	15-24 years	25+ years	Total	15-24 years	25+ years	Total
Shipbuilding and Repair Services	0	64	64	7	32	39
Boatbuilding and Repair Services	42	184	226	33	149	182
Aquaculture	3	3	6	0	6	6
Water Passenger Transport	3	51	54	4	15	19
Water Transport	0	46	46	0	6	6
Water Freight Transport	0	27	27	0	0	0
Commercial Fishing	0	5	5	0	0	0
Marine Equipment Retailing	9	98	107	9	85	94
Scenic and Sightseeing Transport	3	72	75	0	16	16
Seafood Processing	0	3	3	0	0	0
Marinas[18]	72	186	258	72	186	258
Marina Tenancies[19]	37	94	131	37	94	131
Total	**169**	**833**	**1,002**	**162**	**589**	**751**

Source: ABS 2011, HillPDA

The following will focus on the economic contribution of the local workforce or by a person's Place of Work (POW). A POW is where a person works, irrespective of their place of residence.

[16] This refers to the total residents within the LGA employed within this industry irrespective of where they travel to work
[17] This refers to the Place Of Work (POW) of a person irrespective of where they live
[18] This figure has been estimated using exact employment figure provided within surveys and interviews with local marina representatives. For marinas that did not provide employment numbers a ratio of employment per number of berths / moorings was used. This raged from 1 job per 1 to 7 berths and 1 job per 1 to 4 moorings. In each case the larger ratio has been applied (i.e. 1 per 7 berths or per 4 moorings). The surveys also revealed an average of 28% of employees were under 25 years of age, this rate has also been applied.
[19] Interviews with local marinas indicated that tenancies employed approximately 5 employees per tenant. HillPDA has used a more conservative 3 jobs per tenant for known tenancies.

Marine industry wages

HillPDA has estimated a combined potential annual worker salaries at approximately $37 million for workers within marine industries. A breakdown by land use can be seen in the table below.

Table 15 - Marine industry wages by Place of Work ($2015)

	Labour force	Average wage	Total wages ($m)
Shipbuilding and Repair Services	39	$45,362	$1.77
Boatbuilding and Repair Services	182	$45,362	$8.26
Aquaculture	6	$45,624	$0.27
Water Passenger Transport	19	$48,838	$0.93
Water Transport	6	$133,678	$0.80
Marine Equipment Retailing	94	$48,382	$4.55
Scenic and Sightseeing Transport	16	$33,159	$0.53
Marinas	258	$42,900	$11.07
Marina Tenancies	131	$43,872	$5.75
Total	**751**	**$49,367**	**$36.80**

Source: ABS 2011, IBIS World Reports 2015, Marina Survey 2013 and HillPDA

Marine industry value added

Industry Value Added (IVA) refers to the market value of goods and services produced by an industry, minus the cost of goods and services used in the production process, which leaves the gross product of the industry (also called its Value Add).

The components include compensation of workers, net taxes on production and imports and gross operating surplus. IVA is commonly referred to as the contribution made to the local economy (GDP).

Table 16 - Estimated industry value added ($2015)

Wages	Local workforce	Industry / Value Add / Worker	Industry Value Add ($m)
Shipbuilding and Repair Services	39	$89,752	$3.50
Boatbuilding and Repair Services	182	$89,752	$16.33
Aquaculture	6	$90,810	$0.54
Water Passenger Transport	19	$104,647	$1.99
Water Transport	6	$296,739	$1.78
Marine Equipment Retailing	94	$61,331	$5.77
Scenic and Sightseeing Transport	16	$52,278	$0.84
Marinas	258	$78,740	$20.31
Marina Tenancies	131	$43,872	$5.75
Total	**751**		**$56.81**

Source: ABS 2011, IBIS World Reports 2015 and HillPDA

As shown in the above table, marine industries are estimated to contribute around $57 million every year to the local economy.

Retail expenditure from marine industry workers

A recent survey conducted by URBIS found that Sydney CBD workers spend an average of $230 a week or $11,000 per annum (based on 46 working weeks) on retail goods and services in the CBD[20]. URBIS also noted that on average $76 was spent on food and drink items a week. However, for centres outside of the CBD average spend is considerably lower due to the lack of retail offer.

Marine industries are predominantly located within IN4 – working water front and W2 - recreational waterways zones or along the waterfront and mixed with residential uses. As such they are usually isolated from surrounding retail centres. However, as previously discussed, some marine industries (such as marinas) have adjoining cafes, restaurants, bars, kiosks and apparel retailing.

These services accrue some retail expenditure from local workers within marine industries albeit at a lower capture rate compared to a more established retail centre with a wider retail offer.

As such, for the purpose of the assessment, HillPDA has applied a more conservative weekly expenditure of $15 per employee per week for the marine workers on site.

As seen in the table below, the combined total retail spend for the marine workers is an estimated at $2.4 million. The bulk of this would be captured by retailers in the local area.

Table 17 - Estimated retail spend of employees

	Total Workforce	Weekly retail spend	Total retail spend (per annum)
Marine workers	751	75	$2.4

Source: HillPDA

Marine tourism

Assessing the value of marine related tourism is difficult. This being said, the contribution that marine relate tourism provides to the local economy is undoubtedly substantial.

While there is a standard approach of attributing the economic contribution for tourism to a geographical area, there is no consensus on the approach for quantifying or identifying the contribution marine tourism provides.

[20] Urbis 2014

The only existing methodology for this apportionment was developed in the 1989 *report Oceans of Wealth?*. In the report, 19% of international and 40% of domestic tourism was attributed to marine related activities[21].

Given the significant exposure to water and coastal based activities that Pittwater LGA provides, these portions have been applied to tourism statistics for the area, while a more conservative proportion has been applied to Warringah LGA (say one third). This conveys an understanding of the potential contribution that marine tourism provides to the local economy.

Tourism employment and local economy contribution

In 2011, approximately 4,000 persons were employed within tourism related businesses in the study area. These workers had an estimated annual worker salary generation of $172 million and contributed around $330 million every year to the local economy.

Table 18 – Estimated wages and IVA generated by the tourism ($2015)

	Labour force	Average wage	Total wages ($m)
Wages	4,089	$41,707/ worker	$172
Industry value add	4,089	$80,776/worker	$330

Source: Forecast ID, IBIS World Report and HillPDA

Economic contribution of visitors

HillPDA has estimated that expenditure captured within the study area, as a result of marine related tourism, was approximately $127 million in 2015 or 24% of all tourism related spend.

Table 19 - Estimated expenditure from marine tourism ($2015)

	Total visitor nights / days (2014/15)		Marine tourism capture rates[22]		Average spend per night or day (Sydney Area)[23]	Estimated tourism spend related to marine tourism ($m)
	Pittwater	Warringah	Pittwater	Warringah		
International Tourists	167,895	793,976**	19%	6%	$101	$8.3
Domestic Overnight	597,116	624,217	40%	13%	$261	$84.1
Domestic Day	658,722	520,929*	40%	13%	$103	$34.3
Total	**1,423,733**	**1,939,122**				**$126.7**

Source: Forecast ID (*2013/14 figure used as no recent figure provided), Destination NSW

**13.7% of visitors to Warringah LGA were stated as education and business reasons; as such this proportion was excluded from the overall total nights.

[21] The AIMS Index of Marine Industry 2014
[22] The AIMS Index of Marine Industry 2014
[23] Destination NSW at the time of this study did not provide a tourist LGA profile for either Pittwater or Warringah. As such the average for Sydney was used

Recreational fishing

Putting an economic value on the contribution of recreational fishing to the local and wider economy is challenging. This challenge is partly due to the difficulty in collecting and comparing data for an activity that largely occurs informally in spread out locations and time.

The AIMS Index of Marine Industry 2014 study states:

"*In addition to any intrinsic environmental or heritage value, the fish caught by recreational fishers could be seen to represent an economic value; they are not, however, part of a market transaction, and determining how much they are worth therefore would require alternative approaches to valuation.*"

The only data regarding the economic contribution of recreational fishing relates to the expenditure provided by registration fees, ice, bait, fishing/boating/safety equipment and travel costs[24]. However, most of the retail and accommodation expenditure from this industry would likely be captured within HillPDA's estimated expenditure from marine tourism. Furthermore, recreational fishing is more likely to be classified as a marine related service and not a primary marine industry.

A recent study by the University of Wollongong concluded that the economic output for recreational fishing in NSW provides:

- $3.4 billion of economic output;
- $1.6 billion in added value;
- $877.3 million in household income; and
- 14,254 fulltime equivalent jobs.

This employment figure was disbursed across the retail sector, hospitality, personal and other services and transport and storage[25].

It is therefore likely that recreational fishers within the study area provide further stimulus to the local economy in terms of expenditure, job creation and economic output, however further investigation would be needed to quantify this contribution.

[24] The AIMS Index of Marine Industry 2014
[25] NSW recreational expenditure survey 2012, University of Wollongong

Paddle boarding and kayak services

A desktop review has shown there is approximately six kayaking and paddle boarding businesses within the study area. The typical fee is $25 for an hour of kayaking and $40 for two hours.

Consultation with Barrenjoey Boating Service revealed that during a "good" week they could expect 20 to 30 clients Monday to Friday with this increasing to 70 to 100 clients over the weekend. The company provides an estimated 27 kayaks and paddle boards.

The company also stated that business extended from November to April (27 weeks).

Other companies include:

- Ecotreasures – estimated 58 kayaks and paddle boards;
- Careel bay – estimated 10 kayaks and paddle boards;
- Paddlecraft Sydney – estimated 22 kayaks and paddle boards; and
- Pittwater Kayak Tours – estimated 24 kayaks and paddle boards.

Applying an average of 0.34 clients per kayak/paddle board during the week and 1.08 clients per kayak/paddle board on the weekend for 27 weeks (to Barrenjoey Boating Service, Ecotreasures, Careel Bay and Pittwater Kayak Tours) an estimated 6,500 clients use the water ways during November to April.

Further applying an average of an hour travel for each of these clients at $25 for the first hour, a total of approximately $163,000 is raised in fees.

Most services offer guided tours which are more expensive. For example, consultation with Pittwater Kayak Tours stated that an average of 80 persons used the facility each weekend. The clients undertake tours for $70/persons. This provides $5,600 in revenue each weekend or $151,200 over 27 weeks.

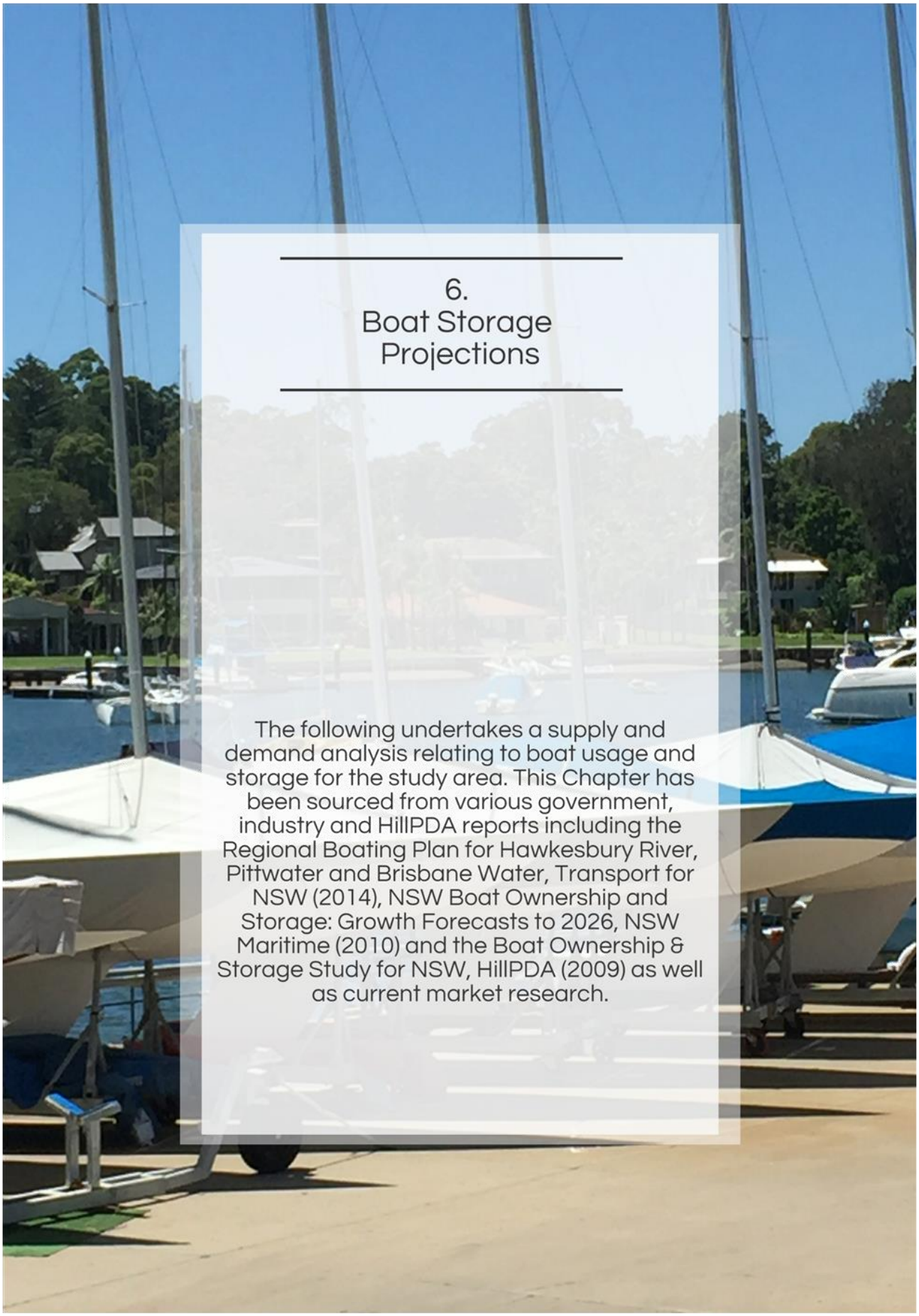
The interviewee also stated that the majority of persons were from outside the local area and stayed on to visit local restaurants and accommodation, further providing stimulation to the local economy.

Total estimated revenue from paddle boarding and kayak services is estimated at a conservative $313,700 for the peak period (November to April) within the study area.

Dinghy storage and tie up fees

Pittwater Council provides storage spaces for up to 802 dinghys across 20 separate locations within the study area. Revenue from charges associated with dinghy storage and tie up fees was $225,000 in the 2014/15 financial year[26].

[26] Pittwater Council 2015



6. Boat Storage Projections

The following undertakes a supply and demand analysis relating to boat usage and storage for the study area. This Chapter has been sourced from various government, industry and HillPDA reports including the Regional Boating Plan for Hawkesbury River, Pittwater and Brisbane Water, Transport for NSW (2014), NSW Boat Ownership and Storage: Growth Forecasts to 2026, NSW Maritime (2010) and the Boat Ownership & Storage Study for NSW, HillPDA (2009) as well as current market research.

Key findings

The key findings of the Chapter are as follows:

- As of 2015, there were 10,940 registered boats within Pittwater and Warringah LGAs. Of this total 7,079 or 37% were for boats under the six metre mark while the remaining 3,861 or 28% were over this mark;
- Since 2003, boat registrations have increased by 2,758 with boats over six metres accounting for 833 or 30% of the growth;
- Boat ownership as a proportion to overall population has been increasing over the previous 12 years, from 4.3% in 2003 to 5% in 2015;
- It is estimated that as of 2015, the study area contained at least 4,862 on-water storage options;
- Additionally there were an estimated 311 dry storage spaces and numerous dinghy storage sites provided by Council and marinas;
- From 2010 to 2015, swing moorings increased by 654 spaces, of this increase 96% or 645 moorings were attributed to private moorings;
- One swing mooring accounted for approximately eight marina berths;
- 64 berths could be accommodated within 1ha of water-space, while only seven moorings could be accommodated in the same area;
- Boat ownership levels are projected to increase by approximately 8,950 boats or +82% over a 26 year period to 2041;
- Of this increase 6,300 boats or 63% was attributed to boats over the six metre mark;
- Applying three different storage type scenario proportions to the five year incremental growth in boats, it was deduced that the study area would likely need an additional 1,097 to 1,706 swing moorings and 536 to 853 additional marina berths between 2015 and 2041; and
- Using the take up of water-space for marina berths verse swing moorings discussed earlier, the study area would likely need between 200 to 240ha of additional water-space to accommodate the additional swing moorings to 2041, while only eight to 13ha of water-space would likely be need to for the additional marina berths.

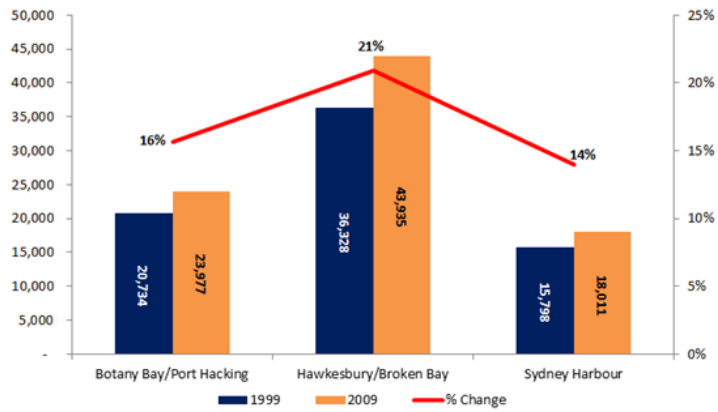
Regional boat ownership trends (1999 to 2009)

In 2010, the then NSW Maritime released a study entitled *NSW Boat Ownership and Storage Growth Forecasts to 2026*. Over the period between 1999 and 2009 the Hawkesbury / Broken Bay Region (which Pittwater and Warringah LGAs are included) experienced a total increase in boat ownership of 7,600 boats or 21%. This was the largest recorded growth in boat registrations within the Sydney area. This is compared to Sydney Harbour, which saw an increase of 2,200 boats or 14% and Botany Bay / Port Hacking saw an increase of 3,250 boats or 16% over the same period.

This reveals that in 2009 the Hawkesbury / Broken Bay Region housed one fifth (20%) of NSW's recreational boating fleet, making it a popular area for boating related recreational activities on the east coast. The number of boats increases dramatically throughout the year due to visitors bringing their own boats[27].

This popularity for on water boating activities highlights the need for more on-water storage facilities in an area where on-water storage availability has already become challenging.

Figure 4 - Increase in Boat Registrations (1999 to 2009)



Source: NSW Boat Ownership and Storage Growth Forecasts to 2026

Boat storage types

Boat storage can be divided into boats stored on trailers and non-trailers. The focus of this Study is on non-trailer storage types such as:

- Private swing moorings (PML);

[27] Hawkesbury River, Pittwater and Brisbane Water Regional Boating Plan

- Commercial swing moorings (CML Sites);
- Commercial Marina Wet Berths;
- Private Marina & Mooring Pens; and
- Dry Storage.

The six metre mark for boat storage

Boats of all sizes need to be stored either on or off water. Boats longer than six metres are stored on-water in either marina berths or moorings at a higher frequency than those of a smaller nature. As such, an increase in boats of this size requires an increase in on-water storage infrastructure. Therefore, this demand and supply analysis focuses on boats that are six metres and over. The Regional Boating Plan found that in March 2014, the region contained the highest proportion (25%) of boats over 6 metres within NSW.

Study area boating trends

Study area boat registrations

As of 2015, there were 10,940 registered boats within Pittwater and Warringah LGAs. Of this total 7,079 or 37% were for boats under the length of six metres while the remaining 3,861 or 28% were over this length.

Since 2003, boat registrations have increased by 2,758 registrations with boats over six metres accounting for 833 or 30% of the growth. This historic data reveals an annual increase for boats over six metres of 69 boats per annum or an annual increase of 2% per annum.

Table 20 – Pittwater and Warringah LGAs boat registration data (2003-15)

Year	Vessel size		Total
	<6m	>6m	
2003	5,154	3,028	8,182
2004	5,210	3,024	8,234
2005	5,281	3,064	8,345
2006	5,473	3,122	8,595
2007	5,540	3,195	8,735
2008	5,548	3,281	8,829
2009	5,655	3,324	8,979
2010	5,609	3,153	8,762
2011	5,911	3,311	9,222
2012	6,186	3,436	9,622
2013	6,460	3,553	10,013
2014	6,753	3,710	10,463
2015	7,079	3,861	10,940
Total increase 03-15	**1,925**	**833**	**2,758**
% increase 03-15	**37%**	**28%**	**34%**
Annual increase	**160**	**69**	**230**
Annual compound growth	**2.7%**	**2.0%**	**2.5%**

Source: RMS Boat Registration Data

The increase in registrations further reinforces the study area's popularity as a boating destination. This popularity increases the demand for boating storage.

It must also be noted that consultation with marina operators indicated that approximately 15-20% of berths were occupied by members living outside the two LGAs of Pittwater and Warringah. These members, visitors and clients increases the demand for on-water storage (primarily berthing and dry storage) above the number of resident registrations.

Boat ownership to population

Boat ownership as a proportion of overall population has been increasing over the previous 12 years, from 4.3% in 2003 to 5% in 2015.

It is interesting to note that around the Global Financial Crisis (GFC) in 2009, boat ownership levels slightly declined although this trend was quickly rectified in 2011.

Table 21 – Proportion of boats to study areas population (Pittwater and Warringah)

	LGA		Total	Boat size		Total
	Pittwater	Warringah		<6m	>6m	
2003	55,837	135,796	191,633	2.7%	1.6%	4.3%
2004	55,610	136,182	191,792	2.7%	1.6%	4.3%
2005	55,943	137,171	193,114	2.7%	1.6%	4.3%
2006	56,252	138,322	194,574	2.8%	1.6%	4.4%
2007	56,860	140,629	197,489	2.8%	1.6%	4.4%
2008	57,137	142,853	199,990	2.8%	1.6%	4.4%
2009	58,672	144,980	203,652	2.8%	1.6%	4.4%
2010	59,577	146,774	206,351	2.7%	1.5%	4.2%
2011	60,455	148,423	208,878	2.8%	1.6%	4.4%
2012	61,256	150,358	211,614	2.9%	1.6%	4.5%
2013	62,061	152,613	214,674	3.0%	1.7%	4.7%
2014	63,338	155,289	218,627	3.1%	1.7%	4.8%
2015	63,622	155,836	219,457	3.2%	1.8%	5.0%
Annual compound growth	**1.1%**	**1.2%**	**1.1%**			

Source: Forecast.id, BTS Population Projections 2014 and HillPDA

Existing storage volume

It is estimated that as of 2015, the study area contained at least 4,862 on-water storage options (including 646 private jetties[28]). Additionally there were an estimated 311 dry storage spaces and numerous dinghy storage sites provided by Council and marinas.

Of the approximately 5,200 storage spaces for boats (excluding sailing clubs and dinghy storage) 3,000 or 58% were attributed to swing moorings, 1,200 or 24% were commercial berths, 650 or 12% were private jetties and 300 or 6% were on-land dry storage.

Table 22 – Existing storage within study area

	Swing moorings	Berths	Jetties	Dry storage	Total
Commercial	968	1,224		311	2,503
Private	2,024		646		2,670
Total	**2,992**	**1,224**	**646**	**311**	**5,173**
% of total storage	58%	24%	12%	6%	100%

Source: HillPDA, RMS, Transport NSW

[28] Desktop review

Commercial berth facilities

There are several commercial marinas, large sailing and yacht clubs and other boating facilities that provide berths for boats. These facilities include:

- Holmeport marina – 59 berths;
- The Quays marina – 160 berths;
- The Royal Prince Alfred Yacht Club - 352 berths;
- The Royal Motor Yacht Club – 220 berths;
- Gibson marina – 50 berths;
- Pittwater Aquatic Club – 19 berths;
- Rowell Marine – 15 berths;
- Princess St marina - 80 berths;
- Sirsi Marina – 40 berths;
- Akuna Bay, d'Albora Marinas – 219 berths; and
- Ku-ring-gai Motor Yacht Club – 10 berths.

Figure 5 - Berth storage (Royal Prince Alfred)

Source: HillPDA

Swing moorings

As of 2015 there were 2,992 moorings within the study area[29], this represented a 669 or 29% increase on the number recorded in 2010 (2,323 moorings). Of this increase, 96% or 645 moorings were attributed to Private Moorings (PMs)[30], while the remaining 4% or 24 moorings were Commercial Moorings (CMs)[31].

[29] RMS
[30] A private mooring licence permits the licensee to moor their vessel on navigable waters and is renewable annually
[31] A commercial mooring license is issued to a business entity trading to provide marine type services to the boating public

Of the approximate 3,000 moorings in 2015, 2,024 or 68% were PMs while 968 or 32% were CMs.

Table 23 – Swing moorings within Study area

	2010	2015	Increase #	% increase
Commercial Moorings	944	968	24	3%
Private Moorings	1,379	2,024	645	47%
Total	**2,323**	**2,992**	**669**	**29%**

Source: RMS

Figure 6 - Mooring storage

Source: HillPDA, Google Maps

Private jetties

A desktop review of the study area has identified approximate 650 private jetties. These jetties provide on-water storage for boats and off-water storage for smaller boats.

As the exact number of boats stored on-water at private jetties is difficult to source, there has been an assumption that these jetties currently provide one on-water storage space.

Dry storage

It is estimated that there are at least 250 dry and hard stand storage spaces within the study area. The largest of these facilities is located at d'Albora Akuna Bay where a 169 dry space stack is located. The Royal Prince Alfred Yacht Club also provides 83 hard stand spaces, Pittwater Aquatic Club – 39 dry storage spaces and Gonsalves Boatshed which provides a further 20 dry storage spaces.

Figure 7 - Dry storage examples within study area (Akuna Bay, Royal Prince Alfred and Pittwater Aquatic Club)

Source: HillPDA and Regional Boating Plan

Sailing and other clubs in the study area

While the majority of sailing boats within the study area are stored on moorings there are numerous smaller sailing and water associated clubs within the study area such as Avalon Sailing Club, Palm Beach Sailing Club, Bayview Yacht Racing Association and Sailability at Pittwater Sailing Club to name a few.

These clubs and facilities often provide storage to their members for smaller boats (less than 6 metres). These boats are predominantly stored in dry stack within the club or its surrounds. As stated within the Regional Boating Plan:

"sailing clubs and associated facilities can often store from small numbers to in excess of 60 sailing (beach-launch) craft. Those boats stored on land are usually not required to be registered and so do not appear in those total numbers."

As such, this study does not quantify the number of boats stored at these facilities and excludes them from boating storage projections.

Figure 8 - Small boat storage (Avalon Sailing Club)

Source: HillPDA

Dinghy storage

Commercial marinas and Pittwater Council provide dinghy storage for community use. These dinghies are predominately used to ferry people to their boat, which is stored at a commercial or private mooring. As such, any increase in moorings would likely have a corresponding effect on increased dinghy storage needs.

Pittwater Council provides 981 dinghy storage spaces available for rent in 20 separate locations around the study area. In the 2014/-15 financial year rent from dinghy storage generated $150,241 and boat tie ups generated $78,847 for Council[32].

There is currently a waitlist of approximately 50 people for various dinghy storage spaces, with the most popular areas being Paradise Beach watercraft and Clareville watercraft. Both areas have only 12 spaces listed which are all occupied.

Information provided by Pittwater Council suggests that more spaces are required north of Avalon for watercraft storage as the existing facilities are subject to increasing demand. Council suggests that on average 10 calls a day are received by Council from residents requesting dinghy or watercraft storage.

[32] Pittwater Council, 2016

Figure 9 - Dinghy storage

Source: HillPDA

Long-term trailer parking

The practice of long term parking on residential streets within the study area is a key issue for residents. The amount of trailers on local streets, public car parks and footpaths is another indication of the current under supply of dry storage options within the study area.

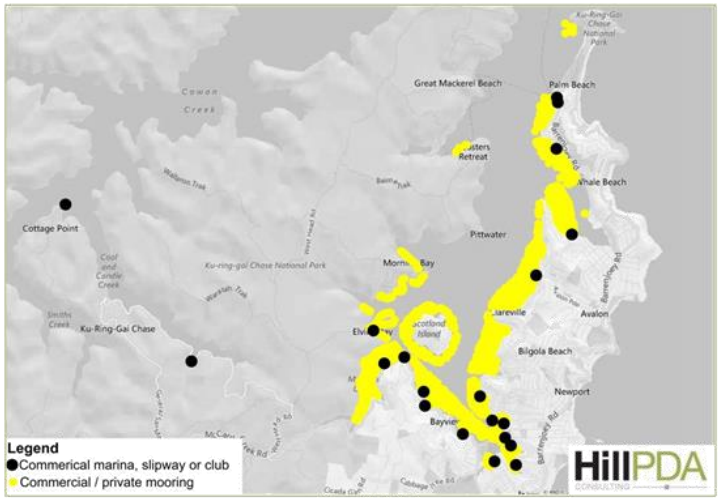
Any increase in storage provision within the study area, would likely aid in reducing the amount of long-term trailer parking, by providing cost efficient alternatives.

Figure 10 - Long term trailer storage

Source: HillPDA

The figure below provides a visual approximation of the location of storage by broad type within the study area.

Figure 11 - Existing storage by broad type 2015



Source: HillPDA

Swing moorings verse marina berths

When it comes to current on-water storage options within the study area, swing moorings contribute the greatest both proportionally and numerically. This is evident in there being almost 2.5 swing moorings to every berth within the area.

As evident in the map above, the large number of swing moorings has had a corresponding effect of taking up a larger proportion of water-space compared to other on-water storage options. During consultation the number of swing moorings was raised as an issue for increasing navigation and manoeuvring difficulties.

To give a comparison between the area of water-space needed to store approximately the same number of boats the following analysis was undertaken.

As of 2015, the bays and coves of Bayview, Crystal Bay, Winji Jimmi and Winnererremy Bay contained a total of 511 swing moorings over an area roughly calculated at approximately 70ha of water-space. By comparison the Royal Prince Alfred Yacht Club and Royal Motor Yacht Club provide 572 berths over an estimated 9ha of water-space (as seen in the figure below).

The two clubs provided 61 or 12% additional berths over a water-space area that was in size, 61ha or 678% smaller when compared to the analysed swing mooring area.

Further, this analysis highlights the efficiency of marina berth storage where 64 berths can be provided for every 1ha compared to seven swing moorings per 1ha.

However, it is noted that swing mooring provide a crucial cost efficient solution for many local residents and visitors when compared to berthing rates. This analysis was undertaken to provide insight from a water-space take up point of view only.

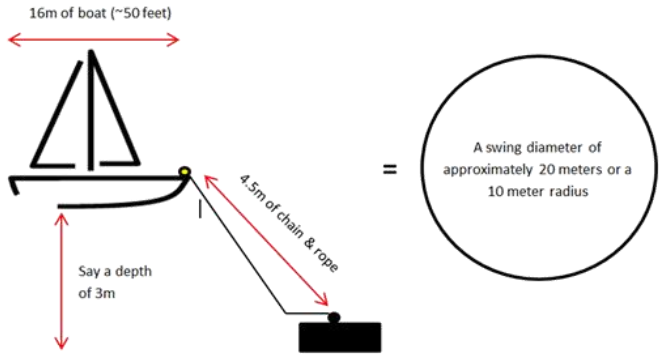
Figure 12 – On water-space comparison swing moorings verse berths

Source: HillPDA, RMS 2015

The primary reason for this difference in amount of water-space taken up by swing moorings verse berth - is by their very nature swing moorings need "swing" space to allow for changes in tide and wind direction. HillPDA has calculated an average swing space of 20 metres in diametre for a 16 metre boat within three metres of water. The amount of rope and chain needed has been calculated at an average of 1.5 times the depth[33]. The figure below provides a visual diagram of this.

[33] RMS 2015

Figure 13 – Swing mooring, "swing" space calculation diagram



Source: HillPDA

With an average swing space of 20 metres in diameter, HillPDA has calculated that one swing mooring equates to eight berths. This has been calculated by overlaying a 20 metre diameter circle over four marinas within the study area.

Figure 14 – 10 Meter Radius Over Wet Berths (Pittwater)

Source: Nearmap (radiuses) – Top Left – Royal Prince Alfred Yacht Club (8 berths), Top Right Royal Motor Yacht Club (8 berths), bottom left The Quays Marina (7 – 8 berths) and bottom right Holemport Marina (8 berths),

The importance of this analysis is that with increasing boat sizes there would be a corresponding increase in swing space as a result of either deeper moorings or the increase in boat size itself. The increasing swing space would result in a reduced number for swing moorings per bay/cove (saturation point) or expansion into

additional areas. Marina berths could provide a more effective and efficient storage option in terms of on water-space usage.

Boat ownership projections

Forecasting boat ownership within the study area has been undertaken to provide an estimate to the level of additional on-water storage needed over the next 25 years.

Forecasting methodology

HillPDA has applied a methodology that uses the historic annual growth in boat registrations and population to deduce the real increase in boat registrations over the period from 2003 and 2015. This was applied separately to the categories of boats under and over six metres.

These "real increase" proportions were then applied to the forecast annual population growth rate within the study area for 2015 to 2031 (which was 0.9%). This determined the forecast proportion for boat under and over six metres separately.

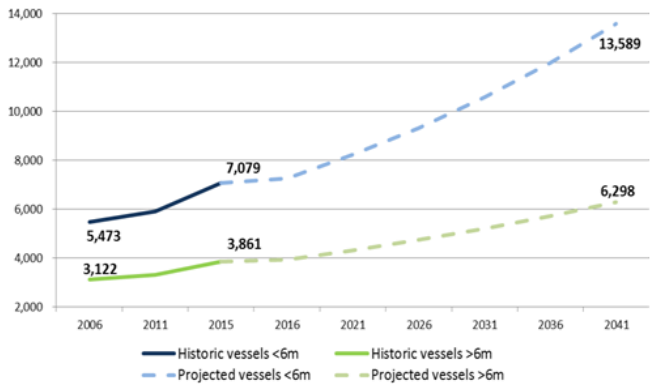
These proportions were then applied to the 2015 boat registration figure provided by RMS to forecast the number of vessel ownerships within the study area to 2041 (Table 24).

Boat ownership projections

Using the above methodology it is estimated that over the period between 2015 and 2041 boat ownership levels are likely to increase by approximately 8,950 boats or +82% over the 26 years period.

This can be seen in the figure below.

Figure 15 – Study area boat ownership projections by size



Source: HillPDA

Furthermore, boats under six metres are forecast to increase by 6,510 boats or 92% over this period, representing an annual increase of 250 boats.

While boats over six metres are forecast to increase by 2,437 boats or 63% over the period, representing an annual increase of 94 boats.

This is compared to annual increase of 69 boats over the six metre mark between 2003 and 2015. However, with increasing rates of affluence, aging population, increasing persons within the age cohort of home builders and increasing boat sizes this annual rate would be expected to increase in the coming decades.

Table 24 - Study area boat ownership projections by size

Year	Vessel size		Total
	<6m	>6m	
2015	7,079	3,861	10,940
2021	8,229	4,323	12,551
2026	9,328	4,749	14,077
2031	10,575	5,218	15,792
2036	11,988	5,733	17,720
2041	13,589	6,298	19,888
Growth #	6,510	2,437	8,948
Growth %	92%	63%	82%
Annual Growth	250	94	344
Forecast growth in boat registrations %	2.50%	1.87%	

Source: HillPDA 2016

Boat storage demand projections

The following undertakes a demand analysis for storage options for boats over six metres within the study area.

The disparity between 2015 registration number and current on-water supply

The number of registrations in 2015 for boats over six metres (3,861 boats) was lower than the total combined number of swing moorings, berths, dry storage and jetties within the study area(5,173 spaces), so how can there be an existing undersupply? The answer is fourfold:

i) In some cases smaller boats need to be stored on-water rather than on land. For example some wooden boats need to be stored on the water. These smaller boats

would increase the demand for additional storage spaces on-water;

ii) Besides the dry storage at Akuna Bay the majority of dry storage would likely be for smaller sailing and motor boats under or around the six metre mark;

iii) Although there are approximately 650 jetties within the study area not all house owners necessarily own a vessel or they moor a smaller vessel (below six metres) out the front of their house; and

iv) Consultation with local marina representatives revealed that 15-20% of berths maybe occupied by persons outside the study area. HillPDA has been only given registrations for persons residing within the study area and therefore these additional boats have not been accounted for in the above projections.

Assumptions

For the above reasons is has been assumed that there is an equilibrium between the on-water storage capacity and the number of boat registrations over six metres as of 2015. As such, any additional growth past 2015 would need to be addressed with additional storage.

Boat storage projections

The five year incremental growth in boat ownership for vessels over six metres was applied to various boat storage options proportions (excluding trailers).

Three different scenarios were tested, these were as follows:

i) Scenario 1– this scenario applies the current proportions of storage within the study area as identified in the 2015 audit;

ii) Scenario 2 – applies a target storage proportion based on the 2009 HillPDA Study, *Boat Ownership & Storage Study for NSW* for the, at the time, NSW Maritime. These target proportions were a target for the whole of NSW; and

iii) Scenario 3 – applies minimal storage growth within swing moorings with additional growth being diverted to marina berths. This is a trend being witnessed in Sydney Harbour locations such as Middle Harbour. Furthermore, swing mooring growth within this scenario was guided by the maximum number of moorings permitted as

identified within Pittwater's DCP, which there was found to be growth for an additional 647 swing moorings.

These proportions are provided in the table below.

Table 25 - Scenario proportions by storage type

	Private swing moorings	Commercial swing moorings	Commercial marina berths	Private jetties	Dry storage
Scenario 1	39%	19%	24%	12%	6%
Scenario 2	35%	10%	35%	5%	15%
Scenario 3	20%	10%	54%	5%	15%

Source: HillPDA

Scenario 1 storage projections

Applying the current storage proportions to the projected five year incremental increase in boat ownership levels reveals that the study area would likely need an additional 995 private swing moorings, 458 commercial swing moorings, 585 marina berths, 292 private jetties and 146 dry storage spaces.

Using the take up of water-space for marina berths verse swing moorings, in this scenario an additional 202ha of water-space would likely be needed for the 1,414 additional swing moorings and 9ha for the berths.

Table 26 – Base case storage projections

Scenario 1	Boat growth (five year increase)	Private swing moorings	Commercial swing moorings	Commercial marina berths	Private jetties	Dry storage	Total
		39%	19%	24%	12%	6%	
2015-21	462	181	87	111	55	28	462
2021-26	427	167	80	102	51	26	427
2026-31	469	184	88	112	56	28	469
2031-36	515	202	97	124	62	31	515
2036-41	566	222	106	136	68	34	566
Total	**2,437**	**955**	**458**	**585**	**292**	**146**	**2,437**

Source: HillPDA

Scenario 2 storage projections

In HillPDAs 2009 *Boat Ownership & Storage Study for NSW* several scenarios were also tested in projecting the level of demand for boat storage options for NSW. One of the scenarios tested was a "target storage scenario" based on observed proportions of storage facilities / areas at the time of the study.

Applying these target storage proportions (Table 25) used within the 2009 study to the projected five year incremental increase in boat ownership levels reveals that the study area would likely need an additional 853 private swing moorings, 244 commercial swing moorings, 853 marina berths, 122 private jetties and 366 dry storage spaces.

Using the take up of water-space for marina berths verse swing moorings, in this scenario an additional 157ha of water-space would likely be needed for the 1,097 additional swing moorings and 13ha for the berths.

Table 27 – Scenario 2 storage projections

Scenario 2	Boat growth (five year increase)	Private swing moorings	Commercial swing moorings	Commercial marina berths	Private jetties	Dry storage	Total
		35%	10%	35%	5%	15%	
2015-21	462	162	46	162	23	69	462
2021-26	427	149	43	149	21	64	427
2026-31	469	164	47	164	23	70	469
2031-36	515	180	51	180	26	77	515
2036-41	566	198	57	198	28	85	566
Total	**2,437**	**853**	**244**	**853**	**122**	**366**	**2,437**

Source: HillPDA

Scenario 3 projections

Applying minimal growth proportions to swing moorings within the area and directing this growth towards marina berths (a trend that is currently underway within surrounding Sydney Harbour locations) to the projected five year incremental increase in boat ownership levels reveals that the study area would likely need an additional 487 private swing moorings, 146 commercial swing moorings, 1,316 marina berths, 122 private jetties and 366 dry storage spaces.

Using the take up of water-space for marina berths verse swing moorings, in this scenario an additional 91ha of water-space would likely be needed for the 366 additional swing moorings and 21ha for the berths.

Table 28 - Scenario 3 projections

Scenario 3	Boat growth (increase)	Private swing moorings	Commercial swing moorings	Commercial marina berths	Private jetties	Dry storage	Total
		20%	6%	54%	5%	15%	
2015-21	462	92	28	249	23	69	462
2021-26	427	85	26	230	21	64	427
2026-31	469	94	28	253	23	70	469
2031-36	515	103	31	278	26	77	515
2036-41	566	113	34	305	28	85	566
Total	**2437**	**487**	**146**	**1316**	**122**	**366**	**2437**

Source: HillPDA

Disclaimer

1. This report is for the confidential use only of the party to whom it is addressed ("Client") for the specific purposes to which it refers and has been based on, and takes into account, the Client's specific instructions. It is not intended to be relied on by any third party who, subject to paragraph 3, must make their own enquiries in relation to the issues with which this report deals.

2. Hill PDA makes no representations as to the appropriateness, accuracy or completeness of this report for the purpose of any party other than the Client ("Recipient"). Hill PDA disclaims all liability to any Recipient for any loss, error or other consequence which may ari se as a result of the Recipient acting, relying upon or using the whole or part of this report's contents.

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4. This report and its attached appendices are based on estimates, assumptions and information provided by the Client or sourced and referenced from external sources by Hill PDA. While we endeavour to check these estimates, assumptions and information, no warranty is given in relation to their reliability, feasibility, accuracy or reasonableness. Hill PDA presents these estimates and assumptions as a basis for the Client's interpretation and analysis. With respect to forecasts, Hill PDA does not present them as results that will actually be achieved. Hill PDA relies upon the interpretation of the Client to judge for itself the likelihood of whether these projections can be achieved or not.

5. Due care has been taken to prepare the attached financial models from available information at the time of writing, however no responsibility can be or is accepted for errors or inaccuracies that may have occurred either with the programming or the resultant financial projections and their assumptions.

6. This report does not constitute a valuation of any property or interest in property. In preparing this report Hill PDA has relied upon information concerning the subject property and/or proposed development provided by the Client and Hill PDA has not independently verified this information except where noted in this report.

7. In relation to any valuation which is undertaken for a Managed Investment Scheme (as defined by the Managed Investments Act 1998) or for any lender that is subject to the provisions of the Managed Investments Act, the following clause applies:

   This valuation is prepared on the assumption that the lender or addressee as referred to in this valuation report (and no other) may rely on the valuation for mortgage finance purposes and the lender has complied with its own lending guidelines as well as prudent finance industry lending practices, and has considered all prudent aspects of credit risk for any potential borrower, including the borrower's ability to service and repay any mortgage loan. Further, the valuation is prepared on the assumption that the lender is providing mortgage financing at a conservative and prudent loan to value ratio.

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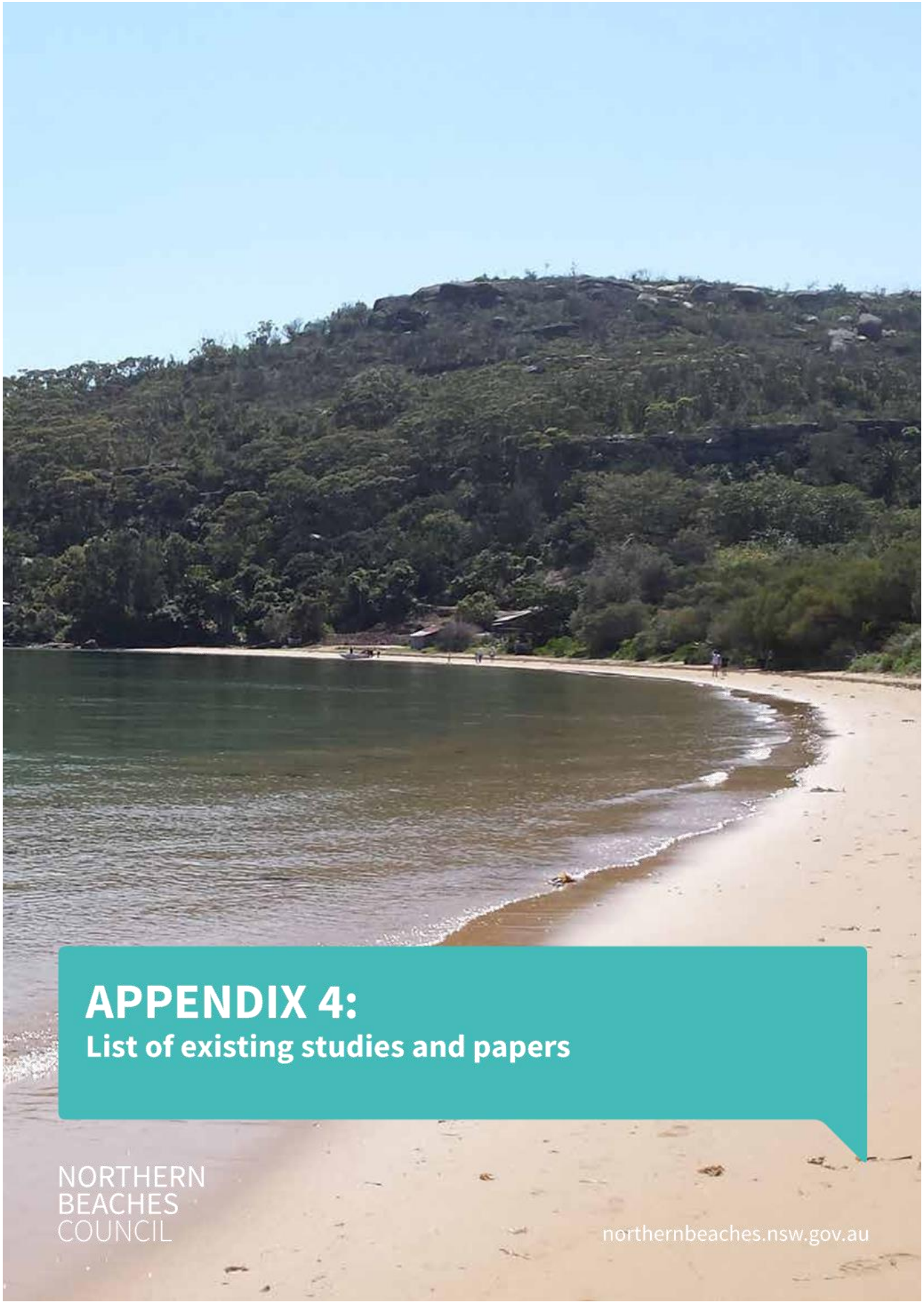

APPENDIX 4:
List of existing studies and papers

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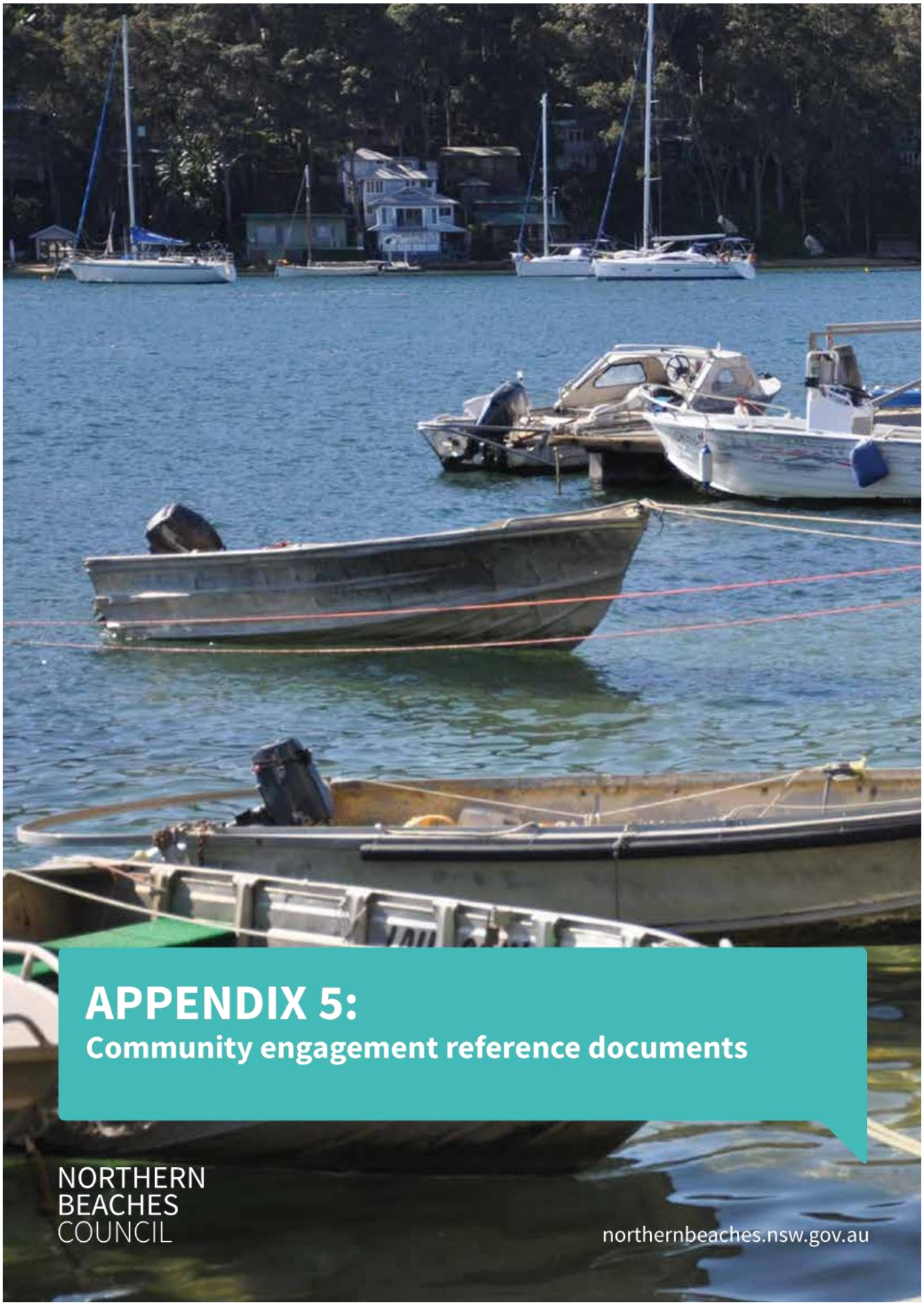
Appendix 4: Pittwater Waterways Review – Existing studies and papers

This list is of existing studies and papers identified and reviewed as part of the Pittwater Waterways Review. This list is a live document designed to be added to over the life of the review and does not provide analysis or key figures of the documents.

Item	Author	Date	Title
1.	Maritime Management Centre, Transport for NSW	February 2015	*Regional Boating Plans – Hawkesbury River, Pittwater and Brisbane Water Region*
2.	Pittwater Council – Sustainable Towns and Villages Committee	13 October 2014	*Agenda Report* - Submission to Transport for NSW – Draft Hawkesbury River, Pittwater and Brisbane Water Regional Boating Plan
3.	Maritime Management Centre, Transport for NSW	March 2014	*Moorings Review – Issues Paper*
4.	Sydney Coastal Councils Group Inc.	1 August 2014	*Submission – Moorings Review*
5.	Sydney Coastal Councils Group Inc.	June 2014	*Submission – Crown Lands Legislation White Paper*
6.	Sydney Coastal Councils Group Inc.	2010	*Strategic Plan 2010-2014*
7.	BMT WBM Pty Ltd	November 2010	*Pittwater Estuary Management Plan*
8.	Pittwater Council	October 2014	*Pittwater Public Space and Recreation Strategy 2014*
9.	Pittwater Council	October 2014	*Pittwater Public Space and Recreation Strategy 2014 Appendices*
10.	Elton Consulting Pty Ltd	November 2014	*Bays Precinct – Urban Renewal Program – Planning processes and consultation review report*
11.	Department of Infrastructure, Planning and Natural Resources	August 2003	*Sharing Sydney Harbour Access Plan*
12.	SJB Planning	December 2006	*Review of Draft Waterways Local Environmental Plan*
13.	SJB Planning	September 2005	*Hornsby Shire Waterways Review*
14.	Sweeney Research	July 2014	*Marine Estate Community Survey Final Report*
15.	Hill PDA	January 2011	*SHOROC Employment Lands Study Addendum*
16.	NSW Maritime	July 2010	*NSW Boat Ownership and Storage: Growth Forecasts to 2026*
17.	Sydney Metropolitan Catchment Management Authority	June 2009	*Environmentally Friendly Seawalls – A Guide to Improving the Environmental Value of Seawalls and Seawall-lined Foreshores in Estuaries*
18.	NSW Department of Environment, Climate Change and Water	December 2010	*Draft guidelines for assessing the impact of seawalls*
19.	Natural Environment Committee, Pittwater Council	7 September 2009	Council report – *Seagrass Friendly Moorings Trial in Pittwater*
20.	West (2007) and NSW Maritime (2008)	2008	*Pittwater Boat Moorings and Seagrass Overlay*
21.	Australian Wetlands Consulting Pty Ltd	31 August 2012	*Urban Sedimentation and Pollution Audit in the Pittwater Waterway – Environmental Investigation Report*
22.	Department of Environment and Climate Change NSW	December 2008	*Best practice guidelines for coastal saltmarsh*
23.	Maritime Management Centre, Transport for NSW	August 2013	*Sydney Harbour Boat Storage Strategy*
24.	NSW Land and Environment Court	2009	*Addenbrooke Pty Ltd v Woollahra Municipal Council (No 2) [2009] NSWLEC 134*
25.	NSW Land and Environment Court	2013	*Rose Bay Marina Pty Limited v Woollahra Municipal Council and anor [2013] NSWLEC 1046*
26.	Hill PDA Consulting	February 2015	Holmeport Marina, Church Point, *Economic Impact and Demand Assessment* – Prepared for Patrina Pty Ltd for N0240/15
27.	Office of Environment & Heritage	July 2013	*Guidelines for Preparing Coastal Zone Management Plans*
28.	Sydney Morning Herald	19 November 2011	*Anglers and commercial fishers draw line in sand at Pittwater*
29.	NSW Department of Primary Industries	July 2014	*Domestic waterfront facility policy 2014*
30.	R.J Williams and I. Thiebaud, NSW Department of Primary Industries	August 2007	*An Analysis of Changes to Aquatic Habitats and Adjacent Land-use in the Downstream Portion of the Hawkesbury Nepean River over the Past Sixty Years*
31.	NSW Government	2015	*Fisheries Management Amendment Bill 2015*
32.	Department of Environment and Conservation NSW	June 2006	*Local planning for healthy waterways using NSW Quality Objectives*

33.	NSW Fisheries Office of Conservation	September 1997	*Fish Habitat Protection Plan No 2: Seagrasses*
34.	Pittwater Council	May 2014	*Careel Bay/George Street, Avalon Foreshore Masterplan*
35.	Cardno (NSW/ACT) Pty Ltd	February 2015	*Pittwater Estuary – Mapping of Sea Level Rise Impacts (Revised Draft Report)*
36.	Maritime Management Centre, Transport for NSW	March 2015	*NSW Boating Statement*
37.	Pittwater Council	July 2011	*Pittwater Local Planning Strategy – Planning for Pittwater towards 2031*
38.	Pittwater Council	2014	*Pittwater Local Environmental Plan 2014*
39.	Pittwater Council	2002-2015	*Pittwater 21 Development Control Plan*
40.	Coastal Council	February 2003	*Coastal Design Guidelines for NSW*
41.	Cameron McNamara Pty. Ltd	1987	*Barrenjoey Peninsula, Pittwater: environmental overview*



APPENDIX 5:
Community engagement reference documents

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APPENDIX 5: Community engagement reference documents

List of key stakeholders

COUNCIL DIVISION – INTERNAL STAKEHOLDERS

Natural Environment and Climate Change (NE&CC)
Place Management
Transport & Infrastructure
Parks & Reserves
Property Management & Procurement
Corporate Strategy & Planning
Development Assessment
Environmental Compliance

STATE GOVERNMENT – EXTERNAL STAKEHOLDERS

Transport NSW- Maritime Management Centre
NSW Office of Environment and Heritage
Department of Primary Industries (Fisheries)
Department of Lands
Department of Planning
Transport NSW - Roads and Maritime Services
Broken Bay Water Police
National Parks and Wildlife Service
DPI Water
Transport NSW - Roads and Maritime Services

COMMUNITY GROUPS - EXTERNAL STAKEHOLDERS (now extended to include all registered community groups within Northern Beaches LGA)

Scotland Island Resident Association (SIRA)
Scotland Island Rural Fire Brigade (SIRFB)
West Pittwater Community Association(WPCA)
Mackerel Beach Resident Association
Coasters Retreat Association
Coastal Retreat Historical Society
KU-RING-GAI PH
Aboriginal Support Group Manly Warringah Pittwater
Avalon Beach Historical Society Inc.
Avalon Beach SLSC Committee
Avalon Palm Beach Business Chamber Inc
Avalon Preservation Trust Incorporated As Avalon Preservation Association
Bayview-Church Point Residents Association Inc
Bayview Heights Estate Owners Group
Bayview & Ingleside Residents Association
Bayview Tennis Club
Bilgola Preservation Society
Careel Bay Pittwater Protection Association Inc.
Careel Bay Trailer Boat Club Inc.
Clareville & Bilgola Plateau Residents Association

Climate Action Pittwater
Coastal Retreat Historical Society
Community Care (Northern Beaches) Inc
Combined Probus Club Of Palm Beach Inc.
Elanora Heights Resident Association
Elanora Park Tennis Club Inc
Friends Of Narrabeen Lagoon Catchment
Friends Of Bungan Community Group
Friends Of Pittwater
Garigal Deep Creek Residents Association
Horseshoe Cove Association
Ingleside Riders Group Inc
Mackerel Beach Association Inc
Manly & District Kennel & Dog Training Club Inc
Manly Warringah Pittwater Historical Society Inc.
Mona Vale Residents Association
Mona Vale Surf Lifesaving Club
Mona Vale Garden Club
Narrabeen Lakes Chamber Of Commerce
Northern Beaches Roadkill Prevention Committee
Newport Residents Association Inc.
Palm Beach & Whale Beach Association Inc.
Peninsula Bridge Club
Peninsula Music Club
Pittwater Community Arts
Pittwater Community Gardens
Pittwater Natural Heritage Association
Pittwater Unleashed
Rotary Club of Pittwater
Scotland Island Residents Association Inc (SIRA)
Surf Lifesaving Sydney Northern Beaches
Surf Rider Foundation Northern Beaches
Sustainability Pittwater
Warriewood Residents Association
West Pittwater Community Association
Wilga Wilson Residents Association
Wires
Wirreanda Valley Land Owners Incorporated
Zonta Club of Northern Beaches Inc.

RECREATIONAL CLUBS AND FACILITIES – EXTERNAL STAKEHOLDERS

Boating Industry Association of NSW
Bei Loon Dragon Boat Club
Yachting NSW
Bayview Yacht Racing Association
All Sail Sailing Club
Club Sail Pty Ltd
Palm Beach Yacht Club
Palm Beach Sailing Club
Avalon Sailing Club

pittwater dragon boat racing club
Sailability NSW Pittwater
woody Point Yacht Club
Barrenjoey Boating Services
paddlecraft kayaks
club sail
church point charter
Seaschool Marine Training
Pittwater Cruises
small yachting cruising club of pittwater
wisky business charters

MARINAS – EXTERNAL STAKEHOLDERS

Careel Bay Marina
Holmeport Marina
The Quays Marina
Bayview Anchorage
Gibson Marina Bayview
Newport Anchorage
Rowell Marine - Heron Cove Marina
Princes Street Marina
Royal Prince Alfred Yacht Club
Royal Motor Yacht Club
Sirsi Marina
Colin Beashel Marine
Pittwater Aquatic Club
Lovett Bay Boatshed

APPENDIX 5: A – COPY OF THE PITTWATER WATERWAY SURVEY

PITTWATER
COUNCIL

Waterway Review

Introduction

About the Waterway Review

The Pittwater waterway is a natural icon and distinguishing feature of our region's identity and an important environmental asset. The waterway is a focus for leisure, tourism and business.

Pittwater Council is looking at ways to improve the management of the waterway and to manage a range of competing demands and the complex interplay of environmental, social, economic and governance considerations.

We look forward to hearing what you have to say.

About this survey

This survey should take about 10 minutes to complete. Your input will help inform the development of a discussion paper about the management of the waterway.

The survey seeks your input on what you feel are the key issues facing the waterway and asks a range of questions about how often you use the waterway and what for.

At the end of the survey we would encourage you to leave your name and email address to subscribe to email updates about the Waterway Review – we will also let you know about other ways to have your say on this important project.

PITTWATER
COUNCIL

Waterway Review

About the waterway

1. How satisfied are you with the following elements of the waterway?

	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	N/A
Moorings	○	○	○	○	○	○
Marinas and pump out facilities	○	○	○	○	○	○
Foreshore access	○	○	○	○	○	○
Parking facilities	○	○	○	○	○	○
Wharves and Jetties	○	○	○	○	○	○
Dinghy and dry storage (kayaks/small boats)	○	○	○	○	○	○
Boat ramps	○	○	○	○	○	○
Recreational facilities (parks, reserves, public bathrooms)	○	○	○	○	○	○
Natural environment – water quality and foreshore	○	○	○	○	○	○
Natural environment – flora and fauna	○	○	○	○	○	○

PITTWATER COUNCIL

Waterway Review

Managing issues on the waterway - environmental

A large number of issues have been identified on the waterway. Please rate each of the identified issues in importance to you.

2. Please indicate how important each of the following environmental issues are to you?

	Unimportant	Important	Very important	N/A
Protection of estuarine habitat (saltmarsh, seagrasses etc)	○	○	○	○
Protection of fauna species	○	○	○	○
Management of pollution from sewerage, stormwater and sediment run-off	○	○	○	○
Littering and illegal dumping	○	○	○	○
Pollution from marinas and commercial activities	○	○	○	○
Erosion of the foreshore from boats/ foreshore activities	○	○	○	○
Over fishing	○	○	○	○
Sea level rise	○	○	○	○

Other (please specify)

3

PITTWATER COUNCIL

Waterway Review

Managing issues on the waterway - boating

A large number of issues have been identified on the waterway. Please rate each of the identified issues in importance to you.

3. Please indicate how important each of the following boating issues are to you?

	Unimportant	Important	Very important	N/A
Increasing demand for moorings	○	○	○	○
Growth in boat ownership	○	○	○	○
Growth in boat size and the impact of larger boats (increased wash, visual impact, increased pollution)	○	○	○	○
Growth in marina size	○	○	○	○
Demand for dry storage (for kayaks, paddleboards, small craft, dinghy's)	○	○	○	○
Demand for boat ramps	○	○	○	○
Parking for cars and boats	○	○	○	○
Protect and enhance tourism and commercial activity	○	○	○	○

Other (please specify)

4

PITTWATER
COUNCIL

Waterway Review

Managing issues on the waterway - social

A large number of issues have been identified on the waterway. Please rate each of the identified issues in importance to you.

5

4. Please indicate how important each of the following social issues are to you?

	Unimportant	Important	Very important	N/A
Safety on the waterway and foreshore	○	○	○	○
Public access to the foreshore and waterway (eg kayak's, paddle boards, boat ramps)	○	○	○	○
Protection of Aboriginal and European heritage on the waterway	○	○	○	○
Protection of visual and aesthetic qualities of the waterway	○	○	○	○
Management of powered watercraft (jet ski's) on the waterway	○	○	○	○
Enhancement of recreational facilities on the waterway and foreshore	○	○	○	○
Management of dogs and pets along the foreshore	○	○	○	○
Access to the waterway for recreational fishing	○	○	○	○

Other (please specify)

6

PITTWATER
COUNCIL

Waterway Review

Managing issues on the waterway - regulatory and enforcement

A large number of issues have been identified on the waterway. Please rate each of the identified issues in importance to you.

5. Please indicate how important each of the following regulatory and enforcement issues are to you?

	Unimportant	Important	Very important	N/A
Transport access for offshore communities (eg Scotland Island, western foreshore)	○	○	○	○
Parking enforcement	○	○	○	○
Enforcement and management of moorings	○	○	○	○
Tie off facilities and public wharf enforcement	○	○	○	○
Protection and management of navigational channels	○	○	○	○
Speed limits and wash	○	○	○	○
Planning considerations including zoning and building controls	○	○	○	○

Other (please specify)

7

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Waterway Review

Biggest Challenge

6. From your perspective, what is the single biggest challenge facing the waterway over the next ten years?

7. How do you think this challenge could best be managed?

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Waterway Review

Your aspirations for the waterway

8. What are your top three aspirations for the waterway into the future?

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Waterway Review

About you and your use of the waterway:

9. What waterway activities are you involved in? Tick all that apply

- [ ] Ferry/ water taxi
- [ ] Large Powered boating (>6m)
- [ ] Small Powered boating (<6m)
- [ ] Sail boating
- [ ] Powered water craft (Jet Ski)
- [ ] Kayaking
- [ ] Paddle boarding
- [ ] Fishing
- [ ] Commercial or business purposes (eg cafes, tourism etc)
- [ ] Foreshore recreation (eg. BBQs, foreshore walks)
- [ ] Marina operator/ boat builder etc
- [ ] Swimming
- [ ] Other (please specify)

10. How do you access the waterway? Tick all that apply. Via:

- [ ] Marina
- [ ] Public wharf or jetty
- [ ] Private wharf or jetty
- [ ] Boat ramp
- [ ] Foreshore or beach
- [ ] Dry storage or dingy tie up
- [ ] Other (please specify)

11. How often do you use the waterway

	Everyday	Once a week	Once every few weeks	Once a month	Less than once a month
During summer months from October to April	○	○	○	○	○
During winter months from May to September	○	○	○	○	○

12. Where do you live?

- ○ Onshore in Pittwater
- ○ Offshore in Pittwater
- ○ Elsewhere on the northern beaches
- ○ Elsewhere in Sydney
- ○ Elsewhere in NSW

13. Age

- ○ Under 24 years
- ○ 25-44 years
- ○ 45-64 years
- ○ Over 65 years

* 14. Contact details

Name	
Group, Organisation, Company or Operator	
Email Address	

* 15. Would you like to subscribe to project updates by email?

- ○ No thanks, I'll keep up to date via the webpage
- ○ Yes (please confirm you typed your email correctly in the question above)

PITTWATER
COUNCIL

Waterway Review

Thanks
!

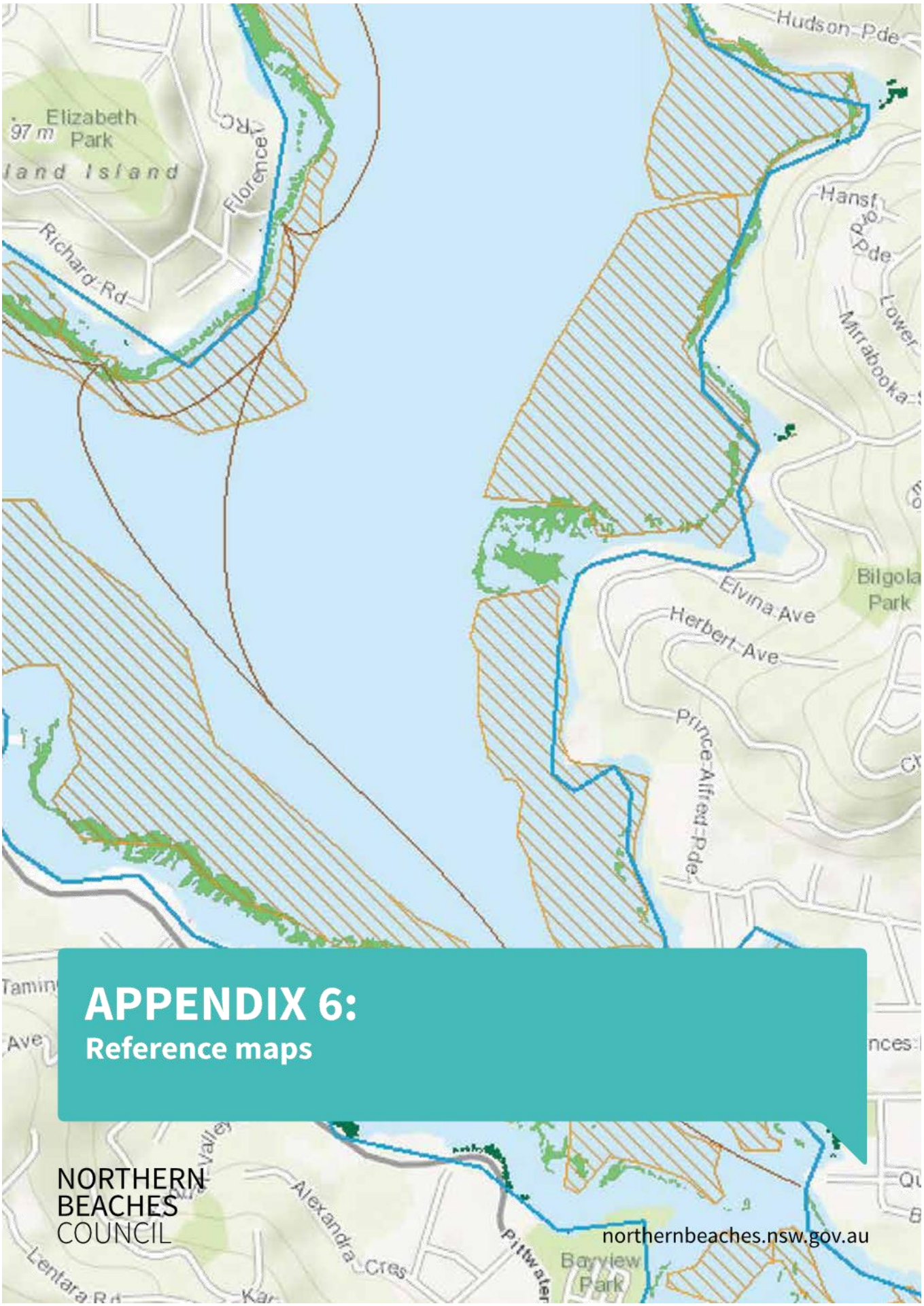
Thank you for your input in the Waterway Review.

Pittwater Council is at the beginning of a process that is expected to take about a year and a half. There will be several opportunities for you to find out more and again have your say as the project progresses.

Updates about the project will be included in Council's enewsletter and on the YourSay web portal at key stages, and by email if you chose to subscribe to updates.

Please take a moment to share this survey with your friends – all the information can be found on Council's website at www.pittwater.nsw.gov.au/yoursay

12



APPENDIX 6:
Reference maps

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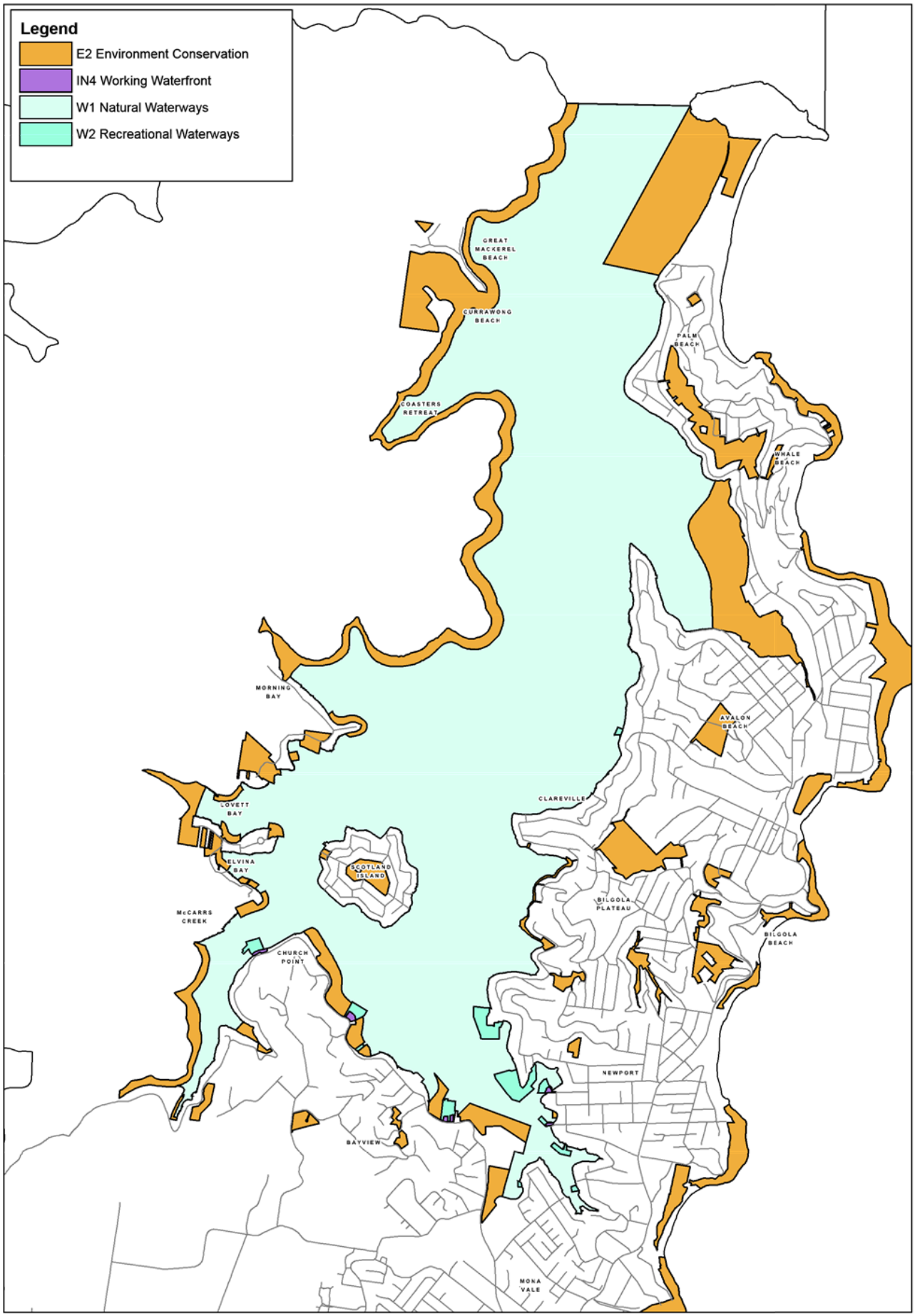
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W1 Natural Waterways
W2 Recreational Waterways
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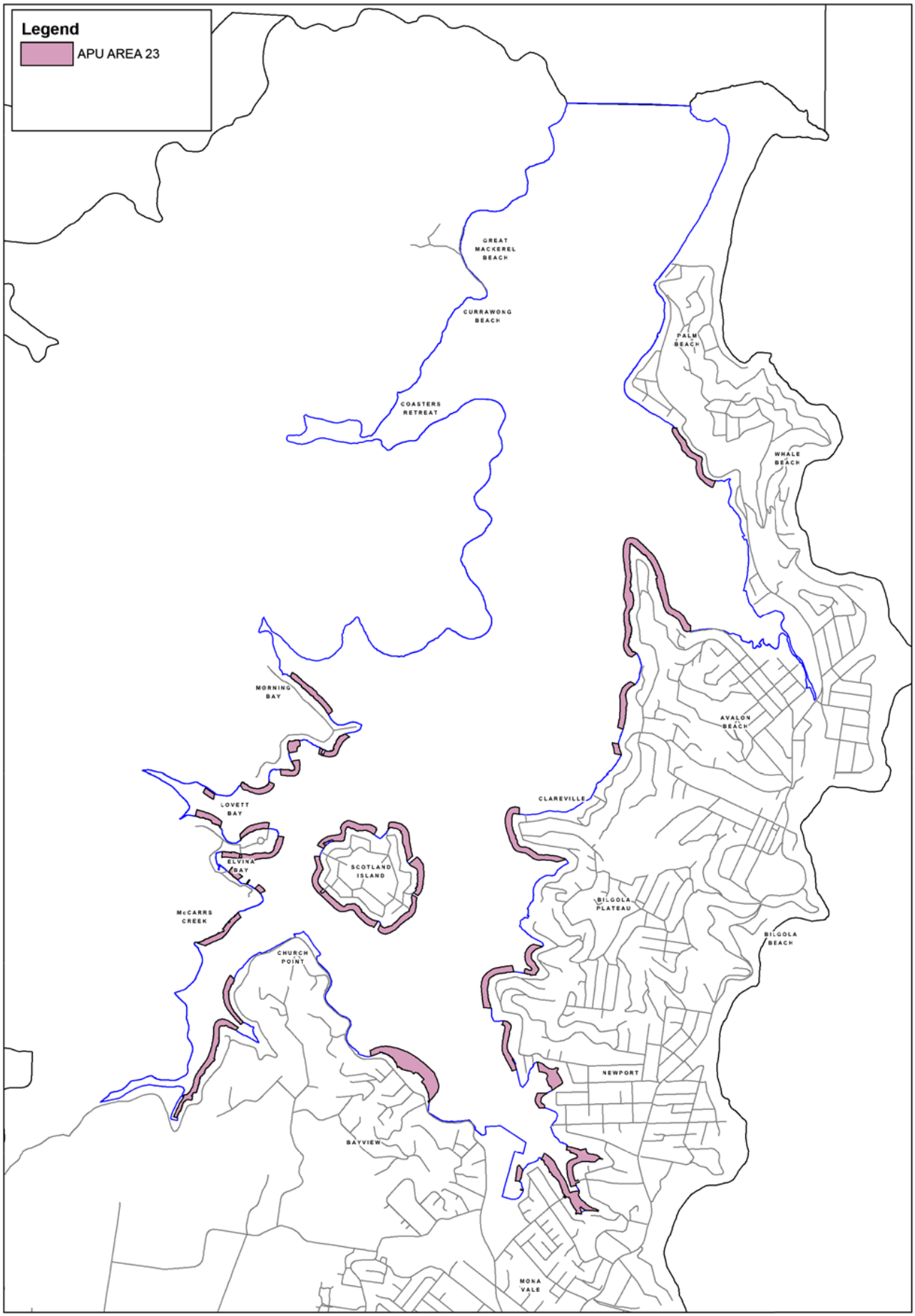
CURRAWONG BEACH
PALM BEACH
COASTERS RETREAT
WHALE BEACH
MORNING BAY
AVALON BEACH
CLAREVILLE
LOVETT BAY
ELVINA BAY
SCOTLAND ISLAND
BILGOLA PLATEAU
McCARRS CREEK
BILGOLA BEACH
CHURCH POINT
NEWPORT
BAYVIEW
MONA VALE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PALM BEACH
COASTERS RETREAT
WHALE BEACH
MORNING BAY
AVALON BEACH
CLAREVILLE
LOVETT BAY
ELVINA BAY
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BILGOLA PLATEAU
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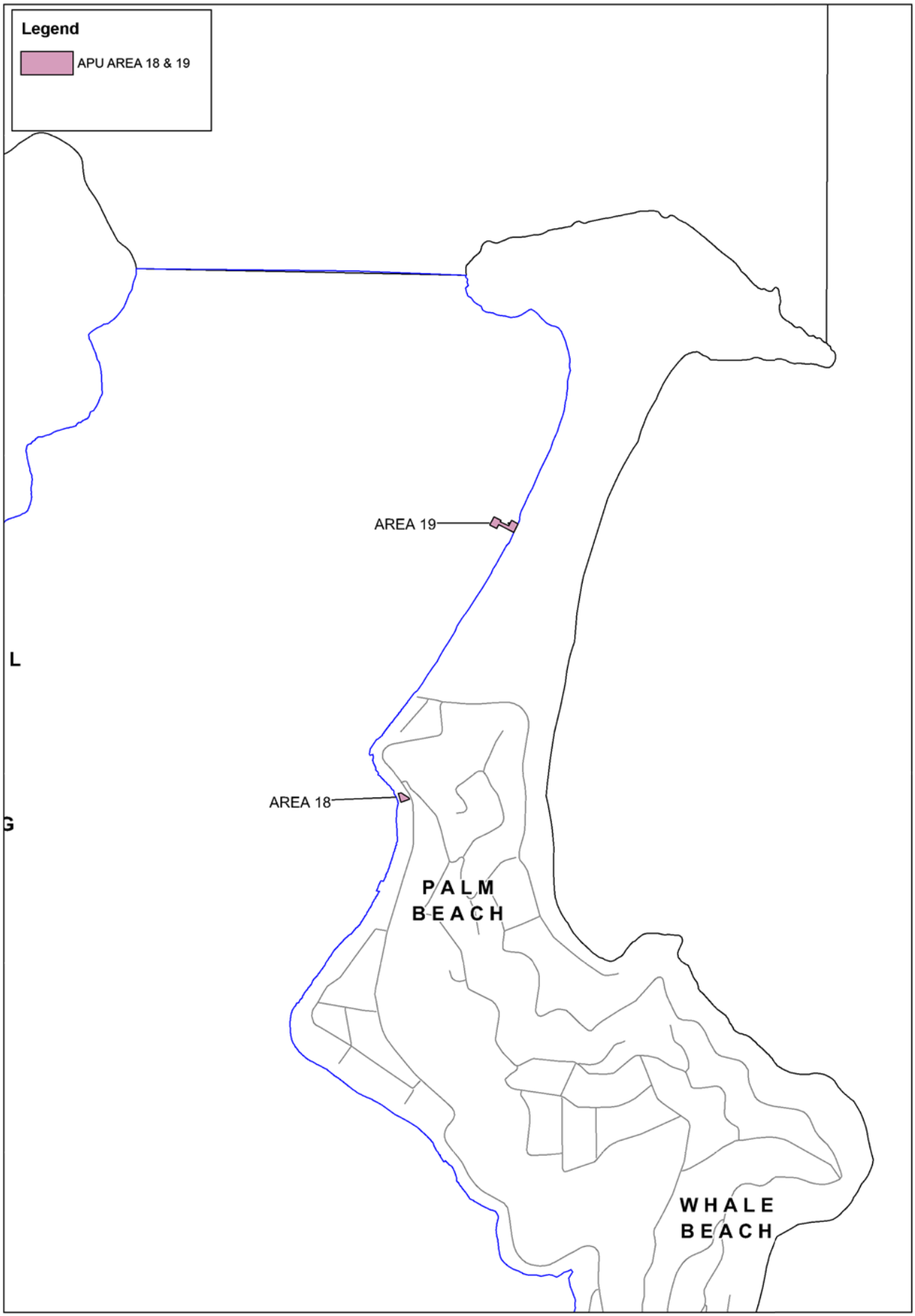
CHURCH POINT
NEWPORT
BAYVIEW
MONA VALE


Legend
APU AREA 18 & 19
AREA 19
AREA 18
L
G
PALM
BEACH
WHALE
BEACH