

**HORNSBY SHIRE COUNCIL**

**HAWKESBURY RIVER  
ESTUARY ECONOMIC BENEFIT  
IDENTIFICATION STUDY**

Rolyat Services Pty Ltd  
27 February 2013

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## EXECUTIVE SUMMARY

In early 2012, Rolyat Services Pty Ltd was engaged by Hornsby Shire Council to prepare an economic benefit identification study of the Hawkesbury River estuary east of Wisemans Ferry. The study area under consideration comprised the Hawkesbury River estuary, defined as the river and foreshores east from Wiseman's Ferry to Broken Bay entrance, including:

- Berowra Creek and tributaries;
- Cowan Creek and tributaries;
- Mooney Mooney Creek;
- Mullet Creek;
- Mangrove Creek;
- Pittwater and tributaries; and
- Brisbane Water and tributaries, including Patonga.

The study concept was defined to confirm the number, location and reasonable economic replacement value of:

- marinas, public wharves, commuter berths and pontoons, boat ramps, together with associated car and trailer parking areas;
- boat washing and fish cleaning facilities;
- moored boats, including houseboats, located on swing moorings and marina berths;
- sailing clubs and boats associated with them; and
- public toilets, picnic facilities, lookouts, seawalls, constructed walkways and interpretive signage.

Other commercial benefits produced by the estuary include:

- oyster aquaculture;
- commercial fin fish and prawn harvesting; and
- houseboat and other commercial boat hire.

Recreational benefits include:

- boating (motorised and non-motorised);
- fishing (shore and boat-based);
- water skiing and wake boarding;
- sailing and yachting;
- camping;
- swimming;
- walking; and
- sightseeing.

Table E1 summarises fixed foreshore assets by estimated replacement cost over the Hawkesbury River estuary by subcatchment.

**Table E1: Hawkesbury River estuary fixed foreshore assets by subcatchment and indicative estimated 2012-13 replacement prices**

<i>Asset</i>	<i>Subcatchment area</i>	<i>Assets (No.)</i>	<i>Subtotal</i>	<i>Wet berths (No.)</i>	<i>Item costs (\$'M)</i>	<i>Subtotal costs (\$'M)</i>
Marinas	Berowra Creek	2		118	11.8	
	Brooklyn	9		461	57.1	
	Cowan Creek	2		485	66.2	
	Pittwater	8		495	62.5	
	Brisbane Water, inc Ptga	5		109	13.7	
	Wisemans to Spencer	-	26	-		211.3
Public wharves	Berowra Creek	3			0.5	
	Brooklyn	13			3.0	
	Cowan Creek	3			0.7	
	Pittwater	29			13.4	
	Brisbane Water, inc Ptga	43			13.1	
	Wisemans to Spencer	2	93		0.6	31.3
Commuter berths	Berowra Creek	40			0.3	
	Brooklyn	140			1.4	
	Cowan Creek	-			-	
	Pittwater	95			0.7	
	Brisbane Water	7			0.5	
	Wisemans to Spencer	-	282		-	2.9
Pontoon wharves	Berowra Creek	1			0.1	
	Brooklyn	2			1.2	
	Cowan Creek	1			0.2	
	Pittwater	-			-	
	Brisbane Water, inc Ptga	-			-	
	Wisemans to Spencer	-	4		-	1.5
Boat ramps	Berowra Creek	1			1.0	
	Brooklyn	4			2.3	
	Cowan Creek	3			1.8	
	Pittwater	3			2.5	
	Brisbane Water	23			6.9	
	Wisemans to Spencer	2	36		0.5	15.0
Car parking spots	Berowra Creek	134			0.5	
	Brooklyn	468			1.0	
	Cowan Creek	759			2.3	
	Pittwater	842			2.5	
	Brisbane Water, inc Ptga	398			1.2	
	Wisemans to Spencer	-	2,601		-	7.5
Vehicle/trailer spots	Berowra Creek	58			0.4	
	Brooklyn	183			0.9	
	Cowan Creek	147			0.7	
	Pittwater	313			1.6	
	Brisbane Water, inc Ptga	204			1.0	
	Wisemans to Spencer	-	905		-	4.5
Boat washing facilities	Berowra Creek	-			-	
	Brooklyn	1			-	
	Cowan Creek	-			-	
	Pittwater	-			-	
	Brisbane Water, inc Ptga	-			-	
	Wisemans to Spencer	-	1		-	
Fish cleaning stations	Berowra Creek	1			-	
	Brooklyn	2			-	
	Cowan Creek	1			-	
	Pittwater	-			-	
	Brisbane Water, inc Ptga	7			0.1	
	Wisemans to Spencer	-	11		-	0.1
<b>Foreshore fixed assets</b>				<b>1,686</b>	<b>\$274.1M</b>	<b>\$274.1M</b>

Source: spreadsheets, Appendix A

Table E2 summarises overall numbers and estimated replacement values for all vessels either moored or berthed on the Hawkesbury River estuary, with total replacement value for these vessels estimated at \$1.5 billion, of which \$1.06 billion worth, or more than two thirds by value, are located in Pittwater. In this report, vessels stored ashore on riverside properties or tied up at private jetties throughout the estuary have been included in the “berthed vessels” counts for each subcatchment.

**Table E2**  
**Hawkesbury River estuary berthed and moored boats by subcatchment**  
 combined indicative estimated 2012-13 replacement values

<i>Subcatchment area</i>	<i>Total moored vessels (No.)</i>	<i>Total berthed vessels (No.)</i>	<i>Total all vessels (No.)</i>	<i>Replacement costs moored vessels (\$ millions)</i>	<i>Replacement costs berthed vessels (\$ millions)</i>	<i>Replacement costs all vessels (\$ millions)</i>
Berowra Creek	160	352	412	18.5	24.4	40.9
Brooklyn	559	804	1,363	44.6	56.2	100.8
Cowan Creek	137	600	737	16.0	108.6	124.6
Pittwater	2,852	2,559	5,411	431.8	634.6	1,066.4
Brisbane Water inc. Patonga	859	1,780	2,639	71.7	86.9	158.6
Wisemans to Spencer	32	158	190	3.4	6.0	9.4
<b>Totals</b>	<b>4,599</b>	<b>6,253</b>	<b>10,852</b>	<b>\$586.0M</b>	<b>\$916.7M</b>	<b>\$1,502.7M</b>

*Source: spreadsheets, Appendix A*

There is a strong industry in the Hawkesbury River estuary employed maintaining and servicing vessels. According to the Manager of Rowell Marine, Newport, annual operating and maintenance costs of 10% of the sale price of berthed boats have been accepted as an industry standard around the world, with annual operating and maintenance costs of between 5% and 7.5% of the sale price for moored boats. These figures are endorsed by the Manager of Fenwick’s Marina, Brooklyn.

Table E3 shows combined estimated annual operating and maintenance costs for all vessels either moored or berthed on the Hawkesbury estuary east of Wisemans Ferry. Combined annual operating and maintenance costs for all vessels either moored or berthed in the estuary east of Wisemans Ferry are estimated at \$135 million, using the higher annual value of 7.5% of replacement costs for moored vessels.

**Table E3****Hawkesbury River estuary berthed and moored boats by subcatchment  
combined indicative estimated 2012-13 replacement values and annual O&M costs**

<i>Subcatchment area</i>	<i>Total all vessels (No.)</i>	<i>Replacement costs all vessels (\$ millions)</i>	<i>Annual O&amp;M costs at 7.5% for moored vessels (\$ millions)</i>	<i>Annual O&amp;M costs at 10% for berthed vessels (\$ millions)</i>	<i>Combined annual O&amp;M costs for all vessels (\$ millions)</i>
Berowra Creek	412	40.9	1.4	2.4	3.8
Brooklyn	1,363	100.8	3.3	5.6	8.9
Cowan Creek	737	124.6	1.2	10.9	12.1
Pittwater	5,411	1,066.4	32.4	63.4	96.8
Brisbane Water inc. Patonga	2,639	158.6	5.4	8.7	14.1
Wisemans to Spencer	190	9.4	0.3	0.6	0.9
<b>Totals</b>	<b>10,852</b>	<b>\$1,502.7M</b>	<b>\$44.1M</b>	<b>\$91.6M</b>	<b>\$135.7M</b>

*Source: spreadsheets, Appendix A*

Estimated combined annual operating and maintenance costs by subcatchment are:

- almost \$4 million for Berowra Creek subcatchment;
- almost \$9 million for Brooklyn area;
- \$12 million for Cowan Creek area;
- almost \$97 million for Pittwater;
- \$14 million for the Brisbane Water area including Patonga; and
- almost \$1 million for the Wisemans Ferry to Spencer area.

As shown in Table E1 above, of the 26 marinas located in the Hawkesbury River estuary, 9 are located in the Brooklyn subcatchment area, 8 are in Pittwater, 5 are in Brisbane Water, 2 are in the Cowan Creek subcatchment and 2 are in Berowra Creek.

AgEconPlus Consulting<sup>1</sup>'s 2006 figures for recreation and tourism values in the Hawkesbury River estuary east of Wisemans Ferry have been adjusted to consider demographic growth in the Greater Sydney area and average wage increases since 2006.

Table E4 reflects these two adjustments of the AgEconPlus 2006 recreation and tourism values to allow for the increased value of recreational activities for the Hawkesbury River estuary east of Wisemans Ferry to 2011-12 values.

<sup>1</sup> AgEconPlus Consulting Pty Ltd, "Quantifying the Economic Value of Activities Dependent on the Hawkesbury-Nepean River", Final Report, June 2006

**Table E4****2012 adjusted recreation and tourism values - Hawkesbury River Reaches 26 and 27**

	<i>Total visits*</i> (‘000)	<i>Consumer surplus**</i> <i>per person per visit</i> (\$)	<i>Total consumer surplus</i> <i>(\$ millions)</i>
Sightseeing, walking, picnicking	575.0	25.24	14.51
Camping	86.3	50.48	4.36
Swimming	115.0	25.24	2.90
Recreational fishing	172.5	44.17	7.62
Boating – canoeing and sailing	172.5	44.17	7.62
Boating – houseboats	34.5	44.17	1.52
Boating – power boats/water skiing	172.5	44.17	7.62
<b>Totals</b>	<b>1,328.3</b>		<b>\$46.15M</b>

\* - increased by 15% as per Greater Sydney demographic changes, Wikipedia

\*\* - increased by 26.2% as per ABS indicators 1350.5 – non-farm GDP deflator

Table E4 indicates that the 2012 adjusted recreation and tourism values for Reaches 26 and 27 of the Hawkesbury River estuary have risen overall by 46% since 2006 from \$31.8 million per annum to \$46.15 million in 2011-12 prices.

The NSW Department of Primary Industries’ Fisheries Resource Management Branch has provided commercial harvests for the Hawkesbury River and Pittwater by weight for 2008-09 and 2009-10. The 2009-10 catch weight of 704.7 tonnes for fin fish was significantly greater than the 2008-09 catch weight of 479.0 tonnes. Fisheries Resource Management Branch is unable to supply the catch value of commercial harvests in the Hawkesbury Rivers and Pittwater for the last 4 years.

The Sydney Morning Herald<sup>2</sup> reported on 25 January 2013 that tests have confirmed that the Pacific oyster mortality syndrome had reached Mullet Creek in the Hawkesbury estuary, the local nursery for juvenile oyster stock. The Hawkesbury River estuary produces more than 300,000 dozen oysters annually, worth about \$2.4 million. This is about half NSW’s Pacific oyster production. The Herald reported that about 20% of the local industry’s 245 hectare growing area had been affected and in 24 hours the infection wiped out about 90% of oysters growing there.

Discussions were held with a number of real estate agents operating around the Hawkesbury River estuary regarding real estate economic benefits produced by the estuary.

Residents living in riverside settlements, away from urban centres like Brooklyn and Berowra Waters and without direct road access to their properties, require car parking and boat parking at mainland access points as well as landing areas at their properties for access from the water. It is estimated that a service boat for riverside residents involves a similar expense to that of operating a medium to large family car, up to \$12,000 per annum, for servicing, fuel, mooring and berthing fees.

<sup>2</sup>“Virus wipes out millions of oysters overnight” Sydney Morning Herald, 25/1/2013, by Leesha McKenny

Additional costs and inconvenience impact on riverside property values. Riverside properties at places like Milsons Passage with deepwater frontage access can sell at a 50% discount compared to similar properties with direct road access in the Brooklyn area.

It is estimated that holiday rental of properties on the Hawkesbury River could generate up to \$15 million per annum when all client expenditure, including that at restaurants, shops and entertainment facilities in the Hawkesbury valley, are included.

The collapse of the Sydney Rock Oyster industry in the Hawkesbury River through QX parasite in the mid 2000's had an impact on public perceptions of river health and reflected on property values. Mr. Jeff Rudge, Proprietor of Hawkesbury River Real Estate at Brooklyn, observed a general drop off in house prices at the time of between 5% and 10%, with sales slowing due to concerns of potential buyers due to impacts on river water quality. He cautions that economic conditions at that time were also affected due to the general economic slowdown of the late 2000's but states that there was a definite impact on housing prices due to the oyster industry's problems on the river at that time.

The subsequent cleanup and reestablishment of the Hawkesbury River oyster industry using the Pacific Oyster and development of more sustainable practices and technology have restored public faith in the river's quality to some extent but the recent emergence of Pacific Oyster Mortality Syndrome may adversely impact on property prices again.

Lack of direct road access has a major impact on a property's resale potential in the Pittwater area, with 95% of potential buyers not interested in properties without road access. These properties can take several years to sell and vendors can face substantial price reductions to get them sold.

Properties on the Barrenjoey Peninsula facing Pittwater to the west generally tend to be 30% to 40% cheaper than similar ocean side properties with ocean views although waterfront homes on Pittwater generate similar prices to ocean beachfront properties. Pittwater properties tend to be about 40% cheaper than equivalent properties in Sydney's eastern suburbs with water views, although top end prices in Pittwater are similar to those in the eastern suburbs.

Rail access is a positive feature for Brisbane Water real estate with the Main Northern Line running along the western side of the waterway. There is no real differential in real estate prices between the eastern and western areas surrounding the waterway, especially since the Rip Bridge opened in 1974 and commuters can more easily access railway stations on the western side. Improved water access through Brisbane Water with access to the Pittwater area and ultimately to Sydney Harbour could provide more public transport alternatives to the rail way and F3 freeway for commuters. Delays on the F3 and the Central Coast rail system can have major impacts on morning and evening peak commuter flows.

# INTRODUCTION

## Background

Hornsby Shire Council is bordered to the north by the Hawkesbury River estuary between Wisemans Ferry and Brooklyn. The Hawkesbury River also forms the southern boundary of Gosford City Council.

Hornsby Shire Council has been actively involved in co-ordinating the management of improving water quality and enhancing recreational experiences in the estuary for many years. Council requires a comprehensive overview of the entire lower estuary to estimate levels of investment in the recreational boating industry, the nature and indicative replacement costs of local government infrastructure on estuary foreshores and indicative values of recreational benefits provided by the estuary.

## The brief

In early 2012, Rolyat Services Pty Ltd was engaged by Hornsby Shire Council to prepare an economic benefit identification study of the Hawkesbury River estuary east of Wisemans Ferry. The study area under consideration comprised the Hawkesbury River estuary, defined as the river and foreshores east from Wiseman's Ferry to Broken Bay entrance including:

- Berowra Creek and tributaries;
- Cowan Creek and tributaries;
- Mooney Mooney Creek;
- Mullet Creek;
- Mangrove Creek;
- Pittwater and tributaries; and
- Brisbane Water and tributaries, including Patonga.

This project has a potentially immense scope and, following a series of discussions, the study concept was defined to confirm the number, location and reasonable economic replacement value of:

- marinas, public wharves, commuter berths and pontoons, boat ramps, together with associated car and trailer parking areas;
- boat washing and fish cleaning facilities;
- moored boats, including houseboats, located on swing moorings and marina berths;
- sailing clubs and boats associated with them; and
- public toilets, picnic facilities, lookouts, seawalls, constructed walkways and interpretive signage.

In addition, discussions with a number of real estate agencies located close to the estuary were held to estimate the indicative additional value of private real estate due to its proximity to the estuary.

Other commercial benefits produced by the estuary include:

- oyster aquaculture;
- commercial fin fish and prawn harvesting; and
- houseboat and other commercial boat hire.

Recreational benefits include:

- boating (motorised and non-motorised);
- fishing (shore and boat-based);
- water skiing and wake boarding;
- sailing and yachting;
- camping;
- swimming;
- walking; and
- sightseeing.

These benefits have been included in the study, based on information previously published by NSW Fisheries and other agencies and updated where possible to 2011-12 values.

## **PROJECT METHODOLOGY**

### **Use of aerial survey data**

Latest available aerial survey data from Council's "dekho" in-house geographic information system (GIS), Google Maps and Nearmap were used to survey the Hawkesbury River estuary. In addition, comprehensive field inspections were undertaken across the estuary by subcatchment to investigate assets.

### **Subcatchment field visits and asset cataloguing**

A substantial number of field days were spent assessing and preparing inventories of infrastructure assets in each subcatchment. These assets were entered into Excel spreadsheets for each subcatchment. The estuary subcatchments were defined as follows:

- Berowra Creek and tributaries, including riverside settlements located between Berowra Waters and Fishermans Point;
- the Brooklyn area, including Mullet Creek, Mooney Mooney Creek and riverside settlements west to Spencer and east to Croppy Point;
- Cowan Creek and tributaries;
- Pittwater and tributaries;
- Brisbane Water and tributaries, including Patonga; and

- Mangrove Creek and the Hawkesbury River between Wisemans Ferry and Spencer.

Each spreadsheet was divided into asset category by worksheet, as follows:

- land-based fixed public assets including marinas, wharves and jetties, boat ramps; car parking and vehicle and boat trailer parking spots, fish cleaning stations and boat washing facilities;
- moored boats, grouped in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, as well as houseboats listed separately;
- berthed boats, grouped in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, as well as houseboats listed separately. In this analysis, vessels berthed at marinas and on private wharves and jetties, as well as those stored on hard stands in marinas and ashore in private premises, were included in the count of berthed vessels;
- sailing clubs and boats; and
- toilets, recreational and other foreshore public facilities including foreshore improvements.

Individual assets were recorded within worksheet categories by subcatchment and then costed at indicative replacement values, based on recent asset construction costs provided by Hornsby Shire Council, updated historic actual and budgeted costs and discussions with commercial operators and industry groups. Consultations and meetings were held with Building Services officers from Hornsby Shire Council, Pittwater Council and Gosford City Council to check asset replacement costs.

Estimates of replacement values for vessels berthed and moored in the Hawkesbury River estuary were based on December 2012 advertised sale prices from:

- Berowra Waters Marina;
- Fenwicks Marina, Brooklyn;
- Empire Boat Sales at Bobbin Head;
- Cottage Point Boats Sales at Cottage Point;
- Maritimo Boat Sales at Akuna Bay, Coal and Candle Creek; and
- Rowell Marine Boat Sales at Heron Cove, Newport.

Detailed discussions on current boat prices and the costs of marinas were held with Mr. Andrew Fenwick of Fenwicks Marina, Brooklyn, and Mr. David Rowell of Rowell Marine, Newport, with follow up written questions comprehensively answered by both operators.

It has been discussed and agreed with these boating industry representatives that marina berths in the Cowan Creek and Pittwater subcatchments have an indicative replacement cost of \$120,000 each. These berths generally cater for a higher average number of larger vessels than those kept in the Berowra Creek, Brooklyn area, Brisbane Water and upper Hawkesbury River subcatchments.

Marina berths in the Berowra Creek, Brooklyn area, Brisbane Water and upper Hawkesbury River subcatchments have an estimated indicative replacement cost of \$100,000 each.

Individual worksheet asset items and indicative costings were then summarized on a summary sheet for each subcatchment.

## **EARLY DEVELOPMENT OF THE HAWKESBURY AREA**

The Hawkesbury River, also known as “Deerubbin”, is a semi-mature tide-dominated drowned valley estuary located to the west and north of Sydney. The Hawkesbury River and its main tributary, the Nepean River, virtually encircle the greater Sydney metropolitan area. The total catchment area of the river system is approximately 21,624 square kilometres.

The Hawkesbury River has its origin at the confluence of the Nepean River and the Grose River to the north of Penrith and travels for approximately 120 kilometres in a north easterly and then south easterly direction to its mouth at Broken Bay. The Hawkesbury River is the main tributary of Broken Bay. Other tributaries include Cowan Creek, Brisbane Water and Pittwater. Broken Bay joins the Tasman Sea at Barrenjoey Head and Box Head to the north.

### **Early European exploration**

When the First Fleet arrived initially in January 1788, Governor Phillip realized that Botany Bay was an exposed and shallow anchorage with dangers to his ships. He quickly explored north and found Sydney Harbour, or Port Jackson, which proved to be one of the world's best and safest harbours, with well protected bays and deep anchorages close to shore.

The First Fleet had limited supplies and food was soon short as areas surrounding Sydney Harbour were found to be mainly rugged sandstone country, harsh and infertile with limited and shallow soils. In early 1788 two expeditions were organized which explored the Hawkesbury River to the northwest of Sydney and the Nepean River to the southwest in search of agricultural land.

On 2nd March 1788 Governor Phillip arrived in Broken Bay and named its closest southern tributary “Pittwater” after William Pitt the Younger, Prime Minister of Great Britain. He described the inlet as "the finest piece of water I ever saw". At the same time he explored the Hawkesbury River as far up as Mullet, now Dangar, Island.

During this eight day voyage, Phillip and his party briefly explored both sides of Broken Bay. This included a northern tributary initially known as the 'north-west arm'. In 1789, a more thorough investigation of the north-west arm was conducted. During this second voyage, the north-west arm area was discounted for agricultural use, owing to its rugged nature. Later the north-west arm waterway was renamed 'Brisbane Water' after Sir Thomas MacDougall Brisbane, NSW Governor between 1821 and 1825.

The Hawkesbury River was named by Governor Phillip in June 1789 after Charles Jenkinson, 1st Earl of Liverpool, titled Baron Hawkesbury.

Good quality agricultural land was found along the Hawkesbury River west of Sydney. It took three years for authorities to realise that the Nepean and Hawkesbury rivers were joined and were branches of the same system.

James Ruse was a Cornish farmer who, at the age of 23, was convicted of breaking and entering and sentenced to seven years' transportation to Australia. He arrived at Sydney Cove on the First Fleet with 18 months of his sentence remaining. Ruse applied to Governor Arthur Phillip for a land grant, stating that he had been bred to farming.

Governor Phillip, desperate to make the colony self-sufficient in food, allocated Ruse an allotment at Rose Hill near Parramatta, where he proved himself industrious and showed that it was possible for a family to survive through farming. Ruse then received a grant of 30 acres, enabling him eventually to sell 600 bushels of maize. This was the first grant of land in New South Wales. Ruse later exchanged the Rose Hill grant for more fertile land on the Hawkesbury River.

In 1794, 22 families were granted land at Bardenarang, now known as Pitt Town Bottoms, near Windsor. Europeans have lived along the river since the 1790's, fishing, oyster gathering and growing, farming and supplying timber and other agricultural products.

### **Early transport on the Hawkesbury River**

The Hawkesbury River was one of the major routes for transporting food from surrounding agricultural areas to Sydney during the 1800's. Vessels would wait in the protection of Broken Bay and Pittwater until favourable weather allowed them to make the ocean journey south to Sydney.

In 1826 work commenced on the Great North Road, linking Sydney with Newcastle and the newly settled agricultural lands of the Hunter Valley. At that time, the Great North Road represented the greatest public works project undertaken in the colony. Engineering practice, using mainly convict iron gang labour, was equal to the best in England. Simple hand tools were used by convicts working in primitive conditions.

Construction works on the 240 kilometre long road included massive buttressed stone walls and elaborate drainage systems. After its completion in 1836, the Great North Road was little used by early travellers and some sections remain unaltered from their original appearance.

Following the opening of the railway line from Sydney to Windsor in 1864, farm produce could be shipped up the Hawkesbury River for onward transportation by train to the Sydney markets.

By the 1880s, due to land clearing and agricultural and grazing practices, the river had become silted up between Sackville and Windsor. Sackville then became the head of navigation for seagoing vessels. Coastal steamers travelled between Sackville and Sydney until the end of the 19th century.

In April 1887, a single line section of railway track was opened between Hornsby and the Hawkesbury River. Passengers and goods heading north were unloaded at the River Wharf platform located on the eastern end of Long Island. They then boarded a double decker, rear paddlewheeled steamer named the "*General Gordon*", which conveyed them out into Broken Bay and up Brisbane Water to Gosford. At Gosford they could rejoin trains heading north.

Once the 1.6-kilometre long Woy Woy Tunnel was completed, the three hour trip was considerably shortened as the steamer only had to cross the river and negotiate the lower reaches of Mullet Creek to reach Wondabyne railway station.

In January 1886 the Union Bridge Company from New York, USA, was awarded the contract to construct a rail bridge across the river from Long Island to Mullet Point. The bridge was officially opened on 1 May 1889. The bridge gave good service until 1927 when it required strengthening. During the 1930's cracks developed in one of the piers and it became necessary to replace the entire structure.

Work commenced on a new rail bridge in July 1940. It was opened for traffic on 1 July 1946. The new rail bridge was positioned 60 metres to the west and upstream of the original bridge. New tunnels were bored through Long Island to the south and Cogra Point on the northern approach. After completion of the new rail bridge, the old bridge was removed but the original sandstone piers were left and remain in the river.

In the early 1830's, George Peat, an early settler, marked a line of road from Sydney to Brisbane Water and established a ferry crossing at Mooney Mooney Point. The Hawkesbury River had been bridged for road traffic at North Richmond in 1860 but there no road across the Hawkesbury River estuary.

In the 1820's Governor Brisbane promised settlers in the Gosford area road access to Sydney. In 1848 Governor Fitzroy approved Peats Ferry Road as the new North Road. Punts were used to ferry travellers across the Hawkesbury River and Mooney Mooney Creek. These punts ceased operation in 1889 with the opening of the rail bridge. Peats Ferry Road north of the river was not maintained afterwards.

By 1930 the section of Peats Ferry Road from Hornsby to the Hawkesbury River had been reconstructed and renamed the Pacific Highway. Two vehicular ferries, the "*George Peat*" and the "*Frances Peat*", operated across the river from Kangaroo Point to Mooney Mooney. As traffic flows increased, a decision was made to build a road bridge across the river. Construction of the Peats Ferry Road Bridge began in September 1938 and the bridge was officially opened in May 1945. It was the first direct road link between Sydney and Newcastle.

As part of construction of the Sydney-Newcastle Freeway, the F3, a new six lane bridge was built adjacent to the 1945 bridge and opened to traffic in October 1973. The original road bridge remains in service carrying traffic on the old Pacific Highway route and acts as a backup to the freeway. It also provides access to Brooklyn.

## **Early development of the Pittwater area**

Although the country between Manly and Palm Beach was rugged and very difficult to travel, settlement in Pittwater was established soon after Governor Hunter surveyed Broken Bay in 1796. The principal means of transport between Pittwater and Sydney was by ship. Grants of land were made to prominent settlers who set about developing a timber industry and providing farm produce for the Sydney markets.

Urban growth on the Barrenjoey Peninsula from Mona Vale to Palm Beach proceeded at a slow pace until the 1960's when it accelerated because of improved roads and population growth pressures in Sydney.

## **Early development of the Brisbane Water area**

One of the earliest industries established in the Brisbane Water district after European exploration was collection of shells for lime manufacture. Shells mined from natural shell banks and aboriginal middens were transported to Sydney by ship for burning. This lime was used to make mortar for building.

Timber-getters worked in the hills around Brisbane Water to obtain forest oak and ironbark for roof shingles. Red cedar was in high demand for furniture manufacture and interior timberwork. Cedar getting began in 1820 and reached a peak in 1830.

More than 500 named vessels were built in the Brisbane Water area using local timber between 1829 and 1953. Shipbuilding was undertaken at Blackwall, Kincumber, Green Point, Empire Bay, Davistown, Erina Creek and Terrigal. In its heyday, the Brisbane Water shipbuilding industry was second only to Sydney in terms of tonnage built. Vessels built at Brisbane Water carried huge quantities of shells for lime manufacture and thousands of tonnes of timber for wharf pilings, railway sleepers, mine props and other uses.

The railway reached Gosford in August 1887, coming south from Newcastle. The opening of the Hawkesbury River Rail Bridge in May 1889 provided a direct connection to Sydney and brought real progress to the Brisbane Water area which had previously been largely dependent on steamships and poor, circuitous road routes. New land subdivisions were opened up close to Gosford and services developed in smaller centres around Brisbane Water.

## **Hawkesbury River transport infrastructure development**

Modern generations are often unaware of the early transport difficulties posed by the rugged sandstone country and the Hawkesbury River valley north of Sydney. The area was a significant barrier to early commerce and growth. For many early residents, water transport on the estuary was their only method of contact with the outside world. Today there are still many residents of the Hawkesbury River estuary whose only access to and from their properties is via water.

A substantial number of public wharves have been built in the estuary, including 29 in Pittwater and 43 in the Brisbane Water area, including Patonga.

Many of these wharves provide vital communications and travel access for residents, particularly in the Brisbane Water area and the western shores of Pittwater.

There are also many hundreds of privately owned wharves and jetties located on permissive occupancies into the estuary from the foreshores of private residences and businesses.

In June 1974 the Rip Bridge was opened between Booker Bay and Daleys Point near the southern entrance of Brisbane Water. The bridge made road travel around Brisbane Water much more convenient and quicker, as prior to its commissioning all road transport had to go through Gosford at the head of the waterway.

## ASSET ANALYSIS BY SUBCATCHMENT

### Berowra Creek subcatchment

Berowra Creek subcatchment was assessed from Crosslands in the south to Fishermans Point in the north, where Berowra Creek joins the main Hawkesbury River. The main developed areas for recreational activity in the Berowra Creek subcatchment are at Crosslands Reserve and Berowra Waters ferry.

There are two marinas located at Berowra Waters, one on either side of the Berowra Waters ferry. These two marinas contain an estimated combined total of 118 berths and have a combined indicative replacement cost of \$11.8 million. There are also three public wharves located at Berowra Waters.

Detailed analyses of assets located in the Berowra Creek subcatchment and their indicative replacement costs are contained in the spreadsheets at Appendix A and are summarised below.

Table 1 sets out fixed foreshore assets by number of asset and indicative replacement cost in the Berowra Creek subcatchment.

**Table 1**  
**Berowra Creek fixed foreshore assets by category**  
and indicative estimated 2012-13 replacement prices

<i>Asset</i>	<i>Number of assets</i>	<i>Costs (\$ millions)</i>
Marinas - with 118 wet berths	2	11.8
Public wharves	3	0.5
Commuter berths	40	0.3
Pontoon wharves	1	0.1
Boat ramps	1 (quadruple)	1.0
Car parking spots	134	0.5
Vehicle and trailer spots	58	0.4
Boat washing facilities	-	-
Fish cleaning stations	1	-
<b>Total Berowra Creek foreshore fixed assets</b>		<b>\$14.7M</b>

Source: spreadsheets, Appendix A

Table 2 sets out boats moored in the Berowra Creek subcatchment by number and indicative replacement cost in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, as well as houseboats.

**Table 2**  
**Berowra Creek moored boats by category**  
 and indicative estimated 2012-13 replacement prices

<i>Vessel length</i>	<i>Number of vessels</i>	<i>Costs (\$ millions)</i>
Less than 6 metres	52	0.8
Between 6 and 12 metres	52	4.7
Longer than 12 metres	41	10.7
Houseboats	15	2.3
<b>Total moored vessels in Berowra Creek</b>	<b>160</b>	<b>\$18.5M</b>

Source: spreadsheets, Appendix A

Table 3 sets out boats berthed in the Berowra Creek subcatchment by number and indicative replacement cost in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, plus houseboats.

**Table 3**  
**Berowra Creek berthed boats by category**  
 and indicative estimated 2012-13 replacement prices

<i>Vessel length</i>	<i>Number of vessels</i>	<i>Costs (\$ millions)</i>
Less than 6 metres	222	3.3
Between 6 and 12 metres	69	6.2
Longer than 12 metres	52	13.5
Houseboats	9	1.4
<b>Total berthed vessels in Berowra Creek</b>	<b>352</b>	<b>\$24.4M</b>

Source: spreadsheets, Appendix A

There are no sailing clubs located in the Berowra Creek subcatchment.

Table 4 sets out foreshore public facilities located in the Berowra Creek subcatchment by number and indicative replacement cost.

**Table 4**  
**Berowra Creek foreshore public assets by category**  
 and indicative estimated 2012-13 replacement prices

<i>Asset</i>	<i>Number of assets</i>	<i>Costs (\$ millions)</i>
Public toilet facilities	4 blocks	1.1
Picnic and recreational facilities	various	0.7
Seawalls	500 metres	0.5
Walkways	450 metres	0.3
Interpretive signs	12	-
<b>Total foreshore public recreational assets</b>		<b>\$2.6M</b>

Source: spreadsheets, Appendix A

## Brooklyn area subcatchment

The Brooklyn area subcatchment was assessed as the area from Spencer to the west down river to Juno Point and Eleanor Bluffs in the east, where Cowan Creek enters the Hawkesbury River main channel.

It includes Mullet Creek and Mooney Mooney Creek on the northern side of the Hawkesbury River and Sandbrook Inlet and Porto Bay on the southern side, as well as riverside settlements along the main river and its tributaries.

Deerubbin recreational reserve, located on the northern bank of the Hawkesbury immediately west of the F3 freeway bridge, has been included in the Brooklyn area subcatchment for this study, even though it is located in the Gosford City Council local government area.

The main developed areas for recreational activity in the Brooklyn area subcatchment are located at Brooklyn, Sandbrook Inlet and Deerubbin reserve.

There are 9 marina facilities located between Kangaroo Point and Flat Rock Point in the Brooklyn area. Together they contain an estimated 461 wet berths and have a combined indicative capital replacement cost of \$57.1 million. Details of these marinas are set out in Table 5.

**Table 5**  
**Brooklyn area marinas with estimated berths and major installed equipment**  
and indicative estimated 2012-13 replacement prices

<i>Marina – shown from west to east</i>	<i>Estimated number of wet berths</i>	<i>Costs (\$ millions)</i>
Kangaroo Point Marina	13	
Dolphin Boatshed and Luxury Afloat - has slipway and hardstand area	49	
Fenwicks Marina - has slipway, hardstand and supporting retail areas plus overhead gantry crane and spray booth	71	
Brooklyn Marina - has slipway, hardstand and supporting retail areas	51	
Wharf Street Marina - has slipway, hardstand and supporting retail areas	51	
Brooklyn Central Marina - has slipway and hardstand area	54	
Sandbrook Inlet Marina - has slipway and hardstand area	65	
Holidays Afloat/Ripples Holiday Houseboats	48	
Hawkesbury River Marina - has hardstand and supporting retail areas	59	
<b>Total Brooklyn area marinas and berths</b>	<b>461</b>	<b>\$57.1M</b>

*Source: spreadsheets, Appendix A*

Hornsby Shire Council maintains 13 public wharves on the Hawkesbury River between Bar Point and Croppy Point.

Table 6 sets out and describes Hornsby Shire Council's public wharves in the Brooklyn area subcatchment and their indicative replacement cost, based on costs provided by Mr. Phil Murdoch, Council's Technical Officer Asset Management.

**Table 6**  
**Brooklyn area public wharves by location with installed equipment**  
and indicative estimated 2012-13 replacement prices

<i>Wharf</i>	<i>Location</i>	<i>Costs (\$ millions)</i>
Kangaroo Point Wharf - 8 x 4m timber jetty plus 6 x 4m wharf on timber piers with 6 timber mooring piles	Kangaroo Point	0.3
Kangaroo Point Pump Out Wharf - 8 x 4m timber jetty plus 6 x 4m wharf on timber piers with 6 timber mooring piles	"	0.7
Kangaroo Point Wharf - 150 x 4m pontoon with 12 x 2m aluminium ramp and 2 concrete piles	"	0.2
East Brooklyn Wharf - 6 x 8m timber wharf with steps and 3 timber piles	East Brooklyn off causeway	0.3
Brooklyn Baths Wharf - 15 x 4m pontoon with 10 x 2m aluminium ramp and 2 concrete piles	McKell Park, Brooklyn	0.2
East Parsley Bay Wharf - 12 x 2.4m pontoon with 8 x 2m aluminium ramp and 3 concrete piles	Parsley Bay, Brooklyn	0.2
West Parsley Bay Wharf - 9 x 2.4m pontoon with 15 x 2m aluminium ramp and 2 concrete piles	"	0.8
Parsley Bay Cargo Wharf - 10 x 15m concrete groyne with 5 timber piles and access road	"	0.4
Dangar Island Wharf - 30 x 3m timber wharf and loading dock on concrete piles with 6 piles, steps, lights, power, water and 8 x 4m shelter shed	Dangar Island	0.2
Wobbys Beach Wharf - 15 x 2m timber jetty with 6 x 4m timber wharf with and 4 piles	Wobbys Beach	0.2
Mullet Creek Rail Wharf - pontoon with aluminium ramp and 2 piles at Wondabyne station	Mullet Creek	0.2
Milsons Passage Wharf - 60 x 2m timber jetty with 4 timber piles plus 6 x 4m shelter shed and lights	Milsons Passage	0.2
Bar Island Wharf - 10 x 2m timber jetty on timber piles plus 8 x 2m aluminium ramp and 6 x 4m pontoon with 2 piles	Bar Island	0.2
Bar Point Wharf - 10 x 2m timber jetty with 2 pontoons and 8 timber piles	Bar Point	0.2
<b>Total Brooklyn area public wharves</b>	<b>13</b>	<b>\$4.2M</b>

Source: spreadsheets, Appendix A

Detailed analyses of assets located in the Brooklyn area subcatchment and their indicative replacement costs are contained in the spreadsheets at Appendix A.

Table 7 summarises fixed foreshore assets by number of asset and indicative replacement cost.

**Table 7**  
**Brooklyn area fixed foreshore assets by category**  
and indicative estimated 2012-13 replacement prices

<i>Asset</i>	<i>Number of assets</i>	<i>Costs (\$ millions)</i>
Marinas - with estimated 461 wet berths	9	57.1
Public wharves	13	3.0
Commuter berths	140	1.4
Pontoon wharves	2 locations	1.2
Boat ramps	4 ramps	2.3
Car parking spots	468	1.0
Vehicle and trailer spots	183	0.9
Boat washing facilities	1	-
Fish cleaning stations	2 locations	-
<b>Total Brooklyn area foreshore fixed assets</b>		<b>\$66.9M</b>

Source: spreadsheets, Appendix A

Table 8 sets out boats moored in the Brooklyn area subcatchment by number and indicative replacement cost in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, as well as houseboats.

**Table 8**  
**Brooklyn area moored boats by category**  
and indicative estimated 2012-13 replacement prices

<i>Vessel length</i>	<i>Number of vessels</i>	<i>Costs (\$ millions)</i>
Less than 6 metres	240	3.6
Between 6 and 12 metres	217	19.5
Longer than 12 metres	56	14.6
Houseboats	46	6.9
<b>Total moored vessels in Brooklyn area</b>	<b>559</b>	<b>\$44.6M</b>

Source: spreadsheets, Appendix A

Table 9 sets out boats berthed in the Brooklyn area subcatchment by number and indicative replacement cost in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, plus houseboats.

**Table 9**  
**Brooklyn area berthed boats by category**  
and indicative estimated 2012-13 replacement prices

<i>Vessel length</i>	<i>Number of vessels</i>	<i>Costs (\$ millions)</i>
Less than 6 metres	469	7.0
Between 6 and 12 metres	188	16.9
Longer than 12 metres	93	24.2
Houseboats	54	8.1
<b>Total berthed vessels in Brooklyn area</b>	<b>804</b>	<b>\$56.2M</b>

Source: spreadsheets, Appendix A

Three sailing clubs operate in the Brooklyn area subcatchment. They are:

- Hornsby Police and Citizens' Youth Club (PCYC) Sailing Club, which has premises at and operates out of Lookout Beach, east of Parsley Bay, Brooklyn;
- Hawkesbury River Yacht Club, which is based at the Hawkesbury River Marina at East Brooklyn and has 15 yachts sailing in the club; and
- Hawkesbury River Sailing Club, with no premises and a fleet comprising mainly trailable yachts that conduct cruising and racing together with social events.

Discussions were held with Mr. Grahame Brown, the Hornsby PCYC Sailing Club Captain, who advised that the PCYC Sailing Club has 100 members and 35 boats based at their Lookout Beach clubhouse. The PCYC fleet is mainly skiffs, comprising Vacluse Seniors (VS's), 125's, Flying 11's and Manly Junior (MJ) classes.

Information has been sought from the other two Hawkesbury River sailing clubs based at Brooklyn.

Table 10 sets out foreshore public facilities located in the Brooklyn area subcatchment by number and indicative replacement cost.

**Table 10**  
**Brooklyn area foreshore public assets by category**  
 In indicative 2012-13 replacement prices

<i>Asset</i>	<i>Number of assets</i>	<i>Costs (\$ millions)</i>
Public toilet facilities	3 blocks	1.2
Picnic and recreational facilities		0.3
Seawalls	1,950 metres	4.9
Walkways	360 metres	0.6
Interpretive signage	17	-
Tidal swimming pool	1	0.6
<b>Total foreshore public recreational assets</b>		<b>\$7.6M</b>

Source: spreadsheets, Appendix A

### **Cowan Creek subcatchment**

Cowan Creek subcatchment was assessed as the area from the upper tidal limits of Cowan and Cockle Creeks to the south, north past Appletree Bay and Cottage Point to Eleanor Bluffs, where Cowan Creek joins the Hawkesbury River. The subcatchment includes Smiths Creek and Coal and Candle Creek to the east as well as major bays like Jerusalem Bay, America Bay and Refuge Bay to the north.

The main developed areas for recreational activity in the Cowan Creek subcatchment are located at Bobbin Head, Appletree Bay, Cottage Point and Illawong and Akuna Bays in Coal and Candle Creek. All recreational areas in Cowan Creek subcatchment lie within Kur-ring-gai Chase National Park.

There are 2 large marinas located in Cowan Creek subcatchment, Empire Marina at Bobbin Head and Akuna Bay Marina. Together they contain an estimated 485 wet berths.

Akuna Bay Marina has an additional 175 dry storage berths located in a “Rack ‘n Stack” storage shed sized 150 x 30 metres on a hardstand area plus an overhead gantry crane. These marinas have an estimated combined replacement cost of \$66.2 million.

Public wharves are located at Bobbin Head and Appletree Bay (two wharves) and have estimated replacement costs of \$0.7 million. Shore access at Cottage Point can be made via a private wharf located on the premises of the Cottage Point Kiosk.

Details of these marinas are set out in Table 11.

**Table 11**  
**Cowan Creek area marinas with estimated berths and major installed equipment**  
and indicative estimated 2012-13 replacement prices

<i>Marina</i>	<i>Estimated number of wet berths</i>	<i>Costs (\$ millions)</i>
Empire Marina - slipway, hardstand and supporting retail areas	232	
Akuna Bay Marina - slipway, hardstand and supporting retail areas with an extra 175 dry storage berths in “Rack ‘n Stack” storage shed 150 x 30 metres on hardstand plus overhead gantry crane	253	
<b>Total Cowan Creek area marinas and berths</b>	<b>485</b>	<b>\$66.2M</b>

Source: spreadsheets, Appendix A

Detailed analyses of assets located in the Cowan Creek area subcatchment and their indicative replacement costs are contained in the spreadsheets at Appendix A and are summarised below. Table 12 sets out fixed foreshore assets by number of asset and indicative replacement cost.

**Table 12**  
**Cowan Creek area fixed foreshore assets by category**  
and indicative estimated 2012-13 replacement prices

<i>Asset</i>	<i>Number of assets</i>	<i>Costs (\$ millions)</i>
Marinas - with estimated 485 wet berths	2	66.2
Public wharves	3	0.7
Commuter berths	-	-
Pontoon wharves	1 location	0.2
Boat ramps	3 ramps	1.8
Car parking spots	759	2.3
Vehicle and trailer spots	147	0.7
Boat washing facilities	-	-
Fish cleaning stations	1 location	-
<b>Total Cowan Creek area foreshore fixed assets</b>		<b>\$71.8M</b>

Source: spreadsheets, Appendix A

Table 13 sets out boats moored in the Cowan Creek area subcatchment by number and indicative replacement cost in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, as well as houseboats.

**Table 13**  
**Cowan Creek area moored boats by category**  
 and indicative estimated 2012-13 replacement prices

<i>Vessel length</i>	<i>Number of vessels</i>	<i>Costs (\$ millions)</i>
Less than 6 metres	20	0.3
Between 6 and 12 metres	113	10.6
Longer than 12 metres	12	4.8
Houseboats	2	0.3
<b>Total moored vessels in Cowan Creek area</b>	<b>137</b>	<b>\$16.0M</b>

*Source: spreadsheets, Appendix A*

Table 14 sets out boats berthed in the Cowan Creek area subcatchment by number and indicative replacement cost in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, plus houseboats. These figures include 158 vessels stored in dry berths in the Akuna Bay “Rack ‘n Stack” facility.

**Table 14**  
**Cowan Creek area berthed boats by category**  
 and indicative estimated 2012-13 replacement prices

<i>Vessel length</i>	<i>Number of vessels</i>	<i>Costs (\$ millions)</i>
Less than 6 metres	141	2.1
Between 6 and 12 metres	248	23.2
Longer than 12 metres	209	83.0
Houseboats	2	0.3
<b>Total berthed vessels in Cowan Creek area</b>	<b>600</b>	<b>\$108.6M</b>

*Source: spreadsheets, Appendix A*

Cottage Point Boatshed lies adjacent to the grounds of the Kur-ring-gai Motor Yacht Club which is located on Cottage Point. The Cottage Point Kiosk and Boat Sales premises are located next to the Boatshed and Motor Yacht Club facilities. These Cottage Point facilities have a total of 40 wet berths and an estimated replacement value of \$8.3 million and have been included under “sailing clubs” in the Cowan Creek subcatchment analysis.

Table 15 sets out foreshore public facilities located in the Cowan Creek area subcatchment by number and indicative replacement cost.

**Table 15**  
**Cowan Creek area foreshore public assets by category**  
 In indicative 2012-13 replacement prices

<i>Asset</i>	<i>Number of assets</i>	<i>Costs (\$ millions)</i>
Public toilet facilities	6 blocks	1.9
Picnic and recreational facilities		0.7
Seawalls	3,400 metres	8.5
Walkways	3,000 metres	3.8
- includes a 60 x 2m aluminium bridge across Cockle Creek upstream of Bobbin Head with estimated replacement value of \$3 million		
Interpretive signage	6	-
<b>Total foreshore public recreational assets</b>		<b>\$14.9M</b>

Source: spreadsheets, Appendix A

### **Pittwater subcatchment**

Pittwater subcatchment was assessed as the area from the head of the waterway at Bayview and Newport to the south, north to Commodore Heights and Barrenjoey, where Pittwater joins Broken Bay. The subcatchment includes McCarrs Creek to the west.

The main developed areas for recreational activity in the Pittwater subcatchment are located at upper McCarrs Creek, Church Point, the south western side of Pittwater near Bayview, around Newport and Careel Bay and the inner shore of Palm Beach, as well as on the western side of the waterway at the Basin, Currawong Beach and Mackerel Beach, which are only accessible by water. Other parts of the Pittwater shoreline have steep topography which limits public recreational access. Many of these areas also have private ownership of foreshore land down to the shoreline, which prohibits public access.

There are 8 marinas located in Pittwater. Together they contain an estimated 495 wet berths and a total estimated combined replacement cost of \$62.5 million. Details of these Pittwater marinas are set out in Table 16.

**Table 16****Pittwater area marinas with estimated berths and major installed equipment and indicative estimated 2012-13 replacement prices**

<i>Marina</i>	<i>Estimated number of wet berths</i>	<i>Costs (\$ millions)</i>
Holmport Marina, Church Point - <i>hardstand and supporting retail areas</i>	60	
Quays Marina, Church Point - <i>overhead gantry crane, hardstand and supporting retail areas, with 69 moorings</i>	95	
Gibsons Marina, Bayview - <i>slipway and supporting retail areas</i>	110	
SIRSI Marina, Newport - <i>overhead gantry crane, hardstand and supporting retail areas</i>	40	
Newport Anchorage Marina, Newport	70	
Heron Cove Marina, Newport - <i>overhead gantry crane, hardstand and supporting retail areas</i>	20	
Princes Street Marina, Newport	80	
Careel Bay Marina, Avalon - <i>hardstand and supporting retail areas plus 3 slipways</i>	20	
<b>Total Pittwater area marinas and berths</b>	<b>495</b>	<b>\$62.5M</b>

Source: spreadsheets, Appendix A

There are also three substantial boatsheds located in Pittwater:

- Beashells, located at Elvina Bay;
- Gonsalves, located adjacent to the Palm Beach ferry wharf; and
- The Boathouse, located on the inside of Palm Beach.

Pittwater Council maintains 29 public wharves in Pittwater. Tables 17A and 17B set out and describe Pittwater Council's public wharves in Pittwater and their indicative replacement cost, based on costs provided by Council from their wharf asset management plan and advice from Mr. John Berry, Pittwater Council's Senior Officer Building Services.

**Table 17A****Pittwater area public wharves by location with installed equipment  
and indicative estimated 2012-13 replacement prices**

<i>Wharf</i>	<i>Location</i>	<i>Costs (\$ millions)</i>
Mc Carrs Creek Wharf - 15m timber wharf with handrails	McCarrs Creek Reserve	0.2
Browns Bay Wharf - based on Council advice, unable to physically locate	Browns Bay, McCarrs Creek	0.2
Church Point Commuter Wharf - 200 x 2m aluminium pontoon with access ramp	Church Point	0.6
Church Point "Old Wharf" - 20 x 2m timber jetty with 3 x 2m timber wharf with timber bench seats, light and 8 timber piles	"	0.8
Church Point "New Wharf" - 20 x 2m timber jetty with rails plus 12 x 2m timber wharf with shelter shed, steps, light and 4 piles	"	0.4
Church Point Cargo Wharf - 30 x 15m timber cargo wharf with 30 x 15m road access plus groyne	"	0.4
Scotland Cargo Wharf - 25 x 5m stone/concrete groyne with 8 x 10m timber cargo wharf with 3 piles and 5 x 5m shelter shed	Scotland Island	0.6
Bells Wharf - 30 x 2m timber jetty with 6 x 4m wharf plus stairs 6 timber piles plus 6 x 6m shelter shed and lights	"	0.4
Tennis Court Wharf - 35m stone/concrete ramp plus 10 x 2m timber jetty with 4 x 6m aluminium pontoon and 20 x 2m ramp with 8 piles and lights	"	0.5
Eastern Wharf - 10m stone/concrete ramp plus 20 x 3m timber jetty with 4 x 6m timber wharf with 3 x 3m shed and lights	"	0.3
Carols Wharf - 60 x 2m timber jetty with 4 timber piles plus 3 x 3m shelter shed and lights	"	0.6
Elvina South Wharf - 30 x 2m timber jetty with 5 timber piles plus 6 x 3m shelter shed, steps and light	Elvina Bay	0.4
Elvina North Wharf - 10 x 10m landing with 10m stone/concrete wharf, 6 timber piles and 6 x 3m shelter shed	"	0.4
Lovett Bay Wharf - 5 x 5m timber wharf and steps with 10m stone/ concrete jetty, 4 timber piles and 6 x 3m shelter shed	Lovett Bay	0.2
Halls Wharf - 10 x 5m pontoon with 20 x 2m aluminium ramp, 20 x 2m concrete jetty, 3 x 3m shelter shed and 6 concrete piles	"	0.4
Morning Bay Wharf and 5 x 5m shelter shed	Towlers Bay	0.4

*Source: spreadsheets, Appendix A*

**Table 17B****Pittwater area public wharves by location with installed equipment and indicative estimated 2012-13 replacement prices**

<i>Wharf</i>	<i>Location</i>	<i>Costs (\$ millions)</i>
Bennetts Wharf - 30 x 2m timber jetty with 6 x 6m timber wharf plus steps with 4 piles (to be replaced in 2013)	Coasters Retreat	0.4
Bonnie Doon Wharf - 35 x 5m stone/concrete groyne with 6 x 3m timber wharf with 7 piles and 5 x 5m shelter shed	"	0.4
Currawong Wharf - 50 x 2m timber jetty with 6 x 6m timber plus steps and 4 timber piles	Currawong Beach	0.4
Mackerel Wharf - 60 x 2m timber jetty with 6 x 6m timber wharf and loading dock with steps and 8 timber piles	Mackerel Beach	0.6
Bayview Park Wharf - 25 x 4m stone/concrete groyne with 10 x 15m timber wharf with 6 piles	Bayview	0.3
Rowlands Reserve Wharf - 20 x 2m timber wharf with 20 x 10m pontoon and 20 x 2m aluminium ramp with 4 concrete piles and 2 lights and Marine Rescue Wharf in aluminium with 10 x 10m pontoon	"	0.5
Yachtsmans Paradise Wharf - 30 x 2m timber and stone wharf at head of bay	Newport	0.2
Newport Public Wharf - 30 x 2m timber wharf with 8 timber piles and lights	"	0.7
Salt Pan Wharf - 35m stone/concrete ramp plus 20 x 2m timber jetty on concrete piles with 20 x 2m aluminium ramp and 4 timber and 2 concrete piles and lights	Saltpan Cove	0.4
Taylor's Point Wharf - 20 x 2m timber jetty on concrete piles with timber steps and light	Taylor's Point	0.5
Paradise Beach Wharf - 30 x 2m timber jetty with timber railings on concrete piers plus 5 mooring piles	Paradise Beach	0.5
Careel Bay Wharf - 40 x 10m timber jetty on concrete piers partially used by marina with 14 timber piles, steps and 100m access road with wastewater pumpout	Careel Bay	0.6
Palm Beach Wharf - 90 x 2m timber jetty on timber piles with 18 mooring piles, 4 sets of steps and two 5 x 5m shelter sheds	Palm Beach	2.0
<b>Total Pittwater area public wharves</b>	<b>29</b>	<b>\$14.0M</b>

Source: spreadsheets, Appendix A

Detailed analyses of assets located in the Pittwater subcatchment and their indicative replacement costs are contained in the spreadsheets at Appendix A and are summarised below. Table 18 sets out fixed foreshore assets by number of asset and indicative replacement cost.

**Table 18**  
**Pittwater area fixed foreshore assets by category**  
and indicative estimated 2012-13 replacement prices

<i>Asset</i>	<i>Number of assets</i>	<i>Costs (\$ millions)</i>
Marinas - with estimated 495 wet berths	8	62.5
Public wharves	29	13.4
Commuter berths	95	0.7
Pontoon wharves	-	-
Boat ramps	3 locations	2.5
Car parking spots	842	2.5
Vehicle and trailer spots	313	1.6
Boat washing facilities	-	-
Fish cleaning stations	-	-
<b>Total Pittwater area foreshore fixed assets</b>		<b>\$83.2M</b>

Source: spreadsheets, Appendix A

Table 19 sets out boats moored in the Pittwater subcatchment by number and indicative replacement cost in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, as well as houseboats.

**Table 19**  
**Pittwater area moored boats by category**  
and indicative estimated 2012-13 replacement prices

<i>Vessel length</i>	<i>Number of vessels</i>	<i>Costs (\$ millions)</i>
Less than 6 metres	1,095	16.4
Between 6 and 12 metres	1,391	171.8
Longer than 12 metres	348	240.9
Houseboats	18	2.7
<b>Total moored vessels in Pittwater area</b>	<b>2,852</b>	<b>\$431.8M</b>

Source: spreadsheets, Appendix A

Table 20 sets out boats berthed in the Pittwater subcatchment by number and indicative replacement cost in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, plus houseboats.

**Table 20**  
**Pittwater area berthed boats by category**  
and indicative estimated 2012-13 replacement prices

<i>Vessel length</i>	<i>Number of vessels</i>	<i>Costs (\$ millions)</i>
Less than 6 metres	1,328	19.9
Between 6 and 12 metres	413	51.0
Longer than 12 metres	813	562.9
Houseboats	5	0.8
<b>Total berthed vessels in Pittwater area</b>	<b>2,559</b>	<b>\$634.6M</b>

Source: spreadsheets, Appendix A

Pittwater is a mecca for sailing and boating, with a number of sailing, yachting and motor boat clubs located in the waterway. The Pittwater Aquatic Club, Royal Prince Alfred Yacht Club and Royal Motor Yacht Club have been included under “sailing clubs” in this Pittwater subcatchment analysis even though they are substantial organisations with multi-million dollar premises and shore-based facilities.

The Pittwater Aquatic Club is located at Bayview and has 400 members. It has an estimated 26 wet berths plus 2 slipways, hardstand, parking area and clubhouse facilities.

The Royal Prince Alfred Yacht Club is located at Newport. According to the club’s website, it has 352 wet berths plus two hardstand areas, multiple parking areas, a 50 tonne travelling crane, 18 swing moorings and substantial clubhouse facilities.

The Royal Motor Yacht Club is also located at Newport and, according to the club’s website, has 220 wet berths plus 49 swing moorings. Other foreshore facilities include a 300 metre floating breakwall, four slipways, hardstand area, multiple parking areas and substantial clubhouse facilities with a number of support businesses located onsite.

Bayview Yacht Racing Association operates from premises in Bayview that are owned and maintained by Pittwater Council. These premises have historic significance. The Association has 100 members sailing from October to April mainly in skiffs. There are 40 skiffs sailing out of the Association.

Avalon Sailing Club operates from premises located in the Old Wharf Reserve at Avalon. The Club has 200 members sailing from October to April. The club owns 10 moorings located in deeper water in front of the clubhouse. There are 40 skiffs sailing out of the Association and club members sail 93 yachts in club events.

Moored and berthed yachts and motor boats associated with Bayview Yacht Racing Association, Pittwater Aquatic Club, Royal Prince Alfred Yacht Club, Royal Motor Yacht Club and Avalon Sailing Club have been included under the “moored boats” and “berthed boats” boat counts and valuations.

Table 21 sets out details of Pittwater subcatchment sailing club wet berths, installed equipment and facilities and estimated replacement value.

**Table 21**  
**Pittwater area sailing clubs and installed equipment**  
and indicative estimated 2012-13 replacement prices

<i>Facility</i>	<i>Number of wet berths</i>	<i>Costs (\$ millions)</i>
Bayview Yacht Racing Association - 100 members sailing from October to April with 40 skiffs	-	
Pittwater Aquatic Club - clubhouse plus 2 slipways, hardstand and parking	26	
Royal Prince Alfred Yacht Club - 18 swing moorings, two hardstands, multiple car parks and clubhouse	352	
Royal Motor Yacht Club - 49 swing moorings with 300m floating breakwall, 4 slipways, hardstand, multiple car parks and clubhouse	220	
Avalon Sailing Club - clubhouse with jetty, 10 mooring, 93 yachts sailing 200 members with season October to April	-	
<b>Total Pittwater area sailing clubs</b>	<b>598</b>	<b>\$90.7M</b>

Source: spreadsheets, Appendix A

Table 22 sets out foreshore public facilities located in the Pittwater subcatchment by number and indicative replacement cost.

**Table 22**  
**Pittwater area foreshore public assets by category**  
In indicative 2012-13 replacement prices

<i>Asset</i>	<i>Number of assets</i>	<i>Replacement cost (\$ millions)</i>
Public toilet facilities	4 blocks	1.7
Picnic and recreational facilities		1.7
Seawalls	6,000 metres	14.4
Walkways	3,100 metres	0.6
Interpretive signage	-	-
<b>Total foreshore public recreational assets</b>		<b>\$18.4M</b>

Source: spreadsheets, Appendix A

### **Brisbane Water subcatchment, including Patonga**

Brisbane Water subcatchment including Patonga was assessed as the area from the entrance of Narara Creek to Brisbane Water and Gosford CBD to the north, south to Juno Point and Box Head. The subcatchment includes Erina Creek and Kincumber Creek to the east.

The main developed areas for recreational activity in the Brisbane Water subcatchment including Patonga are located at on the western foreshores at:

- Patonga;
- Ocean Beach and Ettalong, Booker Bay north to Blackwall Point;

- Woy Woy Channel to Woy Woy town centre and west across to Woy Woy Bay;
- Koolewong;

and on the eastern foreshores at

- Gosford CBD foreshore along Masons Parade;
- Saratoga, Davistown and Empire Bay;
- St Huberts Island;
- Hardys Bay and Killcare; and
- Pretty Beach and Wagstaff.

Many parts of the Brisbane Water shoreline have steep topography which limits public recreational access. A considerable part of the waterway also has private ownership of foreshore land down to the shoreline, which prohibits public access.

There are 5 marinas located in Brisbane Water. Together they contain an estimated 109 wet berths and associated swing moorings and have an estimated total combined replacement cost of \$13.7 million.

Details of these marinas are set out in Table 23.

**Table 23**

**Brisbane Water area marinas with estimated berths and major installed equipment and indicative estimated 2012-13 replacement prices**

<i>Marina</i>	<i>Estimated number of wet berths</i>	<i>Costs (\$ millions)</i>
Andersons Marina, Ettalong - small hardstand and slipway	25	
Machins Marina, Booker Bay - 16 swing moorings, hardstand and slipway	21	
Booker Bay Marina, Booker Bay - slipway	28	
Empire Bay Marina, Empire Bay - slipway and hardstand	12	
Killcare Marina, Hardys Bay - slipway and supporting retail areas	23	
<b>Total Brisbane Water area marinas and berths</b>	<b>109</b>	<b>\$13.7M</b>

*Source: spreadsheets, Appendix A*

Scandretti's Boatshed is also located on Cockle Creek at Saratoga.

Gosford City Council maintains 43 public wharves in the Brisbane Water area, including Patonga. Tables 24A, 24B and 24C set out and describe Gosford City Council's public wharves in the Brisbane Water area and their indicative replacement cost, based on estimates derived for similar jetties and wharves located on the Hawkesbury River.

**Table 24A**  
**Brisbane Water area public wharves by location with installed equipment**  
and indicative estimated 2012-13 replacement prices

<i>Wharf</i>	<i>Location</i>	<i>Costs (\$ millions)</i>
Patonga Ocean Wharf - 80 x 4m reinforced concrete with steel handrails on concrete piers with steps, lights and 30 timber piles	Brisk Bay, Patonga	0.9
Ettalong Beach Wharf - 30 x 2m timber jetty with steel railings plus 6 x 4m timber wharf with steps, lights and 3 piles with access ramp	Ettalong	0.5
Guyra Street Wharf - 18 x 1.5m timber jetty on concrete piers with concrete landing and timber steps plus 2 mooring piles	Booker Bay	0.3
Blackwall Finger Wharf - 20 x 1.5m timber jetty with 6 x 2m timber wharf with light and 2 timber piles	Blackwall Point	0.3
Woy Woy Lions Park Finger Wharf - 15 x 1.5m timber jetty with 6 x 1.5m timber wharf with 3 piles	Woy Woy Channel	0.2
Woy Woy Ferry Wharf - 6 x 3m timber jetty with 60 x 3m timber wharf with steps, landing and lights	"	0.5
Woy Woy Cargo Wharf - 10 x 6m timber cargo wharf with 2 piles	"	0.3
Rawson Road Wharf - 60 x 1.2m timber jetty on concrete piles with steel railings plus 3 x 2m timber wharf plus 2 timber mooring piles plus lights	Woy Woy Bay	0.3
Pier Street Wharf - 45 x 2m timber jetty on concrete piles with steel railings plus 8 x 4m timber wharf and landing plus 4 timber mooring piles plus light	Woy Woy Bay	0.3
Bassan Street Wharf - 70 x 1.5m timber jetty on concrete piles with 5 x 3m wharf plus 4 timber mooring piles plus lights	"	0.3
Phegans Bay Wharf - 60 x 2m timber jetty on concrete piles with steel railings and 4 x 4m timber wharf plus 4 timber mooring piles plus lights	Phegans Bay	0.3
Couche Park Reserve – "Bill Fitch" Wharf - 65 x 2m steel jetty on timber piles with 4 x 6m wharf on timber piles plus 10m gantry bridge with 4 mooring piles	Koolewong	0.3
Foreshore Reserve Wharves - two 6 x 2m concrete jetties on timber piles with 4 x 1.4m finger wharves	"	0.3
Gosford Breakwater Wharf - 200 x 7m concrete groyne with 15 x 11m aluminium pontoon and 15 x 3m aluminium ramp, 22 timber piles and 100 x 4m timber wharf with lights	Gosford CBD foreshore	0.9
Gosford Boat Ramp Wharf - 6 x 1.5m jetty with 6 x 1.5m timber wharf with steel railings and 3 timber piles	Masons Parade, Gosford	0.3

Source: spreadsheets, Appendix A

**Table 24B****Brisbane Water area public wharves by location with installed equipment and indicative estimated 2012-13 replacement prices**

<i>Wharf</i>	<i>Location</i>	<i>Costs (\$ millions)</i>
Masons Parade Wharf - 35 x 1.5m timber jetty with 5 x 4m timber wharf on concrete piers with steel railings and 6 mooring piles	Masons Parade, Gosford	0.3
Erina Creek Wharf - 10 x 1.5m timber jetty with 5 x 4m timber wharf on concrete piers with steel railings and 3 mooring piles	Erina Creek	0.2
Orana Street Wharf - 5 x 1.8m timber wharf on piles	Green Point	0.2
Yattalunga Wharf - 130 x 2m timber jetty with 5 x 4m timber wharf on concrete piers plus 30 x 15m tidal pool	Yattalunga	0.5
Jirramba Avenue Wharf - 100 x 2m timber jetty with steel railings on concrete piers with 10 x 2m timber wharf with 4 timber piles	Saratoga	0.3
Bayview Wharf - 60 x 1.5m timber jetty with 5 x 4m timber wharf on concrete piers with steel railings plus 2 timber piles	"	0.3
View Parade Wharf - 60 x 2m timber jetty with 6 x 6m timber wharf and loading dock with steps and 8 timber piles	"	0.6
Byalla Lane Wharf - 90 x 2m timber jetty on concrete piers with steel railings and 6 x 6m timber wharf with 5 timber piles	"	0.3
Veterans Hall Ferry Wharf - 7 x 5m timber wharf plus 5 x 2m aluminium ramp with 7 x 4m pontoon with 5 piles and light and 4 x 3m steel and glass shelter shed	"	0.4
Lintern Street Wharf - 10 x 8m timber wharf with steel railings plus with 5 piles and light and 4 x 3m steel and glass shelter shed	Davistown	0.3
Central RSL Ferry Wharf - 15 x 8m concrete groyne with 6 x 8m timber wharf on concrete piers with steel railing and 4 x 3m steel and glass shelter shed 3 timber piles	"	0.3
Pine Avenue Wharf - 15 x 3m timber jetty with steel railings on concrete piers plus 8 x 5m timber wharf with landing, light and 4 mooring piles	"	0.3
Eulalia Wharf - 15 x 6m concrete groyne with 10 x 5m timber wharf with 4 timber piles, steps and light	"	0.2
Carrack Road Wharf - 20 x 2m timber jetty on concrete piers plus 8 x 5m timber wharf	Kincumber	0.2

Source: spreadsheets, Appendix A

**Table 24C****Brisbane Water area public wharves by location with installed equipment  
and indicative estimated 2012-13 replacement prices**

<i>Wharf</i>	<i>Location</i>	<i>Costs (\$ millions)</i>
Humphreys Road Wharf - 8 x 1.8m timber jetty on concrete piers plus 8 x 2m timber wharf with steps and landing and 3 timber piles	Kincumber	0.2
Hastings Wharf - 80 x 4m groyne with 10 x 5m timber wharf on concrete piers with steps, light and 2 timber piles	Bensville	0.3
Shelley Beach Road Wharf - 15 x 8m timber jetty with steel railings on timber piers with 5 x 4m timber wharf with 3 timber piles	Empire Bay	0.2
Kendall Road Wharf - 8 x 8m timber jetty with steel railings on timber piers with 12 x 8m timber wharf with 2 timber piles, steel railings, landing and light	"	0.3
Merritts Road Wharf - 8 x 2m aluminium ramp with railings with 8 x 4m pontoon with 2 timber piles and 2 concrete piles	"	0.1
Bar Estate Wharf - 20 x 2m timber jetty on concrete piers with 4 x 5m timber wharf and steel railings with 2 timber piles and landing	Daleys Point	0.1
Killcare Extension Wharf - 130 x 2m timber jetty on concrete piers with 8 x 4m timber wharf and steel railings with 2 timber piles, landing and 7 lights	Hardys Bay	0.3
Killcare Road Wharf - 140 x 2m timber jetty on concrete piers with timber and wire railings and 7 x 7m timber wharf with 8 piles and 5 lights	"	0.3
Araluen Drive Wharf - 80 x 2m timber jetty on concrete piers with timber and wire railings and 6 x 4m timber wharf with 12 timber piles and 4 lights	"	0.3
Heath Road Wharf - 20 x 2m pontoon wharf with 10 x 2m aluminium ramp and 2 concrete piles	Pretty Beach	0.1
Pretty Beach Wharf - 20 x 2m concrete groyne with 30 x 2m timber jetty on concrete piers with steel railing and 7 x 4m timber wharf with steps, 8 timber piles and light	"	0.3
Oroo Street Wharf - 90 x 2m timber jetty with timber and steel railings plus 6 x 4m timber wharf and steps with 8 piles and 4 lights	"	0.3
Wagstaff Ferry Wharf - 20 x 6m groyne plus 7 x 7m timber jetty on timber piers and 7 timber piles with light	Wagstaff	0.2
<b>Total Brisbane Water area public wharves</b>	<b>43</b>	<b>\$13.2M</b>

Source: spreadsheets, Appendix A

Detailed analyses of assets located in the Brisbane Water area subcatchment including Patonga and their indicative replacement costs are contained in the spreadsheets at Appendix A and are summarised below. Table 25 sets out fixed foreshore assets by number of asset and indicative replacement cost.

**Table 25**  
**Brisbane Water area fixed foreshore assets by category**  
and indicative estimated 2012-13 replacement prices

<i>Asset</i>	<i>Number of assets</i>	<i>Costs (\$ millions)</i>
Marinas - with estimated 109 wet berths	5	13.7
Public wharves	43	13.2
Commuter berths	7	0.5
Pontoons	-	-
Boat ramps	23 locations	6.9
Car parking spots	398	1.2
Vehicle and trailer spots	204	1.0
Boat washing facilities	-	-
Fish cleaning stations	7	0.1
<b>Total Brisbane Water foreshore fixed assets</b>		<b>\$37.7M</b>

Source: spreadsheets, Appendix A

Table 26 sets out boats moored in the Brisbane Water area subcatchment including Patonga by number and indicative replacement cost in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, as well as houseboats.

**Table 26**  
**Brisbane Water area moored boats by category**  
and indicative estimated 2012-13 replacement prices

<i>Vessel length</i>	<i>Number of vessels</i>	<i>Costs (\$ millions)</i>
Less than 6 metres	299	4.5
Between 6 and 12 metres	458	41.2
Longer than 12 metres	91	23.7
Houseboats	11	1.7
<b>Total moored vessels in Brisbane Water area</b>	<b>859</b>	<b>\$71.1M</b>

Source: spreadsheets, Appendix A

Table 27 sets out boats berthed in the Brisbane Water area subcatchment including Patonga by number and indicative replacement cost in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, plus houseboats.

**Table 27**  
**Brisbane Water area berthed boats by category**  
and indicative estimated 2012-13 replacement prices

<i>Vessel length</i>	<i>Number of vessels</i>	<i>Costs (\$ millions)</i>
Less than 6 metres	1,234	18.5
Between 6 and 12 metres	430	38.7
Longer than 12 metres	112	29.1
Houseboats	4	0.6
<b>Total berthed vessels in Brisbane Water area</b>	<b>1,780</b>	<b>\$86.9M</b>

Source: spreadsheets, Appendix A

Gosford Sailing Club has been included under “sailing clubs” in the Brisbane Water area subcatchment analysis even though it is a substantial organisation with multi-million dollar premises and shore-based facilities.

Gosford Sailing Club is located off Masons Parade on the East Gosford foreshore south of Gosford CBD. Gosford Sailing Club has published its 2011-12 annual report on the club’s website. The report states that the club had 4,907 members in 2012. The club has 29 wet berths plus slipway, hardstand, parking area and clubhouse facilities.

Saratoga Sailing Club operates from its own premises at Saratoga. These premises are located on Crown land and have been improved over time by the club. Mr. Norm Thompson, the club’s Race Secretary, advises that the club has 40 active members with 4 Lasers and 8 Hartley TS16 trailer sailers currently stored in the club.

Larger yachts and motor boats associated with the Gosford and Saratoga Sailing Clubs have been included under the “moored boats” and “berthed boats” boat counts and valuations.

Table 28 sets out details of Brisbane Water catchment sailing club installed equipment and facilities and estimated replacement value.

**Table 28**  
**Brisbane Water area sailing clubs and installed equipment**  
 and indicative estimated 2012-13 replacement prices

<i>Facility</i>	<i>Number of wet berths</i>	<i>Costs (\$ millions)</i>
Gosford Sailing Club - 29 wet berths plus clubhouse, hardstand and restaurant with adjacent parking	29	
Saratoga Sailing Club	-	
<b>Total Brisbane Water area sailing clubs</b>	<b>29</b>	<b>\$4.6M</b>

Source: spreadsheets, Appendix A

Table 29 sets out foreshore public facilities located in the Brisbane Water subcatchment by number and indicative replacement cost.

**Table 29**  
**Brisbane Water area foreshore public assets by category**  
 In indicative 2012-13 replacement prices

<i>Asset</i>	<i>Number of assets</i>	<i>Replacement cost (\$ millions)</i>
Public toilet facilities	15 blocks	4.5
Picnic and recreational facilities		2.0
Seawalls	12,450 metres	31.4
Walkways	7,300 metres	1.9
Interpretive signage	-	-
<b>Total foreshore public recreational assets</b>		<b>\$39.8M</b>

Source: spreadsheets, Appendix A

## Wisemans Ferry to Spencer subcatchment

The section of the Hawkesbury River between Wisemans Ferry and Spencer was the final subcatchment assessed as the area from the north western boundary of Hornsby Shire at Wisemans Ferry east to Spencer. Field investigations were undertaken:

- along the length of Singleton Road, which runs east from Wisemans Ferry along the southern bank of the Hawkesbury River;
- around Wisemans Ferry; and
- across the Wisemans Ferry eastern ferry and east along the northern bank of the river to Spencer and from Spencer along Wisemans Ferry Road to George Downes Drive and Peats Ridge Road to the F3 freeway.

The main developed areas for recreational activity in the Wisemans Ferry to Spencer area subcatchment are located at Wisemans Ferry and Spencer.

There are no marina facilities located along the Hawkesbury River between Wisemans Ferry and Spencer.

There are several private water ski “parks” located on the banks of the Hawkesbury River east of Wisemans Ferry. These facilities do not have wharves or jetties on the river bank and have grassy, flat foreshore areas where water skiers can camp or overnight in recreational vehicles and launch and retrieve their ski boats.

Hornsby Shire Council maintains one public wharf on the Hawkesbury River between Wisemans Ferry and Spencer, the Wisemans Ferry Public Wharf. This wharf is located east of the Wisemans Ferry East Bank Ferry off Old Northern Road. It is made up of a 15 x 2 metre timber jetty and 6 x 4 metre timber wharf on concrete piers with timber railings, steps, a light and 3 timber mooring piles. Based on costs provided by Mr. Phil Murdoch, Technical Officer Asset Management, Hornsby Shire Council, the Wisemans Ferry Public Wharf has an indicative replacement cost of \$0.3 million.

The Spencer Public Wharf is located off Wisemans Ferry Road at Spencer. It has a 10 x 10 metre filled groyne from the road with an 8 x 6 metre timber wharf on timber piers with steps, a landing, steel railing and 3 timber mooring piles. Spencer Public Wharf has an indicative replacement cost of \$0.3 million and is owned and maintained by Gosford City Council.

There are two single boat ramps located within the subcatchment. One is next to the Wisemans Ferry Public Wharf and the other is at Spencer, north of the Spencer Public Wharf. These two boat ramps have a combined indicative replacement cost of \$0.5 million.

Detailed analyses of assets located in the Wisemans Ferry to Spencer area subcatchment and their indicative replacement costs are contained in the spreadsheets at Appendix A and are summarised below. Table 30 sets out fixed foreshore assets by number of asset and indicative replacement cost.

**Table 30**

**Wisemans Ferry to Spencer area fixed foreshore assets by category**  
and indicative estimated 2012-13 replacement prices

<i>Asset</i>	<i>Number of assets</i>	<i>Costs (\$ millions)</i>
Marinas	-	-
Public wharves	2	0.6
Commuter berths	-	-
Pontoons	-	-
Boat ramps	2 ramps	0.5
Car parking spots	-	-
Vehicle and trailer spots	-	-
Boat washing facilities	-	-
Fish cleaning stations	-	-
<b>Total Wisemans Ferry to Spencer area foreshore fixed assets</b>		<b>\$1.1M</b>

Source: spreadsheets, Appendix A

Table 31 sets out boats moored in the Wisemans Ferry to Spencer area subcatchment by number and indicative replacement cost in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, as well as houseboats.

**Table 31**

**Wisemans Ferry to Spencer area moored boats by category**  
and indicative estimated 2012-13 replacement prices

<i>Vessel length</i>	<i>Number of vessels</i>	<i>Costs (\$ millions)</i>
Less than 6 metres	10	0.2
Between 6 and 12 metres	14	1.3
Longer than 12 metres	6	1.6
Houseboats	2	0.3
<b>Total moored vessels in Wisemans Ferry to Spencer area</b>	<b>32</b>	<b>\$3.4M</b>

Source: spreadsheets, Appendix A

Table 32 sets out boats berthed in the Wisemans Ferry to Spencer area subcatchment by number and indicative replacement cost in lengths of up to 6 metres, between 6 and 12 metres and longer than 12 metres, plus houseboats.

**Table 32**

**Wisemans Ferry to Spencer area berthed boats by category**  
and indicative estimated 2012-13 replacement prices

<i>Vessel length</i>	<i>Number of vessels</i>	<i>Costs (\$ millions)</i>
Less than 6 metres	121	1.8
Between 6 and 12 metres	29	2.6
Longer than 12 metres	4	1.0
Houseboats	4	0.6
<b>Total berthed vessels in Wisemans Ferry to Spencer area</b>	<b>158</b>	<b>\$6.0M</b>

Source: spreadsheets, Appendix A

There are no sailing clubs operating in the Wisemans Ferry to Spencer area subcatchment.

Table 33 sets out foreshore public facilities located in the Wisemans Ferry to Spencer area subcatchment by number and indicative replacement cost.

**Table 33**

**Wisemans Ferry to Spencer area foreshore public assets by category**

In indicative 2012-13 replacement prices

<i>Asset</i>	<i>Number of assets</i>	<i>Costs (\$ millions)</i>
Public toilet facilities	2 blocks	0.6
Picnic and recreational facilities		0.1
Seawalls	2,050 metres	5.1
Walkways	-	-
Interpretive signage	-	-
Tidal swimming pool	1	0.2
<b>Total foreshore public recreational assets</b>		<b>\$6.0M</b>

Source: spreadsheets, Appendix A

## SUMMARY OF THE ANALYSIS

### Fixed foreshore assets

Table 34 summarises fixed foreshore assets by estimated replacement cost over the Hawkesbury River estuary by subcatchment. It shows that there are 26 marinas located in the estuary, with 9 in the Brooklyn area, 8 in Pittwater, 5 in Brisbane Water, 2 at Berowra Waters and 2 in the Cowan Creek subcatchment. These marinas provide an estimated total of 1,686 wet berths. The Akuna Bay Marina also provides an additional 175 dry berths in its “Rack’n Stack” storage shed.

There are an estimated 93 public wharves across the estuary, with 29 located in Pittwater and 43 in Brisbane Water. Commuter berths are estimated to total 282, with 40 in Berowra Creek subcatchment, 140 in Brooklyn subcatchment and 95 in Pittwater.

Of the estimated 36 boat ramp facilities located in the estuary, Brisbane Water has 23.

There are an estimated 2,601 foreshore car parking spots located across the estuary, with 134 in the Berowra Creek subcatchment, 468 in the Brooklyn subcatchment, 759 in the Cowan Creek subcatchment, 842 in Pittwater and 398 in Brisbane Water. No dedicated foreshore car parking areas were observed in the Wisemans Ferry to Spencer area.

Of the 905 observed vehicle/ boat trailer parking spots located across the estuary, 58 are in Berowra Creek subcatchment, 183 are in Brooklyn subcatchment, 147 are in Cowan Creek subcatchment, 313 are in Pittwater and 204 are in the Brisbane Water area. No dedicated foreshore vehicle/boat trailer parking areas were observed in the Wisemans Ferry to Spencer area.

One boat washing facility was observed in the estuary at Brooklyn and, of the 11 fish cleaning stations across the estuary, 7 were located in the Brisbane Water area, including Patonga.

**Table 34**  
**Hawkesbury River estuary fixed foreshore assets by subcatchment**  
and indicative estimated 2012-13 replacement prices

<i>Asset</i>	<i>Subcatchment area</i>	<i>Assets (No.)</i>	<i>Subtotal</i>	<i>Wet berths (No.)</i>	<i>Item costs (\$'M)</i>	<i>Subtotal costs (\$'M)</i>
Marinas	Berowra Creek	2		118	11.8	
	Brooklyn	9		461	57.1	
	Cowan Creek	2		485	66.2	
	Pittwater	8		495	62.5	
	Brisbane Water, inc Ptga	5		109	13.7	
	Wisemans to Spencer	-	26	-		211.3
Public wharves	Berowra Creek	3			0.5	
	Brooklyn	13			3.0	
	Cowan Creek	3			0.7	
	Pittwater	29			13.4	
	Brisbane Water, inc Ptga	43			13.1	
	Wisemans to Spencer	2	93		0.6	31.3
Commuter berths	Berowra Creek	40			0.3	
	Brooklyn	140			1.4	
	Cowan Creek	-			-	
	Pittwater	95			0.7	
	Brisbane Water	7			0.5	
	Wisemans to Spencer	-	282		-	2.9
Pontoons	Berowra Creek	1			0.1	
	Brooklyn	2			1.2	
	Cowan Creek	1			0.2	
	Pittwater	-			-	
	Brisbane Water, inc Ptga	-			-	
	Wisemans to Spencer	-	4		-	1.5
Boat ramps	Berowra Creek	1			1.0	
	Brooklyn	4			2.3	
	Cowan Creek	3			1.8	
	Pittwater	3			2.5	
	Brisbane Water	23			6.9	
	Wisemans to Spencer	2	36		0.5	15.0
Car parking spots	Berowra Creek	134			0.5	
	Brooklyn	468			1.0	
	Cowan Creek	759			2.3	
	Pittwater	842			2.5	
	Brisbane Water, inc Ptga	398			1.2	
	Wisemans to Spencer	-	2,601		-	7.5
Vehicle/trailer spots	Berowra Creek	58			0.4	
	Brooklyn	183			0.9	
	Cowan Creek	147			0.7	
	Pittwater	313			1.6	
	Brisbane Water, inc Ptga	204			1.0	
	Wisemans to Spencer	-	905		-	4.5
Boat washing facilities	Berowra Creek	-			-	
	Brooklyn	1			-	
	Cowan Creek	-			-	
	Pittwater	-			-	
	Brisbane Water, inc Ptga	-			-	
	Wisemans to Spencer	-	1		-	
Fish cleaning stations	Berowra Creek	1			-	
	Brooklyn	2			-	
	Cowan Creek	1			-	
	Pittwater	-			-	
	Brisbane Water, inc Ptga	7			0.1	
	Wisemans to Spencer	-	11		-	0.1
<b>Foreshore fixed assets</b>				<b>1,686</b>	<b>\$274.1M</b>	<b>\$274.1M</b>

Source: spreadsheets, Appendix A

Table 34 shows that there are 26 marinas and 93 public wharves located across the Hawkesbury River estuary. There are also many hundreds of privately owned wharves and jetties located on permissive occupancies into the river running from the foreshores of private residences and businesses. These public and private wharves, jetties and marinas accommodate approximately 6,250 vessels in the Hawkesbury estuary (Table 38). Maintenance and replacement of these facilities, in addition to seawalls, boat ramps and other public facilities, generates a substantial support industry across the estuary.

### Vessel replacement values in the Hawkesbury River estuary

As discussed previously, estimates of replacement values for vessels berthed and moored in the Hawkesbury River estuary have been based on December 2012 advertised sale prices from:

- Berowra Waters Marina;
- Fenwicks Marina, Brooklyn;
- Empire Boat Sales at Bobbin Head;
- Cottage Point Boats Sales at Cottage Point;
- Maritimo Boat Sales at Akuna Bay; and
- Rowell Marine Boat Sales at Heron Cove, Newport.

Table 35 sets out average vessel replacement cost estimates for the various subcatchments considered. Berowra Creek and Brooklyn costs are based on sale prices at Berowra Waters Marina and Fenwicks Marina. Cowan Creek costs are based on sale prices at Empire Boat Sales, Cottage Point Boat Sales and Maritimo Boat Sales and Pittwater costs are based on sale prices at Rowell Marine. Brisbane Water costs were based on average Brooklyn prices from Fenwicks Marina.

**Table 35**  
**Hawkesbury River vessel replacement costs by length and subcatchment**  
 indicative estimated 2012-13 replacement prices

Subcatchment area	Average estimated replacement costs			
	less than 6 metres (\$)	between 6 and 12 metres (\$)	longer than 12 metres (\$)	Houseboats (\$)
Berowra Creek	15,000	90,000	260,000	150,000
Brooklyn	15,000	90,000	260,000	150,000
Cowan Creek	15,000	93,500	397,308	150,000
Pittwater	15,000	123,487	692,350	150,000
Brisbane Water, inc. Patonga	15,000	90,000	260,000	150,000
Wisemans to Spencer	15,000	90,000	260,000	150,000

Source: spreadsheets, Appendix A

Table 35 indicates that average prices for vessels between 6 and 12 metres are higher in Cowan Creek and Pittwater than in the other subcatchments, with Pittwater more than 30% higher.

Cowan Creek and Pittwater average prices are also higher for vessels over 12 metres long, with average Cowan Creek prices more than 50% higher and Pittwater prices more than twice as high.

As these replacement costs have been based on advertised prices, they are considered conservative. Mr. David Rowell of Rowell Marine advises that at least 10% of all vessels berthed or moored on Pittwater longer than 12 metres are in the “mega” class, with prices exceeding \$2 million. Many of these “mega” vessels are sold through private contracts with their prices not publicly advertised. The values of these privately sold “mega” vessels have not been considered in these pricing calculations.

### Vessels moored in the Hawkesbury River estuary

Table 36 shows vessels moored in the estuary by length and subcatchment. Table 37 gives a percentage breakdown of these moored boats by location.

**Table 36**  
**Hawkesbury River estuary moored boats by length and subcatchment**  
and indicative estimated 2012-13 replacement prices

<i>Subcatchment area</i>	<i>less than 6 metres (No.)</i>	<i>between 6 and 12 metres (No.)</i>	<i>longer than 12 metres (No.)</i>	<i>House boats (No.)</i>	<i>Total vessels moored in subcatchment (No.)</i>	<i>Costs (\$ millions)</i>
Berowra Creek	52	52	41	15	160	18.5
Brooklyn	240	217	56	46	559	44.6
Cowan Creek	20	113	12	2	137	16.0
Pittwater	1,095	1,391	348	18	2,852	431.8
Brisbane Water, inc Ptga	299	458	91	11	859	71.7
Wisemans to Spencer	10	14	6	2	32	3.4
<b>Estuary moored boats</b>	<b>1,716</b>	<b>2,245</b>	<b>554</b>	<b>94</b>	<b>4,599</b>	<b>\$586.0M</b>

Source: spreadsheets, Appendix A

**Table 37**  
**Hawkesbury River estuary moored boats by location as percentage of whole estuary**  
and percentage indicative estimated 2012-13 replacement prices

<i>Subcatchment area</i>	<i>less than 6 metres (%)</i>	<i>between 6 and 12 metres (%)</i>	<i>longer than 12 metres (%)</i>	<i>House boats (%)</i>	<i>Total vessels moored in subcatchment (%)</i>	<i>Costs (%)</i>
Berowra Creek	3	2	7	16	3	3
Brooklyn	14	9	10	49	12	8
Cowan Creek	1	5	2	2	3	2
Pittwater	64	62	63	19	62	74
Brisbane Water, inc Ptga	17	26	17	12	19	12
Wisemans to Spencer	1	1	1	2	1	1
<b>Estuary moored boats</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: spreadsheets, Appendix A

Table 37 shows that, in replacement cost terms, an estimated 74% of all vessels moored in the Hawkesbury River estuary are located in Pittwater. For moored vessels less than 6 metres long, Pittwater has 1,095 out of a total of 1,716 or 64%. For moored vessels between 6 and 12 metres long, Pittwater has 1,391 out of a total of 2,245 or 62%.

For moored vessels longer than 12 metres, Pittwater has 348 out of a total of 554 or 63% and for moored houseboats, Pittwater has 18 out of 94 or 18%.

The subcatchment with the second highest total of moored vessels is the Brisbane Water area, including Patonga, with 859 or 19%. The Brisbane Water area has 26% of all moored vessels between 6 and 12 metres long.

The Brooklyn area has the highest proportion of moored houseboats on the estuary, with 46 out of 94 or 49%. This is because Luxury Afloat, Holidays Afloat and Ripples Holiday Houseboats, all located in Sandbrook Inlet at Brooklyn, specialise in hiring out houseboats.

### Vessels berthed in the Hawkesbury River estuary

Table 38 shows vessels berthed in the estuary by length and subcatchment. Table 39 gives a percentage breakdown of these berthed boats by location.

**Table 38**

#### Hawkesbury River estuary berthed boats by length and subcatchment and indicative estimated 2012-13 replacement prices

<i>Subcatchment area</i>	<i>less than 6 metres (No.)</i>	<i>between 6 and 12 metres (No.)</i>	<i>longer than 12 metres (No.)</i>	<i>House boats (No.)</i>	<i>Total vessels berthed in subcatchment (No.)</i>	<i>Costs (\$ millions)</i>
Berowra Creek	222	69	52	9	352	24.4
Brooklyn	469	188	93	54	804	56.2
Cowan Creek	141	248	209	2	600	108.6
Pittwater	1,328	413	813	5	2,559	634.6
Brisbane Water, inc. Ptga	1,234	430	112	4	1,780	86.9
Wisemans to Spencer	121	29	4	4	158	6.0
<b>Estuary berthed boats</b>	<b>3,515</b>	<b>1,377</b>	<b>1,283</b>	<b>78</b>	<b>6,253</b>	<b>\$916.7M</b>

Source: spreadsheets, Appendix A

**Table 39**

#### Hawkesbury River estuary berthed boats by location as percentage of whole estuary and percentage indicative estimated 2012-13 replacement prices

<i>Subcatchment area</i>	<i>less than 6 metres (%)</i>	<i>between 6 and 12 metres (%)</i>	<i>longer than 12 metres (%)</i>	<i>House boats (%)</i>	<i>Total vessels berthed in subcatchment (%)</i>	<i>Costs (%)</i>
Berowra Creek	7	5	5	12	6	3
Brooklyn	13	14	7	69	13	6
Cowan Creek	4	18	16	3	10	12
Pittwater	38	30	63	6	41	69
Brisbane Water, inc. Ptga	35	31	9	5	28	9
Wisemans to Spencer	3	2	-	5	2	1
<b>Estuary berthed boats</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: spreadsheets, Appendix A

Table 39 shows that more than 40% of all vessels berthed in the Hawkesbury River estuary east of Wisemans Ferry are located in Pittwater. For berthed vessels less than 6 metres long, Pittwater has 1,328 out of a total of 3,515 or 38%.

For berthed vessels between 6 and 12 metres long, Pittwater has 413 out of a total of 1,377 or 30%. For berthed vessels longer than 12 metres, Pittwater has 813 out of a total of 1,283 or 63%. For berthed houseboats, Pittwater has 5 out of 78 or 6%.

The subcatchment with the second highest total of berthed vessels is the Brisbane Water area, including Patonga, with 1,780 or 28%. The Brisbane Water area has 35% of all berthed vessels less than 6 metres long and 31% of all berthed vessels between 6 and 12 metres long.

The Brooklyn area has the highest proportion of berthed houseboats on the estuary, with 54 out of 78 or 69%. This is again because Luxury Afloat, Holidays Afloat and Ripples Holiday Houseboats all specialise in hiring out houseboats from Sandbrook Inlet at Brooklyn.

Table 39 shows that an estimated 69% in replacement cost terms of all vessels berthed in the Hawkesbury River estuary are located in Pittwater.

In replacement cost terms, Cowan Creek has 18% of all berthed vessels between 6 and 12 metres long and 16% of all berthed vessels longer than 12 metres. In replacement cost terms, an estimated 12% of all vessels berthed in the Hawkesbury River estuary are located in the Cowan Creek area subcatchment.

In replacement cost terms, 81% of all berthed vessels in the Hawkesbury River estuary are located in either Pittwater or Cowan Creek subcatchments. These two catchments are located closest to suburbs in Sydney's North Shore and northern beaches, where disposable incomes are higher than in many other parts of Sydney. In addition, residents who enjoy boating and sailing on the Hawkesbury river estuary tend to move into suburbs close and accessible to these two subcatchments.

Table 40 summarises overall numbers and estimated replacement values for all vessels either moored or berthed on the Hawkesbury River estuary. It shows that the total replacement value for these vessels is estimated at \$1.5 billion, of which \$1.06 billion worth, or more than two thirds by value, are located in Pittwater.

**Table 40****Hawkesbury River estuary berthed and moored boats by subcatchment combined indicative estimated 2012-13 replacement values**

<i>Subcatchment area</i>	<i>Total moored vessels (No.)</i>	<i>Total berthed vessels (No.)</i>	<i>Total all vessels (No.)</i>	<i>Replacement costs moored vessels (\$ millions)</i>	<i>Replacement costs berthed vessels (\$ millions)</i>	<i>Replacement costs all vessels (\$ millions)</i>
Berowra Creek	160	352	412	18.5	24.4	40.9
Brooklyn	559	804	1,363	44.6	56.2	100.8
Cowan Creek	137	600	737	16.0	108.6	124.6
Pittwater	2,852	2,559	5,411	431.8	634.6	1,066.4
Brisbane Water	859	1,780	2,639	71.7	86.9	158.6
Wisemans to Spencer	32	158	190	3.4	6.0	9.4
<b>Totals</b>	<b>4,599</b>	<b>6,253</b>	<b>10,852</b>	<b>\$586.0M</b>	<b>\$916.7M</b>	<b>\$1,502.7M</b>

Source: spreadsheets, Appendix A

**Annual vessel operating and maintenance costs**

There is a strong industry in the Hawkesbury River estuary employed maintaining and servicing vessels. Mr. Andrew Fenwick of Fenwicks Marina advises that the annual operating and maintenance costs for a berthed vessel can be reasonably estimated at 10% of its replacement cost. He advises that annual operating and maintenance costs for vessels on moorings are somewhat cheaper, at between 5% and 7.5%, as annual mooring fees are considerably cheaper than berthing charges.

Berthed vessels, because of their greater ease of access and convenience, tend to be used more frequently than moored vessels. Vessels on moorings generally have to be cleaned, covered and sealed up and then a tender has to be used to carry passengers and crew to shore whereas vessels berthed in marinas can be left for clean up and servicing by marina staff.

These figures have been supported by Mr. David Rowell of Rowell Marine, who advised that annual operating and maintenance costs of 10% of the sale price of berthed boats have been accepted as an industry standard around the world, with annual operating and maintenance costs of between 5% and 7.5% of the sale price for moored boats.

Indicative current berthing fees levied for permanent users per month in the Brooklyn area are as follows:

- up to 5 metres - \$390;
- between 5 and 10 metres - \$685;
- between 10 and 12 metres - \$800;
- between 12 and 14 metres - \$920; and
- over 14 metres - \$1,000.

These fees are less expensive than berthing fees charged in the Cowan Creek and Pittwater areas.

Table 41 shows that estimated replacement value for vessels moored on the Hawkesbury River estuary is \$586 million. Based on estimated annual operating and maintenance costs for these moored vessels of from 5% to 7.5% of replacement cost, between \$29 million and \$44 million is spent annually on the estuary by owners of moored vessels. Table 37 above indicates that, in replacement cost terms, 74% of these vessels are moored in Pittwater and it is reasonable that between \$21 million and \$32 million is spent on operating and maintenance costs for moored vessels in Pittwater each year.

**Table 41**  
**Hawkesbury River estuary moored boats by subcatchment**  
**annual operating and maintenance costs**  
and indicative estimated 2012-13 replacement prices

<i>Subcatchment area</i>	<i>Total moored vessels in subcatchment (No.)</i>	<i>Replacement costs (\$ millions)</i>	<i>Annual O&amp;M costs at 5% (\$ millions)</i>	<i>Annual O&amp;M costs at 7.5% (\$ millions)</i>
Berowra Creek	160	18.5	0.9	1.4
Brooklyn	559	44.6	2.2	3.3
Cowan Creek	137	16.0	0.8	1.2
Pittwater	2,852	431.8	21.6	32.4
Brisbane Water, inc. Ptga	859	71.7	3.6	5.4
Wisemans to Spencer	32	3.4	0.2	0.3
<b>Estuary moored boats</b>	<b>4,599</b>	<b>\$586.0M</b>	<b>\$29.3M</b>	<b>\$44.1M</b>

Source: spreadsheets, Appendix A

Table 42 indicates that estimated replacement value for vessels berthed on the Hawkesbury River estuary is \$917 million. Based on estimated annual operating and maintenance costs for these berthed vessels of 10% of replacement cost, approximately \$92 million is spent annually on the estuary by owners of berthed vessels. Table 39 above indicates that, in replacement cost terms, 69% of these vessels are berthed in Pittwater and it is reasonable that approximately \$63 million is spent on operating and maintenance costs for berthed vessels in Pittwater each year.

**Table 42**  
**Hawkesbury River estuary berthed boats subcatchment**  
**annual operating and maintenance costs**  
and indicative estimated 2012-13 replacement prices

<i>Subcatchment area</i>	<i>Total berthed vessels in subcatchment (No.)</i>	<i>Replacement costs (\$ millions)</i>	<i>Annual O&amp;M costs at 10% (\$ millions)</i>
Berowra Creek	352	24.4	2.4
Brooklyn	804	56.2	5.6
Cowan Creek	600	108.6	10.9
Pittwater	2,559	634.6	63.4
Brisbane Water, inc. Ptga	1,780	86.9	8.7
Wisemans to Spencer	158	6.0	0.6
<b>Estuary berthed boats</b>	<b>6,253</b>	<b>\$916.7M</b>	<b>\$91.6M</b>

Source: spreadsheets, Appendix A

Table 43 shows combined estimated annual operating and maintenance costs for all vessels either moored or berthed on the Hawkesbury estuary east of Wisemans Ferry. Combined annual O&M costs for all vessels either moored or berthed in the estuary east of Wisemans Ferry are estimated at \$135 million, using the higher annual value of 7.5% of replacement costs for moored vessels.

**Table 43**  
**Hawkesbury River estuary berthed and moored boats by subcatchment**  
**combined indicative estimated 2012-13 replacement values and annual O&M costs**

<i>Subcatchment area</i>	<i>Total all vessels (No.)</i>	<i>Replacement costs all vessels (\$ millions)</i>	<i>Annual O&amp;M costs at 7.5% for moored vessels (\$ millions)</i>	<i>Annual O&amp;M costs at 10% for berthed vessels (\$ millions)</i>	<i>Combined annual O&amp;M costs for all vessels (\$ millions)</i>
Berowra Creek	412	40.9	1.4	2.4	3.8
Brooklyn	1,363	100.8	3.3	5.6	8.9
Cowan Creek	737	124.6	1.2	10.9	12.1
Pittwater	5,411	1,066.4	32.4	63.4	96.8
Brisbane Water inc. Patonga	2,639	158.6	5.4	8.7	14.1
Wisemans to Spencer	190	9.4	0.3	0.6	0.9
<b>Totals</b>	<b>10,852</b>	<b>\$1,502.7M</b>	<b>\$44.1M</b>	<b>\$91.6M</b>	<b>\$135.7M</b>

*Source: spreadsheets, Appendix A*

Estimated combined vessel annual operating and maintenance costs by subcatchment are:

- almost \$4 million for Berowra Creek;
- almost \$9 million for the Brooklyn area;
- \$12 million for the Cowan Creek area;
- almost \$97 million for Pittwater;
- \$14 million for the Brisbane Water, including Patonga; and
- almost \$1 million for the Wisemans Ferry to Spencer area.

As shown in Table 34 above, of the 26 marinas located in the Hawkesbury River<sup>3</sup> estuary, 9 are in the Brooklyn area, 8 are in Pittwater, 5 are in the Brisbane Water area, 2 area at Berowra Waters and 2 are in the Cowan Creek area. It is likely that some Pittwater and Cowan Creek owners take their vessels to other marinas in the Brooklyn area for servicing, as marinas at Brooklyn are well equipped and may be more economical than the Pittwater marinas.

### **Recreational activities dependent on the Hawkesbury River estuary**

In June 2006, AgEconPlus Consulting Pty Ltd prepared their final version of a report for the NSW Department of Environment and Conservation entitled “*Quantifying the Economic Value of Activities Dependent on the Hawkesbury-Nepean River*”.

<sup>3</sup> AgEconPlus Consulting Pty Ltd, “*Quantifying the Economic Value of Activities Dependent on the Hawkesbury-Nepean River*”, *Final Report, June 2006*

Table 8.2 in the AgEconPlus report sets out estimates of total visits, consumer surplus per person per visit and total consumer surplus for Reaches 26 and 27, which the report defined as the area of the Hawkesbury River from Wisemans Ferry to Brooklyn Bridge (Reach 26) and from Brooklyn Bridge to the Pacific Ocean (Reach 27).

Reaches 26 and 27 combined match the section of the Hawkesbury River estuary between Wisemans Ferry and the ocean covered in our report. Table 44 duplicates the original Table 8.2 of the AgEconPlus Consulting report.

**Table 44**  
**2006 recreation and tourism values for Reaches 26 and 27 of the Hawkesbury River estuary**

	<i>Total visits (‘000)</i>	<i>Consumer surplus per person per visit (\$)</i>	<i>Total consumer surplus (\$ millions)</i>
Sightseeing, walking, picnicking	500.0	20.00	10.00
Camping	75.0	40.00	3.00
Swimming	100.0	20.00	2.00
Recreational fishing	150.0	35.00	5.25
Boating –canoeing and sailing	150.0	35.00	5.25
Boating – houseboats	30.0	35.00	1.05
Boating – power boats/water skiing	150.0	35.00	5.25
<b>Totals</b>	<b>1,155.0</b>		<b>\$31.8M</b>

*Source: Table 8.2 “Quantifying the Economic Value of Activities Dependent on the Hawkesbury-Nepean River”, AgEconPlus Consulting Pty Ltd, June 2006*

Between 2006 and 2011, Greater Sydney’s population has grown from 4,119,190 at the 2006 Census to 4,627,345 as estimated by the Australian Bureau of Statistics (ABS), an increase of 12.34%. This indicates an average annual growth rate in Greater Sydney of 2.3% from the 2006 Census and should result in a 2012 estimated population 15% higher than that in 2006.

The non-farm Gross Domestic Product deflator, which the ABS uses to measure non-farm average wages growth, has increased from 152.8 in 2005-06 to 192.8 in 2011-12. This indicates that average wage levels have increased by 26.2% since 2005-06.

The 2006 AgEconPlus Consulting figures for recreation and tourism values in the Hawkesbury River estuary east of Wisemans Ferry have been adjusted in this report to allow for demographic growth and average wage increases since 2006.

As visitors to the Hawkesbury River estuary come from across Greater Sydney (and often outside of that area), it is considered reasonable to allow for Greater Sydney population growth since 2006 of 15% and increase the AgEconPlus annual visitor numbers by that amount from 2006 to 2011-12.

Similarly, since AgEconPlus’s 2006 estimates of the value of consumer surplus would have been based on average wage rates, it is also considered reasonable to adjust their figures by 26.2% to reflect the growth of average wage rates from 2005-06 to 2011-12.

Table 45 reflects these two adjustments of the AgEconPlus 2006 recreation and tourism values to allow for the increased value of recreational activities for the Hawkesbury River estuary east of Wisemans Ferry to 2011-12 values.

**Table 45**  
**2012 adjusted recreation and tourism values - Hawkesbury River Reaches 26 and 27**

	<i>Total visits*</i> (‘000)	<i>Consumer surplus**</i> <i>per person per visit</i> (\$)	<i>Total consumer surplus</i> <i>(\$ millions)</i>
Sightseeing, walking, picnicking	575.0	25.24	14.51
Camping	86.3	50.48	4.36
Swimming	115.0	25.24	2.90
Recreational fishing	172.5	44.17	7.62
Boating –canoeing and sailing	172.5	44.17	7.62
Boating – houseboats	34.5	44.17	1.52
Boating – power boats/water skiing	172.5	44.17	7.62
<b>Totals</b>	<b>1,328.3</b>		<b>\$46.15M</b>

\* - increased by 15% as per Greater Sydney demographic changes

\*\* - increased by 26.2% as per ABS indicators 1350.5 – non-farm GDP deflator

Table 45 indicates that the 2012 adjusted recreation and tourism values for Reaches 26 and 27 of the Hawkesbury River estuary have risen overall by 46% since 2006 from \$31.8 million per annum to \$46.15 million in 2011-12 prices.

### **Commercial fishing and oysters on the Hawkesbury River estuary**

The June 2006 AgEconPlus Consulting Pty Ltd report in Table 8.3 sets out estimates of the value of commercial fishing and oyster production for Reaches 26 and 27, the section of the Hawkesbury River estuary between Wisemans Ferry and the ocean covered in our report, as a 5-year average from 1999 to 2003.

Table 46 duplicates the original Table 8.3 of the AgEconPlus Consulting report.

**Table 46**  
**Commercial Fishing, Oysters Gross Value & Producer Surplus - Reaches 26 and 27**

<i>Fishing activity</i>	<i>Hawkesbury-Nepean River total value averaged from 1999 to 2003 (\$'000)</i>	<i>Estimated reliance on Reaches 26 and 27 (%)</i>	<i>Estimated value from Reaches 26 and 27 (\$'000)</i>	<i>Producer surplus at 20% (\$'000)</i>
Crustaceans	761.0	80	608.8	121.8
Fin fish	776.0	80	620.8	124.2
Molluscs	80.6	80	64.5	12.9
Oysters	3,690.0	100	3,690.0	738.0
<b>Totals</b>	<b>5,307.6</b>		<b>4,984.1</b>	<b>996.8</b>

*Source: Table 8.3 “Quantifying the Economic Value of Activities Dependent on the Hawkesbury-Nepean River”, AgEconPlus Consulting Pty Ltd, June 2006*

The NSW Department of Primary Industries (DPI) has responsibility for commercial and recreational fisheries management in NSW. DPI's Fisheries Resource Management Branch has provided commercial harvests for the Hawkesbury River and Pittwater by weight for 2008-09 and 2009-10.

The 2009-10 catch weight of 704.7 tonnes for fin fish was significantly greater than the 2008-09 catch weight of 479.0 tonnes. While DPI advise that overall annual catch weight depends on species proportion and catch location, it should be noted that the Sydney region emerged from a 10 year drought in 2008-09. 2009-10 and 2010-11 were very wet years, which led to much greater inflows into the Hawkesbury-Nepean River system. DPI estimates of the gross value of Hawkesbury River estuary commercial fishing and oyster harvests for the last 4 years are not currently available.

Advice was received from commercial operators at the Hornsby Shire Council Estuary Management Committee meeting in November 2012 that increased rainfall over the last three years has resulted in a marked increase in fin fish and prawns in the Hawkesbury River estuary.

Developments in January 2013 have led to uncertainty regarding the future of the Hawkesbury River estuary oyster industry. The Sydney Morning Herald<sup>4</sup> reported on 25 January 2013 that tests have confirmed that the Pacific oyster mortality syndrome had reached Mullet Creek in the Hawkesbury estuary, the local nursery for juvenile oyster stock. The Hawkesbury River estuary produces more than 300,000 dozen oysters annually, worth about \$2.4 million. This is about half NSW's Pacific oyster production. The Herald reports that about 20% of the local industry's 245 hectare growing area had been affected and in 24 hours the infection wiped out about 90% of oysters growing there.

## **REAL ESTATE ASPECTS ON THE ESTUARY**

Discussions were held with a number of real estate agents operating around the Hawkesbury River estuary regarding real estate economic benefits produced by the estuary. The estate agents contacted were:

- Mr. Jaime Garrick, Principal and Director, Ray White Real Estate, Hornsby;
- Mr. Jeff Rudge, Principal, Hawkesbury River Real Estate, Brooklyn;
- Mr. David Edwards, Principal, L J Hooker Real Estate, Palm Beach; and
- Mr. Nicholas Cusick, Principal, L J Hooker Real Estate, Gosford.

As estate agents tend to concentrate on specific areas around the estuary, their comments are presented in context based on locality.

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<sup>4</sup>“Virus wipes out millions of oysters overnight” Sydney Morning Herald, 25/1/2013, by Leesha McKenny

## **The Hawkesbury River and riverside settlements**

Residents living in riverside settlements, away from centres like Brooklyn and Berowra Waters and without direct road access to their properties, require car parking and boat parking at mainland access points as well as landing areas at their properties from the water. A service boat for riverside residents involves a similar expense to that of operating a medium to large family car, up to \$12,000 per annum, for servicing, fuel, mooring and berthing fees.

These residents also face additional weather damage and vandalism risks for onshore cars and transport vessels with jetty and wharf annual licences and maintenance fees as additional expenses.

A number of riverside properties located away from main urban centres do not have access to mains power or town water supply. Residents in these properties must invest in stand-alone power supplies, including petrol or diesel generators, solar and PV panels and back up batteries, with costs running into tens of thousands of dollars, and which require regular servicing, monitoring and maintenance.

Water supply quality and quantity can become a major issue, particularly in drought periods. Many riverside properties must rely on tank water, which requires expensive and bulky tank purchases and installation. When stored water supplies run out, owners must pay for water to be barged in to their properties. Riverside settlement property owners not connected to the sewer must also treat their wastewater on site with private treatment costs as an additional expense.

Maintenance for properties on the estuary away from direct road access becomes more expensive. Trades hire includes extra travel and handling costs and material supplies incur increased delivery costs, often including barging of large or bulky items. Routine and periodic maintenance costs for riverside properties tend to be double those for properties with direct road access.

All these additional costs and inconveniences impact on riverside property values. Mr. Jeff Rudge, Principal of Hawkesbury River Real Estate at Brooklyn, advises that riverside properties at places like Milsons Passage with deepwater frontage access can sell at a 50% discount compared to similar properties with direct road access in the Brooklyn area. He states that land values in the riverside area have been declining steadily since 2003.

Many people assumed that, once Brooklyn, Dangar Island and Mooney Mooney became fully sewerred, development in those areas would accelerate and numerous subdivisions of existing lots would take place. Mr. Rudge advises that this has not occurred, but properties located in the sewerred area have become more saleable with prices firming by between 5% and 10%.

The collapse of the Sydney Rock Oyster industry in the Hawkesbury River through QX parasite in the mid 2000's had an impact on public perceptions of river health and reflected on property values.

Mr. Rudge observed a general drop off in house prices at the time of between 5% and 10%, with sales slowing due to concerns of potential buyers due to impacts on river water quality. He cautions that economic conditions at that time were also affected due to the general economic slowdown of the late 2000's but states that there was a definite impact on housing prices due to the oyster industry's problems on the river at that time.

The subsequent cleanup and reestablishment of the Hawkesbury River oyster industry using the Pacific Oyster and development of more sustainable practices and technology have restored public faith in the river's quality to some extent but the recent emergence of Pacific Oyster Mortality Syndrome may adversely impact on property prices again.

### **Changes to bank valuations methods and resulting impacts on values**

Mr. Rudge advised that, in July 2012, the major banks changed their method of property valuation. Since property valuers now have to accept professional liability for shortfalls in recoveries from bank foreclosures, property valuations have become more conservative. The banks introduced a 5 point valuation system that discounts values based on criteria including:

- average time taken to resell properties;
- lack of services;
- fire zoning; and
- flooding potential.

Whereas previously banks generally lent to 95% of valuation, properties that now perform poorly on the 5 point valuation system can have loan limits reduced to 70% of valuation.

### **Holiday rental changes along the river**

When property owners rent out their riverside properties, they can recover costs, negative gear their property purchase and expense maintenance and improvement costs. Well organized and business-like owners can let out good quality properties along the river for up to 80% of the year and earn tens of thousands of dollars net income. Many owners now used online websites such as Stayz to self manage property rentals and save on estate agent costs.

Previous conflicts on rental of properties on Dangar Island have been resolved through the establishment of a code of conduct which has been accepted by NSW Planning. Dangar Island property owners have now generally become very supportive of holiday rentals on the island. Mr. Rudge estimates that holiday rental of properties on the Hawkesbury River could generate up to \$15 million per annum when all client expenditure, including that at restaurants, shops and entertainment facilities in the Hawkesbury valley, are included.

## **Pittwater property factors**

Discussions were held with Mr. David Edwards, Principal of L J Hooker Palm Beach and Whale Beach branches, regarding variations in property values between Pittwater properties on the eastern shore with direct road access compared to western shore and Scotland Island properties with water only access.

Lack of direct road access has a major impact on a property's resale potential in the Pittwater area, with 95% of potential buyers not interested in properties without road access. These properties can take several years to sell and vendors can face substantial price reductions to get them sold.

Properties on the Barrenjoey Peninsula facing Pittwater to the west generally tend to be 30% to 40% cheaper than similar oceanside properties with ocean views although waterfront homes on Pittwater generate similar prices to ocean beachfront properties. Homes at Church Point are generally built on steeper blocks and are regarded as more isolated than those along the eastern side of Pittwater. Many Church Point residences have south westerly aspects and are colder in winter than those on the eastern shore. Generally Church Point residences are about one third cheaper than equivalent standard properties on the eastern shore.

Properties on Scotland Island have an even lower value compared to those on the eastern side, with waterfront properties on Scotland Island available from \$1.3 million to \$1.4 million. Access and shore based parking issues impact heavily on Scotland Island property values.

Pittwater properties tend to be about 40% cheaper than equivalent properties in Sydney's eastern suburbs with water views, although top end prices in Pittwater are similar to those in the eastern suburbs.

## **Brisbane Water property factors**

Rail access is a positive feature for Brisbane Water real estate with the Main Northern Line running along the western side of the waterway. There is no real differential in real estate prices between the eastern and western areas surrounding the waterway, especially since the Rip Bridge opened in 1974 and commuters can more easily access railway stations on the western side.

Improved water access through Brisbane Water with access to the Pittwater area and ultimately to Sydney Harbour could provide more public transport alternatives to the railway and F3 freeway for commuters. Delays on the F3 and the Central Coast rail system can have major impacts on morning and evening peak commuter flows.

## CONCLUSIONS

The study demonstrates that there has been substantial public and private investment in the Hawkesbury River estuary east of Wisemans Ferry.

There are 26 marinas located in the estuary, with 9 in the Brooklyn area, 8 in Pittwater, 5 in the Brisbane Water area, 2 in the Cowan Creek area and 2 at Berowra Waters. These marinas provide an estimated total of 1,686 wet berths. The Akuna Bay Marina provides an additional 175 dry berths in its onshore “Rack’n Stack” storage shed.

There are an estimated 93 public wharves across the estuary, with 29 located in Pittwater and 43 in Brisbane Water. Commuter berths are estimated to total 282, with 40 in Berowra Creek subcatchment, 140 in Brooklyn subcatchment and 95 in Pittwater. Of the estimated 36 boat ramp facilities located in the estuary, Brisbane Water has the highest number at 23.

There are an estimated 2,601 foreshore car parking spots located across the estuary, with 134 in Berowra Creek subcatchment, 468 in Brooklyn subcatchment, 759 in Cowan Creek subcatchment, 842 in Pittwater and 398 in Brisbane Water. No dedicated foreshore car parking areas were observed in the Wisemans Ferry to Spencer area.

Of the 905 observed vehicle/ boat trailer parking spots located across the estuary, 58 are in Berowra Creek subcatchment, 183 are in Brooklyn subcatchment, 147 are in Cowan Creek subcatchment, 313 are in Pittwater and 204 are in Brisbane Water area. No dedicated foreshore vehicle/boat trailer parking areas were observed in the Wisemans Ferry to Spencer area.

One boat washing facility was observed in the estuary at Brooklyn and, of the 11 fish cleaning stations across the estuary, 7 were located in Brisbane Water.

The estimated replacement value of fixed foreshore assets in the estuary is \$274 million.

More than 40% of all vessels berthed in the Hawkesbury River estuary east of Wisemans Ferry are located in Pittwater. For berthed vessels less than 6 metres long, Pittwater has 1,328 out of a total of 3,515 or 38%.

For berthed vessels between 6 and 12 metres long, Pittwater has 413 out of a total of 1,377 or 30%. For berthed vessels longer than 12 metres, Pittwater has 813 out of a total of 1,283 or 63%. For berthed houseboats, Pittwater has 5 out of 78 or 6%.

The subcatchment with the second highest total of berthed vessels is Brisbane Water, with 1,780 or 28%. Brisbane Water has 35% of all berthed vessels less than 6 metres long and 31% of all berthed vessels between 6 and 12 metres long.

The Brooklyn area has the highest proportion of berthed houseboats on the estuary, with 54 out of 78 or 69%. This is again because Luxury Afloat, Holidays Afloat and Ripples Holiday Houseboats all specialise in hiring out houseboats from Sandbrook Inlet at Brooklyn.

An estimated 69% in replacement cost terms of all vessels berthed in the Hawkesbury River estuary are located in Pittwater. Cowan Creek has 18% of all berthed vessels between 6 and 12 metres long and 16% of all berthed vessels longer than 12 metres. In replacement cost terms, an estimated 12% of all vessels berthed in the Hawkesbury River estuary are located in the Cowan Creek area subcatchment. 81% of all berthed vessels in the Hawkesbury River estuary are located in either Pittwater or Cowan Creek subcatchments.

The total replacement value for all moored and berthed vessels on the Hawkesbury River estuary is estimated at \$1.5 billion, of which \$1.06 billion worth, or more than two thirds by value, are located in Pittwater.

There is a strong industry in the Hawkesbury River estuary employed maintaining and servicing vessels. Annual operating and maintenance costs for a berthed vessel can be reasonably estimated at 10% of its replacement cost. Annual operating and maintenance costs for vessels on moorings are somewhat cheaper, at between 5% and 7.5%, as annual mooring fees are considerably cheaper than berthing charges.

Combined annual O&M costs for all vessels either moored or berthed in the estuary east of Wisemans Ferry are estimated at \$135 million, using the higher annual value of 7.5% of replacement costs for moored vessels.

Estimated combined annual operating and maintenance costs by subcatchment are:

- almost \$4 million for Berowra Creek subcatchment;
- almost \$9 million for Brooklyn area;
- \$12 million for Cowan Creek area;
- almost \$97 million for Pittwater;
- \$14 million for the Brisbane Water area, including Patonga; and
- almost \$1 million for the Wisemans Ferry to Spencer area.

AgEconPlus Consulting<sup>5</sup>'s 2006 figures for recreation and tourism values in the Hawkesbury River estuary east of Wisemans Ferry have been adjusted to allow for demographic growth in the Greater Sydney area and average wage increases since 2006. Outdoor activities including sightseeing, walking, picnicking, camping, swimming, recreational fishing and boating are estimated to currently total 1.33 million annual visits with a total estimated value of \$46.2 million.

The 2009-10 commercial catch weight of 704.7 tonnes for fin fish in the Hawkesbury River and Pittwater was significantly greater than the 2008-09 catch weight of 479.0 tonnes. The Sydney region emerged from a 10 year drought in 2008-09. 2009-10 and 2010-11 were very wet years, which led to much greater inflows into the Hawkesbury-Nepean River system.

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<sup>5</sup> AgEconPlus Consulting Pty Ltd, "*Quantifying the Economic Value of Activities Dependent on the Hawkesbury-Nepean River*", *Final Report, June 2006*

The Sydney Morning Herald<sup>6</sup> reported on 25 January 2013 that tests have confirmed that the Pacific oyster mortality syndrome had reached Mullet Creek in the Hawkesbury estuary, the local nursery for juvenile oyster stock. The Hawkesbury River estuary produces more than 300,000 dozen oysters annually, worth about \$2.4 million. The Herald reported that about 20% of the local industry's 245 hectare growing area had been affected and in 24 hours the infection wiped out about 90% of oysters growing there.

Discussions were held with a number of real estate agents operating around the Hawkesbury River estuary regarding real estate economic benefits produced by the estuary.

Residents living in riverside settlements, away from urban centres like Brooklyn and Berowra Waters and without direct road access to their properties, require car parking and boat parking at mainland access points as well as landing areas at their properties from the water. Additional costs and inconveniences impact on riverside property values. Riverside properties at places like Milsons Passage with deepwater frontage access can sell at a 50% discount compared to similar properties with direct road access in the Brooklyn area.

In July 2012, the major banks changed their method of property valuation. Since property valuers now have to accept professional liability for shortfalls in recoveries from bank foreclosures, property valuations have become more conservative.

The banks introduced a 5 point valuation system that discounts values. Whereas previously banks generally lent to 95% of valuation, properties that now perform poorly on the 5 point valuation system can have loan limits reduced to 70% of valuation.

Family weekenders tend to become liabilities during major economic downturns as happened in 2008. Where property owners can rent out their riverside properties, they can recover costs, negative gear their property purchase and expense maintenance and improvement costs. Well organized and business-like owners can let out good quality properties along the river for up to 80% of the year and earn tens of thousands of dollars net income. Many owners now used online websites such as Stayz to self manage property rentals and save on estate agent costs.

It is estimated that holiday rental of properties on the Hawkesbury River could generate up to \$15 million per annum when all client expenditure, including that at restaurants, shops and entertainment facilities in the Hawkesbury valley, are included.

Lack of direct road access has a major impact on a property's resale potential in the Pittwater area, with 95% of potential buyers not interested in properties without road access. These properties can take several years to sell and vendors can face substantial price reductions to get them sold.

Properties on the Barrenjoey Peninsula facing Pittwater to the west generally tend to be 30% to 40% cheaper than similar oceanside properties with ocean views although waterfront homes on Pittwater generate similar prices to ocean beachfront properties.

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<sup>6</sup>“Virus wipes out millions of oysters overnight” Sydney Morning Herald, 25/1/2013, by Leesha McKenny

Pittwater properties tend to be about 40% cheaper than equivalent properties in Sydney's eastern suburbs with water views, although top end prices in Pittwater are similar to those in the eastern suburbs. The highest price received in 2012 in the Palm Beach area was \$22 million.

Rail access is a positive feature for Brisbane Water real estate with the Main Northern Line running along the western side of the waterway. There is no real differential in real estate prices between the eastern and western areas surrounding the waterway, especially since the Rip Bridge opened in 1974 and commuters can more easily access railway stations on the western side.

Improved water access through Brisbane Water with access to the Pittwater area and ultimately to Sydney Harbour could provide more public transport alternatives to the rail way and F3 freeway for commuters. Delays on the F3 and the Central Coast rail system can have major impacts on morning and evening peak commuter flows.

## REFERENCES AND ACKNOWLEDGEMENTS

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- Written advice and technical answers from officers of Hornsby Shire Council
- Written advice and technical answers from officers of Pittwater Council

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Hornsby Shire Council
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- Mr. Richard Rasdall  
Club Secretary  
Avalon Sailing Club, Taylors Point, Pittwater
- Mr. Les Kemp  
Club Secretary  
Hawkesbury River Sailing Club, Brooklyn
- Mr. Norm Thompson  
Race Secretary  
Saratoga Sailing Club, Saratoga
- Mr. Jaime Garrick  
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- Mr. David Edwards  
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L J Hooker Real Estate, Palm Beach and Whale Beach
- Mr. Nicholas Cusick  
Principal  
L J Hooker Real Estate, Gosford

# **APPENDIX A – SPREADSHEETS**

**APPENDIX A1 – HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS**

Date: 16/10/12

**SUBCATCHMENT: BEROWRA CREEK**

LOCATION	MARINAS		PUBLIC WHARVES		COMMUTER	PONTOONS		BOAT RAMPS	CAR PARKING		TRAILER PARKING		BOAT WASHING FACILITIES		FISH CLEANING FACILITIES	
	INDICATIVE VALUE \$100,000 PER BERTH		INDICATIVE VALUE		BERTHS	INDICATIVE VALUE			INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
	BERTHS	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
BEROWRA WATERS - DUSTHOLE BAY	76		25 X 2M PONTON JETTY WITH 10 X 2M ALUMINIUM RAMP AND TWO CONCRETE PILES	200					ONE QUADRUPLE	1,000	56	280	58	464		
- WESTERN SIDE																
BEROWRA WATERS	42		20 X 2M ALUMINIUM RAMP TO 8 X 4M PONTON WITH 2 CONCRETE PILES	120	40	250					38	114				
- EASTERN SIDE			15 X 10M TIMBER WHARF NEAR FERRY CROSSING	200												
CROSSLANDS RESERVE							1	120			40	120				
<b>TOTAL FIXED ASSETS</b>	<b>118</b>	<b>11,800</b>	<b>3</b>	<b>520</b>	<b>40</b>	<b>250</b>	<b>1</b>	<b>120</b>	<b>1</b>	<b>1,000</b>	<b>134</b>	<b>514</b>	<b>58</b>	<b>464</b>	<b>1</b>	<b>5</b>

**APPENDIC A2 - HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – MOORED VESSELS**

**Date: 16/10/12**

**SUBCATCHMENT: BEROWRA CREEK**

MOORED VESSEL TYPE	LESS THAN 6 METRE		FROM 6 TO 12 METRE			GREATER THAN 12 METRE		HOUSEBOATS	
	INDICATIVE VALUE WITH UNIT VALUE = \$15,000**		INDICATIVE VALUE WITH UNIT VALUE = \$90,000**			INDICATIVE VALUE WITH UNIT VALUE = \$260,000**		INDICATIVE VALUE WITH UNIT VALUE = \$150,000**	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	
BEROWRA WATERS UPSTREAM OF FERRY	23	345	10	900	17	4,420	6	900	
BEROWRA WATERS DOWNSTREAM OF FERRY TO CALABASH BAY	24	360	37	3,330	20	5,200	9	1350	
CALABASH BAY TO COLLINGRIDGE POINT	5	75	5	450	4	1,040	0	0	
COLLINGRIDGE POINT TO BAR ISLAND	0	0	0	-	0	-	0	0	
<b>TOTAL MOORED VESSELS</b>	<b>52</b>	<b>780</b>	<b>52</b>	<b>4,680</b>	<b>41</b>	<b>10,660</b>	<b>15</b>	<b>2,250</b>	

\*\* BEROWRA CREEK BOAT PRICES BASED ON BROOKLYN BOAT SALES

**APPENDIX A3 - HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – BERTHED VESSELS**

Date: 16/10/12

**SUBCATCHMENT: BEROWRA CREEK**

BERTHED VESSEL TYPE	LESS THAN 6 METRE		FROM 6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
	UNIT VALUE** = \$15,000		UNIT VALUE** = \$90,000		UNIT VALUE** = \$260,000		UNIT VALUE** = \$150,000	
LOCATION	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
BEROWRA WATERS UPSTREAM OF FERRY	28	420	4	360	17	4,420	6	900
BEROWRA WATERS DOWNSTREAM OF FERRY	141	2,115	56	5,040	34	8,840	3	450
TO CALABASH BAY								
CALABASH BAY TO COLLINGRIDGE POINT	27	405	1	90	1	260	-	-
COLLINGRIDGE POINT TO BAR ISLAND	26	390	8	720	-	-	-	-
<b>TOTAL BERTHED VESSELS</b>	<b>222</b>	<b>3,330</b>	<b>69</b>	<b>6,210</b>	<b>52</b>	<b>13,520</b>	<b>9</b>	<b>1,350</b>

\*\* BEROWRA CREEK BOAT PRICES BASED ON BROOKLYN BOAT SALES

**APPENDIX A4 - HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES**

Date: 16/10/12

**SUBCATCHMENT: BEROWRA CREEK**

PUBLIC FACILITIES	PUBLIC TOILETS		PICNIC FACILITIES		SEAWALLS	WALKWAYS		INTERPRETIVE SIGNAGE		
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE PER LINEAL METRE = \$2,500	INDICATIVE VALUE	INDICATIVE VALUE		INDICATIVE VALUE	
LOCATION	NUMBER	(\$000)	NUMBER	(\$000)	METRES	(\$000)	METRES	(\$000)	NUMBER	(\$000)
CROSSLANDS - EASTERN SIDE OF BEROWRA CREEK	2 BLOCKS (16 UNITS)	500	12 COVERED ELECTRIC BBQ's	240			300M BOARD WALK WITH VIEWING PLATFORM	240	12 SIGNS	10
			FLYING FOX, SWING SETS AND TRAMPOLINE 12 COVERED TABLES AND BENCH SEATS	40 240						
BEROWRA WATERS - EASTERN SIDE	1 BLOCK (6 PANS, URINAL AND BASINS)	300								
BEROWRA WATERS - WESTERN SIDE			KIDS PLAYGROUND	20	500	1,250	150M	53		
	1 BLOCK	300	6 COVERED ELECTRIC BBQ's PLUS COVERED TABLES AND SEATS 6 BENCH SEATS	180 9						
<b>TOTAL PUBLIC FACILITIES</b>	<b>4</b>	<b>1100</b>		<b>729</b>	<b>500</b>	<b>1250</b>	<b>450</b>	<b>293</b>	<b>12</b>	<b>10</b>

**APPENDIX A5- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – SUMMARY OF ASSETS**

Date: 16/10/12

**SUBCATCHMENT: BEROWRA CREEK**

FIXED ASSETS	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS		PONTOONS		BOAT RAMPS		CAR PARK SPOTS		TRAILER SPOTS	
<u>TOTAL \$'000</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>
14,673**	2	11,800	3	520	40	250	1	120	1	1,000	134	514	58	464
<b>MOORED VESSELS</b>	<b>LESS THAN 6 METRE</b>		<b>6 TO 12 METRE</b>		<b>GREATER THAN 12 METRE</b>		<b>HOUSEBOATS</b>							
<u>TOTAL \$'000</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>						
18,370	52	780	52	4,680	41	10,660	15	2,250						
<b>BERTHED VESSELS</b>	<b>LESS THAN 6 METRE</b>		<b>6 TO 12 METRE</b>		<b>GREATER THAN 12 METRE</b>		<b>HOUSEBOATS</b>							
<u>TOTAL \$'000</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>						
24,410	222	3,330	69	6,210	52	13,520	9	1,350						
<b>SAILING CLUBS AND ASSOCIATED BOATS</b>	<b>SAILING CLUBS</b>		<b>SKIFFS</b>		<b>DAY BOATS</b>		<b>YACHTS</b>							
<u>TOTAL \$'000</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>						
-	-	-	-	-	-	-	-	-						
<b>PUBLIC FACILITIES</b>	<b>PUBLIC TOILETS</b>		<b>PICNIC FACILITIES</b>		<b>SEAWALLS</b>		<b>WALKWAYS</b>		<b>INTERPRETIVE SIGNAGE</b>					
<u>TOTAL \$'000</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>METRES</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>				
2,631	4	1,100		729	729	500	450	293	12	10				

\*\* ADD IN FISH CLEANING FACILITIES – 1 AT \$5,000

**APPENDIX A6- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 1**

Date: 16/10/12

**SUBCATCHMENT: BROOKLYN AREA**

LOCATION	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS		PONTOONS		BOAT RAMPS		CAR PARKING SPOTS	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
	BERTHS	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
KANGAROO POINT			8 X 4M TIMBER JETTY PLUS 6 X 4M TIMBER WHARF ON TIMBER PIERS WITH 6 TIMBER PILES	250			2 PONTOONS PLUS ALUMINIUM LADDER AND 9 CONCRETE PILES - ONE IS PUMPOUT WHARF	750	COMMERCIAL LOADING RAMP	750	50	150
			15 X 4M PONTOON PLUS 12 X 2M ALUMINIUM RAMP WITH 2 PILES	200								
LUXURY AFLOAT MARINA												
- BERTHS	13											
DOLPHIN BOATSHED											40	120
- BERTHS	49											
- SLIPWAY												
FENWICK'S MARINA											48	144
- BERTHS	71											
- SLIPWAY												
- HARDSTAND												
- SPRAY PAINTING SHOP - 4 SHOPS IN OFFICE BLOCK												

**APPENDIX A7- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 2**

Date: 16/10/12

**SUBCATCHMENT: BROOKLYN AREA**

LOCATION	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS RAMPS		PONTOONS		BOAT RAMPS		CAR PARKING SPOTS	
	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE				
	BERTHS	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
BROOKLYN MARINA											32	96
- BERTHS	51											
- SLIPWAY												
- HARDSTAND												
WHARF STREET MARINA											10	30
- BERTHS	51											
- SLIPWAY												
- HARDSTAND												
BROOKLYN CENTRAL											28	84
- BERTHS	54											
- SLIPWAY												
SANDBROOK INLET MARINA											20	60
- BERTHS	65											
- SLIPWAY												
HOLIDAYS AFLOAT/RIPPLES											20	60
- BERTHS	48											
BROKEN BAY BOATING - EAST BROOKLYN												
- BERTHS	59											

**APPENDIX A8- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 3**

Date: 16/10/12

**SUBCATCHMENT: BROOKLYN AREA**

LOCATION	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS RAMPS		PONTOONS		BOAT RAMPS		CAR PARKING SPOTS	
	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE
	BERTHS	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
EAST BROOKLYN OFF RAILWAY CAUSEWAY			6 X 8M TIMBER WHARF WITH 3 TIMBER PILES AND STEPS	250								
McKELL PARK FORESHORE			15 X 4M PONTOON WITH 10 X 2M ALUMINIUM RAMP AND 2 CONCRETE PILES	200	150 M PONTOONS PLUS ALUMINIUM GATES AND RAMP AND 10 PILES	650					140	
					30 MIDSTREAM PILES	300						
PARSLEY BAY - EAST BROOKLYN			TWO JETTIES WITH PONTOONS, 10M ALUMINIUM RAMPS AND 5 PILES	240					1 TRIPLE RAMP	750	10	30
			- EAST 12 X 2.4M WIDE									
			- WEST 9 X 2.4M WIDE									
			LOADING JETTY AT BAY ENTRANCE - CONCRETE WITH 5 PILES	800								

**APPENDIX A9- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 4**

Date: 16/10/12

**SUBCATCHMENT: BROOKLYN AREA**

LOCATION	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS RAMPS		PONTOONS		BOAT RAMPS		CAR PARKING SPOTS		
	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	
LOCATION	BERTHS	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	LOCATION	BERTHS	(\$000)	NUMBER	(\$000)	NUMBER	
DANGAR ISLAND			30 X 3M TIMBER WHARF AND LOADING DOCK HARDWOOD DECKING ON CONCRETE PILES WITH 6 MOORING PILES, STEPS, 2 LIGHTS, POWER AND WATER WITH 8 X 4M TIMBER SHELTER SHED	250									
WOBYS BEACH			15 X 2M TIMBER JETTY WITH 6 X 4M TIMBER WHARF, STEPS AND 4 PILES	250									
MULLETT CREEK							PONTOON WITH ALUMINIUM RAMP AND 2 PILES AT WONDABYNE STATION		200				
DEERUBBUN RESERVE - GOSFORD CITY COUNCIL							20 M x 3 M WIDE PLUS 2 PILES	250		2 RAMPS (1 DOUBLE PLUS 1 SINGLE WITH PONTOON	800	70	210

**APPENDIX A10- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 5**

Date: 16/10/12

**SUBCATCHMENT: BROOKLYN AREA**

LOCATION	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS RAMPS		PONTOONS		BOAT RAMPS		CAR PARKING SPOTS	
	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE
LOCATION	BERTHS	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	LOCATION	BERTHS	(\$000)	NUMBER	(\$000)	NUMBER
MILSONS PASSAGE			12 X 3M TIMBER WHARF ON TIMBER PILES, WITH 6 X 4M SHELTER SHED AND 2 LIGHTS	190						PONTOON)		
BAR ISLAND			TIMBER WALKWAY WITH ALUMINIUM LADDER AND PONTOON WITH 2 PILES	150								
BAR POINT			TIMBER WHARF WITH 2 PILE PONTOONS AND 8 PILES	200								
<b>TOTAL BROOKLYN AREA FIXED ASSETS</b>	<b>9</b>	<b>57,050</b>	<b>12</b>	<b>2,980</b>		<b>1,150</b>		<b>1,000</b>	<b>4</b>	<b>2,300</b>	<b>468</b>	<b>984</b>

**APPENDIX A11- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 5**

Date: 16/10/12

**SUBCATCHMENT: BROOKLYN AREA**

LOCATION	TRAILER PARKING SPOTS		BOAT WASHING FACILITIES		FISH CLEANING FACILITIES	
	NUMBER	INDICATIVE VALUE (\$000)	NUMBER	INDICATIVE VALUE (\$000)	NUMBER	INDICATIVE VALUE (\$000)
DOLPHIN BOATSHED	15	75				
- BERTHS						
- SLIPWAY						
FENWICK'S MARINA	10	50				
- BERTHS						
- SLIPWAY						
- HARDSTAND						
- SPRAY PAINTING SHOP						
- 4 SHOPS IN OFFICE BLOCK						
PARSLEY BAY - EAST BROOKLYN	133	665	1	6	1	8
DEERUBBUN RESERVE - GOSFORD CITY COUNCIL	25	125			1 DOUBLE	10
<b>TOTAL BROOKLYN AREA FIXED ASSETS</b>	<b>183</b>	<b>915</b>	<b>1</b>	<b>6</b>	<b>3</b>	<b>18</b>

**APPENDIX A12- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – MOORED VESSELS**

Date: 16/10/12

**SUBCATCHMENT: BROOKLYN AREA**

MOORED VESSEL TYPE	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
	UNIT VALUE = \$15,000		UNIT VALUE = \$90,000		UNIT VALUE = \$260,000		UNIT VALUE = \$150,000	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
SANDBROOK INLET	129	1,935	119	10,710	20	5,200	27	4,050
PARSLEY BAY	9	135	65	5,850	19	4,940	6	900
EAST BROOKLYN	10	150	2	180	1	260	3	450
WOBYS BEACH	7	105	6	540	-	-	-	-
DANGAR ISLAND	45	675	9	810	9	2,340	3	450
MULLET CREEK	7	105	-	-	2	520	1	150
MOONEY MOONEY CREEK	24	360	12	1,080	4	1,040	6	900
BAR POINT	8	120	4	360	1	260	-	-
MILSON PASSAGE/MILSON ISLAND	1	15	-	-	-	-	-	-
<b>TOTAL MOORED VESSELS</b>	<b>240</b>	<b>3,600</b>	<b>217</b>	<b>19,530</b>	<b>56</b>	<b>14,560</b>	<b>46</b>	<b>6,900</b>

FENWICK'S BROOKLYN MARINA BOAT SALES - ADVERTISEMENTS 5/11/12

SIZE OF BOAT	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
	1	58	34	3051	12	
AVERAGE PRICE		58		90		259

**APPENDIX A13- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – BERTHED VESSELS**

Date: 16/10/12

**SUBCATCHMENT: BROOKLYN AREA**

BERTHED VESSEL TYPE	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS	
	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE
	UNIT VALUE = \$15,000	UNIT VALUE = \$90,000	UNIT VALUE = \$260,000	UNIT VALUE = \$150,000				
LOCATION	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
KANGAROO POINT LUXURY AFLOAT MARINA	8	120	-	-	-	-	5	750
DOLPHIN BOATSHED	9	135	23	2,070	8	2,080	2	300
FENWICK'S MARINA	17	255	36	3,240	24	6,240	1	150
BROOKLYN MARINA	15	225	22	1,980	6	1,560	6	900
WHARF STREET MARINA	5	75	23	2,070	12	3,120	2	300
HOLIDAYS AFLOAT	26	390	32	2,880	26	6,760	1	150
BROOKLYN CENTRAL	25	375	22	1,980	5	1,300	5	750
SANDBROOK INLET MARINA	43	645	6	540	-	-	-	-
RIPPLES HOLIDAY HOUSEBOATS	15	225	-	-	-	-	26	3,900
BROKEN BAY BOATING - EAST BROOKLYN	28	420	5	450	8	2,080	-	-
McKELL PARK BROOKLYN COMMUTER BERTH	48	720	-	-	1	260	-	-
WOBYS BEACH	15	225	-	-	-	-	-	-
DANGAR ISLAND	62	930	2	180	-	-	-	-
MULLET CREEK	7	105	-	-	-	-	1	150
MOONEY MOONEY CREEK	50	750	12	1,080	2	520	1	150
BAR POINT	66	990	5	450	1	260	3	450
MILSON PASSAGE/MILSON ISLAND	30	450	-	-	-	-	1	150
<b>TOTAL BERTHED BOATS</b>	<b>469</b>	<b>7,035</b>	<b>188</b>	<b>16,920</b>	<b>93</b>	<b>24,180</b>	<b>54</b>	<b>8,100</b>

FENWICK'S BROOKLYN MARINA BOAT SALES - ADVERTISEMENTS 5/11/12

SIZE OF BOAT	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
	1	58	34	3051	12	3112
AVERAGE PRICE		58		90		259

**APPENDIX A14- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – SAILING CLUBS**

Date: 16/10/12

**SUBCATCHMENT: BROOKLYN AREA**

SAILING CLUBS AND ASSOCIATED BOATS	FIXED ASSETS	SKIFFS		DAY BOATS		YACHTS		
		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		
		(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
HORNSBY PCYC SAILING CLUB	BUILDINGS ETC	155	35	350	-	-	-	-
LOOKOUT BEACH								
- 100 MEMBERS								
HAWKESBURY RIVER YACHT CLUB	NO CLUBHOUSE							
- BASED AT HAWKESBURY MARINA,								
McKELL PARK, BROOKLYN								
HAWKESBURY RIVER SAILING CLUB								
<b>TOTAL SAILING CLUB ASSETS</b>		<b>155</b>	<b>35</b>	<b>350</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

**APPENDIX A15- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES**

Date: 2/11/12

**SUBCATCHMENT: BROOKLYN AREA**

PUBLIC FACILITIES	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS			SEA WALLS INDICATIVE VALUE PER LINEAL METRE = \$2,500		WALKWAYS INDICATIVE VALUE		INTERPRETIVE SIGNAGE		SWIMMING POOLS	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	METRES	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	
KANGAROO POINT			3 SHELTER TABLES	60			400M (LARGE SANDSTONE BLOCKS)	1,000			6 SIGNS	5			
BROOKLYN PARK WALKWAY			2 DOUBLE BBQs COVERED	40					360 METRES ELEVATED 1.3 M	600	6 SIGNS	5			
			7 LARGE OPEN TABLES WITH TIMBER BASES	14					4 M BENCH SEAT AND 2 x 16 SQ M END PLATFORMS PLUS 100 M						
MC KELL PARK EAST BROOKLYN	3 TOILETS PLUS 7 SHOWERS PLUS URINAL AND BASINS	450	5 SHELTER TABLES	100		250M	625				10 SIGNS	8	50M ENCLOSED POOL WITH	600	
			4 BENCH SEATS	6									WALKWAYS ON 3 SIDES AND SEAWALL		
			3 WOODEN SEATS	5											
			KIDS' PLAYGROUND	20											
PARSLEY BAY	5 PANS + URINAL + 2 BASINS	300	2 SHELTER TABLES	40			300M (LARGE BLOCKS SANDSTONE)	750							
							700M (OUTER SEAWALL)	1,750							
DEERUBBUN RESERVE	4 PANS WITH PIT TOILETS	400		12		300M	750				1 SIGN - COVERED	2			
- GOSFORD CITY COUNCIL			4 ALUMINIUM TABLES & BENCHES ON CONCRETE PADS				STONE BANK PROTECTION								
<b>TOTAL PUBLIC FACILITIES</b>	<b>3</b>	<b>1,150</b>		<b>297</b>		<b>1,950</b>	<b>4,875</b>	<b>360</b>	<b>600</b>		<b>17</b>	<b>20</b>	<b>1</b>	<b>600</b>	

**APPENDIX A16- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – SUMMARY OF ASSETS**

Date: 2/11/12

**SUBCATCHMENT: BROOKLYN AREA**

FIXED ASSET TYPE	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS		PONTOONS		BOAT RAMPS		CAR PARKS		TRAILER PARKING		BOAT WASHING FACILITIES	
	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE
TOTAL \$000	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
66,403	9	57,050	11	2,980		1,150		1,000	4	2,300	468	984	183	915	1	6
MOORED VESSEL TYPE	LESS THAN 6 METRE INDICATIVE VALUE		6 TO 12 METRE INDICATIVE VALUE		GREATER THAN 12 METRE INDICATIVE VALUE		HOUSEBOATS INDICATIVE VALUE									
TOTAL \$000	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)								
44,590	240	3,600	217	19,530	56	14,560	46	6,900								
BERTHED VESSEL TYPE	LESS THAN 6 METRE INDICATIVE VALUE		6 TO 12 METRE INDICATIVE VALUE		GREATER THAN 12 METRE INDICATIVE VALUE		HOUSEBOATS INDICATIVE VALUE									
TOTAL \$000	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)								
56,235	469	7,035	188	16,920	93	24,180	54	8,100								
SAILING CLUBS AND ASSOCIATED BOATS	SAILING CLUBS		SKIFFS		DAY BOATS		YACHTS									
TOTAL \$000	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)								
505	3	155	35	350												
PUBLIC FACILITIES	PUBLIC TOILETS INDICATIVE VALUE		PICNIC FACILITIES INDICATIVE VALUE		SEA WALLS INDICATIVE VALUE		WALKWAYS INDICATIVE VALUE		INTERPRETIVE SIGNAGE INDICATIVE VALUE		SWIMMING POOLS INDICATIVE VALUE					
TOTAL \$000	NUMBER	(\$000)	NUMBER	(\$000)	METRES	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)				
7,541	3	1,150		297	1,950	4,875		600	17	20	1	600				

**APPENDIX A17- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS**

Date: 29/10/12

**SUBCATCHMENT: COWAN CREEK AREA**

ASSET TYPE	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS		PONTOONS		BOAT RAMPS		CAR PARKING SPOTS		TRAILER SPOTS		FISH CLEANING STATION			
	INDICATIVE BERTH** COST = \$120,000		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE			
LOCATION	BERTHS	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)		
BOBBIN HEAD - EASTERN SIDE			PONTOON PLUS ALUMINIUM RAMP AND 2 PILES	250							69	345						
- 232 BERTHS PLUS WORKSHOP, RETAIL SHOPS AND HARDSTAND BOBBIN HEAD - WESTERN SIDE	232										332 3 BUS BAYS	1660						
APPLETREE BAY			10 X 8M CONCRETE GROUYNE PLUS 20 X 4M PONTOON AND 8 X 2M RAMP WITH 2 CONCRETE PILES	400			2 PONTOONS PLUS ALUMINIUM LADDER AND TWO PILES	200	1 DOUBLE 1 SINGLE	500 250	84	420	30	240	1	5		
ILLAWONG BAY, COAL AND CANDLE CREEK AKUNA BAY, COAL AND CANDLE CREEK	253										94	470						
- 253 BERTHS PLUS 175 DRY STORAGE RACK 'N STACK BERTHS - 150 X 30M STEEL FRAME RACK SHED WITH GAL ROOF ON HARD STAND PLUS OVERHEAD GANTRY CRANE							QUADRUPLE	1000			180	900	117	936				
<b>TOTAL FIXED ASSETS</b>	<b>485</b>	<b>66,200</b>	<b>3</b>	<b>650</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>200</b>	<b>3</b>	<b>1,750</b>	<b>759</b>	<b>3,825</b>	<b>147</b>	<b>1,176</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>5</b>

\*\* BERTH COST BASED ON EMPIRE BOAT SALES RETAIL PRICE \$195,000 FOR NEW MARINA BERTHS PLUS ADVICE FROM MR ANDREW FENWICK OF FENWICKS MARINA, BROOKLYN, AND MR DAVID ROWELL OF ROWELL MARINE, NEWPORT

**APPENDIX A18- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – MOORED VESSELS**

Date: 29/10/12

**SUBCATCHMENT: COWAN CREEK AREA**

MOORED VESSEL TYPE	LESS THAN 6 METRE INDICATIVE VALUE		6 TO 12 METRE INDICATIVE VALUE		GREATER THAN 12 METRE INDICATIVE VALUE		HOUSEBOATS INDICATIVE VALUE	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
		UNIT VALUE = \$15,000		UNIT VALUE = \$93,500		UNIT VALUE = \$397,308		UNIT VALUE = \$150,000
BOBBIN HEAD - IN STREAM	2	30	3	281		-		-
APPLETREE BAY	8	120	33	3,086	2	795		-
COTTAGE POINT	10	150	77	7,200	10	3,973	2	300
ILLAWONG BAY, COAL AND CANDLE CREEK	-		-		-		-	
AKUNA BAY, COAL AND CANDLE CREEK	-		-		-		-	
<b>TOTAL MOORED VESSELS</b>	<b>20</b>	<b>300</b>	<b>113</b>	<b>10,566</b>	<b>12</b>	<b>4,768</b>	<b>2</b>	<b>300</b>

BASED ON DECEMBER ADVERTISED BOAT SALES ADVERTISEMENTS AT COWAN CREEK BROKERAGES

	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
EMPIRE BOAT SALES, BOBBIN HEAD	1	58	18	2,390	13	3,830
COTTAGE POINT BOAT SALES	0		9	586	1	200
AKUNA BAY BROKERAGE	0		33	2,634	12	6,300
TOTAL BOATS ADVERTISED	1	58	60	5,610	26	10,330
AVERAGE PRICE		58		94		397

**APPENDIX A19- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – BERTHED VESSELS**

Date: 29/10/12

**SUBCATCHMENT: COWAN CREEK AREA**

MOORED VESSEL TYPE	LESS THAN 6 METRE INDICATIVE VALUE		6 TO 12 METRE INDICATIVE VALUE		GREATER THAN 12 METRE INDICATIVE VALUE		HOUSEBOATS INDICATIVE VALUE	
	UNIT VALUE = \$15,000		UNIT VALUE = \$93,500		UNIT VALUE = \$397,308		UNIT VALUE = \$150,000	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
BOBBIN HEAD - IN STREAM	12	180	47	4,395	141	56,020	2	300
COTTAGE POINT	49	735	13	1,216	3	1,192	-	-
AKUNA BAY, COAL AND CANDLE CREEK	25	375	85	7,948	65	25,825	-	-
AKUNA BAY RACK 'N STACK ONSITE STORAGE (MAXIMUM LENGTH 24 FEET – 175 RACK BERTHS WITH ESTIMATED 90% FILLED)	55	825	103	9,631	-	-	-	-
<b>TOTAL BERTHED VESSELS</b>	<b>141</b>	<b>2,115</b>	<b>248</b>	<b>23,188</b>	<b>209</b>	<b>83,037</b>	<b>2</b>	<b>300</b>

BASED ON DECEMBER ADVERTISED BOAT SALES ADVERTISEMENTS AT COWAN CREEK BROKERAGES

	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
EMPIRE BOAT SALES, BOBBIN HEAD	1	58	18	2,390	13	3,830
COTTAGE POINT BOAT SALES	0		9	586	1	200
AKUNA BAY BROKERAGE	0		33	2,634	12	6,300
TOTAL BOATS ADVERTISED	1	58	60	5,610	26	10,330
AVERAGE PRICE		58		94		397

**APPENDIX A20- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – SAILING CLUBS AND ASSOCIATED BOATS**

Date: 29/10/12

**SUBCATCHMENT: COWAN CREEK AREA**

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SAILING CLUBS AND ASSOCIATED BOATS	FIXED ASSETS	SKIFFS		DAY BOATS		YACHTS	
	INDICATIVE VALUE	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
COTTAGE POINT KUR-RING-GAI MOTOR YACHT CLUB AND COTTAGE POINT KIOSK  - 40 BERTHS PLUS IMPROVEMENTS  ** ALL VESSELS INCLUDED IN MOORED AND BERTHED BOAT COUNTS	BUILDINGS ETC						
<b>TOTAL SAILING CLUB ASSETS</b>		<b>8,300</b>					

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**APPENDIX A21- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES**

Date: 2/11/12

**SUBCATCHMENT: COWAN CREEK AREA**

PUBLIC FACILITIES	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEA WALLS INDICATIVE VALUE PER LINEAL METRE = \$2,500		WALKWAYS		INTERPRETIVE SIGNAGE	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE				INDICATIVE VALUE		INDICATIVE VALUE	
LOCATION	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	METRES	(\$000)	METRES	(\$000)	NUMBER	(\$000)
BOBBIN HEAD - EASTERN SIDE	1 BLOCK (6 PANS PLUS URINAL)	400	1 ELECTRIC BBQ	8			700	1,750			6 SIGNS	5
BOBBIN HEAD - WESTERN SIDE	3 BLOCKS (16 PANS PLUS 3 URINALS)	900	5 DOUBLE BBQ's 6 LARGE OPEN TABLES 17 COVERED TABLES AND SEATS 6 LARGE COVERED TABLES AND SEATS ON CONCRETE PADS 4 TRESTLE TABLES LARGE SANDPIT, SWINGS AND PLAY EQUIPMENT 10 x FLAT BENCH SEATS	75 12 340 120 10 20 15			1,700	4,250	3,000	750 3,000		
APPLETREE BAY	1 BLOCK (5 PANS PLUS URINAL)	300	1 DOUBLE BBQ	15			700	1,750				
ILLAWONG BAY, COAL AND CANDLE CREEK	1 BLOCK (5 PANS PLUS URINAL)	300	2 x DOUBLE BBQ's COVERED 4 x COVERED QUAD PICNIC TABLES & SEATS 6 x BENCH SEATS	40 80 9			300	750				
AKUNA BAY, COAL AND CANDLE CREEK												
<b>TOTAL PUBLIC FACILITIES</b>	<b>6</b>	<b>1,900</b>		<b>744</b>	<b>-</b>	<b>-</b>	<b>3,400</b>	<b>8,500</b>	<b>3,000</b>	<b>3,750</b>	<b>6</b>	<b>5</b>

**APPENDIX A22- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – SUMMARY OF ASSETS**

Date: 2/11/12

**SUBCATCHMENT: COWAN CREEK AREA**

FIXED ASSETS	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS		PONTOONS		BOAT RAMPS		CAR PARKING INDICATIVE VALUE		TRAILER PARKING INDICATIVE VALUE		BOAT WASHING FACILITIES INDICATIVE VALUE		FISH CLEANING FACILITIES INDICATIVE VALUE		TOTAL INDICATIVE VALUE	
	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	(\$000)	
	2	66,200	3	650	-	-	1	200	3	1,750	759	3,825	147	1,176	-	-	1	5	73,806	
MOORED VESSELS	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS													
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE													
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	(\$000)	
	20	300	113	10,566	12	4,768	2	300												15,933
BERTHED VESSELS	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS													
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE													
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	(\$000)	
	141	2,115	248	23,188	209	83,037	2	300												108,640
SAILING CLUBS AND ASSOCIATED BOATS	SAILING CLUBS		SKIFFS		DAY BOATS		YACHTS													
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE													
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	(\$000)	
	1	8,300																		8,300
PUBLIC FACILITIES	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS		WALKWAYS		INTERPRETIVE SIGNAGE									
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE							
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	METRES	(\$000)	METRES	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	(\$000)	
	6	1,900		744	-	-	3,400	8,500	3,000	3,750	6	5								14,899

**APPENDIX A23- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 1**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

ASSET TYPE	MARINAS UNIT VALUE = \$120,000 INDICATIVE VALUE		PUBLIC WHARVES INDICATIVE VALUE		COMMUTER BERTHS INDICATIVE VALUE		PONTOONS INDICATIVE VALUE		BOAT RAMPS INDICATIVE VALUE		CAR PARKING SPOTS INDICATIVE VALUE		TRAILER PARKS INDICATIVE VALUE	
LOCATION	BERTHS	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
McCARRS CREEK RESERVE			ONE 15 M TIMBER WHARF WITH RAILS	200			5M x 5M PONTOON PLUS ALUMINIUM RAMP AND 4 PILES SOLAR POWERED LIGHT	100			SMALL BOAT RAMP	50	150	750
BROWNS BAY			AS ADVISED BY PITTWATER COUNCIL - UNABLE TO PHYSICALLY LOCATE WHARF	200										
HOLMPort MARINA, CHURCH POINT (160 SWING MOORINGS AND 60 BERTHS)	60													
CHURCH POINT			COMMUTER WHARF				200 X 2M ALUMINIUM PONTOONS 15M ALUMINIUM RAMP PLUS 10M BUILT UP RAMP WITH 95 COMMUTER BERTHS	600						
			20M TIMBER JETTY WITH 3 x 2M TIMBER WHARF BENCH SEATS AND STEPS	800								300	1500	
			8 PILES 20 x 2M TIMBER JETTY WITH RAILS	400										
			PLUS 12 X 10M TIMBER WHARF WITH DOUBLE SIDED SHELTER SHED AND 4 PILES											

**APPENDIX A24- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 2**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

ASSET TYPE	MARINAS UNIT VALUE = \$120,000 INDICATIVE VALUE	PUBLIC WHARVES INDICATIVE VALUE	COMMUTER BERTHS INDICATIVE VALUE	PONTOONS INDICATIVE VALUE	BOAT RAMPS INDICATIVE VALUE	CAR PARKING SPOTS INDICATIVE VALUE	TRAILER PARKS INDICATIVE VALUE
LOCATION	BERTHS (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)
		30 X 15M CARGO WHARF WITH 15M ROAD ACCESS PLUS GROUYNE	400				
SCOTLAND ISLAND		SCOTLAND ISLAND CARGO WHARF 25 x 5M STONE/CONCRETE GROUYNE WITH 8 X 10M TIMBER WHARF WITH 3 PILES AND 5 X 5M TIMBER SHED	600				
		BELLS 30 x 2M TIMBER JETTY WITH 6 x 4M LANDING PLUS STAIRS	400				
		6 TIMBER PILES 6 x 6M TIMBER SHED					
		TENNIS COURT	500				
		35M STONEWALL					
		CONCRETE RAMP 10 x 2M TIMBER JETTY 4 x 6M CONCRETE PONTOON WITH 20M ALUMINIUM RAMP AND 8 PILES					

**APPENDIX A25- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 3**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

ASSET TYPE	MARINAS UNIT VALUE = \$120,000 INDICATIVE VALUE		PUBLIC WHARVES INDICATIVE VALUE		COMMUTER BERTHS INDICATIVE VALUE		PONTOONS INDICATIVE VALUE		BOAT RAMPS INDICATIVE VALUE		CAR PARKING SPOTS INDICATIVE VALUE		TRAILER PARKS INDICATIVE VALUE	
LOCATION	BERTHS	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
				300										
			EASTERN 20 x 3M TIMBER JETTY											
			10M STONEWALL											
			CONCRETE RAMP 4 x 6M TIMBER WHARF WITH 3 x 3M SHED AND 2 LIGHTS											
				600										
			CAROLS 60 x 2M TIMBER JETTY 4 LIGHTS AND 4 PILES 3 x 3M TIMBER SHED AND LIGHTS											
ELVINA BAY				400										
			ELVINA SOUTH 30 x 2M TIMBER JETTY PLUS STEPS AND LIGHT 5 PILES AND 6 X 3M TIMBER											
			SHED											
				400										
			ELVINA NORTH 10 x 10M LANDING											
			6 TIMBER PILES 10M CONCRETE AND STONE WALL WHARF WITH 6 X 3M SHED											

**APPENDIX A26- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 4**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

ASSET TYPE	MARINAS UNIT VALUE = \$120,000 INDICATIVE VALUE	PUBLIC WHARVES INDICATIVE VALUE	COMMUTER BERTHS INDICATIVE VALUE	PONTOONS INDICATIVE VALUE	BOAT RAMPS INDICATIVE VALUE	CAR PARKING SPOTS INDICATIVE VALUE	TRAILER PARKS INDICATIVE VALUE
LOCATION	BERTHS (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)
LOVETT BAY		LOVETT BAY 200  5 x 5M TIMBER WHARF AND STEPS 15 x 2M STONEWALL JETTY 4 TIMBER PILES WITH  6 x 3M SHED  HALLS 400  10 x 5M PONTOON 6 CONCRETE PILES 20 x 2M ALUMINIUM RAMP 3 x 3M TIMBER SHED 20 x 2M CONCRETE  STONEWALL RAMP					
TOWLERS BAY		MORNING BAY 400 40 x 4M TIMBER JETTY WITH STEPS WITH 4 PILES AND 5 X 5M TIMBER SHED					
COASTERS RETREAT AND THE BASIN		BENNETTS 400 30 x 2M TIMBER JETTY WITH 6 X 6M TIMBER WHARF PLUS STEPS WITH 4 PILES (TO BE REPLACED IN 2013)					

**APPENDIX A27- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 5**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

ASSET TYPE	MARINAS UNIT VALUE = \$120,000 INDICATIVE VALUE VALUE	PUBLIC WHARVES INDICATIVE VALUE	COMMUTER BERTHS INDICATIVE VALUE	PONTOONS INDICATIVE VALUE	BOAT RAMPS INDICATIVE VALUE	CAR PARKING SPOTS INDICATIVE VALUE	TRAILER PARKS INDICATIVE VALUE
LOCATION	BERTHS (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)
		<i>BONNIE DOON</i> 35 x 5M STONE /CONCRETE GROYNE WITH 6 X 6M TIMBER WHARF WITH 7 PILES AND 5 X 5M TIMBER SHED	200				
CURRAWONG BEACH		<i>CURRAWONG</i> 50 x 2M TIMBER JETTY WITH 6 X 6M TIMBER WHARF PLUS STEPS WITH 4 PILES	350				
MACKEREL BEACH		<i>MACKEREL</i> 60 x 2M TIMBER JETTY WITH 6 X 6M TIMBER WHARF AND  LOADING DOCK PLUS STEPS WITH 8 PILES	600				
QUAYS MARINA, CHURCH POINT (69 MOORINGS AND 95 BERTHS)	95						
GIBSONS MARINA, BAYVIEW	110						
BAYVIEW PARK		25 x 4M STONE /CONCRETE GROYNE WITH 10 X 15M TIMBER WHARF WITH 6 PILES	300		DOUBLE RAMP 500	36 180	13 104

**APPENDIX A28- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 5**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

ASSET TYPE	MARINAS UNIT VALUE = \$120,000 INDICATIVE VALUE	PUBLIC WHARVES INDICATIVE VALUE	COMMUTER BERTHS INDICATIVE VALUE	PONTOONS INDICATIVE VALUE	BOAT RAMPS INDICATIVE VALUE	CAR PARKING SPOTS INDICATIVE VALUE	TRAILER PARKS INDICATIVE VALUE
LOCATION	BERTHS (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)
ROWLANDS RESERVE		20 x 2M WHARF 400			2 TRIPLE RAMPS 1500	110 550	300 2,400
		20 x 10M PONTOON 20 x 2M ALUMINIUM RAMP					
		4 CONCRETE PILES					
		2 LIGHTS MARINE RESCUE WHARF 60					
		IN ALUMINIUM WITH 10 x 10M PONTOON					
WINNERERREMY BAY FORESHORE RESERVE						90 450	
YACHTSMAN'S PARADISE		SMALL TIMBER AND 30 X 2M STONE WHARF AT 200					
		HEAD OF BAY					
SIRSI NEWPORT MARINA	40						
NEWPORT ANCHORAGE MARINA	70						
HERON COVE MARINA PLUS SLIPWAY AND HARDSTAND	20						

**APPENDIX A29- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 6**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

ASSET TYPE	MARINAS UNIT VALUE = \$120,000 INDICATIVE VALUE	PUBLIC WHARVES INDICATIVE VALUE	COMMUTER BERTHS INDICATIVE VALUE	PONTOONS INDICATIVE VALUE	BOAT RAMPS INDICATIVE VALUE	CAR PARKING SPOTS INDICATIVE VALUE	TRAILER PARKS INDICATIVE VALUE
LOCATION	BERTHS (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)
NEWPORT PUBLIC WHARF		30 x 2M TIMBER WHARF 700					
		2 LIGHTS					
		8 TIMBER PILES					
PRINCES STREET MARINA	80						
SALT PAN WHARF		10M CONCRETE RAMP WITH 20 x 2M TIMBER JETTY ON CONCRETE PILES AND 20 X 2M	400		SMALL BOAT RAMP 50 TIMBER		
		ALUMINIUM RAMP 4 TIMBER PILES, 2 CONCRETE PILES AND 2 LIGHTS					
TAYLORS POINT WHARF		20 x 2M TIMBER JETTY ON CONCRETE PILES WITH 1 LIGHT AND TIMBER STEPS	500		SMALL BOAT RAMP 50		
CLAREVILLE BEACH RESERVE					SINGLE BOAT RAMP 250		
PARADISE BEACH WHARF		30 x 2M TIMBER JETTY WITH TIMBER RAILINGS ON CONCRETE PILES	500				
		5 MOORING PILES					

**APPENDIX A30- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 7**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

ASSET TYPE	MARINAS UNIT VALUE = \$120,000 INDICATIVE VALUE		PUBLIC WHARVES INDICATIVE VALUE		COMMUTER BERTHS INDICATIVE VALUE		PONTOONS INDICATIVE VALUE		BOAT RAMPS INDICATIVE VALUE		CAR PARKING SPOTS INDICATIVE VALUE		TRAILER PARKS INDICATIVE VALUE	
LOCATION	BERTHS	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
CAREEL BAY WHARF			40 x 10M TIMBER WHARF ON CONCRETE PILES PART USED BY MARINA AND TIMBER STEPS WITH 14 TIMBER PILES AND 100M ACCESS ROAD WITH WASTE PUMPOUT	600										
CAREEL BAY MARINA (96 MOORINGS PLUS 20 BERTHS)	20													
PLUS 3 SLIPWAYS														
LUCINDA PARK									SMALL BOAT RAMP	50	16	80		
PALM BEACH WHARF			90 x 2M TIMBER WHARF ON TIMBER PILES WITH 18 MOORING	2,000									140	700
			PILES,4 SETS OF STEPS AND 2 TIMBER SHEDS 5 X 5M											
<b>TOTAL FORESHORE FIXED ASSETS</b>	<b>495</b>	<b>62,500</b>	<b>29</b>	<b>13,410</b>	<b>2</b>	<b>700</b>	<b>-</b>	<b>-</b>	<b>8</b>	<b>2,450</b>	<b>842</b>	<b>4,210</b>	<b>313</b>	<b>2,504</b>

\*\* NO BOAT WASHING OR FISH CLEANING FACILITIES LOCATED IN PITTWATER

**APPENDIX A31- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – MOORED VESSELS - PAGE 1**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

MOORED VESSEL TYPE	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
	UNIT VALUE = \$15,000		UNIT VALUE = \$123,481		UNIT VALUE = \$692,350		UNIT VALUE = \$150,000	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
CICADA GLEN CREEK	4	60	1	123	-	-	-	-
UPPER McCARRS CREEK TO BROWNS BAY	2	30	41	5,063	11	7,616	-	-
BROWNS BAY	26	390	42	5,186	4	2,769	4	600
McCARRS CREEK TO CHURCH POINT	76	1,140	104	12,842	21	14,539	1	150
CHURCH POINT COMMUTER WHARF	149	2,235	-	-	-	-	-	-
ELVINA BAY	40	600	12	1,482	4	2,769	2	300
LOVETT BAY	32	480	42	5,186	21	14,539	5	750
TOWLERS BAY	7	105	19	2,346	7	4,846	-	-
THE BASIN	20	300	12	1,482	6	4,154	-	-
GREAT MACKEREL BEACH	19	285	3	370	1	692	-	-
CHURCH POINT SOUTH EAST SIDE	48	720	48	5,927	26	18,001	-	-
GRIFFIN PARK TO LOCQUAT VALLEY ROAD	47	705	100	12,348	20	13,847	-	-
LOCQUAT VALLEY ROAD TO BAYVIEW PARK	27	405	103	12,719	2	1,385	2	300
WINNERERREMY BAY	18	270	7	864	5	3,462	-	-
SOUTH BAYVIEW	12	180	10	1,235	8	5,539	-	-
NEWPORT ANCHORAGE TO NEWPORT WHARF	7	105	-	-	-	-	-	-
HERON COVE AND CRYSTAL BAY	23	345	5	617	10	6,924	-	-
ROYAL PRINCE ALFRED YACHT CLUB	1	15	6	741	-	-	-	-
HORSESHOE COVE	24	360	20	2,470	11	7,616	1	150
ROYAL MOTOR YACHT CLUB	5	75	6	741	9	6,231	-	-
SCOTLAND ISLAND	59	885	45	5,557	30	20,771	-	-

**APPENDIX A32- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – MOORED VESSELS - PAGE 2**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

MOORED VESSEL TYPE		LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS	
		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
		UNIT VALUE = \$15,000		UNIT VALUE = \$123,481		UNIT VALUE = \$692,350		UNIT VALUE = \$150,000	
ROYAL MOTOR YACHT CLUB TO SALT PAN POINT	8	120	9	1,111	2	1,385	-	-	
SALT PAN COVE TO REFUGE COVE	90	1,350	282	34,822	30	20,771	1	150	
TAYLORS POINT TO AVALON SAILING CLUB	103	1,545	232	28,648	20	13,847	1	150	
AVALON SAILING CLUB TO STOKES POINT	46	690	67	8,273	23	15,924	-	-	
CAREEL BAY TO DARK GULLY BEACH	98	1,470	115	14,200	31	21,463	1	150	
DARK GULLY BEACH TO PALM BEACH	104	1,560	60	7,409	46	31,848	-	-	
<b>TOTAL MOORED VESSELS</b>	<b>1,095</b>	<b>16,425</b>	<b>1,391</b>	<b>171,763</b>	<b>348</b>	<b>240,938</b>	<b>18</b>	<b>2,700</b>	

ROWELL MARINE BOAT SALES, NEWPORT - ADVERTISEMENTS 27/11/12

SIZE OF BOAT	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE	
	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>
		1	15	27	3,334	40
AVERAGE PRICE		\$15,000		\$123,481		\$692,350

**APPENDIX A33- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – BERTHED VESSELS - PAGE 1**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

BERTHED VESSEL TYPE	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS	
	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE
	UNIT VALUE = \$15,000	UNIT VALUE = \$15,000	UNIT VALUE = \$123,481	UNIT VALUE = \$123,481	UNIT VALUE = \$692,350	UNIT VALUE = \$692,350	UNIT VALUE = \$150,000	UNIT VALUE = \$150,000
LOCATION	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
CICADA GLEN CREEK	6	90	10	1,235	8	5,539	1	150
UPPER McCARRS CREEK TO BROWNS BAY	9	135	6	741	9	6,231	-	-
BROWNS BAY	8	120	11	1,358	11	7,616	-	-
McCARRS CREEK TO CHURCH POINT	41	615	27	3,334	35	24,232	1	150
ELVINA BAY	42	630	8	988	2	1,385	-	-
LOVETT BAY	65	975	16	1,976	4	2,769	-	-
TOWLERS BAY	17	255	-	-	-	-	-	-
THE BASIN	7	105	-	-	-	-	-	-
GREAT MACKEREL BEACH	-	-	-	-	-	-	-	-
CHURCH POINT SOUTH EAST SIDE	38	570	29	3,581	53	36,695	-	-
GRIFFIN PARK TO LOCQUAT VALLEY ROAD	6	90	3	370	3	2,077	-	-
LOCQUAT VALLEY ROAD TO BAYVIEW PARK	38	570	27	3,334	55	38,079	-	-
WINNERERREMY BAY	13	195	3	370	9	6,231	-	-
SOUTH BAYVIEW	69	1,035	19	2,346	45	31,156	-	-
NEWPORT ANCHORAGE TO NEWPORT WHARF	36	540	20	2,470	61	42,233	-	-
HERON COVE AND CRYSTAL BAY	47	705	13	1,605	46	31,848	-	-
ROYAL PRINCE ALFRED YACHT CLUB	125	1,875	76	9,385	236	163,395	-	-
- ON HARD STAND AT CLUB	73	1,095	50	6,174	7	4,846	-	-
HORSESHOE COVE	27	405	22	2,717	6	4,154	-	-
ROYAL MOTOR YACHT CLUB	36	540	20	2,470	182	126,008	-	-
SCOTLAND ISLAND	237	3,555	7	864	6	4,154	-	-
ROYAL MOTOR YACHT CLUB TO SALT PAN POINT	9	135	2	247	3	2,077	-	-

**APPENDIX A34- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – BERTHED VESSELS - PAGE 2**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

BERTHED VESSEL TYPE	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
	UNIT VALUE = \$15,000		UNIT VALUE = \$123,481		UNIT VALUE = \$692,350		UNIT VALUE = \$150,000	
	LOCATION	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER
SALT PAN COVE TO REFUGE COVE	27	405	25	3,087	12	8,308	-	-
TAYLORS POINT TO AVALON SAILING CLUB	15	225	1	123	1	692	-	-
AVALON SAILING CLUB TO STOKES POINT	59	885	3	370	4	2,769	-	-
CAREEL BAY TO DARK GULLY BEACH	185	2,775	7	864	9	6,231	-	-
DARK GULLY BEACH TO PALM BEACH	93	1,395	8	988	6	4,154	3	450
<b>TOTAL VESSELS BERTHED</b>	<b>1,328</b>	<b>19,920</b>	<b>413</b>	<b>50,998</b>	<b>813</b>	<b>562,881</b>	<b>5</b>	<b>750</b>

ROWELL MARINE BOAT SALES, NEWPORT - ADVERTISEMENTS 27/11/12

SIZE OF BOAT	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
		1	15	27	3,334	40
AVERAGE PRICE		15,000		123,481		692,350

**APPENDIX A35- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – SAILING CLUBS AND BOATS**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

SAILING CLUBS AND ASSOCIATED BOATS	BERTHS	INDICATIVE VALUE		SKIFFS		DAY BOATS		YACHTS	
		UNIT VALUE = \$120,000		UNIT VALUE = \$10,000		INDICATIVE VALUE		INDICATIVE VALUE	
		PER BERTH		PER SKIFF					
		NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
BAYVIEW YACHT RACING ASSOCIATION		400	40	400					
- RENT COUNCIL -OWNED CLUBHOUSE									
- 100 MEMBERS SAILING OCTOBER TO APRIL									
PITTWATER AQUATIC CLUB	26								
- PLUS 2 SLIPWAYS, HARDSTAND, PARKING AND CLUBHOUSE									
ROYAL PRINCE ALFRED YACHT CLUB	352								
- PLUS TWO HARDSTANDS, MULTIPLE PARKING, CLUBHOUSE AND 18 SWING									
MOORINGS WITH 50 TONNE TRAVEL CRANE									
ROYAL MOTOR YACHT CLUB	220								
- PLUS HARDSTAND, MULTIPLE PARKING, 4 SLIPWAYS AND CLUBHOUSE, WITH 49 49 SWING MOORINGS WITH 300M FLOATING BREAKWALL PLUS MULTIPLE SUPPORT BUSINESSES									
AVALON SAILING CLUB		600	40	400					
- 10 MOORINGS									
- 93 YACHTS									
- 200 MEMBERS SAILING OCTOBER TO APRIL									
<b>TOTAL SAILING CLUBS</b>	<b>598</b>	<b>89,860</b>	<b>80</b>	<b>800</b>					

**APPENDIX A36- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES – PAGE 1**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

LOCATION	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS		WALKWAYS		INTERPRETIVE SIGNAGE	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	METRES	INDICATIVE VALUE PER LINEAL METRE = \$2,500 (\$000)	NUMBER	(\$000)	NUMBER	(\$000)
McCARRS CREEK RESERVE	1 BLOCK (3 PANS PLUS URINAL PLUS BASINS IN BRICK BUILDING)	400	4 OLD FIREPLACES	6			300M STONE	750	100M CONCRETE	40		
			12 BENCH SEATS, 4 TABLES AND BENCH SEATS ON CONCRETE BASES	12			BLOCK WALL		PATHS			
CHURCH POINT				8								
- COMMUTER WHARF							300M STONE	750				
							WALL					
- PUBLIC WHARF AREA			6 TIMBER TABLES AND	12			100M STONE	250				
			BENCH SEATS				WALL					
			3 TIMBER SEATS	5								
			30M x 50M PAVED	150								
			AREA									
			2 COVERED									
			ALUMINIUM SEATS ON	60								
			PONTOON WHARF									
- CAR PARK	1 BLOCK (3 PANS PLUS URINAL PLUS BASINS)	400					200M STONE	500				
							WALL					
							600M STONE	1,500				
							PROTECTION					
							WALL					
CHURCH POINT TO QUAYS MARINA			6 BENCH SEATS	9			3KM STONE WALL WITH 6 SETS STONE STEPS	7,500	3KM x 2M GRAVEL TRACK	600		

**APPENDIX A37- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES – PAGE 2**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

LOCATION	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS		WALKWAYS		INTERPRETIVE SIGNAGE	
	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE PER LINEAL METRE = \$2,500	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE
NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	METRES	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	
RIDDLE RESERVE			2 BENCH SEATS 3 COVERED QUAD TABLES AND BENCH SEAT	3 60		200 STONE WALL	500					
BAYVIEW PARK			2 COVERED TABLES AND BENCH SEATS 2 DOUBLE GAS BBQ's 4 TIMBER TABLES AND BENCH SEATS ON SLABS 3 TIMBER BENCH SEATS ON SLABS	40 30 8 5								
ROWLANDS RESERVE	1 BLOCK (3 PANS PLUS URINAL PLUS BASINS)	400	1 COVERED QUAD TABLE AND BENCH SEATS 2 COVERED TABLES AND BENCH SEATS	20 40								
WINNERERREMY BAY FORESHORE RESERVE			2 ELECTRIC BBQ's AND 6 TIMBER BENCHS	39								
WINJI JIMMI RESERVE			2 BENCH SEATS KIDS SWINGS AND SLIDE	3 3								
YACHTSMAN'S PARADISE						500M STONE WALL	1,250					
FLORANCE RESERVE			KIDS SWINGS AND SLIDE PLUS PLAYGROUND 2 TIMBER BENCH SEATS	8 3		100M STONE WALL	250					

**APPENDIX A38- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES – PAGE 3**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

LOCATION	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS		WALKWAYS		INTERPRETIVE SIGNAGE		
	NUMBER	INDICATIVE VALUE (\$000)	INDICATIVE VALUE PER LINEAL METRE = \$2,500	NUMBER	INDICATIVE VALUE (\$000)	NUMBER	INDICATIVE VALUE (\$000)	INDICATIVE VALUE (METRES)	INDICATIVE VALUE (\$000)	NUMBER	INDICATIVE VALUE (\$000)	NUMBER	INDICATIVE VALUE (\$000)
SALT PAN WHARF			TIMBER TABLE AND BENCH SEATS ON CONCRETE PAD	2				300M STONE WALL WITH SANDSTONE STEPS	750				
TAYLORS POINT WHARF			3 BENCH SEATS ON CONCRETE BASE	5				100M STONE WALL	250				
CLAREVILLE BEACH RESERVE	1 BLOCK	500	2 DOUBLE ELECTRIC BBQ's	30									
	2 URINALS PLUS 6 PANS PLUS BASINS PLUS OUTDOOR SHOWER		8 TIMBER BENCHS AND SEATS ON CONCRETE PADS	16									
			2 TIMBER SEATS	3									
PARADISE BEACH WHARF			TIDAL POOL 50M x 30M WITH TIMBER POSTS	400									
LUCINDA PARK			2 BENCH SEATS PLUS VIEWING PLATFORM	3	120			50M STONE BLOCK WALL	125				
PALM BEACH WHARF			KIDS PLAYGROUND TOILETS WITH OUTDOOR SHOWER	6	500								
			6 BENCH SEATS ON CONCRETE PADS	9									
<b>TOTAL FORESHORE PUBLIC FACILITIES</b>	<b>4</b>	<b>1,700</b>		<b>1,717</b>				<b>5,950</b>	<b>14,375</b>	<b>3,100</b>	<b>640</b>		<b>-</b>

**APPENDIX A39- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – SUMMARY OF ASSETS**

Date: 2/11/12

**SUBCATCHMENT: PITTWATER AREA**

FIXED ASSET TYPE	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS		PONTOONS		BOAT RAMPS		CAR PARKS		TRAILER PARKING		TOTAL INDICATIVE VALUE** (\$000)	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE			
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)		
	8	62,500	29	13,410	2	700	-	-	8	2,450	842	4,210	313	2,504	85,774	
MOORED VESSEL TYPE	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS									
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE									
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)								
	1095	16425	1391	171,763	348	240,938	18	2,700								431,826
BERTHED VESSEL TYPE	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS									
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE									
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)								
	1,328	19,920	413	50,998	813	562,881	5	750								634,548
SAILING CLUBS AND ASSOCIATED BOATS	SAILING CLUBS		SKIFFS		DAY BOATS		YACHTS									
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE									
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)								
	5	89,860	80	800	-	-	-	-								90,660
PUBLIC FACILITIES	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS		WALKWAYS		INTERPRETIVE SIGNAGE					
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE					
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	METRES	(\$000)	METRES	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)		
	4	1,700	15	1,717			5,750	14,375	3,110	640					18,432	

\*\*NO BOAT CLEANING FACILITIES OR FISH CLEANING STATIONS FOUND IN PITTWATER AREA

**APPENDIX A40- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 1**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

ASSET TYPE	MARINAS INDICATIVE VALUE	PUBLIC WHARVES INDICATIVE VALUE	COMMUTER BERTHS INDICATIVE VALUE	PONTOONS INDICATIVE VALUE	BOAT RAMPS INDICATIVE VALUE	
LOCATION	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	
PATONGA		BRISK BAY WHARF 80 X 4M REINFORCED CONCRETE JETTY ON CONCRETE PIERS 30 WOODEN PILES WITH 4 LIGHTS AND STEPS	900		1 SINGLE AT MAIN BEACH  1 SINGLE IN PATONGA CREEK AT CARAVAN PARK	250  250
ETTALONG - ETTALONG BEACH WHARF	ANDERSONS MARINA 25 BERTHS AND SLIPWAY	30 X 2M TIMBER JETTY WITH 3 PILES AND 6 X4M TIMBER WHARF AND RAMP ACCESS WITH STEEL RAILINGS AND 2 LIGHTS	500			
BOOKER BAY - GUYRA STREET WHARF	MACHINS MARINA 21 BERTHS, 16 MOORINGS PLUS HARDSTAND AND SLIPWAY	18 X 1.5M TIMBER JETTY ON CONCRETE PIERS WITH 2 MOORING PILES PLUS CONCRETE LANDING AND TIMBER STEPS	250			

**APPENDIX A41- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 2**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

ASSET TYPE	MARINAS	PUBLIC WHARVES	COMMUTER BERTHS	PONTOONS	BOAT RAMPS
	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE
	BERTH UNIT VALUE = \$100,000				
LOCATION	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER
					(\$000)
	BOOKER BAY MARINA				
	28 BERTHS & SLIPWAY				
KARU STREET BOATRAMP					1 SINGLE 250
BLACKWALL POINT	20 X 1.5M TIMBER JETTY	250			1 DOUBLE 500
	WITH 6 X 2M WHARF, 2 PILES				
	AND LIGHT				
WOY WOY CHANNEL - LIONS PARK FINGER WHARF	15 X 1.5M TIMBER JETTY WITH 6 X 1.5M WHARF	200			2 DOUBLE RAMPS 1000
	AND 3 PILES				
- WOY WOY FERRY WHARF	60 X 3M TIMBER WHARF	500			
	PLUS 6 X 3M JETTY WITH				
	STEPS AND LANDING AND				
	32 PILES AND 4 LIGHTS				
- WOY WOY CARGO WHARF	10 X 6M CARGO WHARF WITH	300			
	2 PILES				
	16 MOORING PILES IN CHANNEL				
WOY WOY BAY - RAWSON ROAD WHARF	60 X 1.2M TIMBER JETTY ON	250			
	CONCRETE PILES WITH				
	3 X 2M WHARF AND 2 MOORING PILES AND 4 LIGHTS				
- PIER STREET WHARF	45 X 2M TIMBER JETTY ON CONCRETE PILES WITH 8 X 4M WHARF AND LANDING, 4 MOORING PILES & LIGHT	250			

**APPENDIX A42- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 3**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

ASSET TYPE	MARINAS INDICATIVE VALUE BERTH UNIT VALUE = \$100,000	PUBLIC WHARVES INDICATIVE VALUE	COMMUTER BERTHS INDICATIVE VALUE	PONTOONS INDICATIVE VALUE	BOAT RAMPS INDICATIVE VALUE
LOCATION	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)	NUMBER (\$000)
CORREA BAY - BASSAN STREET WHARF		70 X 1.5M TIMBER JETTY ON CONCRETE PILES WITH 5 X 3M WHARF WITH 5 LIGHTS AND 4 MOORING PILES	300		1 SINGLE 250
- PHEGANS BAY WHARF		60 X 2M TIMBER JETTY ON CONCRETE PILES WITH RAILS AND 4 X 4M TIMBER WHARF 3 LIGHTS AND 4 MOORING PILES	250		
KOOLEWONG - COUCHE PARK RESERVE		"BILL FITCH" JETTY 65 X 1.8M STEEL JETTY ON TIMBER PILES WITH 4 X 6M WHARF ON TIMBER PILES AND 10M GANTRY BRIDGE WITH 4 MOORING PILES	300		
- FORESHORE RESERVE		TWO 6 X 2M CONCRETE JETTIES ON TIMBER PILES 4 X 1.2M FINGER WHARVES	300		1 SINGLE 250 1 SMALL DINGHY RAMP 150
-FORESHORE NORTHERN END					

**APPENDIX A43- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 4**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

ASSET TYPE	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS		PONTOONS		BOAT RAMPS	
	INDICATIVE VALUE	BERTH UNIT VALUE = \$1000 000	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE
LOCATION	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
TASCOTT									1 SINGLE	250
GOSFORD BREAKWATER WHARF			30 X 5M ALUMINIUM WHARF WITH 15 X 3M ALUMINIUM RAMP  AND 7 LIGHTS AND 22 PILES  200 X 7M GROUYNE OUT TO  100 X 4M TIMBER WHARF	900	7 PUBLIC BERTHS WITH LIGHT AND POWER	490			1 SINGLE	250
GOSFORD BOAT RAMP WHARF			6 X 1.5M FINGER WHARF  AND 6 X 1.5M JETTY WITH  STEEL RAILING AND  3 MOORING PILES	250					1 DOUBLE	500
MASONS PARADE FORESHORE PARK									SMALL LAUNCH RAMP, 60M CONCRETE WITH 2 STEPS AND 2 END RAMPS	100
MASONS PARADE WHARF			35 X 1.5M FINGER WHARF AND 6 X 1.5M JETTY WITH STEEL RAILINGS AND 6 MOORING PILES	250						
ERINA CREEK WHARF			10 X 1.5M FINGER WHARF AND 5 X 4M JETTY WITH STEEL RAILINGS AND 3 MOORING PILES	150					2 SINGLES	500

**APPENDIX A44- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 5**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

ASSET TYPE		MARINAS	PUBLIC WHARVES	COMMUTER BERTHS	PONTOONS	BOAT RAMPS
		INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE
		BERTH UNIT VALUE = \$100,000				
LOCATION	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER
		(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
GREEN POINT - ORANA STREET WHARF			15 X 1.8M TIMBER WHARF ON PILES	200		1 DOUBLE 500
YATTALUNGA - YATTALUNGA WHARF			130 X 2M TIMBER JETTY AND 5 X 4M TIMBER WHARF WITH 30 X 15M TIDAL POOL	450		
SARATOGA - JIRRAMBA AVENUE WHARF			100 X 2M TIMBER JETTY WITH STEEL RAILINGS ON CONCRETE PIERS WITH 2 X 10M WHARF AND 4 TIMBER MOORING PILES	300		1 SINGLE 250
- BAYVIEW WHARF			60 X 1.5M TIMBER JETTY WITH STEEL RAILINGS ON CONCRETE PIERS WITH 5 X 4M WHARF AND 2 PILES AND LIGHT	300		

**APPENDIX A45- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 6**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

ASSET TYPE		MARINAS INDICATIVE VALUE BERTH UNIT VALUE = \$100,000		PUBLIC WHARVES INDICATIVE VALUE		COMMUTER BERTHS INDICATIVE VALUE		PONTOONS INDICATIVE VALUE		BOAT RAMPS INDICATIVE VALUE	
LOCATION	NUMBER	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
- VIEW PARADE WHARF				80 X 2M TIMBER JETTY ON CONCRETE PILES WITH STEEL RAILING AND 8 X 5M TIMBER WHARF WITH 2 WOODEN PILES	300						
- BYALLA LANE WHARF				90 X 2M TIMBER JETTY ON CONCRETE PILES WITH STEEL RAILING AND 6 X 6M TIMBER WHARF WITH 5 WOODEN PILES	400						
- VETERANS HALL FERRY WHARF				7 X 5M TIMBER WHARF PLUS 5M X 2M ALUMINIUM RAMP TO 7 X 4M PONTOON WITH 5 PILES AND 4 X 3M STEEL AND GLASS SHELTER SHED AND LIGHT 20 X 2M CONCRETE ACCESS RAMP	400      150						

**APPENDIX A46- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 7**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

ASSET TYPE		MARINAS	PUBLIC WHARVES	COMMUTER BERTHS	PONTOONS	BOAT RAMPS					
		INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE					
		BERTH UNIT VALUE = \$100,000									
LOCATION	NUMBER	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
DAVISTOWN - LINTERN STREET WHARF				10 X 8M TIMBER WHARF WITH STEEL RAILINGS AND LIGHT AND 5 TIMBER PILES AND 4 X 3M STEEL AND GLASS SHELTER SHED	250			1 DOUBLE		400	
- SCANDRETTIS BOATSHED								1 SINGLE		200	
- RESTELLA AVENUE								1 SINGLE		200	
- CENTRAL RSL FERRY WHARF				15 X 8M CONCRETE GROUYNE PLUS 6 X 8M TIMBER WHARF ON CONCRETE PIERS WITH STEEL RAILING AND 4 X 3M STEEL SHELTER SHED AND 3 TIMBER MOORING PILES	300						
- PINE AVENUE WHARF				15 X 3M TIMBER JETTY ON PILES WITH STEEL RAILINGS AND 8 X 5M TIMBER WHARF WITH LANDING AND LIGHT	250						

**APPENDIX A47- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 8**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

ASSET TYPE		MARINAS INDICATIVE VALUE BERTH UNIT VALUE = \$100,000		PUBLIC WHARVES INDICATIVE VALUE		COMMUTER BERTHS INDICATIVE VALUE		PONTOONS INDICATIVE VALUE		BOAT RAMPS INDICATIVE VALUE	
LOCATION	NUMBER	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
- EULALIA WHARF				10 X 5M TIMBER WHARF WITH STEPS, LIGHT AND 15 X 6M GROYNE	250					1 SINGLE	200
KINCUMBER - CARRACK ROAD JETTY				20 X 2M TIMBER JETTY AND 8 X 4M TIMBER WHARF	200					1 SINGLE	250
- KINCUMBER CREEK				4 TIMBER MOORING PILES	40					1 DOUBLE	400
- HUMPHREYS ROAD WHARF				8 X 1.8M TIMBER JETTY WITH STEEL RAILINGS ON CONCRETE PIERS PLUS 8 X 2M WHARF WITH STEPS AND LANDING WITH 3 PILES	200						
BENSVILLE				80 X 4M GROUYNE WITH 10 X 5M TIMBER WHARF WITH STEPS, LIGHT AND 2 TIMBER PILES	300						
- HASTINGS WHARF											

**APPENDIX A48- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 9**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

ASSET TYPE		MARINAS	PUBLIC WHARVES	COMMUTER BERTHS	PONTOONS	BOAT RAMPS
		INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE
		BERTH UNIT VALUE = \$100,000				
LOCATION	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER
		(\$000)		(\$000)	(\$000)	(\$000)
EMPIRE BAY		EMPIRE BAY MARINA 12 BERTHS PLUS SLIPWAY				1 SINGLE 250
- KENDALL ROAD WHARF			8 X 8M TIMBER JETTY PLUS 12 X 8M TIMBER WHARF WITH STEEL RAILINGS AND LANDING	250		
- SHELLEY BEACH ROAD WHARF			15 X 2M TIMBER JETTY PLUS 5 X 4M TIMBER WHARF WITH STEEL RAILINGS AND 3 PILES			
- MERRITTS ROAD WHARF			8 X 2M ALUMINIUM RAMP WITH RAILINGS TO 8 X 4M PONTOON WITH 2 CONCRETE PILES AND 2 TIMBER PILES	120		
- BAR ESTATE WHARF			20 X 2M TIMBER JETTY PLUS 4 X 5M TIMBER WHARF WITH STEEL RAILINGS, LANDING AND 2 TIMBER PILES	120		
EMPIRE BAY		EMPIRE BAY MARINA 12 BERTHS PLUS SLIPWAY	KENDALL ROAD WHARF 8 X 8M TIMBER JETTY PLUS 12 X 8M TIMBER WHARF	250		1 SINGLE 250

**APPENDIX A49- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 10**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

ASSET TYPE		MARINAS		PUBLIC WHARVES		COMMUTER BERTHS		PONTOONS		BOAT RAMPS	
		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
		BERTH UNIT VALUE = \$100,000									
LOCATION	NUMBER	NUMBER	(\$000)	NUMBER	(\$000)	LOCATION	NUMBER	NUMBER	(\$000)	NUMBER	
ST HUBERTS ISLAND											
- NAUTILUS CRESCENT BOATRAMP										1 SINGLE	250
HARDYS BAY											
- KILLCARE EXTENSION WHARF				130 X 2M TIMBER JETTY ON CONCRETE PILES WITH STEEL RAILINGS AND 8 X 4M TIMBER WHARF WITH STEPS AND 7 LIGHTS WITH 8 TIMBER MOORING PILES	300						
KILLCARE MARINA 23 BERTHS PLUS SLIPWAY AND SHOPS											
- KILLCARE ROAD WHARF				140 X 2M TIMBER JETTY ON CONCRETE PILES WITH STEEL RAILING PLUS 7 X 7M TIMBER WHARF WITH 8 PILES AND 5 LIGHTS	300						
- ARALUEN DRIVE WHARF											
				65 X 2M TIMBER JETTY ON CONCRETE PIERS WITH TIMBER AND WIRE RAILING AND 6 X 4M TIMBER WHARF WITH STEPS AND 12 TIMBER PILES AND 4 LIGHTS	250						

**APPENDIX A50- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 11**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA**

ASSET TYPE		MARINAS		PUBLIC WHARVES		COMMUTER BERTHS		PONTOONS		BOAT RAMPS	
		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
		BERTH UNIT VALUE = \$100,000									
LOCATION	NUMBER	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
PRETTY BEACH - HEATH ROAD WHARF				20 X 2M PONTOON WHARF WITH 10 X 2M ALUMINIUM RAMP AND 2 CONCRETE PILES	120					1 SINGLE	250
				20 X 2M CONCRETE GROUYNE ON CONCRETE PIERS WITH STEEL RAILING AND 7 X 5M TIMBER WHARF WITH STEPS AND 8 TIMBER PILES AND LIGHT	300						
				30 X 60M TIDAL POOL	250						
- OROO STREET WHARF				90 X 2M TIMBER JETTY ON CONCRETE PIERS WITH TIMBER AND STEEL RAILING AND 6 X 4M TIMBER WHARF WITH STEPS AND 8 TIMBER PILES AND 4 LIGHTS	250						
				20 X 6M GROUYNE PLUS 7 X 7M TIMBER WHARF ON TIMBER PIERS WITH 7 TIMBER PILES AND A LIGHT	200						
<b>TOTAL FIXED ASSETS</b>		<b>5</b>	<b>13,650</b>	<b>43</b>	<b>13,160</b>	<b>7</b>	<b>490</b>	<b>-</b>	<b>-</b>	<b>23</b>	<b>6,900</b>

**APPENDIX A51- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FIXED FORESHORE ASSETS – PAGE 12**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

ASSET TYPE	PUBLIC WHARVES	CAR PARKING SPOTS	TRAILER PARKING SPOTS		BOAT WASHING FACILITIES		FISH CLEANING FACILITIES		
			INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		
			UNIT VALUE = \$5,000		UNIT VALUE = \$8,000		UNIT VALUE = \$8,000		
LOCATION	NUMBER	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
PATONGA	BRISK BAY WHARF 80 X 4M	30	150	15	120			1 SINGLE	8
ETTALONG	ETTALONG BEACH WHARF	8	40						
BLACKWALL POINT	20 X 1.5M TIMBER JETTY WITH 6 X 2M WHARF, 2 PILES AND LIGHT	30	150	15	120			1 DOUBLE	12
WOY WOY CHANNEL - LIONS PARK	15 X 1.5M TIMBER JETTY WITH 6 X 1.5M WHARF, 3 PILES	35	175	44	352			1 DOUBLE	12
CORREA BAY KOOLEWONG - FORESHORE RESERVE -FORESHORE NORTHERN END	TWO 6 X 2M CONCRETE JETTIES	5	25	5	40			1 SINGLE	8
GOSFORD CBD FORESHORE	30 X 5M ALUMINIUM WHARF WITH 15 X 3M ALUMINIUM RAMP	4	20	6	48				
GOSFORD BOAT RAMP WHARF	6 X 1.5M FINGER WHARF	80	400	25	200				
MASONS PARADE FORESHORE PARK GREEN POINT - ORANA STREET WHARF		60	300						
PRETTY BEACH	15 X1.8M TIMBER WHARF ON PILES 20 X 2M PONTOON WHARF	8	40	6	48			1 DOUBLE	8
<b>TOTAL FIXED ASSETS</b>		<b>38</b>	<b>1804</b>	<b>204</b>	<b>1632</b>			<b>7</b>	<b>64</b>

**APPENDIX A52- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – MOORED VESSELS**

**Date: 2/11/12**

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

MOORED VESSEL TYPE	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
	UNIT VALUE = \$15,000		UNIT VALUE = \$90,000		UNIT VALUE = \$260,000		UNIT VALUE = \$150,000	
** INDICATIVE VALUES BASED ON "BROOKLYN" FIGURES	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
PATONGA	27	405	6	540	5	1300	-	-
ETTALONG TO MAREELA AVENUE	22	330	8	720	7	1,820	-	-
MAREELA AVENUE TO RIP BRIDGE	14	210	18	1,620	3	780	-	-
RIP BRIDGE TO BLACKWALL POINT	4	60	4	360	-	-	-	-
BLACKWALL POINT TO WOY WOY CHANNEL	8	120	6	540	3	780	1	150
WOY WOY CHANNEL	42	630	13	1,170	-	-	1	150
WOY WOY BAY	17	255	3	270	2	520	-	-
WOY WOY INLET	10	150	15	1,350	-	-	-	-
MURPHYS BAY TO NOONAN POINT	13	195	117	10,530	11	2,860	1	150
NOONAN POINT TO NARARA CREEK ENTRANCE	11	165	13	1,170	7	1,820	-	-
NARARA CREEK TO GOSFORD SAILING CLUB	-	-	9	810	2	520	1	150
GOSFORD SAILING CLUB TO POINT FREDERICK	21	315	65	5,850	6	1,560	1	150
POINT FREDERICK TO GREEN POINT	26	390	47	4,230	6	1,560	-	-
GREEN POINT TO HALL WHARF, SARATOGA	28	420	34	3,060	14	3,640	1	150
HALL WHARF, SARATOGA TO EMPIRE BAY WHARF	30	450	55	4,950	7	1,820	4	600
EMPIRE BAY WHARF TO ST HUBERTS ISLAND BRIDGE	5	75	14	1,260	-	-	-	-
ST HUBERTS ISLAND	2	30	3	270	1	260	-	-
ST HUBERTS ISLAND BRIDGE TO RILEYS BAY	3	45	15	1,350	7	1,820	1	150
RILEYS BAY TO BOX HEAD	16	240	13	1,170	10	2,600	-	-
<b>TOTAL MOORED VESSELS</b>	<b>299</b>	<b>4,485</b>	<b>458</b>	<b>41,220</b>	<b>91</b>	<b>23,660</b>	<b>11</b>	<b>1,650</b>

**APPENDIX A53- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – BERTHED VESSELS**

**Date: 2/11/12**

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

BERTHED VESSEL TYPE	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
	UNIT VALUE = \$15,000		UNIT VALUE = \$90,000		UNIT VALUE = \$260,000		UNIT VALUE = \$150,000	
** INDICATIVE VALUES BASED ON "BROOKLYN" FIGURES	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
PATONGA	131	1,965	8	720	-	-	1	150
ETTALONG TO MAREELA AVENUE	26	390	3	270	1	260	-	-
MAREELA AVENUE TO RIP BRIDGE	49	735	36	3,240	27	7,020	-	-
RIP BRIDGE TO BLACKWALL POINT	21	315	5	450	3	780	1	150
BLACKWALL POINT TO WOY WOY CHANNEL	31	465	21	1,890	1	260	-	-
WOY WOY CHANNEL	3	45	1	90	2	520	-	-
WOY WOY BAY	39	585	16	1,440	3	780	-	-
WOY WOY INLET	70	1,050	35	3,150	1	260	-	-
MURPHYS BAY TO NOONAN POINT	43	645	11	990	2	520	-	-
NOONAN POINT TO NARARA CREEK ENTRANCE	22	330	10	900	1	260	-	-
NARARA CREEK TO GOSFORD SAILING CLUB	7	105	30	2,700	11	2,860	-	-
GOSFORD SAILING CLUB TO POINT FREDERICK	9	135	-	-	5	1,300	-	-
POINT FREDERICK TO GREEN POINT	90	1,350	23	2,070	3	780	-	-
GREEN POINT TO HALL WHARF, SARATOGA	93	1,395	35	3,150	4	1,040	-	-
HALL WHARF, SARATOGA TO EMPIRE BAY WHARF	189	2,835	20	1,800	8	2,080	-	-
EMPIRE BAY WHARF TO ST HUBERTS ISLAND BRIDGE	48	720	35	3,150	8	2,080	2	300
ST HUBERTS ISLAND	195	2,925	69	6,210	11	2,860	-	-
ST HUBERTS ISLAND BRIDGE TO RILEYS BAY	22	330	21	1,890	10	2,600	-	-
RILEYS BAY TO BOX HEAD	146	2,190	51	4,590	11	2,860	-	-
<b>TOTAL MOORED VESSELS</b>	<b>1,234</b>	<b>18,510</b>	<b>430</b>	<b>38,700</b>	<b>112</b>	<b>29,120</b>	<b>4</b>	<b>600</b>

**APPENDIX A54- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – SAILING CLUBS AND ASSOCIATED BOATS**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

SAILING CLUBS AND ASSOCIATED BOATS	SAILING CLUBS		SKIFFS		DAY BOATS		YACHTS	
	INDICATIVE VALUE							
	BERTHS	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
GOSFORD SAILING CLUB (PLUS HARDSTAND, CLUBHOUSE AND RESTAURANT - 4,907 MEMBERS IN 2012)	29	3,900						
SARATOGA SAILING CLUB	-	700	4	60	8	240		
<b>TOTAL SAILING CLUBS AND BOATS</b>	<b>29</b>	<b>4,600</b>	<b>4</b>	<b>60</b>	<b>8</b>	<b>240</b>		<b>-</b>

**APPENDIX A55- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES – PAGE 1**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

PUBLIC FACILITIES	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS INDICATIVE VALUE PER LINEAL METRE = \$2,500		WALKWAYS		INTERPRETIVE SIGNAGE	
	INDICATIVE VALUE NUMBER	(\$000)	INDICATIVE VALUE NUMBER	(\$000)	INDICATIVE VALUE NUMBER	(\$000)	METRES	(\$000)	INDICATIVE VALUE METRES	(\$000)	INDICATIVE VALUE NUMBER	(\$000)
PATONGA												
- BRISK BAY - MAIN BEACH			1 STEEL BENCH AND SEATS	2			500M	1,250				
							STONE WALL					
- PATONGA CREEK NEAR CARAVAN PARK			3 TIMBER TABLES	6			350M	875				
			2 DOUBLE BBQ's ON CONCRETE PADS	20			SANDSTONE BLOCK					
ETTALONG MAIN BEACH			20 X 6M VIEWING PLATFORM WITH TIMBER DECK, RAILINGS AND 4 BENCH SEATS	200			400M	1,000				
			3 TIMBER SEATS	6			ROCK FACE WALL					
			1 COVERED BBQ	24								
ETTALONG FERRY WHARF	2 TOILETS WITH COVERED AWNING ON CONCRETE LANDING WITH RAINWATER TANK AND PUMP	400	2 TIMBER SEATS	4								
- KARU STREET BOATRAMP			2 TIMBER SEATS	3			20M	50				
BLACKWALL POINT							50M	125				

**APPENDIX A56- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES – PAGE 2**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

PUBLIC FACILITIES	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS INDICATIVE VALUE PER LINEAL METRE = \$2,500		WALKWAYS		INTERPRETIVE SIGNAGE		
	LOCATION	INDICATIVE VALUE NUMBER	(\$000)	INDICATIVE VALUE NUMBER	(\$000)	INDICATIVE VALUE NUMBER	(\$000)	METRES	(\$000)	INDICATIVE VALUE METRES	(\$000)	INDICATIVE VALUE NUMBER	(\$000)
WOY WOY CHANNEL													
- LIONS PARK	1 BLOCK (6 PANS PLUS 1 URINAL AND BASINS)	300		2 DOUBLE BBQ's ON CONCRETE PADS	24			200M	500	3,000M	750		
				KIDS PLAYGROUND	20					2M CONCRETE			
				6 COVERED TABLES AND SEATS ON CONCRETE PADS	120								
				15 TIMBER TABLES AND BENCH SEATS	30								
- WOY WOY TOWN CENTRE	2 BLOCKS (4 PANS, 1 URINAL PLUS SHOWER)	350		LARGE SANDPIT, SWINGS AND PLAY EQUIPMENT	20			100M	250				
				50 X 40M TIDAL POOL PLUS LADDERS AND WALKWAY	600			TIMBER SEAWALL					
								650M STONE SEAWALL	1,625				
WOY WOY BAY													
- RAWSON ROAD WHARF								600M	1,800				
								ROCK WALL					
- CORREA BAY	1 BLOCK	300		4 TABLES AND BENCH SEATS	8			80M	200				
								STONE WALL					
- BASSAN STREET WHARF								50M	125				
								STONE WALL					

**APPENDIX A57- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES – PAGE 3**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

PUBLIC FACILITIES	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS INDICATIVE VALUE PER LINEAL METRE = \$2,500		WALKWAYS		INTERPRETIVE SIGNAGE		
	LOCATION	INDICATIVE VALUE NUMBER	(\$000)	INDICATIVE VALUE NUMBER	(\$000)	INDICATIVE VALUE NUMBER	(\$000)	METRES	(\$000)	INDICATIVE VALUE METRES	(\$000)	INDICATIVE VALUE NUMBER	(\$000)
PHEGANS BAY ROAD WHARF							100M	250					
							STONE WALL						
KOOLEWONG													
- COUCHE PARK RESERVE	1 BLOCK (3 PANS, 1 URINAL AND BASINS)	300		2 TABLE AND BENCH SEATS ON CONCRETE PADS	40								
				1 BENCH SEAT 3 COVERED TABLES AND SEATS	2								
					60								
- FORESHORE RESERVE							350M	875					
							STONE WALL						
- FORESHORE NORTHERN END	1 BLOCK (3 PANS, 1 URINAL AND BASINS PLUS SHOWER)	350		5 COVERED TABLES AND	100					500M	125		
				BENCH SEATS 2 QUAD TABLES AND BENCH SEATS ON CONCRETE PADS	40					2M CONCRETE			
				KIDS PLAYGROUND	20								
GOSFORD CBD FORESHORE				6 TABLES AND BENCH SEATS ON CONCRETE PADS	12		2,000M	5,000					
				2 ALUMINIUM BENCH SEATS	5		STONE WALL						

**APPENDIX A58- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES – PAGE 4**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

PUBLIC FACILITIES  LOCATION	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS INDICATIVE VALUE PER LINEAL METRE = \$2,500		WALKWAYS		INTERPRETIVE SIGNAGE	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	METRES	(\$000)	METRES	(\$000)	NUMBER	(\$000)
MASONS PARADE, GOSFORD			6 ALUMINIUM BENCH SEATS	15					3,000	750		
MASONS PARADE FORESHORE PARK			KIDS PLAYGROUND	20			100M BRICK SEAWALL	250				
			3 COVERED TABLES AND BENCH SEATS ON CONCRETE PADS	60								
			1 COVERED DOUBLE BBQ	15			1,000M STONE SEAWALL	2,500				
			5 ALUMINIUM TABLES AND BENCH SEATS ON CONCRETE PADS	13								
			6 TABLES AND BENCH SEATS ON CONCRETE PADS	18								
			4 SEATS	6								
YATTALUNGA - YATTALUNGA WHARF			TIMBER SEATS ON CONCRETE PADS	3			500M STONE SEAWALL	1,250				
SARATOGA - JIRRAMBA AVENUE WHARF			1 TIMBER TABLE AND BENCH SEAT	2			500M	1,250				
			1 TABLE AND BENCH SEAT ON CONCRETE PAD	2			STONE SEAWALL					

**APPENDIX A59- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES – PAGE 5**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

PUBLIC FACILITIES	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS INDICATIVE VALUE		WALKWAYS		INTERPRETIVE SIGNAGE	
	INDICATIVE VALUE NUMBER	(\$000)	INDICATIVE VALUE NUMBER	(\$000)	INDICATIVE VALUE NUMBER	(\$000)	PER LINEAL METRE = \$2,500 METRES	(\$000)	INDICATIVE VALUE METRES	(\$000)	INDICATIVE VALUE NUMBER	(\$000)
- VETERANS HALL FERRY WHARF			1 BIKE RACK	2			2,500M STONE SEAWALL	6,250	800M 2M FORESHORE WALKWAY	320		
DAVISTOWN												
- LINTERN STREET WHARF			2 TABLES AND BENCH SEATS	4			100M STONE SEAWALL	250				
			2 SEATS COMMUNITY NOTICE BOARD	3								
- SCANDRETTIS BOATSHED			2 TABLES AND BENCH SEATS	4								
			2 SEATS	3			1,000M STONE SEAWALL	2,500				
- RESTELLA AVENUE	2 BLOCKS	350	2 ALUMINIUM SEATS ON CONCRETE PADS	4								
			1 TABLE AND BENCH SEAT	2								
- CENTRAL RSL FERRY WHARF			1 TABLE AND BENCH SEAT	2								
			1 SEAT	2								

**APPENDIX A60- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES – PAGE 6**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

PUBLIC FACILITIES	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS		WALKWAYS		INTERPRETIVE SIGNAGE	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
LOCATION	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	METRES	(\$000)	METRES	(\$000)	NUMBER	(\$000)
- PINE AVENUE WHARF	1 BLOCK (5 PANS PLUS URINAL AND BASINS)	400	DOUBLE COVERED ALUMINIUM TABLE AND BENCH SEATS ON CONCRETE PAD	40								
			50 X 25M TIDAL POOL	200								
			LARGE KIDS PLAYGROUND	20								
			4 COVERED ALUMINIUM TABLES AND BENCH SEATS ON CONCRETE PADS	80								
			4 ALUMINIUM SEATS ON CONCRETE PADS	8								
KINCUMBER												
- CARRACK ROAD JETTY			2 COVERED ALUMINIUM TABLES AND BENCH SEATS ON CONCRETE PADS	40								
BENSVILLE												
- HASTINGS WHARF	1 BLOCK (5 PANS PLUS URINAL AND BASINS)	350										

**APPENDIX A61- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES – PAGE 7**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

PUBLIC FACILITIES	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS INDICATIVE VALUE		WALKWAYS		INTERPRETIVE SIGNAGE	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		PER LINEAL METRE = \$2,500		INDICATIVE VALUE		INDICATIVE VALUE	
LOCATION	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	METRES	(\$000)	METRES	(\$000)	NUMBER	(\$000)
EMPIRE BAY												
- KENDALL ROAD WHARF			1 TIMBER TABLE WITH BENCH SEATS ON CONCRETE PAD	2			500M	1,250				
			KIDS PLAYGROUND TO WEST	20			STONE SEAWALL					
- MERRITTS ROAD WHARF			1 ALUMINIUM SEAT	2								
- KILLCARE ROAD WHARF	1 BLOCK (5 PANS PLUS URINAL AND BASINS)	350	4 ALUMINIUM TABLES AND BENCH SEATS ON CONCRETE PADS	8			300M	750				
							STONE SEAWALL					
- ARALUEN DRIVE WHARF	2 BLOCKS (3 PANS PLUS URINAL AND BASINS)	350	1 TIMBER SEAT	1								
PRETTY BEACH	1 BLOCK (3 PANS PLUS URINAL AND BASINS)	350	2 TIMBER TABLES AND BENCH SEATS	2								
			1 ALUMINIUM TABLE AND BENCH SEAT	2								
	1 BLOCK (3 PANS PLUS URINAL AND BASINS)	350					500M	1,250				
							STONE SEAWALL					
<b>TOTAL FORESHORE PUBLIC FACILITIES</b>	<b>15</b>	<b>4,500</b>	<b>1,974</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>12,450</b>	<b>31,425</b>	<b>7,300</b>	<b>1,945</b>	<b>-</b>	<b>-</b>

**APPENDIX A62- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – SUMMARY OF ASSETS**

Date: 2/11/12

**SUBCATCHMENT: BRISBANE WATER AREA, INCLUDING PATONGA**

FIXED ASSET TYPE	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS		PONTOONS		BOAT RAMPS		CAR SPOTS		TRAILER SPOTS	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
<b>TOTAL = \$38.3M</b>	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
	5	13,650	43	13,160	7	490	-	-	23	6,900	398	1,804	204	1,632
** PLUS FISH CLEANING FACILITIES = 7 FOR \$64,000														
MOORED VESSELS	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS							
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE							
<b>TOTAL = \$71.0M</b>	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)						
	299	4,485	458	41,220	91	23,660	11	1,650						
BERTHED VESSELS	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS							
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE							
<b>TOTAL = \$86.9M</b>	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)						
	1,234	18,510	430	38,700	112	29,120	4	600						
SAILING CLUBS AND ASSOCIATED BOATS	SAILING CLUBS		SKIFFS		DAY BOATS		YACHTS							
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE							
<b>TOTAL = \$4.9M</b>	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)						
	29	4,600	4	60	8	240	-	-						
PUBLIC FACILITIES	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS		WALKWAYS		INTERPRETIVE SIGNAGE			
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE			
<b>TOTAL = \$39.8M</b>	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	METRES	(\$000)	METRES	(\$000)	NUMBER	(\$000)		
	15	4,500	-	1,974	-	-	12,450	31,425	7,300	1,945	-	-		

**APPENDIX A63- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – FORESHORE FIXED ASSETS**

Date: 2/11/12

**SUBCATCHMENT: WISEMANS FERRY TO SPENCER**

ASSET TYPE	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS		PONTOONS		BOAT RAMPS		CAR PARKS		TRAILER PARKING	
	LOCATION	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE	INDICATIVE VALUE
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
WISEMAN'S FERRY EAST OF MCDONALD RIVER ON SOUTH BANK OF RIVER			15 X 2M JETTY AND 6 X 4M WHARF ON CONCRETE PILES WITH 1 LIGHT PLUS 3 TIMBER PILES, STEPS AND TIMBER RAILINGS	250					1 SINGLE	250				
SPENCER			TIMBER WHARF 8 X 6M WITH 3 PILES PLUS STEPS AND 50M ROADSIDE APPROACH AREA SEALED WITH FILLED SEAWALL	250					1 SINGLE	250				
<b>TOTAL FIXED ASSETS</b>				<b>2</b>	<b>500</b>				<b>2</b>	<b>500</b>				

\*\* NO BOAT WASHING OR FISH CLEANING FACILITIES WERE FOUND IN THIS AREA

**APPENDIX A64- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – MOORED VESSELS**

Date: 2/11/12

**SUBCATCHMENT: WISEMANS FERRY TO SPENCER**

LOCATION	LESS THAN 6 METRE INDICATIVE VALUE = \$15,000		6 TO 12 METRE INDICATIVE VALUE = \$90,000		GREATER THAN 12 METRE INDICATIVE VALUE = \$260,000		HOUSEBOATS INDICATIVE VALUE = \$150,000	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
FROM WISEMANS FERRY TO END OF SINGLETON ROAD ON SOUTH BANK OF RIVER	-	-	3	270	-	-	-	-
WISEMANS FERRY TO SPENCER ON NORTH BANK OF RIVER	10	150	11	990	6	1,560	2	300
<b>TOTAL MOORED BOATS</b>	<b>10</b>	<b>150</b>	<b>14</b>	<b>1,260</b>	<b>6</b>	<b>1,560</b>	<b>2</b>	<b>300</b>

**APPENDIX A65- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – BERTHED VESSELS**

Date: 2/11/12

**SUBCATCHMENT: WISEMANS FERRY TO SPENCER**

LOCATION	LESS THAN 6 METRE INDICATIVE VALUE = \$15,000		6 TO 12 METRE INDICATIVE VALUE = \$90,000		GREATER THAN 12 METRE INDICATIVE VALUE = \$260,000		HOUSEBOATS INDICATIVE VALUE = \$150,000	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)
FROM WISEMANS FERRY TO END OF SINGLETON ROAD ON SOUTH BANK OF RIVER	13	195	13	1,170	-	-	1	150
WISEMANS FERRY TO SPENCER ON NORTH BANK OF RIVER	108	1,620	16	1,440	4	1,040	3	450
<b>TOTAL BERTHED BOATS</b>	<b>121</b>	<b>1,815</b>	<b>29</b>	<b>2,610</b>	<b>4</b>	<b>1,040</b>	<b>4</b>	<b>600</b>

**APPENDIX A66- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – PUBLIC FACILITIES**

Date: 2/11/12

**SUBCATCHMENT: WISEMANS FERRY TO SPENCER**

LOCATION	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS		WALKWAYS		INTERPRETIVE SIGNAGE	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE PER LINEAL METRE = \$2,500		INDICATIVE VALUE		INDICATIVE VALUE	
	NUMBER	(\$000)	NUMBER	(\$000)	NUMBER	(\$000)	METRES	(\$000)	METRES	(\$000)	NUMBER	(\$000)
WISEMAN'S FERRY EAST OF MCDONALD RIVER ON SOUTH BANK OF RIVER	1 BLOCK	400	2 COVERED SHELTER SHEDS - BRICK ON CONCRETE SLAB WITH TILED ROOF AND TABLES AND BENCH SEATS		40							
WISEMAN'S FERRY EAST OF MCDONALD RIVER ON NORTH BANK OF RIVER							2,000	5,000				
SPENCER	1 BLOCK	200	2 ALUMINIUM SEATS		2		50	125				
	SINGLE PANS WITH PITS		KIDS PLAY AREA		15							
			40 X 15M TIDAL POOL		200							
<b>TOTAL PUBLIC FACILITIES</b>	<b>2</b>	<b>600</b>			<b>257</b>		<b>2,050</b>	<b>5,125</b>				

**APPENDIX A67- HORNSBY SHIRE COUNCIL HAWKESBURY RIVER ESTUARY ASSET VALUATION STUDY – SUMMARY OF ASSETS**

Date: 2/11/12

**SUBCATCHMENT: WISEMANS FERRY TO SPENCER**

FIXED ASSET TYPE	MARINAS		PUBLIC WHARVES		COMMUTER BERTHS		PONTOONS		BOAT RAMPS		CAR PARKS		TRAILER PARKING	
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE	
<b>TOTAL = \$1 0 MILLION</b>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>
			2	500					2	500				
MOORED VESSEL TYPE	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS							
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE							
<b>TOTAL = \$3.3 MILLION</b>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>				
	10	150	14	1,260	6	1,560	2	300						
BERTHED VESSEL TYPE	LESS THAN 6 METRE		6 TO 12 METRE		GREATER THAN 12 METRE		HOUSEBOATS							
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE							
<b>TOTAL = \$6.1 MILLION</b>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>				
	121	1,815	29	2,610	4	1,040	4	600						
SAILING CLUBS	SAILING CLUBS		SKIFFS		DAY BOATS		YACHTS							
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE							
<b>TOTAL = ZERO</b>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>				
PUBLIC FACILITIES	PUBLIC TOILETS		PICNIC FACILITIES		LOOKOUTS		SEAWALLS		WALKWAYS		INTERPRETIVE SIGNAGE			
	INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE		INDICATIVE VALUE			
<b>TOTAL = \$6 0 MILLION</b>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>	<u>METRES</u>	<u>(\$000)</u>	<u>METRES</u>	<u>(\$000)</u>	<u>NUMBER</u>	<u>(\$000)</u>		
	2	600		257	-	-	2,050	5,125	-	-	-	-	-	-

**\*\* NO BOAT WASHING OR FISH CLEANING FACILITIES WERE FOUND IN THIS AREA**