Gold Coast Broadwater Economic Assessment and Monitoring

Baseline Report - Gold Coast City Council

May 2012

urbis

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Director	Malcolm Aikman
Consultant	Paul Riga,
Research Analyst	Scott Hinds
Job Code	BPE0427
Report Number	1

© Urbis Pty Ltd ABN 50 105 256 228

All Rights Reserved. No material may be reproduced without prior permission. While we have tried to ensure the accuracy of the information in this publication, the Publisher accepts no responsibility or liability for any errors, omissions or resultant consequences including any loss or damage arising from reliance in information in this publication.

URBIS Australia Asia Middle East urbis.com.au

TABLE OF CONTENTS

Exe	cutive	Summary	1		
	Introduction and study purpose1				
	Study Approach				
	Economic Baseline Assessment				
	Econo	mic Monitoring Scoreboard	3		
	1				
1	Introc		1 •		
	1.1	Background	1		
	1.2		1		
	1.3	Gold Coast Broadwater History	1		
	1.4	Report Limitations	3		
2	Appro	ach	4		
	2.1	Total Economic Value (TEV)	4		
	2.2	Study Approach	6		
	2.3	Identification of Value Components	6		
	2.4	Value Component Measure Assessment	8		
3	Value	Component Analysis	11		
	3.1	Current Economic Value Components			
	3.1.1	Property Value			
	3.1.2	Marina Values	.14		
	3.1.3	Additional Amenity and Brand Value	.15		
	3.1.4	Value of Open Space	. 10		
	316	Facilitating Recreational Infrastructure	18		
	317	Waste Treatment	19		
	318	Employment	19		
	3.1.9	Summary of Economic Value Components	20		
	3.2	Annual Economic Returns.			
	3.2.1	Property Revenues			
	3.2.2	Open Space	23		
	3.2.3	Amenity and Brand	24		
	3.2.4	Recreational Value	27		
	3.2.5	Waste Treatment	. 28		
	3.2.6	Congestion	. 28		
	3.3	Economic Baseline Assessment	. 28		
4	Fcon	mic Monitoring	30		
4		Economic Monitoring Scoreboard	20		
	4.1 10	Conclusion	.30		
	4.2	0010003001	.51		
Арр	endix	A Property Value – Maps & Method	. 33		
Арр	endix	3 Open Space - Maps	. 36		
Ref	erence	;	. 39		

Executive Summary

INTRODUCTION AND STUDY PURPOSE

The Gold Coast Waterways Steering Committee (GCWSC) is undertaking a Master Plan of the Gold Coast Broadwater. To inform the Master Plan from an economic perspective the GCWSC commissioned Urbis to prepare an Economic Baseline & Contextual Assessment Study (Economic Assessment).

The Economic Assessment incorporates the following key components:

- Identification of economic value components of the Gold Coast Broadwater
- An Economic Baseline Assessment that estimates the current economic value of the Broadwater
- Development of an Economic Monitoring tool to measure economic changes from year to year, and those resulting from proposed Master Plan projects.

STUDY APPROACH

The approach adopted for this study aims to derive Total Economic Value of the Gold Coast Broadwater through the identification of Direct and Indirect Use and Non-use Values. Recognised economic value techniques are applied to determine these values including opportunity cost, shadow pricing, replacement cost, and willingness to pay.

Economic value components for the Gold Coast Broadwater were identified through research, case studies, and consultation with stakeholders and the Project Steering Committee. These were assessed in terms of their significance to the Total Economic Value of the Broadwater, the practicality in measuring them, and the degree to which they represent economic value

This generated the following list of economic value components.

VALUE COMPONENT	MEASURE		
 Property value - Residential, Commercial (including businesses operating on foreshore) 	 The uplift in property value presented by the Broadwater. Calculated by deducting Site Value of property one block back from the Broadwater with property within one block of Broadwater. 		
	MEASURE cial The uplift in property value presented by the Broadwater Calculated by deducting Site Value of property one bloc back from the Broadwater with property within one bloc of Broadwater. · Value of Marina's · Value of Marina's · Rates revenue · Alternative land value (site value) · Annual maintenance cost (minus inflation) s · Tourist visitation numbers - Events · Boats on B/W · Car Traffic on Spit · Area of Recreational Land · Cost of dredging		
 Property revenue - Residential, Commercial 	 Rates revenue 		
 Value of open space parks 	 Alternative land value (site value) 		
	 Annual maintenance cost (minus inflation) 		
 Additional amenity value, brand values 	 Tourist visitation numbers - Events 		
	 Boats on B/W 		
	 Car Traffic on Spit 		
	 Area of Recreational Land 		
 Recreational value 	 Cost of dredging 		

VALUE COMPONENT	MEASURE
Boating/Paddling	 Boats on B/W
Sail/swim Pedestrians	 No. of Marina berth/moorings
Cycling	 Traffic counts (the spit)
 Facilitating Recreational Infrastructure 	 Replacement Cost
Waste Treatment	 Alternative Cost
Wastewater Discharge	 Discharge Volumes
 Employment Direct (eg. Jetboat) Indirect (eg. Personal Trainers) 	 No. of workers (Business site Survey)
 Congestion – Waterway, Traffic 	 Boats on B/W
	 Car Traffic on Spit

Having identified the Economic value components for assessment, economic value techniques were applied to derive value estimates and the assessment of an overall Economic Baseline.

ECONOMIC BASELINE ASSESSMENT

The Value Component analysis identified and provided measures of a range of value components incorporating overall economic value and annual economic impacts. From this analysis an Economic Baseline for the Gold Coast Broadwater has been compiled (as reflected in the table below). The intention is that this is in a format that can be updated annually.

ECONOMIC BASELINE VALUE COMPONENT	ESTIMATED VALUE OR VOLUME
Residential and Non Residential Property Values	\$1,158,189,690
Marina Values	\$126,381,000
Open Space Value	\$818,351,581
Environmental land value	\$1,557,576,934
Infrastructure Values	\$152,400,746
Waste Water Treatment	\$350,000,000
TOTAL VALUE	\$4,162,899,950
Employment Numbers – Dependent on Broadwater	2,500 Full time Equivalents

ECONOMIC BASELINE VALUE COMPONENT	ESTIMATED VALUE OR VOLUME
Area of Open Space	353,500sq.m
Area of Environmental Land	942,000 sq.m

Based on this assessment an overall monetary value of **\$4.16 billion** is estimated as the Economic Baseline value of the Gold Coast Broadwater in 2012. In addition to this the Broadwater is estimated to sustain **2,500 FTE direct jobs**, and **35 hectares of open space** and **94 hectares of environmental land**.

ECONOMIC MONITORING SCOREBOARD

The analysis of the Economic Value components and preparation of the Economic Baseline form the basis for the compilation of an Economic Monitoring Scoreboard for the Gold Coast Broadwater. A set of principles were derived by the Project Steering Committee in conjunction with Urbis to determine which measures were most appropriate for inclusion in the Economic Monitoring Scoreboard. These principles are:

- Capture the core elements of economic value such as employment and income;
- Reflect Financial value, Economic growth, and Community value; and
- Able to be relatively easily measured and updated regularly.

The Scoreboard identifies eight key measures to monitor Financial Value, Economic Growth, and Community Value components. The Scoreboard is translated into an assessment tool through the application weightings for each measure and derivation of weighted scores which sum to a total score. An example of how this tool works is shown in the following table.

Gold Coast Broadwater Economic Monitoring Tool

Project Name:

Economic Value Component	Metric/measure	% Change	Weighting	Score
Financial Value	Increase (or decrease) in Residential and Commercial property value relative to surrounding land	5	20%	1.00
	Increase (or decrease) in marina property value	5	5%	0.25
	Increase (or decrease) in direct jobs	3	20%	0.60
Economic Growth	Increase (or decrease) in indirect jobs	3	10%	0.30
	Increase in Gross Regional Product/Value Added expenditure	1.5	15%	0.23
	Visitation – Boats, Motor Vehicles; Pedestrians; Event attendances	2	10%	0.20
Community Value	Associated infrastructure investment required by Government	2	5%	0.10
	Increase (or decrease) in Open Space and Environmental land	-3	15%	- 0.45
Total		19	100%	2.23

The preparation of the Economic Baseline Assessment and Economic Monitoring Scoreboard to measure the value and potential impacts on the Gold Coast Broadwater has been a valuable exercise that can be used to provide significant economic insights for the Broadwater Master Plan. These tools can contribute

to the effective monitoring of the overall performance of the Master Plan and also have applications for the economic assessment and monitoring of other natural assets within the Gold Coast and Queensland more broadly.

1 Introduction

The Gold Coast Broadwater is an important asset for Queensland and particularly the Gold Coast, forming a key part of the region's brand and image. It is an attractor for residents, visitors, commercial activities, and an important part of the region's ecological footprint. The Gold Coast City Council in conjunction with the State Government has commissioned an Economic Assessment of the Broadwater to inform the Master Plan being undertaken to sustain and protect the Broadwater as an asset for the region. This study presents the approach and results to provide an ongoing economic assessment of the Gold Coast Broadwater.

1.1 BACKGROUND

The Gold Coast Waterways Steering Committee is undertaking a Master Plan of the Gold Coast Broadwater. The Master Plan is intended to "establish a coordinated and consistent long term approach to sustainable planning, development and management of the Broadwater" (Study Brief, Gold Coast City Council, 2012). The Master Plan should identify planning priorities for fringing land and waterway areas and develop a range of agreed actions (GCCC, 2012).

To inform the Master Plan a range of technical studies has been commissioned. The Gold Coast Waterways Steering Committee (GCWSC), which is a collaborative effort between Gold Coast City Council (GCCC), the Queensland Government Department of Employment, Economic Development and Innovation (DEEDI), and Maritime Safety Queensland (MSQ), has commissioned Urbis to prepare an Economic Baseline & Contextual Assessment Study (Economic Assessment).

1.2 STUDY PURPOSE

Through the direction of the Consulting Brief and discussions with the Project Team the key objectives of the Economic Assessment can be summarised into the following three points:

- To document the economic profile and function of the Broadwater and immediately surrounding land
- Identify and understand the economic value components of the Broadwater to inform the Master Plan
- Develop a set of indices or performance measures to monitor the Broadwater over time and allow assessment of the Broadwater Master Plan and specific Broadwater projects.

1.3 GOLD COAST BROADWATER HISTORY

The history of the development of the Southport area and the Gold Coast Broadwater reflects an area of multiple uses. Leisure and tourism has been an important use from its earliest days for activities such as theatre, sailing, tourist accommodation, themed attractions, and marinas. However, over time the value of the Broadwater has been reflected in other uses such as education, retailing, and nature management.

The following time line tracks the key events in the development of the Broadwater from its early role as a tourism location in the 1850s to its much wider role today:

- 1850s Southport area emerges as a major tourism destination
- 1875 Area re-named Southport after English seaside resort town
- 1898 Railway built from Brisbane to Southport (closed 1964)
- 1901 The Southport School founded on banks of Nerang River
- 1914 Building of cement Jetty at Southport (location for future Pier Theatre)
- 1925 Opening of new road linking Brisbane to Southport opens Gold Coast to much larger market
- 1925 Opening of Jubilee Bridge connecting Southport and Main Beach

- 1927 Pier Theatre built in Southport Broadwater parkland area and became centre of entertainment on the Gold Coast
- 1932 Pier Theatre burnt down, then rebuilt (demolished in the 1960s)
- 1934 Southport Bathing Pavilion built and now listed on Queensland Heritage Register
- 1946 Southport Yacht Club founded on South Stradbroke Island with clubhouse opening on current site in 1956
- 1959 State Government proclaims City of Gold Coast
- 1960s Opening of Southport Pool on banks of Broadwater, later renamed Gold Coast Aquatic Centre
- 1967 Major cyclone ravages Gold Coast beaches. A million cubic metres of sand dredged from Broadwater and pumped to replenish the beaches
- 1969 Sundale Shopping Centre opens at Southport facing the Broadwater including Qld's first Big W, a cinema, restaurants, and 45 specialty shops (Closed 1989 after opening of nearby Australia Fair)
- 1970 First major tourist attraction, Ski Land and Marineland (now Seaworld) developed on the Spit
- 1972 Runaway Bay canal development commences
- 1974 Brisbane and Gold Coast floods dam sea entrance
- 1977 Broadwater Plan promoted by Keith Williams including establishment of a Marina/Cruise Terminal Island in the Broadwater
- 1979 Gold Coast Waterways Authority established by State Government
- 1980 Gold Coast Waterways Authority forms plan (following consultation) for Seaway. Cost intended to be offset by tourism/residential development on Wavebreak Island and the Spit
- 1984 Construction commences on entrance dredging and on training walls for Gold Coast Seaway
 as means of stabilising Nerang River entrance and facilitating recreational and commercial boating on
 the Gold Coast
- 1985 Seaway opened resulting in development of new marina facilities in the Broadwater
- 1988 Sea World Nara Resort opens
- 1991 Gold Coast Waterways Authority disbanded by State Government
- 2002 Review of Gold Coast Seaway and Sand By-passing System
- 2003-2008 Planning for development of Spit with marinas and cruise ship terminal (2006 election commitment to "no cruise ship terminal")

The history of the development of the Gold Coast Broadwater highlights the breadth of economic, social, and biophysical value that the Broadwater represents as an asset to the Gold Coast region and Queensland more broadly. This goes beyond the obvious tourism and property benefits to unique values in waste water treatment and disposal, education, and environmental protection. These factors are investigated in detail in following sections of this report.

1.4 REPORT LIMITATIONS

As the report involves projections, it can be affected by a number of unforseen variables. It represents for the party to whom it is addressed, the various estimates of Urbis Pty Ltd but no assurance is given by Urbis Pty Ltd that the projections will be achieved.

The assessment undertaken has been done on the basis of information available at this time. Our assessment may be impacted by changes to this information or by market factors which cannot be foreseen at this stage. Urbis Pty Ltd will not accept liability or responsibility to any third party relying on information provided in this advice.

2 Approach

There are a range of methods that can be used to assess the economic value of natural assets such as the Gold Coast Broadwater. Economic value is assessed in terms of human welfare benefits. These benefits are measured through consumer's surplus and market value where goods and services are traded (The Victorian Coastal Council, Department of Sustainability and Environment, 2007).

2.1 TOTAL ECONOMIC VALUE (TEV)

An environmental and recreational asset such as the Gold Coast Broadwater can contribute value to those who use the asset (Use Values) and also to non-users who may value the asset because they know it can be used by others or merely because it exists (Non-use Values). The combination of Use and Non-use Values is termed Total Economic Value (TEV).

Use Values reflect interaction with the asset which can be Direct or Indirect. Direct values are where individuals make actual use of the asset. Indirect values recognise associated benefits or situations where an individual or group benefits from services provided by the asset. Direct and Indirect values can have both Market and Non-market components. Market components are those that can be measured by a market such as property values, whilst Non-market values have no commercial market such as ecological preservation.

Use Values also have an Option value which reflects the value an individual or group place on the future use of the asset for their own benefit. An example of this may be the research potential of a natural asset for improvements in medical applications.

Non-use Values reflect the value derived from the knowledge that the asset will continue to exist and provide ongoing benefits for others currently (Existence Values) and future generations (Bequest Values). These are both Non-market values as they cannot be traded or sold in a current market situation.

Source: URS Australia Pty Ltd for Victorian Coastal Council – Department of Sustainability and Environment.

The components of Total Economic Value are shown graphically in the following diagram.

FIGURE 1 – TOTAL ECONOMIC VALUE CHART



The Total Economic Value framework above can be applied to the Gold Coast Broadwater to investigate different components of value and potential measurement techniques to measure these components.

TOTAL ECONOMIC VALUE	TYPE	EXAMPLE	MEASUREMENT TECHNIQUE
Use Value			
Direct	Market	Private land (residential lots)	Property Valuation
	Non-market	Recreational land, Conservation land	Production Function Technique – based on estimated value to marketed outputs (eg. Input-Output analysis)
			Cost of Alternatives Technique – replacement cost approach
			Shadow Project Cost Technique – cost of providing comparable benefit elsewhere
			Revealed Preference Techniques – Willingness to pay based on access costs (eg. Travel Cost method)
			Stated Preference Techniques – Willingness to pay based on hypothetical estimates of what impacted stakeholders would pay (eg. Contingent Valuation Surveys)
Indirect	Market	Views from property	Property Valuation differences
	Non-market	Storm Protection	As above
Option	Market/Non- market	Future Direct & Indirect Uses	Qualitative Assessment
Non-Use Value			
Bequest	Non-Market	Future Generations Benefits	Qualitative Assessment
Existence	Non-Market	Satisfaction that asset exists	As per Non-market techniques above

2.2 STUDY APPROACH

There are numerous approaches to assessing economic value of natural assets. These include:

- Market Techniques using market prices
- Input-Output Analysis The application of industry wide factor prices and derived multipliers for employment, expenditure, and value added
- Replacement Cost Techniques the cost of alternative techniques or options
- Shadow Project Cost Techniques cost of providing comparable benefits elsewhere
- Preference Techniques Stated or Revealed which applies Willingness to Pay techniques either from access costs or surveyed estimates of what impacted stakeholders would pay for the benefit or to avert the cost.

The benefits and success of these approaches depends on the type and scale of the project being assessed, the availability of data, and the level of objectivity that can be applied to the assessment. Drawbacks of these approaches include the difficulties in measuring changes over time, the potential to have overlapping costs, and the incorporation of subjective assessments of costs and values.

These drawbacks are problematic for this study as key functions of this study are 'the need to be able to assess the economic value of the Broadwater over time' and also 'to provide independent assessments of Master Plan projects as they are proposed'. Given these factors, this study has formulated a Scorecard Approach to the economic assessment of the Gold Coast Broadwater whereby a range of economic value components are identified that represent the majority of the economic value of the Broadwater. These factors need to be objectively measured each year and able to be combined to provide a comprehensive assessment of the range of economic value of single projects proposed for the Broadwater.

This Scorecard Approach allows the incorporation of measures of Direct and Indirect value. It allows a like for like comparison to other areas and assets. It presents measures that can be easily understood by the community. Finally it allows measurement over time including annual updates. It does not, however, provide an overall value estimate of the Broadwater. Given the key objectives of this analysis the project team has agreed that this is not a critical output of this study.

The first step then is to identify the range of economic value components comprising the Broadwater and then through the application of key criteria refine these to a robust list of components that comprise the Gold Coast Broadwater Economic Assessment Scorecard.

2.3 IDENTIFICATION OF VALUE COMPONENTS

A key component of assessing the TEV of the Gold Coast Broadwater is the identification of the different economic value components of the Broadwater. This assessment focuses principally on the Economic value of the Broadwater and does not aim to assess the Social, Environmental, or Ecological value of the Broadwater. There are however elements of overlap between Economic, Social, and Environmental and where appropriate these have been incorporated into the Economic assessment.

Urbis worked with the Broadwater Masterplan Project Management Team to identify the range of Economic Value components of the Broadwater and potential measures to assess these value components. The following table presents the list of economic value components identified by the project team and associated measures.

VALUE COMPONENT (IMPACTS)	MEASURE
 Property value 	 UILV (block back vs. on the Broadwater)
(Residential, Commercial)	 Site Value
	 Marina's
Property revenue	 Rates revenue
(Residential, Commercial)	
 Value of open space parks 	 Annual maintenance cost (minus inflation)
 Businesses operating on B/W Foreshore 	- UILV
	 Rates revenue
 Additional amenity value, brand values 	 Tourist visitation numbers
	 Conservation Land
	Area of Recreational Land
Recreational value	Cost of dredging
Boating/Paddling	 Marina berth/moorings
	 Day trip utilisation
Fishing Diving/Sportcolling	
Diving/Shorkelling	 Traffic counts (the spit)
 Facilitating Recreational Infrastructure 	 Replacement Cost
Waste Treatment	Alternative Cost
Stormwater Conveyance and Treatment	
Effluent Discharge	
Economic Costs	Alternative Cost or Replacement Cost
Increased Flooding	
Increased Insects (Mosquitos)	
 Employment 	Employment numbers
Direct	
- Fishing (Commercial)	
- Charters (Fishing, Whale watching, etc.)	
- Marine Industry (Servicing)	
- Tourism/Recreation (Jetboat, Jetskis, etc.)	
Indirect (Personal Trainers)	
Congestion	• Estimates of boats, cars, people – through survey

Waterway	and observation methods
People	
Traffic	
Events	Visitation
	 Media coverage

2.4 VALUE COMPONENT MEASURE ASSESSMENT

Having identified the range of value components comprising the economic value of the Gold Coast Broadwater it is important to filter these through a range of criteria in order to generate the most relevant and practical set of indicators of economic value. Following a workshop with the Project Team the following criteria were identified to apply to the value components:

- Significance Estimated significance of the value component to the Total Economic Value of the Broadwater
- Practicality Ease of measurement of the identified indicators, including availability of data
- Economic Representation the degree to which the value component represents economic value (the consideration being would the component be assessed in another technical study).

The following table presents the assessment of the identified Value Components against the above criteria:

,	VALUE COMPONENT	MEASURE	SIGNIFICANCE	PRACTICALITY OF MEASUREMENT	ECONOMIC REPRESENTATION
•	Property value - Residential, Commercial (including businesses operating on foreshore)	 Site Value of property within one block of Broadwater 	High	Practical	High
		 Value of Marina's 	Low-Medium	Moderate-Difficult	High
-	Property revenue - Residential, Commercial	 Rates revenue 	Medium	Practical	High
	Value of open space parks	 Alternative land value (site value) 	High	Practical	Medium
		 Annual maintenance cost (minus inflation) 	Medium-High	Practical	Medium
	Additional amenity value, brand values	 Tourist visitation numbers - Events 	High	Practical	Medium-High
		 Boats on B/W 	High	Moderate	Medium-High
		 Car Traffic on Spit 	Medium	Moderate	Medium

	 Day trip visitation 	High	Difficult	Medium-High
	 Area of Recreational Land 	High	Practical	Medium
	 Media Exposure 	Medium	Difficult	Medium
 Recreational value Boating/Paddling 	 Cost of dredging 	Medium	Practical	Medium
Sail/swim	 Boats on B/W 	High	Moderate	Medium-High
Cycling	 No. of Marina berth/moorings 	High	Practical	Medium
	 Day trip visitation 	High	Difficult	Medium
	 Traffic counts (the spit) 	Medium	Moderate-Difficult	Medium
 Facilitating Recreational Infrastructure 	 Replacement Cost 	Medium-High	Moderate Difficult	Medium-High
 Waste Treatment Stormwater Disposal 	 Alternative Cost 	Medium-High	Moderate-Practical	Medium
Wastewater Discharge	 Discharge Volumes 	Medium-High	Practical	Low
 Economic Costs (Flooding, Insects) 	 Flood mitigation costs 	Medium	Difficult	Medium
	 Insect Spraying costs 	Low	Moderate-Difficult	Low
 Employment Direct (eg. Jetboat) Indirect (eg. Personal Trainers) 	 No. of workers (Business site Survey) 	High	Moderate	High
 Congestion – Waterway, Traffic 	 Boats on B/W 	Medium	Moderate	Medium-Low
	 Car Traffic on Spit 	Medium	Moderate	Medium-Low

The application of a traffic light colouring system to the different criteria for the identified value components allows the easy identification of which value component measures are most appropriate to include in the Economic Assessment tool for the Gold Coast Broadwater. Those measures that are rated as Practically Difficult to measure are recommended for exclusion unless they are considered to be High in Significance and Economic Representation. On this basis we recommend the exclusion of the following measures:

 Day Trip Visitation – though it is noted that this is rated as High in Significance and Medium High in Economic Representation

- Media Exposure rated Medium on the other two criteria
- Flood Mitigation Costs/Benefits Difficult to measure and of Medium Significance and Economic Representation
- Insect Spraying Costs whilst this is only rated Moderately Difficult to measure it is also rated as of Low Significance and Low Economic Representation (more significant as an Ecological Measure) and has thus been recommended for exclusion.

3 Value Component Analysis

Having identified the Value Components and associated measures to assess the Economic Value of the Gold Coast Broadwater it is necessary to differentiate between measures that represent current economic value and those that represent annual economic returns. Those measures that represent current economic value combine to form the Economic Baseline for the Broadwater. This section of the report presents the measures of economic value of the Gold Coast Broadwater separated into current economic value components and annual economic returns.

3.1 CURRENT ECONOMIC VALUE COMPONENTS

Current Economic Value Components incorporate those measures that represent an asset's value at a point in time. In relation to the Gold Coast Broadwater Economic Assessment these components and measures are identified in the following table.

VALUE COMPONENT	MEASURE
 Property value - Residential, Commercial (including businesses operating on foreshore) 	 Site Value of property within one block of Broadwater
	 Value of Marina's
 Additional amenity value, brand values 	 Area of open space Land in Broadwater foreshore
 Value of open space land in Broadwater foreshore areas 	 Alternative land value (site value)
 Facilitating Recreational Infrastructure 	 Replacement Cost
 Waste Treatment - Stormwater Disposal; Wastewater Discharge 	Alternative Cost
 Employment - Direct (eg. Jetboat); Indirect (Personal Trainers) 	No. of workers (Business site survey)

The value of these components is estimated in the following sections through the compilation of quantitative measures of value for each of the identified values.

3.1.1 PROPERTY VALUE

The value of property benefiting from proximity to the Broadwater is reflective of the value of the Broadwater. This is considered to be a direct use value which can be traded through a market mechanism such as a property market. The economic value of the property benefiting from the Broadwater can be measured as the difference between the value of land in proximity to the Broadwater and equivalent land that does not benefit from Broadwater proximity. The difficulty with discerning this is that there are a wide range of factors that influence the value of land and finding directly equivalent parcels can be extremely difficult and when trying to do this across the whole Broadwater foreshore, this becomes virtually impossible. For the purposes of this assessment we have considered the property value measure for the Broadwater to be the site value of land within one block of the Broadwater.

The benefits of this measure are:

It is consistent across locations

- It is a relatively consistent measure over time (this will be the case more so going forward as the recent change from Unimproved Capital Value to Site Value will limit historical comparisons over time)
- It is able to be calculated for residential, and commercial premises and also for different precincts
- It is updated either annually or every two years.

The major shortfalls of this measure are:

- The conservative nature of Site Value estimates which are likely to underestimate the true value of land (and subsequently the Broadwater)
- The limited ability to compare historical values (due to change from Unimproved Capital Values to Site Values).

To assess the property value component of the economic value of the Gold Coast Broadwater an area surrounding the Broadwater has been compared to an area extending one block from the Broadwater foreshore, as identified within the Broadwater study area (see map in Appendix A).

Gold Coast City Council then provided site value estimates and land size assessed by land use type (Residential and Non-Residential) for land by suburb. The resultant valuation per square metre for the 'Surrounding the Broadwater' precinct has had the value per square metre for the 'One block back' precinct subtracted, with the difference being the uplift in value created by the Broadwater. These values are shown in the following tables.

3.1.1.1 RESIDENTIAL

Values Summary - Residential

BROADWATER MASTERPLAN - DEFINED AREAS - 2011/12

	Surrounding Broadwater			1 Block Back			Difference
	Valuation	Catchment Size (m ²)	Valuation (\$ per m ²)	Valuation	Catchment Size (m ²)	Valuation (\$ per m ²)	Value of Broadwater (m ²)
Areas ¹	2011/12		2011/12	2011/12		2011/12	
Paradise Point	\$782,881,293	1,012,584	\$773	\$286,449,789	444,906	\$644	\$129
Hollywell	\$134,523,977	137,355	\$979	\$247,035,802	490,989	\$503	\$476
Runaway Bay	\$442,256,665	440,379	\$1,004	\$278,967,500	570,436	\$489	\$515
Biggera Waters ²	\$127,189,169	58,802	\$2,163	\$282,022,777	434,832	\$649	\$1,514
Labrador ³	\$147,925,102	45,968	\$3,218	\$336,571,110	609,874	\$552	\$2,666
Southport	\$209,451,022	56,873	\$3,683	\$293,484,443	424,095	\$692	\$2,991
Main Beach ⁴	\$210,900,000	79,671	\$2,647			\$692	\$1,955
The Spit	-	-	-	-	-	-	-
Total	\$2,055,127,228	1,831,632	\$1,122	\$1,724,531,421	2,975,132	\$580	\$542

1. A reas do not represent the actual suburbs. The area names are used purely to reference the defined areas in Appendix B

 Valuation for Biggera Waters based on 'Tourist & Residential' Land Use in addition to 'Residential'
 Valuation for Labrador based on 'Tourist & Residential' Land Use in addition to 'Residential' 4. Main Beach has had Southport 1Block Back applied as the comparable

- Residential land surrounding the Gold Coast Broadwater was estimated to be valued at \$2.055 billion for the 2011/12 year.
- Based on a catchment size of around 1.83 million square metres, this equates to a value per square metre of \$1,122 recorded for 2011/12
- Residential land one block back from the Gold Coast Broadwater was estimated to be valued at \$1.725 billion for the 2011/12 year.
- Based on a catchment size of around 2.975 million square metres, this equates to a value per square metre of \$580 recorded for 2011/12
- Residential values for properties surrounding the Broadwater have seen a decline in value of around \$83.5 million between 2010/11 and 2011/12, representing a variation of just under 4%. Residential

values for properties one block back from the Broadwater have seen a decline in value of around \$8 million between 2010/11 and 2011/12, representing a variation of around 0.5%.

Due to the geographic borders of our precincts, Main Beach did not have a comparable 'One block back' catchment. Based on the locality characteristics, a nominal value equal to that of Southport has been applied.

3.1.1.2 NON-RESIDENTIAL

Values Summary - Non-Residential

BROADWATER MASTERPLAN - DEFINED AREAS - 2011/12

	Surrounding Broadwater		1 Block Back			Difference⁵	
	Valuation	Catchment Size (m ²)	Valuation (\$ per m ²)	Valuation	Catchment Size (m ²)	Valuation (\$ per m ²)	Value of Broadwater (m ²)
Areas ¹	2011/12		2011/12	2011/12		2011/12	
Paradise Point	\$25,836,266	20,055	\$1,288	\$3,996,666	4,053	\$986	\$302
Hollywell	\$13,673,333	88,871	\$154	-	-	-	\$237
Runaway Bay	-	-	-	\$37,725,961	125,234	\$301	\$237
Biggera Waters ²	\$775,000	1,768	\$438	\$11,998,333	25,984	\$462	\$237
Labrador	-	-	-	\$476,666	1,509	\$316	\$237
Southport ³	\$230,969,564	209,487	\$1,103	\$245,887,035	295,212	\$833	\$270
Main Beach	\$20,700,000	3,806	\$5,439			-	\$237
The Spit ⁴				-	-	-	-
Total	\$291,954,163	323,987	\$901	\$300,084,661	451,992	\$664	\$237

1 Areas do not represent the actual suburbs. The area names are used purely to reference the defined areas in Appendix B

Valuation for Biggera Waters has been removed based on limited size and type of comparable, the average has instead been applied
 Valuation for Southport based on 'Other' Land Use in addition to 'Commercial'

4. The Spit has been removed for non-comparable purposes
5. The difference of the total catchment (\$237) has been applied where no difference was no comparable was available

- Non-Residential land surrounding the Gold Coast Broadwater was estimated to be valued at \$404.5 million for the 2011/12 year. With The Spit removed from these calculations, Non-Residential land surrounding the Gold Coast Broadwater was estimated to be valued at \$292 million
- Excluding the 670,900 square metres of The Spit, the catchment of just under 324,000 square metres equates to a value per square metre of \$901 recorded for 2011/12
- Non-Residential land one block back from the Gold Coast Broadwater was estimated to be valued at \$300 million for the 2011/12 year.
- Based on a catchment size of just around 452,000 square metres, this equates to a value per square metre of \$664 recorded for 2011/12
- Non-Residential values consist largely of commercial properties; however community use and 'other' uses have also been included.
- Non-Residential values for properties surrounding the Broadwater have seen a proportionately larger decline in value than purely residential property, representing a variation of over 14%. This equates to a difference of around \$68 million between 2010/11 and 2011/12. Non-Residential values for properties one block back from the Broadwater have seen a proportionately larger decline in value than purely residential property, representing a variation of over 14%. This equates to a difference of around \$68 million between 2010/11 and 2011/12. Non-Residential values for properties one block back from the Broadwater have seen a proportionately larger decline in value than purely residential property, representing a variation of over 14%. This equates to a difference of around a \$49 million between 2010/11 and 2011/12.

Due to the variety and mix of land uses within suburbs for each catchment, it was impossible to ascertain comparable values per square metre. Consequently, for the suburbs of Hollywell, Runaway Bay, Biggera Waters, Labrador and Main Beach, a nominal figure equal to the total difference in surrounding Broadwater value to One block back value per square metre (\$237) has been applied. In addition to this, and primarily based on its land use and size, The Spit has been excluded from the table above, with its total featuring in section 3.1.1.3 below.

^{5.} The amerence of the total catchment (\$237) has Source : Gold Coast City Council (GCCC): Urbis

3.1.1.3 VALUES SUMMARY

The table below progresses from both tables in sections 3.1.1.1 and 3.1.1.2 by applying the value per square metre for each land use by the associated land surrounding the Broadwater, thus capturing the 'value' component provided by the Broadwater.

Values Summary

BROADWATER MASTERPLAN - DEFINED AREAS

		Value - Difference (\$ per m²) ⁶	Catchment Size (m ²)	Value of Broadwater
Precinct	Land Use	2011/12		2011/12
Paradise Point	Residential	\$129	1,012,584	\$130,935,774
	Non-Residential	\$302	20,055	\$6,060,017
Hollywell	Residential	\$476	137,355	\$65,415,295
	Non-Residential	\$237	88,871	\$21,081,391
Runaway Bay	Residential	\$515	440,379	\$226,892,577
Biggera Waters ²	Residential	\$1,514	58,802	\$89,051,444
	Non-Residential	\$237	1,768	\$419,393
Labrador ³	Residential	\$2,666	45,968	\$122,556,746
Southport ⁴	Residential	\$2,991	56,873	\$170,093,471
	Non-Residential	\$270	209,487	\$56,484,322
Main Beach ⁵	Residential	\$1,955	79,671	\$155,765,657
	Non-Residential	\$237	3,806	\$902,834
The Spit	Non-Residential	-	670,900	\$112,530,769
Total			2,826,519	\$1,158,189,690

1. A reas do not represent the actual suburbs. The area names are used purely to reference the defined areas in Appendix B

Valuation for Biggera Waters based on 'Community Land Use, 'Tourist & Residential' Land Use in addition to 'Residential'
 Valuation for Labrador based on 'Tourist & Residential' Land Use in addition to 'Residential'

Valuation for Southport based on 'Other' Land Use in addition to 'Commercial'
 Main Beach has had Southport 1Block Back applied as the comparable.

Main Beach has had southport inforce back applied as the comparable.
 The difference of the total catchment (\$227) has been applied where no difference was no comparable was available

Source : Gold Coast City Council (GCCC); Urbis

- Value uplift created by the Broadwater ranged from \$129 per square metre to \$2,991 per square metre for Residential land use, and from \$237 per square metre to \$302 per square metre for Non-Residential land use.
- Based on the total catchment and both residential and non-residential values, the property related value of the Broadwater is \$1.158 billion. This is essentially the value created by the Broadwater for sites in its direct surrounds.

3.1.2 MARINA VALUES

The value of marina berths for boats that access the Broadwater is considered to be a component of the overall economic value of the Broadwater. The value of these has been estimated from information on current asking prices for marina berths on the Broadwater and in close proximity. Maritime Safety Queensland has provided estimates of the number of marina berths with a direct relationship to the Broadwater. We have applied average values per lineal metre of marina berths to these figures to estimate the overall value of marina berths benefiting from the Broadwater (shown below).

Gold Coast Marina Prices

BROADWATER LOCALITIES - 2011/2012

Location	Length (metres)	Price	Price per metre	Additions
Coomera River	14	\$225,000	\$16,071	Shed
Coomera River	15	\$169,000	\$11,267	
Coomera River	14	\$160,000	\$11,429	
Coomera River	16	\$270,000	\$16,875	Shed
Southport YC	16	\$159,000	\$9,938	
Hope Island	30	\$449,000	\$14,967	
Average			\$13,424	
Base Average			\$10,878	
0				

Source : www.boatsonsale.com.au; Urbis

We acknowledge this is a limited sample to estimate marina berth values and subsequently we have calculated a Base Average rate which eliminates inconsistencies associated with very large marina berths and berths that have additional factors such as sheds. The Base Average reflects a rate of \$10,878 per metre. Given this is an asking price and not a sale price which would more accurately reflect true value we have discounted this figure by 5%. This provides an average lineal metre rate of \$10,334, say \$10,300 per metre. This figure has then been applied to the volume of marina berths identified as benefiting from the Broadwater.

Gold Coast Marina Berths - Summary

BROADWATER LOCALITIES and GOLD COAST TOTAL - 2011/2012

			Berths (#)		
Customer Name	Suburb	< 12 metres	12 - 18 metres	> 18 metres	Total
Bayview Harbour Yacht Squadron	Runaway Bay	125	69	5	199
ldjit Pty Ltd	Paradise Point	4	0	0	4
Ephraim Island PBC - CTS33951	Paradise Point	71	38	7	116
Sovereign Island Marina	Paradise Point	0	20	0	20
Runaway Bay Shopping Village	Runaway Bay	7	1	0	8
Southport Yacht Club Inc	Main Beach	87	186	13	286
Mariner's Cove	Main Beach	33	58	8	99
Palazzo Versace	Main Beach	16	48	25	89
Marina Mirage	Main Beach	0	29	44	73
Gold Coast Fishermans Co-Op	Main Beach	0	18	0	18
Howard's Landing	Southport	3	2	0	5
(1) Total Broadwater Marina Berths		346	469	102	917
(2) Assumed Average metres per Berth (m)		10	14	22	
(1) x (2) = (3) Estimated total Berth metres (m))	3,460	6,566	2,244	
(4) Base Average (\$/m)		\$10,300	Price per metre b	ased on Average	Sales Rates
(3) x (4) = (5) Base Average Value of Broadwater Marinas		\$35,638,000	\$67,629,800	\$23,113,200	\$126,381,000

 The total Value of Broadwater Marinas is estimated to be around \$126 million. This has been based on assumed average marina berth lengths with the application of a base average price per metre.

3.1.3 ADDITIONAL AMENITY AND BRAND VALUE

The amenity value of the Broadwater is reflected in a number of factors including property values, marina values, and number of visitors to the Broadwater. There is also amenity value above these factors that is not easily measured. This is also partly reflected in the strength of the Gold Coast brand. In economic

terms these are considered non-use values that do not have market values. They can be considered as existence values and bequest values. There are no easily available direct measures of these factors however an indirect measure can be considered the scale of open space within the Broadwater foreshore precinct. This is a notable measure that is readily available and can be measured on an annual basis. Impacts to the scale and quality of this land can also be assessed.

Information on the scale of the different forms of open space in the Broadwater foreshore precinct have been provided by Gold Coast City Council Parks division. These estimates are displayed below, with maps available in Appendix B.

Open Space Provisions

BROADWATER MASTERPLAN - DEFINED AREAS - 2010-11

Provision	Type/Quality	Size (m²)
James Cook Park	Local	6,900
Centenary Park	Local	7,600
Central Broadwater 1	Local	6,000
Central Broadwater 2	Local	16,000
Central Broadwater 3	Local	11,000
Central Broadwater 4	Local	13,000
Muriel Henchman Park	Local	84,000
Jack Gordon Park	Local	11,000
Paradise Point Parklands	Premium	72,000
Harley Park	Premium	25,000
Broadwater Parklands	Premium	210,000
Pelican Beach Park	Premium	18,000
Quota Park	Profile	14,000
Len Fox Park	Profile	48,000
Total		542,500
Source : GCCC Parks; Urbis		

3.1.4 VALUE OF OPEN SPACE

Open space land has been identified by the State Government and the Gold Coast City Council to be preserved for the community's use. There are a number of economic techniques for measuring non-market goods. Shadow pricing is a common approach to measuring the value of such public goods where a market equivalent is readily available. In this instance the residential or commercial site value. This can be considered the opportunity cost of keeping the land as open space. In this situation the alternative value of the land for residential or commercial use is considered to be of lower value than the value of the land for open space otherwise the community would have chosen to use the land for these uses. Thus the shadow price of the open space land is acknowledged as being a conservative estimate of the value of this land.

With this in mind we have calculated the land value per square metre for each precinct based on a mix of residential and commercial uses and multiplied this by the amount of open space in the relevant Broadwater area. The calculation for land value per square metre is shown below.

Precinct Areas Size Summary

BROADWATER MASTERPLAN - DEFINED AREAS - 2010-11

Areas ¹	Approximate Size (sq.m) ²	Value of Area	\$/sq.m
Paradise Point	1,032,639	\$808,717,559	\$783
Hollywell	226,226	\$148,197,310	\$655
Runaway Bay	440,379	\$442,256,665	\$1,004
Biggera Waters	60,570	\$127,964,169	\$2,113
Labrador	45,968	\$147,925,102	\$3,218
Southport	266,360	\$440,420,586	\$1,653
Main Beach	83,477	\$231,600,000	\$2,774
The Spit	670,900	\$112,530,769	\$168

1 Areas do not represent the actual suburbs. The area names are used purely to reference the defined areas in Appendix B 2. Approximate sze has a 30% provision subtracted for raods and water provisions Source : GCCC; Urbis

This dollar per square metre rate has been established by dividing the total size (both residential and nonresidential land uses) by the total value of each suburb, with all information provided by the Gold Coast City Council. The land value per square metre for each precinct has then been multiplied by the amount of open space in the relevant Broadwater area. This calculation is seen below.

Open Space - Value

DEFINED AREAS - 2010-11 - VALUE

Provision	Type/Quality	Suburb	Size (m²)	Adopted Value
James Cook Park	Local	Hollywell	6,900	4,520,088
Centenary Park	Local	Hollywell	7,600	4,978,648
Central Broadwater 1	Local	Runaway Bay	6,000	6,025,582
Central Broadwater 2	Local	Runaway Bay	16,000	16,068,220
Central Broadwater 3	Local	Runaway Bay	11,000	11,046,901
Central Broadwater 4	Local	Runaway Bay	13,000	13,055,429
Muriel Henchman Park	Local	The Spit	84,000	14,089,409
Jack Gordon Park	Local	Main Beach	11,000	30,518,586
Paradise Point Parklands	Premium	Paradise Point	72,000	56,387,241
Harley Park	Premium	Labrador	25,000	80,450,042
Broadwater Parklands	Premium	Southport	210,000	347,230,527
Pelican Beach Park	Premium	Main Beach	18,000	49,939,504
Quota Park	Profile	Biggera Waters	14,000	29,577,322
Len Fox Park	Profile	Labrador	48,000	154,464,081
Total			542,500	\$ 818,351,580.63

Source : GCCC Parks; Urbis

The total Value of open space (parklands) has therefore been calculated at around \$818 million for areas within the defined Masterplan area. It is important to note that this is a minimum value as the highest opportunity cost (Residential/Commercial land) has been used as a proxy of the next highest value use.

3.1.5 VALUE OF ENVIRONMENTAL LANDS

Environmental land includes natural open space areas that have been retained for their environmental value. This includes National parks, State parks and forests, and Conservation parks and areas. These are considered to be of higher value than open space land (agreed by Project Steering Committee and consistent with community principles and values). The areas identified as Environmental lands in the Gold Coast Broadwater Study area are:

- Wave Break Island = 37 ha
- Mangrove area of Broadwater Parklands (south western edge) = 1.2 ha
- Southern point of South Stradbroke Island = 56 ha

The principle of opportunity cost of non-developed land, such as open space, was established in the previous Value of Open Space section. This applies an alternative land use value (residential or commercial), that can be measured in the market, to the open space. In this case, the environmental land. An alternative method is the cost of creating and maintaining such land (Replacement Cost method). In the case of the Mangrove area of the Broadwater Parklands the cost to create and maintain this land have been identified by the Gold Coast City Council as \$1.3 million for 1.2 hectares of land. This includes the costs for civil, landscape, and marine works as well as dredging costs. This equates to a cost of \$108.3/m2. Notably this cost is substantially less than the alternative use value of this land for residential development which is in the order of \$577/m2. Thus applying a replacement cost approach substantially undervalues the economic value of Environmental land within the Broadwater. With this in mind the opportunity cost approach of applying proxy values (shadow prices) to the environmental lands has been adopted.

Utilising the Open Space proxy values, the minimum value of the Broadwater based environmental lands can be estimated as outlined in the following table.

Environmental Lands - Value

DEFINED AREAS - 2010-11 - VALUE			
Environmental Land	Assumed \$/m ²	Size (m²)	Adopted Value
Wave Break Island	Southport	370,000	611,787,118
Broadwater Parklands (Mangrove Area - South Western Edge)	Southport	12,000	19,841,744
South Stradbroke Island (Southern Point)	Southport	560,000	925,948,071
Total		942,000	\$ 1,557,576,934
Source : GCCC Parks; Urbis			

The total value (minimum) of environmental lands within the Gold Coast Broadwater Master Plan area is estimated at \$1.558 billion.

3.1.6 FACILITATING RECREATIONAL INFRASTRUCTURE

A further economic value component of the Gold Coast Broadwater is the value of recreational infrastructure such as boat ramps, marine walls, jetties and wharves that facilitate and enhance business and recreational activities on the Broadwater. Traditional market values are generally not applicable for these forms of infrastructure as they are not generally tradeable items. Thus an appropriate method to value these components is the replacement cost method whereby components are valued as what they would cost to be replaced as new.

The Gold Coast City Council has provided replacement cost estimates for identified facilitating infrastructure within the Gold Coast Broadwater foreshore areas, as outlined below.

Value of Infrastructure

BROADWATER MASTERPLAN - DEFINED AREAS - 2010/11

Component	Value (\$)
Transport and Main Roads - TSD	\$98,539,603
Transport and Main Roads - MSQ	\$38,648,675
Gold Coast City Council	\$3,665,111
Sand Bypass System	\$11,547,357
Total	\$152,400,746

1. Costs are based on NPV not replacement costs. Source: GCC; Urbis The various categories of infrastructure have been split between their respective property managers, as well as a separate provision for the Broadwater Sand Bypass System. Costs have been established via their current **net present value** (Source: Marine Safety Queensland), however as replacement costs are estimated to be higher in some cases, the current value components are considered to be conservative.

3.1.7 WASTE TREATMENT

The Gold Coast Seaway within the Broadwater plays an important role in disposing of treated waste water. At present the Seaway disposes of the majority of waste water on the Gold Coast. Waste water is discharged on the ebb tides through outlet pipes near the north and south walls of the Seaway. The system is reaching capacity and has between 7-13 years remaining before it will need additional capacity built A range of long term release options are being explored with no decision made on the preferred option. These options will range in scale and cost, however a current estimate of a potential long term release option is in the order of \$300-\$400 million. This essentially reflects the replacement cost of the current system which has been identified as a component of the economic value of the Broadwater. For the purposes of the economic value of the Broadwater we have assumed a value of **\$350 million** from the waste water discharge function of the Seaway.

3.1.8 EMPLOYMENT

The Broadwater generates economic value through the support of employment opportunities that can be directly attributable to the location and amenity of the Broadwater. A component of this value is captured in the value of the commercial land that accommodates businesses within the Broadwater foreshore area. However there is a wider economic and social benefit from generating of employment opportunities. Whilst there are measures that can be applied to estimate this value in dollar terms they suffer from issues of double counting, inconsistency over time, and the application of industry averages to micro businesses.

On this basis it has been deemed sufficient to provide purely an estimate of the number of jobs directly supported by the Broadwater. This can be used as a measure to assess change over time and the impacts of development projects within the Broadwater master plan area.

Employment estimates for businesses directly benefiting from location within the Broadwater foreshore precinct have been based on a site survey of businesses by size of business and the application of industry employee floorspace benchmarks. The results of this survey are shown below.

Broadwater Employment Estimates¹

SITE SURVEY - APRIL 2012

Broadwater Precinct	Land Use ²	Floor Size (m²)	Retail Tenancies (No.)	Estimated Employment (No.)	Dependence of Broadwater on Employment (No.) ³	Dependence of Broadwater on Employment (%)
Southport	Commercial	37,102		1,855	139	8%
	Retail		290	1,789	39	2%
	Services		38	505	24	5%
Main Beach	Services		1	40	40	100%
The Spit	Commercial	2,000		100	100	100%
·	Retail		113	494	482	98%
	Services		9	1,499	1,487	99%
Labrador	Retail		38	249	93	37%
	Services		2	15	12	80%
Biggera Waters	Retail		8	51	0	0%
	Services		1	30	0	0%
Runaway Bay	Retail		146	1,208	48	4%
	Services		9	92	12	13%
Paradise Point	Retail		13	72	0	0%
	Services		14	105	0	0%
Total		39,102	682	8,104	2,476	31%

1. The areas are based on an estimate of all land within 1 block of the Broadwater. This definition was derived by Urbis. A cadastral map was developed by GCCC based on the 1 block definition.

This developed map was approved by Urbis before any data was extracted from GCCC's rates database. Commercial employment has been based on floorspace estimates and workspace density benchmarks, Retail and Services employment has been based on business counts with average employment densities applied.

3. Dependence has been based on the need for the location next to the Broadwater for the subject business.

Source : GCCC; Urbis

The business and employment survey picked up an estimated 39,000m² of commercial office space and 682 retail and services tenancies within the subject area (approximately 1 block from the Broadwater). Based on the application of commercial and retail employment density benchmarks, an estimated 8,100 full time equivalent employees (FTE) are employed in these premises with approximately 31% (2,500 employees) in businesses that are dependent on the Broadwater.

SUMMARY OF ECONOMIC VALUE COMPONENTS 3.1.9

By combining all the value components identified for this assessment, an annual value can be ascribed to the Gold Coast Broadwater. The value components are summed in the following table to derive an economic value of the Gold Coast Broadwater in 2012 of \$??

VALUE COMPONENT	VALUE
Residential and Non Residential Property Values	\$1,158,189,690
Marina Values	\$126,381,000
Open Space Value	\$818,351,581
Environmental land value	\$1,557,576,934
Infrastructure Values	\$152,400,746

	\$4 462 800 0E0
Waste Water Treatment	\$350,000,000

3.2 ANNUAL ECONOMIC RETURNS

In defining the Value Components of the Gold Coast Broadwater a number of measures have been identified that measure annual economic returns generated by the Broadwater rather than a point in time value. These include the following measures.

VALUE COMPONENT	MEASURE
 Property revenue - Residential, Commercial 	 Rates revenue
 Value of open space parks 	 Annual maintenance cost (minus inflation)
 Additional amenity value, brand values 	 Tourist visitation numbers - Events
	 Boats on B/W
	Car Traffic on Spit
 Recreational value - Boating/Paddling; Sail/swim; Pedestrians; Cycling 	 Cost of dredging
	 Boats on B/W
	 No. of Marina berth/moorings
	 Traffic counts (the spit)
 Waste Treatment - Stormwater Disposal; Wastewater Discharge 	 Discharge Volumes
 Congestion – Waterway, Traffic 	 Boats on B/W
	Car Traffic on Spit

These measures are investigated in the following sections.

3.2.1 PROPERTY REVENUES

In addition to having a market value the property benefiting from the Broadwater also generates annual income for the Gold Coast community in the form of rates revenue. Gold Coast City Council administers an extensive program of rates covering a wide range of local government services. As part of this assessment the Gold Coast City Council has calculated the annual rates revenue for all residential and commercial property within one block of the Gold Coast Broadwater study area.

It is important to note that rates revenue is based on site value and subsequently all of this revenue is not attributable to the existence of the Broadwater. The true measure of this would be the difference between the rates revenue from this area and an equivalent area not benefited by the Broadwater. However as we noted in the Property Value assessment this is virtually impossible to do given the range of other influencing factors at play in land valuation.

Thus the following estimates are best used as a measure of the change in annual revenue generated by the Broadwater. This can be compared on a percentage basis to the change in rates revenue for the overall Gold Coast to determine the increase in annual rates revenue attributable to the Broadwater.

Rates Summary - Residential

BROADWATER MASTERPLAN - DEFINED AREAS - 2010/11

	Valu	ation	Value V	ariation
. 1	valu	ation	value va	
Areas	2010/11	2011/12	\$	%
Paradise Point	3,235,395	3,463,610	228,215	7.1%
Hollywell	629,325	675,577	46,252	7.3%
Runaway Bay	2,335,207	2,437,765	102,558	4.4%
Biggera Waters ²	1,150,984	1,157,086	6,102	0.5%
Labrador ²	1,582,685	1,608,212	25,526	1.6%
Southport	2,475,226	2,560,078	84,852	3.4%
Main Beach	1,264,528	1,347,751	83,223	6.6%
The Spit	-	-		
Total	12,673,350	13,250,079	576,729	4.6%

1 Areas do not represent the actual suburbs. The area names are used purely to reference the defined areas in Appendix B 2. Valuation for Biggera Waters and Labrador based on 'Tourist & Residential' Land Use in addition to 'Residential'

Source : Gold Coast City Council (GCCC); Urbis

- Gold Coast Residential properties contributed \$13.25 million to the Gold Coast City Council over the 2011/12 year.
- Residential rates for properties surrounding the Broadwater have seen an increase in value of around \$577 thousand between 2010/11 and 2011/12, representing a variation of 4.6%.
- Despite the difficult Gold Coast residential market, the rates base continues to show growth in the residential sector.

Rates Summary - Non-Residential

BROADWATER MASTERPLAN - DEFINED AREAS - 2010/11

	Valuation		Value Variation	
Areas ¹	2010/11	2011/12	\$	%
Paradise Point	233,512	267,413	33,901	14.5%
Hollywell	108,248	124,128	15,880	14.7%
Runaway Bay	-	-	-	-
Biggera Waters ²	6,065	6,832	767	12.6%
Labrador	-	-	-	-
Southport ³	2,417,704	2,332,902	-84,801	-3.5%
Main Beach	196,027	203,456	7,429	3.8%
The Spit	1,258,842	1,447,232	188,389	15.0%
Total	4,220,397	4,381,963	161,566	3.8%

1 Areas do not represent the actual suburbs. The area names are used purely to reference the defined areas in Appendix B

2. Valuation for Biggera Waters based on 'Community' Land Use

3. Valuation for Southport based on 'Other' Land Use in addition to 'Commercial'

Source : Gold Coast City Council (GCCC); Urbis

- Gold Coast Non-Residential properties contributed \$4.38 million to the Gold Coast City Council over the 2011/12 year.
- Non Residential rates for properties surrounding the Broadwater have seen an increase in value of around \$161 thousand between 2010/11 and 2011/12, representing a variation of 3.8%.
- Like Residential rates, Non Residential rates continue to show growth despite the rates group including property types such as commercial, which is a very poor performer in its market.
- Non Residential rates form around one quarter of the total rates base of the Broadwater area.

Rates Summary - Residential and Non-Residential

BROADWATER MASTERPLAN - DEFINED AREAS - 2010/11

	Valu	ation	Value Va	ariation
Areas ¹	2010/11	2011/12	\$	%
Paradise Point	3,468,907	3,731,024	262,117	7.6%
Hollywell	737,572	799,705	62,132	8.4%
Runaway Bay	2,335,207	2,437,765	102,558	4.4%
Biggera Waters ²	1,157,049	1,163,918	6,869	0.6%
Labrador ⁴	1,582,685	1,608,212	25,526	1.6%
Southport ³	4,892,929	4,892,980	51	0.0%
Main Beach	1,460,554	1,551,207	90,652	6.2%
The Spit	1,258,842	1,447,232	188,389	15.0%
Total	16,893,747	17,632,042	738,295	4.4%

1 A reas do not represent the actual suburbs. The area names are used purely to reference the defined areas in Appendix B

2. Valuation for Biggera Waters based on 'Community' Land Use, 'Tourist & Residential' Land Use in addition to 'Residential'

3. Valuation for Southport based on 'Other' Land Use in addition to 'Commercial'

4. Valuation for Labrador based on 'Tourist & Residential' Land Use in addition to 'Residential'

Source : Gold Coast City Council (GCCC); Urbis

- In total, Residential and Non-Residential rates represented a total rates contribution for Broadwater property of \$17.63 million for the 2011/12 year
- The total Residential and Non-Residential rates have registered an increase in value of 4.4%. This
 equates to a difference of around a \$738 thousand between 2010/11 and 2011/12.

3.2.2 OPEN SPACE

There is an annual economic measure of the value of open space associated with the Broadwater. This can be assessed in terms of Shadow Costs, or the annual maintenance costs of maintaining this open space. The concept here is that the community, through the Council, has assessed the annual return of this open space as being at least equivalent to the cost to maintain it. Once again this can be considered a conservative estimate.

The following table identifies the annual costs for maintaining open space within the Broadwater study area.

Open Space - Annual Cost

DEFINED AREAS - 2010-11 - COSTS BASED OPERATIONAL COSTS

Provision	Type/Quality	Size (m²)	Adopted Cost (\$)
James Cook Park	Local	6,900	19,182
Centenary Park	Local	7,600	21,128
Central Broadwater 1	Local	6,000	16,680
Central Broadwater 2	Local	16,000	44,480
Central Broadwater 3	Local	11,000	30,580
Central Broadwater 4	Local	13,000	36,140
Muriel Henchman Park	Local	84,000	233,520
Jack Gordon Park	Local	11,000	30,580
Paradise Point Parklands	Premium	72,000	333,600
Harley Park	Premium	25,000	115,833
Broadwater Parklands	Premium	210,000	2,119,250
Pelican Beach Park	Premium	18,000	83,400
Quota Park	Profile	14,000	25,947
Len Fox Park	Profile	48,000	88,960
Total		542,500	3,199,280

Source : GCCC Parks; Urbis

Costs have been established via the known rate for premium parks and applying this rate across the other open spaces in the Broadwater area on a square metre basis. Local and profile parks are set 60% and 40% of premium rates respectively as per current Broadwater cost provisions. Total adopted cost for the 542,500 sq. m of open space is \$3.199 million.

Changes to these costs on an annual basis will reflect changes in the annual economic return generated by this open space as reflected by the Community's assessment of the value of this space. This factor can also be used to assess the impact of any new projects or initiatives within the Gold Coast Broadwater master plan area.

3.2.3 AMENITY AND BRAND

It was noted in the Economic Value assessment section that there is value in the wider amenity generated by the Broadwater and also in the value of the Broadwater to the Gold Coast Brand. These factors are extremely difficult to measure. Indicators have been identified that represent relative measures of these factors, though not in a monetary sense. These are based on visitation estimates associated with the annual existence of the Broadwater. Measures that have been identified that can be compiled relatively practically on an annual basis include:

- Event visitation numbers
- Boating volumes on the Broadwater
- Motor vehicle movements along the Spit.

These measures are presented below.

Event Visitation Numbers

The Gold Coast runs a number of events that draw on the existence of the Broadwater. This includes events that are run annually and those that occur on a less regular basis or sporadically. These events are outlined in the following table with their participation or visitation numbers shown.

Events Summary

BROADWATER MASTERPLAN - DEFINED AREAS - 2010/11

Events	Туре	Typical Attendee Count
Summafieldaze	Annual	20,000
Gold Coast Triathlon	Annual	9,000
Nissan corperate Triathlon	Annual	8,000
Gold Coast Marathon	Annual	23,800
Wilson Brisbane to Gold Coast Cycle Classic	Annual	10,000
Gold Coast 600: Concerts	Annual	16,000
Total Annual Attendees		86,800

Source : GCC; Urbis

Boating Levels

The Broadwater is a highly attractive location for marine activities, particularly boating (power and sail). There are no records kept of annual boating levels on the Broadwater, however previous studies have undertaken surveys at points in time to identify daily levels.

Vessel traffic and activity surveys were conducted in 4 months in the year over a 12 month period. These observations sessions are conducted in the following manner:

- 300 random observation sessions across the wider Gold Coast
- 5 key Gold Coast areas observed including Broadwater
- 10 Sub locals within the 10 key areas including three in the Broadwater area
- 30 sessions within the individual sub locals (90 sessions across the Broadwater area)
- Sessions are 30 minutes across the Daylight hours of 7am to 5pm

Data analysed is taken from the three locals within the Broadwater area only. These being the mouth of the Seaway, The Spit Bay and the Labrador channel. The most recent results of these surveys are shown below.

Vessel Count by Location - Summary

BROADWATER - MARINE AREA 12 - 2011



Source : Vessel Activity Observation Program MSQ, Urbis

Vessel counts in the Gold Coast Broadwater have been collated via area, being the Spit Mouth, Spit Port/Bay and the Labrador channel. The Spit Port displays the highest levels of vessel traffic over the surveyed periods at approximately 850 vessels, followed by the Spit's Mouth at 550, and Labrador at 375. Spit Port/Bay is a shelter for vessels and key loading zone for recreational boating within the Broadwater which reflects the high level of traffic counts.

Vessel Count by Season - Summary

BROADWATER - MARINE AREA 12 - 2011



Source : Vessel Activity Observation Program MSQ, Urbis

Vessel counts in the Gold Coast Broadwater have been collated according to season. In 2011, the January season displayed the highest level of vessel traffic at 812 vessels sightings. July displays the lowest annual vessel traffic at 274 sightings. These traffic numbers roughly coincide with the climate of the season, with the warmer summer months displaying the highest traffic numbers, as opposed to the colder winter months.

It is understood that this is not an annual survey, nor part of any government program. The level of boating activity on the Broadwater is both a measure of recreational value to the community and marine congestion. On this basis it is considered to be an important measure of the economic value and performance of the Broadwater and it is recommended that a comparable survey be undertaken on an annual basis.

Motor Vehicle Movements

The Spit is a unique part of the Gold Coast that provides key insights into the use of the Broadwater and its foreshore. Due to its narrow width and significant length (it forms a substantial eastern border of the Broadwater) visitation levels to it can be considered either directly or indirectly attributable to the Broadwater. It is noted that there are a number of significant man made attractors on the Spit including Seaworld, The Mirage, and Palazzo Versace. Whilst these are attractors in their own right there location has been significantly influenced by the existence of the Broadwater.

The Gold Coast City Council has undertaken traffic counts along the Spit at specific points in time. These counts provide an indication of the motor vehicle visitation levels to the Spit, and by proximity the Broadwater. These can be extrapolated (with care) to estimate wider visitation levels to the Spit. These estimates are shown in the following table.

Traffic Count Summary - The Spit

BROADWATER MASTERPLAN - DEFINED AREAS - 2010/11

Collection Point	Date	Traffic numbers travelling towards The Spit
Seaworld Drive, 200m South of Nara Resort	May-98	3,520
Seaworld Drive, Between Macarthur and First Roundabout	Aug-02	9,558
Seaworld Drive, North of Macarthur Pde	Jan-12	19,274

Source: GCC; Urbis

Essentially, the results in the table above have been displayed based on the relativity of their capture point. Regular collection activity at consistent locations may provide insightful ongoing measures into the popularity of the Spit.

3.2.4 RECREATIONAL VALUE

The Recreational Value of the Broadwater refers to the value that users of the Broadwater attribute to knowing they can access the Broadwater for recreational activities. In economic terms this represents both a Direct Non-market Use (use for Recreational activities) and a Non-use Existence value (knowing the Broadwater is available to use for recreational activities).

This is an extremely difficult value to measure, however indicators have been identified to reflect this value component and measure changes on an annual basis. These measures include a number of factors presented as part of other value components such as Boats on the Broadwater, Traffic counts on the Spit, and the number of marina berths. In addition to these measures the annual cost of dredging the Broadwater can be included. It is noted that this factor also represents components of ecological value. The dredging cost to the Broadwater has been identified at a cost of \$1.1 Million per annum specifically to dredge the Seaway component of the river system. This estimate has been based the dredging of 46,000m³ at the Seaway Entrance, and has been taken from the Gold Coast Waterways Access Needs Study Final Report, by GHD for the Department of Main Roads and Transport at Dec 2010.

3.2.5 WASTE TREATMENT

The Seaway in the Broadwater performs an important waste disposal role for the majority of the Gold Coast. An indicator of this role is the volume of waste discharged on an annual basis. This has both a positive and negative element to it in that the alternative methods of disposal would incur a higher cost than the Seaway method, however there can be negative environmental impacts from discharging this waste into the Seaway. A key strategy to minimise the potentially detrimental environmental effects of effluent discharge is diffusion -- to allow or encourage the effluent to disperse and thereby dilute the concentration of nutrients, etc. The Seaway facilitates a very robust tidal exchange and effluent discharge is carefully engineered to leverage this characteristic to maximise dispersion (Maritime Safety Queensland). We note that this process is carefully managed by the Gold Coast City Council and the Department of Environment and Resource Management to minimise any negative impacts.

Gold Coast Waste Water Capacity

BROADWATER MASTERPLAN - DEFINED AREAS - 2010/11

Water Mega Litres (per day)
18
110

Source : Case Study: Decision Support Systems Optimising Effluent Release in a Sub Tropical Estuarine Environment, Kirkpatrick et al; Urbis

The level of waste discharge provides a useful measure and insight into the benefit of the Seaway to the Gold Coast community. This can also be used to test proposed projects within the master plan area through analysis of the waste discharge impacts that a project will have on the level of waste discharge through the Seaway.

3.2.6 CONGESTION

Congestion is a negative externality, or cost, associated with use of the Broadwater. This is reflected in the number of boats using the Broadwater, cars on the roads surrounding the Broadwater, and people in parks and on footpaths around the Broadwater. Congestion essentially occurs only at peak times and is thus not a constant cost. As part of the economic assessment of the Broadwater the boating and motor vehicle visitation measures used in the Amenity and Brand Assessment value component can be applied. These have been outlined in a previous section.

3.3 ECONOMIC BASELINE ASSESSMENT

The Value Component analysis has identified and provided measures of a range of value components incorporating overall economic value and annual economic impacts. From this analysis an Economic Baseline for the Gold Coast Broadwater can be compiled. The intention is that this is in a format that can be updated annually. With these factors in mind we propose the inclusion of the following value components in the Gold Coast Broadwater Economic Baseline.

ECONOMIC BASELINE VALUE COMPONENT	ESTIMATED VALUE OR VOLUME
Residential and Non Residential Property Values	\$1,158,189,690
Broadwater Marina Values	\$126,381,000
Open Space Value	\$818,351,581
Environmental land value	\$1,557,576,934
Infrastructure Values	\$152,400,746

Waste Water Treatment	\$350,000,000
TOTAL VALUE	\$4,162,899,950
Employment Numbers – Dependent on Broadwater	2,500 Full time Equivalents
Area of Open Space	353,500sq.m
Area of Environmental Land	942,000 sq.m

Based on this assessment an overall monetary value of \$4.16 billion is estimated as the Economic Baseline value of the Gold Coast Broadwater in 2012. In addition to this the Broadwater is estimated to sustain 2,500 FTE direct jobs, and 35 hectares of open space and 94 hectares of environmental land.

4 Economic Monitoring

The final component of the Gold Coast Broadwater Economic Assessment includes the formulation of an Economic Monitoring Scoreboard. This is intended to incorporate a range of metrics that can be updated annually and used to assess the Economic impact of proposed projects within the Master Plan area.

4.1 ECONOMIC MONITORING SCOREBOARD

Drawing on the tools and measures derived in the Economic Assessment the Project Steering Committee worked with Urbis to define a compact set of measures that optimally represent the economic value of the Gold Coast Broadwater. The principles used in determining these measures were:

- Capture the core elements of economic value such as employment and income
- Reflect Financial value, Economic growth, and Community value
- Able to be relatively easily measured and updated regularly.

With these guiding principles the following measures were agreed on as the basis for the **Gold Coast Broadwater Economic Monitoring Scoreboard.**

ECONOMIC VALUE FACTOR	METRIC/MEASURE	DATA SOURCE
Financial Value	 Increase (or decrease) in Residential and Commercial property value relative to surrounding land 	Annual site value information from GCCC
	Increase (or decrease) in marina property value	Market value estimates for Broadwater marina berths
Economic Growth	Increase (or decrease) in direct jobs	 Project proponent; floor space surveys
	Increase (or decrease) in indirect jobs	GCCC Input Output model
	Increase in Gross Regional Product/Value Added expenditure	Employment estimates; GCCC Input Output model including GRP per worker
Community Value	 Visitation – Boats, Motor Vehicles; Pedestrians; Event attendances 	 Boat ramp counts; boat surveys; pedestrian counts; Motor vehicle counts; Event attendance counts
	 Associated infrastructure investment required by Government 	Relevant Government agency/Public Works
	 Increase (or decrease) in Open Space and Environmental land 	GCCC land register

Note: The Economic Monitoring Scoreboard utilises the GCCC's Input Output model which has been specifically developed for the Gold Coast regional economy. It can provide regional multiplier impact measures for Employment, Income, Valued Added Expenditure (equivalent to Gross Regional Product),

and Output. Care needs to be taken when applying such models as they are at best an indication of the direction and quantum of impact but do not provide the level of precision that is often attributed to them.

Having calculated the measures generated by a particular project or the change from one year to the next, it is useful to provide context for these changes and an overall assessment decision mechanism where new projects are being considered. The appropriate context to measure impacts is against the Status Quo or previous year if being used as an annual monitoring tool. This can be ascertained through a calculation of the percentage change to the measure. Not all measures are of equal value and this can be addressed through applying weightings to each measure. Summing all weightings to 100% provides an easy comparison for the relative importance of the different measures.

The change in the measure can then be multiplied by the weighting factor to determine a weighted score for each measure. The scores are then summed to provide an total score for the proposed project. An example of how this can work is shown in the Economic Monitoring Tool table below.

Gold Coast Broadwater Economic Monitoring Tool

Project Name:

Economic Value Component	Metric/measure	% Change	Weighting	Score
Financial Value	Increase (or decrease) in Residential and Commercial property value relative to surrounding land	5	20%	1.00
	Increase (or decrease) in marina property value	5	5%	0.25
Economic Growth	Increase (or decrease) in direct jobs	3	20%	0.60
	Increase (or decrease) in indirect jobs	3	10%	0.30
	Increase in Gross Regional Product/Value Added expenditure	1.5	15%	0.23
Community Value	Visitation – Boats, Motor Vehicles; Pedestrians; Event attendances	2	10%	0.20
	Associated infrastructure investment required by Government	2	5%	0.10
	Increase (or decrease) in Open Space and Environmental land	-3	15%	- 0.45
Total		19	100%	2.23

The above table incorporates weightings as a best estimate by Urbis. The Project Steering Committee may revise these estimates after initial consideration.

If a number of projects are being considered then their total scores can be compared to identify which project performs best with respect to the economic value of the Broadwater. A threshold total economic score could be identified that sets a minimum benchmark for project's to proceed.

4.2 CONCLUSION

The preparation of the Economic Baseline Assessment and Economic Monitoring Scoreboard to measure the value and potential impacts on the Gold Coast Broadwater has been a valuable exercise that can be used to provide significant economic insights for the Broadwater Master Plan. These tools can contribute to the effective monitoring of the overall performance of the Master Plan and also have applications for the economic assessment and monitoring of other natural assets within the Gold Coast and Queensland more broadly. Appendix A

Property Value – Maps & Method



Broadwater Masterplan Map: Definition of Surrounding Broadwater and 1 block back

Area definitions

The areas are based on an estimate of all land within 1 block of the Broadwater. This definition was derived by Urbis. A cadastral map was developed by GCCC based on the 1 block definition. This developed map was approved by Urbis before any data was extracted from GCCC's rates database.

- Paradise Point Extends from the top end of Paradise Point west to Paradise Parade south to Errol Avenue & Sapphire Street and extends east to include Sovereign Islands & Ephraim Island
- Hollywell Extends from Sapphire Street south to Poinsettia Street, west to Bayview Street and east to the edge of the Broadwater
- Runaway Bay Extends from Poinsettia Street south to Biggera Waters Creek, west to Bayview Street and east to the edge of the Broadwater
- Biggera Waters Extends from Biggera Waters Creek south to Broad Street & Marine Parade, west to Back Street and Brighton Street and east to the edge of the Broadwater
- Labrador Extends from Marine Parade south to Loder Creek, west to Gold Coast Highway (Frank Street) and east to the edge of the Broadwater
- Southport Extends from Loder Creek south to the Nerang River on the west side of the Sundale Bridge, west to Scarborough Street and down to Aqua Street and east to the edge of the Broadwater.
- Main Beach Extends from Tedder Avenue east to the Nerang River, from Main Beach Parade north to the Broadwater and to beginning of Seaworld Drive
- The Spit Extends from corner of Seaworld Drive & Macarthur Parade to the edge of the Spit at the Gold Coast seaway

Methodology

GCCC's Rates & Billing Services provided the full rates and values database by street address for the suburbs of Paradise Point, Hollywell, Runaway Bay, Biggera Waters, Labrador, Southport, Main Beach, South Stradbroke & Surfers Paradise.

Due to the confidentiality of this database GCCC's EDMP directorate aggregated the data by street and then by area per the definitions provided above.

Appendix B

Open Space - Maps





References

Gay, Patrick., Jeffrey Leigh-Smith, Paul Burns, Graeme McIlwain, Lance Cushion. 2005. *The Gold Coast Broadwater Community and Marine Master Plan.* Gold Coast City Council

GHD, 2010. Department of Transport and Main Roads Report for Gold Coast Waterways Access Needs Study.

Department of Infrastructure and Planning; *Gold Coast Marine Development.* Accessed May 30, 2008. http://www.dip.qld.gov.au/projects/tourism-arts-and-recreation/gold-coast-marine-development

Gold Coast City Council; Queensland's Southport Broadwater Parklands, Reflecting on our past. Imagine our future.

Gold Coast City Council; Community Budget Report and Long Term Financial Plan 2011-2012.

Gold Coast City Council; Annual Report 2010-11 Together we are creating a safe city where everyone belongs.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No.60 Foreshore Works – Paradise Point*, Harris, Justin. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No.61 Foreshore Works – Waterways Drive*, Harris, Justin. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No.62 Wavebreak Island – History, Current Usage and Safety Issues*, Arbon, David. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No.63 Wavebreak Island Open Space Options & Indicative Cost Estimates*, Nash, Michael. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No.64 Boardwalk Harbour Access Conceptual Design and Indicative cost Estimate*, Alcock, Rob. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No.65 The Spit – Community Safety Issues*, Harris, Justin. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No.66 The Spit – Oceanside Parks – Conceptual Design and Indicative Cost Estimate*, Dixon, Diane. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No.67 The Spit – Federation Walk – Conceptual Design and Indicative Cost Estimate*, Dixon, Diane. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No.68 the Spit – Marine Stadium – Conceptual Design & Indicative Cost Estimate*, Dixon, Diane. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No.69 Tourism and Cultural Heritage Precincts – Conceptual Design and Indicative Cost*, Crick-Lyon, Julia. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No. 70A Scope of Works - Overview*, Stewart, Darren. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No. 70 Fishermans Wharf Precinct (Fishing Fleet and Charter Boat Operation)*, Crick-Lyon, Julia. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No. 71 Do Nothing scenario and Associated Cost Implications*, Sheers, Eric. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No. 72 Public Funding Scenario – All Works (Identification of Council & Government Responsibilities & Financial Impact Upon Governments)*, Reidy, Angela. ed. 2002. Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No. 74 Proviate Funding Scenario (Southern Spit) Development Implications and Indicative Valuations*, Arbon, David. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No. 76 Combination Public – Private Funding Scenarios*, Arbon, David. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No. 76AOption 10 – Coastal Protection Strategy*, Jackson, Angus. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No. 77 Gold Coast City, Queensland and Australian Economic Benefits of the Various Public and Private Sector Scenarios*, Reidy, Angela. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No. 78 Gold Coast Harbour Study Area – Existing Revenue Generation from Public Sector Leasehold Tenures*, Wood, Ray. ed. 2002.

Gold Coast City Council; Gold Coast Harbour Vision 2020 Project. *Report No. 79 World Class Urban Design Principles*, Case, Bryan. ed. 2002.

Low Choy, Darryl; Czarnecki, Jill and Cebuliak, Ben. 2009. *Phase 1 Final Report – Reconceptualising the management of open space provision for growing regions: a Gold Coast case study*. Griffith University Urban Research Program

Sydney Level 21, 321 Kent Street Sydney, NSW 2000 t +02 8233 9900 f +02 8233 9966

Melbourne

Level 12, 120 Collins Street Melbourne, VIC 3000 t +03 8663 4888 f +03 8663 4999

Brisbane

Level 12, 120 Edward Street Brisbane, QLD 4000 t +07 3007 3800 f +07 3007 3811

Perth

Level 1, 55 St Georges Terrace Perth, WA 6000 t +08 9346 0500 f +08 9321 7790

Australia • Asia • Middle East w urbis.com.au e info@urbis.com.au