Shute Harbour Marina: Socio-Economic Impact Assessment

FINAL REPORT
July, 2008

Shute Harbour Marina Development Pty Ltd

Document Control

Job ID:	14598
Job Name:	Shute Harbour Marina: Socio-Economic Impact Assessment
Project Director	Gavin O'Donovan
Project Manager:	Ashley Page
Company:	Shute Harbour Marina Development Pty Ltd
Job Contact:	David Quinlan
Document Name:	SHMD - SEIA FINAL REPORT v2 1.doc
Last Saved:	18/07/2008 2:46:00 PM
Printed:	18/07/2008 2:50:00 PM

Version	Date	Reviewed Project Manager	Approved Project Director
Working Draft			
Draft v 2.0	1 April 2008	ARP	GO
Final Report	9 May 2008	ARP	GO
Final Report v2.0	18 July 2008	KL	GO

Executive Summary

Introduction

The AEC Group Limited (AEC*group*) has been engaged by Shute Harbour Marina Development Pty Ltd (SHMD Pty Ltd) to undertake a Socio-Economic Impact Assessment of the proposed Shute Harbour Marina Development. This report forms a background technical report for the Environmental Impact Assessment of the proposed Shute Harbour Marina Development.

This report describes and examines the social and economic values of the local Shute Harbour region and the broader region that may be affected by the proposed Shute Harbour Marina Development project and considers the projects impact (both beneficial and adverse) on the local and regional community and economy. The assessment also recommends mitigation strategies and monitoring regimes to ensure the social and economic values of the region are enhanced or, at least, maintained by the project.

Description of the Project

The concept master plan for the proposed Shute Harbour Marina Development incorporates water and land based components, which are summarised below:

- A world class marina facility will be developed including 669 wet berths (including 193 multi hull berths), a fixed breakwater, pontoons, hardstand, chandlery, fuelling and sullage pump out facilities, charter boat base, and required lighting and navigation infrastructure;
- Commercial and Tourism Precincts including:
    - A 4½ star tourist resort up to 5 storeys comprising 109 family suites in a format designed to suit the site and the location with underground car parking;
    - Managed Resort Accommodation, incorporating an anticipated 207 dwellings over 117 lots;
    - Marina office, amenities and car parking;
    - Charter Boat Waiting Lounge;
    - Charter boat base comprising a range of charter boat tenancies, administration and amenities;
    - Retail space and restaurants; and
    - Emergency services access and facilities;
    - Landscaped approach road, entry statement open space and gardens.
- A full range of site services such as power, water, sewer, stormwater drainage and telecommunications will be provided.

SHMD Pty Ltd will develop the site from its current state to the point at which all site preparation work is complete including the preparation of the marina and the construction of the commercial, retail, tourism and resort lots. This is expected to result in expenditure of approximately $253.4 million on labour and materials over 30 months, with activity anticipated to commence in 2008 and conclude in 2011.

SHMD Pty Ltd will then sell the resort lots to secondary developers who will undertake the construction phase for the Managed Resort Accommodation. Entities other than SHMD Pty Ltd may undertake other construction works and when complete operate the marina and commercial precincts. The tourism precinct is likely to be run in a similar model to the Mackay Marina where third parties operate and manage the hotel, marina and commercial precincts. The secondary construction activities (development of the Managed Resort Accommodation) are anticipated to result in expenditure of approximately $104.5 million on labour and materials over approximately four years.

Study Areas

The social impact assessment examines three catchments, as relevant:

- **The immediate area**: the proposed development site and surrounds, incorporating Shute Harbour and the adjacent residential area of Shutehaven.
- **The surrounding service centre**: which currently provides the majority of basic services to the development site and immediate area. This includes the settlements of Cannonvale, Airlie Beach, Flametree and Jubilee Pocket, which are within approximately half an hour's drive from the proposed development site.
- **Broader service centres**: Broader, regional level services (such as hospitals) are provided predominantly in Proserpine and Mackay City, and potential impacts in terms of provision of services in these areas will also be examined.

The economic impact assessment examines the anticipated impacts generated by the proposed development in the context of the Whitsunday LGA and the Mackay Statistical Division (SD) regional economies. Few economic impacts are anticipated to be captured by the broader Queensland economy that are not captured by the Mackay SD economy.

Existing Socio-Economic Environment

The following key points regarding the existing regional socio-economic environment can be noted:

- The population in the Whitsunday LGA has grown rapidly in the past five years, above that of the Mackay Statistical Division (SD) and Queensland;
- Whitsunday LGA has a relatively more transient population than the Mackay SD and Queensland average, recording a relatively higher proportion of people changing address within the same catchment and migrating to the region from interstate between 2001 and 2006;
- The Whitsunday LGA has a higher average age when compared to the Mackay SD and the State, although the average age for the Whitsunday LGA has declined over the past five years. This is likely due to young adults migrating to the region in search of job opportunities and coastal lifestyle, while older persons may be migrating to other regions to avoid increasing cost of living;
- The Whitsunday LGA is a culturally diverse area, recording a high percentage of overseas born persons when compared to the Mackay North Coast, Mackay SD and Queensland. However, the Whitsunday LGA records a lower proportion of persons of Indigenous heritage;
- The Whitsunday LGA has a low proportion of 'families with children' and a high proportion of 'other family', 'group' and 'other' household types compared to the Mackay SD and Queensland;
- Average household incomes are lower in Whitsunday LGA than in the Mackay SD or Queensland, although have grown at a faster rate in the past five years than the Queensland average;
- Post-school qualifications are relatively low in Whitsunday LGA when compared to the Mackay SD and Queensland;
- The Whitsunday LGA regional economy has been growing strongly over the past five years, in line with the State;
- The Whitsunday LGA economy is highly reliant on the accommodation, cafés and restaurants sector and the transport and storage sector, largely attributable to the Whitsunday's position as a key leisure tourism destination and significant air and sea transport infrastructure in the region;
- In line with the Mackay and State experiences, Whitsunday LGA is currently experiencing a tight labour market, with historically low levels of unemployment;
- Whitsunday LGA has a relatively high proportion of persons employed in the occupations of managers, labourers and community and personal service workers,

and a relatively lower proportion of persons employed in the occupations of clerical and administrative workers and professionals;

- Whitsunday LGA has experienced a strong level of dwelling investment in the past three years, with the number and value of dwelling approvals growing at a faster rate than the Mackay SD and Queensland;
- The majority of private dwellings in the Shute Harbour area are owned outright by the occupants, while the surrounding service centre (including Cannonvale, Airlie Beach, Flametree and Jubilee Pocket) is characterised by high levels of rental properties;
- Over the past year, Whitsunday LGA has experienced strong growth in the number and value of sales for house and unit properties, particularly in the suburbs of Cannonvale, Airlie Beach and Jubilee Pocket;
- Demand for house rental properties in the surrounding service centre has increased by over 20% in the past year, while demand for unit rentals has remained relatively constant;
- The availability of public and community housing in the Whitsunday LGA is relatively low, with sizable waiting lists for both State Government managed public housing and housing cooperative managed community housing;
- The average cost of housing (both home loans and rents) is higher in the immediate area and the surrounding service centre than in broader regional centres and the State, placing greater emphasis on the need for affordable housing for low income earning households in the region; and
- The immediate area and surrounding service centre of the Shute Harbour Marina Development has considerable social, community and recreational infrastructure capable of servicing the majority of the local population's needs, while regional level services are primarily provided in Proserpine and Mackay.

Social Impact Assessment

Labour Force Impacts

The proposed Shute Harbour Marina Development is expected to impact on the labour market of the immediate Shute Harbour area and the surrounding service centre during both the construction and operational phases, in terms of labour and skill requirements.

There is considered to be a strong likelihood and opportunity for continuity of construction workforce from other developments in the region, in particular the Port of Airlie development, however, to ensure a conservative assessment, the social impact assessment considers the Shute Harbour Marina Development in isolation.

Construction

The primary construction phase is anticipated to result in additional labour demand of approximately 78 FTE workers on average, with a peak of 192 positions. Current skill availability in the surrounding and broader service areas and the implementation of education, training and skills development programs is expected to enable approximately 50% (39 average, 96 peak) of the labour requirement to be sourced from within the surrounding service centre, with the remainder needing to be attracted to meet labour requirements.

The majority of the labour requirement for the secondary construction phase is expected to be sourced from existing local residential and accommodation construction companies and represent a continuation of work for these companies and employees. As such, it is not anticipated that the secondary construction phase will result in any significant change in the overall level of employment in the surrounding service centre.

Operation

During operation, a total of 142 FTE positions are anticipated to be required, with 75% (106) of these anticipated to be filled using local labour. The remaining 36 employment positions are anticipated to need to be filled from outside the surrounding service centre.

Population Impacts

Population impacts from the Shute Harbour Marina Development can result from the attraction of labour, visitors and residents that would not otherwise come to the region, and can have significant flow on impacts on demand for social infrastructure and services. The estimates of additional people migrating to the region form the basis for social infrastructure impact assessments (e.g., access to community services, accommodation and housing demand, demographic and cultural change).

Construction

Approximately 50% of the primary construction labour requirement is expected to be sourced from the existing labour pool in the surrounding service centre, with the residual anticipated to relocate to the region during their period of employment and require accommodation. Up to approximately 10% of workers moving to the region may also choose to relocate their families for the period of construction, with the residual effectively choosing to live as singles.

It is estimated that the Shute Harbour Marina Development would result in an increase from current population levels in the surrounding service centre (and Whitsunday LGA) of approximately 46 persons (39 workers and 7 additional family members), peaking at 112 persons (96 workers and 16 additional family members.

As the second stage development is anticipated to be sourced primarily from the local construction labour force it is not expected that the secondary stage construction phase of the development will result in any significant population impacts. It should be noted, however, that any second stage construction labour sourced from outside the region would be expected to result in the same types of impacts as those during the primary construction phase, but be proportionately less.

Operation

The operational phase of the development is likely to see an increase in the number of persons in the Shute Harbour precinct, resulting from employees of the marina, commercial and retail precincts, tourists staying in the hotel and managed resort accommodation and visitors accessing the area by sea.

Operational Labour

It is expected that approximately 25% of the operational workforce (36 workers) will be sourced from outside the region and relocate to the surrounding service centre, with 30% of these relocating their family with them (18 family members). This equates to a total additional persons in the region of approximately 54 persons. It is anticipated that less than 5% of the 142 operational workforce will reside in the immediate area (Shutehaven and Shute Harbour).

Tourism Precinct Visitors/ Tenants

It is anticipated that a total of 316 units/ suites will be included in the Shute Harbour Marina Development, including the Hotel and Managed Resort Accommodation. Based on prevailing average and peak demand in the Whitsunday Mainland for similar types of accommodation, an average of 220 units/ suites can be expected to be occupied throughout the course of the year, peaking at approximately 276. This equates to between 493 and 623 additional persons staying in the immediate area at any one time.

Marina Precinct Visitors

The marina precinct is expected to attract additional persons to the immediate area, although the majority of these are likely to be visitors/ tenants of the tourist precinct and so are already included in the assessment above. It is estimated that at a maximum the marina would average an additional 500 people on any one day for the sole purpose of using the marina facilities. However, these people would not be staying overnight and as such have not been included in the population estimates.

Total Additional Operational Population

Once fully operational the development is estimated to result in an average population staying in the immediate area of 493 people, with a peak of 623. The surrounding service centre and Whitsunday LGA are estimated to have a slightly higher population staying in the area of 547 people on average (677 peak) with approximately 25% of the operational labour force anticipated to reside in these areas, with some bringing their families. It should be noted that these estimates do not include people working on site or using marina facilities that do not stay in the area overnight.

Summary of Population Impacts

The analysis above indicates that the Shute Harbour Marina Development is expected to result in the following population impacts in terms of additional people residing or temporarily staying in the three catchment areas during the construction and operational phases.

Total Construction Population Impact:

Immediate Area	*Surrounding Service Centre*	*Whitsunday LGA*
Average = 0 persons	Average = 46 persons	Average = 46 persons
Peak = 0 persons	Peak = 112 persons	Peak = 112 persons

Total Operational Population Impact:

Immediate Area	*Surrounding Service Centre*	*Whitsunday LGA*
Average = 493 persons	Average = 547 persons	Average = 547 persons
Peak = 623 persons	Peak = 677 persons	Peak = 677 persons

Demographic, Social and Cultural Impacts

The size and scope of the proposed development has the potential to generate impacts on the existing demographics, lifestyle and values of the local community, access to requisite social, community and recreational facilities and services, accessibility of property, and cultural heritage. These impacts can be related to physical changes in the environment from the development itself as well as increases in population (as outlined above) flowing from the development. A number of impacts were identified following a detailed assessment of the demographic, social and cultural implications of the Shute Harbour Marina Development, and are summarised below.

Demographic Impacts

No significant demographic impacts are expected to be experienced in the immediate area or surrounding service centre as a result of the development and the associated increase in population.

Community Values and Lifestyle

The proposed development has the potential to impact on elements of the community values and lifestyle of the immediate area. This is primarily due to the size and scope of the proposed development in comparison to the current characteristics of the Shute Harbour community. Of the issues identified through consultation and research, the potential impacts on the values and lifestyle of residents in the area are:

- Potential impacts (both negative and positive) on accessibility to and enjoyment of recreational boating activities in the area;
- Potential for changes to the level of community cohesiveness and the identity of the Shute Harbour community; and
- Enhancement of recreational, leisure and employment options in the longer term.

Access and Availability of Social and Community Infrastructure and Services

Population-based benchmarks indicate that the current level of social and community infrastructure and services should generally have capacity to cater to the increase in population expected as a result of the Shute Harbour Marina Development. However, health and child care service levels appear to be currently under stress.

Access and Availability of Recreational Activities

Benchmark analysis indicate that current levels of provision for some sporting facilities, in particular sports fields and tennis courts, is below recommended levels and may be experiencing demand pressures. While the estimated increase in population is not expected to place significant additional stress on these facilities, strategies should be developed to monitor any potential impacts on access to these facilities.

Property Access and Relocation

Based on observed trends, the majority of the construction workforce that are not currently residing in the region are anticipated to seek rental accommodation where available, with relatively less expensive short stay accommodation such as caravan parks and motels a secondary option. The supply of rental properties in the surrounding service centre has increased in recent years, however, rental prices have also increased significantly and rental properties do not stay available for long due to the current high demand from other construction work crews in the area and tourists. Rapid growth in the cost of accommodation can place an increasing financial burden on low income families in the region.

During operation, it is expected that some of the operational workforce will need to be sourced from outside the region. These workers are expected to relocate and seek a residence within an appropriate travel time to their place of work, placing increased demand on the property and rental markets. However, given the relatively low number of workers (some with family members) anticipated to move to the region (36), the highly mobile nature of the surrounding service centre population (i.e. low proportion of residents in the same address as the previous year) and the considerable amount of property development currently being undertaken in the region, it is not expected that the attraction of workers to the region will have any significant impact on the property market during operation.

Traditional Owner Impacts

Consultation with traditional owners for the site (the Gia and Ngaro/Gia people) indicated that there were initially concerns regarding the impact of the development on the region's cultural heritage. These concerns primarily related to the potential impact of the proposed development on culturally significant flora and fauna, the potential to uncover archaeological findings and the involvement of cultural representatives in the construction phase of the development. Through a consultative process a Cultural Heritage Management Plan (CHMP) was developed that addresses these issues and demonstrates the high level of support for the project by the respondent parties.

The CHMP (Shute Harbour Marina Development, 2008) and the associated report that details the process by which it was achieved is a component of the EIS and has used the guiding principles and rationale of Council of Australian Government's Overcoming Indigenous Disadvantage, Key Indicators Report 2007 (Council of Australian Government, 2007) to explore the determinants of net social benefit, which are aligned to the proposed Shute Harbour Marina Development and the Aspirations initiatives agreed to in the CHMP.

The Overcoming Indigenous Disadvantage, Key Indicators Report 2007 (Council of Australian Government, 2007) provides a robust 'roadmap' for actioning change to address disadvantage and contribute to 'closing the social, economic, environmental and wellbeing gap' between Indigenous and non-Indigenous Australians.

While the SHMD does not address all indicators of disadvantage for Gia and Ngaro/Gia communities, it is closely aligned to three of the four headline indicators. This alignment is demonstrated through the potential positive impact on Gia and Ngaro peoples through the opportunity to:

- Participate in and share economic prosperity and cultural tourism opportunities;
- Support the intrinsic benefits of governance and culture in community capacity building;
- Maintain generational celebration and learning of cultural heritage traditions, language and expression;
- Contribute to functional and resilient families and communities; and
- Provide generational 'care for country', while showcasing Indigenous pride and knowledge to local, regional and international tourists.

It is therefore strongly asserted that the CHMP will contribute to positive long term outcomes for at least two Indigenous peoples – the Gia and Ngaro communities – at a local community level.

The Cultural Heritage Management Plan (CHMP) has been signed by the Gia and Ngaro/Gia people and the proponents. The CHMP has been approved and registered by the Department of Natural Resources and Water in April 2008.

Transport Accessibility and Safety Impacts

The Shute Harbour Marina Development has the potential to impact on the accessibility and safety of transport networks in the local area. Impacts have been assessed for road, water, public, pedestrian, equality and emergency access and safety, with the following impacts identified.

Road Access, Mobility and Safety

Cardno (2007a) estimate the total additional traffic in peak hour to be 168 vehicles during construction (increase of approximately 50%) and 338 vehicles during operation (increase of approximately 100%). This increase in traffic has the potential to reduce access and mobility through increased congestion, travel times and safety risks on Shute Harbour Road.

Water Access, Mobility and Safety

During construction, outside of the development site footprint there is not anticipated to be any significant reduction in water access, with the foreshore at the development site currently relatively inaccessible.

During operation, water access is expected to be enhanced through the provision of 669 marina berths and associated facilities. Water access from the existing ferry terminal and boat ramps is not expected to be impeded, with the marina designed to allow sufficient manoeuvrability and access from/ to this site.

Public Transport

Bus services currently operate between the ferry terminal and Airlie Beach, however, the ferry terminal stop is the nearest stop providing access to the development site. While no new bus services are currently planned for access to/ from the marina, it is recommended by Cardno (2007a) that strategies be developed to enable future public transport access to/ from the marina.

Bicycle and Pedestrian Access

Pedestrian access will be provided in the development site through a pedestrian boardwalk along the water edge and pedestrian paths provided along the collector roads. This will result in significant improvement in pedestrian access to, within the site and along the foreshore.

Current pedestrian access from the development site to the ferry terminal is limited. Cardno (2007a) recommend that strategies be developed to improve connectivity between the marina development site and the ferry terminal.

Equality of Access

Design of the Shute Harbour Marina Development will satisfy Whitsunday Shire Council's Universal Equity Access policy requirements for equitable access.

Emergency Access

Emergency service access is primarily provided via Shute Harbour Road, which has adequate response times of just over 10 minutes. Mitigation measures to minimise road and traffic impacts that could potentially impact on emergency service access are addressed in the Transport section of the EIS. Additional emergency service access to the site will be available via water transport or helicopter if required.

Impacts on Current Land Use

The proposed development site will not have a direct impact on private land as it is wholly contained within Lot 2 on Plan SP 117389, Lot 273 on Plan HR1757, which is currently managed by SHMD Pty Ltd. Some of the planned development area is currently occupied by swing moorings, however the swing moorings within the plan area will be relocated prior to the commencement of construction.

Concerns were initially raised by the Hamilton Island Barge operation relating to the impact of the development on the safety and operation of barges as a result of increased traffic in the Shute Harbour area. This risk has been mitigated through the preparation of a management plan for marine traffic in the area, which has been approved by the Harbour Master (Mackay).

The owners of the motel adjacent to the development site expressed some concerns regarding their ability to attract visitors during construction due to noise and dust issues. Mitigation strategies to minimise noise and dust impacts have been outlined in the 'Noise and Dust' section of the EIS.

Concerns have also been raised during consultation regarding the impact of the development on property values for adjacent properties, particularly from decreased visual amenity from the site. Mitigation strategies have been developed in the Visual Amenity report by Yurrah Pty Ltd (2007), with the visual amenity of adjacent lands expected to be maintained or enhanced via provision of view corridors through the proposed development and by screening existing incompatible uses.

Potential Environmental Harm on the Amenity of Adjacent Areas

The Shute Harbour Marina Development is not anticipated to generate any significant environmental impacts on the amenity of adjacent areas. In terms of the physical environment, no negative land based environmental impacts have been identified in the technical documents for the adjacent properties to the development or the National Park.

While the marina is expected to have some impacts on the near field aquatic environment, these impacts are assessed in sections 4.5 and 4.9 of the EIS. Further, the proponent has developed an environmental trust (Reef Conservation Fund) to be funded initially from the sale of the marina berths and on an ongoing basis through lease contributions from the owners of the marina berths that will contribute to the ongoing sustainability of the marine environment in the area.

The development will be consistent in practice and aesthetics with the existing uses of Shute Bay. Assessment of the social and economic environments indicates that the local community and businesses places a high value on water-based recreation and has a strong tourism focus, which the Shute Harbour Marina Development will enhance.

Implications for Future Developments in the Local Area

Outside the footprint of the site itself, it is not anticipated that the Shute Harbour Marina Development will constrain land use in the surrounding area. The development will provide opportunities for existing business growth and expansion due to enhanced local access to the marina and associated facilities, particularly for businesses in related upstream and downstream industries. Additional detail regarding the implications for future development in the local area is provided in the Economic Impact Assessment.

Economic Impact Assessment

Quantitative Assessment of Economic Impacts

Construction

The following table shows the forecast costs associated with the primary (SHMD Pty Ltd expenditure) and secondary (secondary developer expenditure) construction phases of the development and the proportion of that expenditure that is expected to be retained within the regional and state economies. These forecasts include sales commissions from brokerage services provided by local real estate agents for those buying and selling the Managed Resort Accommodation.

Table E.2. Construction Phase Expenditure and Regional and State Retention

Element	Development Cost ($M)	Retained in Region[(a)] ($M)	Retained in State ($M)
SHMD Pty Expenditure	$253.4	$158.1	$213.7
Secondary Developer Expenditure[(b)]	$104.5	$83.6	$94.0
Sales Commissions	$5.4	$4.3	$4.8
Total[(c)]	**$363.2**	**$245.9**	**$312.5**

Notes: (a) Regional economy is defined as the Mackay Statistical District (b) This does not include the costs of purchasing the lots from SHMD Pty Ltd as this is a transfer payment. (c) Some totals may not add up due to rounding.
Source: AEC*group*

The following table summarises the economic impact of the $363.2 million expenditure during the construction phase including the direct and flow on elements for the regional and state economies. The figures represent the total impact of the combined primary and secondary construction phases.

Table E.3. Economic Impacts of the Construction Phase ($M 2007)

	Output ($M)	Value Added ($M)	Income ($M)	Emp (FTE)
Mackay SD				
Direct	$245.9	$105.3	$44.9	552
Flow on	$91.4	$42.3	$13.6	269
Total [(a)]	**$322.9**	**$137.2**	**$51.6**	**821**
Queensland				
Direct	$312.5	$133.5	$57.4	781
Flow on	$140.0	$62.2	$19.1	393
Total [(a)]	**$452.5**	**$195.7**	**$76.5**	**1,174**

Notes: (a) Some totals may not add up due to rounding.
Source: AEC*group*

The Shute Harbour Marina Development would be expected to increase the regional economy's output by $322.9 million, including $137.2 million of value add. Household incomes in the region would be expected to increase by $51.6 million as a result of the development, with an anticipated 552 FTE employment positions generated in the region during the primary and secondary construction phases with a further 269 FTE positions created indirectly.

The State economy would be expected to benefit from an increase in output of $452.5 million, with $195.7 million of value add. Household incomes in Queensland would be expected to increase by $76.5 million as a result of the development, with additional employment of 1,174 FTE employment positions (781 direct and 393 indirect).

Operation

The following table illustrates the anticipated annual operating output from each element of the development. The assessment examines anticipated expenditure both within the Shute Harbour Marina Development itself as well as within the wider region (all expenditure is assumed to be retained within Mackay SD). This analysis only includes expenditure from visitors that would not come to the region if the Shute Harbour Marina

Development did not exist (assumed proportion for each element shown in the table below) as this represents the additional expenditure in the region as a result of the development.

Table E.4. Shute Harbour Marina Development Operating Phase Output ($M 2007)

Element	% of Expenditure Included in EIA	Annual Output ($M)	% of Total SHMD Output
Hotel Accommodation	80%	$9.4	21.4%
Managed Resort Accommodation	80%	$21.0	47.9%
Marina	90%	$3.1	7.0%
Charter Boat Base	80%	$3.4	7.9%
Commercial	80%	$4.7	10.8%
Retail	80%	$2.2	5.0%
Expenditure within SHMD	**82%** [(a)]	**$43.8**	**100%**
Expenditure outside SHMD	**82%** [(a)]	**$12.4**	
Total Expenditure	**82%**	**$56.2**	

Note: (a) This figure is a weighted average of the six SHMD elements.
Source: AEC*group*

The following table shows the expected annual economic impact of visitor expenditure as a result of the Shute Harbour Marina Development. Over the operating phase of the development, the total anticipated annual economic contribution (including direct and indirect impacts) of the development to the Mackay regional economy is estimated to be an additional $78.8 million of output, with $37.0 million of value added. Household incomes are expected to increase by approximately $13.4 million with approximately 271 FTE positions expected to be generated.

Table E.5. Economic Impacts of the Operating Phase ($M 2007)

	Mackay SD			
	Output ($M)	Value Added ($M)	Income ($M)	Emp (FTE)
Direct	$56.2	$26.9	$10.0	195
Flow on	$22.5	$10.1	$3.4	76
Total [(a)]	**$78.8**	**$37.0**	**$13.4**	**271**

Notes: (a) Some totals may not add up due to rounding.
Source: AEC*group*

Cost Benefit Assessment

The CBA assessment found that development of the Shute Harbour Marina is expected to deliver a total net benefit of $299.2 million in present value terms (NPV) at a discount rate of 10% for direct impacts (i.e. incurred by the proponent) and 6% for indirect impacts (i.e. to stakeholders other then the proponent), with present value of benefits of $984.5 million and a present value of costs of $685.3 million. Overall, the development provides a benefit cost ratio (BCR) of 1.44 (i.e. returns $1.44 for every dollar spent in delivery of the project).

The project provides a positive direct net benefit (i.e. to the proponent) in present value terms of $93.6 million with a BCR of 1.46. The project delivers a positive indirect net benefit (i.e. to stakeholders other then the proponent) in present value terms of $205.6 million with a BCR of 1.43.

It is anticipated that the overall net benefit is understated by these results as where possible a conservative approach has been applied. A number of economic and social benefits were unable to be quantified (e.g., appreciation of property values, tourism support, increased business confidence, improved access to recreational activities and enhanced community interaction), with these benefits expected to outweigh the economic and social costs identified from the SHMD project that have not been able to be quantified (e.g., additional social, community and recreational infrastructure, increased road and water traffic, noise impacts), which further supports this assessment potentially understating the benefits delivered by the SHMD development.

Table E.6. Quantitative CBA Summary

Impact	PV of Benefits ($M)	PV of Costs ($M)	Net Present Value ($M)	BCR
Direct Impacts	$295.8	$202.2	$93.6	1.46
Indirect Impacts	$688.7	$483.1	$205.6	1.43
Total Impacts	**$984.5**	**$685.3**	**$299.2**	**1.44**

Source: AEC*group*

From the outcomes of the CBA, it is clear that the direct, indirect and overall impacts of the project result in a net benefit to the community.

Qualitative Assessment of Economic Impacts

Impacts to Existing Business

The Shute Harbour Marina Development provides opportunities for local business to grow and expand their business and improve linkages with other business in the local area. The marina will enable increased tourism visitation to the region, resulting in increased tourism expenditure captured by existing local business and providing opportunities for increasing hospitality and tourism related services in the region. Additionally, the marina and associated land-based aspects of the development provides opportunities for investment in the region, with potential for flow on expenditure and wealth generation.

There are some concerns about the impact of the construction phase and the increase in marine traffic in the Shute Harbour area but these can be managed through appropriate mitigation strategies.

Distributional Effects of the Shute Harbour Marina Development

Distributional effects refer to the way in which the economic impacts of the development are expected to accrue to individuals and groups.

The construction phase will generate demand for construction workers and materials as well as other construction support services such as plant and equipment supplies. This demand is expected to be greatest in the region with any additional needs being met by the state economy, although some specialist services (for example design and architectural services) may need to be brought in from outside of the region.

This additional economic activity would be expected during both the primary and secondary construction phases. SHMD Pty Ltd are committed to using local companies wherever possible during construction. It is likely that Shute Harbour Marina Development will have an important role in providing continuity of employment for construction workers currently engaged in developments under construction in the region (e.g., the Port of Airlie Marina).

During the operational phase of the development, the distributional effects are likely to be determined by the ability of local businesses to meet the needs of the additional visitors to the area, which would appear strong given the prevailing economic driver in the region is tourism. Where local business are able to meet the needs of visitor demand, this would increase revenues for business owners and create additional local employment opportunities across a range of sectors including:

- Land and marine based tourism operators;
- Maritime support industries;
- Marine supply companies; and
- Cafés, restaurants and bars.

Beyond the benefits to businesses directly involved in either the construction or retail/commercial sectors, the additional activity associated with the construction and operation of Shute Harbour Marina Development is also likely to have a flow on economic impact across other sectors of the regional economy.

Opportunities for Direct Equity Investment

There is limited scope for direct equity investment by local businesses during the construction phase. The proponent has a commitment to engage local and regional construction firms and suppliers, however this is likely to be limited to work carried out on a contractual rather than equity basis. All marina developments are capital intensive by their nature with extensive capital works like dredging, the construction of the breakwater, berths and pontoons that must be completed before any revenue can be realised. As a result, the proponent may look to engage a suitable equity investor, however, none are identified at this time.

Opportunities exist for direct equity investment during the operating phase and the marina and tourist precincts appear to offer the greatest potential for equity partners to become involved in the development, for instance through the management of the hotel and managed resort accommodation tourism precinct. The hotel and managed resort accommodation are expected to be owned and operated by investors.

Impacts on Economic Diversity

It is expected that a large proportion of the labour requirement during the construction phase will be able to be sourced from existing developments in the region, for example the Port of Airlie development, and as such would provide a continuity of the construction workforce in the region rather than driving any significant change in the proportion of workers in the region or state that are employed in this sector.

The operational phase of the Shute Harbour Marina Development is not anticipated to have any significant impact on economic structure of the region given the relatively small number of employees involved relative to the total regional labour force and the dominant tourism and boating focus of the region.

Impacts to Local Government

Although infrastructure costs are still subject to negotiation, no requirement for extensive expansion or improvements to the existing local government services has been identified. There may be potential for the local government to improve existing facilities at Shute Harbour as a result of the development.

Council are expected to lose some revenue from no longer charging for the use of the ferry terminal, although given the low level of usage of this terminal by private boat operators this loss appears to be minimal. It is assumed there will be no net cost to Whitsunday Shire Council from the provision of additional infrastructure with services provided on a full cost recovery basis.

Additionally, the potential contribution of $2.5 million from SHMD Pty Ltd towards the costs of the new boat ramp is expected to represent a considerable saving to Whitsunday Shire Council.

Impacts on Property Prices

Some residents have expressed concerns about the impact of the development on property values. However, it is anticipated that any potential impact on property values during construction would be short-term and that there would be a net increase in property values following the completion of the development. Additional services including those directly associated with the development such as the marina, retail and commercial developments as well as indirect benefits such as the new boat ramp and improved public transport services would be expected to add to the value of property prices in the surrounding area.

Implications for Future Developments in the Local Area

The Shute Harbour Marina Development site has been identified by State Government as a safe natural harbour with potential as a marina site. In addition, the Whitsunday Region Marina Demand Analysis prepared by Brown and Root Services Asia Pacific Pty Ltd (2001) indicated that Shute Harbour is ideally suited for development of a marina. The proposed site is constrained by Conway National Park, limiting the potential of the site for alternate development uses.

The Shute Harbour Marina Development and associated land based developments have the potential to encourage future economic development in Shute Harbour, largely related to the potential upgrade of the existing ferry terminal and expansion of the marine services industry. The upgrade would be expected to improve facilities and increase the size and number of vessels that could be accommodated. Any upgrade is likely to be driven by demand for these services from the islands and resorts that the ferries currently service and fits in with the proposed development.

Additionally, the Shute Harbour Marina Development will not impede future development of other sites in the local area. The site's characteristics make it an ideal location for a marina, and the boundary of Conway National Park adjacent to the site makes the site unsuitable for development for most alternate uses.

Mitigation Measures

Mitigation measures have been recommended as appropriate to minimise potential negative impacts of the Shute Harbour Marina Development to the social and economic environments, and facilitate potential positive impacts. Mitigation measures have been developed to deliver the following outcomes:

- Source labour from the local labour pool;
- Ensure population impacts from second stage construction are minimised;
- Reduce the potential impact on access to water for recreational boating;
- Integrate the values of the existing community and their lifestyle in the proposed development;
- Enhance recreational, leisure and employment options in the longer term;
- Reduce impacts on access to health services from additional population;
- Reduce impacts on provision and access to sporting facilities from additional population;
- Facilitate local community access to recreational facilities provided by project;
- Reduce potential impacts on short stay accommodation availability, rental prices and the accessibility to traditional low-cost housing options;
- Enable future public transport access to/ from the marina;
- Improve connectivity between the marina and ferry terminal;
- Ensure equitable access within the marina and associated facilities for all persons;
- Retain as much construction expenditure as possible in the regional economy;
- Retain as much visitor expenditure as possible in the regional economy;
- Facilitate benefits to and opportunities for local business; and
- Reduce potential impacts on short stay accommodation availability for tourists.

Table of Contents

List of Tables

List of Figures

1. Introduction

1.1 Background

Shute Harbour has been identified by the Queensland Government as being a strategically located safe haven for vessels in the event of a cyclone and as a gateway to the Whitsunday Islands (Shute Harbour Marina Development, 2006). Given its strategic location to the nearby island resorts and the existing transit terminal, Shute Harbour is a major marine transport hub for the Whitsunday Island Tourist resorts.

The development of a marina facility at Shute Harbour has been proposed for some time, through a range of proponents and proposals. Port Binnli Pty Ltd, a specialist marina development organisation, purchased a 50% share in Shute Harbour Marina Development Pty Ltd in March 2006 and has subsequently redesigned the proposed marina facility in response to identified community concerns and environmental requirements.

1.2 Purpose of the Report

The AEC Group Limited (AEC*group*) has been engaged by Shute Harbour Marina Development Pty Ltd to undertake a Socio-Economic Impact Assessment of the proposed Shute Harbour Marina Development. This report forms a background technical report for the Environmental Impact Assessment of the proposed Shute Harbour Marina Development.

The report describes and examines the social and economic values of the local Shute Harbour region and the broader region that may be affected by the proposed Shute Harbour Marina Development project and considers the project's impact (both beneficial and adverse) on the local and regional community and economy. The assessment also recommends mitigation strategies and monitoring regimes to ensure the social and economic values of the region are enhanced or, at least, maintained by the project.

1.3 Study Area and Catchments Examined

1.3.1 Project Site

The project site is located in Shute Bay in the Whitsunday Shire Council Local Government Area (LGA), off Shute Harbour Road. The proposed Shute Harbour Marina Development site is described as Lot 2 on Plan SP 117389 and Lot 273 on Plan HR1757.

The site lies outside the boundary of the Great Barrier Reef Marine Park (GBRMP), Dugong Protection Areas and Fish Habitat Areas (FHA). Part of the site is within the outer margin of the World Heritage Area, and the proposed site abuts Conway National Park on the northern boundary.

1.3.2 Study Area

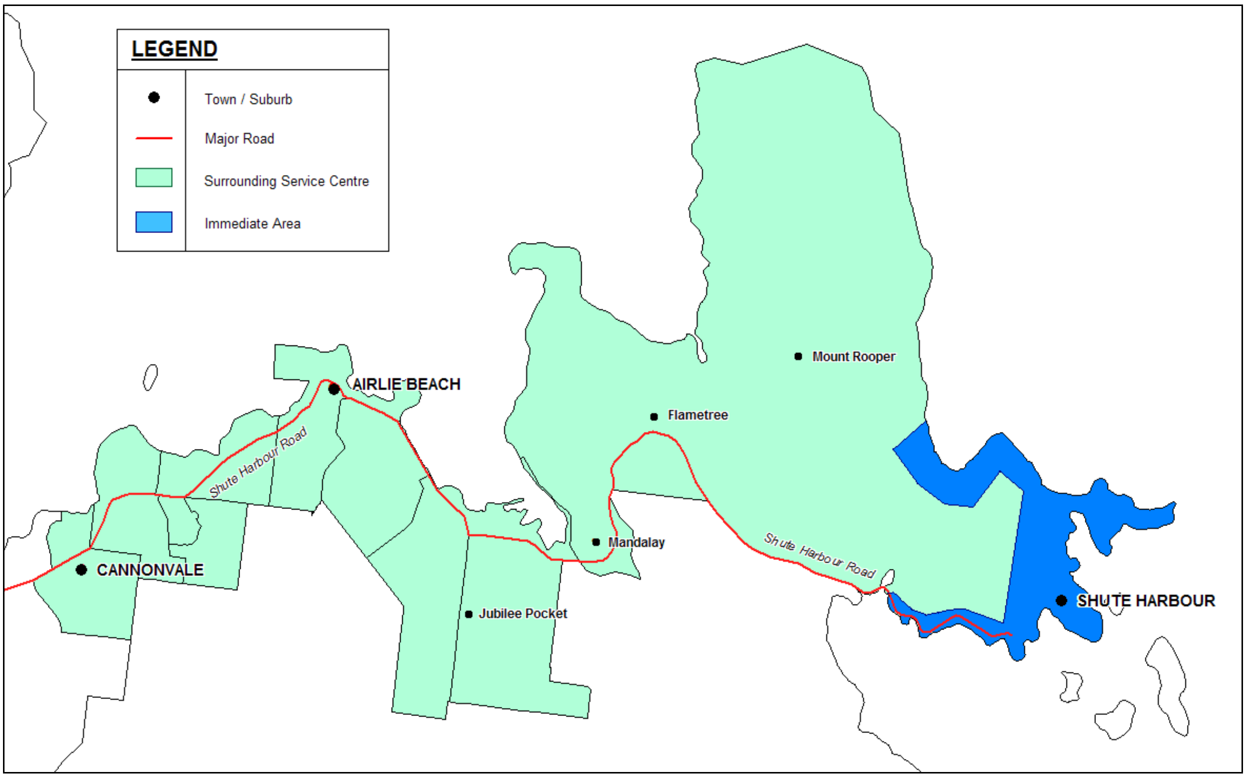
A number of different study areas are considered in this analysis. The baseline socio-economic profile focuses on the Whitsunday LGA with comparison to the Mackay North Coast, the Mackay Statistical Division (SD) and Queensland. Where possible and relevant, more localised information is presented (for example the property market statistics in the surrounding service centre).

The social impact assessment examines and refers to three catchments, as relevant throughout the analysis:

- **The immediate area**: the proposed development site and surrounds, incorporating Shute Harbour and the adjacent residential area of Shutehaven.
- **The surrounding service centre**: which currently provides the majority of basic services to the development site and immediate area. This includes the settlements of Cannonvale, Airlie Beach, Flametree and Jubilee Pocket, which are within approximately half an hour's drive from the proposed development site.

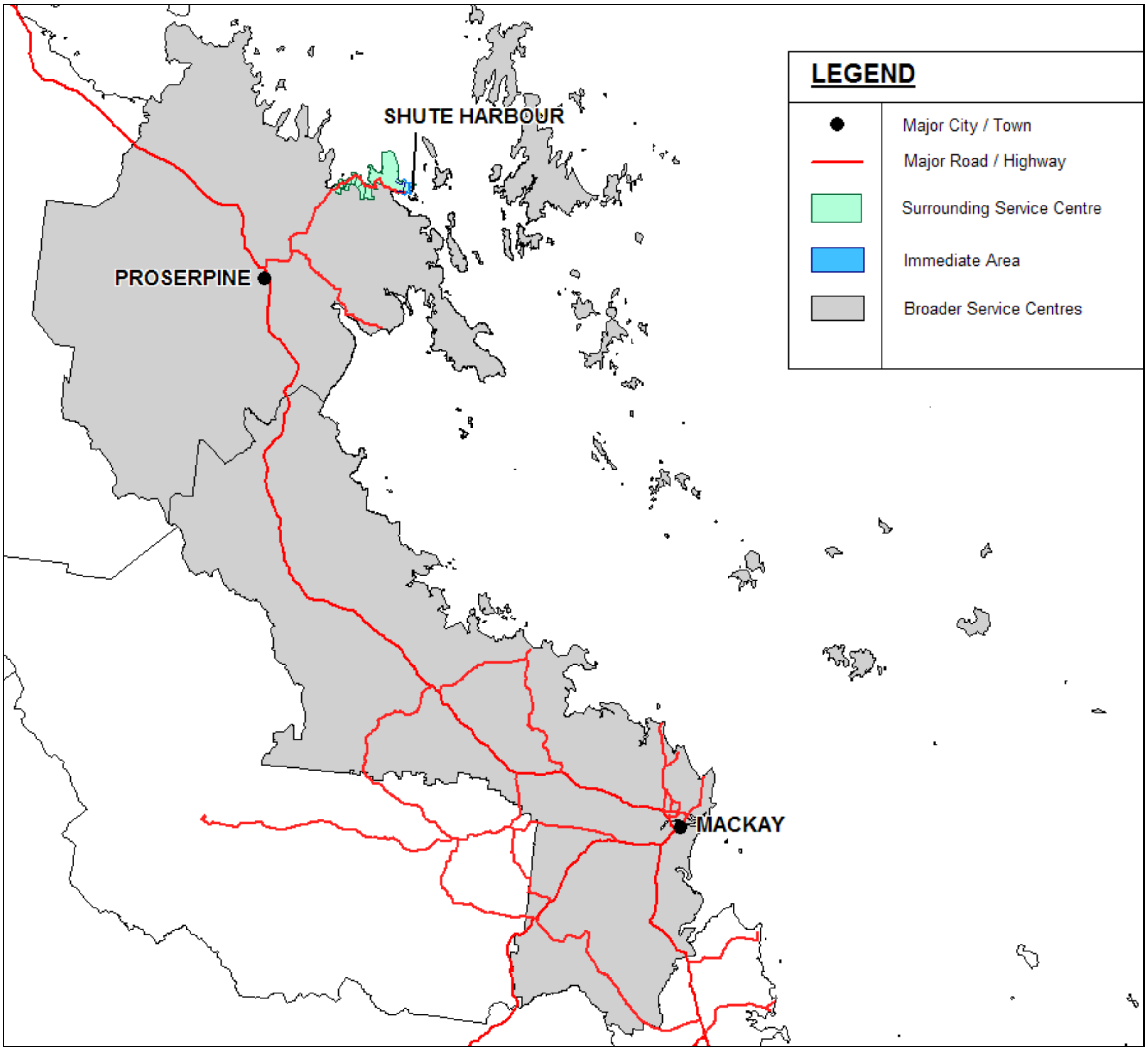
- **Broader service centres**: Broader, regional level services (such as hospitals) are provided predominantly in Proserpine and Mackay City, and potential impacts in terms of provision of services in these areas is also examined.

Figure 1.1. Map of the Immediate Area and Surrounding Service Centre



Source: Australian Bureau of Statistics (2003).

Figure 1.2. Map of the Broader Service Centres



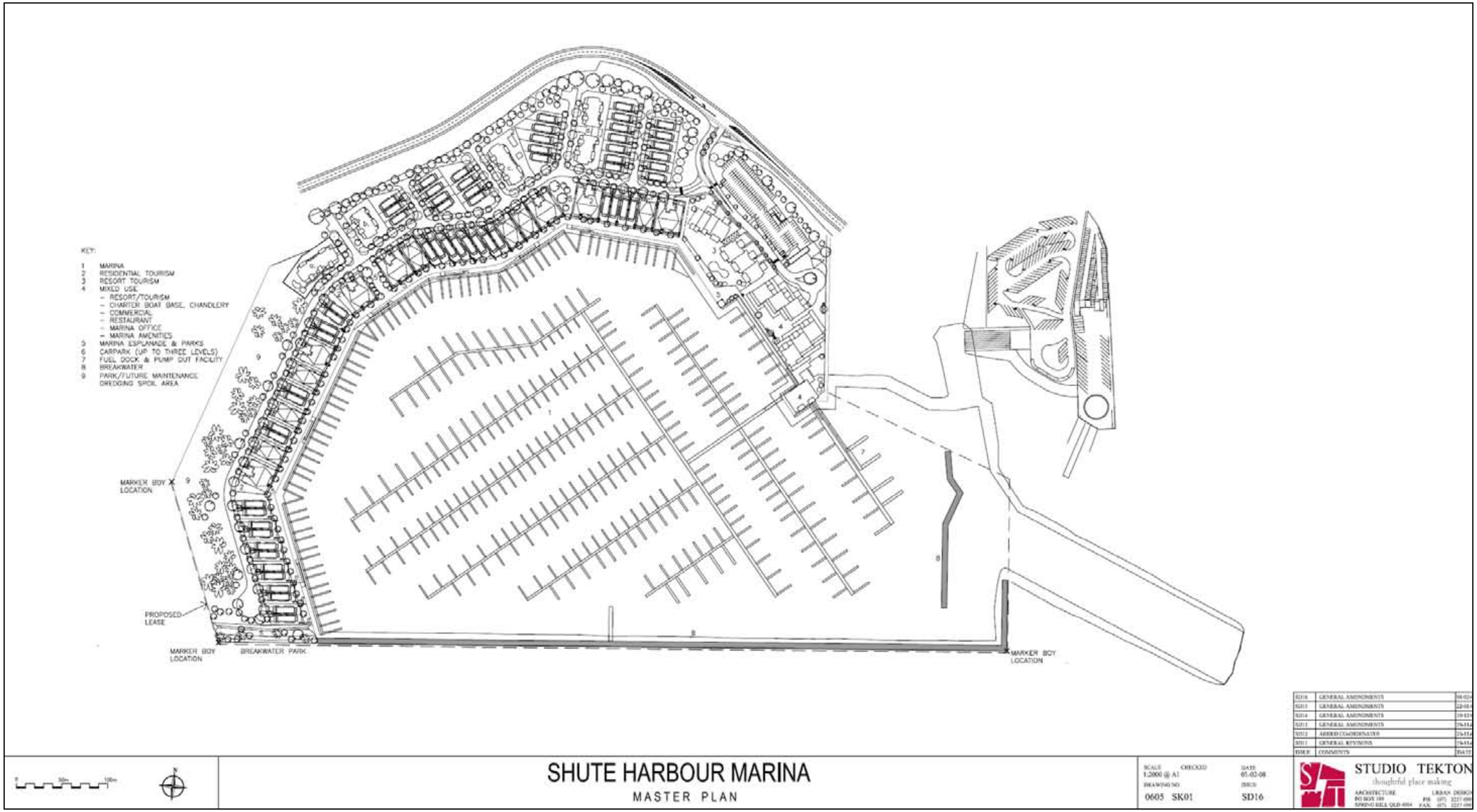
Source: Australian Bureau of Statistics (2003).

The economic impact assessment examines the anticipated impacts generated by the proposed development in the context of the Whitsunday LGA and the Mackay SD regional economies. Few economic impacts are anticipated to be captured by the broader Queensland economy that are not captured by the Mackay SD economy.

1.4 Project Description

The concept master plan for the proposed Shute Harbour Marina development incorporates water and land based components, which are summarised below and are shown in the following site Master Plan.

Figure 1.3. Shute Harbour Marina Development Master Plan



Source: Studio Tekton (2008b)

1.4.1 Marina Facility

A world class marina facility will be developed including:

- Marina providing 669 berths (including 193 multi hull berths) in a “good” wave climate constructed in accordance with Australian Design Standard AS3962-2001;
- Excavation and dredging of the marina basin to achieve navigation depths to suit the types and sizes of vessels to be accommodated;
- Fixed breakwater located at the eastern and southern edges of the site to control and dampen wave action and induce calm conditions within the marina basin;
- Fixed breakwall for marina berths accommodating vessels of various sizes ranging from 11 metres to 35 metres in length and including berths for large catamarans in accordance with Australian Design Standard AS3962-2001;
- Charter boat base for a range of charter boats directly connected to the onshore facilities; and
- All required navigation aids, lights and signage to comply with Queensland Maritime Safety requirements.

1.4.2 Onshore Development

The proponents intend to import some sand which, in addition to the excavated material from the marina basin, will form the platform for the onshore development. The water edge will be retained with sheet piling or similar structure.

The onshore development will be set at levels that can accommodate the tidal range and predicted increases in sea levels due to storm conditions and greenhouse effects. The Commercial and Tourism Precincts will include:

- A 4½ star tourist resort up to 5 storeys comprising 109 family suites in a format designed to suit the site and the location with underground car parking;
- Managed Resort Accommodation, with the architectural design controlled through design covenants and guidelines to achieve a high quality, consistent and coordinated built form appropriate to the region and the marina setting;
- Marina office and amenities and car parking;
- Charter boat base comprising a range of charter boat tenancies, administration and amenities;
- Retail space; and
- Landscaped approach road, entry statement open space and gardens.

1.4.3 Infrastructure Services and Amenities

The full range of site services such as power, water, sewer, stormwater drainage and telecommunications will be provided.

A new intersection will be developed at Shute Harbour Road and the approaches landscaped in accordance with the Deed of Agreement with the Department of Main Roads.

2. Methodology

2.1 Project Objectives

This study focuses on the delivery of three key objectives, to:

- Conduct a baseline assessment of the social and economic values using existing measures and statistics;
- Examine and discuss identified potential social and economic impacts (positive and negative) resulting from the proposed Shute Harbour Marina Development; and
- Develop and propose mitigation measures to ensure the social and economic values of the region are enhanced or, at least, maintained by the project.

These objectives are developed in response to the terms of reference released by the Coordinator General and Department of Infrastructure "Terms of Reference for an Environmental Impact Statement" (2007), specifically sections 4.11 Social and 4.13 Economic.

The EIS will be used to inform the community, business, industry and the Government of the potential impacts and benefits associated with the proposed Shute Harbour Marina Development.

2.2 Project Approach & Structure

The following process was followed in the development of the Socio-Economic Impact Assessment for the Shute Harbour Marina Development:

- Review of existing literature and policy;
- Baseline data collection and analysis;
- Consultation with key stakeholders;
- Description of the existing socio-economic environment and values;
- Social impact assessment;
- Economic impact assessment; and
- Development of appropriate mitigation strategies.

3. Alignment with Regional Planning

The Shute Harbour Marina Development project's objectives align with a number of State and Local government planning and policy documents. These documents each provide key areas for action and focus to ensure the delivery of sustainable economic development that provides environmental, social and community benefits producing prosperous communities.

The following section identifies the key priorities for each strategy and the relevant outcome delivered by the Shute Harbour Marina project for each priority.

3.1 Queensland Government Priorities

The Queensland Government Priorities have been identified by the Queensland Government to provide a directional approach to the development of policy and are outlined in the following table along with the synergies delivered by the SHMD.

Table 3.1. Alignment of Shute Harbour Marina with Queensland Government Priorities

Queensland Government Key Priorities	Delivered by Shute Harbour Development
Realising the *Smart State* (education, skills and innovation)	• **Increase employment opportunities in *Smart State* priority industries (marine & tourism sector):** Provision of a marina and tourism precinct will provide both mid term construction employment and long term marina and tourism employment opportunities in identified priority *Smart State* industries.
Protecting children and enhancing community safety	• **Emergency services and facilities:** Provision for a cyclone shelter (car-park) and water-based emergency service access (in the marina) to increase the safety standards for the community. • **The interpretative centre:** Will include operating and safety guidelines particularly relevant to sometimes relatively inexperienced charter boat users.
Managing urban growth and building Queensland's regions	• **Regional job creation:** The site will cater to the targeted increase in local and regional workforce. • **Marine industry:** Marine industry facilities and maintenance services in the surrounding service centre will support the marina and marine tourism operators.
Protecting the environment for a sustainable future	• **Sustainability:** Regulation of marine and industry practices with a 'clean and green' philosophy, including provision of a trust fund to assist in the management and maintenance of marine ecology. • **Improved management and education of recreational boaters:** The management and education of recreational boaters facilitated by the interpretative centre and education extension programs run by the marina is anticipated to assist in reducing potential detrimental impacts of recreational boaters on the reef by assisting locals, visitors and the recreational and commercial boating community to understand coastal processes and the marine environment and appropriate boating best practice. • **Rehabilitation and environmental management:** The proponent has developed a "Reef Conservation Fund" to be operated as a charitable fund and administered by the Great Barrier Reef Marine Park Authority. The Reef Conservation Fund will be funded from the sale of the marina berths, with an initial contribution, to be provided by the proponent upon the settlement of each marina berth, of approximately $1.0 million in total, with an ongoing contribution of approximately $150,000 per annum. This fund will contribute to the ongoing sustainability of the coral providing environmentally friendly moorings on the reef. Part of this funding is expected to be used for ongoing public education and awareness campaigns as part of cultural and marine interpretive centres. • **Sustainable construction and operation practices:** The marina resort buildings and facilities are to incorporate best practice sustainable construction techniques and the resort is to be run according to industry best practice.
Growing a diverse economy and creating jobs	• **Job creation and employment opportunity:** Direct and indirect flow on effects on employment with education and training opportunities to expand the skilled workforce base. • **Diversification, productivity and growth:** The development of retail, commercial and managed tourism accommodation, 4½ star hotel, and a large marina facility including charter boat hub has the ability to create a diverse community in Shute Harbour Bay with a high standard of productivity and economic growth. • **Increasing capacity of the marina market**: Increased supply of marina berths to the market that is currently undersupplied will help continue to meet the demands of the growing Queensland marine industry; • **Supporting Shute Harbour precinct:** Enhancement of the Shute Harbour Precinct's pivotal role in the Whitsundays will help support the long term growth of tourism in the region.

Source: Queensland Government Key Priorities (2006) & AEC*group*

3.2 Whitsunday Growth Management Initiative

The Whitsunday Growth Management Initiative was established to ensure a proactive response to rapid growth and development within the Whitsunday Shire (Department of Infrastructure and Planning, 2007). The Initiative was the product of a collaborative effort between the Queensland Government and the Whitsunday Shire Council, in the formation of the Whitsunday Growth Management Group.

This group is led by the Department of Infrastructure and Planning, and has maintained that a key aim of the Initiative is the development of an integrated, strategic and collaborative approach to service and infrastructure planning.

The project is closely linked to the Whitsunday Hinterland and Mackay Regional Plan (WHAM). While it is particularly focused on the high growth areas of Cannonvale and Airlie Beach, the strategy is relevant for the surrounding localities as well.

The Growth Management Initiative is currently still under review, however the Growth Management Group has released its Strategic Infrastructure and Services Plan for the Whitsundays, of which key aims are outlined in the following table, along with deliverables of the SHMD project.

Table 3.2. Alignment of Shute Harbour Marina with the Whitsunday Growth Management Initiative

Whitsunday Growth Management Key Objectives	Description	Delivered by Shute Harbour Development
Skilled development opportunities	Whitsunday Shire has very low levels of unemployment however, issues such as skills development and training are key needs for Whitsunday. Seasonal tourism and the attraction of nearby coal mines mean that many skilled employees leave the region.	• **Increased employment:** The proposed SHMD will provide diversification of employment and skills development opportunities, including year-round options in the marine, tourism, recreation, and service industries.
Electricity and water supply	It is recommended that electricity and water supply expand to meet expected future population and industry growth for the region.	• **Infrastructure services:** Power, water, sewer, stormwater drainage and telecommunications will be provided, but do not require infrastructure upgrades apart from power, a component of which will be provided by the proponent.
Support of the marine industry	The growing marine industry is a major economic driver and needs to be supported through infrastructure provision and a skilled employee base.	• **Marine industry:** Marine industry facilities and maintenance services in the surrounding service centre will support the marina and marine tourism operators. • **Employee training opportunities:** The expansion of employment opportunities and the marine industry will provide a basis for developing a complementary, skilled labour supply.
Traffic management	Preservation of amenity and economic value of the area through traffic management.	• **Transport infrastructure and transit centre**: The development of a marina will provide key marine-based transport infrastructure, increasing access to the area by sea and providing transport which is focused on the key amenity in the region, the coastline. • **Road infrastructure**: New road alignment will be designed to accommodate increasing amounts of visitors and labourers in the region. Reports indicate the current condition of Shute Harbour Road is appropriate for additional traffic impact from the proposed development. • **Public transport:** A regular bus service already exists from Airlie Beach to Shute Harbour. The development includes a bus set down area, and increased demand for access to Shute Harbour can be expected to provide a commensurate increase in patronage on the bus route. SHMD will provide a shuttle bus to facilitate connectivity where the market is initially insufficient to justify provision by a commercial operator.

Source: Queensland Department of Local Government and Planning (2007)

3.3 Draft Mackay-Whitsunday Regional Coastal Management Plan

The Draft Mackay-Whitsunday Regional Coastal Management Plan provides direction for development management with the aim of protecting the unique ecosystem of the Mackay-Whitsunday Region within the framework of the State Coastal Management Plan.

It is a response to the growing demand for coastal residential and commercial development, and the challenge to protect local wetlands, flora, fauna, and erosion prone areas. Apart from providing environmental value, these resources contribute significantly to the social and economic well being of the region (Environmental Protection Agency, 2006).

The Mackay Whitsunday Coastal Plan addresses the following key coastal management issues for the region:

- Maintaining diversity of recreational opportunities to accommodate the diverse range of visitors;
- Planning and managing for natural coastal erosion processes;
- Maintaining biodiversity within the region;
- Balancing the need for urban expansion due to population growth with protection of environmental resources in the region;
- Improving quality of water entering the Great Barrier Reef Marine Park and World Heritage Area;
- Recognition of the social and economic importance of the ports, airports and identified marine transport facilities; and
- Identification and protection of significant scenic coastal areas and species habitats in the region.

Specific key principles of the Management Plan are outlined below, along with aspects of the SHMD which support these legislative principles.

Table 3.3. Alignment of Shute Harbour Marina with the Draft Mackay Whitsunday Regional Coastal Management Plan

Coastal Management Key Principles	Delivered by Shute Harbour Development
Recognition of coastal resources in development and planning.	• **Recognition**: The proposed SHMD development is directly reliant on coastal resources such as recreation and boating opportunities. The value of these resources is recognised in the design of the marina and resort facilities, initiation of education programs and the establishment of an environmental management trust fund.
Coastal use, infrastructure, and development is planned and managed to ensure that significant adverse effects of activities on the natural environment are avoided, mitigated or remedied.	• **Sustainability**: Regulation of marine and industry practices with a 'clean and green' philosophy, including provision of a trust fund to assist in the management and maintenance of marine habitat including provision of sea grass friendly moorings. • **Improved management and education of boat owners and operators**: Improved management and education of boat owners and operators will be facilitated by the initiation of education programs at the proposed marina, which is anticipated to assist in reducing potential detrimental impacts of boaters on the environment.
Development and use of the coast should enhance and maintain quality of life for residents and visitors.	• **Transport**: Increased transportation networks will provide more options for tourists, visitors and residents. • **Industry**: The development of the marine industry will provide skills training and employment for residents, and enhanced social infrastructure options for both visitors and inhabitants. • **Tourism**: The enhanced infrastructure will provide more destination options and accommodation for tourists staying in the region and visiting the neighbouring islands. • **Diversification of opportunities**: The development of retail, commercial and managed tourism accommodation will create a diverse community in the region with the potential for high levels of productivity, growth, and expanding social opportunities and infrastructure.

Coastal Management Key Principles	Delivered by Shute Harbour Development
Maintenance of functionality in areas of state significance (social and economic) and protection from incompatible land uses and activities that may adversely affect the continued use of those areas.	• **Areas of state significance:** Includes those which provide coastal dependent recreational and marine transport facilities. The Shute Harbour Transit Facility is listed as a key significant site. The proposed SHMD will act as a key catalyst in the overall upgrade and enhancement of the Shute Harbour precinct, allowing the Transit terminal to better fulfil its pivotal role in the tourism fabric of the Whitsunday region. • **Marine safety:** The development itself is designed to be compatible with the operations of the terminal and barge facilities, and the construction of the public boat ramp facilitated by the proponent's monetary contribution will lead to increased capacity and safety for all users of the precinct. • **Enhanced opportunities**: Development of the Shute Harbour Marina will enhance the accessibility and functionality of coastal dependent transport services offered in the region. Infrastructure investment will provide the framework for expanded social and economic opportunities.

Source: Queensland Government Environmental Protection Agency (2006).

3.4 Mackay Whitsunday Regional Tourism Investment & Infrastructure Plan (MWRTIIP)

The Mackay Whitsunday Regional Tourism Investment and Infrastructure Plan 2006-2016 (MWRTIIP) was developed to determine real opportunities for sustainable growth within the region, with the aim of creating collaborative opportunities for private and public sectors (Tourism Queensland and the Department of Tourism, Fair Trading and Wine Industry Development, 2006). Key aims and SHMD deliverables are outlined in the table below.

Table 3.4. Alignment of Shute Harbour Marina with the Mackay Whitsunday Regional Tourism Investment and Infrastructure Plan

RTIIP Key Points	Delivered by Shute Harbour Development
Create a sense of uniqueness especially in built environments.	• **Integration with existing environment**: The proposed development will be a unique stand-alone development that will build upon the unique characteristics of the region, Shute Harbour and the marine and tourism industry. The SHMD is to be designed as a World Class Facility acting as an icon for the region. • **Precinct enhancement:** The SHMD will add to and facilitate the enhancement of the Shute Harbour precinct to better fulfil its pivotal role in the tourism industry of the Whitsundays.
Invest in new and enhanced infrastructure.	• **Marine transport infrastructure:** Provision for marina berths in the region's most appropriate marina location to cater for current and expected future regional demand. • **Marina and supporting social and commercial infrastructure:** Appropriate planning and coordination of marina infrastructure with tourism, recreational, commercial, and transport infrastructure as an integrated project. • **Road infrastructure**: Road alignment will be developed on Shute Harbour Road in line with the deed of agreement between the Department of Main Roads and Shute Harbour Marina Development Pty Ltd. • **Boat ramp**: The proponent's contribution towards a new public boat ramp will facilitate the construction of a key piece of community infrastructure rationalising and adding to the capacity, functionality and marine safety of the precinct. • **Pedestrian linkages and foreshore access**: The development will provide approximately 1km of boardwalk along the marina esplanade and isthmus parkland, creating new and unique vantage points to view the marina, Shute Harbour, Conway National Park and the Islands to the east.
Ensure an appropriate mix of products are available to visitors.	• **Diversification of opportunities**: The development of retail, commercial and managed tourism accommodation will enhance diversity in the region with the potential for high levels of productivity, growth, and expanding social opportunities and infrastructure. • **Managed resort accommodation**: The ability to provide waterfront tourism accommodation of an appropriate character within the Managed Resort Accommodation precinct caters to a market which is largely absent from the current tourism accommodation mix.

RTIIP Key Points	Delivered by Shute Harbour Development
Develop Shute Harbour including the Shute Harbour Foreshore and Waterways Management Plan.	• **Boat ramp**: The proponent's contribution towards a new public boat ramp will facilitate the construction of a key piece of community infrastructure rationalising and adding to the capacity, functionality and marine safety of the precinct. • **Pedestrian linkages and foreshore access**: The development will provide approximately 1km of boardwalk along the marina esplanade and isthmus parkland, creating new and unique vantage points to view the marina, Shute Harbour, Conway National Park and the Islands to the east.
Improve electricity and water supply and service, and telecommunications to the region.	• **Infrastructure services**: Power, water, sewer, stormwater drainage and telecommunications will be provided, but do not require infrastructure upgrades apart from power, a component of which will be provided by the proponent.
Expand accommodation facilities catering to leisure and business visitor markets.	• **Key industry investment**: The project will provide accommodation and supporting infrastructure for approximately 12 months growth in the regional tourism sector (tourism, accommodation, cafes and restaurants, transport and storage and marine support). This will assist in enhancing tourism opportunities and experiences in the region and promote sustainable economic growth. The standard of the accommodation lends itself well to strengthening the options for general leisure and particularly business markets. • **Tourism precinct:** Precinct facilities will include a 4½ star, 109 suite hotel; managed resort accommodation, marina office, amenities, carparking, charter boat cruise base, retail space and landscaped gardens entry and open space as well as managed resort accommodation.

Source: Tourism Queensland and the Department of Tourism, Fair Trading and Wine Industry Development (2006).

3.5 WHAM Regional Plan

The Whitsunday Hinterland and Mackay (WHAM) region is centrally located on the Queensland coastline and has experienced strong population and economic growth, increasing the region's contribution to the Queensland economy in recent times through its major industries of mining, agriculture, marine and tourism. The WHAM Regional Plan (Queensland Department of Local Government and Planning, 2006a) provides the strategic framework for guiding development of the WHAM region over the next 20 years.

The WHAM Regional Plan was established to provide a holistic and integrated approach to recognising and addressing the economic, social and environmental elements, issues and opportunities of the region. Key priorities and goals of the WHAM Regional Plan are centred around the following themes:

- Regional identity, leadership and management;
- Environment and natural resources;
- Economic development;
- Social infrastructure;
- Settlement pattern;
- Infrastructure; and
- Transport.

The priorities and goals delivered by the Shute Harbour Development are identified in the table below.

Table 3.5. Alignment of Shute Harbour Marina with the WHAM Regional Plan

Key Priorities and Goals of WHAM	Description	Delivered by Shute Harbour Development
Regional identity, leadership and management	• **Regional Identity:** Establish region as a distinct economic, cultural, social and administrative entity. • **Collaborative Planning and Management:** Integration, coordination and streamlining of planning and management to improve quality and effectiveness of outcomes. • **Investment and resourcing:** Secure investment and resource avenues to support major growth, productivity and prosperity.	• Development of **regional identity** towards a marine and tourism hub and enhancement of the overall Shute Harbour precinct. • **Integration** of individual and stakeholder collaboration between the marine, tourism and transport sectors into a key development and strengthened Shute Harbour precinct. • **Secure investment** in the Shute Harbour development with the capacity to support growth with provision of marina, tourism and commercial infrastructure. The construction of the development is a major investment and vote of confidence for the region.

Key Priorities and Goals of WHAM	Description	Delivered by Shute Harbour Development
Environment and natural resources	• **Natural disaster management:** Manage and minimise potential impacts of social, economic and natural disaster of the region.	• **Safe harbour**: Provision of a marina in Shute Harbour in conjunction with the Harbour's natural weather protection provides exceptional marine safety in extreme cyclonic events. • Assist in the **management and education of recreational boaters** to reduce the risk of potentially detrimental environmental impacts. • **Cyclone shelter:** Provision for a community cyclone shelter within the carpark equipped to respond to cyclone disaster.
Economic development	• **Economic climate:** Establishment of a stable, cost-competitive and sustainable environment for business and investment that facilitates economic growth and employment. • **Sustainable industries:** Maximise investment in sustainable industries. • **Tourism:** Establish region as a distinctive tourist destination that offers a diverse range of tourism opportunities and unique experiences. • **Management and workforce skills:** Attract and retain skilled workforce to strengthen economic opportunities and social infrastructure. • **Land infrastructure and transport:** Provide infrastructure and adequate services that are suitably located to meet the needs of the region.	• **Tourism precinct:** Precinct facilities will include a 4½ star, 109 suite hotel; managed resort accommodation, marina office, amenities, carparking, charter boat cruise base, retail space and landscaped gardens entry and open space as well as managed resort accommodation. • **Key industry investment:** The project will provide accommodation and supporting infrastructure for approximately 12 months growth in the regional tourism sector (tourism, accommodation, cafés and restaurants, transport and storage and marine support). This will assist in enhancing tourism opportunities and experiences in the region and promote sustainable economic growth. • **World class facility:** The provision of a world class facility will promote the identity of Shute Harbour and the Whitsundays to the international tourism market, capitalising on the unique attributes of the region. • **Attraction and retention of skilled workers:** Establishment of a marina and tourism precinct will increase demand for skilled labour and employment opportunities in key sectors of the marine, tourism and hospitality industries. • **Transport infrastructure and transit centre:** The development of a marina will provide key marine-based transport infrastructure, increasing access to the area by sea. • **Precinct improvement:** The development's contribution towards the upgrading of the Shute Harbour precinct is likely to help protect the precinct's pivotal role for some decades, aiding the region's long term competitiveness with other tourism areas.
Social infrastructure	• **Services and facilities:** Provision for current and future needs of communities through timely and appropriate planning.	• **Transport infrastructure:** Provision for marina berths to cater for current and expected future regional demand. • **Improvement of transport links** to the Shute Harbour region (courtesy bus, improved road infrastructure through the deed of agreement with Main Roads and increased patronage on the existing bus route). • **Provision of leisure infrastructure:** The development will include the provision of retail, cafe and restaurant areas in the Marina Plaza precinct. This will increase leisure opportunities in Shute Harbour and the surrounding service centre, and provide a meeting place for residents and visitors. • **Provision of recreational infrastructure:** The development includes a $2.5 million contribution to a new public boat ramp and car parking facility. • **Pedestrian linkages and foreshore access**: The development will provide approximately 1km of boardwalk along the marina esplanade and isthmus parkland, creating new and unique vantage points to view the marina, Shute Harbour, Conway National Park and the Islands to the east.

Key Priorities and Goals of WHAM	Description	Delivered by Shute Harbour Development
Infrastructure	• **Infrastructure planning and coordination:** Provision for the appropriate physical and social infrastructure to allow for economic development. • **Energy and telecommunications:** Appropriate and timely infrastructure development to meet demands. • **Sewerage:** Provision for appropriate environmentally friendly, safe and effective sewerage disposal. • **Water infrastructure:** Provision for water demands in timely, cost effective, safe and environmentally responsible manner.	• **Infrastructure services:** Power, water, sewer, stormwater drainage and telecommunications will be provided, but do not require infrastructure upgrades apart from power, a component of which will be provided by the developer. • **Marina and supporting social and commercial infrastructure:** Appropriate planning and coordination of marina infrastructure with tourism, recreational, commercial, and transport infrastructure of the project. Provision of pump out facilities to maintain high water quality and reduce instances of illegal or inappropriate effluent disposal. • **Road infrastructure:** A new intersection & road alignment will be developed on Shute Harbour Road in line with the deed of agreement between the Department of Main Roads and Shute Harbour Marina Development Pty Ltd.
Transport	• **Seaports:** Provide competitive, cost effective, efficient and safe transport facilities to meet the needs of regional industry. • **Aquatic facilities:** Provide and maintain quality, environmentally sustainable aquatic infrastructure to meet commercial and recreational needs.	• **Marina and aquatic facilities:** The establishment of 669 berths and supporting marina structure will provide significant facilities to the marine industry and increase the availability of aquatic activities in the region. • **Marine transport:** The improvement of the seaport, facilities and capacity of marine vessel accommodation in the area will meet increasing demand for such services in the region. The new boat ramp and the plan for separating recreational and commercial traffic will greatly improve access and safety. • **Improved operation and capacity:** The provision of the public boat ramp facilitated by the proponent's monetary contribution will increase marine safety for all users and remove a current impediment for growth in capacity for the transit terminal.

Source: Queensland Department of Local Government and Planning (2006a)

3.6 Whitsunday 2015: A Whitsunday Shire Economic Development Strategy

Whitsunday 2015: A Whitsunday Shire Economic Development Strategy (Pacific Southwest Strategy Group, 2006b) is an economic planning document that has been developed by the Whitsunday Shire Council and Whitsunday Development Corporation (WDC). Whitsunday 2015 aims to produce economic and social outcomes in the Whitsunday Shire by building on the region's competitive advantages whilst balancing the management of the environment and national parks and fostering community cohesion.

The main focus of the vision is to build on the thriving tourism industry whilst achieving infrastructure targets that provide safe, clean communities and a high standard of living, built in harmony with the social, natural and environmental features of the region.

Key goals and objectives of the strategy were identified to include:

- Facilitation of business growth and development;
- Creation of job training and local needs;
- Marketing and promotion;
- Cooperative asset development and optimisation; and
- Increased networking and coordination.

The Strategy is considered to be broadly consistent with both the MWRTIIP and the WHAM and hence is supported by the measures outlined in the responses provided to those sections above. In particular, however, the proposed SHMD development aligns with the strategy by assisting in and improving the delivery of:

- **Transport and transport servicing**: *Development of a marina and transit centre will augment the water transport services and facilities and encourage linkages between water and land based tourism in the region.*

- **Tourism and travel**: *The construction of the 4½ star resort/ managed tourism accommodation tourism precinct and retail facilities in conjunction with the marina will promote the tourism and water transport services in and around Shute Harbour and the broader service centre.*
- **Marketing and promotion**: *The provision of a world class marina resort facility in Shute Harbour, coupled with the leveraged enhancement of the precinct will aid the image and identity of the region, increasing marketing and promotion reach, whilst aiding in providing a more completely satisfying tourism experience for visitors travelling to and from the Whitsunday Islands and Great Barrier Reef.*
- **Cooperative asset development**: *There are clear synergies between the development and the enhancement of the overall Precinct. The contribution towards the public boat ramp by the proponents is considered to be an excellent example of a cooperative approach to asset development. The overall investment in the precinct which is of State Economic and Social significance in line with State, Regional and Local priorities represents successful integration of public and private interests and investments. The development also proposed to establish an environmental trust that will facilitate the development of environmentally friendly 'EzyRider' type moorings for public use on the reef to help prevent anchor damage.*
- **Education and training**: *The proponent has a commitment to training and development of the local labour force and has partnered with the Barrier Reef Institute of TAFE to deliver identified training needs.*

3.7 Whitsunday Destination Management Plan

The Whitsunday Destination Management Plan (Tourism Queensland, 2004a) has been developed to ensure the future of the tourism industry in the Whitsundays and Great Barrier Reef. This plan supports the development of a sustainable and ecologically 'friendly' tourism industry and promotes industry growth whilst aligning with the environmental and sustainable obligation guidelines set out by the Government. The goals and strategies of the Whitsundays Destination Management Plan and how they align with the proposed development include:

- **Promoting the Whitsunday's as a desirable holiday experience in domestic and international markets**: *The proposed development will have a range of accommodation and tourism facilities to meet the demand of both domestic and international tourists. The proposed development provides accommodation and associated infrastructure for approximately one year's growth in the regional tourism market. The development and its leveraged effect on the Shute Harbour Precinct will help Shute Harbour to better perform its pivotal role in the overall image and tourism experience of the Whitsundays.*
- **Ensure more effective distribution of travel information, products and services to consumers:** *The 4½ star hotel and managed tourism accommodation and associated facilities of the proposed development will allow for and facilitate linkages with other destinations, particularly in relation to land and water based activities.*
- **Identify and facilitate the development of infrastructure and services that are appropriate to the needs of visitors and residents:** *Infrastructure and services of the development include marina services and facilities, transport facilities, a 4½ star hotel and managed tourism accommodation precinct, with commercial and retail infrastructure provision and associated leisure facilities such as cafés and restaurants in the marina plaza precinct, linked to an extensive marina esplanade and Isthmus parkland. The charter boat base including transit lounge and interpretive centre will provide a clear strengthening and improvement of the boating experience for charter boat and other marina users.*
- **Promote the value and importance of sustainable tourism practices**: *The project upholds the values of environmental sustainability and 'clean and green' tourism and marine based activity, including the design, construction and operation of the marina and resort and a commitment to fund a trust to assist in the management and maintenance of marine habitat in the region, including provision of sea grass friendly moorings and a marine interpretive centre.*

4. Existing Socio-Economic Environment

4.1 Demographic Overview

4.1.1 Population

The Whitsunday LGA currently comprises 11.4% of the Mackay Statistical Division (SD) total population, and has been growing faster than the Mackay SD and Queensland for the past five years. This is expected to continue over the next 20 years, driven by national trends towards 'sea and tree change' destinations, as well as strong and developing tourism and marine industries providing considerable employment opportunities and entertainment options in the Shire.

In 2006, the primary catchment area of Whitsunday LGA was estimated to have a resident population of 18,177 persons, representing 11.4% of the Mackay SD total population. By comparison the Mackay North Coast was estimated to have a resident population of 121,622, representing 76.1% of the total Mackay SD population.

Whitsunday LGA recorded an annual population growth of 3.6% in 2006, and has averaged considerably stronger growth over the past five years (3.2% per annum) than Queensland (2.4%) over this period. The strong population growth in Whitsunday LGA reflects a number of factors, including:

- National 'sea and tree change' trends, with the climate and coastal lifestyle making Whitsunday Shire a desirable location;
- Proximity to internationally recognised tourism and entertainment precincts, destinations and activities; and
- Growing industry, particularly tourism and marine, providing considerable employment opportunities in the region.

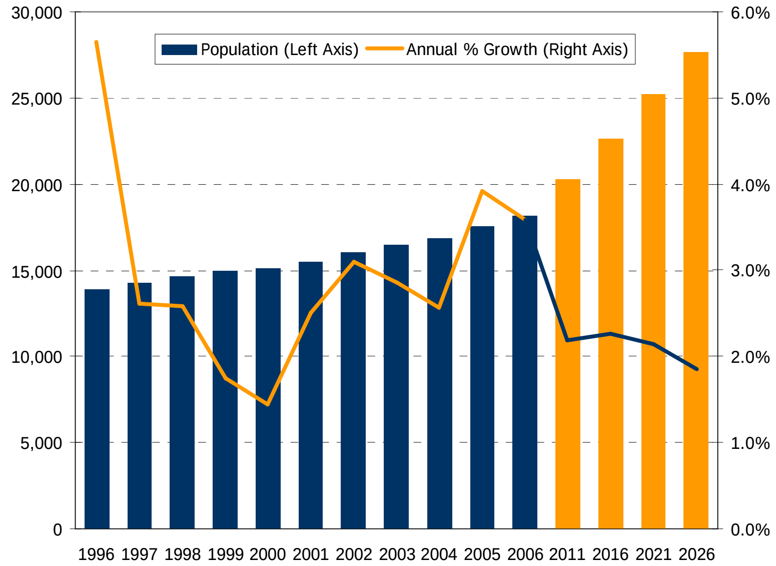
Table 4.1. Recent Population Growth

Region	2006	2005	2001	Annual % Change 2005-06	Average Annual % Change 2001-06
Whitsunday LGA	18,177	17,548	15,522	3.6%	3.2%
Mackay North Coast	121,622	117,148	103,924	3.8%	3.2%
Mackay SD	159,869	154,061	137,539	3.8%	3.1%
Queensland	4,091,546	3,996,564	3,628,946	2.4%	2.4%

Source: Australian Bureau of Statistics (2007a)

Population growth in Whitsunday LGA has generally been accelerating since 2000, although as the figure below shows this is expected to ease over the next 20 years, with population growth estimated to be just below 2.0% in 2026.

Figure 4.1. Population Growth and Projections, Whitsunday LGA



Source: Australian Bureau of Statistics (2007a), Queensland Department of Local Government and Planning (2006b)

The Whitsunday LGA resident population is expected to grow at an average annual rate of 2.1% over the next 20 years, reaching an estimated 27,523 persons by the year 2026. This growth is projected to be above the level of the Mackay SD (1.6%) and Queensland (1.6%) over the same period.

Table 4.2. Projected Population Growth

Region	2006	2016	2026	Average Annual % Change 2006-26
Whitsunday LGA	18,177	22,655	27,610	2.1%
Mackay North Coast	121,622	146,112	168,585	1.6%
Mackay SD	159,869	194,235	219,634	1.6%
Queensland	4,091,546	4,883,296	5,653,287	1.6%

Source: Australian Bureau of Statistics (2007a), Queensland Department of Local Government and Planning (2006b)

4.1.2 Migration

The Whitsunday LGA has a slightly higher level of population mobility than the Mackay SD and the State, as evidenced by a lower proportion of residents reporting the same address one and five years ago. Whitsunday LGA recorded a relatively higher proportion of people changing address within the same catchment and migrating to the region from interstate than the Mackay SD and Queensland.

The Whitsunday LGA recorded a lower proportion of residents reporting the same address one (73.6%) and five (41.7%) years ago than either the Mackay SD or the State. This suggests that the Whitsunday LGA has a slightly higher level of population mobility than the Mackay SD and the State.

The Whitsunday LGA had a relatively higher proportion of people moving to the region from interstate when compared to the Mackay SD and Queensland over both time periods, reflective of the Whitsundays' attractive lifestyle. The Whitsunday LGA also recorded a slightly higher proportion of persons changing address within Whitsunday LGA.

Table 4.3. Migration

Usual Place of Residence	Whitsunday LGA	Mackay North Coast	Mackay SD	Queensland
1 Year Ago				
Same Address	73.6%	78.6%	78.4%	79.0%
Different Address in Same SLA	11.2%	9.8%	9.1%	5.2%
Migrated to SLA From				
Intrastate	7.6%	7.4%	8.7%	11.9%
Interstate	5.8%	2.8%	2.7%	2.3%
Overseas	1.8%	1.3%	1.2%	1.6%
5 Years Ago				
Same Address	41.7%	49.0%	48.6%	48.7%
Different Address in Same SLA	20.4%	20.0%	18.4%	10.0%
Migrated to SLA From				
Intrastate	17.6%	20.0%	22.5%	28.7%
Interstate	15.6%	8.0%	7.7%	7.8%
Overseas	4.7%	3.0%	2.8%	4.8%

Source: Australian Bureau of Statistics (2007b)

4.1.3 Age Distribution

The Whitsunday LGA has a higher average age when compared to the Mackay SD and the State. However, the average age for the Whitsunday LGA has declined over the past five years, with the proportion of persons aged 24 years and younger increasing and the proportion of persons aged 55 and over declining. This is likely due to young adults migrating to the region in search of job opportunities and coastal lifestyle, while older persons may be migrating to other regions to avoid increasing cost of living.

In 2006, the Whitsunday LGA recorded an average age of 36.1 years, which was slightly higher than the average of the Mackay SD (35.4 years) but slightly lower than the Queensland average (36.7 years).

The Whitsunday LGA recorded a higher proportion of persons aged between 15 and 44 years and a lower proportion of persons aged between 0 to 14 years (17.5%) and over 65 years (8.6%) when compared to the Mackay SD and the State.

Since 2001, the average age of Whitsunday LGA has declined, driven by a combination of an increase in the proportion of persons aged 0-24 years (29.7% in 2001 to 31.8% in 2006) and a reduction in those persons aged 55 years and over (21.7% in 2001 to 19.7% in 2006). The increase in younger persons possibly reflects the opportunities for education, training and employment in the Whitsunday LGA, encouraging greater numbers of young adults to remain in or migrate to the region. The decrease in the proportion of persons aged 55 and over could possibly be the result of an increase in the cost of living (see Household Finances section), making the region less affordable for retired aged persons.

Table 4.4. Age Distribution

Region	0-14 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65+ years	Average age
Whitsunday LGA								
2006	17.5%	14.3%	16.3%	16.8%	15.4%	11.1%	8.6%	36.1
2001	17.2%	12.5%	16.7%	16.5%	15.4%	11.6%	10.1%	37.0
Mackay North Coast								
2006	26.3%	13.7%	18.3%	17.1%	13.3%	7.3%	3.9%	36.1
2001	25.4%	12.5%	16.9%	17.4%	15.2%	6.9%	5.5%	35.9
Mackay SD								
2006	21.9%	13.2%	13.9%	15.9%	14.9%	10.5%	9.8%	35.4
2001	22.3%	12.8%	14.3%	15.9%	14.3%	9.8%	10.6%	35.3

Region	0-14 years	15-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65+ years	Average age
Queensland								
2006	20.7%	13.8%	13.4%	14.7%	13.8%	11.2%	12.4%	36.7
2001	21.3%	13.8%	14.2%	14.9%	13.7%	9.7%	12.4%	36.0

Source: Australian Bureau of Statistics (2007b)

4.1.4 Cultural Diversity

The Whitsunday LGA is a culturally diverse area, recording a high percentage of overseas born persons when compared to the Mackay North Coast, Mackay SD and Queensland. However, the Whitsunday LGA records a lower proportion of persons of Indigenous heritage.

Approximately three quarters (73.6%) of the Whitsunday LGA population is Australian born, a lower proportion than that recorded for the Mackay North Coast (80.0%), Mackay SD (84.1%) and Queensland (75.2%). The percentage of overseas born persons in Whitsunday LGA was 14.7%, with the most significant proportion of persons born in the United Kingdom (5.2%), New Zealand (3.5%) and Germany (0.6%).

The Whitsunday LGA recorded a significantly lower proportion of persons of Indigenous heritage (1.9%) when compared to the Mackay North Coast (3.9%), Mackay SD (3.4%) and Queensland (3.1%), although the number and proportion of Indigenous persons has increased since 2001.

Table 4.5. Cultural Diversity

Country of Birth	Whitsunday LGA		Mackay North Coast		Mackay SD		Queensland	
	2006	2001	2006	2001	2006	2001	2006	2001
Australian Born	73.6%	75.5%	80.0%	84.1%	80.6%	84.5%	75.2%	77.7%
Indigenous Persons	1.9%	1.4%	3.9%	3.6%	3.6%	3.4%	3.3%	3.1%
Overseas Born	14.7%	14.7%	10.5%	10.0%	9.8%	9.2%	17.9%	17.1
New Zealand	3.5%	3.6%	2.4%	2.2%	2.4%	2.1%	3.8%	3.6%
United Kingdom	5.2%	5.4%	3.1%	3.3%	2.8%	3.0%	4.9%	5.0%
Germany	0.6%	0.7%	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%
Other	5.4%	4.9%	4.5%	4.0%	4.2%	3.6%	8.5%	7.8%
Not Stated	11.7%	9.8%	9.5%	5.9%	9.6%	6.3%	6.9%	5.1%

Source: Australian Bureau of Statistics (2007b)

4.1.5 Household Structure

The Whitsunday LGA has a low proportion of 'families with children' and a high proportion of 'other' family type households compared to Mackay North Coast, Mackay SD and Queensland. The proportion of 'group' and 'other' type household types is significantly higher when compared to Mackay North Coast, Mackay SD and Queensland.

Total Number of Households

There were 7,073 households recorded as being in the Whitsunday LGA in 2006, 385 more than recorded in 2001. The growth in total households was 5.8% between the 2001 and 2006, below the growth of Mackay North Coast (7.4%), Mackay SD (9.9%) and Queensland (11.3%).

The number of persons per household in the Whitsunday LGA declined from 2.7 persons in 2001 to 2.5 persons in 2006. This was in line with a decreasing trend of household size across all catchments. The average number of persons per household in the Whitsunday LGA in 2006 was below those recorded for the Mackay North Coast (2.6 persons), Mackay SD (2.7 persons) and Queensland (2.6 persons).

Table 4.6. Total Households and Average Persons Per Household

Region	Total Households	Persons Per Household
Whitsunday LGA		
2006	7,073	2.5
2001	6,688	2.7
Mackay North Coast		
2006	42,744	2.6
2001	39,786	2.7
Mackay SD		
2006	56,700	2.7
2001	51,574	2.8
Queensland		
2006	1,508,162	2.6
2001	1,355,613	2.7

Source: Australian Bureau of Statistics (2007b)

Household Type

The proportion of family type households with children in the Whitsunday LGA declined to 22.0% in 2006 from 22.3% in 2001, which was below those recorded in 2006 for the Mackay North Coast (30.5%), Mackay SD (31.6%) and Queensland (29.4%). The proportion of couple families without dependent children in the Whitsunday LGA increased to 24.9% in 2006 in line with increases elsewhere, but was below the proportions recorded for Mackay North Coast (26.1%) and Mackay SD (25.9%) and Queensland (26.0%).

The proportion of lone person households was 15.7% in 2006, below the proportions recorded for the Mackay North Coast (18.6%), Mackay SD (18.1%) and Queensland (21.0%). Meanwhile group households and other household types[1] (4.3% and 27.1% respectively) were well above the proportions recorded for the Mackay North Coast (3.0% and 12.7%), Mackay SD (3.0% and 12.6%) and Queensland (4.2% and 7.7%).

Table 4.7. Household Type

Region	Couple Family With Children Household	Couple Family Without Children Household	One Parent Family Household	Other family household	Lone Person Household	Group Household	Other household
Whitsunday LGA							
2006	22.0%	24.9%	5.6%	0.4%	15.7%	4.3%	27.1%
2001	22.3%	23.4%	6.6%	0.6%	17.5%	5.1%	24.5%
Mackay North Coast							
2006	30.5%	26.1%	8.4%	0.7%	18.6%	3.0%	12.7%
2001	31.1%	24.4%	9.6%	0.8%	20.5%	3.4%	10.2%
Mackay SD							
2006	31.6%	25.9%	8.0%	0.7%	18.1%	3.0%	12.6%
2001	32.7%	24.6%	9.0%	0.8%	20.0%	3.0%	10.0%
Queensland							
2006	29.4%	26.0%	10.5%	1.1%	21.0%	4.2%	7.7%
2001	30.7%	25.3%	10.8%	1.2%	21.8%	4.3%	5.9%

Source: Australian Bureau of Statistics (2007b)

[1] A 'Group Household' is a household consisting of 2 or more unrelated people where all people are over the age of 15. There are no reported couple, parent/child or other blood relationships in these households. The 'Other Household' category primarily includes those households that were considered to be occupied on Census night but provided insufficient details on the Census form of household type.

4.1.6 Household Income

Average household incomes are lower in Whitsunday LGA than in the Mackay SD and Queensland, but have grown at a faster rate in the past five years than the Queensland average.

Average weekly household income in the Whitsunday LGA was $1,174.24 in 2006, representing average annual growth of 7.5% since 2001. This average annual growth was below the levels recorded for Mackay North Coast (8.8%) and Mackay SD (8.6%) but above Queensland (6.2%). Whitsunday LGA has a lower household income on average compared to surrounding areas and Queensland.

Table 4.8. Average Weekly Household Income

Region	Average Weekly Household Income ($)		Avg. Ann. Growth (% 2001-06)
	2001	2006	
Whitsunday LGA	$821.72	$1,174.24	7.5%
Mackay North Coast	$835.29	$1,262.89	8.8%
Mackay SD	$889.19	$1,331.60	8.6%
Queensland	$887.31	$1,192.53	6.2%

Source: Australian Bureau of Statistics (2007b)

The average annual growth in income has also been below the rise in cost of home loan repayments in the Whitsunday LGA (11.2%), which experienced growth above the Mackay North Cost (10.6%), Mackay SD (10.4%) and the State (10.7%) (see 'Home Loan Repayments' section in section 4.3.2).

Meanwhile the growth in rental payments in Whitsunday LGA (7.1%) is slightly below the growth in weekly household income and in line with the State (7.2%) (see 'Rental Bonds and Prices' section in section 4.3.2). However, despite a lower growth in average weekly rent, the Whitsunday LGA records an average weekly rent more than double that of Mackay North Coast, Mackay SD and the State.

The combined rising costs of home loans and higher rental costs in the Whitsunday LGA in comparison with the lower average income and growth in weekly household income indicate a higher and rising cost of living in the Whitsunday LGA when compared to the surrounding region and the State.

4.1.7 Education and Qualifications

The Whitsunday LGA has a slightly higher proportion of persons with non-school qualifications when compared to the Mackay North Coast, Mackay SD and Queensland. Over the past five years educational attendance has increased significantly in the Whitsunday LGA, particularly at secondary schools and university/tertiary institutions.

The largest proportion of educational attendance in the Whitsunday LGA is primary education recording 30.3% of educational attendance for the study area in 2006. This proportion of primary school attendance is lower than the Mackay North Coast (34.3%), Mackay SD (35.2%) and Queensland (34.1%). Since 2001, the number of primary school students has declined in the Whitsunday LGA (down 0.9%), Mackay North Coast (down 0.6%) and Mackay SD (down 1.6%).

Between the years 2001 and 2006, the Whitsunday LGA recorded growth in educational attendance at secondary and tertiary/university institutions of 19.7% and 10.5% respectively. This growth in secondary and tertiary institution attendance was above the level recorded for the Mackay North Coast, Mackay SD and Queensland.

Conversely, technical education has declined across all study areas with the Whitsunday LGA recording the most significant decline in technical education attendance of 15.1%

when compared with Mackay North Coast (-8.2%), Mackay SD (-7.0%) and Queensland (-6.9%).

The proportion of students not indicating the type of educational institution they attend has increased significantly since 2001. This could potentially be the cause of proportional declines in primary and TAFE educational institution attendance in the Whitsunday LGA.

Table 4.9. Educational Attendance

Region	Primary School	Secondary School	TAFE	University / Tertiary	Other	Educational Institution Not Stated
Whitsunday LGA						
Number (2006)	1,302	796	270	169	90	2,134
% of Students	30.3%	16.0%	5.4%	3.4%	1.8%	43.0%
% Growth (2001-06)	-0.9%	19.7%	-15.1%	10.5%	5.9%	62.8%
Mackay North Coast						
Number (2006)	10,383	6,841	1,843	1,879	481	11,941
% of Students	34.3%	19.6%	5.3%	5.4%	1.4%	34.2%
% Growth (2001-06)	-0.6%	3.7%	-8.2%	-9.0%	12.4%	154.3%
Mackay SD						
Number (2006)	14,039	8,826	2,315	2,343	640	15,877
% of Students	35.2%	19.1%	5.0%	5.1%	1.4%	34.3%
% Growth (2001-06)	-1.6%	1.3%	-7.0%	-5.9%	12.9%	132.1%
Queensland						
Number (2006)	348,514	236,684	68,104	137,846	22,539	323,530
% of Students	34.1%	19.8%	5.7%	11.5%	1.9%	27.1%
% Growth (2001-06)	0.5%	5.3%	-6.9%	0.6%	-0.7%	107.6%

Source: Australian Bureau of Statistics (2007b)

In 2006, the Whitsunday LGA recorded a higher proportion of persons with non-school qualifications of 38.5% when compared to Mackay North Coast (33.8%), Mackay SD (36.0%) and Queensland (31.6%). Whitsunday LGA had 23.9% of the population having attained a certificate level of education, while 14.7% had attained a bachelor degree or higher.

Table 4.10. Qualifications, 2006

Region	% With Non-School Qualifications	% With Bachelor or Higher	% With Certificate
Whitsunday LGA	38.5%	14.7%	23.9%
Mackay North Coast	33.8%	12.8%	21.0%
Mackay SD	36.0%	13.2%	22.7%
Queensland	31.6%	13.4%	18.2%

Source: Australian Bureau of Statistics (2007)

4.2 Economic Overview

4.2.1 Gross Regional Product

The Whitsunday LGA regional economy has been growing strongly over the past five years, in line with the State, although below the experience of other areas of Mackay, which have been boosted by significant growth in the mining sector.

The Whitsunday LGA economy is highly reliant on the accommodation, cafés and restaurants sector and the transport and storage sector, largely attributable to the Whitsunday's position as a key leisure tourism destination and significant air and sea transport infrastructure in the region.

Estimates of Gross Regional Product (GRP) at Factor Cost for Whitsunday LGA and the Mackay North Coast have been prepared based on the share of employment within each industry for the eight LGAs within the Mackay Statistical Division.

The size of the Whitsunday LGA regional economy is estimated to have been $803.0 million in 2006-07, accounting for 7.6% of the total Mackay Statistical Division's GRP at Factor Cost of $10.6 billion. Mining accounts for over 50% of the Mackay Statistical Division GRP.

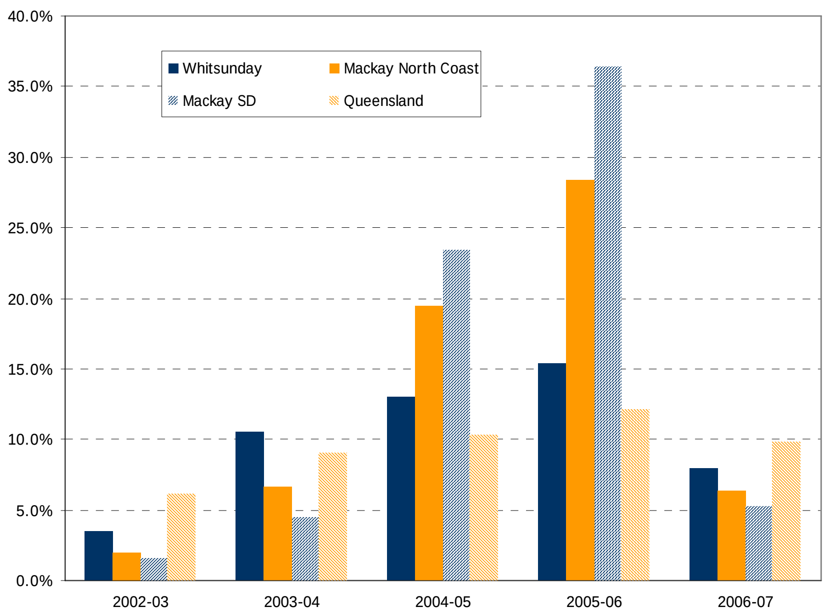
Table 4.11. Estimated Size of the Regional Economy

Region	GRP/GSP 2006/07 ($ M)	GRP/GSP 2005/06 ($ M)	Annual % Growth
Whitsunday LGA	$803.0	$743.8	8.0%
Mackay North Coast	$1,806.9	$1,699.3	6.3%
Mackay SD	$10,634.2	$10,104.7	5.2%
Queensland	$174,741.0	$159,156.0	9.8%

Source: AEC*group*

The Whitsunday LGA's economy has grown at an annual average growth rate of 10.0% over the past five years, similar to growth in Queensland Gross State Product (GSP, 9.8%). By comparison, estimated GRP growth in the Mackay North Coast (12.2%) and Mackay SD (13.5%) economies has been greater over this period, due primarily to significant growth in the mining sector.

Figure 4.2. Growth in GRP (2002/03 to 2006/07)



Source: AEC*group*

The commerce based sector is a major contributor to the Whitsunday LGA regional economy (contributing 20.6% of total GRP at Factor Cost), with transport and storage the dominant industry. The information and finance based sector is also a major contributor to the regional economy (contributing 20.0% of total GRP at Factor Cost), driven primarily by property and business services.

Table 4.12. Gross Regional Product

Industry	Whitsunday LGA[a]		Mackay North Coast[a]		Queensland	
	2006-07 ($M)	Contribution (%)	2006-07 ($M)	Contribution (%)	2006-07 ($M)	Contribution (%)
Primary (resources based)						
Agriculture	37.4	4.7%	83.3	4.6%	5,544.0	3.2%
Mining	119.5	14.9%	701.3	38.8%	14,937.0	8.5%
Total Primary	*156.9*	*19.5%*	*784.7*	*43.4%*	*20,481.0*	*11.7%*
Secondary (goods based)						
Manufacturing	50.5	6.3%	95.5	5.3%	17,922.0	10.3%
Electricity, Gas & Water	13.5	1.7%	22.9	1.3%	3,378.0	1.9%
Construction	49.8	6.2%	75.9	4.2%	15,390.0	8.8%
Total Secondary	*113.8*	*14.2%*	*194.4*	*10.8%*	*36,690.0*	*21.0%*
Tertiary (commerce based)						
Wholesale Trade	19.7	2.5%	38.2	2.1%	8,015.0	4.6%
Retail Trade	47.8	5.9%	74.0	4.1%	12,652.0	7.2%
Transport & Storage	97.9	12.2%	166.6	9.2%	10,283.0	5.9%
Total Tertiary	*165.3*	*20.6%*	*278.8*	*15.4%*	*30,950.0*	*17.7%*
Quarternary (information & finance based)						
Communications	8.1	1.0%	13.7	0.8%	3,756.0	2.1%
Finance & Insurance	19.9	2.5%	28.7	1.6%	9,542.0	5.5%
Property & Bus Services	94.7	11.8%	136.2	7.5%	19,353.0	11.1%
Govt Admin & Defence	11.2	1.4%	20.7	1.1%	8,264.0	4.7%
Education	26.5	3.3%	47.0	2.6%	8,665.0	5.0%
Total Quartернary	*160.4*	*20.0%*	*246.3*	*13.6%*	*49,580.0*	*28.4%*
Quinary (household based)						
Health & Comm Services	27.1	3.4%	51.1	2.8%	11,823.0	6.8%
Accom, Cafes & Rest	100.1	12.5%	122.6	6.8%	5,002.0	2.9%
Cultural & Rec Services	6.8	0.8%	8.9	0.5%	2,011.0	1.2%
Personal & Other Services	20.2	2.5%	32.7	1.8%	3,849.0	2.2%
Total Quinary	*154.3*	*19.2%*	*215.4*	*11.9%*	*22,685.0*	*13.0%*
Other						
Ownership of Dwellings	52.4	6.5%	87.4	4.8%	14,355.0	8.2%
Total	**803.0**	**100.0%**	**1,806.9**	**100.0%**	**174,741.0**	**100.0%**

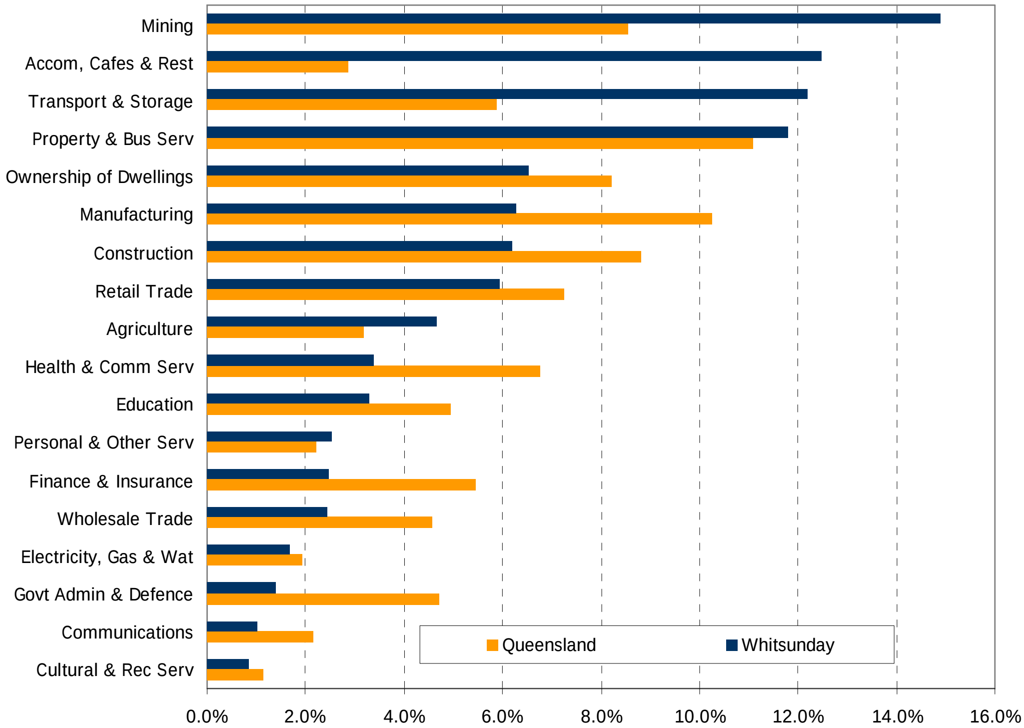
Notes: (a) Estimate derived from GSP.
Source: AEC*group*

When compared to the structure of the Queensland economy, Whitsunday LGA is approximately four times as reliant on the accommodation, cafés and restaurants industry (12.5% of GRP at Factor Coast compared to just 2.9% of GSP at Factor Cost) and twice as reliant on the transport and storage industry (12.2% versus 5.9%). This can largely be attributed to the significant accommodation, food services, and air and sea transport in the region, driven by a buoyant tourism industry and links with coal exports.

In addition to the accommodation, cafés and restaurants industry and transport and storage industry, the mining (14.9% versus 8.5%), agriculture (4.7% versus 3.2%) and property and business services (11.8% versus 11.1%) industries contribute comparatively more to the Whitsunday LGA regional economy than the State economy. The contribution of the mining sector to the Whitsunday LGA regional economy is a reflection of the high contribution of the mining sector to the Mackay Statistical Division economy and the proximity of the Whitsunday LGA to the nearby mining regions of the Mackay Statistical Division.

The regional economy is significantly less reliant on the communications (1.0% versus 2.1%), government administration and defence (1.4% versus 4.7%), finance and insurance (2.5% versus 5.5%), wholesale trade (2.5% versus 4.6%), education (3.3% versus 5.0%), health and community services (3.4% versus 6.8%), retail trade (5.9% versus 7.2%), construction (6.2% versus 8.8%), and manufacturing (6.3% versus 10.3%) industries when compared to the State.

Figure 4.3. Industry Contribution to GRP



Source: AEC*group*

4.2.2 Business Numbers

In line with contribution to GRP, when compared to the business structure of the Mackay SD and Queensland, the Whitsunday LGA has a considerably higher proportion of businesses operating in the transport and storage and accommodation, cafés and restaurants industries, which may be indicative of the strong demand for tourism related business.

There were 2,469 businesses operating in the Whitsunday LGA as at June 2006[2], accounting for 16.4% of all businesses operating in the Mackay SD in that year. The majority of businesses in the Whitsunday LGA operate in the industries of property and business services (20.3%), construction (18.2%), agriculture, forestry and fishing (16.0%) and transport and storage (10.0%).

[2] Does not include businesses operating in the category of Government, Administration and Defence

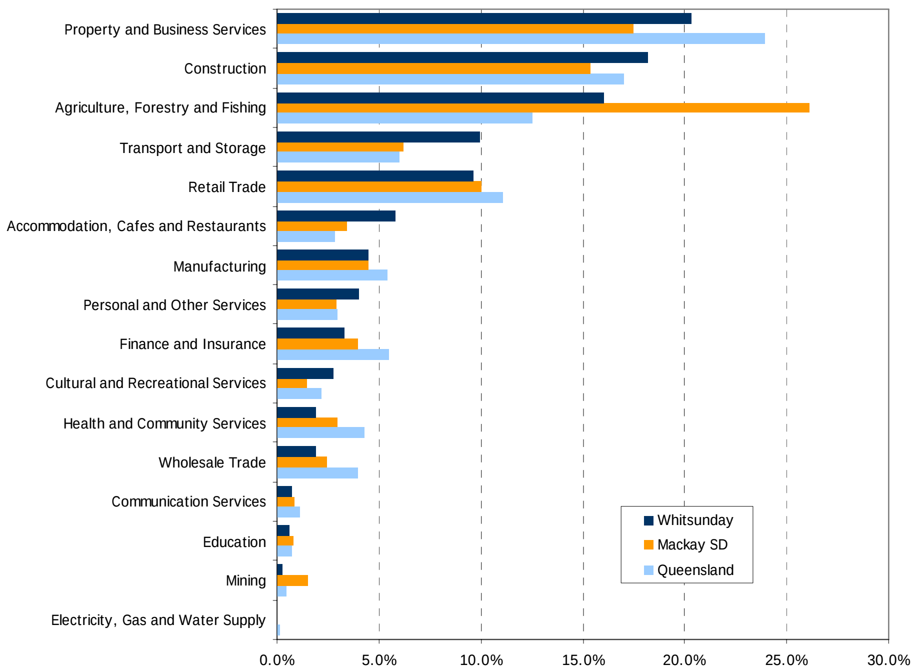
Table 4.13. Business Numbers by Industry

Industry	Whitsunday LGA		Mackay North Coast		Mackay SD	
	No.	%	No.	%	No.	%
Agriculture, Forestry and Fishing	396	16.0%	2,535	20.7%	3,936	26.1%
Mining	6	0.2%	180	1.5%	228	1.5%
Manufacturing	111	4.5%	567	4.6%	678	4.5%
Electricity, Gas and Water Supply	0	0.0%	9	0.1%	9	0.1%
Construction	450	18.2%	2,028	16.6%	2,313	15.3%
Wholesale Trade	48	1.9%	312	2.5%	366	2.4%
Retail Trade	237	9.6%	1,287	10.5%	1,506	10.0%
Accommodation, Cafés and Restaurants	144	5.8%	438	3.6%	516	3.4%
Transport and Storage	246	10.0%	807	6.6%	930	6.2%
Communication Services	18	0.7%	102	0.8%	129	0.9%
Finance and Insurance	81	3.3%	540	4.4%	600	4.0%
Property and Business Services	501	20.3%	2,391	19.5%	2,637	17.5%
Education	15	0.6%	96	0.8%	120	0.8%
Health and Community Services	48	1.9%	399	3.3%	447	3.0%
Cultural and Recreational Services	69	2.8%	186	1.5%	216	1.4%
Personal and Other Services	99	4.0%	372	3.0%	438	2.9%
Total	**2,469**	**100.0%**	**12,249**	**100.0%**	**15,069**	**100.0%**

Source: Australian Bureau of Statistics (2007c)

In line with contribution to GRP, when compared to the business structure of the Mackay SD and Queensland, Whitsunday LGA has a considerably higher proportion of businesses operating in the transport and storage industry (10.0% compared to 6.6% in Mackay SD and 6.2% in Queensland). Similarly, the Whitsunday LGA has a relatively higher proportion of businesses operating in the accommodation, cafés and restaurants industry.

Figure 4.4. Business Numbers by Industry



Source: Australian Bureau of Statistics (2007c)

4.2.3 Labour Market

Labour Force Participation

In line with the Mackay and State experiences, Whitsunday LGA is currently experiencing a tight labour market, with historically low levels of unemployment.

Whitsunday LGA is currently experiencing a relatively tight labour market, with historically low levels of unemployment (currently 2.4% unemployment). This is similar to the experience of the entire Mackay SD (currently 2.5% unemployment), as well as the Queensland labour market (currently 4.0% unemployment). Employment has remained steady in Whitsunday LGA when compared to a year ago (June Quarter 2006), in line with the regional employment trends for the Mackay SD, while employment in Queensland increased by 5.9%.

Whitsunday LGA currently accounts for approximately 16.7% of the Mackay North Coast's total labour force and 12.7% of the Mackay SD's total labour force.

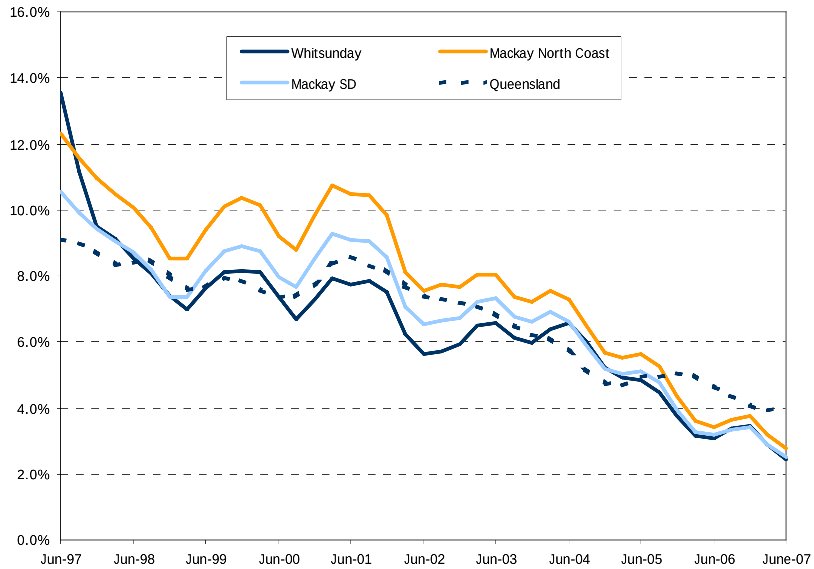
Table 4.14. Labour Market, June Quarter 2007

	Whitsunday LGA	Mackay North Coast	Mackay SD	Queensland
Level				
Labour Force	10,529	62,877	82,785	2,189,073
Employed Persons	10,286	61,369	80,868	2,100,741
Unemployment Rate	2.4%	2.8%	2.5%	4.0%
Annual % Change				
Labour Force	-0.4%	-0.6%	-0.5%	4.7%
Employed Persons	0.0%	0.0%	0.0%	5.9%
Unemployment Rate [a]	-0.2	-0.2	-0.2	-1.0

Note: (a) This is a percentage point difference.
Source: Federal Department of Employment and Workplace Relations (2007).

Whitsunday LGA's unemployment rate has been trending lower for the past decade, in line with the Mackay North Coast, Mackay SD and Queensland experiences. Whitsunday LGA has generally recorded a lower unemployment rate than the Mackay North Coast and Mackay SD over the past 10 years.

Figure 4.5. Trend Unemployment Rate



Source: Federal Department of Employment and Workplace Relations (2007)

Employment by Industry

> In line with contribution to GRP and business structure, Whitsunday LGA has a considerably higher proportion of persons employed in the accommodation, cafes and restaurants and transport and storage sectors when compared to the Mackay North Coast and Queensland. Whitsunday LGA is particularly reliant on the a accommodation, cafes and restaurants sector in terms of employment opportunities, with approximately one-fifth of all employed persons in the Shire employed in this industry.

The major industries of employment in the Whitsunday LGA are accommodation, cafes and restaurants (19.3%), retail trade (15.0%) and construction (11.7%).

In line with their relative importance to the regional economy, Whitsunday LGA employs a relatively larger proportion of persons compared to the Mackay North Coast in the industries of:

- Accommodation, cafes and restaurants (19.3% compared to 7.3%);
- Construction (11.7% compared to 10.1%); and
- Transport and storage (9.0% compared to 5.9%).

Conversely, Whitsunday LGA has a comparatively lower proportion of persons employed in the following industries compared to the Mackay North Coast:

- Manufacturing (6.8% compared to 9.5%);
- Mining (1.9% compared to 6.9%);
- Health and community services (5.0% compared to 7.8%);
- Wholesale trade (2.4% compared to 5.3%); and
- Education (4.0% compared to 5.8%).

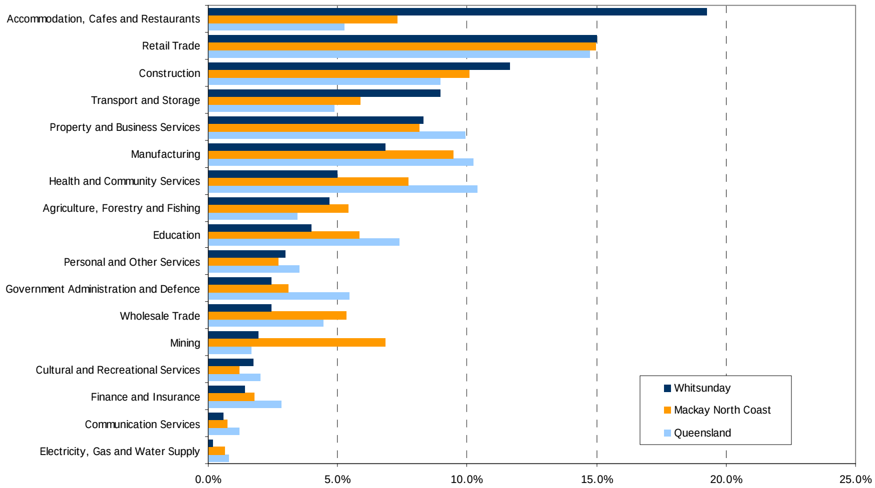
In line with the comparison to the Mackay North Coast, Whitsunday LGA has a higher share of persons employed when compared to Queensland in the following industries:

- Accommodation, cafes and restaurants (19.3% compared to 5.3%);
- Construction (11.7% compared to 9.0%); and
- Transport and storage (9.0% compared to 4.9%).

Conversely, the Whitsunday LGA has a comparatively lower proportion of persons employed in the following industries compared to Queensland:

- Property and business services (8.3% compared to 10.0%);
- Education (4.0% compared to 7.4%); and
- Manufacturing (6.8% compared 10.2%);
- Health and community services (5.0% and 10.4%);
- Wholesale trade (2.4% compared to 4.5%);
- Government, administration and defence (2.4% compared to 5.5%); and
- Finance and insurance (1.4% compared to 2.8%).

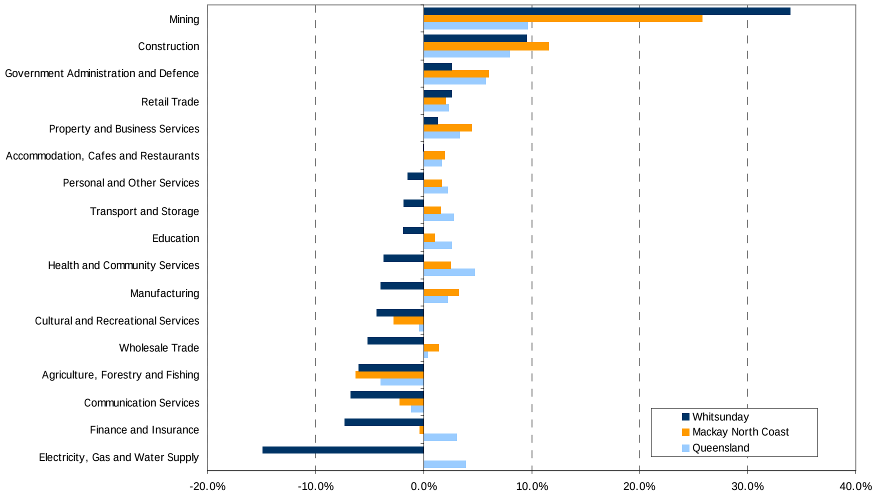
Figure 4.6. Employment by Industry, 2006



Source: Australian Bureau of Statistics (2007)

The mining sector experienced the most significant average annual growth in employment in the Whitsunday LGA between the years of 2001 and 2006 of 34.0%, well above the growth levels recorded for the Mackay North Coast (25.9%) and Queensland (5.9%). Significant growth in employment also occurred for the construction (9.6% average annual growth), government, administration and defence (2.6% average annual growth), and retail trade industries (2.6% average annual growth) in the Whitsunday LGA.

Figure 4.7. Average Annual Growth in Employment by Industry, 2001-2006



Source: Australian Bureau of Statistics (2007)

Employment by Occupation

Whitsunday LGA has a relatively larger proportion of persons employed in the occupations of managers, labourers and community and personal service workers than the Mackay North Coast and Queensland, and a relatively lower proportion of persons employed in the occupations of clerical and administrative workers and professionals.

Compared to the Mackay North Coast, Whitsunday LGA employs a relatively larger proportion of:

- Managers (14.8% compared to 11.9%); and

- Community and personal service workers (9.9% compared to 7.6%);
- Labourers (13.9% compared to 13.4%); and
- Sales workers (10.4% compared to 9.8%).

Conversely, Whitsunday LGA has a comparatively lower proportion of persons employed in the following occupations compared to the Mackay North Coast:

- Technicians and trades workers (18.3% compared to 19.5%);
- Clerical and administrative workers (11.4% compared to 12.8%);
- Professionals (11.8% compared to 12.2%); and
- Machinery operators and drivers (8.1% compared to 11.1%).

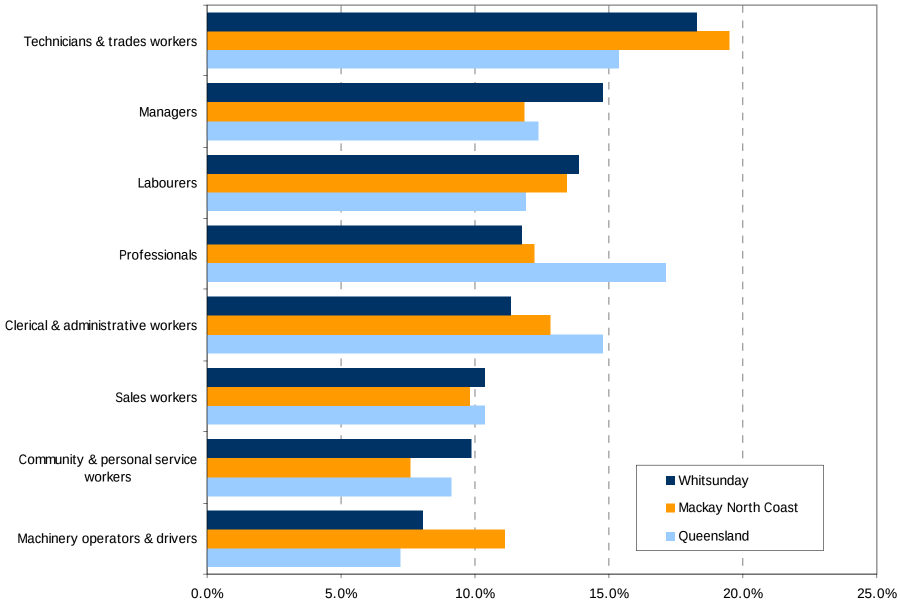
When compared to Queensland, Whitsunday LGA has a higher share of persons employed in the following occupations:

- Technicians and trades workers (18.3% compared to 15.4%);
- Managers (14.8% compared to 12.4%);
- Labourers (13.9% compared to 11.9%);
- Community and personal service workers (9.9% compared to 9.1%); and
- Machinery operators and drivers (8.1% compared to 7.2%).

Conversely, the Whitsunday LGA has a comparatively lower proportion of persons employed in the following occupations compared to Queensland:

- Professionals (11.8% compared to 17.1%); and
- Clerical and administrative workers (11.4% compared to 14.8%).

Figure 4.8. Employment by Occupation, 2006



Source: Australian Bureau of Statistics (2003)

4.2.4 Income by Industry

> The average weekly income in the Whitsunday LGA is slightly below the Mackay North Coast, Mackay SD and Queensland averages. The lower average income overall in Whitsunday LGA is primarily due to the larger proportion of people in Whitsunday employed in relatively lower paying industries such as accommodation and food services and transport, postal and warehousing. This is likely a reflection of the tourism-oriented nature of the Whitsundays and the attractive lifestyle for young adults and backpackers.

The average weekly individual income in the Whitsunday LGA in 2006 was $742.65, which was below the Mackay North Coast ($838.71), Mackay SD ($882.40) and Queensland ($795.78) averages.

Breaking income down by industry shows that employees in the mining industry had the highest average income on average ($1,629.65), significantly higher than any other industry. Incomes in the electricity, gas, water and waste services ($1,069.23) and construction ($945.13) industries were the next highest in the Whitsunday LGA.

When compared to the Mackay North Coast, Whitsunday LGA had higher average weekly incomes in the industries of:

- Information, media and telecommunications ($878.64 compared to $805.83);
- Education and training ($837.98 compared to $826.86);
- Agriculture, forestry and fishing ($731.63 compared to $680.35);
- Arts and recreation services ($659.01 compared to $525.49); and
- Accommodation and food services ($651.17 compared to $531.58).

Conversely, Whitsunday LGA had a comparatively lower average weekly income compared to the Mackay North Coast in the industries of:

- Construction ($945.13 compared to $992.97);
- Professional, scientific and technical services ($891.15 compared to $972.99);
- Public administration and safety ($864.94 compared to $901.97);
- Rental hiring and real estate services ($840.61 compared to $903.50);
- Wholesale trade ($794.32 compared to $911.17);
- Manufacturing ($748.10 compared to $884.50);
- Financial and insurance services ($725.17 compared to $895.38);
- Transport, postal and warehousing ($724.69 compared to $917.25);
- Health care and social assistance ($684.90 compared to $723.26).

When compared to Queensland, Whitsunday LGA had higher average weekly incomes in the industries of:

- Mining ($1,629.65 compared to $1,549.73);
- Agriculture, forestry and fishing ($731.63 compared to $623.06);
- Accommodation and food services ($651.17 compared to $470.39);
- Administrative and support services ($686.95 compared to $670.83); and
- Arts and recreation services ($659.01 compared to $629.90).

Conversely, Whitsunday LGA had a comparatively lower average weekly income compared to Queensland in the industries of:

- Electricity, gas, water and waste services ($1,069.23 compared to $1,180.75);
- Professional, scientific and technical services ($891.15 compared to $1,027.60);
- Public administration and safety ($864.94 compared to $970.66);
- Manufacturing ($748.10 compared to $831.51);
- Financial and insurance services ($725.17 compared to $1,000.45);
- Transport, postal and warehousing ($724.69 compared to $882.49); and
- Health care and social assistance ($684.90 compared to $775.44).

Table 4.15. Average Individual Weekly Income by Industry, 2006

Industry	Whitsunday LGA	Mackay North Coast	Mackay SD	Queensland
Mining	$1,629.65	$1,646.68	$1,682.59	$1,549.73
Electricity, gas, water & waste services	$1,069.23	$1,080.45	$1,079.92	$1,180.75
Construction	$945.13	$992.97	$1,015.39	$932.01
Professional, scientific & technical services	$891.15	$972.99	$959.85	$1,027.60
Information media & telecommunications	$878.64	$805.83	$794.76	$922.94
Public administration & safety	$864.94	$901.97	$875.45	$970.66
Rental, hiring & real estate services	$840.61	$903.50	$926.87	$891.93
Education & training	$837.98	$826.86	$810.29	$838.44
Wholesale trade	$794.32	$911.17	$943.60	$830.58
Manufacturing	$748.10	$884.50	$888.26	$831.51
Agriculture, forestry & fishing	$731.63	$680.35	$680.59	$623.06
Financial & insurance services	$725.17	$895.38	$872.70	$1,000.45
Transport, postal & warehousing	$724.69	$917.25	$936.17	$882.49
Administrative & support services	$686.95	$681.80	$663.90	$670.83
Health care & social assistance	$684.90	$723.26	$714.08	$775.44
Arts & recreation services	$659.01	$525.49	$494.55	$629.90
Accommodation & food services	$651.17	$531.58	$523.81	$470.39
Total	**$742.65**	**$838.71**	**$882.40**	**$795.78**

Source: Australian Bureau of Statistics (2003)
Note: Industry by income could not be reported using the ANSIC 1993 sector split due to unavailability of ABS data and as such cannot be directly compared to the GRP and employment by industry data.

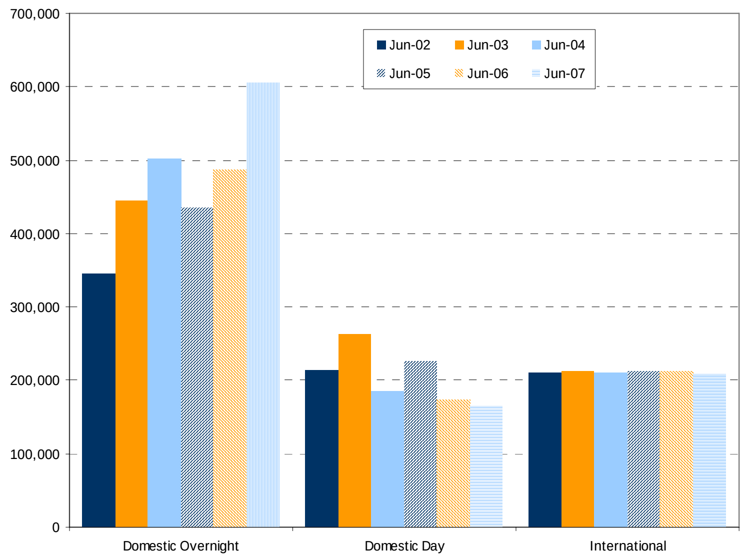
4.2.5 Major Industry Assessments

Tourism

Visitation to the Whitsunday Tourism Region

There were over 978,235 visitors to the Whitsunday Tourism Region (WTR), which includes the LGAs of Whitsunday and Bowen, in the year ended June 2007, 12.1% more than in the year ended June 2006 and 27.0% more than in the year ended June 2002. This growth is primarily due to a significant increase in the past year in domestic overnight visitors of 24.1%. Domestic overnight visitors to the WTR have generally increased year on year since 2005, while international visitors have remained relatively steady and domestic day visitors have declined in recent years.

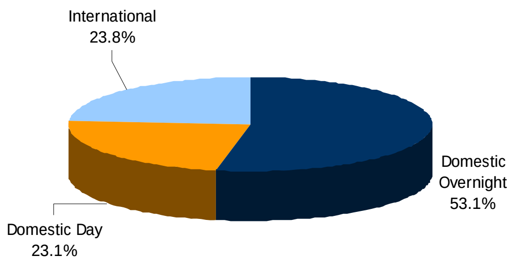
Figure 4.9. Visitor Numbers, WTR, Year Ended June 2002 - 2007



Source: Tourism Queensland (2007)

Over the past six years (year ended June 2002 to year ended June 2007) the WTR has averaged approximately 885,712 visitors to the region each year. Domestic overnight visitors account for approximately 53.1% of total visitation to the WTR, while domestic day visitors account for 23.1% and international visitors account for 23.8%.

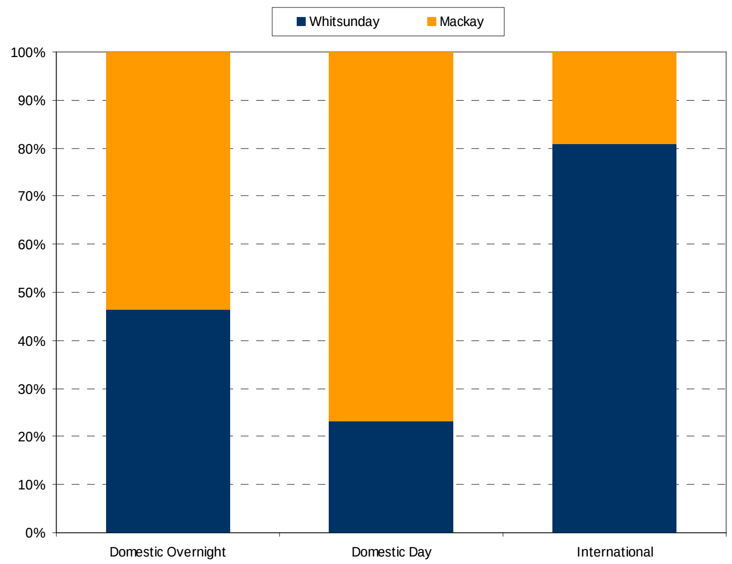
Figure 4.10. Visitor Breakdown, WTR, Year Ended June 2002 - 2007



Source: Tourism Queensland (2007)

The WTR accounts for over 80% of total international visitation to the combined Mackay – Whitsunday Tourism Region (approximately equivalent to the Mackay Statistical Division). Conversely, the Mackay Tourism Region (MTR) accounts for over 75% of total domestic day visitation to the combined region, while domestic overnight visitation is relatively evenly shared between the two tourism regions.

Figure 4.11. Visitor Share, WTR vs MTR, Year Ended June 2007



Source: Tourism Queensland (2007)

Accommodation Supply and Demand

The WTR had 37 accommodation establishments recorded as having five or more rooms operating in the region in the year ended June 2007, offering 2,731 guest rooms and 9,640 bed spaces. Accommodation supply in the WTR increased when compared to the previous year, with two more establishments operating in the region.

The 37 accommodation establishments in the WTR attracted 446,630 guests in the year ended June 2007, accounting for approximately 73.5% of total overnight visitors to the Whitsunday region in the year. These guests stayed a total of 1,441,597 nights and spent over approximately $120 million in accommodation expenses. Demand for accommodation has been relatively steady over the past two years.

Table 4.16. Accommodation Supply and Demand, WTR

	Year Ended June 2007	Year Ended June 2006	Annual % Change
Accommodation Supply			
Establishments (No.)	37	35	5.7%
Guest Rooms (No.)	2,731	2,697	1.3%
Bed Spaces (No.)	9,640	9,520	1.3%
Accommodation Demand			
Room Nights (No.)	619,424	620,436	-0.2%
Room Occupancy Rate (%) [(a)]	62.1%	63.0%	-0.9%
Guest Nights (No.)	1,441,597	1,467,521	-1.8%
Guest Arrivals (No.)	446,630	444,411	0.5%
Average Length of Stay (nights) [(b)]	3.2	3.3	-0.1
Takings from Accommodation ($M)	$120.4	$122.0	-1.3%

Notes: (a) The annual % change figure presented for room occupancy rate is a percentage point change. (b) The annual % change figure is the actual change in average length of stay and not a percentage change.
Source: Australian Bureau of Statistics (2007d)

Tourism Expenditure in the Whitsunday Tourism Region

The Office of Economic and Statistical Research (2006) estimate that international and domestic visitor expenditure in Queensland totalled approximately $18.0 billion in 2003-04. The majority of visitor expenditure was generated by domestic overnight visitors, who accounted for 62.3% of total visitor expenditure in the State ($11.2 billion), while international visitors accounted for 23.1% ($4.2 billion) and domestic day visitors accounted for 14.6% of total visitor expenditure ($2.6 billion).

Based on visitor numbers for the year ended June 2004 as recorded by Tourism Queensland, this equates to an average expenditure per visitor, for each visitor type, of:

- $681.66 for domestic overnight visitors;
- $85.09 for domestic day visitors; and
- $2,127.37 for international visitors.

In 2006/07 dollar terms this equates to an average expenditure per visitor, for each visitor type, of:

- $752.13 for domestic overnight visitors;
- $98.86 for domestic day visitors; and
- $2,451.33 for international visitors.

When indexed to current prices and applied to visitation for the year ended June 2007 in the WTR[3], total expenditure by visitors to the WTR in 2007 is estimated to have been approximately $952.4 million (approximately 4.5% of total Queensland tourism expenditure). This was comprised of:

- $451.4 million for domestic overnight visitors;
- $15.3 million for domestic day visitors; and
- $485.7 million for international visitors.

[3] Assuming expenditure per visitor for the State is comparable to the region examined.

Table 4.17. Tourism Expenditure, WTR, Year Ended June 2007

	Domestic Overnight	Domestic Day	International	Total
Queensland (2003/04)				
Visitors ('000s)	16,495	31,001	1,956	49,452
Visitor Expenditure ($M)	$12,306	$2,887	$4,553	$19,747
Average Expenditure / Visitor	$746.07	$93.13	$2,328.32	
WTR (2006/07)				
Visitors ('000s)	605	165	209	978
Visitor Expenditure ($ million)	**$451.4**	**$15.3**	**$485.7**	**$952.4**

Note: All $ values represented in 2006/07 dollar terms.
Source: Office of Economic and Statistical Research (2006), Tourism Queensland (2007 and 2004b), AEC*group*

Marine

Queensland Marine Industry

The Boating Industry Association of Queensland (2007) estimate that the Queensland marine industry, including manufacture, servicing, retail, distribution, brokerage and marinas, has an annual turnover of $2.6 billion and employs approximately 11,000 people. Further, it is estimated that the Queensland marine industry contributed $1.4 billion to State's economy in 2002-03, or approximately 1.2% of total Queensland Gross State Product (GSP) for the year (Pacific Southwest Strategy Group, 2006a).

The marine industry and boatbuilding sector is one of the largest manufacturing and value added sectors in Queensland, and has a significant presence in the Mackay Statistical Division (SD).

Boat Registrations

Queensland boat registrations exceeded 200,000 in January 2006 (Collins PRD, 2007), and have continued to grow since, with 223,425 boats registered as of July 2007. Over the past decade, boat registrations have recorded an average annual growth of 5.3% (Boating Industry Association of Queensland, 2007), approximately double the Queensland population growth rate.

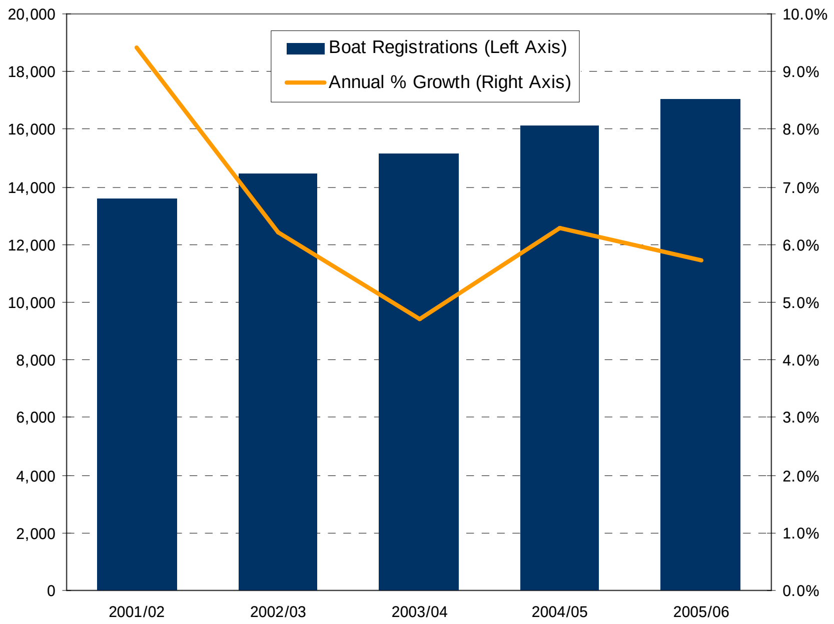
Of the 223,425 boats registered in Queensland, 11,602 (or 5.2%) of these are greater than 8 metres in length (Pacific Southwest Strategy Group, 2007). Boats larger than 8 metres typically require a mooring or berth for storage for a variety of reasons, including (URS, 2005):

- Larger boats are difficult to handle on a trailer as towing and launching larger boats can be difficult;
- Larger boats tend to be more valuable, with owners who tend to prefer and can afford alternate storage options; and
- With trends toward medium and higher density living, there are fewer suburban storage options.

Since 2002, registrations for boats greater than 8 metres in length have been growing at a faster rate than smaller boats (7.1% per annum on average compared to 6.0%), reflecting the current trend towards larger and more luxurious watercraft (Pacific Southwest Strategy Group, 2007; Collins PRD, 2007).

In the Mackay SD there were over 17,000 recreational boats registered as at April 2006, accounting for approximately 8.5% of total Queensland recreational boat registrations. Since 2000-01, recreational boat registrations have averaged annual growth of 6.7% in the region, above the Queensland growth rate of 5.1% over the same period.

Figure 4.12. Recreational Boat Registrations, Mackay SD



Note: Registrations for 2005/06 are for the 10 months to the end of April 2006.
Source: Pacific Southwest Strategy Group (2006a) (data originally from Queensland Transport)

Existing Marina Capacity

There were six marinas operating in the Mackay SD in 2006, with a total capacity of 1,384 wet berths. Whitsunday Shire has three marinas currently operating, Abel Point Marina, Hamilton Island Marina and Hayman Island Marina. Mackay City has two operating marinas (Mackay Marina Village and Laguna Quays Marina) and Bowen Shire has one marina (Bowen Marina).

Occupancy rates for these marinas are high, with the majority recording over 80% of berths occupied. Existing wet berth capacity at the six marinas is outlined in the table below.

Table 4.18. Wet Berth Capacity at Mackay SD Marinas, 2006

Marina	Location	Wet Berths
Abel Point Marina	Whitsunday Shire	500
Hamilton Island Marina	Whitsunday Shire	220
Hayman Island Marina	Whitsunday Shire	26
Mackay Marina Village	Mackay City	328
Laguna Quays	Mackay City	110
Bowen Marina	Bowen Shire	200
Total		1,384

Source: Pacific Southwest Strategy Group (2006a)

In addition to these wet berths, there are also a number of moorings (413 moorings identified in 2001) and dry berths (75 identified in 2006) available in the Mackay SD.

Proposed Additional Marina Capacity

There are currently a number of developments in the planning stage in the Mackay SD that will result in an increase in wet berth capacity if developed. The proposed Shute Harbour development will result in an increase in capacity in the region of 669 wet berths upon completion.

A complete list of proposed marina development (including expansion of existing facilities and new facilities) in the region is outlined in the table below.

Table 4.19. Proposed Additional Wet Berth Capacity at Mackay SD Marinas

Marina	Location	Current Wet Berths	Proposed Additional Wet Berths	Total Wet Berths
Abel Point Marina	Whitsunday Shire	500	-	500
Hamilton Island Marina	Whitsunday Shire	220	200	420
Hayman Island Marina	Whitsunday Shire	26	-	26
Port of Airlie Marina	Whitsunday Shire	-	300	300
Shute Harbour Marina	Whitsunday Shire	-	669	669
Mackay Marina Village	Mackay City	328	156	484
Laguna Quays	Mackay City	110	500	610
Bowen Marina	Bowen Shire	200	600	800
Total		1,384	2,425	3,809

Source: Pacific Southwest Strategy Group (2006a)

Marina Demand in Mackay SD

There was a total waiting list of 1,480 for marina berths in Queensland in 2005 (Pacific Southwest Strategy Group, 2006a), consisting of 795 waiting to purchase and 685 wanting to lease. Assuming that the waiting list for berths in the Mackay SD constitutes a similar proportion of the Queensland total as boat registrations (8.5%), this equates to a waiting list of approximately 121 marina berths in the Mackay SD. In addition, there are an estimated 75 dry berths and 413 moorings in the region (Pacific Southwest Strategy Group, 2006a).

In total, Pacific Southwest Strategy Group (2006a) estimate that current demand for berths in the Mackay SD (including current wet berth capacity, moorings, dry berths and waiting list) is 1,993, or 11.7% of current boat registrations in the region.

Alternatively, using a conservative occupancy rate of 80% for existing marina wet berths, this equates to total current demand base of 1,716 berths, or 10.1% of current boat registrations in the region.

Anticipated Additional Berthing Demand in Mackay SD

Based on current growth in boat registrations (6.7% per annum), Pacific Southwest Strategy Group (2006a) estimate that demand for berths in the Mackay SD will increase to 2,730 by 2010, and 5,122 by 2020. This is above the total existing and proposed additional wet berth capacity for the region (3,809), including the Shute Harbour Marina development, which implies that the current planned developments are insufficient to meet anticipated demand.

Even at a conservative existing demand estimate of 1,716 berths, and assuming that the current ratio between boat registrations and berth demand remains the same (10.1%, which is a conservative estimate as registration of boats requiring a mooring or berth is growing faster than for boats small enough to be stored on a trailer (Pacific Southwest Strategy Group, 2007; Collins PRD, 2007)), it is expected that demand for berths in the Mackay SD will increase to 2,220 by 2010, and 4,226 by 2020. This is still above the total existing and proposed additional wet berth capacity for the region, including the Shute Harbour Marina development.

4.3 Housing and Investment Overview

4.3.1 Dwelling Investment

Whitsunday LGA has experienced a strong level of dwelling investment in the past three years, with the number and value of dwelling approvals growing at a faster rate than Mackay North Coast, Mackay SD and Queensland.

The Whitsunday LGA had 389 dwellings approved in the year ended June 2007, 20.1% more dwelling approvals than the year ended June 2006. Growth in dwelling approvals for Whitsunday was above the level recorded for Mackay North Coast (19.0%) and Queensland (9.8%), but in line with the level recorded for Mackay SD (20.2%).

The total value of dwellings approved in the Whitsunday LGA was $123.0 million in the year ended June 2007, a 57.2% increase in value on the previous year. In line with the growth in number of approvals, growth in the value of approvals was also above the level recorded for Mackay North Coast (47.7%), Mackay SD (47.1%) and Queensland (15.6%).

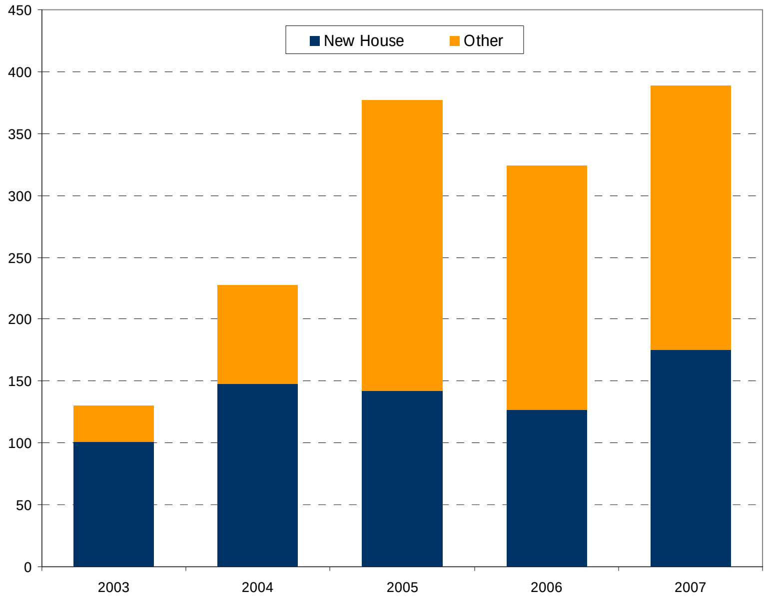
Table 4.20. Dwelling Approvals

Dwelling Type	Number		Value ($'million)	
	Year to June 2007	% Annual Change	Year to June 2007	% Annual Change
Whitsunday LGA				
New House	175	37.8%	$79.3	103.9%
Other Dwellings	214	8.6%	$38.8	10.8%
Total	389	20.1%	$123.0	57.2%
Mackay North Coast				
New House	914	1.1%	$267.4	24.5%
Other Dwellings	504	75.0%	$134.1	163.7%
Total	1,418	19.0%	$430.1	47.7%
Mackay SD				
New House	1,247	9.4%	$349.9	31.6%
Other Dwellings	510	58.4%	$134.9	136.6%
Total	1,757	20.2%	$522.5	47.1%
Queensland				
New House	28,726	14.2%	$6,657.1	21.3%
Other Dwellings	12,468	0.7%	$2,638.8	3.3%
Total	41,194	9.8%	$9,295.9	15.6%

Source: Australian Bureau of Statistics (2007e).

The number of dwelling approvals in Whitsunday LGA has increased significantly over the past five years, from 130 approvals in 2003 to 389 in 2007.

Figure 4.13. Dwelling Approvals- Whitsunday LGA (Year ended June)



Source: Australian Bureau of Statistics (2007e).

4.3.2 Property Market

There are 82 private dwellings in the Shute Harbour Collection District (immediate area), with the majority of these owned outright by the occupants. In contrast, the surrounding service centre of the Shute Harbour Marina development site (see section 1.3.2) is characterised by high levels of rental properties, supported by strong demand in the tourism market and the influx of construction workers seeking temporary accommodation in recent years.

Over the past year, Whitsunday LGA has experienced strong growth in the number and value of sales for house and unit properties compared to the Mackay North Coast, particularly in the suburbs of Cannonvale, Airlie Beach and Jubilee Pocket. However, property sales values appear to have stabilised in recent months.

The surrounding service centre of the Shute Harbour Marina development site accounted for over three quarters of total bonds lodged for rental properties in Whitsunday Shire in 2006-07, indicating a high degree of rental turnover. Demand for house rental properties has increased by over 20% in the surrounding service centre in the past year, while demand for unit rentals has remained relatively constant. Strong demand for rental properties has contributed to rental prices growing by over 10% per annum in across the Mackay North Coast in recent years.

The availability of public and community housing in the Whitsunday LGA is relatively low, with sizable waiting lists for both State Government managed public housing and housing cooperative managed community housing.

The average cost of housing (both home loans and rents) is higher in the immediate area and the surrounding service centre than in broader regional centres and the State, placing emphasis on the need for affordable housing for low income earning households in the region – the supply of which is significantly limited to below 25% of rental stock and below 15% of dwellings currently being purchased.

Private Dwelling Stock and Structures

There were 82 private dwellings in the Shute Harbour / Shutehaven Collection District (the immediate area) at the time of the 2006 Census, 22.4% more than in 2001 (67). Within the surrounding service centre of the Shute Harbour Marina development site, comprising Shute Haven, Airlie Beach and Cannonvale, there were 4,115 private dwellings in 2006, 19.9% more than in 2001. Growth in private dwellings has been more pronounced in Shute Harbour and the surrounding service centre than in Whitsunday LGA (17.2%), Mackay North Coast (10.2%), Mackay SD (9.2%) and Queensland (12.0%).

The majority of occupied private dwellings in the immediate area are separate houses, representing 63.5% of total occupied private dwellings in the local area, around 13% lower than the Mackay SD and Queensland averages. Separate houses account for 42.6% of total occupied dwellings in the surrounding service centre to the development site, representing a considerably smaller proportion of total occupied dwellings than in the Mackay SD (77.3%) and Queensland (76.5%). In contrast, the surrounding service centre is characterised by considerably higher proportions of semi-detached, flat / unit and other dwelling structures, likely representative of the significance of the tourism sector in the local region.

Table 4.21. Private Dwellings

Region	Occupied Dwellings						Unoccupied Dwellings	Total Dwellings
	House	Semi-Detached	Flat / Unit	Other Dwelling	Not Stated	Total		
Immediate Area								
2006	63.5%	0.0%	4.1%	32.4%	0.0%	74	8	82
2001	65.0%	0.0%	15.0%	26.7%	0.0%	60	7	67
Surrounding Service Centre								
2006	42.6%	13.0%	23.7%	20.5%	0.2%	3,719	396	4,115
2001	38.8%	8.6%	28.2%	22.8%	1.7%	3,216	216	3,432
Whitsunday LGA								
2006	58.3%	6.7%	20.6%	14.3%	0.0%	7,647	927	8,574
2001	57.2%	5.3%	16.6%	19.1%	1.7%	6,691	627	7,318
Mackay North Coast								
2006	74.7%	5.8%	12.0%	7.6%	0.0%	44,395	4,399	48,794
2001	75.8%	4.4%	10.2%	8.4%	1.2%	39,789	4,471	44,260
Mackay SD								
2006	77.3%	4.7%	10.2%	7.8%	0.1%	57,292	6,667	63,959
2001	78.4%	3.6%	8.7%	8.2%	1.1%	51,576	6,985	58,561
Queensland								
2006	76.5%	7.5%	13.0%	2.8%	0.1%	1,508,522	152,228	1,660,750
2001	77.1%	6.8%	12.1%	3.1%	0.9%	1,355,613	127,299	1,482,912

Source: Australian Bureau of Statistics (2007b)

Household Ownership

The Shute Harbour immediate area is characterised by high levels of home ownership (54.1%) compared to averages for the surrounding service centre (24.9%), Whitsunday LGA (31.4%), Mackay North Coast (34.5%), Mackay SD (34.4%) and Queensland (32.8%). This is likely a reflection of the older demographic residing in the area with accumulated wealth. Tenure type has remained relatively stable over the past five years in the immediate area.

By comparison, almost half (48.3%) of the private dwellings in the surrounding service centre are occupied by tenants, considerably higher than averages for rental tenure recorded by the immediate area (26.2%) and the broader service regions (ranging from 31.5% to 37.5%). The proportion of households purchasing and renting their home in the surrounding service centre has increased over the past five years by 6.4 and 2.2 percentage points respectively, while the proportion fully owning their home has declined by 3.9 percentage points.

Consultation with real estate agents and accommodation providers indicated that demand for rental accommodation in the surrounding service centre is supported by strong demand in the tourism market, and in recent years has been further buoyed by the high level of development in the area.

Table 4.22. Household Ownership

Region	% Fully Owning Home	% Purchasing Home	% Renting	% Other Tenure Type
Immediate Area				
2006	54.1%	19.7%	26.2%	0.0%
2001	53.6%	17.9%	25.0%	0.0%
Surrounding Service Centre				
2006	24.9%	24.8%	48.3%	1.9%
2001	28.8%	18.4%	46.1%	6.7%
Whitsunday LGA				
2006	31.4%	29.2%	37.5%	1.9%
2001	37.7%	21.2%	35.3%	5.8%
Mackay North Coast				
2006	34.5%	33.0%	31.5%	1.1%
2001	40.1%	24.5%	31.6%	3.7%
Mackay SD				
2006	34.4%	31.0%	33.4%	1.1%
2001	40.0%	23.2%	32.2%	4.6%
Queensland				
2006	32.8%	33.8%	32.3%	1.1%
2001	38.4%	27.0%	31.5%	3.2%

Source: Australian Bureau of Statistics (2007b)

Property Sales and Values

The Whitsunday LGA recorded an increase in total number of house sales of 22.8% over the year to June 2007 with 224 sales. This annual growth was above the level recorded for the Mackay North Coast (which declined 14.2%) with the largest growth in sales recorded for Jubilee Pocket (126.3%), followed by Proserpine (29.4%) and Cannonvale (10.2%). Median house sales price over the same period experienced growth of 9.3% for the Whitsunday LGA.

Unit sales increased in the Whitsunday LGA by 84.8% with 231 sales in the year to June 2007, in contrast to the Mackay North Coast, which experienced a decline in the number of units sold of 2.0% over the year. Despite the declines in sales numbers, the Mackay North Coast experienced growth in the median unit price of 20.0% (to $292,259), while Whitsunday LGA recorded growth in the median unit price of 6.5% to $320,328.

A total of 81 land sales with a median sales price of $205,858 were recorded for the Whitsunday LGA in the year to June 2007. This was associated with a decline in median sales value of 5.0% for the year.

Table 4.23. Property Market

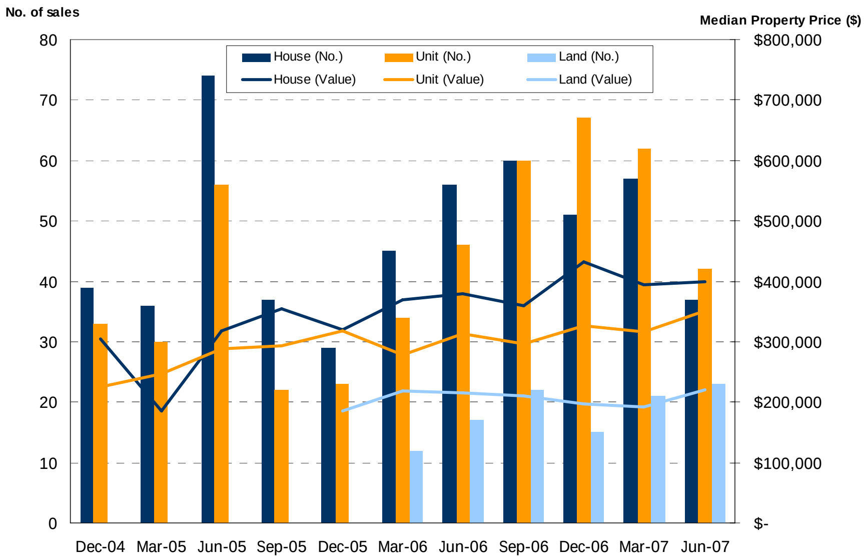
Property Type	Number		Value	
	Year to Jun 2007	% Annual Change	Year to Jun 2007	% Annual Change
House				
Cannonvale	65	10.2%	$460,000	14.1%
Jubilee Pocket	43	126.3%	$413,500	13.3%
Proserpine	66	29.4%	$280,000	18.1%
Whitsunday LGA	224	22.8%	$394,966	9.3%
Mackay North Coast	1893	-14.2%	$367,464	9.1%

Property Type	Number		Value	
	Year to Jun 2007	% Annual Change	Year to Jun 2007	% Annual Change
Unit				
Cannonvale	131	67.9%	$305,000	21.8%
Jubilee Pocket	9	12.5%	$299,000	n.a.
Airlie Beach	53	211.8%	$425,000	4.3%
Whitsunday LGA	231	84.8%	$320,328	6.5%
Mackay North Coast	597	-2.0%	$292,259	20.0%
Land				
Cannonvale	36	414.3%	$179,000	-16.7%
Jubilee Pocket	22	n.a.	$176,000	n.a.
Hideaway Bay	5	n.a.	$205,000	n.a.
Whitsunday LGA	81	179.3%	$205,858	-5.0%
Mackay North Coast	315	-38.8%	$204,778	16.4%

Source: Real Estate Institute of Queensland (2007)

The number of unit sales has been increasing for the Whitsunday LGA over the past two years, however, the number of sales declined in the first half of 2007. Meanwhile house and land sales have been variable over this time. In December 2006, house prices peaked in Whitsunday LGA and have since declined.

Figure 4.14. Property Trends Whitsunday LGA



Source: Real Estate Institute of Queensland (2007)

Home Loan Repayments

Average monthly home loan repayments in the immediate area were $1,705 in 2006, considerably higher than regional ($1,448.45 for Mackay SD) and State comparisons ($1,466.59). Higher home loan repayments in the local area are likely to be predominantly driven by relatively high property values.

Average home loan repayments in the surrounding service centre were slightly lower than in the immediate area ($1,612) in 2006, although were higher than broader regional and State comparisons, reflecting the high value of property in the area.

The Whitsunday LGA recorded an average monthly home loan repayment of $1,490.90 in 2006, which was slightly above the Mackay North Coast, Mackay SD and Queensland averages. Home loan repayments have grown at 8.6% per annum on average since 2001, which is slightly above the Mackay SD trend.

Table 4.24. Home Loan Repayments

Region	Average Monthly Home Loan Repayment	Average Annual % Growth (2001 – 06)
Immediate Area	$1,704.60	N/a
Surrounding Service Centre	$1,612.18	N/a
Whitsunday LGA	$1,490.90	8.6%
Mackay North Coast	$1,471.03	8.9%
Mackay SD	$1,448.55	9.3%
Queensland	$1,466.59	8.3%

Note: N/a = not available as comparable time series Census data is not available at this area level.
Source: Australian Bureau of Statistics (2007b)

Rental Stock

Of the 74 occupied private dwellings in the Shute Harbour immediate area, 19 were occupied by tenants at the time of the 2006 Census, with all of these properties managed by real estate agents. In contrast, almost half (1,796) of occupied private dwellings in the surrounding service centre were leased to tenants in 2006.

Real estate agents manage a considerably higher proportion of rental properties in the surrounding service centre (62.0%) than broader regional and State averages (40.0% to 52.4%), while approximately one quarter of rental properties in the area are managed by other persons (e.g. property owner, parent, friend, relative, etc.).

The immediate area and surrounding service centre have a low level of rental accommodation managed by the State Housing Authority or housing cooperatives / community church groups, indicating that the availability of public housing in the area is relatively low.

As at November 2005, the State Housing Authority managed a total of 77 houses and units (Hornby, 2006), comprised of 46 houses / units in Proserpine, 22 in Cannonvale and nine in Jubilee Pocket. The report entitled *"Opportunities for affordable housing in the Whitsunday Shire"* (Hornby, 2006) indicates that in November 2005 there was a 9 year wait for Queensland Government public housing, further emphasising the low level of availability of affordable housing.

Housing cooperatives / community church group's in the Whitsunday Shire are reported to provide the following affordable housing (Hornby, 2006):

- Whitsunday Community Housing Association: Manages 24 houses / units for low income households;
- Whitsunday Women's Service: Manages one refuge and three units of housing for women and children;
- PATCH: Manages two units for aged people with a disability;
- Proserpine Homes for the Aged: Manages 30 units for aged persons;
- Community Rent Scheme: Manages six houses for low income households; and
- Indigenous Management: Manages six houses for Indigenous persons under the auspice of a Bowen based Indigenous Housing Organisation.

Hornby (2006) indicates that in November 2005 the Whitsunday Community Housing Association, Proserpine Homes for the Aged and Community Rent Scheme had a combined waiting list of approximately 200, indicating the high level of demand for affordable housing relative to supply in the region.

Table 4.25. Rental Stock by Landlord Type (Occupied Dwellings Only, 2006)

Region	Real Estate Agent	State or Territory Housing Authority	Person Not in Same Household [(a)]	Housing Cooperative / Community Church Group	Other Landlord Type [(b)]	Total Rental Properties
Immediate Area	100.0%	0.0%	0.0%	0.0%	0.0%	19
Surrounding Service Centre	62.0%	1.3%	24.5%	1.6%	10.7%	1,796
Whitsunday LGA	52.5%	4.7%	28.7%	3.0%	11.1%	2,868
Mackay North Coast	47.8%	13.2%	28.0%	3.1%	8.0%	13,984
Mackay SD	40.0%	11.3%	25.6%	2.7%	20.5%	19,136
Queensland	52.4%	11.4%	26.9%	2.4%	6.8%	487,253

Notes: (a) Comprises dwellings being rented from a parent/other relative or other person. (b) Comprises dwellings being rented through a 'Residential park (includes caravan parks and marinas)', 'Employer-government (includes Defence Housing Authority)' and 'Employer-other employer' (private).
Source: Australian Bureau of Statistics (2007b)

Rental Bonds and Prices

Average weekly rents in the immediate area were $542.86 in 2006, more than double regional ($190.41 Mackay SD) and State ($217.76) comparisons. Average weekly rental prices in the surrounding service centre, while approximately half those recorded for the immediate area, were higher than broader regional averages in 2006 at $263.87. This is a reflection of the high property values and demand for rental properties in the area.

Average weekly rents in Whitsunday LGA were $261.50 in 2006, representing average annual growth of 7.1% since 2001. Average annual growth in the Whitsunday LGA was below that recorded for Mackay North Coast (8.6%), Mackay SD (8.8%), but was in line with the Queensland average (7.2%). Average weekly rents for Whitsunday LGA are considerably higher than in these comparison areas.

The high cost of purchasing or renting accommodation in the Whitsunday LGA places emphasis on the need for affordable housing in the region to cater to low income families.

Table 4.26. Rental Prices, 2001 to 2006

Region	Average Weekly Rent Repayment	Average Annual % Growth (2001 – 06)
Immediate Area	$542.86	N/a
Surrounding Service Centre	$263.87	N/a
Whitsunday LGA	$261.50	7.1%
Mackay North Coast	$213.77	8.6%
Mackay SD	$190.41	8.8%
Queensland	$217.76	7.2%

Note: N/a = not available as comparable time series Census data is not available at this area level.
Source: Australian Bureau of Statistics (2007b)

The Shute Harbour Marina development's surrounding service centre (including the Whitsunday islands) accounted for 551 (83.1%) of the 663 flat/ unit rental bonds lodged in Whitsunday Shire during the 2006-07 financial year, and 303 (68.1%) of the 445 house bonds lodged. Bonds lodged for flats in the surrounding service centre were in line with the previous year, while house bonds increased by 22.7%.

Flat and house rents are generally higher in the Shute Harbour Marina development's surrounding service centre and the broader Whitsunday region when compared to Mackay City, although have generally increased at a slower rate over the past year with the exception of one bedroom flats and two bedroom houses compared to Whitsunday LGA and three bedroom flats and two bedroom houses compared to Mackay City.

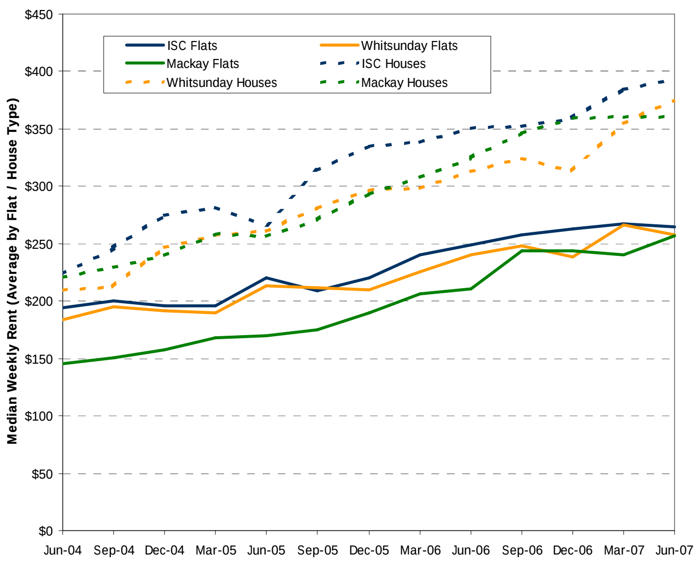
Table 4.27. Rental Market

Property Type	Surrounding Service Centre [(a)]		Whitsunday Shire		Mackay City	
	Year to June 2007	% Annual Change	Year to June 2007	% Annual Change	Year to June 2007	% Annual Change
Bonds Lodged						
1 Bedroom Flat	71	0.0%	104	4.0%	198	33.8%
2 Bedroom Flat	349	-4.6%	419	-6.7%	877	4.8%
3 Bedroom Flat	131	13.9%	140	13.8%	217	25.4%
Total	*551*	*-0.2%*	*663*	*-1.3%*	*1,292*	*11.6%*
2 Bedroom House	33	57.1%	58	3.6%	256	2.4%
3 Bedroom House	192	12.9%	278	9.4%	1,254	-1.5%
4 Bedroom House	78	39.3%	109	38.0%	643	17.8%
Total	*303*	*22.7%*	*445*	*14.4%*	*2,153*	*4.1%*
Median Weekly Rent						
1 Bedroom Flat	$197	5.3%	$190	1.6%	$178	15.2%
2 Bedroom Flat	$254	12.7%	$246	13.5%	$242	29.5%
3 Bedroom Flat	$324	20.9%	$324	21.8%	$321	19.6%
Average	*$264*	*14.9%*	*$254*	*14.6%*	*$246*	*26.0%*
2 Bedroom House	$266	22.1%	$248	19.0%	$271	15.0%
3 Bedroom House	$362	10.4%	$336	13.6%	$340	18.5%
4 Bedroom House	$451	13.5%	$418	14.5%	$423	18.7%
Average	*$374*	*12.0%*	*$345*	*16.0%*	*$356*	*19.3%*

Note: (a) Rental market data from the Surrounding service centre from the Residential Tenancies Authority includes the suburbs of Shute Harbour, Shutehaven, Cannonvale, Airlie Beach and Jubilee Pocket, as well as the Whitsunday islands.
Source: Residential Tenancies Authority (2007)

Flat and house rental prices have been consistently growing over the past three years in the surrounding service centre of the Shute Harbour Marina development, in line with the experience of Whitsunday Shire and Mackay City.

Figure 4.15. Rental Price Trends



Source: Residential Tenancies Authority (2007)

Short Stay Accommodation

Short stay accommodation supply in Airlie Beach, Cannonvale and the surrounding suburbs that form the surrounding service centre for the Shute Harbour Marina development site is considerable, with Airlie Beach a key tourism gateway and destination. The table in Appendix A outlines the supply of short stay accommodation in the surrounding service centre.

Occupancy rates for short stay accommodation throughout Whitsunday Shire are generally high, reflective of the Shire's status as a desirable tourism destination. The table below outlines the average occupancy rates for accommodation establishments in the Whitsunday mainland during high and low seasons, as well overall during the year.

Table 4.28. Accommodation Occupancy Rates, Whitsunday Mainland, 2006

Occupancy Rate	High Demand Period	Low Demand Period	Average Throughout Year
Hotels, Motels & Serviced Apartments	87.6%	61.0%	75.7%
Caravan Parks – Cabins	89.1%	52.1%	69.2%
Caravan Parks – Sites	71.9%	32.2%	50.2%
Flats, Units & Holiday Apartments	64.5%	39.7%	53.8%

Source: Tourism Queensland (2006)

Consultation with real estate agents and accommodation providers indicated that the high level of construction activity in recent years in the region has placed increased demand on short stay accommodation, in particular relatively less expensive short stay accommodation such as caravan parks and some motels. Higher priced accommodation such as hotels and holiday apartments do not typically receive significant demand impacts from construction workers.

Consultation with caravan park managers indicates that they typically do not tend to cater to large numbers of construction workers as they can impact on the relaxed atmosphere that the tourist clientele are seeking. However, during periods of high demand from construction workers some caravan parks have leased on a short term basis while workers seek alternate accommodation. Hutchinson Builders have purchased a caravan park to house construction workers during the development of the Whisper Bay residential / tourism development in Airlie Beach, which has reduced the supply of short stay accommodation available for tourism visitors.

Motel style accommodation establishments have also reported some increases in demand from construction workers in the past, although this is typically relatively small and for short periods of time.

Housing Affordability

Housing affordability refers to the capacity of an individual to meet the cost of their dwelling while also being able to meet the costs of maintenance and energy consumption while meeting lifestyle needs (Queensland Government, 2007). While there are many other considerations than cost in determining housing affordability, the benchmark for affordable housing in Queensland is that "low income households (the bottom 40% of households in the income distribution) spend no more than 30% of their income on mortgage or rental costs" (Queensland Government, 2007).

Using this definition, the supply of affordable housing for rent or purchase in the Whitsunday region is outlined in the following tables.

Table 4.29. Affordable Housing Supply in Whitsunday LGA: Dwellings Currently Being Purchased

Income Quintile	Average Weekly Household Income	"Affordable" Weekly Housing Loan Repayment (30% Income)	No. of Dwellings Being Purchased With Home Loan Repayment < 30% of Income	Cumulative Percent of Total Dwellings Being Purchased
Quintile 1 (20%)	$307.11	$92.13	69	4.1%
Quintile 2 (40%)	$495.85	$148.75	150	13.2%
Quintile 3 (60%)	$680.82	$204.25	190	24.5%
Quintile 4 (80%)	$871.95	$261.58	288	41.8%
Quintile 5 (100%)	$1,174.24	$352.27	969	100.0%

Source: ABS (2007b)

Table 4.30. Affordable Housing Supply in Whitsunday LGA: Dwellings Currently Being Rented

Income Quintile	Average Weekly Household Income	"Affordable" Weekly Rent Payment (30% Income)	No. of Dwellings Being Rented With Rent Payment < 30% of Income	Cumulative Percent of Total Dwellings Being Rented
Quintile 1 (20%)	$307.11	$92.13	248	10.8%
Quintile 2 (40%)	$495.85	$148.75	303	23.9%
Quintile 3 (60%)	$680.82	$204.25	464	44.1%
Quintile 4 (80%)	$871.95	$261.58	413	62.0%
Quintile 5 (100%)	$1,174.24	$352.27	876	100.0%

Source: ABS (2007b)

As outlined above, at the time of the 2006 Census there were 219 dwellings being purchased that met the affordability criteria for the two lowest income quintiles in the Whitsunday LGA, comprising 13.2% of the total dwelling supply being purchased. Of dwellings currently being rented, 553 dwellings currently meet the requirements for affordable housing in the Whitsunday LGA, comprising 23.9% of the total supply of rented dwellings in 2006.

Indicators of Housing Stress

A comparison of the income and rent payments of those in the Whitsunday LGA at the time of the 2006 Census provides an estimate of those persons experiencing housing stress (those households spending greater than 30% of their income on rent payments). As shown in the table below, 481 currently occupied dwellings were estimated as experiencing housing stress, accounting for 29.5% of those households renting in the Whitsunday LGA at the time of the 2006 Census.

Table 4.31. Households in Occupied Private Dwellings Spending 30% of Income on Rent - Whitsunday LGA

Weekly Income	In Housing Stress	Total Occupied Rental Dwellings	Proportion of Occupied Rental Dwellings
Negative/Nil income	24	24	100.0%
$1-$149	24	24	100.0%
$150-$249	71	77	95.9%
$250-$349	99	131	79.2%
$350-$499	20	41	48.8%
$500-$649	127	249	52.3%
$650-$799	39	147	26.5%
$800-$999	34	153	23.1%
$1,000-$1,399	39	404	9.8%
$1,400-$1,999	4	252	1.7%
$2,000-$2,499	0	82	0.0%
$2,500 or more	0	86	0.0%
Total	**481**	**1,670**	**29.5%**

Source: ABS (2007b)

As outlined in the table above, the proportion of households in each income grouping experiencing housing stress decreased with increasing income levels, with the highest proportion of housing stress experienced for those households receiving no income up to $149 per week. The majority of households with an average weekly household income of less than $499 per week were experiencing some housing stress at the time of the 2006 Census.

4.3.3 Non-Residential Building Investment

The Whitsunday LGA has experienced significant growth in non-residential building investment over the past five years, highlighting the volume of development activity currently being undertaken in the region.

The value of non-residential building investment increased 61.9% to a total of $90.8 million for Whitsunday LGA in the year ended June 2007. This was well above the annual growth in non-residential building investment experienced by the Mackay North Coast (31.3%), Mackay SD (40.2%) and Queensland (9.4%).

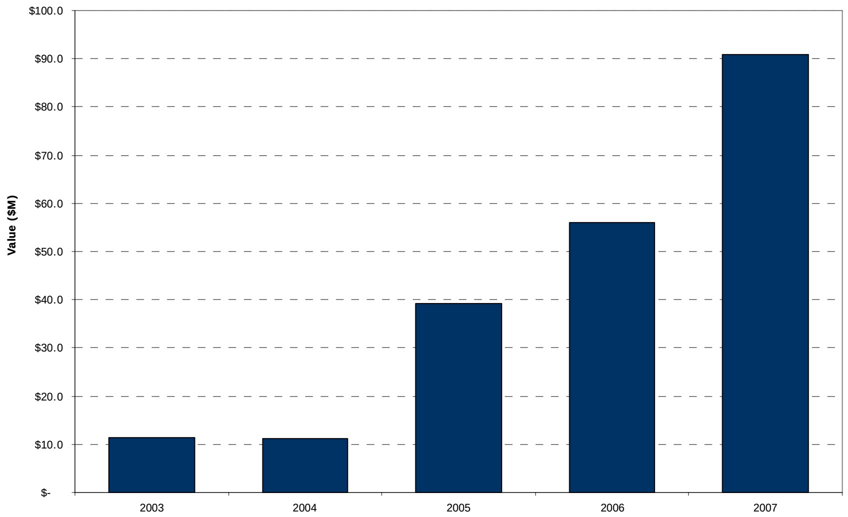
Table 4.32. Non-Residential Building Investment

Region	Value	
	Year to June 2007 ($M)	% Annual Change
Whitsunday LGA	$90.8	61.9%
Mackay North Coast	$199.6	31.3%
Mackay SD	$240.1	40.2%
Queensland	$6,591.7	9.4%

Source: Australian Bureau of Statistics (2007e).

The Whitsunday LGA has experienced strong growth in non-residential building investment over the past four years and contributed over 35% of total non-residential building investment in the Mackay SD in the year ended June 2007.

Figure 4.16. Non-Residential Building Investment- Whitsunday LGA (YE June)



Source: Australian Bureau of Statistics (2007e).

Major Regional Projects

Over the next two years Whitsunday LGA is expected to receive over $2.4 billion in commercial investment, including a range of five star resorts, marina developments, energy infrastructure, and recreational and retail facilities.

The Whitsunday LGA has an estimated $2.4 billion worth of investment either under construction, committed or under study, covering a range of infrastructure, tourism, recreation, retail and marine based developments. Project developments include:

- A number of five star hotel developments (e.g. Peppers Coral Coast Resort and North Point);

- Marina facilities (e.g. Port Airlie Marina Development); and
- A variety of recreational facilities (e.g. Jagabara Championship Golf Course and Whitsunday Springs Golf Course).

The table below outlines the major recent and current development projects in the region.

Table 4.33. Major Projects, Whitsunday LGA

Project	Description	Project Stage	Estimated Value
Energy Supply Cannonvale/ Jubilee Pocket	Reinforcement of the local energy supply of Cannonvale and Jubilee Pocket to support increased energy demands in Whitsunday Shire.	Under Construction	$20 M
North Point	Development of 50 one bedroom pavilions of a six-star resort addition to the Hamilton Island Resort.	Under Construction	$50 M
Peppers Coral Coast Resort	Development of a five star resort comprising 121 apartments, 11 penthouses, swimming facilities, conference centre, retail shops and restaurants.	Under Construction	$140 M
Whisper Bay	Development of 98 three bedroom study villas and apartments, and 6 four bedroom super penthouses at Airlie Beach. The development will feature a number of individual swimming pools, two community pools, BBQs, recreation decks and landscaped surrounds.	Under Construction	$282 M
Jagabara Championship Golf Course	The Karrie Webb designed championship golf course is to be a part of the $100 million expansion plan for the Laguna Whitsunday's resort.	Under Construction	$25 M
Port Airlie Marina Development	Development of a 300 berth marina comprising ferry and cruise terminal, public boat ramp, pedestrian mall and village square, retail and commercial space. The development will include 140 resort apartments, 356 residential apartments and up to 14 detached homes	Berths & associated facilities completed, development of resort and tourism accommodation committed	$450 M
Funnel Bay	Development of a 200-room hotel and 400 apartments has been approved for construction on scenic funnel bay beach on the Whitsunday Coast.	Committed	$500 M
Whitsunday Springs	Development of 2,500 mixed density dwellings to include hotel, apartments, residential allotments and golf course located 5km from Airlie Beach.	Committed	$600 M
Waterson Way	Development of 163 resort style apartments, conference facilities and retail space.	Committed	$102 M

Source: Queensland Department of State Development, Trade and Innovation (2006)

Given the local workforce has little excess capacity, as evidenced by a high participation rate and low unemployment rate, the cumulative workforce demands of current and future major projects in the region may lead to pressure on affordable rental and short stay accommodation stock from construction work crews, and this will need to be monitored. This impact will be mitigated to some extent through work crews moving from one project to the next (work continuity).

4.4 Social Infrastructure Overview

4.4.1 Education Facilities

Based on consultation with a selection of schools throughout the region, Whitsunday LGA appears to be adequately serviced by primary and secondary schools. Approximately 1,500 students enrolled in primary schools in Whitsunday LGA and over 850 secondary school students, with most schools reporting that additional capacity is available.

There are several primary and secondary school options in the Whitsunday and Mackay City LGAs, including a range of public and private institutions. There are a total of 29 public primary schools in these LGAs, including four in the Whitsunday LGA and 25 in the Mackay City LGA. Additionally, there are 11 private primary schools, including two in the Whitsunday LGA and nine in the Mackay City LGA. The table below outlines all primary school facilities in these two LGAs and the number of enrolments.

Table 4.34. Government and Non-Government Primary Educational Facilities

School Type and Name	Enrolment (FTE)	
	Pre school	Primary
Government Schools		
Whitsunday LGA		
Cannonvale State School	34	492
Hamilton Island State School		35
Hayman Island State School		11
Proserpine State Primary	18.9	619
Mackay (C) LGA		
Andergrove State School	231.5	506
Beaconsfield State School	32.5	431
Bloomsbury State School		59
Bucasia State School	10	217
Calen District State College	11	133
Chelona State School		78
Coningsby State School		48
Dundula Stae School	11	87
Eimeo Road State School	11	87
Eton State School	9.5	90
Farleigh State School	9	39
Glenella State School	12	141
Hampden State School	4.5	96
Homebush State School	3.5	45
Mackay Central State School	10.5	165
Mackay North State School	23.5	412
Mackay West State School	45	715
Mount Charlton State School		14
Northview State School	22.5	331
Oakenden State School		20
Pindi Pindi State School		30
Seaforth State school	6	128
Slade Point State School	18	308
Victoria Park State School	44	591
Walkerston State School	25	320
Non Government Schools		
Whitsunday LGA		
St. Catherine's Primary School, Proserpine	38	220
Whitsunday Christian College	26	109
Mackay (C) LGA		
Carlisle Christian College	3	41
Emmanuel Catholic Primary School	48	548
Mackay Christian College	76	530
MacKillop Catholic Primary School	41	310
St. Francis Xavier Catholic Primary School	50	344
St. John's Catholic School	34	160
St. Joseph's Catholic Primary School	46	267
St. Mary's Catholic Primary School	37	199.2
Whitsunday Anglican School	49	322

Source: Mackay City Council (2007)

There are a total of five government secondary school options, including one in the Whitsunday LGA and four in the Mackay City LGA. There are a further seven private secondary school facilities in the area, including one in the Whitsunday LGA and six in the

Mackay City LGA. The table below outlines all secondary school facilities in the two LGAs and the number of enrolments.

Table 4.35. Government and Non-Government Secondary Educational Facilities

School Type	Enrolment (FTE) Secondary School
Government Schools	
Whitsunday LGA	
Proserpine State High School	862
Mackay (C) LGA	
Calen District State College	119
Mackay North State High School	1,514
Mackay State High School	954
Pioneer State High School	883
Non Government Schools	
Whitsunday LGA	
Whitsunday Christian College	76
Mackay (C) LGA	
Carlisle Christian College	27
Holy Spirit College	18
Mackay Christian College	480
Mercy College	565
St. Patrick's College	440
Whitsunday Anglican School	375

Source: Mackay City Council (2007)

There are also tertiary education opportunities in the surrounding areas. Within the Mackay City LGA, tertiary institutions include Central Queensland University (including the Central Queensland Conservatorium of Music), James Cook University, and the Central Queensland Institute of TAFE. Additionally, in the Whitsunday LGA, The Barrier Reef Institute of TAFE, located on Shute Harbour Road in Cannonvale, provides residents with further education and vocational training options.

The Mackay International Education and Training Consortium (Edmac) is also located in the region and comprises a network of Queensland education providers and support agencies. The aim of the group is to provide support services to select export markets and to provide increased services to international students within primary, secondary, and tertiary studies.

4.4.2 Child Care Facilities

Consultation with child care facilities in the surrounding service centre indicates that demand for child care facilities is above existing capacity.

There are currently four child care facilities operating in the surrounding service area of the Shute Harbour Marina Development (including the suburbs of Shute Harbour, Airlie Beach, Cannonvale, Flametree and Jubilee Pocket) – three long day care centres operating Monday to Friday and one occasional care centre open Monday to Friday between 9:00 AM and 1:00 PM. There is also a vacation care facility in Cannonvale operating holiday programs for primary school children during school holidays, and an out of school hours care facility that operates from 2:30 PM to 6:00 PM every day of school term. Further afield, Proserpine has one long day care facility in operation and one family day care facility.

The four child care facilities currently operating in the area around Shute Harbour do not have sufficient capacity to cater to existing demand for child care, reporting no vacancies with waiting lists of up to six months (Director, Whitsunday Child Care Centre, *pers. comm*. 8/10/2007).

Two new long day care facilities are scheduled to open in Cannonvale in late 2007, which will increase child care capacity in the area. Demand for these facilities is already high, with both facilities having received a large number of applications for places (121 Childcare, 2007; Cannonvale Kidz Early Learning Centre, 2007).

A list of the profit and non-profit child care facilities in the area around Shute Harbour, Airlie Beach and Cannonvale, as well as Proserpine, is provided in the table below.

Table4.36. Child Care Facilities

Area of service	Child Care Centre	Type of Service
Profit (Existing)		
Airlie Beach	Bizy Kidz Whitsunday	Long Day Care
Cannonvale	Cannonvale Childcare Centre	Long Day Care
	Scallywags Limited Hours Childcare Centre	Occasional Care
	Whitsunday Childcare Centre	Long Day Care
Proserpine	Smart Start Child Care Centre	Long Day Care
Profit (Starting Late 2007)		
Cannonvale	Cannonvale Kidz Early Learning Centre	Long Day Care
	121 Childcare	Long Day Care
Non-Profit		
Cannonvale	Whitsunday Vacation Care	Vacation Care
	Cannonvale Out of School Hours Care	OOSH Care
Proserpine	Whitsunday Shire Family Day Care Association	Family Day Care

Source: Whitsunday Shire Council (2007)

4.4.3 Community and Cultural Facilities

The Whitsunday LGA has a number of community and cultural facilities servicing the local population, augmented by regional facilities available in Mackay City.

There are two libraries in the Whitsunday LGA, located in Proserpine and at the TAFE campus in Cannonvale. The Mackay City LGA contains three libraries, situated in Mackay City, Walkerston, and Mount Pleasant. There is an additional mobile library, which stops in most locations within the LGA for residents who do not have easy access to the above locations.

The Proserpine Entertainment Centre, located on Main Street in Proserpine, serves as the major entertainment venue in the Whitsunday LGA. Besides serving as a venue for local and travelling performers, the centre also screens movies and hosts cultural events. Aside from this venue, there are ten other community halls within the LGA, mostly located in Proserpine and Airlie Beach. The halls are associated with local organisations such as the Proserpine Cricket Association, the Airlie Beach Bowls Club, and the Country Women's Association.

There are 15 halls and venues for hire in the Mackay City LGA, including space at the Mackay Botanic Gardens. These venues are located across the LGA, from the city centre, to Walkerston, Seaforth, and to Andergrove, amongst others.

There are also two museums in the Whitsunday LGA – the Proserpine Historical Museum Society and the Proserpine Sugar Mill, which are both open to the public.

4.4.4 Health Facilities and Services

Whitsunday LGA is serviced by one local hospital in Proserpine with capacity of 35 beds and providing a range of specialist health services including nursing care, general care services, hearing aid and substance abuse recovery. There are also three hospitals and numerous specialist health care services in Mackay City (approximately 130 kilometres).

There are three hospitals in the Mackay City LGA, including one public and two private hospitals, all of which are within the vicinity of the city centre. The Mackay Base Hospital has a capacity of 120 beds. The Mater Miscericordiae Hospital includes 105 beds, with additional day surgery and special unit facilities. The Pioneer Valley Private Hospital is a 38 bed facility also servicing the city centre region.

The main hospital in the Whitsunday LGA is the Proserpine Hospital, with capacity of 35 beds and providing a range of specialist health services including nursing care, general care services, hearing aid and substance abuse recovery. The closest referral hospital is the Mackay Base Hospital (128km away).

Both Mackay City and Whitsunday LGAs also have an array of specialised health services, including nursing care, general care services, hearing aid, and substance abuse recovery. In addition, Mackay City has over 50 specialised health services, extending to care for pre and post natal health, mental health, cardiac rehabilitation, sexual health, Aboriginal and Torres Strait Islander health, and clinics for specific injuries and diseases (e.g. multiple sclerosis and sleep disorders).

4.4.5 Aged Care Facilities and Services

A number of non-profit aged care facilities and services are located in the Whitsunday area including:

- Accommodation and services for independent aged care living (low care, medium and high care facilities and homes);
- Nursing and care service providers (e.g. Blue Nurses);
- 24 hour high care and nursing facilities for aged persons (post-op, respite care and nursing home, etc.); and
- Aged care association and hostel steering committee[4].

The majority of these facilities and services are located in Proserpine.

4.4.6 Family and Community Support Services

A number of non-government organisations in Whitsunday Shire are funded by the Department of Communities to provide a range of services in the area. The following table outlines the family and community support services that are provided in Whitsunday Shire.

Table 4.37. Family and Community Support Services, Whitsunday Shire

Location of Service	Name of Service
Airlie Beach/ Cannonvale	Alcoholics Anonymous
	Breast Cancer Support Services
	Family Support Worker
	Kids Can (Cancer Support)
	Meals on Wheels
	Taxation Help Program
	Whitsunday Community Services (Cannonvale Neighbourhood Centre)
	Whitsunday Domestic Violence Service
	Whitsunday Flexible Respite Care (Disability Service)
	Whitsunday Nursing Mothers Group
	Whitsunday Police Juvenile Aid Bureau
	Whitsunday Sexual Assault Service

[4] The role of the steering committee and aged care association in the Whitsunday Shire is to build and support aged care persons villages in Whitsunday Shire, while a number of active aged and pensioners groups such as the Proserpine Pensioners League and Proserpine Senior Citizens Group encourage community involvement and activity.

Location of Service	Name of Service
Proserpine	Australian Breastfeeding Association
	Australian Red Cross
	Country Women's Association
	Lifeline Community Care
	Meals on Wheels
	Proserpine and District Respite Services Inc (Disability Service)
	Proserpine Community Centre
	Proserpine Handicapped Persons Committee
	Proserpine Youth Club (Youth Service)
	Taxation Help Program
	Whitsunday-Proserpine Queensland Cancer Fund

Source: Whitsunday Shire Council (2007).

In addition, Whitsunday Shire Council employs a Youth Services Officer to facilitate the development and maintenance of youth services, projects, programs and activities in the Whitsunday Shire (Whitsunday Shire Council, 2007).

4.4.7 Police and Other Emergency Services

Whitsunday LGA has two police stations, two fire stations, rural fire services and two ambulance stations servicing the area. Shute Harbour and its surrounding service centre is serviced by police, ambulance and fire stations located in Airlie Beach / Cannovale. An additional police station is planned to be opened in 2008, which is anticipated to meet growing demand.

The Whitsunday LGA contains two police stations, two fire stations, and two ambulance stations in addition to rural fire services.

The nearest police station to the Shute Harbour Marina Development is the Whitsunday Police Station in Cannonvale, which services the surrounding service area of the development site (Shute Harbour, Airlie Beach, Cannonvale, Jubilee Pocket and Flametree). The Whitsunday police station includes a water patrol service. A police station is also located in the town centre of Proserpine.

Steve O'Connell, the Officer in Charge of the Whitsunday Police Station, believes the existing station and resources are insufficient to meet the service requirements of current expansion and growth occurring in the local area (S. O'Connell, Whitsunday Police Station, *pers. comm.* 28/09/2007). However, a new police station is scheduled to open in September 2008 adjacent to the existing building that will provide facilities adequate for catering to the growing area. While there is currently no additional staff set to begin once the new station is operational, Steve O'Connell expects that additional staff will be allocated/ added as needs arise.

The Queensland Ambulance Service (QAS) Whitsunday Station is located approximately 12 kilometres from the Shute Harbour ferry terminal, and services the surrounding service area of the development site (Shute Harbour, Airlie Beach, Cannonvale, Jubilee Pocket and Flametree). The geographical location of Shute Harbour in relation to the Station results in response times being greater than 10 minutes.

Consultation with the QAS indicates that the existing population base located at Shute Harbour/ Shutehaven only impacts minimally on ambulance service demand at the Whitsunday Station. Additionally, as Shute Harbour is the preferred port for island transfer, QAS meets non-urgent patients on transfer from the islands approximately twice each week (S. Lennon, QAS Central Region, *pers. comm.* 24/01/2008). Upgrading of the QAS station and a subsequent increase in staff has been approved for 2008.

Consultation with the Queensland Fire and Rescue Service (QFRS) regarding the adequacy of existing service and any potential impacts resulting from the proposed SHMD was positive in that the concept design allows for easy access by emergency vehicles. There was interest in upgrades to Shute Harbour Road to improve safety. Consultation undertaken during the previous EIS in 2005 (Connell Wagner, 2005a) indicated that the existing fire service in Airlie Beach provides adequate services and response times to cater to the existing population in Shute Harbour and the surrounding service centre.

There are ten fire service facilities in the Mackay City LGA, most of which are concentrated along the eastern border of the area. There are three ambulance stations and seven police stations, which are largely concentrated around the city centre. The main police headquarters is located in Mackay.

4.4.8 Recreation and Leisure Infrastructure

Shute Harbour is serviced by a considerable number of foreshore, recreational and National park facilities providing opportunities for informal recreation and leisure activities, in particular water-based activities. In addition, Whitsunday Sportspark and the adjacent Whitsunday PCYC in Airlie Beach provide infrastructure for outdoor and indoor sports and recreation activities.

Shute Harbour and the surrounding service centre provide the following recreational and leisure facilities and services (GHD, 2005).

Organised Sports:

- A seven hectare multi-purpose sport and recreation hub (Whitsunday Sportspark), comprising two playing fields, netball courts and an indoor sports centre;
- Lawn bowls club;
- Four public tennis facilities; and
- An outdoor 25 metre swimming pool on school grounds at Cannonvale.

The *Open Space and Recreation Study for the Shire of Whitsunday* (GHD, 2005) identified a number of potential issues in the provision of sportsgrounds and courts in the surrounding service centre:

- Provision of outdoor sporting venues in the surrounding service centre is limited; and
- There are limited large sites available in the surrounding service centre that have the flexibility or room to expand to support growth in demand for organised sport.

The following additional regional level facilities are provided in Proserpine and service the Shute Harbour area:

- Two multi-purpose sportsground precincts;
- An outdoor 50 metre public swimming pool, with separate infant learn to swim pool;
- Specialised facilities including a hack and pony club, shooting range, BMX area, and motor bike track;
- Tennis and lawn bowls clubs;
- A showground reserve; and
- An 18 hole golf course.

Indoor Sport and Recreation:

The Airlie Beach Sports and Entertainment Centre (Whitsunday PCYC), located at the Sportspark, provides a multi-purpose indoor sport and recreation venue incorporating sports hall, function hall with stage, youth café, canteen, meeting rooms and games room, as well as an outdoor skate facility.

Informal Recreation:

Parks and natural settings such as beaches, waterways and environmental reserves are an important focus for informal recreation in the surrounding service centre. Whitsunday's climate and coastal location supports a range of water-based recreation activities, which are popular amongst residents and tourists. These are supported by three boat ramps, as well as jetties and a marina. Many water-based activities are also supplied by commercial operators.

The surrounding service centre has 14 parks, including:

- Six small recreation parks serving neighbourhood catchments and equipped with picnic and play facilities; and
- Eight foreshore parks adjacent to beaches in Cannonvale and Airlie Beach.

Foreshore parks are popular destinations for both residents and tourists. The larger parks cater for water-based activities, children's play, picnicking, informal games, special events, ocean viewing, cycling, walking and youth recreation activities.

The redevelopment of the Airlie Beach foreshore has provided a major attraction to the surrounding service centre, including park areas, playgrounds, picnic facilities, a 4,300m^2 sculptured swimming lagoon, extensive pathways and boardwalks.

Ocean swimming is constrained by the presence of Irikandji marine stingers. Beach swimming enclosures/ stinger nets have been established at Cannonvale, while all year swimming is available at the Airlie Beach swimming lagoon.

National Park:
The Conway National Park and Conway State Forest system extends through the Whitsunday Shire, including Shute Harbour and the surrounding service centre. The reserve offers visitors with a range of nature-based recreation and tourism opportunities, including walking tracks, picnic areas, lookouts and camping.

4.4.9 Access and Mobility

Road Access

The majority of services to the Shute Harbour Marina Development site are provided by the surrounding service centres of Airlie Beach, Cannonvale, Jubilee Pocket and Flametree. Vehicle access into Shute Harbour is currently dependent on Shute Harbour Road, which is a two-lane bitumen sealed pavement carriageway with unsealed shoulders. The Queensland Department of Main Roads has progressively been upgrading the road from Proserpine / Cannonvale / Airlie Beach towards Shute Harbour to a wider formation with sealed shoulders (Cardno, 2007).

Shute Harbour Road east of the site has a total sealed pavement width of approximately 9.0m, consisting of two 3.0m lanes and 1.5m sealed shoulders. The section of road along the site frontage is yet to be upgraded and has a two lane undivided road layout with a total sealed pavement width of approximately 6.0-6.5m with unsealed shoulders.

Existing two way traffic volumes along the site frontage averages approximately 2,321 vehicles per day for the five day weekday period, with a maximum peak of 331 vehicles per hour between 5:00 PM and 6:00 PM on a Thursday (Cardno, 2007). The daily traffic incorporates a high proportion (approximately 12%) of heavy vehicle traffic. Average daily traffic on weekends is marginally lower than for weekdays.

Average annual daily traffic (AADT) counts from 2001 to 2006 along Shute Harbour Road west of the Whitsunday Airport in Shute Harbour are outlined in the table below. Traffic counts along this stretch of Shute Harbour Road have increased at an average annual rate of 1.9% between 2001 and 2006.

Table 4.38. Average Annual Daily Traffic (AADT), Shute Harbour Road

Year	AADT
2001	2,431
2002	2,502
2003	2,685
2004	2,787
2005	2,613
2006	2,671
Average Annual Growth (%), 2001-06	1.9%

Source: Cardno, 2007

Public Transport

Scheduled bus services are provided by Whitsunday Transit, and operate between Airlie Beach, Shute Harbour and Proserpine, with services travelling along the site frontage along Shute Harbour Road approximately every 15 to 30 minutes between 6:00 AM and 6:30 PM.

Whitsunday Transit is contracted by Queensland Transport to provide school services throughout the area, and also operates services connecting Shute Harbour to Proserpine and the Whitsunday Coast Airport.

Water Access

Shute Harbour is the closest harbour to the offshore islands and as such is the base of operations for a number of commercial vessel activities. These activities, including barge, tourism (ferry) and charter boat operations as well as private vessel launching are concentrated around the four jetties located to the west side of Shutehaven.

Daily passenger ferry services, tourist vessels and vehicular barges operate from a number of privately and publicly owned wharves, resulting in an average of about 80 vessel movements a day (Thomson Clarke, 2007). Recreational traffic includes trailer launched boats and a large number of yachts and power boats moored at the more than 300 swing moorings in Shute Bay and off the inner harbour islands.

The facilities at Shute Harbour support a large number of users, both commercial and recreational. Commercial operators include Fantasea Cruises, Hamilton Island Barge Services, Hayman Island Barge Services, Whitsunday Rent a Yacht, a passenger transfer service to/ from Pepper's Resort on Long Island, as well as a number of other small commercial operators.

Bicycle and Pedestrian Access

No pedestrian paths, bicycle lanes or bicycle awareness zones are provided on Shute Harbour Road.

Equality of Access

The Whitsunday Shire Council's Universal Equity Access policy outlines the requirements for equitable access for all persons, including those with diverse abilities. These guidelines form part of the legislative framework for development within Whitsunday Shire and will be a part of the development approval process for the planned facilities.

4.4.10 Local Values, Vitality and Lifestyle

The Whitsunday Shire offers a relaxed, low-key, leisure based coastal lifestyle, with a range of natural assets that enhance the region's appeal for both residents and visitors (Whitsunday Shire Council, 2005).

Within the Shute Harbour community, consultation results from both the Shute Harbour Planning Study (Jackson Planning & Buckley Vann, 2007) and Shute Harbour Marina Project (Three Plus, 2006, 2007) indicate that the Shute Harbour community values the following aspects of their community and lifestyle:

- Accessibility to waterways and moorings for recreational boating;
- Preservation/protection of the area's environmental values and biodiversity;
- Restrictions on development activity in Shute Harbour– including limitations on height, scale and further expansion of the urban footprint;
- The importance of the 'iconic view' to community members;
- Management of waterways for recreational and commercial marine activities;
- Safety – including road and water safety;
- The importance of Shute Harbour as a transit terminal and port;
- Connection to place and custodianship over the environment; and
- Identification with a 'tropical' lifestyle that was distinct from a 'southern' lifestyle and influenced the design of the township.

Within the broader context of the Whitsunday local government area, the following characteristics are also considered likely to exist in the Shute Harbour community:

- Identification of clearly delineated nodes of activity within the Shire, particularly Airlie Beach, Proserpine and Cannonvale;
- A focus on sustainable development at a local and regional level;
- Centrality of the Whitsunday Islands to the region's economic prosperity;
- Recognition of the unique environmental values of the region and a desire to protect these values;
- Sense of a coastal 'retreat' or 'hideaway' associated with the less densely populated areas of the Whitsunday Shire (including Shutehaven) as opposed to the busier character of Airlie Beach;
- Laidback and casual lifestyle focusing on the outdoors, in particular recreational use of waterways and beaches; and
- A desire to manage growth pressure in the community in accordance with social justice and ecological sustainability principles.

Further details regarding these characteristics can be found in Appendix B of this report.

Social Amenity

Given the limited facilities and infrastructure within the Shute Harbour area (as outlined in the above sub-sections of section 4.4) it is anticipated that residents of Shutehaven would utilise the community, retail and commercial services in neighbouring townships for their day-to-day needs. The primary service sites are anticipated to be Airlie Beach, Proserpine and Cannonvale.

Residents also expressed both positive and negative views of the amenities within their community. Issues frequently occurring within the consultation conducted by Three Plus and Jackson Planning & Buckley Vann (2007) were:

- Limited or constrained infrastructure, including power, sewerage and public transport; and
- Road/traffic issues, including the safety of Shute Harbour Road.

The consultation also suggests that Shute Harbour is viewed as having a distinct and separate character and identity from Airlie Beach.

Demographic Indicators of Lifestyle

Based on the 2006 Census data for the Shutehaven community and area immediately bordering Shute Harbour Road, residents of Shute Harbour exhibit the following characteristics:

- Significantly higher median age (50 years) than the Whitsunday average (36 years);
- Significantly higher proportion of couple families without children (70.7% of all families) than the Whitsunday average (46.6% of all families);
- More than double the proportion of other dwellings (caravan, cabin, houseboat) than the Whitsunday average (32.4% compared to 14.3%);
- Below average proportion of flats, apartments and unit dwellings;
- Higher than average levels of dwelling ownership and lower than average levels of renting;
- Employment primarily in services, tourism and water transport industries, including accommodation, school education, water transport support services, transport equipment manufacturing and adult, community and other education
- Slightly higher than average levels of household income;
- No unemployed persons; and

- No persons identifying as Indigenous.

These demographic characteristics suggest a population that is relatively homogenous with the majority of residents at a similar stage in the family lifecycle, with the majority residing in separate house dwellings without children.

5. Description of the Project

5.1 Project Elements

5.1.1 Construction

SHMD Pty Ltd will develop the site from its current state to the point at which all site preparation work is complete including the preparation of the marina and the construction of the commercial, retail, tourism and resort lots. This is expected to result in expenditure of approximately $253.4 million on labour and materials over 30 months, with activity anticipated to commence in 2009 and conclude in 2012.

SHMD Pty Ltd will then sell the managed resort accommodation lots to secondary developers who will undertake the construction phase for the Managed Resort Accommodation. Other entities may undertake other construction works and when completed will operate the marina and commercial precincts. The tourism precinct is likely to be run in a similar model to the Mackay Marina where a third party operates and manages the hotel and tourist precinct for the owners. The secondary construction activities are anticipated to result in expenditure of approximately $104.5 million on labour and materials over approximately four years.

The construction activity associated with the Shute Harbour Marina Development comprises three main elements:

- Marina (669 berths) including:
  - Fixed breakwater;
  - Ferry wharf;
  - Pontoons;
  - Hardstand;
  - Chandlery;
  - Fuelling and sullage pump out facilities;
  - Charter boat basin; and
  - Required lighting and navigation infrastructure.

- Commercial and Tourist Precinct including:
  - A 4½ star resort comprising 109 family rooms and reception, lounge, bars, function rooms, restaurant, kitchen, offices, carparking, pool and maintenance facilities;
  - Approximately 146 high quality one, two or three bedroom units and 61 single lots in a Managed Resort Accommodation precinct;
  - Marina office and amenities;
  - Charter boat base;
  - Marine Transit Centre;
  - Sailing club;
  - Restaurants;
  - Retail space;
  - Emergency services access and facilities;
  - Carparking, landscaped roads, pathways and other urban design elements; and
  - Landscaped roads, pathways and other urban design elements.

- Infrastructure Services including:
  - Water;
  - Sewerage;
  - Electricity;
  - Gas;
  - Roads; and
  - Telecommunications.

5.1.2 Operation

The operational activities associated with the Shute Harbour Marina Development area anticipated to include those outlined below:

- Tourism Resort and Managed Tourism Accommodation: Owned and managed by a third party;
- Charter Boat Base: Managed by the marina and open for use by all charter boat operators and boating tourists utilising the marina;
- Marina: Operated by Shute Harbour Marina Development Pty Ltd;
- Commercial Precinct: Constructed and owned by Shute Harbour Marina Development Pty Ltd and operated by various individual business owners; and
- Retail Precinct: Constructed and owned by Shute Harbour Marina Development Pty Ltd and operated by various individual business owners.

The operation of the above facilities is anticipated to generate approximately 142 employment positions. Additional detail regarding the impact of additional business activity is contained in section 7.2.2 of the Economic Impact Assessment.

5.2 Labour Requirements

It is estimated that during the primary construction phase an average of approximately 78 FTE workers will be required with a peak of 192 positions (Shute Harbour Marina Development, 2006). Secondary construction activities are anticipated to generate a total of 358 FTE positions over a period of four years. An estimate of the distribution of staff on site throughout the primary and secondary construction phases is provided in section 7.2.1.

The anticipated daily operational employee requirement for the proposed SHMD is outlined in the table below and total 142 persons. These estimates are based on an indicative marina commercial precinct and employment levels.

Table 5.1. Operational Employment

Facility	Employment
Tourism Resort/ Precinct	66
Charter Boat Base	16
Marina	16
Commercial Precinct	32
Retail Precinct	12
Total	**142**

Source: Shute Harbour Marina Development Pty Ltd (2006)

6. Social Impact Assessment

6.1 Introduction

The Terms of Reference requires an assessment of the impacts of the Proposal on local and regional residents, community services and recreational activities for all stages (including construction and operational phases) of the development.

The following table outlines the terms of reference and the sections of the report where it is addressed. The Terms of Reference also stipulate that for identified impacts to social values, recommended mitigatory and enhancement strategies are to be developed, including practical monitoring regimes. Mitigation and enhancement strategies are outlined in section 8.1.

Table 6.1. Social Impact Assessment Terms of Reference Addressed

No.	Terms of Reference	Section(s) Addressed
1.	Assessment of impacts on foreshore and marine access for the general public.	6.4.2, 6.4.4, 6.4.7, 6.5.2, 6.5.7
2.	Assessment of impacts on local residents, current land uses and existing lifestyles and enterprises.	6.4, 6.7
3.	Assessment of impacts on local and state labour markets, with regard to the source of the workforce. This information is to be presented according to occupational groupings of the workforce. In relation to the source of the workforce, information is required as to whether the proponent, and/or its contractors, is likely to employ locally or through other means and whether there are initiatives for local employment opportunities.	6.2
4.	Establish mitigation strategies for both construction and operational workforces and associated contractors on housing demand, community services and community cohesion. The capability of the existing housing stock, including rental accommodation and transport, to meet any additional demands created by the Proposal is to be discussed.	8.1.1, 8.1.2, 8.1.3, 8.1.4
5.	Assessment of impacts on relevant demographic, social, cultural and economic profiles and transport.	6.3, 6.4, 6.5, 6.6
6.	Identify any new skills and training to be introduced in relation to the Proposal. Adequate provision is to be made for apprenticeship and worker training schemes. Where possible, the occupational skill groups required and potential skill shortages anticipated are to be indicated.	6.2.2
7.	Provide comment on how much service revenue and work from the Proposal (e.g. provisioning, catering and site maintenance) would be likely to flow to existing communities in the area of the Proposal.	6.6
8.	Include an assessment of impacts on existing local residents' values and aspirations.	6.4.2, 6.4.7
9.	In regard to affected Indigenous and non-Indigenous communities respectively, particular attention is to be paid to the effects on:	
	(a) The ability of both Indigenous and non-Indigenous people, to live in accordance with their own values and priorities;	6.4.2, 6.4.6, 6.4.7
	(b) The use of and access to culturally important areas and landscapes;	6.4.3, 6.4.4, 6.4.6, 6.4.7
	(c) The access to existing human and commercial services and housing;	6.4.3, 6.4.5, 6.4.6, 6.4.7
	(d) The ability to participate in regional and local employment and training opportunities; and	6.2.2, 6.4.6, 6.4.7
	(e) The new project workforce and their families.	6.2
10.	For the construction and operational phases of the development, describe the effects of the Proposal on local and regional residents, including land acquisition, property access and relocation issues and property valuation and marketability, community services and recreational activities.	6.4.3, 6.4.4, 6.4.5, 6.4.7, 6.7
11.	Discuss the potential environmental harm on the amenity of adjacent areas used for cropping, grazing, forestry, recreation, industry, education, aesthetics, or scientific or residential purposes.	6.8
12.	Describe the implications of the Proposal for future developments in the local area including constraints on surrounding land uses.	6.9
13.	The educational impacts of the proposed development are to be analysed and described, particularly in regard to:	
	(a) Primary, secondary and tertiary educational sectors;	6.2.2
	(b) Improved appreciation of conservation areas; and	6.2.2
	(c) Environmental education for the general public.	6.2.2

6.2 Labour Force Impacts

6.2.1 Labour Force Requirements

The proposed Shute Harbour Marina Development is expected to impact on the labour market of the immediate Shute Harbour area and the surrounding service centre during both the construction and operational phases, in terms of labour and skill requirements.

Consultation with the proposed SHMD primary construction companies (Jetty Specialists & Lucy Construction) identified a strong likelihood and opportunity for continuity of construction workforce from the Port of Airlie development (currently being constructed) to the proposed SHMD. As the Port of Airlie and SHMD have relatively similar anticipated work crews – in annual estimated FTE terms 160 FTEs for Port of Airlie (Queensland Department of State Development, 2003), compared to the average of 78 FTE and a peak of 192 FTE for SHMD – the impacts associated with the presence of the SHMD construction crew in the region are likely to be a continuation of those currently associated with the Port of Airlie construction crew. However, to ensure a conservative assessment, the social impact assessment considers the Shute Harbour Marina Development in isolation.

Secondary construction activities are anticipated to generate a total of 358 FTE positions over a period of four years (average of approximately 89 FTE, peak of 107 FTE). The second stage development will be predominantly detached and semi-detached dwellings, which encompasses the vast majority of current construction activities in the surrounding service centre and Whitsunday LGA. As such, it is anticipated that the local construction labour force will be engaged and provide the vast majority of labour required. An estimate of the distribution of staff on site throughout the primary and secondary construction phases is provided in section 7.2.1.2.

During the operational phase of the development a daily workforce of approximately 142 people is expected to be required (SHMD, 2006). This equates to approximately 58.4% of those individuals actively looking for work in the Whitsunday Shire and approximately 9.4% of those persons actively looking for work in the Mackay North Coast region, suggesting there may be some potential to attract staff from the regional unemployment pool. It is also highly likely that there are a number of disenfranchised workers in the region not represented in these statistics (AEC*group*, 2007a) who may re-enter the labour force where an appropriate position became available, further reducing the requirement to attract labour from outside the region. However, the actual number can not be quantified.

Labour Force Occupational Skills Splits

The table below provides an indicative percent breakdown by occupation of employment for the key components of the Shute Harbour Marina Development during the construction and operation phases based on ABS (2007b) statistics. The breakdown by occupation has been developed based on the occupational splits for key industries of employment in the Whitsunday LGA.

The phases outlined in the table have been identified to predominantly correspond to the following industries:

- “Construction” of marina and associated developments is a sub-section of the construction industry classification;
- Operation of the “Tourism Resort/ Precinct” is a sub-section of the accommodation and food services industry classification; and
- Operation of the “Charter Boat Base”, “Marina” and associated “Commercial Precinct” is primarily a sub-section of the transport, postal and warehousing industry classification.

Table 6.2. Breakdown of Occupation by Phase of Development

Phase	Managers	Professionals	Technicians & Trades Workers	Community & Personal Service Workers	Clerical & Administrative Workers	Sales Workers	Machinery Operators & Drivers	Labourers
Construction Phase								
Construction	10.4%	1.2%	51.6%	0.0%	8.5%	0.5%	11.4%	16.4%
Operation Phase								
Tourism Resort/ Precinct	20.0%	4.5%	16.9%	18.9%	9.9%	5.3%	3.4%	21.0%
Charter Boat Base	11.3%	20.4%	5.6%	10.0%	13.5%	5.6%	23.9%	9.8%
Marina	11.3%	20.4%	5.6%	10.0%	13.5%	5.6%	23.9%	9.8%
Commercial Precinct	11.3%	20.4%	5.6%	10.0%	13.5%	5.6%	23.9%	9.8%
Retail Precinct	18.4%	2.2%	7.7%	1.7%	4.7%	51.6%	3.1%	10.7%

Source: Australian Bureau of Statistics (2007b)

Indicative estimates of the labour and skill requirements for the construction and operation phases of the Shute Harbour Marina Development are outlined in the table below. These estimates are based on the expected construction and operation labour requirements and the indicative occupation breakdown provided in the tables above. Actual labour and skill requirements may vary due to the specific nature and scope of the development.

Table 6.3. Labour and Skill Requirements by Phase of Development

Phase	Managers	Professionals	Technicians & Trades Workers	Community & Personal Service Workers	Clerical & Administrative Workers	Sales Workers	Machinery Operators & Drivers	Labourers	Total
Primary Construction Phase									
Average	8	1	40	0	7	0	9	13	78
Peak	20	2	99	0	16	1	22	32	192
Secondary Construction Phase									
Average	9	1	46	0	8	0	10	15	89
Peak	11	1	55	0	9	1	12	18	107
Operation Phase									
Tourism Resort/ Precinct	13	3	11	12	7	4	2	14	66
Charter Boat Base	2	3	1	2	2	1	4	1	16
Marina	2	3	1	2	2	1	4	1	16
Commercial Precinct	4	6	2	3	4	2	8	3	32
Retail Precinct	2	0	1	0	1	6	1	1	12
Total Operation	*23*	*15*	*16*	*19*	*16*	*14*	*19*	*20*	*142*

Source: Australian Bureau of Statistics (2007b), Shute Harbour Marina Development Pty Ltd (2006)

Based on these estimates, and assuming that all labour requirements are additional to the existing labour force rather than a continuity of the construction workforce from the Port of Airlie development (or other developments), the Shute Harbour Marina Development would be anticipated to result in an average increase in employment of 2.1% in the surrounding service centre during the primary construction phase, peaking at 5.1% (see Table 6.4 below). The occupational category of technicians and trades workers, which is currently the largest employer in the surrounding service centre, would be anticipated to experience the most significant increase (5.5% average, 13.7% peak), followed by machinery operators and drivers (3.9% average, 9.6% peak).

While the secondary construction phase is anticipated to require 89 FTE employees on average, with a peak of 107 FTEs, the vast majority of these workers are expected to be sourced from within the surrounding service centre and would represent a continuation of work for local construction workers and companies rather than additional employment positions. As such, the impact on the surrounding service centre's labour force is expected to be similar to that for the primary construction phase, but be proportionately less.

During operation, total employment in the surrounding service centre is anticipated to increase by 3.8%, with machinery operators and drivers expected to experience the most significant increase of 8.3%.

Table 6.4. Employment by Occupation, Surrounding Service Centre

Phase	Managers	Professionals	Technicians & Trades Workers	Community & Personal Service Workers	Clerical & Administrative Workers	Sales Workers	Machinery Operators & Drivers	Labourers	Total
Current	530	543	724	399	405	438	230	497	3,766
Primary Construction Phase									
Average	538	544	764	399	412	438	239	510	3,844
% Increase	1.5%	0.2%	5.5%	0.0%	1.7%	0.0%	3.9%	2.6%	2.1%
Peak	550	545	823	399	421	439	252	529	3,958
% Increase	3.8%	0.4%	13.7%	0.0%	4.0%	0.2%	9.6%	6.4%	5.1%
Operational Phase									
Total	553	558	740	418	421	452	249	517	3,908
% Increase	4.3%	2.8%	2.2%	4.8%	4.0%	3.2%	8.3%	4.0%	3.8%

Note: Labour force impacts during the secondary construction phase are expected to be similar to those experienced during the primary construction phase, but proportionately less.
Source: Australian Bureau of Statistics (2007b), Shute Harbour Marina Development Pty Ltd (2006)

The proponent has committed to seeking to hire labour from the local labour pool where possible and is actively pursuing skills training and development to enhance employment opportunities for local and Indigenous persons during both construction and operational phases of the development.

Discussions with the likely primary construction companies (Jetty Specialists & Lucy Construction) identify that approximately 50% (39) of the labour required during the primary construction phase can be expected to be sourced from the existing labour pool in the surrounding service centre, with the residual 50% (39) expected to need to be attracted to the region from other areas to meet labour requirements.

It is expected that the majority of the operational workforce will be able to be drawn from the surrounding service centre and adjacent areas with few, if any, relocating to the region. The social impact assessment assumes that 75% (106) of the operational workforce would be sourced from within the surrounding service centre, with the remainder (36) needing to be attracted to the surrounding service centre to meet labour requirements during operation.

6.2.2 Education, Training and Skills Development

The proponent has committed to seeking to hire labour from the local labour pool where possible. However, opportunities to source the appropriately skilled construction labour from within the local unemployment pool are considered to be relatively limited due to low levels of unemployment, with a tight labour market and recent construction activity absorbing any latent skilled construction labour in the region. However, it is anticipated that there will be some construction labour transference from other construction operations to the Shute Harbour Marina Development as employees complete contracts and developments are completed. Opportunities to hire local labour during the operational phase are considered to be greater given the different skill mix required during this phase.

The proponent has partnered with the Barrier Reef Institute of TAFE to facilitate and deliver a skills training and development program focussing on the education and training of local unemployed or unskilled workers, including Indigenous persons. This program will focus on providing appropriate training and skills development to facilitate ongoing employment following the completion of the proposed development as well as improve general public understanding of the environmental and conservation significance of the region.

Other education programs committed to by the proponent include environmental education programs and interpretative signage throughout the marina to promote environmental awareness and traditional owner history. The cultural centre and marine interpretative centre will also present opportunities for traditional owners to undertake retail and business activity. A cultural officer will be employed full time on site for the first two years of construction.

Education and Training Opportunities

Construction

Employment and training opportunities exist in both the construction and operational phases. During the construction phase, there is the opportunity to train and employ local apprentices and workers in marine, residential, commercial building and general construction activities as well as transport.

The proponent has a commitment to utilising local labour where possible through a skills development program, to be developed and delivered in conjunction with the Barrier Reef Institute of TAFE (training partner). The objective of the skills program is to train and employ those members of the local labour force that are currently unemployed that are suitable for work on construction crews.

The commitment to the use and up-skilling of the local labour force through the construction phase has the opportunity to provide long-term benefits for the local workforce. These benefits include improving the ability of local residents to access job opportunities through the building of specialist trade-based knowledge and skills, providing access to employment networks in the regional construction industry, and supporting the growth of a skilled local construction workforce that will be available for future projects in the area. The building of skills in the region has potential to produce indirect benefits to the entire community through more prosperous community members, and a greater range of skills and experience in the local workforce.

Operation

The operational phase will see the opportunity for employment and training in areas of goods and services provision to clients and customers in the form of full-/part-time employment, traineeships and work experience.

Training and development of staff in the operational stage of the proposed development is expected to provide direct and indirect benefits to the local community. Investment in the skill development of the local workforce through structured training programs including traineeships has the potential to provide long-term benefits to the local community as school-leavers and young people are provided with opportunities to live and work in the community for the long-term. Industry-based training and education will also provide the opportunity to further build on the region's capability and competitive advantage in key industries including marine-based services and retailing, water transport, tourism, hospitality, waterways management and hotel management.

The provision of full and part time employment opportunities for local residents provides opportunities for those in the local community to gain skills and experience in the region's key employment sectors, offering the opportunity for these skills to be transferred through other businesses and industries within the region and facilitating regional industry capacity.

Environmental Education & Indigenous Awareness

An environmental education program will be undertaken through the development and facilitation of materials and interpretative signage throughout the marina, particularly the transit area, to facilitate the increased awareness of the environmental and conservation significance of the region to those utilising the proposed SHMD facilities. The interpretative facility in the transit centre will also include Indigenous displays and material designed to extend local and regional Indigenous culture and artwork.

Further, the proponent has committed to developing a "Reef Conservation Fund" to be operated as a charitable fund and administered by the Great Barrier Reef Marina Park Authority. The Reef Conservation Fund will be funded from the sale of the marina berths, with an initial contribution, to be provided by the proponent upon the settlement of each marina berth, of approximately $1.0 million in total, and an ongoing contribution of approximately $150,000 per annum from leaseholders as part of the lease agreement. This fund will contribute to the ongoing sustainability of the marine environment by providing environmentally friendly moorings on the reef that minimise disruption to benthic communities and provide space for boaters to safely moor their boats without causing anchor damage. Additionally, part of this trust will be utilised to facilitate marine and cultural education programs through the cultural and marine interpretative centre to be co-located with the charter boat waiting lounge.

The benefits of further environmental education in the area include increased environmental awareness of the environmental and Indigenous values of the Whitsunday area among users of the marina, boat owners and visitors to the region. This has the potential to encourage more persons towards environmentally conscious behaviour, and may also promote the biodiversity of the region's marine and support the efforts of local conservation groups.

Primary, Secondary & Tertiary Education

Impacts to primary, secondary and tertiary education providers are outlined in section 6.4.3.

Summary of Education, Training & Skills Development

As part of the proposed development, education, training and skills development programs will be provided to assist in meeting anticipated labour requirements. Potential benefits of these programs may include:

- Improved opportunities to access employment networks for unemployed persons;
- Greater opportunities for youth and school leaver employment for local residents;
- The development of specialist knowledge clusters in key local industries; and
- Improved environmental and Indigenous awareness.

6.2.3 Summary of Labour Force Impacts

The primary construction phase is anticipated to result in additional labour demand of approximately 78 FTE workers on average, with a peak of 192 positions. Current skill availability in the surrounding and broader service areas and the implementation of education, training and skills development programs is expected to enable approximately 50% (39 average, 96 peak) of the labour requirement to be sourced from within the surrounding service centre, with the remainder needing to be attracted to meet labour requirements.

The majority of the labour requirement for the secondary construction phase is expected to be sourced from existing local residential and accommodation construction companies and represent a continuation of work for these companies and employees. As such, it is not anticipated that the secondary construction phase will result in any significant change in the overall level of employment in the surrounding service centre.

During operation, a total of 142 FTE positions are anticipated to be required, with 75% (106) of these anticipated to be filled using local labour. The remaining 36 employment positions are anticipated to need to be filled from outside the surrounding service centre.

6.3 Population Impacts

The Shute Harbour Marina Development has the potential to impact on the population of the immediate area, surrounding service centre and Whitsunday LGA during both the construction and operational phases. Population impacts can result from the attraction of labour, visitors and residents that would not otherwise migrate to the region, and can have significant flow on impacts on demand for social infrastructure and services. As such, the estimates of additional people migrating to the region calculated below form the basis for social infrastructure impact assessments described in this chapter (e.g. access to community services, accommodation and housing demand, demographic and cultural change).

6.3.1 Construction Phase

Discussions with the likely primary construction companies (Jetty Specialists & Lucy Construction) identify that approximately 50% (39 workers on average, 96 peak) of the labour will be sourced from the existing labour pool in the surrounding service centre, with the residual 50% (39 workers on average, 96 peak) expected to relocate to the region during their period of employment and require accommodation. Based on the past experience of the primary construction company (Jetty Specialists), up to approximately 10% of workers (4 workers on average, 10 peak) moving to the region may also choose to relocate their families for the period of construction, with the residual effectively choosing to live as singles.

For the purposes of the analysis, the workers that are to be sourced from outside the region are termed "non-resident workers", regardless of if they are currently working in the region on other construction projects (e.g., the Port of Airlie construction crew), while those workers who currently reside within an appropriate drive time are termed "resident workers".

Based on these assumptions, it is estimated that the Shute Harbour Marina Development would result in an increase from current population levels in the surrounding service centre (and Whitsunday LGA) of approximately 46 persons (39 workers and 7 additional family members), peaking at 112 persons (96 workers and 16 additional family members.

The majority of new workers to the region are expected to be housed in the surrounding service centre. The analysis assumes none of the construction workforce will reside within the immediate area. As such, the population impact in the immediate area is expected to be constrained to the daily impact associated with the construction workforce travelling to the area for work.

As the second stage development will be predominantly detached and semi-detached dwellings. The nature of construction in the second phase is consistent with a great proportion of the activity occurring in the surrounding service centre and it would therefore be expected that these contractors and their existing labour force would be likely to capture this work.

It is therefore expected that the secondary stage construction phase of the development will not result in any significant population impacts. As such, assessment of the impact of the construction labour force on the social environment in this report has focused on the primary construction phase. It should be noted that any second stage construction labour sourced from outside the region would be expected to result in the same types of impacts as those during the primary construction phase, but be proportionately less.

Table 6.5. Construction Phase Population Impacts

Impact	Immediate Area	Surrounding Service Centre	Whitsunday LGA
Average			
Total average workforce required on site	78	78	78
% of site workers already residing in the catchment	0%	50%	50%
# of site workers already residing in the catchment	= 78 * 0% = **0**	= 78 * 50% = **39**	= 78 * 50% = **39**
% of site workers not currently residing in the catchment	100%	50%	50%
# of site workers not currently residing in the catchment	= 78 * 100% = **78**	= 78 * 50% = **39**	= 78 * 50% = **39**
% of site workers not currently residing in the catchment that move to the catchment	0%	100%	100%
# of site workers not currently residing in the catchment that move to the catchment	= 78 * 0% = **0**	= 39 * 100% = **39**	= 39 * 100% = **39**
% of these workers bringing family	N/A	10%	10%
Average additional family members (not including worker)	N/A	1.7	1.7
Additional family members moving to the catchment	= 10% * 1.7 * 0 = **0**	= 10% * 1.7 * 39 = **7**	= 10% * 1.7 * 39 = **7**
Average Population Increase in the Catchment	= 0 + 0 = **0**	= 39 + 7 = **46**	= 39 + 7 = **46**
Peak			
Total peak workforce required on site	192	192	192
% of site workers already residing in the catchment	0%	50%	50%
# of site workers already residing in the catchment	= 192 * 0% = **0**	= 192 * 50% = **96**	= 192 * 50% = **96**
% of site workers not currently residing in the catchment	100%	50%	50%
# of site workers not currently residing in the catchment	= 192 * 100% = **192**	= 192 * 50% = **96**	= 192 * 50% = **96**
% of site workers not currently residing in the catchment that move to the catchment	0%	100%	100%
# of site workers not currently residing in the catchment that move to the catchment	= 192 * 0% = **0**	= 96 * 100% = **96**	= 96 * 100% = **96**
% of these workers bringing family	N/A	10%	10%
Average additional family members (not including worker)	N/A	1.7	1.7
Additional family members moving to the catchment	= 10% * 1.7 * 0 = **0**	= 10% * 1.7 * 96 = **16**	= 10% * 1.7 * 96 = **16**
Peak Population Increase in the Catchment	= 0 + 0 = **0**	= 96 + 16 = **112**	= 96 + 16 = **112**

6.3.2 Operational Phase

The operational phase of the development is likely to see an increase in the number of persons in the Shute Harbour precinct, resulting from employees of the marina, commercial and retail precincts, tourists staying in the hotel and managed resort accommodation and visitors accessing the area by sea. There may also be some overlap between construction and operation phases of the development, which could lead to some cumulative population impacts where this occurs. The operational impacts outlined below are steady state estimates and it is expected that some ramping up period will be experienced before these impacts are fully realised, which would reduce these overlap issues.

Operational Labour

It is expected that due to the timing of construction and the commencement of operational activities, less than 10% of the prevailing first stage construction workers will overlap with any operational aspects of the Shute Harbour Marina Development (D Quinlan, *pers. comm*. 14 September, 2007). The proponent is also actively pursuing skills training and development to ensure employment opportunities for local and Indigenous persons during both construction and operational phases of the development are realised to the fullest extent.

Due to these factors, it is expected that the majority of the operational workforce will be drawn from the surrounding region and adjacent local government areas with few, if any, relocating to the region.

The following analysis assumes that 25% of the operational workforce would be sourced from outside the region and relocate to the surrounding service centre, with 30% of those relocating their family with them (this scenario is based on the anticipated maximum that is likely to occur). This equates to a total additional persons in the region of approximately 54 persons (assuming the average family size of 2.7 persons per family in the Mackay Statistical Division (ABS, 2007b)).

However, in relation to pressures on and provision of infrastructure and services in the immediate area (Shutehaven and Shute Harbour), this analysis assumes that less than 5% of operational workers would actually reside in this area (7 people), and could be as low as zero. Considering the development is estimated to generate an additional 142 FTE of employment during the operating phase this would result in a daily influx of approximately 135 persons to the immediate area resulting from the SHMD project.

Table 6.6. Operational Labour Population Impacts

Impact	Immediate Area	Surrounding Service Centre	Whitsunday LGA
Average			
Total average workforce required on site	142	142	142
% of site workers already residing in the catchment	5%	75%	75%
# of site workers already residing in the catchment	= 5% * 142 = **7**	= 75% * 142 = **106**	= 75% * 142 = **106**
% of site workers not currently residing in the catchment	95%	25%	25%
# of site workers not currently residing in the catchment	= 95% * 142 = **135**	= 25% * 142 = **36**	= 25% * 142 = **36**
% of site workers not currently residing in the catchment that move to the catchment	0%	100%	100%
# of site workers not currently residing in the catchment that move to the catchment	= 0% * 135 = **0**	= 25% * 142 = **36**	= 25% * 142 = **36**
% of these workers bringing family	0%	30%	30%
Average additional family members (not including worker)	1.7	1.7	1.7
Additional family members moving to the catchment	= 0% * 1.7 * 135 = **0**	= 30% * 1.7 * 36 = **18**	= 30% * 1.7 * 36 = **18**
Average Population Increase in the Catchment	= 0 + 0 = **0**	= 36 + 18 = **54**	= 36 + 18 = **54**

Tourism Precinct Visitors/ Tenants

It is anticipated that a total of 316 units/ suites will be included in the Shute Harbour Marina Development, comprising (Studio Tekton, 2007):

- 109 family suites in the hotel precinct;
- 146 one, two or three bedroom units/ suites within the managed resort accommodation precinct, comprising 91 water front units and 55 non-water front units; and
- 61 single lots in the managed resort accommodation precinct, comprising 32 water front single lots and 29 non-water front single lots (it is assumed that separate dwelling accommodation will be developed on these single lots).

Average occupancy rates for the tourism precinct and managed resort accommodation are anticipated to be approximately 69.4% by 2016 (AEC*group*, 2008a), which is consistent with average occupancy rates at hotels, motels and serviced apartments of similar star grading across Queensland. Peak monthly demand for hotels, motels and serviced apartments in the Whitsunday mainland was 87.6% in 2006, and it is assumed that the tourist precinct and managed resort accommodation will attract a similar level of tourists during peak periods.

Assuming the tourism precinct and managed resort accommodation match these occupancy rates, anticipated average and peak occupancy would be:

- An average of 76 units/ suites occupied in the tourism precinct, with a peak of 95; and
- An average of 144 units/ suites and single lots occupied in the managed resort accommodation precinct, with a peak of 181.

Based on these estimates, an average of 220 units/ suites can be expected to be occupied throughout the course of the year, peaking at approximately 276. Assuming an average of 2.25 persons per visitor group (average persons per household in Whitsunday Tourism Region on in the 2007 financial year (ABS, 2007d)), this equates to between 493 (170 in Tourism Precinct, 323 in Managed Resort Accommodation) and 623 (215 in Tourism Precinct, 408 in Managed Resort Accommodation) additional persons in the region at any one time.

Table 6.7. Tourism Precinct Population Impacts

Impact	Immediate Area	Surrounding Service Centre	Whitsunday LGA
Average Tourism Precinct			
Rooms	109	109	109
Average occupancy (%)	69.4%	69.4%	69.4%
# of rooms occupied	= 109 * 69.4% = **76**	= 109 * 69.4% = **76**	= 109 * 69.4% = **76**
Average family size	2.25	2.25	2.25
Average Population Increase	= 2.25 * 76 = **170**	= 2.25 * 76 = **170**	= 2.25 * 76 = **170**
Peak Tourism Precinct			
Rooms	109	109	109
Peak occupancy (%)	87.6%	87.6%	87.6%
# of rooms occupied	= 109 * 87.6% = **95**	= 109 * 87.6% = **95**	= 109 * 87.6% = **95**
Average family size	2.25	2.25	2.25
Peak Population Increase	= 2.25 * 83 = **215**	= 2.25 * 83 = **215**	= 2.25 * 83 = **215**

Table 6.8. Managed Accommodation Population Impacts

Impact	Immediate Area	Surrounding Service Centre	Whitsunday LGA
Average			
Units / suites	146	146	146
Single lots	61	61	61
Average occupancy (%)	69.4%	69.4%	69.4%
# occupied	= (146 + 61) * 69.4% = **144**	= (146 + 61) * 69.4% = **144**	= (146 + 61) * 69.4% = **144**
Average family size	2.25	2.25	2.25
Average Population Increase	= 2.25 * 144 = **323**	= 2.25 * 144 = **323**	= 2.25 * 144 = **323**

Impact	Immediate Area	Surrounding Service Centre	Whitsunday LGA
Peak			
Units / suites	146	146	146
Single lots	61	61	61
Peak occupancy (%)	87.6%	87.6%	87.6%
# occupied	= (146 + 61) * 87.6% = **181**	= (146 + 61) * 87.6% = **181**	= (146 + 61) * 87.6% = **181**
Average family size	2.25	2.25	2.25
Peak Population Increase	= 2.25 * 181 = **408**	= 2.25 * 181 = **408**	= 2.25 * 181 = **408**

Marina Precinct Visitors

The marina precinct is expected to attract additional persons to the immediate area, although the majority of these are likely to be visitors/ tenants of the tourist precinct and so are already included in the assessment above. It is estimated that at a maximum the marina would average an additional 500 people on any one day for the sole purpose of using the marina facilities and not staying overnight (D Quinlan, *pers. comm*. 12 December, 2007) (i.e., not included in the aforementioned statistics).

Total Additional Operational Population

Once fully operational the development is estimated to result in an average population staying in the immediate area of 493 people, with a peak of 623. The surrounding service centre and Whitsunday LGA are estimated to have a slightly higher population staying in the area of 547 people on average (677 peak) with approximately 25% of the operational labour force anticipated to reside in these areas, with some bringing their families.

On any given day throughout the course of the year, it is estimated that there is the potential for the Shute Harbour Marina Development to contribute an estimated 1,128 persons in the immediate area, with a peak of 1,258 persons per day (this includes persons working in or utilising the marina and supporting facilities that do not reside in the area).

The number of daily additional persons in the surrounding service centres of the development site is expected to be lower than in the immediate area, with the majority of the operational workforce anticipated to already reside in the surrounding service centre. Based on available statistics, the additional persons on any given day in the surrounding service centres and the Whitsunday LGA is estimated to average approximately 1,047 persons throughout the year, with a peak of 1,177 persons.

Table 6.9. Total Operational Population Impacts (staying in catchment)

Impact	Immediate Area	Surrounding Service Centre	Whitsunday LGA
Average			
Operating Workforce	0	54	54
Tourism Precinct	170	170	170
Managed Resort	323	323	323
Marina	0	0	0
Average Population Increase	= 0 + 170 + 323 + 0 = **493**	= 54 + 170 + 323 + 0 = **547**	= 54 + 170 + 323 + 0 = **547**
Peak			
Operating Workforce	0	54	54
Tourism Precinct	215	215	215
Managed Resort	408	408	408
Marina	0	0	0
Peak Population Increase	= 0 + 215 + 408 + 0 = **623**	= 54 + 215 + 408 + 0 = **677**	= 54 + 215 + 408 + 0 = **677**

Table 6.10. Total Operational Population Impacts (Including all day visitors)

Impact	Immediate Area	Surrounding Service Centre	Whitsunday LGA
Average			
Operating Workforce	135	54	54
Tourism Precinct	170	170	170
Managed Resort	323	323	323
Marina	500	500	500
Average Population Increase	=135 + 170 + 323 + 500 = **1,128**	=54 + 170 + 323 + 500 = **1,047**	=54 + 170 + 323 + 500 = **1,047**
Peak			
Operating Workforce	135	54	54
Tourism Precinct	215	215	215
Managed Resort	408	408	408
Marina	500	500	500
Peak Population Increase	=135 + 215 + 408 + 500 = **1,258**	=54 + 215 + 408 + 500 = **1,177**	=54 + 215 + 408 + 500 = **1,177**

6.3.3 Summary of Population Impacts

The analysis above indicates that the Shute Harbour Marina Development is expected to result in the following population impacts in terms of additional people residing or temporarily staying in the three catchment areas during the construction and operational phases. These estimates do not include people working on site or using marina facilities that do not stay in the area over night.

Total Construction Population Impact:

Immediate Area	*Surrounding Service Centre*	*Whitsunday LGA*
Average = 0 persons	Average = 46 persons	Average = 46 persons
Peak = 0 persons	Peak = 112 persons	Peak = 112 persons

Total Operational Population Impact:

Immediate Area	*Surrounding Service Centre*	*Whitsunday LGA*
Average = 493 persons	Average = 547 persons	Average = 547 persons
Peak = 623 persons	Peak = 677 persons	Peak = 677 persons

Impacts of the increase in population are identified in section 6.4 below, with mitigation strategies identified where appropriate for these impacts in section 8.1.3. It should be noted that the population impacts outlined above include a large number of temporary visitors who are likely to source the majority of their services from their usual place of residence and as such will have only a small (if any) impact on service provision in the study area. This is discussed further in section 6.4.3.

6.4 Demographic, Social and Cultural Impacts

6.4.1 Demographic Impacts

The immediate area surrounding the proposed Shute Harbour Marina Development (Shutehaven) had a local resident population of 130 persons in 2006 (Australian Bureau of Statistics, 2007b). Being a popular tourist destination, there can be a large number of visitors staying in the region at any one point in time. At the time of the 2006 Census (8th August 2006), there were 68 domestic visitors and 38 international visitors staying in the immediate area (Shute Harbour / Shutehaven), contributing to a total population in the area of 232 persons[5].

The surrounding service centre had a resident population of 6,632 persons in 2006, with a total population of 10,337 persons on Census night 2006[6] (Australian Bureau of Statistics, 2007b). The broader service region of Whitsunday Shire and Mackay City had a resident population of 108,480 persons in 2006 (Australian Bureau of Statistics, 2007a), with a total population of approximately 115,000 on Census night 2006 including domestic and international visitors (Australian Bureau of Statistics, 2007b).

Despite having a construction workforce of approximately 78 persons on average (with a peak of 192) for the first stage construction and 89 on average (peak 107) in the second stage construction in the immediate area, the workers are expected to only be on-site during the day and the construction site will not be open for public access. With the main residential area of Shutehaven/ Shute Harbour being relatively isolated from the development site, there will be few opportunities for the residents of the immediate area to interact with construction workers (with the exception of on the road – refer section 6.5.1). Further, it is not expected that any non-resident construction workers will reside in the immediate area during the term of their contract, with the majority of the non-resident construction workforce anticipated to stay in the surrounding service centre. As such, no measurable demographic impacts are anticipated within the immediate area (Shutehaven/ Shute Harbour) of the development.

The majority of the additional 46 persons (non-resident workers and associated family members) associated with the average construction workforce (peak of 112 persons) are anticipated to reside in the surrounding service centre. This represents approximately 0.7% of the surrounding service centre's resident population (1.7% at peak), or 0.4% of the surrounding service centre's population including tourists (1.1% at peak). Given the relatively low proportion of the total population in the surrounding service centre, combined with a relatively high level of mobility exhibited by the area's population (only 41.7% of the area's population recorded the same address as five years ago) and the temporary nature of the construction phase, it is not anticipated the construction workforce and associated increase in population will have a significant demographic impact on the surrounding service centre. Any potential impact relating to population and demographics across the broader service region (Whitsunday Shire and Mackay City) is anticipated to be negligible given the scale of these areas relative to the anticipated population increase.

The operational phase of the development is likely to see a long-term increase in the average number of persons present (e.g. staying in the hotel or managed resort accommodation, visiting for the day and/ or conducting business) each day in the immediate area (Shutehaven and Shute Harbour) of approximately 1,128 persons (with a peak of 1,258). While this is a significant increase on the 232 people counted as staying in the immediate area in 2006, almost half of this increase (43.7% on average, 49.5% peak) is expected to be tourists staying in the tourist precinct or managed resort accommodation, with the remainder being day visitors travelling to the area to work or utilise the marina facilities (and residing elsewhere). Based on Census 2006 figures, approximately 45.7% of persons staying in the immediate area were tourists, reflective of the existing significant tourist demographic of the region. Given the existing strong tourism profile of the immediate area, as well as the somewhat secluded nature of the main residential area of Shutehaven from the Shute Harbour Marina Development site, the development is not expected to have a significant influence on the nature of the immediate area's demographic characteristics.

In the surrounding service centre, the development is expected to result in an additional 547 persons residing or staying in the area on average during operation, peaking at 677, with 493 (average) to 623 (peak) of these expected to be tourists staying in the hotel or managed resort precincts and the remainder representing the operational workforce and their families moving to and residing in the area. Up to an additional 500 people are anticipated to travel to and use the marina on a daily basis, however these people will not be staying in the surrounding service centre and as such have no impact on the

[5] Four of the 130 usual residents were counted elsewhere on Census night.
[6] Consisting of 6,300 local residents, 2,538 domestic visitors and 1,499 international visitors.

demographics of the region. The increase in tourist visitation would result in the region's tourist population increasing from approximately 40% of the total population to approximately 42%, which is not anticipated to result in any significant demographic impacts for the region, and is in line with projected tourism growth (AEC*group*, 2008a).

6.4.2 Impacts on Community Values and Lifestyle

The size and scope of the proposed development has the potential to generate impacts on the existing lifestyle and values of local community members. These are expected to have greatest impact on those living or working in the immediate area due to their proximity to the proposed development. The following analysis summarises the existing values and lifestyle of the community within the immediate area (which is expected to experience the majority of impacts to lifestyle and values) and provides an assessment of likely impacts should the proposed development be approved. Further information regarding the community lifestyle and values are provided in Appendix B.

Consultation with residents in the Shute Harbour community identified several areas of concern regarding the potential impact of the proposed development on their community values and lifestyle (see section 4.4.10). Concerns included:

Recreational uses
- Accessibility for recreational boating and moorings; and
- Relationship of proposed development to Shute Harbour Ferry Terminal.

Community character
- Visual amenity (proposed scale and height, dredging spoil);
- 'Tropical' character of Shute Harbour and regional planning issues;
- Population density; and
- Community cohesion and identity.

Community safety
- Additional traffic along Shute Harbour Road;
- Need for additional facilities and infrastructure; and
- Water safety.

Local environmental values
- Local economy, employment and business opportunities;
- Wildlife and environmental values;
- Whitsunday 'brand' and the tourist experience;
- Construction noise and dust; and
- Impact of dredging on ecosystem.

These concerns and likely impacts are discussed below.

Recreational Uses

Accessibility to recreational boating and moorings

Concern was raised among several community members regarding the impact of the development on recreational boating activities. Concern in particular was raised regarding the potential loss of existing swing moorings[7] (and their replacement with marina berths). Concerns were also raised regarding the potential loss of some of the public boating area. The frequency with which this issue was raised and the strong value placed on recreational boating in the immediate area indicates that the community considers this a significant potential impact of the proposed development.

The specific impacts to the community likely to result from the loss of recreational boating are outlined below.

The Marine Traffic Study estimates that approximately 57 of the 300 swing moorings are located within or in close proximity to the proposed development site. In order to mitigate against the impact the loss of these swing moorings could have on users'

[7] A swing mooring is a structure used to secure a boat while allowing the vessel to swing freely around it with the movement of tides and currents.

lifestyle and recreational utility, these swing moorings will be relocated as part of the development to an area outside the marina footprint. This will allow these boat owners to continue to utilise swing moorings within the local area, minimising the impact to these users (Thompson Clarke Shipping, 2007). Additionally, the introduction of 669 berths in Shute Harbour will provide a considerable improvement to water access in the local area for users of the marina.

Regarding access to the boat ramp for recreational boat users, the Thompson Clarke Shipping (2007) report also notes the developer's proposal includes a financial contribution ($2.5 million) to the construction of a boat ramp and car-parking facilities. The Whitsunday Shire Council has also identified a small bay to the east of the development that will be reclaimed for this purpose. At its most basic, this development is to include 100 car parks and four boat ramps for use in all tides (Thompson Clarke Shipping, 2007). These measures are likely to go some way towards mitigating the impact of the development on the enjoyment of recreational boating that is part of the area's lifestyle.

Relationship of proposed development to Shute Harbour Ferry Terminal

The Shute Harbour Ferry Terminal is the docking and departure point for the majority of vessels travelling between the mainland and Whitsunday Islands. Consultation with stakeholders indicates that this terminal is heavily used and that the proposed development should be linked to a redevelopment of the transit terminal. As the majority of users of this terminal are tourists and tour operators it is not considered that potential development is likely to have a considerable impact on the values and lifestyle of the community, other than to potentially increase tourist numbers utilising the terminal. This is discussed in more detail in section 7.4.8.

Community Character

Impacts on visual amenity

Consultation outlined a concern that the proposed development would have a negative impact on the visual amenity enjoyed by community members. Concerns were raised regarding the height of the proposed tourist accommodation development, the impact of the view from Shute Harbour Road, and the visual amenity impacts as a result of the disposal of dredging spoil. It is likely that the longer term change to visual amenity is of more concern, however, construction activity may also be experienced as a negative impact on views of the Harbour and its quiet ambience.

The current views experienced by residents of Shute Harbour and along Shute Harbour Road have been examined in detail through a Visual Amenity study prepared by Yarrah Pty Ltd (2007). This report highlights that the current visual character of the region is "a heterogenous mix of natural, semi-natural, tourism-oriented, and port-industrial landscape character values" (Yurrah Pty Ltd, 2007). The report outlines several mitigation strategies, including building height restrictions to limit the impact on the visual amenity of the development from key viewing points (Yurrah Pty Ltd, 2007). These impacts are likely to be most significantly experienced from "the open waters of Shute Bay, areas of Shute Harbour road within the development site, and the immediately adjacent residence and motel" (Yurrah Pty Ltd, 2007).

However, the report also indicates that the proposal "is expected to maintain or enhance the amenity of adjacent land uses via provision of view corridors through the proposed development and by screening existing incompatible uses" (Yurrah Pty Ltd, 2007). The lifestyle impacts of this development as a result of the potential loss of views are therefore considered to be able to be mitigated against through the adherence of the developer to these suggestions, with some of the rehabilitation programs undertaken as part of the proposal providing the opportunity to increase visual amenity in certain localities.

Region's 'tropical' character and regional planning issues

Consultation with community members indicated that the design character was a potential issue that could impact the community. Feedback received from stakeholders indicated a need to ensure the development fitted with the 'tropical' character of the locality, that there was concern regarding the scale and footprint of the project, and that the plan fitted with the Shire planning scheme. These issues will be addressed through the design covenants that exist for the site, which is addressed in detail in the planning section of the EIS.

Population density

One stakeholder raised a concern regarding the impact of the proposed development on the population density of the community. These concerns are considered to be referring to the presence of short-stay visitors in the region (addressed below), or to the housing needs of construction workers or operational employees (addressed in section 6.4.5).

As outlined in section 6.3.3, it is anticipated that an average of 493 additional persons will be present in the Shute Harbour community on any given day who will utilise the proposed tourist accommodation. While it is anticipated that these persons will increase the population density of the community, they will be primarily located within a single facility, which is delineated as separate to the established residential area of Shutehaven. There are no plans to extend the residential density or footprint within the residential community of Shutehaven.

The proposed inclusion of services and facilities to cater specifically to these persons within the development is expected to limit the impacts of an increased population density on the community. These additional facilities associated with the increased presence of persons will be available for use by the existing residents, which may improve their lifestyle, increasing their social amenity through reduced need to travel outside the community for their day-to-day needs.

Community cohesion and identity

Consultation results indicate mixed opinions of the impact of the development on community cohesion and community identity. Concerns raised included a desire to retain the small village feel of the community, concern that the area would become similar to Airlie Beach in character, and concern that the community may not be adequately consulted on the development. Some consultation identified positive potential impacts from the development including an increased sense of community, and an increased community cohesiveness to the area due to a greater number of people interacting with residents on a daily basis.

The Shute Harbour community consists of approximately 130 residents across approximately 90 dwellings (ABS, 2007b). According to the 2006 Census, the community is characterised predominantly by older residents and retirees, a higher proportion of couple families without children, slightly higher than average incomes, and higher levels of home ownership (ABS, 2007b). These characteristics are indicative of a relatively homogenous community with many residents at similar life-stages, and it is likely that a strong sense of neighbourliness exists in some areas.

The potential impact of the proposed development on community cohesion and sense of identity are difficult to quantify due to the potential for competing interests to be present in the area. Any change to the community as a result of the development has the potential to increase a sense of community cohesiveness for residents of Shutehaven due to the geographical separation of this community from those visiting or temporarily staying at the proposed development.

There is also the potential that a new identity will be formed for Shute Harbour as a result of the proposed development. Attempts to integrate the values of the existing community and their lifestyle in the proposed development offer an opportunity for the new identity to be accepted by the local community, and may mitigate against the potential negative perception of the area as 'another Airlie Beach' (Three Plus, 2007).

Similarly, the development of a new identity for Shute Harbour that is perceived negatively by the local community has the potential to impact on their quality of life through a disconnection between their existing community values and the new community values encapsulated in this identity.

These differences are based on the individual views that exist within the local community. Adequate community consultation and engagement in the planning, development and operational stages is considered to be important to mitigate potential impacts on community values and lifestyle, and maximise community benefits such as use of new leisure facilities.

Community Safety

Road safety

Shute Harbour road is the main access to the Shute Harbour community from the north and south. The majority of trips along the road are between Airlie Beach and Shute Harbour (Cardno, 2007a). As the road is the primary access route to Shute Harbour, the safety of traffic along the road is important to residents in the Shute Harbour community.

Consultation with community stakeholders indicated concerns for safety given increased traffic volumes, and a need to address dangerous parts of the road. These concerns are addressed through the mitigation recommendations incorporated in the Traffic Impact Assessment prepared by Cardno (2007a).

Need for additional facilities and infrastructure

During the consultation, concern was raised regarding the potential impacts of additional persons on current infrastructure and facilities. These impacts included comments regarding the current power supply, upgrades requested for Shute Harbour Road, and sewerage treatment. A number of comments also related to the desire for additional marine infrastructure, including fuel storage, maintenance facilities, covered departure facility, a shipyard, slipways, cold work access[8] and wider access through arms for trolleys and small vehicles.

The Water Supply and Sewerage Investigation Report prepared by Cardno (2007c) and the Electricity and Communications Report prepared by Lectel (2007) indicate that suitable water, sewerage, electricity and communications infrastructure can be provided for the development without putting additional strain on the area's utilities. The Traffic Report by Cardno (2007a) indicates that the proposed road upgrades will provide sufficient capacity with minimal delays and queuing during peak periods during both the construction phase and operation out to a 2022 time horizon. Additionally, the development of the proposed marina will provide a significant upgrade in the marine infrastructure available in the region.

Further details regarding the infrastructure requirements of the proposed development can be found in the Water Supply and Sewerage Investigation Report prepared by Cardno (2007c), the Electricity and Communications Report prepared by Lectel (2007), and the Traffic Report prepared by Cardno (2007a).

Water safety

Some concern was raised regarding the impact of the proposed development on water safety in the area. The primary concerns were the increased water traffic in the area as a result of the proposed marina development, that the breakwater would narrow the access channel to boat ramps, the potential congestion of the Harbour from barges needing to turn around within a smaller area, and the ability of 'super yachts' to navigate the proposed channel.

The impact of the potential development on water safety is outlined in detail in the Marine Traffic Study completed by Thompson Clarke Shipping (2007). The report notes that the proponent has committed to providing "all required navigational and safety infrastructure including navaids, signage and traffic management in compliance with Maritime Safety Queensland requirements" (Thompson Clarke Shipping, 2007).

[8] "Cold work" refers to ship repair work not involving and with no risk of fire or sparks.

Specific reference is made in this report to the impact of the development on the turning of barges, including that the marina entrance is located 120 metres from the barge jetty allowing for an adequate turning area. A letter provided by the Regional Harbour Master for Mackay outlines that the proposed development meets the requirements of Maritime Safety Queensland (Maritime Safety Queensland, 2007).

The Marine Traffic Study outlines that the volume of marine traffic is expected to rise as a result of the proposed marina development (Thompson Clarke Shipping, 2007). Traffic management strategies have been suggested in this Study to mitigate potential water safety issues as a result of the increased volume of vessels in the area. No specific reference is made in this report to the specific requirements of super yachts in the area, however, reference is made to traffic management strategies relating to the navigational channels proposed.

The Marine Traffic Study and the IAS also state that the proposed development is expected to enhance water safety through the proposed development of a breakwater that will provide protection to the marina in the case of a cyclone (SHMD, 2006).

Local Environmental Issues

Local economy, employment and business opportunities

Consultation results indicate an expectation among stakeholders that the development has the potential to enhance the local economy through employment and business opportunities. Comments related to the potential for the further development of marine-based businesses in the immediate area, the opportunity to develop long-term business and government linkages, and the potential development of a tourism/hospitality training facility in the region (Three Plus, 2007).

The proposed development is expected to provide further opportunities for economic growth in the region with local employment opportunities available in the construction, accommodation, hospitality, water transport, and retail industries. It is expected that the majority of these benefits will be gained by those in the broader surrounding area as at present there are no unemployed persons identified as living within the Shute Harbour immediate area. Positive economic benefits may be generated through increased demand for the services provided by local businesses. Further discussion of these potential impacts and opportunities for external equity investment is included in section 6.6.

Wildlife and environmental values

The Shute Harbour area is considered to have significant environmental value by stakeholders and community members. Consultation with stakeholders indicates there is concern the development will have a negative impact on these environmental values. Specific comments regarding environmental values related to the potential harm to wildlife, the environmental ‘friendliness’ of the development, and the environmental impact associated with the development scale. Concern was also raised that the development would turn Shute Harbour into an ‘Airlie Beach’.

The proposed development involves an obvious change to the present state of the Shute Harbour foreshore, including the development of a breakwater, reclamation of foreshore land, dredging of the seabed, infrastructure provision and construction. Given the environmental values of the Shute Harbour community and the sense of ‘custodianship’ over the local environment, these impacts are considered to be of a significant concern to local community members. The Marine Megafauna Impact Assessment Statement prepared by Natural Solutions (2007), The Aquatic Ecology Report by FRC Environmental (2007) and the Terrestrial Ecology Report by Place Environmental (2007) outline the range of both marine and terrestrial wildlife and ecosystems likely to be impacted by this development. The reports find potential risks associated with the development, but states that effective measures can be taken against these risks by the developer, and in some cases local and regional level representatives, to ensure that there is minimal impact on environmental values.

Whitsunday ‘brand’ and the tourist experience

Stakeholder consultation revealed mixed opinions of the impact of the development on tourist impressions of the region. Comments in particular referred to the potential damage to the eco-tourism ‘brand’ of the Whitsundays, and that the development would cater to a ‘niche market’ of tourists. Comments in support of the development referred to the potential for increased tourism flows to the area, and an increased sense of community.

Tourism is considered a key industry in the Whitsunday region, and the character of the region’s townships is closely linked to their relationship to tourism demand. The key tourist centre of the region is Airlie Beach, which is the centre of the region’s accommodation supply and tourist facilities. Tourism flows within Shute Harbour are at present limited by the lack of accommodation supply in the area, with only one motel present along Shute Harbour Road. As the departure point to the Whitsunday Islands, Shute Harbour Ferry Terminal is one of the most important pieces of tourism infrastructure in the area, facilitating the transport of thousands of tourists to the islands each year.

The construction of a significant tourist accommodation facility within the proposed development is expected to increase the number of visitors to the area, with an average of 1,128 additional persons in the community on any given day (see section 6.3). The presence of the marina also suggests the potential for increased day-trip travel to the area for boating purposes.

The increased tourism flows are anticipated to generate some impacts on the local community, with increased demand for services and facilities, greater traffic volumes on Shute Harbour road and increases in water traffic expected as a result of the development. While changes to the Shute Harbour foreshore are planned it is not anticipated that these will detract from the tourist experience of the Whitsundays or the Whitsunday eco-tourism brand for the majority of individuals, as the development will be constrained to a small, self contained peninsula and will not extend into the Great Barrier Marine Park Area or Conway National Park.

Noise and dust

While no specific comments regarding noise and dust were identified during consultation, the scale and the associated scope of works involved during the construction phase of the proposed development may conflict with the community value for a relaxed environment. The main sources of noise and dust during the construction period are expected from site preparation and pile-driving works, earthworks, dredging and reclamation of spoil, construction of dwellings and accommodation, landscaping, and road works (building of intersection and access road). Primary sources of noise during operation will be from machinery and plant operation and vehicle and barge movement.

The Initial Advice Statement (IAS) prepared by SHMD (2006) outlines the likely impact of noise and dust on the local community through the construction phase of the proposed development. The report outlines that the noise generated through the piling stage of development will be between 85dBA and 110dBA at a distance of 7 metres, falling to 50dBA at a distance of 300 metres (SHMD 2006). The work onsite will be limited to 12 hours per day, with works to be carried out 6 days per week (excluding dredging which at times will need to be carried out around the clock). This schedule for works meets the standards specified in the *Environmental Protection (Noise) Policy 1997* (SHMD, 2006).

Further noise monitoring was undertaken by Cardno (2007b) to assess the potential noise impacts of the development in its construction and operational phases. The monitoring indicates that the primary impact of noise will be on the existing residence, located 50 metres from the proposed development, and the Shute Harbour Motel, located 100 metres from the proposed development (Cardno, 2007b). The report states that control measures will be implemented to minimise construction noise to these sites, however, the noise levels indicated during particular stages of construction are likely to reduce the acoustic amenity of the residence and the motel during the day, with the noise levels of some activities expected to potentially generate difficulties in hearing normal conversations (Cardno, 2007b). The motel may potentially experience some noise at night as a result of round the clock dredging (Cardno, 2007b). The report suggests several mitigation strategies to address these issues and to minimise the potential impacts on sensitive areas.

Dust is also addressed in this report, with the main sources of dust expected to be dust from earthmoving, stockpiles and vehicular traffic on unsealed surfaces (Cardno, 2007b). The report indicates that the potential impact of dust can be mitigated through dust management procedures during construction including the wetting of dust generating areas, cessation of earthworks in windy conditions, limited earthen stockpiling and short-delays in revegation, and the erection of physical barriers to dust movement, which will minimise the potential for air quality impacts. Cardno has also prepared a Construction Environmental Management Plan (CEMP) for the site, which contains provisions for investigation and resolution of complaints regarding noise and dust (2007b).

Further details regarding noise and dust management can be found in section 4.8 of the EIS.

Impact of dredging works on ecosystem

The proposed development involves the dredging of the marina area to a depth of approximately 5.5 to 6.5 metres AHD. One stakeholder raised a concern regarding the impact of this dredging on the marine ecosystem of the harbour. Given the values of the community regarding the protection of the environment, any damage to the marine environment as a result of the proposed dredging program would be perceived as a negative community impact.

The potential environmental impacts of the proposed dredging activity are discussed in detail in the Aquatic Ecologic Environmental Impact Statement for the proposed development (FRC Environmental, 2007).

6.4.3 Access and Availability of Social and Community Infrastructure and Services

The surrounding service centre to Shute Harbour (including Shutehaven, Airlie Beach, Cannonvale, Flametree and Jubilee Pocket) currently provides most basic social and community infrastructure and services, however, due to the relatively small population of the area the majority of major community infrastructure and services is provided in the nearby regional centres of Proserpine to the west, as well as Mackay City to the south.

The table below outlines the type and location of key social and community infrastructure and services for the Shute Harbour study area.

Table 6.11. Access to Social and Community Facilities and Services

Community Facility / Service	Facilities and Services Available
Community Halls	There are four non-profit community halls available for hire located in Cannonvale, Airlie Beach and Jubilee Pocket, with another eight halls available in Proserpine.
Libraries	There is a public library branch located in Cannonvale that opened in 2006, as well as library facilities at the Barrier Reef Institute of TAFE also in Cannonvale. A central library is located in Proserpine.
Museums / Galleries	Two museums / galleries are available to the public in Proserpine.
Child Care	There are currently four child care facilities and services available in Airlie Beach and Cannonvale, with a further two facilities scheduled to open in late 2007/ early 2008. Existing child care facilities report no vacancies, with waiting lists of up to six months.
Schools	There are two primary schools in Airlie Beach (one public and one private) and one public primary school in Cannonvale. There is one private secondary school in Cannonvale. The nearest public secondary school is located in Proserpine.
Tertiary Education	There are two university campuses located in Mackay City LGA – Central Queensland University and James Cook University. The Barrier Reef Institute of TAFE is located in Cannonvale and focuses on the marine sector and hospitality. The Central Queensland Institute of TAFE is located in Mackay City.
Health Care Services	Limited levels of care are available in the surrounding service centre of Shute Harbour. There is a GP and dentist at Airlie Beach but all specialist services must be accessed from Proserpine, Mackay, Townsville or Brisbane.

Community Facility / Service	Facilities and Services Available
Aged Care Services	Limited aged care facilities and services are available in the surrounding service centre, with Proserpine providing the majority of aged care facilities and services in the region.
Family / Community Support Services	A number of family and community support services are provided in the surrounding service centre and Proserpine, catering to a range of needs including physical and mental health, disability, youth and crime.
Emergency Services	The Whitsunday Police Station located in Cannonvale currently services the Shute Harbour community. Fire and ambulance services at Airlie Beach have adequate response times for Shute Harbour.

Source: Various, refer Section 4.4 Social Infrastructure Overview for details.

Population impacts from the Shute Harbour Marina Development are likely to place some additional demand on social and community facilities and services during both the construction and operational phases.

As identified in section 6.3, during the peak of the construction phase there is expected to be an additional 112 persons temporarily residing in the surrounding service centre requiring access to community and cultural infrastructure and services, while during the operational phase there is expected to be an additional 1,047 persons on average residing, working or temporarily staying in the surrounding service centre, peaking at approximately 1,177 persons. However, not all of these additional people will place increased pressures on community and cultural facilities and services.

Due to the relatively short term nature of the construction phase (30 months) it is likely that that the majority of workers, whilst requiring accommodation in the region (refer section 6.4.5 below), will return to their “home base” every third week (i.e. would operate on a two week on and one week off style roster). Consultation with the likely primary construction company (Marina Specialists) and the proponent indicate that workers are likely to source family and community support services, health care and other services from their “home base”, rather than from within the region they are working, except in emergency circumstances. Similarly, tourist visitors to the region can be expected to source the majority of these types of service from their place of residence where possible. As such, additional demand on these services from construction workers and tourists can be expected to be low. The relevant drivers of demand are indicated for each facility/ service type where relevant in the sections below.

The adequacy of services provision can be assessed using population based benchmarks for social and community facility and service provision. The following table outlines population based benchmarks that have been utilised in other regions of Australia. Each of these are discussed as relevant in the following sections.

Table 6.12. Population Based Benchmarks for Community Service and Facility Provision

Facility / Service	Benchmark	Per	Used By
Local Community Space			
Local Meeting Room	1 meeting room	2,500 – 3,000 people	SEQ Regional Plan
Local Community Hall	1 hall	6,000 – 10,000 people	SEQ Regional Plan
Library Branch	1 branch	15,000 – 30,000 people	SEQ Regional Plan
Museum / Gallery			
Museum	1 museum	30,000 – 120,000 people	SEQ Regional Plan
Art Gallery	1 gallery	30,000 – 150,000 people	SEQ Regional Plan
Child Care	1 centre	500 – 700 children aged 0-4	SEQ Regional Plan
	1 space	7 children aged 0-4	Maroochy Shire Council
Schools			
Primary School	1 school	7,500 people	SEQ Regional Plan
Secondary School	1 school	20,000 people	SEQ Regional Plan

Facility / Service	Benchmark	Per	Used By
Higher Education			
University	1 University	150,000 – 200,000 people	SEQ Regional Plan
TAFE	1 TAFE	50,000 people	SEQ Regional Plan
Health Care Services			
Hospital	4.3 beds	1,000 people	Maroochy Shire Council
	4.8 beds	1,000 people	Dept. of Housing & Urban Development
	100 beds	25,000 people	Brisbane City Council
Medical Centre	1 centre	20,000 – 30,000 people	SEQ Regional Plan
Aged Care			
Aged Persons Facility	1 local facility	7,000 – 10,000 people	SEQ Regional Plan
Home-Based Care	10 beds	1,000 people aged 70+	Maroochy Shire Council
	1 place	150 people aged 65+	Port Stephens Council
	5 beds	1,000 people aged 70+	Dept. of Housing & Urban Development
Emergency Services			
Police Service	1 station	20,000 – 30,000 people	SEQ Regional Plan
Fire Service	1 station	25,000 people	SEQ Regional Plan
Ambulance Service	1 station	25,000 people	SEQ Regional Plan

Sources:
Brisbane City Council: SGS Economics & Planning (2006).
Dept. of Housing & Urban Development: SA Dept. of Housing & Urban Development (1994).
Maroochy Shire Council: Andrea Young Planning Consultants, Briggs & Mortar and Elliott Whiteing (2005).
Port Stephens Council: AEC*group* (2007).
SEQ Regional Plan: SGS Economics and Planning, Elliott Whiteing, Briggs & Mortar and Andrea Young Planning Consultants (2007).

As outlined in section 6.3.1, construction phase impacts assessed in this section focus on impacts from the primary construction phase. Any second stage construction labour sourced from outside the region would be expected to result in the same types of impacts as those during the primary construction phase, but be proportionately less in line with the fewer workers, if any, expected to be sourced from outside the region (see section 7.2.1.2).

Community Space

There are four non-profit community halls available for hire located in Cannonvale, Airlie Beach and Jubilee Pocket. Population based benchmarks indicate that a single community hall can generally service a local population of approximately 6,000 people to 10,000 people. Based on the current resident population 6,632 people (or 10,337 people including tourists) in the surrounding service centre, two community halls are sufficient to accommodate the area's population. Over 13,500 additional people would be required to move to the area before an additional community hall would be considered to be necessary, which is considerably greater than either the anticipated construction or operational population impacts.

Libraries

The surrounding service centre is currently serviced by the Cannonvale Branch Library, which recently opened in 2006. The Proserpine Central Library services the majority of the rest of Whitsunday LGA, with a mobile library service operating out of the central library. Population based benchmarks indicate that one branch library is required for every 15,000 to 30,000 people, suggesting that there is some existing capacity at the Cannonvale Branch Library to accommodate any additional demand driven by the Shute Harbour Marina development. In addition, any increase in demand is anticipated to be relatively low due to the low numbers of construction and minimal operational workforces relocating to the region.

Museum / Gallery

There are two museums/ galleries available in Proserpine, servicing the entire Whitsunday LGA (population of 18,177). Benchmarks indicate one museum is capable of servicing a population of 30,000 – 120,000 people, while an art gallery can service 30,000 to 150,000 people, indicating that the two museums/ galleries available are sufficient to cater for the region and any anticipated increase in demand driven by the construction or operational population impacts of the Shute Harbour Marina Development.

Child Care

It is anticipated that the construction phase of the Shute Harbour Marina Development will result in a maximum temporary increase in the region's population of approximately 112 people through short term migration to the region of construction workers and, in some cases, their families. The majority of construction workers are not expected to relocate their children to the region during their period of employment, with just 10% estimated to bring their families. Based on the current proportion of the population aged 0 to 4 years (5.3%), this would result in an estimated increase of approximately one child aged 0 to 4 years.

Population based standards of provision suggest that one long day child care centre is capable of servicing a region with 500 to 700 children aged 0 to 4 years. Data from the 2006 Census indicates that there are less than 500 children aged 0 to 4 years residing in the surrounding service centre, suggesting that one child care centre should be sufficient to cater to the region. However, the three existing long day child care facilities in the surrounding service centre have been identified as having insufficient capacity to meet current demand for child care, suggesting demand patterns in the surrounding service centre differ from observed standards in benchmark areas. Two new long day care facilities are planned to open in Cannonvale in late 2007/ early 2008, which will significantly increase capacity in the region, however demand for these facilities is already high, with both facilities having received a large number of applications for places (121 Childcare, 2007; Cannonvale Kidz Early Learning Centre, 2007).

Population based benchmarks for child care places indicate that one child care place is required for every 7 children aged 0 to 4 years. At a maximum, this would result in demand for one additional place on top of organic population demand. This is considered insignificant in comparison to existing demand for child care in the area.

During the operational phase of the development, the population increase is expected to be around 1,047 persons on average with a peak of 1,177 persons. However, most of this population increase will be transient and not reside in the surrounding service centre, for example those people staying in the hotel and managed resort accommodation precincts on holiday, as well as visitors to the marina complex. These people are not expected to require the use of local child care facilities. The marina workforce is anticipated to be sourced from either the surrounding service centre or from areas within driving distance of Shute Harbour, and thus not directly result in any migration to the region or increase in demand for child care services.

It is estimated that during operation the surrounding service centre's resident population will increase by 54 persons from marina workers (36 people) relocating to the area, with 30% of these estimated to have a family. This equates to approximately 2 children aged 0 to 4 years based on the current age distribution of the region (5.3% aged 0 to 4 years). Population based standards of provision for child care places indicates that this may not result in any substantive increase in demand for child care, although at a maximum this would equate to an additional 2 places required as a result of the development on top of organic population demand. This is considered insignificant in comparison to existing demand for child care in the area.

Schools

Primary school requirements will primarily be serviced by schools located in the surrounding service centre. This includes Cannonvale State School, Whitsunday Christian College and St Catherine's Primary School. Secondary school requirements are primarily serviced by Whitsunday Christian College in Cannonvale and Proserpine State High School in Proserpine. Consultation with all of these schools indicated that there is a relatively high level of spare capacity available.

The construction phase of the Shute Harbour Marina Development is anticipated to result in a maximum temporary increase in the region's population of approximately 112 people (including construction workers and their families). The majority of construction workers are not expected to relocate their children to the region during their period of employment, with just 10% estimated to bring their families. Based on the current proportion of the population aged 5 to 12 years (8.5%) and 13 to 17 years (5.7%), this would result in an estimated increase of 2 primary school aged children and 1 secondary school aged child.

Given the capacity available at the three primary schools in the surrounding service centre and the two secondary schools servicing the Shute Harbour area, this increase in primary and secondary school aged children is not expected to adversely impact on the provision of school services in the local area.

During the operational phase of the development, it is expected that only permanent residents moving to the area will require school services for their children. Approximately 54 persons are anticipated to move to the region on a permanent basis following the development of the Shute Harbour Marina, with approximately 2 of these estimated as being aged between 5 and 12 (8.5%) and 1 aged between 13 and 17 (5.7%). This is appears to be well within the spare capacity expected to be available at the primary and secondary schools servicing the Shute Harbour community.

Tertiary Education

It is anticipated that due to the short term contract nature of the construction workforce, and therefore relatively short period of stay in the region for these workers, non-resident construction workers are unlikely to seek tertiary education opportunities within the surrounding service centre or broader service region as they are already working within an occupation.

Similarly, during the operation phase, it is anticipated that only permanent residents moving to the region may place additional demand on tertiary education in the region. Approximately 54 people are anticipated to move to the region, with an estimated 43 of these people aged 18 or over (and potentially seeking higher education).

Population based benchmarks indicate that a university campus can service a population of approximately 150,000 t0 200,000 people across a broad regional level. There are two campuses located in Mackay City, which services the entire Mackay SD's population of 159,869 people. This would indicate that the additional 54 people expected to move to the region permanently as a result of the Shute Harbour Marina Development can be adequately catered for by the two campuses in Mackay City.

On average, TAFE education facilities are estimated to be able to cater to a population of approximately 50,000 people. The Great Barrier Reef TAFE primarily services the Whitsunday LGA (18,177 persons). It is anticipated that the addition of 54 people in the region can sufficiently be catered for by the existing TAFE campus.

Health Care Services

Consultation with the likely primary construction company and the proponent indicate that due to the shift work nature of the construction workforce, non-resident workers are likely to source health care services from their "home base", rather that from within the region they are working, except in emergency circumstances, as are short stay tourists and visitors to the marina. As such, additional demand for health care services is expected to come primarily from the operational workforce moving to the region and their families (54 people).

The Shute Harbour area is serviced by a local medical centre in Airlie Beach, providing a range of services including GP, after hours emergency services, X-ray facilities, and pharmacy services. There are also a number of other GP, pharmacy, optometry and dental services available in Airlie Beach and Cannonvale. Service provision benchmarks indicate that a medical centre is capable of servicing a population of approximately 20,000 to 30,000 people, indicating current levels of provision will be adequate in absorbing the increase of 54 people due to the development. However, it should be recognised that there is a shortage of general practitioners and specialists in most areas of regional Queensland and that all local residents may experience some waiting time to access medical services, although the impact on waiting times from the increase of 54 people would be negligible.

All specialist health care services are provided at a regional level. The Proserpine Hospital, with capacity of 35 beds, is the nearest hospital to the Shute Harbour area, and provides a range of specialist health services including nursing care, general care services, hearing aid and substance abuse recovery. The closest referral hospital is the Mackay Base Hospital (128km away), which has a capacity of 120 beds. The Mater Miscericordiae Hospital (105 bed capacity) and the Pioneer Valley Private Hospital (38 bed capacity) also service the region. According to population based benchmarks, approximately 4.5 beds are required per 1,000 people. With 54 permanent residents anticipated to move to the region due to the development, this equates to approximately one quarter of a bed, which is considered to be relatively insignificant compared to the 298 beds currently servicing the region.

Aged Care

It is not anticipated that any additional demand will be placed on aged care during either the operation or construction phases as a direct result of the Shute Harbour Marina Development. During the construction phase, non-resident construction workers and their families are not expected to be of an age to require these services.

During operation, visitors staying in the hotel or managed accommodation precincts, as well as those utilising the marina's facilities, are not expected to require aged care services supplied in the region due to the short period of stay of these visitors and their demographic. Non-resident workers and their families moving to the region are not anticipated to be of an age requiring aged care services.

Emergency Services

Consultation with emergency service representatives indicates that the anticipated population increase associated with the Shute Harbour Marina Development is unlikely to be significant enough to impact on emergency service delivery.

Steve O'Connell, Officer in Charge of the Whitsunday Police Station, noted that the target demographic for the tourism precincts (wealthy, relaxed lifestyle) tend to place a relatively low level of demand on police service provision. A new police station is currently under construction to replace the existing Whitsunday Police Station, and will provide adequate facilities to cater for the expected increase in population from the Shute Harbour Marina Development. While there is currently no additional staff set to begin once the new station is operational, it is expected that additional staff will be added as needs arise (S. O'Connell, Whitsunday Police Station, *pers. comm.* 28/09/2007).

Consultation with the QAS indicates that the existing population base located at Shute Harbour/ Shutehaven only impacts minimally on ambulance service demand at the Whitsunday Station. With upgrades for the QAS Whitsunday Station and a subsequent increase in staff approved for 2008, despite increasing the number of persons in the immediate area, the additional population from the development is expected to have little or no effect on overall performance of the QAS (S. Lennon, QAS Central Region, *pers. comm.* 24/01/2008).

Consultation with the QFRS regarding the adequacy of existing service and any potential impacts resulting from the proposed SHMD and consultation undertaken during the previous EIS in 2005 (Connell Wagner, 2005a) indicated that the existing fire service in Airlie Beach provides adequate services and response times to cater to the existing population in Shute Harbour and the surrounding service centre.

Population based benchmarks indicate that a police, fire and ambulance services are capable of servicing a regional population of between 20,000 and 30,000 people. Emergency services at Airlie Beach cater to the surrounding service centre's existing population of 10,337, indicating that emergency service provision is sufficient to handle the anticipated increase of up to 1,177 people during operation of the Shute Harbour Marina. Specific consultation will be required during construction and operational planning to ensure that emergency services are aware of the nature and extent of the project and are able to respond if required.

6.4.4 Access and Availability of Recreational Activities

Recreation and leisure infrastructure and services are primarily provided by the suburbs of Airlie Beach, Cannonvale and, further inland, Proserpine. Currently, facilities in and near the development site are limited to a boat ramp, café, ferry terminal, limited car parking and a couple of commercial operations (e.g., salvage operator, charter boat operations, and barge operation). Foreshore and marine access at the site is limited primarily to the private properties (including the ferry terminal) located on the harbour.

In the surrounding service centre, considerable foreshore, recreational and National park facilities are available providing opportunities for informal recreation and leisure activities, in particular water-based activities. In addition, Whitsunday Sportspark and the adjacent Whitsunday PCYC in Airlie Beach provide infrastructure for outdoor and indoor sports and recreation activities. Additional regional level facilities are also provided in Proserpine and service the Shute Harbour area, including two multi-purpose sportsground precincts, an outdoor 50 metre public swimming pool, a showground reserve and an eighteen-hole golf course.

During construction, increased demand for recreation and leisure infrastructure in the surrounding service centre, as well as Proserpine, is expected to be generated by the non-resident construction workforce moving to the region (46 persons on average, 112 peak).

Increased demand during operation is expected to be generated primarily by additional tourists visiting and staying in the hotel and managed resort accommodation precincts, as well as people moving to the region due to work opportunities in the Shute Harbour Marina. This equates to an estimated additional 547 to 677 people.

The adequacy of recreational and leisure facility and service provision can be assessed using population based benchmarks. The following table outlines population based benchmarks that have been utilised in other regions of Australia. Each of these are discussed as relevant in the following sections.

Table 6.13. Population Based Benchmarks for Recreational Facility and Service Provision

Facility / Service	Benchmark	Per	Used By
Open Space	1 park	1,000 people	Lake Macquarie City Council
Sporting Facilities			
Sports Fields	0.73 ha	1,000 people	Hornsby Shire Council
	1 ha	400 people aged 5-39	Port Stephens Council
	1 field	3,000 people	Brisbane City Council
Indoor Sports Centre	1 centre	20,000 people	Hornsby Shire Council
	1 centre	20,000 people	Penrith City Council
	1 centre	25,000 people	Port Stephens Council
Swimming Pools	1 centre	35,000 people	Lake Macquarie City Council
	1 facility	30,000 people	Port Stephens Council
Tennis Courts	1 court	2,500 people	Penrith City Council
	1 court	2,000 people	Lake Macquarie City Council
Netball Courts	1 court	5,000 people	Penrith City Council
	1 court	6,500 people	Hornsby Shire Council
	1 court	1,500 people	Lake Macquarie City Council
	1 court	3,000 people	Port Stephens Council
Lawn Bowls	1 facility	15,000 people	Penrith City Council
Golf Course	1 course	75,000 people	Hornsby Shire Council
Marine Access			
Marinas	1 berth/ mooring	10 recreational boat registrations	Pacific Southwest Strategy Group
Boat Ramps	1 ramp	6,000 people	Lake Macquarie City Council
	1 ramp	6,000 people	Port Stephens Council

Sources:
Brisbane City Council: SGS Economics & Planning (2006).
Hornsby Shire Council: Recreation Planning Associates (2000).
Lake Macquarie City Council: Lake Macquarie City Council (2004).
Mackay City Council: Mackay City Council (1999).
Pacific Southwest Strategy Group: Pacific Southwest Strategy Group (2007).
Penrith City Council: Stratcorp Consulting (2003).
Port Stephens Council: AEC*group* (2007).

Open Space

Population based benchmarks suggest that approximately one park (including parks, gardens and/ or foreshore) should be provided per 1,000 people.

The surrounding service centre currently has 14 parks, with a combined area of 18.39 hectares, including:

- Six small recreation parks, with a combined size of 3.84 hectares; and
- Eight foreshore parks, with a combined size of 14.55 hectares.

Population based benchmarks indicate that this is sufficient to cater to approximately 14,000 people, which is approximately 4,000 people more than were recorded as staying in the area on Census night 2006. This implies there is currently sufficient open space provision in the surrounding service centre.

During construction, an additional 46 people (peaking at 112) are expected to move to the region, which is within the capacity of the existing open space area to accommodate.

During the operational phase, an additional 0.25 hectares of parkland area will be made available as a result of the development. The proposed Shute Harbour Marina development also includes 0.7 hectares of pedestrian boardwalk between the land and marina facilities, linking through to parkland areas and a carpark area (Studio Tekton, 2008). The boardwalk and pathway network has been designed to ensure that the general public and marina users have the opportunity to access the foreshore area that is currently effectively inaccessible to the general public due to a steep bank and mangroves. It is expected that the additional open space areas provided by the development will be sufficient to meet the requirements of the additional population during operation (peak of 677 people).

Sporting Facilities

As shown in the table below, assessment of existing sporting facility provision in the surrounding service centre against population based benchmarks suggests that the existing supply of most sporting facilities is sufficient to cater to an increase in population of over 4,000 people (with the exception of sporting fields and tennis courts), considerably above the estimated peak of 112 people during construction and 677 during operation that would potentially be seeking to use sporting facilities in the surrounding service centre.

However, population based benchmarks indicate that provision of sporting fields and tennis courts is currently below recommended levels of provision, and the addition of 112 people during construction and 677 people during operation has the potential to exacerbate current demand pressures on these facilities.

The addition of 112 people during the construction phase (peak) equates to an increase in the current estimated demand per sporting facility of approximately 1.1%, while the operational population increase of 677 people is equivalent to an increase in demand per sporting facility of approximately 6.5%. This is a relatively small increase in demand for each facility generated solely by the Shute Harbour Marina, however, given these facilities are already under demand stress it is recommended that mitigation strategies be developed to ensure any impacts are minimised.

Table 6.14. Recreational Facility and Service Provision

Facility / Service	Number	Capable of Servicing
Sports Fields	2 fields	6,000 people
Indoor Sports Centre	1 centre	20,000 people
Swimming Pools	1 pool	30,000 people
Tennis Courts	4 courts	10,000 people
Netball Courts	7 courts	21,000 people
Lawn Bowls	1 facility	15,000 people
Golf Course	1 course	75,000 people

Sources: GHD (2005), Lake Macquarie City Council (2004), Stratcorp Consulting (2003), Recreation Planning Associates (2000), SGS Economics & Planning (2006), AEC*group* (2007).

Marine Access

Marine access in the immediate Shute Harbour area is currently provided via jetties and boat ramps located off Shute Harbour Road. The jetties are used by ferry, barge and charter boat operators, while the boat ramp is primarily used for recreational boating access. However, the limited parking at the boat ramp can restrict access for recreational users during high demand periods such as weekends (Thompson Clarke Shipping, 2007; Three Plus, 2007). The Shute Harbour Marina development will provide for an increase the level of marine access with a new four lane public access boat ramp with parking for approximately 100 vehicles with trailers (this is to be developed separately to the marina with the proponent providing a financial contribution of $2.5 million) and the opportunity to safely berth a boat within the marina complex.

Marina demand studies by Pacific Southwest Strategy Group (2007; 2006a and 2006b) indicate that approximately 1 berth/ mooring is currently demanded per 10 recreational boat registrations. As identified in section 4.2.5, the marina development is expected to provide additional berth capacity to cater to the rapidly growing number of boat registrations in the Mackay region.

It is anticipated that the additional marine access provided by the development will be sufficient to meet the requirements of the additional population during operation (peak of 677 people), and will serve as an outlet for increased recreational water based activities in the surrounding service centre.

6.4.5 Property Access and Relocation

This section outlines the impacts of the construction and operation phases of the Shute Harbour Marina Development on housing availability and affordability. It should be noted that impacts on property demand will be driven primarily by increases in *families* moving to the region either temporarily or permanently, rather than the total number of *persons*, as families are most likely to seek properties capable of accommodating the entire family. As such, the assessment below focuses on the increase in households moving to the region rather than total population.

As outlined in section 6.3.1, construction phase impacts assessed in this section focus on impacts from the primary construction phase. Any second stage construction labour sourced from outside the region would be expected to result in the same types of impacts as those during the primary construction phase, but be proportionately less in line with the fewer workers, if any, expected to be sourced from outside the region (see section 7.2.1.2).

Private Dwelling Stock and Structures

The Shute Harbour Marina Development is not expected to result in the development of any additional private dwellings or residences, with the Managed Resort Accommodation precinct to be developed for tourist accommodation purposes.

Property Sales and Values

The Shute Harbour immediate area is characterised by high levels of home ownership, reflecting an older demographic residing in the area with accumulated housing equity. By comparison, almost half of the private dwellings in the surrounding service centre are occupied by renting tenants, with approximately one quarter purchasing their home.

Consultation with the proposed SHMD primary construction companies (Jetty Specialists & Lucy Construction) identified that during the construction phase, the majority of the construction workforce will be hired on a relatively short-term contract basis (i.e. less than six months). Consultation with real estate agents and accommodation providers indicated that in recent years construction workers in the region have primarily sought rental accommodation where available, with relatively less expensive short stay accommodation such as caravan parks and some motels a secondary alternative.

Some construction companies for large scale projects have also purchased residences for their workers to live in during the construction period. Hutchinson Builders have purchased a caravan park to house construction workers during the development of the Whisper Bay residential / tourism development in Airlie Beach. Given that the non-resident construction workforce is not anticipated to remain in the region and their preference for rental and short stay accommodation, it is not expected that property sales and value will be affected as a direct result of the construction stage of the development. However, the additional rental demand will ensure that investment properties remain attractive.

The operational phase of the development has the potential to result in up to an additional 36 families relocating to the region (refer section 6.3) and seeking long-term accommodation.

Residential property supply in the Cannonvale / Airlie Beach area has been boosted recently following the release of the Port of Airlie residential precinct, which has dominated property sales since its release and resulted in some difficulties in selling other properties (M. Beale, Ray White Whitsunday, *pers. comm.* 27/09/2007). Whisper Bay is scheduled to be completed in October 2008 which will further increase residential property supply (a number of these apartments have been pre-sold), while there are a number of other residential developments either currently under construction or committed for development in the near future. It is likely that residents seeking long-term housing will be accommodated within these existing residential precincts due to their proximity to a broader range of community facilities and services than will be available in the proposed development.

There are currently 90 titles in the suburb of Shutehaven, with no other residential developments planned. An analysis of house sales at Shute Harbour in 2006-07 found that six houses were sold in that period and that the median sale price was $1,190,000. Only two houses were sold for less than $1 million with a highest sale price of $1,425,000. These prices are thought to be indicative of the type of housing stock in the Shute Harbour area, however, they are considered insufficient to provide statistically reliable price estimates.

Property values have levelled off in the area around Airlie Beach, Cannonvale and Shutehaven in the past year. With additional property supply in the Airlie Beach / Cannonvale area in the short to medium term, it is anticipated there is sufficient property development to absorb any potential population increase resulting from the operational phase of the SHMD so as to not significantly impact on property prices in the region.

Increased availability of services and leisure facilities from SHMD has the potential to increase property values in the immediate area of Shute Harbour and Shutehaven (e.g. having the ability to purchase basic supplies such as bread and milk, or pursue activities such as going to cafes/ restaurants). Due to the limited number of sales in recent times it is not possible to quantify the degree or magnitude of these impacts.

Home Loan Repayments

Average monthly home loan repayments in 2006 were $1,704.60 in the immediate area and $1,612.18 in the surrounding service centre. Home loan repayments in these catchments were considerably higher than regional and State comparisons, indicative of the relatively high property values in the areas. Home loan repayments will continue to be driven by property prices (discussed above) as well as interest rate movements into the future, and as such are expected to remain high relative to regional and State comparisons. A continuation of these trends will see demand for more affordable housing alternatives such as rental properties, as well as public and community housing remain high in the area.

Rental Stock

The Shute Harbour immediate area has a relatively low level of rental properties (approximately 25% of total dwelling stock) compared to regional and State benchmarks (see section 4.3.2), with all rental properties managed by real estate agents. In contrast, almost half of the occupied private dwellings in the surrounding service centre are leased to tenants.

Demand for rental accommodation in the surrounding service centre has traditionally been driven by tourism visitation. In recent years, however, there has been high levels of development in the surrounding service centre of the Shute Harbour Marina development site (including Shutehaven, Airlie Beach, Cannonvale, Jubilee Pocket and Flametree), placing high levels of demand on the rental market from construction workers moving to the region during the period of their employment. This has been one factor influencing an increase in rental prices of over 15% per annum over the past two years, which has encouraged a large number of property owners in these suburbs to lease their property, and has resulted in an increase in rental supply (M. Beale, Ray White Whitsunday, *pers. comm.* 27/09/2007).

With an average of 39 construction workers (peak of 96) anticipated to require rental or short stay accommodation during the construction phase of the Shute Harbour Marina Development, demand for rental accommodation is expected to increase, placing further pressure on the rental property market and subsequently rental prices. This may encourage additional property owners to lease their property. Additionally, a significant number of properties have recently been developed or are nearing completion in the surrounding service centre. In line with current home ownership patterns in the area, it is anticipated that a large proportion of these properties will be made available for rent, further boosting supply.

It is anticipated that increased demand for rental properties due to construction workforce demands will decrease the availability of affordable rental housing stock in the surrounding service centre and adjacent areas in the LGA (see ‘Housing Affordability’ section below).

During the operational phase of the development, an additional 36 families are anticipated to relocate to the surrounding service centre. This may place some additional demand on rental accommodation, although it is expected that some of these families will also look to purchase property in the area and as such the impact on rental stock is anticipated to be minimal.

Despite the greater volume of rental accommodation available, Mark Beale of Ray White Whitsunday noted that in the current market, rental properties do not stay available for long, with properties under $400 typically going off the market within days, properties between $400 and $550 within a week or two and above that generally within a month (M. Beale, Ray White Whitsunday, *pers. comm.* 27/09/2007). This is indicative of a tight rental property market in the surrounding service centre.

Demand for rental accommodation is currently driven by large numbers of tourism visitors and construction workers that have capacity to pay for accommodation. However, with rental prices growing faster than household incomes in the surrounding service centre, this makes housing less affordable and places increasing financial pressures on low and medium income earning families residing in the region. As a result, demand for affordable housing in the surrounding service centre is expected to increase in the short to medium term. The immediate area and surrounding service centre have a low level of public and community managed accommodation available, with long waiting lists for these types of properties (Hornby, 2006).

Rental Bonds and Prices

Much of the construction workforce will be hired on a relatively short-term contract basis. This will result in a short-term increase in demand for accommodation in the surrounding service areas of Airlie Beach, Cannonvale and Jubilee Pocket due to the limited supply of residential accommodation in the immediate area. Approximately 39 construction workers (section 6.2) on average are expected to be sourced from outside the region during the 30 month first phase construction period, peaking at 96 in the 22nd month of construction. With the majority of workers for the second phase construction period anticipated to be based in the region (and thus not requiring accommodation) the analysis focuses on the impact of workers through the first stage of construction.

As outlined in the ‘Property Sales and Values’ section (above), consultation with real estate agents and accommodation providers indicated that in recent years construction workers in the region have primarily sought rental accommodation where available, with relatively less expensive short stay accommodation such as caravan parks and some motels a secondary alternative.

As outlined in the 'Rental Stock' section (above), the high levels of construction in the region in recent years, and subsequent high levels of demand for accommodation from construction workers, has contributed to rental prices increasing at over 15% per annum over the past two years and encouraged a large number of property owners in these suburbs to lease their property in order to capture high short-term rental returns (M. Beale, Ray White Whitsunday, *pers. comm.* 27/09/2007).

Mark Beale of Ray White Whitsunday noted that the current rental market is very tight, with short vacancy periods for rental properties. Construction workers typically seek short leases for rental properties, with six-month leases most common. However construction workers often will complete their period of employment within this six-month timeframe leaving the property vacant for a short period of time. Strong demand and high turnover has meant that breaking rental leases has not been a problem in the region as it is relatively easy to find other tenants within a matter of weeks (M. Beale, Ray White Whitsunday, *pers. comm.* 27/09/2007).

The SHMD construction workforce is expected to maintain the existing pressures on rental property demand in the Whitsunday region. Where there is continuity of employment between construction developments occurring in the Whitsunday area, as is expected for construction workers from the Port of Airlie marina, these impacts will be less pronounced due to the limited required changes in prevailing demand and supply required to accommodate the workforce. Additionally, a number of large-scale property developments have recently been completed or are nearing completion in the surrounding service centre, which may serve to decrease the cumulative impact. In line with observed trends in the area, it is anticipated that a large proportion of these properties will be made available for rent, boosting supply to meet additional demand from the Shute Harbour Marina Development.

As outlined in the 'Rental Stock' section (above), during the operational phase the additional demand on rental accommodation is expected to be minimal with many of those relocating to the region anticipated to prefer to purchase a house rather than rent for the longer term.

Short Stay Accommodation

Considerable short stay accommodation is present in the surrounding service areas, with short stay accommodation especially prevalent in Airlie Beach. The table in Appendix A outlines the supply of short stay accommodation in this surrounding service centre.

Occupancy rates for short stay accommodation throughout Whitsunday Shire are generally high, reflective of the Shire's status as a desirable tourism destination. The table below outlines the average occupancy rates for accommodation establishments on the Whitsunday mainland during high and low seasons, as well overall during the year.

Table 6.15. Accommodation Occupancy Rates, Whitsunday Mainland, 2006

Occupancy Rate	High Demand Period	Low Demand Period	Average Throughout Year
Hotels, Motels & Serviced Apartments	87.6%	61.0%	75.7%
Caravan Parks – Cabins	89.1%	52.1%	69.2%
Caravan Parks – Sites	71.9%	32.2%	50.2%
Flats, Units & Holiday Apartments	64.5%	39.7%	53.8%

Source: Tourism Queensland (2006)

During the construction phase of the Shute Harbour Marina development, accommodation establishments may experience increased demand for accommodation from construction workers on short-term contracts. This could potentially impact on the availability of short term accommodation for tourism visitors to the region, particularly in the high demand season, potentially increasing prices.

However, consultation with real estate agents and accommodation providers indicated that in recent years construction workers in the region have primarily sought to lease rental properties rather than utilise short term accommodation establishments. Where rental accommodation is not readily available, relatively less expensive short stay accommodation (such as caravan parks and some motels) have typically been the main alternatives, with higher priced accommodation such as hotels and holiday apartments not typically receiving significant demand impacts from construction workers.

Consultation with caravan park managers indicates that they typically do not seek to cater to large numbers of construction workers as they can impact on the relaxed atmosphere that the tourist clientele are seeking. However, during periods of high demand from construction workers some caravan parks have provided short term leases while workers seek alternate accommodation. Motel style accommodation establishments have also reported some increases in demand from construction workers in the past, although this is typically relatively small and for short periods of time.

At its peak, the construction phase is expected to result in an additional 96 construction workers seeking accommodation in the region (some with families), with the majority of these persons expected to be housed in rental properties (refer to the 'Rental Bonds and Prices' section above). As such, the impact on demand for short stay accommodation from the Shute Harbour Marina's construction workforce is expected to be relatively small, and able to be absorbed by existing accommodation infrastructure without impacting on the availability of short stay accommodation for the tourist market. This expectation is dependent on the availability of rental properties in the surrounding service area for the duration of the construction.

Housing Affordability

Given that access to affordable housing is a significant issue in the Whitsunday Shire[9], any additional pressure on rental rates is likely to further decrease the affordability of dwellings in the area, potentially generating negative social outcomes. Furthermore, no additional long-term residential rental supply has been included within the proposed development, with only short stay tourism-based accommodation proposed. While this additional short-term accommodation supply may decrease occupancy rates for tourist-occupied rental properties within the surrounding area, the proposed development is not expected to improve the housing affordability situation in the region due to its target market being the tourist sector.

While demand pressure on the traditional lower cost accommodation, such as caravan park style accommodation, from construction workers is expected to be relatively small (refer to the 'Short Stay Accommodation' section above), this potential increase in demand may impact on the accessibility to traditional lower cost accommodation for existing residents. The Whitsunday Housing Affordability study notes that occupancy of caravan parks and hotels are common among those experiencing housing stress (Hornby, 2006). Further limitation in the supply of caravan parks and hotels through use by short-term construction workers may place those vulnerable to housing stress into crisis accommodation or increase demand on community support organisations.

6.4.6 Traditional Owner Impacts

The proposed development is located within the traditional homelands of the Gia and Ngaro/Gia people. Both of these groups have an identification with the Shute Harbour area as part of their cultural and ancestral heritage. Ngaro/Gia and Gia Aboriginal Parties have confirmed that the Shute Harbour coastal area (including the SHMD site) remains culturally significant to them for the following reasons (Shute Harbour Marina Development, 2008):

- The area is part of their traditional homelands (land and sea country) and as such retains immeasurable cultural and spiritual values;
- The Aboriginal Parties believe that there is a possibility that intact Aboriginal cultural sites, artefacts or materials may remain in the project area (in the intertidal and subtidal zones, possibly buried within subsurface deposits of mud and other sediments);
- Some highly significant Aboriginal cultural sites (including burials, rock art, ceremonial sites, tidal fish traps, shell middens and stone artefacts) have been recorded in similar coastal settings (sheltered bays) in the Whitsunday region (on the mainland and offshore islands);

[9] See Whitsunday Housing Affordability Study (Hornby, 2006).

- The Aboriginal Parties report that coastal bays such as this one were economically important to the Gia and Ngaro/Gia peoples in traditional times, as fishing grounds, and for hunting and gathering both animal and plant resources. The marine, estuarine and riparian environments contained a plethora of birds, fish, shellfish, marine and terrestrial mammals and plant foods; and
- Elders report that they have continued to visit the Shute Harbour area and adjacent coastline in contemporary times, to fish, collect shellfish and collect bush tucker and medicines.

The results of the Cultural Heritage Assessment (Shute Harbour Marina Development, 2008) and previous cultural heritage investigations in the Shute Harbour Marina project area (Connell Wagner, 2005b) would suggest that the proposed development project is unlikely to have any major detrimental impacts to the Aboriginal archaeological record. However, notwithstanding this purely archaeological assessment, the Gia and Ngaro/Gia people maintain their concern that development operations for the proposed project may impact unrecorded surface or subsurface cultural sites or items (especially along the immediate coastal fringe).

Through a consultative process a Cultural Heritage Management Plan (CHMP) was developed that addresses these issues and demonstrates the high level of support for the project by the respondent parties (Shute Harbour Marina Development, 2008). These mitigation measures include the appointment of Gia and Ngaro/Gia representatives to monitor development operations during dry-land works.

During the course of the cultural heritage assessment the Aboriginal Parties did not raise any major concerns, constraints or objections to the proposed development project, provided that the development proponent undertake to implement the recommendations of the CHMP (Shute Harbour Marina Development, 2008).

The CHMP (Shute Harbour Marina Development, 2008), and the associated report that details the process by which it was achieved, is a component of the EIS and has used the guiding principles and rationale of Council of Australian Government's Overcoming Indigenous Disadvantage, Key Indicators Report 2007 (Council of Australian Government, 2007) to explore the determinants of net social benefit, which are aligned to the proposed Shute Harbour Marina Development and the Aspirations initiatives agreed to in the CHMP.

The Overcoming Indigenous Disadvantage, Key Indicators Report 2007 (Council of Australian Government, 2007) provides a robust 'roadmap' for actioning change to address disadvantage and contribute to 'closing the social, economic, environmental and wellbeing gap' between Indigenous and non-Indigenous Australians.

While the SHMD does not address all indicators of disadvantage for Gia and Ngaro/Gia communities, it is closely aligned to three of the four headline indicators. This alignment is demonstrated through the potential positive impact on Gia and Ngaro peoples through the opportunity to:

- Participate in and share economic prosperity and cultural tourism opportunities;
- Support the intrinsic benefits of governance and culture in community capacity building;
- Maintain generational celebration and learning of cultural heritage traditions, language and expression;
- Contribute to functional and resilient families and communities; and
- Provide generational 'care for country', while showcasing Indigenous pride and knowledge to local, regional and international tourists.

The recommendations in the CHMP, including the engagement strategies proposed to ensure the inclusion of representatives from the Gia and Ngaro/Gia people in the development process, are expected to minimise any negative impacts of the proposed development on the region's cultural heritage. In fact, it is expected that the CHMP will contribute to positive long term outcomes for at least two Indigenous peoples – the Gia and Ngaro communities – at a local community level.

The Cultural Heritage Management Plan (CHMP) has been signed by the Gia and Ngaro/Gia people and the proponents. The CHMP has been approved and registered by the Department of Natural Resources and Water in April 2008.

There will be employment opportunities for Indigenous groups in both the construction and operational stages of the SHMD, in particular through training opportunities for Indigenous persons residing in the surrounding service centre and Whitsunday LGA. This can then be used to further economic opportunity in these groups.

The CHMP provides for a self determination model. In addition, the inclusion of a cultural centre, performance space and marine interpretive centre within the proposal provides and important economic opportunity for traditional owners in terms of cultural eco tourism in a high value and highly visible shop front servicing the domestic and overseas tourism market.

6.4.7 Summary of Demographic, Social and Cultural Impacts

Based on the analysis above, the Shute Harbour Marina Development is anticipated to have the following impacts on the region's demographic, social and cultural aspects.

Demographic Impacts

No significant demographic impacts are expected to be experienced in the immediate area or surrounding service centre as a result of the development and the associated increase in population.

Community Values and Lifestyle

The proposed development has the potential to impact on elements of the community values and lifestyle of the immediate area. This is primarily due to the size and scope of the proposed development in comparison to the current characteristics of the Shute Harbour community. Of the issues identified through consultation and research, the potential impacts on the values and lifestyle of residents in the area are:

- Potential impacts (both negative and positive) on accessibility to and enjoyment of recreational boating activities in the area;
- Potential for changes to the level of community cohesiveness and the identity of the Shute Harbour community; and
- Enhancement of recreational, leisure and employment options in the longer term.

Issues raised regarding road safety, relationship of proposed development to transit terminal, impacts on visual amenity, facilities and infrastructure provision, wildlife and environmental values, construction noise and dust, impact of dredging works, and impact on the region's tropical character and regional planning schemes are addressed as relevant in the mitigation strategies provided in the referenced technical documents.

Access and Availability of Social and Community Infrastructure and Services

Population-based benchmarks indicate that the current level of social and community infrastructure and services should generally have capacity to cater to the increase in population expected as a result of the Shute Harbour Marina Development. However, consultation suggests that health (in particular GP) and child care service levels may be currently under stress.

Strategies may be required to be developed to monitor and address any potential increase in demand for health services. Child care service capacity is generally addressed through the private childcare sector and specific mitigation strategies are not considered to be required.

Access and Availability of Recreational Activities

Benchmark analysis indicate that current levels of provision for some sporting facilities, in particular sports fields and tennis courts, is below recommended levels and may be experiencing demand pressures. While the estimated increase in population is not expected to place significant additional stress on these facilities, strategies should be developed to monitor any potential impacts on access to these facilities.

The Shute Harbour Marina Development will result in the development of some recreational facilities and open space areas available for use by the public. As an operating principle, the proposal will provide free public access to the foreshore with an eight metre wide boardwalk which will allow the public to enjoy the facility without necessary having to purchase accommodation or indeed any products or services.

Property Access and Relocation

Based on observed trends, the majority of the construction workforce that are not currently residing in the region are anticipated to seek rental accommodation where available, with relatively less expensive short stay accommodation such as caravan parks and motels a secondary option. The supply of rental properties in the surrounding service centre has increased in recent years, however, rental prices have also increased significantly and rental properties do not stay available for long due to the current high demand from other construction work crews in the area and tourists.

Despite a strong likelihood of employment continuity for construction workers within the region between projects reducing this impact, strategies to minimise potential impacts on short stay accommodation availability, rental prices and the accessibility to traditional low-cost housing options would be beneficial.

During operation, it is expected that some of the operational workforce will need to be sourced from outside the region. These workers are expected to relocate and seek a residence within an appropriate travel time to their place of work, placing increased demand on the property and rental markets. However, given the relatively low number of workers (some with family members) anticipated to move to the region (36), the highly mobile nature of the surrounding service centre population (i.e. low proportion of residents in the same address as the previous year) and the considerable amount of property development currently being undertaken in the region, it is not expected that the attraction of workers to the region will have any significant impact on the property market during operation.

Traditional Owner Impacts

Consultation with traditional owners for the site (the Gia and Ngaro/Gia people) indicated that there were initially concerns regarding the impact of the development on the region's cultural heritage. These concerns primarily related to the potential impact of the proposed development on culturally significant flora and fauna, the potential to uncover archaeological findings and the involvement of cultural representatives in the construction phase of the development. Through a consultative process a Cultural Heritage Management Plan (CHMP) was developed that addresses these issues and demonstrates the high level of support for the project by the respondent parties.

The CHMP (Shute Harbour Marina Development, 2008) and the associated report that details the process by which it was achieved is a component of the EIS and has used the guiding principles and rationale of Council of Australian Government's Overcoming Indigenous Disadvantage, Key Indicators Report 2007 (Council of Australian Government, 2007) to explore the determinants of net social benefit, which are aligned to the proposed Shute Harbour Marina Development and the Aspirations initiatives agreed to in the CHMP.

The Overcoming Indigenous Disadvantage, Key Indicators Report 2007 (Council of Australian Government, 2007) provides a robust 'roadmap' for actioning change to address disadvantage and contribute to 'closing the social, economic, environmental and wellbeing gap' between Indigenous and non-Indigenous Australians.

While the SHMD does not address all indicators of disadvantage for Gia and Ngaro/Gia communities, it is closely aligned to three of the four headline indicators. This alignment is demonstrated through the potential positive impact on Gia and Ngaro peoples through the opportunity to:

- Participate in and share economic prosperity and cultural tourism opportunities;
- Support the intrinsic benefits of governance and culture in community capacity building;
- Maintain generational celebration and learning of cultural heritage traditions, language and expression;
- Contribute to functional and resilient families and communities; and
- Provide generational 'care for country', while showcasing Indigenous pride and knowledge to local, regional and international tourists.

It is therefore strongly asserted that the CHMP will contribute to positive long term outcomes for at least two Indigenous peoples – the Gia and Ngaro communities – at a local community level.

The Cultural Heritage Management Plan (CHMP) has been signed by the Gia and Ngaro/Gia people and the proponents. The CHMP has been approved and registered by the Department of Natural Resources and Water in April 2008.

6.5 Transport Accessibility and Safety Impacts

6.5.1 Road Access, Mobility and Safety

Access and Mobility

Current vehicle access into the Shute Harbour site is dependant on Shute Harbour Road, which is a two-lane bitumen sealed pavement carriageway with unsealed shoulders. Access to the site is proposed via a single, unsignalised T-intersection along the section of Shute Harbour Road fronting the development site. The Queensland Department of Main Roads has progressively been upgrading the road from Proserpine / Cannonvale / Airlie Beach towards Shute Harbour to a wider formation with sealed shoulders (Shute Harbour Marina Development, 2006).

A condition for the provision of a three lane cross section has been identified as part of the development. Land has been dedicated to meet this requirement, with the Department of Main Roads to construct the additional lane in the future as and when required as follows:

- 3 x 3.5 metre lanes for two through lanes plus one overtaking lane;
- 2 x 2.0 metre shoulders; and
- 2.0 metre central median.

This additional lane will increase road capacity as well as improve safety along the road by reducing its curvature.

Along the site frontage, two way traffic volumes are estimated to average approximately 2,321 vehicles per day on weekdays (slightly lower on weekends), with a maximum peak of 331 vehicles per hour between 5:00 PM and 6:00 PM on a Thursday (Cardno, 2007). The daily traffic incorporates a high proportion (approximately 12%) of heavy vehicle traffic. Average annual daily traffic (AADT) along Shute Harbour Road west of the Whitsunday Airport was estimated to be 2,671 in 2006. Traffic counts along this stretch of Shute Harbour Road have increased at an average annual rate of 1.9% between 2001 and 2006 (Cardno, 2007a).

Community concerns have been raised regarding the impact that increased traffic volumes will have on congestion, in particular at the intersection entering the Shute Harbour Ferry Terminal.

During the construction phase, due to the limited site area available for material storage, it is anticipated that construction materials such as sand, sheet piling, steel piling and concrete slabs will most likely need to be delivered on a daily basis or every second day (Cardno, 2007a). Given the material requirements for construction this equates to, on average, approximately 80 trucks travelling along Shute Harbour Road to the development site per day to deliver construction materials (Cardno, 2007a). This would represent an increase of approximately 3.5% on the estimated average of 2,321 vehicles per day travelling on Shute Harbour Road along the site frontage in August/ September 2007, of which a high proportion (approximately 12% or 280) were heavy vehicles (Cardno, 2007a). The increase of 80 truck movements per day equates to an increase in heavy vehicle traffic of approximately 34.7%. Movement of materials will be limited during peak hours and as such it is not expected that deliveries will significantly impact the external network in terms of link capacity or intersection performance.

Construction impacts on road traffic volumes are also anticipated to occur from the construction workforce using the road to access the site. At the peak of construction, the development is expected to have 192 staff on site, with nearly all of these workers anticipated to be travelling to/ from the surrounding service centre to the west. Peak traffic estimates have been calculated by Cardno (2007a) using the following assumptions:

- Some workers would be car pooling to work, with an average car occupancy of 1.25 construction staff;
- The majority of staff would be arriving in the morning and departing in the afternoon, however, some movements (5%) are expected to occur in the reverse direction; and
- According to the construction schedule, at the time of peak staff numbers the majority of construction material imports will have been completed. However, to provide a conservative estimate, it has been assumed that sand imports would still be ongoing at the time of peak staff. This import adds around 72 deliveries per day, with around 10% (7.2 deliveries) of these assumed to occur in the peak hours.

Based on these assumptions, Cardno (2007a) estimate the total traffic at the construction peak to be some 168 vehicles accessing the site in the peak hour, which is equivalent to an increase of approximately 50% from the current peak load.

The secondary development stage of construction (the Managed Resort Accommodation) would be expected to result in similar types of impacts as those described above for the primary construction phase, but be proportionately less in line with the fewer workers expected to be sourced from outside the region (see section 7.2.1.2) and expected lower construction material requirement.

Operational road access and mobility issues relate to potential additional congestion from employees at the Shute Harbour Marina Development (approximately 148 employees in the tourism resort, commercial/ businesses/ retail, charter boat, marina and maintenance precincts) and visiting tourists.

Cardno (2007a) developed estimates of the operational impact on road traffic based on the following land use mixture for the Shute harbour Marina Development:

- 61 single lot dwellings in the Managed Accommodation Precinct;
- 42 1-bedroom units in the Managed Accommodation Precinct;
- 88 2-bedroom units in the Managed Accommodation Precinct;
- 128 3-bedroom units, including 109 units in the Tourism Resort and 19 units in the Managed Accommodation Precinct;
- Office area (Marina Office + 50% of the Commercial Precinct) of 991m^2 Gross Floor Area (GFA);
- Retail area (30% of the Commercial Precinct) of 595m^2 GFA;
- Restaurant area (20% of the Commercial Precinct) of 396m^2 GFA; and
- 669 marina berths.

The units in the Managed Resort Accommodation are expected to be used as holiday accommodation by either the owners or visitors to the region. It is therefore not expected that the traffic associated with these units will be related to work/ commuter trips to/

from the surrounding service centre in peak traffic periods. The table below outlines the rates for vehicle use by land use adopted.

Table 6.16. Rate of Vehicle Use by Land Use

Land Use	Vehicles Per Day	Vehicles Per Hour
Single lot dwellings	6/ dwelling	0.6/ dwelling
1 – 3 bedroom units	4/ unit	0.4/ unit
Commercial	10/ 100m^2 GFA	3.4/ 100m^2 GFA
Retail	120/ 100m^2 GFA	12/ 100m^2 GFA
Restaurant	60/ 100m^2 GFA	5/ 100m^2 GFA
Marina berths	1/ berth	0.1/ berth

Note: GFA = Gross Floor Area.
Source: Cardno (2007a).

Based on the land use mix and traffic generation rates above, the proposed development is estimated by Cardno (2007a) to generate approximately 3,182 vehicles per day or 338 vehicles per hour in the peak hour. This is equivalent to an approximate doubling in the peak traffic load. This estimate of traffic generation is considered a worst case scenario, with a significant proportion of travel expected to be undertaken by bus, boat or walking (Cardno, 2007a).

Analysis of the proposed T-intersection between Shute Harbour Road and the entry to the marina by Cardno (2007a) using SIDRA3.2 Intersection software indicates that a simple unsignalised T-intersection would be sufficient to cater to peak traffic volumes during construction with minimal delays and queuing, but may not provide sufficient capacity to cater to increased peak traffic volumes during operation. However, it is proposed that a slip lane layout (page 20, *Shute Harbour Marina Traffic Impact Assessment*, Cardno, 2007a) for the intersection would provide sufficient capacity with minimal delays and queuing during peak periods during both the construction phase and operation out to a 2022 time horizon.

Concerns have also been raised regarding the availability of parking in Shute Harbour during the construction phase, particularly for the ferry terminal, due to the increase in construction workers competing for parking spaces. Assuming that the average occupancy per car is 1.25 people, Cardno (2007a) estimate that the construction workforce will result in a maximum of approximately 155 additional cars seeking parking. To ensure that this additional load does not impact on existing car parking and access to the ferry terminal, parking areas should be made available on site for construction workers as proposed in the traffic management component of the EIS. Alternatively, the proponent could consider operating a bus service for the construction workforce, as this would reduce the amount of additional traffic generated during construction and minimise the potential impacts on traffic volumes and parking access.

During operation, a multi-level car park is to be provided in the commercial precinct with approximately 400 car parking spaces, which is expected to be sufficient to cater to the needs of the commercial, restaurant, office and marina areas (Cardno, 2007a).

Safety

Currently there are few traffic accidents along Shute Harbour Road in the proximity of the development site and existing ferry terminal. Crash records provided by Queensland Transport for the five year period Jan 2001 to December 2005 indicate that there were 10 vehicle crashes in the assessment period, of which four were serious enough to cause hospitalisation, two required medical treatment, one resulted in minor injuries and two involved property damage only.

The majority of incidents occurred at curves along the road, with the majority of incidents related to driver violations such as undue care and attention, failure to keep left, crossing double lines or excessive speed. Consultation with local police indicates that many of the traffic accidents that do occur are typically caused by international tourists unfamiliar with Australian road safety rules and laws (S' O'Connell, Whitsunday Police Station, *pers. comm.* 28/09/2007). However, given that the majority of accidents occurred at curves along the road, the road environment is believed to have contributed to some of the accidents (Cardno, 2007a).

A Deed of Agreement between Shute Harbour Marina Development Pty Ltd and the Department of Main Roads to provide provision for a three lane cross section along the development site frontage has been included as part of the development. Land has been dedicated to meet this requirement, with the Department of Main Roads to construct the additional lane in the future as and when required as follows:

- 3 x 3.5 metre lanes for two through lanes plus one overtaking lane;
- 2 x 2.0 metre shoulders; and
- 2.0 metre central median.

This additional lane will improve safety along the road by reducing its curvature.

The proposed location for the T-intersection between Shute Harbour Road and the site access is estimated to have sufficient sight distance to provide adequate safety for commuters (Cardno, 2007a). However, the construction and operation phases of the development will result in additional traffic volumes being generated, which may increase the risk of accident and reduce road safety along Shute Harbour Road. Strategies to reduce this risk should be developed and implemented.

6.5.2 Water Access, Mobility and Safety

Access and Mobility

Shute Harbour is the closest harbour to the offshore islands and as such is the base of operations for a number of commercial vessel activities. These activities, including barge, tourism (ferry) and charter boat operations as well as private vessel launching are concentrated around the four jetties located to the west side of Shutehaven.

During construction, access to the development site will be limited for health and safety reasons. However, while the site area will be inaccessible for recreational and commercial use this is not anticipated to significantly impact on water access to the surrounding area as current foreshore access from the development site is effectively non-existent and the nearby ferry terminal and boat ramps will remain operational.

The provision of 669 marina berths will provide additional access for recreational use of Shute Harbour and adjacent waters. While it is anticipated that the marina development will result in the displacement of approximately 57 swing moorings, these moorings will be replaced within the existing mooring pattern, and is not anticipated to impact on access to the area (Thompson Clarke Shipping, 2007).

The subsequent increase in recreational boats and marine traffic in the marina and local area from the increase in marina berths will have some impact on traffic movement within and around the waters of Shute Harbour. Of particular concern is the potential conflict between the commercial vessels that serve the Whitsunday islands, and the charter and recreational vessels crewed by people with limited experience (Thompson Clarke Shipping, 2007). Appropriate traffic management provisions have been implemented to monitor and mitigate this potential impact, including directing recreational boaters using the marina to stay clear of the commercial operations by laying an approach channel at the marina entrance that segregates the marina users from the commercial vessels (Thompson Clarke Shipping, 2007).

Barge operators have expressed concern regarding the positioning of the marina in relation to the barge ramp and potential problems this may cause with regard to barge manoeuvring and recreational traffic impeding barge operations. However, the Shute Harbour Marine Traffic Study (Thompson Clarke Shipping, 2007) identifies that the marina entrance has been positioned to leave sufficient room for barge operations to be carried out without hindrance. Thompson Clarke Shipping (2007) recommends that recreational traffic from the proposed boat ramps and motel should be prevented from passing close to the barge jetty to ensure that barge operations are not impeded and suggest that recreational traffic be directed through the marina to use the main marina exit.

Safety

Currently, Shute Harbour can be accessed through the channel leading northeast from the commercial wharves, and is marked by cardinal marks out into the Molle Channel. A pair of leading lights lead vessels into the commercial wharf area through the northeast passage, clearing Coral Point (Thompson Clarke Shipping, 2007). An alternative channel exists within Rooper Inlet that leads north-south and is marked by port and starboard hand markers.

In case of emergency, the local police are responsible for providing Search and Rescue services for vessels operating within port limits. Further assistance can be requested from Australian Search and Rescue (AusSAR) if required.

There is a Volunteer Marine Rescue Group based at Cannonvale that operate on weekends and on public holidays between 7:00 AM and 5:00 PM, and monitor three radio channels 24 hours a day, 7 days a week. The Volunteer Marine Rescue Group also has a rescue craft (Thompson Clarke Shipping, 2007).

Concerns have been expressed by barge operators regarding increased recreational water traffic and potential congestion and associated safety impacts. These concerns are addressed through water traffic management guidelines and regulation, operator (recreational and commercial) training and education, and the separation of recreational and commercial traffic (Thompson Clarke Shipping, 2007).

To address concerns raised by barge and commercial vessel operators, several modifications to the design and positioning of the marina entrance have been made to minimise the potential impact on the commercial vessel traffic by recreational users of the marina. Thompson Clarke Shipping (2007) recommend that water traffic safety be further enhanced by directing recreational vessels away from commercial vessel operations using signage and a marked approach channel to the marina, as well as introducing a traffic separation scheme.

To minimise risk and enhance safety for all users in the Shute Harbour waters, Thompson Clarke Shipping (2007) recommend ongoing monitoring of water traffic movement and regulatory compliance should be undertaken by the relevant authority.

The marina has the potential to enhance safety for boat owners and operators by providing a resting place and refuelling station for yachts and other vessels travelling to, from and/ or through the region. In addition, the marina's breakwater will provide shelter for vessels in emergent conditions, for example during cyclonic conditions (Thompson Clarke Shipping, 2007).

6.5.3 Public Transport

Access and Mobility

As outlined in section 4.4.9, a regular bus service is the only mode of public transport to the subject site from neighbouring communities.

Scheduled bus services operate between Airlie Beach, Shute Harbour and Proserpine, with services travelling along the site frontage along Shute Harbour Road approximately every 15 to 30 minutes between 6:00 AM and 6:30 PM. There is currently no bus stop at the site, however a bus lay-by is to be provided within the commercial precinct near the roundabout to cater for bus services provided by Whitsunday Transit (if required). The development also proposes to provide a minibus service to supplement any gaps in scheduled public transport services and ensure links to the major support service centres are provided. The provision of courtesy bus services to/ from the development site would be expected to reduce traffic loads on Shute Harbour Road (Cardno, 2007a).

6.5.4 Bicycle and Pedestrian Access

Access and Mobility

There are currently no pedestrian paths, bicycle lanes or bicycle awareness zones provided on Shute Harbour Road. Within the proposed development, a pedestrian boardwalk will be provided along the water edge, with pedestrian paths provided along the collector roads. This will result in significant improvement in pedestrian access to and within the site.

The development will not result in any bicycle lane provisions due to the steep hill east of Whitsunday Airport that restricts recreational bicycle movements (Cardno, 2007a). However, the sealed shoulders on Shute Harbour Road have the potential to be used by bicycle riders.

Cardno (2007a) recommend that as part of the proposed new boat ramp facility (separate to this development) a pedestrian path be provided for connectivity between SHMD and the ferry terminal. This would represent a logical addition to the proposed development that would support a sense of connection between SHMD and the transit terminal, enhancing the delineation of the proposed development as a tourism-specific site.

6.5.5 Equality of Access

The design of the Shute Harbour Marina Development will satisfy Whitsunday Shire Council's Universal Equity Access policy requirements for equitable access for all persons, including those with diverse abilities. This will include full access to persons of diverse abilities to public spaces provided in the development, including the boardwalk and park at the end of the isthmus.

6.5.6 Emergency Access

Shute Harbour Road is the only motor vehicle access road to the development site, with response times for emergency services of just over 10 minutes. Access has the potential to be impeded by increased traffic congestion on Shute Harbour Road during both construction and operation. Traffic management and mitigation measures to minimise this potential impact have been developed and are outlined in the Transport section of the EIS.

Consultation with the Whitsunday Police Station and QAS indicates that road access to the site is rarely impeded, however there is potential for it to be cut off by one of the large trees lining the road (S. O'Connell, Whitsunday Police Station, *pers. comm.* 28/09/2007) or from flash flooding (S. Lennon, QAS Central Region, *pers. comm.* 24/01/2008).

In the event of a closure to Shute Harbour Road, police and ambulance services can access the Shute Harbour Marina utilising the Whitsunday Police Station's water patrol service (S. O'Connell, Whitsunday Police Station, *pers. comm.* 28/09/2007) or the Central Queensland Rescue Helicopter dependent on prevailing weather conditions (S. Lennon, QAS Central Region, *pers. comm.* 24/01/2008). Berthing for emergency vehicles is included in the design of the Shute Harbour Marina to allow access for these services. Helicopter access is also available, with the car park designed to provide a potential landing area.

6.5.7 Summary of Transport Accessibility and Safety Impacts

Based on the analysis above, the Shute Harbour Marina Development is anticipated to have the following impacts on the transport accessibility and safety.

Road Access, Mobility and Safety

Cardno (2007a) estimate the total additional traffic in peak hour to be 168 vehicles during construction and 338 vehicles during operation. This increase in traffic has the potential to reduce access and mobility through increased congestion, travel times and safety risks on Shute Harbour Road.

To minimise the potential impacts on road access and safety, in particular for users of the ferry terminal and residents of Shutehaven, through increased congestion during both the construction and operation phases, traffic management and mitigation measures are developed and outlined in the Transport section of the EIS.

Water Access, Mobility and Safety

During construction, outside of the development site footprint there is not anticipated to be any significant reduction in water access, with the foreshore at the development site currently relatively inaccessible.

During operation, water access is expected to be enhanced through the provision of 669 marina berths and associated facilities. Water access from the existing ferry terminal and boat ramps is not expected to be impeded, with the marina designed to allow sufficient manoeuvrability and access from/ to this site.

Mitigation strategies regarding water access, mobility and safety issues have been developed and are outlined in the Transport section of the EIS.

Public Transport

Bus services currently operate between the ferry terminal and Airlie Beach, however, the ferry terminal stop is the nearest stop providing access to the development site. While no new bus services are currently planned for access to/ from the marina, it is recommended by Cardno (2007a) that strategies be developed to enable future public transport access to/ from the marina.

Bicycle and Pedestrian Access

Pedestrian access will be provided in the development site through a pedestrian boardwalk along the water edge and pedestrian paths provided along the collector roads. This will result in significant improvement in pedestrian access to and within the site, as well as along the foreshore.

Current pedestrian access from the development site to the ferry terminal is limited. Cardno (2007a) recommend that strategies be developed to improve connectivity between the marina development site and the ferry terminal.

Equality of Access

Design of the Shute Harbour Marina Development will satisfy Whitsunday Shire Council's Universal Equity Access policy requirements for equitable access.

Emergency Access

Emergency service access is primarily provided via Shute Harbour Road, which has adequate response times of just over 10 minutes. Mitigation measures to minimise road and traffic impacts that could potentially impact on emergency service access are addressed in the Transport section of the EIS. Additional emergency service access to the site will be available via water transport or helicopter if required.

6.6 Economic and Business Impacts to Existing Businesses

The Shute Harbour Marina Development provides opportunities for local business to grow and expand their business and improve linkages with other business in the local area. The marina will enable increased tourism visitation to the region, resulting in increased tourism expenditure captured by existing local business and providing opportunities for increasing hospitality and tourism related services in the region. Additionally, the marina and associated land-based aspects of the development provides opportunities for investment in the region, with potential for flow on expenditure and wealth generation. Strategies should be developed to facilitate local business to capitalise on these opportunities.

The impacts to existing businesses and enterprises, the tourism sector and opportunities for service revenue and work from the proposal are examined in the Economic Impact Assessment chapter.

6.7 Impacts on Current Land Uses

6.7.1 Changes in Current Land Use and Acquisition

The proposed development site will not have a direct impact on private land as it is wholly contained within Lot 2 on Plan SP 117389, Lot 273 on Plan HR1757, which is currently managed by SHMD Pty Ltd.

Some of the planned development area is currently occupied by swing moorings, however the swing moorings will be relocated to other sites in the immediate area prior to the commencement of construction.

An application has been made to include an additional area of seabed within the existing term lease area. This area has no adjoining landholders other than the proponent but of course would be subject to assessment by the Department of Natural Resources and Water. There is currently no acquisition of land areas planned outside of the leases outlined above.

6.7.2 Properties Directly Affected

Ferry Terminal: During construction there may be some disruption to visitors travelling to and from the terminal from increased traffic, however, mitigation strategies outlined in the Transport section of the EIS (section 4.2) are expected to minimise these impacts. The construction of the marina itself is not anticipated to impact on services to and from the ferry terminal.

The operational phase of the development may see a small increase in terminal user numbers as awareness of the area increases along with visitor numbers. However, this increase in passengers is not expected to be of a magnitude to result in any social impacts on the ferry terminal and its users. The economic impacts of the development on the ferry terminal are discussed in the Economic Impact Assessment.

Hamilton Island Barge Operation: The main concern from the Hamilton Island Barge Operation relates to the positioning of the marina in relation to the barge ramp and potential problems this may cause with regard to barge manoeuvring and recreational traffic impeding barge operations. The barges can be difficult to control in enclosed spaces and lack the manoeuvrability of other craft. However, the Shute Harbour Marine Traffic Study (Thompson Clarke Shipping, 2007) identifies that the marina entrance has been positioned to leave sufficient room for barge operations to be carried out without hindrance.

Hamilton Island Barge Operation have also expressed concern regarding the potential conflict between the commercial vessels that serve the Whitsunday islands, and the charter and recreational vessels crewed by people with limited experience (Thompson Clarke Shipping, 2007). Thompson Clarke Shipping (2007) recommend that recreational traffic from the proposed boat ramps and motel be prevented from passing close to the barge jetty to ensure that barge operations are not impeded and suggest that recreational traffic be directed through the marina to use the main marina exit. Appropriate traffic management provisions have been approved by the Harbour Master (Mackay) and will be implemented to monitor and mitigate this potential impact (Thompson Clarke Shipping, 2007).

Salvage Operation: Consultation with J. Engwirda (Engwirda Marine: Salvage & Construction) identified that there would be no detrimental impacts from the proposed development provided the existing level of access is maintained.

Motel: During construction, the owners of the motel have raised concerns regarding their ability to attract visitors due to noise and dust issues. However, mitigation strategies have been developed to manage and minimise noise and dust impacts, as outlined in section 4.8 of the EIS.

The owners of the motel are concerned that the Shute Harbour Marina Development has the potential to interrupt views from the motel, which could diminish the value of the property. However, the Visual Amenity report by Yurrah Pty Ltd (2007) indicates that design provisions are in place to ensure this potential impact is not realised, and that the proposal "is expected to maintain or enhance the amenity of adjacent land uses via provision of view corridors through the proposed development and by screening existing incompatible uses".

Concerns were also raised regarding a potential amenity loss associated with winds carrying the smell of fumes from the fuelling facility to the motel.

Carparks and Service Station: The carparks and service station are a few hundred metres from the proposed development site. Consultation with the operators of the commercial car park and service station indicate that they do not anticipate any direct social impact from the construction phase of the development, although there is potential for some noise and dust impacts. Strategies to mitigate these potential impacts are addressed in the noise and dust section of the EIS (section 4.8).

Consultation with the owners of the service station and carpark found that they have identified the operational phase of the development as a significant opportunity to grow both the carparking and service station businesses as a result of the increased road traffic generated by the development (*pers. comm.* Rob Turner, Partner, Sabre Parking Services, 1st October 2007). The economic impacts of this are outlined in the Economic Impact Assessment.

House: The owners of the house have concerns regarding any potential detrimental impact on the value of their property. Driving any potential reduction in value is the potential for decreased visual amenity from the site. However, as with the potential visual amenity impact on the motel, the Visual Amenity report by Yurrah Pty Ltd (2007) indicates that design provisions are in place to ensure no significant visual impact is realised.

6.7.3 Summary of Impacts on Current Land Uses

The proposed development site will not have a direct impact on private land as it is wholly contained within Lot 2 on Plan SP 117389, Lot 273 on Plan HR1757, which is currently managed by SHMD Pty Ltd. Some of the planned development area is currently occupied by swing moorings, however the swing moorings within the plan area will be relocated prior to the commencement of construction.

Concerns have been raised by the Hamilton Island Barge operation relating to the impact of the development on the safety and operation of barges as a result of increased traffic in the Shute Harbour area. This risk has been mitigated through the preparation of a management plan for traffic in the area, which has been approved by the Harbour Master (Mackay).

The owners of the motel adjacent to the development site expressed some concerns regarding their ability to attract visitors during construction due to noise and dust issues. Mitigation strategies to minimise noise and dust impacts have been outlined in the Noise and Dust section of the EIS.

Concerns have also been raised during consultation regarding the impact of the development on property values for adjacent properties, particularly from decreased visual amenity from the site. Mitigation strategies have been developed in the Visual Amenity report by Yurrah Pty Ltd (2007), with the visual amenity of adjacent lands expected to be maintained or enhanced via provision of view corridors through the proposed development and by screening existing incompatible uses.

6.8 Potential Environmental Harm on the Amenity of Adjacent Areas

The Shute Harbour Marina Development is not anticipated to generate any significant environmental impacts on the amenity of adjacent areas. In terms of the physical environment, no negative land based environmental impacts have been identified in the technical documents for the adjacent properties to the development or the National Park.

While the marina is expected to have some impacts on the near field aquatic environment, these impacts are assessed in sections 4.5 and 4.9 of the EIS. Further, the proponent has developed an environmental trust (Reef Conservation Fund) to be funded initially from the sale of the marina berths and on an ongoing basis through lease contributions from the owners of the marina berths that will contribute to the ongoing sustainability of the marine environment in the area.

The development will be consistent in practice and aesthetics with the existing uses of Shute Bay. Assessment of the social and economic environments indicates that the local community and businesses places a high value on water-based recreation and has a strong tourism focus, which the Shute Harbour Marina Development will enhance. A detailed assessment of the impact of the development on the community's values and lifestyle is contained in section 6.4.2. Assessment of the economic impacts of the development is contained in section 7 of this report.

6.9 Implications for Future Developments in the Local Area

Outside the footprint of the site itself, it is not anticipated that the Shute Harbour Marina Development will constrain land use in the surrounding area. The development will provide opportunities for existing business growth and expansion due to enhanced local access to the marina and associated facilities, particularly for businesses in related upstream and downstream industries. Additional detail regarding the implications for future development in the local area is provided in section 7.5.

7. Economic Impact Assessment

7.1 Introduction

The Terms of Reference require the economic analysis to include consideration of the impacts outlined in Table 7.1 below. These requirements are examined in three sections:

- An economic impact assessment (EIA) of the likely direct and flow on impacts of the development (section 7.2);
- A cost benefit analysis (CBA) examining the overall returns from the development (section 7.3); and
- A qualitative discussion surrounding any associated potential economic and business impacts (section 7.4).

The Terms of Reference also stipulate that for identified impacts to economic values, recommended mitigatory and enhancement strategies are to be developed, including practical monitoring regimes. Mitigation and enhancement strategies are outlined in section 8.2.

Table 7.1. Social Impact Assessment Terms of Reference Addressed

No.	Terms of Reference	Section(s) Addressed
1.	The significance of this project on the local and regional economic context.	7.2, 7.3, 7.4, 7.5
2.	The long and short-term beneficial (e.g. job creation) and adverse impacts (e.g. competition with local small business, impacts on navigation, and maintenance of marine access) that are likely to result from the development.	7.2, 7.3, 7.4, 7.5
3.	The potential, if any, for direct equity investment in the Proposal by local businesses or communities.	7.4.2
4.	The cost to all levels of government of any additional infrastructure provision.	7.4.7
5.	Implications for future development in the locality (including constraints on surrounding land uses and existing industry).	7.5
6.	Impacts of the proposal on adjoining sites and activities and the outcomes of any applicable land use study.	7.4.8
7.	Impact on the economic diversity of the area.	7.4.5
8.	The potential economic impact of any major hazard identified in section 4.13 of the Terms of Reference.	7.3
9.	The distributional effects of the Proposal including projects to mitigate any negative impact on disadvantaged groups.	7.4.1.3
10.	The value of lost opportunities or gained opportunities for other economic activities anticipated in the future.	7.5
11.	Impacts on local property values.	7.4.6

7.2 Quantitative Assessment of the Economic Impact of the Shute Harbour Marina Development

This section considers the quantitative economic impact of the construction and operating phases of the proposed development. The analysis includes an assessment of the direct and flow on impacts on the regional (Mackay Statistical Division) and state (Queensland) economies. The multipliers used in this assessment are developed from the transaction tables published by the Queensland Office of the Government Statistician (2002 and 2004).

7.2.1 Construction Phase

7.2.1.1 Construction Phase Expenditure

SHMD Pty Ltd will develop the site from its current state to the point at which the marina, commercial, retail and tourism elements of the development have been constructed and the lots prepared and released for the Managed Resort Accommodation. This phase is expected to result in expenditure by the proponent of approximately $253.4 million on labour, materials and professional services over 30 months, with construction activity anticipated to begin in 2008 and be substantially completed in 2011.

The proponent will sell the Managed Resort Accommodation sites to secondary developers who will undertake the construction phase for this accommodation type. The secondary construction activities are anticipated to result in expenditure of approximately $104.5 million on labour and materials over approximately four years.

It is also anticipated that local real estate agents will provide brokerage services for those buying and selling the Managed Resort Accommodation and in doing so will earn sales commissions. Using an assumed commission rate of 2.5% of the sale price, the total amount of commission that would be earned is estimated to be approximately $5.4 million.

The following table shows the forecast costs associated with the construction phase of the development and the proportion of that expenditure that is expected to be retained within the regional and state economies.

Table 7.2. Construction Phase Expenditure and Regional and State Retention

Element	Expenditure ($M)	Retained in Region[(a)] ($M)	Retained in State ($M)
SHMD Pty Expenditure	$253.4	$158.1	$213.7
Secondary Developer Expenditure[(b)]	$104.5	$83.6	$94.0
Sales Commissions	$5.4	$4.3	$4.8
Total[(c)]	**$363.2**	**$245.9**	**$312.5**

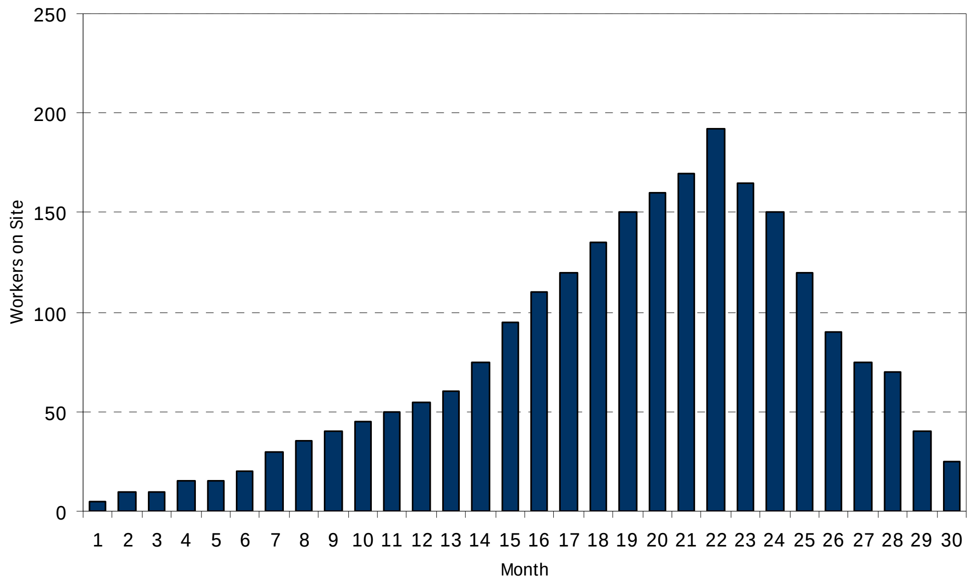
Notes: (a) Regional economy is defined as the Mackay Statistical District (b) This does not include the costs of purchasing the lots from SHMD Pty Ltd as this is a transfer payment. (c) Some totals may not add up due to rounding.
Source: AEC*group*

It is estimated that in total up to 67.7% ($245.9 million) of this expenditure will be retained within the regional economy and up to 86.1% ($312.5 million) retained within the State of Queensland. It is assumed that while a greater proportion of the labour force can be sourced locally (e.g. Whitsunday Local Government Area), some materials may only be available at a regional level and some specialist services only at a state level. It is anticipated that a portion of materials and expertise will be sourced from interstate or overseas.

7.2.1.2 Construction Phase Employment Impacts

The land release and primary construction phase is anticipated to take approximately 30 months with the secondary construction phase expected to be completed over 48 months following the release of the first Managed Resort Accommodation (currently scheduled for 2010). The level of employment will vary depending on the construction stages. The following figure shows the planned monthly labour requirements during the primary construction phase.

Figure 7.1. Workers on Site, Primary Construction Phase

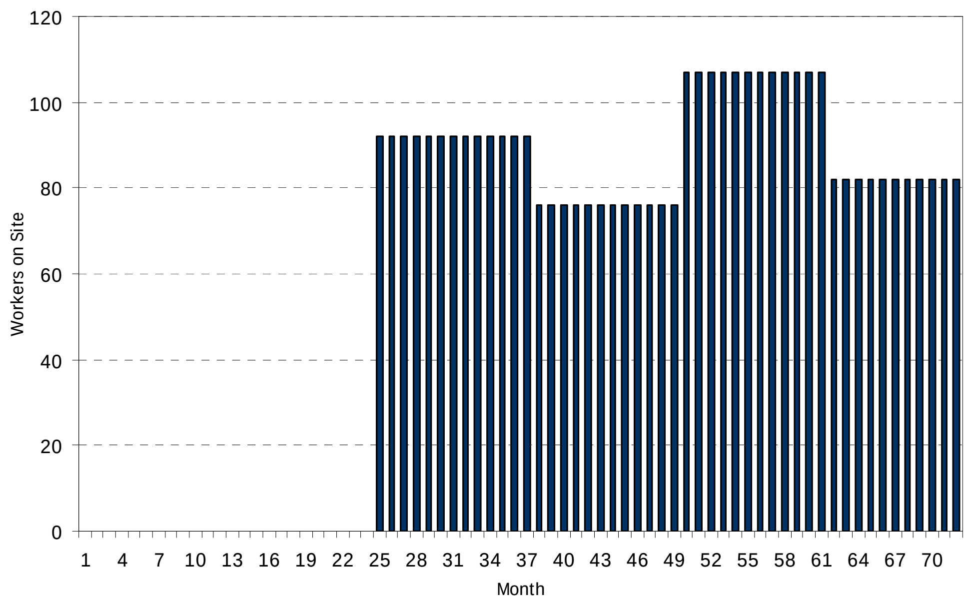


Source: AEC*group*

Construction estimates show that during the primary construction phase average employment will be 78 persons per month (IAS, 2006). Workforce size will be greatest in the period from the fourteenth to the twenty-eighth month, reaching maximum employment during the twenty-second month with 192 persons on site. It is anticipated that the development will create approximately 194 full time equivalent (FTE) positions over the 30-month primary construction period.

There is greater uncertainty about the scheduling of the secondary construction phase as each lot owner will be responsible for determining the timing and nature of the construction work. This assessment assumes that construction begins within 12 months of the land purchase and takes approximately another 12 months to complete. The following figure illustrates the resulting employment distribution based on expected annual construction activity.

Figure 7.2. Workers on Site, Secondary Construction Phase

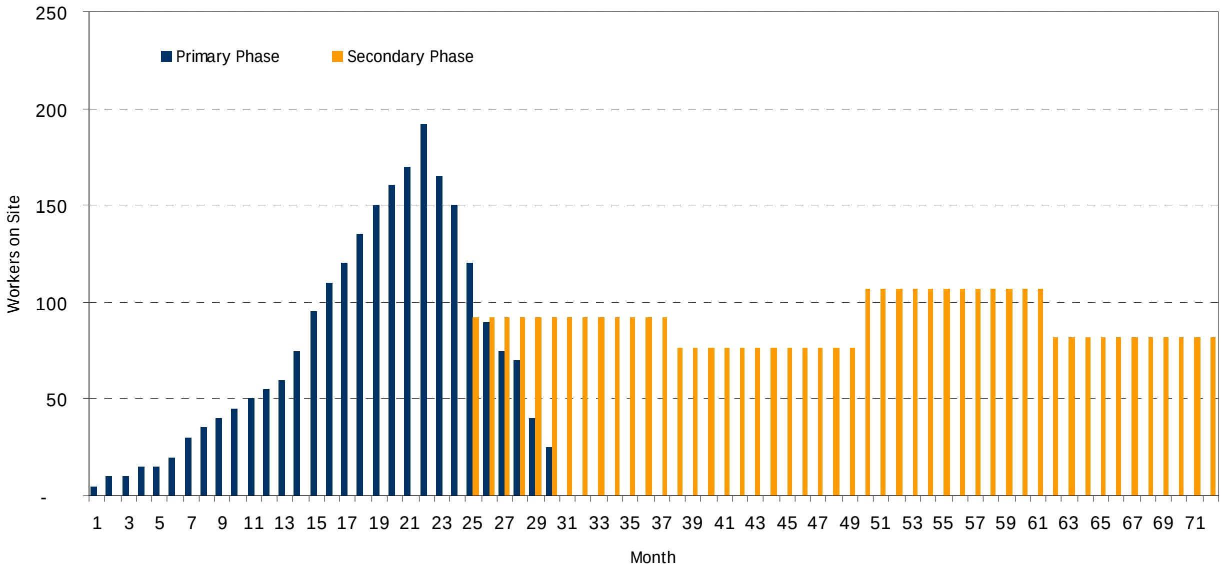


Source: AEC*group*

The final release of Managed Resort Accommodation lots is planned to take place in year five with all secondary development to be completed by the end of year six. It is estimated that an additional 358 FTE construction positions would be created during the 48 months of the secondary construction phase, with an average of 89 workers on site at any one time, and a potential peak of 107 FTE job created in year five.

The following figure shows an indicative distribution of staff on site throughout the primary and secondary construction phases.

Figure 7.3 Total Employment, Primary and Secondary Construction Phases



Source: AEC*group*

It is forecast that the primary and secondary construction phases would be completed within six years (72 months) of the commencement of on-site works with the majority of the development, including the marina basin and the tourist and commercial precincts, completed within the first 30 months. Over the construction period, a total of approximately 552 FTE positions (92 on an annual average basis) will be required.

7.2.1.3 Construction Phase Economic Impacts

The following table summarises the economic impact of the $363.2 million expenditure during the construction phase including the direct and flow on elements for the regional and state economies. The figures represent the total impact of the combined primary and secondary construction phases.

Table 7.3. Economic Impacts of the Construction Phase ($M 2007)

	Mackay SD				Queensland			
	Output ($M)	Value Added ($M)	Income ($M)	Emp (FTE)	Output ($M)	Value Added ($M)	Income ($M)	Emp (FTE)
Direct	$245.9	$105.3	$44.9	552	$312.5	$133.5	$57.4	781
Flow on	$91.4	$42.3	$13.6	269	$140.0	$62.2	$19.1	393
Total[(a)]	**$322.9**	**$137.2**	**$51.6**	**821**	**$452.5**	**$195.7**	**$76.5**	**1,174**

Notes: (a) Some totals may not add up due to rounding.
Source: AEC*group*

The anticipated economic impact of the primary, secondary construction phases and associated sales commissions to the regional economy is estimated to be an additional:

- Approximately $322.9 million of output to the regional economy ($245.9 million directly and $91.4 million as flow on);
- Approximately $137.2 million of value added ($105.3 million directly and $42.3 million as flow on);
- Approximately $51.6 million as income ($44.9 million directly and $13.6 million as flow on); and

- Approximately 821 FTE positions (552 FTE direct employment positions and 269 FTE flow on).

It is anticipated that the impact on the State economy will include:

- Approximately $452.5 million of output to the State economy ($312.5 million directly and $140.0 million as flow on);
- Approximately $195.7 million of value added ($133.5 million directly and $62.2 million as flow on);
- Approximately $76.5 million as income ($57.4 million directly and $19.1 million as flow on); and
- Approximately 1,174 FTE positions (781 FTE directly and 393 FTE as flow on).

7.2.2 Operating Phase

7.2.2.1 Operating Phase Expenditure

It is anticipated that the operating aspects of the development would begin trading on completion of the primary construction phase. It is recognised the facility will not be fully operational on day one of operation and will take some time to reach full operational capacity. This assessment examines the impact of the facility once it reaches steady state operation.

Assessment of accommodation demand (AEC*group*, 2008a) indicates that in steady state the hotel and managed resort accommodation can expect occupancy rates of approximately 69.4% on average throughout the year. Given the premium market that this accommodation will target, average room rates are expected to be approximately $425 per night for a serviced apartment in the hotel, and approximately $500 per night for the managed resort accommodation (AEC*group*, 2008a). With 109 serviced apartments and 207 units in the managed resort accommodation, this equates to operating turnover of approximately $11.7 million per annum for the hotel and $26.2 million for the managed resort accommodation. In addition to expenditure on accommodation, the SHMD would generate turnover through the use of the marina facilities, the charter boat base, and the commercial and retail precincts. The table below outlines the operating output expected to be generated at the SHMD once in steady state.

Table 7.4. SHMD Operating Phase Output

SHMD Element	Operating Output ($M)
Hotel Accommodation	$11.7
Managed Resort Accommodation	$26.2
Marina	$3.8
Charter Boat Base	$3.8
Commercial	$5.9
Retail	$2.8
Total	**$54.3**

Source: AEC*group*

This analysis is only concerned with the attraction of visitors (and their expenditure) that would not come to the region (either Mackay SD or Queensland) if SHMD did not exist. With current occupancy rates at comparable hotel, motel and serviced apartment style accommodation in the Whitsundays above 80% on average (AEC*group*, 2008a), it is expected that without additional accommodation developed in the Whitsunday Shire that visitor growth would be constrained over the medium to long term. It is reasonable to assume that a large proportion of expenditure by visitors to the SHMD would not otherwise occur in the Mackay SD or Queensland without the development.

Similarly, with the high level of occupancy and demand for existing marina facilities in the Mackay SD and Queensland, it can be expected that most expenditure by visitors using the marina facilities would not otherwise occur in the Mackay SD or Queensland without the development.

In addition to expenditure undertaken at SHMD, visitors would also purchase goods and services in the wider region. The average expenditure per visitor per day in the Whitsunday Tourist Region (excluding accommodation costs) is approximately $100 (Tourism Queensland 2007). Given the premium and differentiated accommodation type on offer at SHMD (AEC*group*, 2008a), and the market segment anticipated to be attracted to the development, it is considered that the average spend per person per day will be between $150 and $200 ($175 has been used as an average in the analysis). This equates to approximately $31.4 million spent by visitors to the SHMD outside of accommodation expenditure. Some of this expenditure is expected to be spent at aspects of the SHMD (e.g., the marina facilities, retail and commercial precincts, etc., as outlined in Table 7.4), with the remainder anticipated to be spent at other locations in the Mackay SD. Overall, it is anticipated that once in steady state the SHMD will contribute to annual output in the wider region of approximately $15.1 million.

Consultation with business operators undertaken for the development of the economic impact assessment indicates that they do not anticipate any loss in earnings as a result of the proposed development.

The following table outlines the level of expenditure that is assumed would have otherwise occurred in both the Mackay SD or Queensland without the SHMD and, subsequently, the level of additional expenditure attracted to the Mackay SD and Queensland economies as a result of the SHMD. The additional spend in Queensland is less than that for the region as it is assumed that a greater proportion of visitors to SHMD would have otherwise holidayed elsewhere in Queensland. The economic impact assessment assumes that all additional output is retained in the respective economy.

Table 7.5. SHMD Operating Phase - % of Output New to the Region

SHMD Element	Mackay SD		Queensland	
	% Attracted from Elsewhere	% of Expenditure Included in EIA	% Attracted from Elsewhere	% of Expenditure Included in EIA
Hotel Accommodation	20%	80%	40%	60%
Managed Resort Accommodation	20%	80%	40%	60%
Marina	10%	90%	10%	90%
Charter Boat Base	20%	80%	40%	60%
Commercial	20%	80%	40%	60%
Retail	20%	80%	40%	60%
Expenditure in Wider Region [(a)]	18%	82%	33%	67%

Note: (a) This figure is a weighted average of the six SHMD elements.
Source: AEC*group*

The following table illustrates the anticipated annual operating output from each element of the development. In the Mackay SD, the forecast annual output resulting from the operating phase of the development that would otherwise not occur in the region is $43.8 million from local expenditure at SHMD, with an additional $12.4 million in output from expenditure in the wider region. In Queensland, the forecast annual output resulting from the operating phase of the development that would otherwise not occur in the State is $33.7 million from local expenditure at SHMD, with an additional $10.1 million in output from expenditure in the wider region.

Table 7.6. SHMD Operating Phase Output ($M 2007)

SHMD Element	Mackay SD		Queensland	
	Annual Output ($M)	% Output	Annual Output ($M)	% Output
Hotel Accommodation	$9.4	21.4%	$7.0	20.9%
Managed Resort Accommodation	$21.0	47.9%	$15.7	46.7%
Charter Boat Base	$3.1	7.0%	$2.3	6.8%
Marina	$3.4	7.9%	$3.4	10.2%
Commercial	$4.7	10.8%	$3.6	10.5%
Retail	$2.2	5.0%	$1.7	4.9%
Expenditure within SHMD	**$43.8**	**100%**	**$33.7**	**100%**
Expenditure outside SHMD	**$12.4**		**$10.1**	
Total Expenditure	**$56.2**		**$43.8**	

Source: AEC*group*

7.2.2.2 *Operating Phase Employment Impacts*

SHMD Pty Ltd currently estimates that on completion of the development an additional 142 FTE positions will be created at the facility. The positions are concentrated in the tourist resort and commercial precinct, with other roles in the charter boat base, marina and retail precincts. Estimated skills and occupational characteristics of this labour force is included in section 6.2.1.

Table 7.7. Employment Opportunities, SHMD Operating Phase

SHMD Element	Employment Requirements
Tourist Resort	66
Charter Boat Base	16
Marina	16
Commercial Precinct	32
Retail Precinct	12
Total	**142**

Source: IAS 2006

7.2.2.3 *Operating Phase Economic Impacts*

The following table shows the expected annual economic impact of:

- SHMD resident visitor expenditure within SHMD ($43.8 million);
- SHMD resident visitor expenditure within the region (excluding SHMD) ($12.4 million); and
- SHMD resident visitor expenditure within the region (including SHMD) ($56.2 million).

Table 7.8. Economic Impacts of the SHMD Operating Phase ($M 2007)

	Mackay SD				Queensland			
	Output ($M)	Value Added ($M)	Income ($M)	Emp (FTE)	Output ($M)	Value Added ($M)	Income ($M)	Emp (FTE)
SHMD resident visitor expenditure undertaken at the SHMD								
Direct	$43.8	$20.6	$7.0	117	$33.7	$15.9	$5.4	95
Flow on	$18.0	$8.0	$2.4	54	$13.9	$6.2	$1.9	43
Total[(a)]	**$61.8**	**$28.6**	**$9.4**	**171**	**$47.6**	**$22.1**	**$7.3**	**138**
SHMD resident visitor expenditure undertaken outside of SHMD								
Direct	$12.4	$6.3	$3.1	78	$10.1	$5.1	$2.5	64
Flow on	$4.5	$2.1	$1.0	22	$3.7	$1.7	$0.8	18
Total[(a)]	**$17.0**	**$8.4**	**$4.0**	**100**	**$13.8**	**$6.8**	**$3.3**	**82**
Total SHMD resident visitor expenditure (including at SHMD and outside of SHMD)								
Direct	$56.2	$26.9	$10.0	195	$43.8	$21.0	$7.9	159
Flow on	$22.5	$10.1	$3.4	76	$17.6	$7.9	$2.7	61
Total[(a)]	**$78.8**	**$37.0**	**$13.4**	**271**	**$61.4**	**$28.9**	**$10.6**	**220**

Notes: (a) Some totals may not add up due to rounding.
Source: AEC*group*

Over the operating phase of the development, the total anticipated annual economic contribution of the development to the Mackay SD regional economy is estimated to be an additional:

- Approximately $78.8 million of output ($56.2 million directly and $22.5 million as flow on);
- Approximately $37.0 million of value added ($26.9 million directly and $10.1 million as flow on);
- Approximately $13.4 million as income ($10.0 million directly and $3.4 million as flow on); and
- Approximately 271 FTE positions (195 FTE direct and 76 FTE flow on).

It is anticipated that the impact on the State economy will include:

- Approximately $61.4 million of output ($43.8 million directly and $17.6 million as flow on);
- Approximately $28.9 million of value added ($21.0 million directly and $7.9 million as flow on);
- Approximately $10.6 million as income ($7.9 million directly and $2.7 million as flow on); and
- Approximately 220 FTE positions (159 FTE directly and 61 FTE as flow on).

Although the magnitude of the impact of the operational phase is smaller than that of the construction phase, it is important to remember that the operational impacts are annual and would be expected to continue to accrue each year over the operational life of the development once the development is in steady state.

7.3 Cost Benefit Assessment Summary

This section provides a summary of the Cost Benefit Analysis (CBA) assessment of the proposed Shute Harbour Marina Development. Detailed analysis of the methodology used, impacts of the SHMD, analysis and outcomes of the CBA is provided in Appendix C.

The CBA assessment found that development of the Shute Harbour Marina is expected to deliver a total net benefit of $299.2 million in present value terms (NPV) at a discount rate of 10% for direct impacts (i.e. incurred by the proponent) and 6% for indirect impacts (i.e. to stakeholders other then the proponent), with present value of benefits of $984.5 million and a present value of costs of $685.3 million. Overall, the development provides a benefit cost ratio (BCR) of 1.44 (i.e. returns $1.44 for every dollar spent in delivery of the project).

The project provides a positive direct net benefit (i.e. to the proponent) in present value terms of $93.6 million with a BCR of 1.46. The project delivers a positive indirect net benefit (i.e. to stakeholders other then the proponent) in present value terms of $205.6 million with a BCR of 1.43.

All aspects across the triple bottom line (economic, social and environmental) are anticipated to record a net benefit as a result of the project.

It is anticipated that the overall net benefit is understated by these results as where possible a conservative approach has been applied. A number of economic and social benefits were unable to be quantified (e.g., appreciation of property values, tourism support, increased business confidence, improved access to recreational activities and enhanced community interaction), with these benefits expected to outweigh the economic and social costs identified from the SHMD project that have not been able to be quantified (e.g., additional social, community and recreational infrastructure, increased road and water traffic, noise impacts), which further supports this assessment potentially understating the benefits delivered by the SHMD development.

Table 7.9. Quantitative CBA Summary

Impact	PV of Benefits ($M)	PV of Costs ($M)	Net Present Value ($M)	BCR
Economic				
Direct Impacts	$295.8	$202.2	$93.6	1.46
Indirect Impacts	$570.6	$461.4	$109.2	1.24
Total Impacts	**$866.5**	**$663.6**	**$202.8**	**1.31**
Social				
Direct Impacts	N/a	N/a	N/a	N/a
Indirect Impacts	$94.0	$0.0	$94.0	N/a
Total Impacts	**$94.0**	**$0.0**	**$94.0**	**N/a**
Environmental				
Direct Impacts	N/a	N/a	N/a	N/a
Indirect Impacts	$24.0	$21.6	$2.4	1.11
Total Impacts	**$24.0**	**$21.6**	**$2.4**	**1.11**
Total				
Direct Impacts	$295.8	$202.2	$93.6	1.46
Indirect Impacts	$688.7	$483.1	$205.6	1.43
Total Impacts	**$984.5**	**$685.3**	**$299.3**	**1.44**

Source: AEC*group*

From the outcomes of the CBA, it is clear that the direct, indirect and overall impacts of the project result in a net benefit to the community.

7.4 Qualitative Assessment of the Economic Impact of the Shute Harbour Marina Developmentent

In addition to the economic impacts that can be measured quantitatively, there are others, which are as important but which are best assessed on a qualitative basis and this section discusses these impacts in detail.

7.4.1 Distributional Effects of the Shute Harbour Marina Development

Distributional effects refer to the way in which the economic impacts of the development are expected to accrue to individuals and groups.

7.4.1.1 Construction Phase Distributional Effects

The construction phase will generate demand for construction workers and materials as well as other construction support services such as plant and equipment supplies. This demand is expected to be greatest in the region with any additional needs being met by the state economy, although some specialist services (for example design and architectural services) may need to be brought in from outside of the region.

This additional activity would be expected during both the primary and secondary construction phases. SHMD Pty Ltd are committed to using local companies wherever possible (D Quinlan, SHMD Project Manager, *pers. comm.* 14 September, 2007) during construction. Given the high level of construction activity, currently underway, approved and planned (see section 4.3.3) and the expectancy that this work will be substantially completed before the most labour intensive stages of the SHMD have started, it is likely that SHMD will have an important role in providing continuity of employment for construction workers.

Beyond the commitment to use local suppliers where possible, the previous section outlined significant flow on benefits resulting from both the construction and operational phases of the development. These benefits are expected to be felt throughout the entire Mackay regional economy and are discussed in the Distributional Effects of Flow On Impacts section below.

7.4.1.2 Operating Phase Distributional Effects

During the operational phase of the development, the distributional effects are likely to be determined by the ability of local businesses to meet the needs of the additional visitors to the area, which would appear strong given the prevailing economic driver in the region is tourism. Any increase in the number of visitor stays and the duration of those stays is likely to drive increased demand for services throughout the region (for example, vessels using the harbour would be expected to take on various stores and provisions, which would be purchased either in the SHMD or in the immediate vicinity). This would increase revenues for business owners and create additional local employment opportunities across a range of sectors including:

- Land and marine based tourism operators;
- Maritime support industries;
- Marine supply companies; and
- Cafés, restaurants and bars.

7.4.1.3 Distributional Effects of Flow On Impacts

Beyond the benefits to businesses directly involved in either the construction or retail/commercial sectors, the additional activity associated with the construction and operation of SHMD is also likely to have a flow on economic impact on other sectors of the regional economy. These flow on effects are identified in the quantitative sections, as more income flows into the region this revenue is recirculated between individuals and businesses across the whole economy as consumers buy goods and services[10]. Therefore, whilst distributional effects may be most apparent in those sectors directly connected to the construction and operation of SHMD, there are likely to distributional effects across the economy as a whole, even where there is no direct connection to the construction or operating phases.

7.4.2 Direct Equity Investment Potential

There is limited scope for direct equity investment by local businesses during the construction phase. The proponent has a commitment to engage local and regional construction firms and suppliers, however this is likely to be limited to work carried out on a contractual rather than equity basis. All marina developments are capital intensive by their nature with extensive capital works like dredging, the construction of the breakwater, berths and pontoons that must be completed before any revenue can be realised. As a result, the proponent may look to engage a suitable equity investor, however, none are identified at this time.

Opportunities exist for direct equity investment during the operating phase and the marina and tourist precincts appear to offer the greatest potential for equity partners to become involved in the development, for instance through the management of the hotel and managed resort accommodation tourism precinct. The hotel and managed resort accommodation are expected to be owned and operated by investors.

7.4.3 Skills and Training

SHMD Pty Ltd have engaged the Great Barrier Reef Institute of TAFE as a training partner to facilitate the skilling of local labour during both the construction and operational phases of the development. Additional detail pertaining to this arrangement is included in section 6.2.2 of the Social Impact Assessment.

7.4.4 Capacity Building in the Labour Force

Labour force capacity building refers to the potential increase in the skills and/ or experience of the workforce as a result of either the construction or operation of the SHMD.

On completion of the construction phase of the development, although some workers may have had the opportunity to broaden their skill sets, it is likely that there will have been a relatively small impact on capacity in the regional construction sector. The employee skills required during the operational phase of the marina, tourist and

[10] This assessment conservatively only includes Type I (i.e. direct, initial and industrial support) impacts.

commercial precincts are thought to be a close match to the existing competencies of the area's resident workforce and so it is likely that there will be limited opportunities for capacity building from the operational phase of SHMD.

7.4.5 Impacts on Economic Diversity

Although there may be some impact on the region's economic diversity as a result of the construction phase, the impact will be short-term and at the end of the construction phase the impact will end. There are currently 4,249 construction workers in the Mackay Statistical Division (7.0% of total workforce) (ABS, 2007b). Although demand for construction workers is scheduled to increase by an average of 92 FTE per year for the six years of the primary and secondary construction phases, it is likely that rather than increasing dependency on the construction sector, these opportunities will provide a continuation of work for existing construction workers. The high level of development as evidenced by the major projects that have been approved or are in planning (see section 4.3.3) suggest that the major construction phases of the SHMD will provide employment continuation for workers rather than change the employment distribution in the region.

It is estimated that the operating phase of the development will result in the direct employment of an additional 142 FTE staff. Although important in its own right, this is a relatively small proportion of the regional labour force (0.2%) (ABS, 2007b) and is not thought to have any noticeable effect on economic diversity. SHMD is not anticipated to significantly alter the economic structure of the region as it is predominantly based on tourism and designed to service internal demand rather than change the existing centres hierarchy.

7.4.6 Impacts on Local Property Prices

An analysis of house sales at Shute Harbour between September 2005 and June 2007 found that nine houses had been sold in that period and that the median sale price was $1,100,000 with an average sale price of $922,778. Five of the nine sales completed were over $1 million with a highest sale price of $1,425,000 (RP Data 2007). This is thought to be indicative of the majority of the existing housing stock in the Shute Harbour area.

The construction phase is likely to bring some disruption to the area. However it is possible that once approval is obtained for the proposal that property prices would increase due to the provision of additional amenity and additional services including those directly associated with the development such as the marina, retail and commercial developments as well as indirect benefits such as the new boat ramp and improved public transport services. Whilst quantification of these potential impacts is difficult it is considered unlikely there would be any reduction in property values as a result of the SHMD proposal.

7.4.7 Additional Local Government Services

The anticipated increase in the visitor population during the operational phase of the development may require additional local government services. The services that may be impacted include:

Infrastructure: The requirements for additional infrastructure costs are currently under discussion with the Whitsunday Shire Council. The technical reports (Cardno, 2007c) suggest that there will be no requirement for system capacity increases resulting from of the development. It is assumed that developer contributions will be made as required and negotiated.

Car Parks: Consultation identified that car parking is already over subscribed in Shute Harbour and Queensland Transport have informed the Whitsunday Shire Council that they will only contribute to the a new boat ramp when an additional 90 car and boat trailer spaces are provided for users. Council has prepared preliminary plans to create some additional parking at Shute Harbour although no decision will be taken before the SHMD is considered.

Boat Ramp: SHMD Pty Ltd has committed a contribution of $2.5 million to the Whitsunday Shire Council to upgrade the existing boat ramp and associated facilities at Shute Harbour should the proposed marina proceed. As well as adding to the local amenity, this would reduce the current overcrowding at the existing facility and provide some capacity to accommodate predicted growth in community demand for this facility. This funding support would also save Whitsunday Shire Council from having to fund this expenditure from their capital budget.

Waste Management Services: Additional waste collection and disposal services will be required to service the development. It is understood that Whitsunday Shire Council currently operates its waste collection services on a full cost recovery basis (Dept. LGPSR, 2007). As a result, it would be anticipated that any additional cost of these services should be recovered from users, with no net cost to Council or other ratepayers (Dept. Local Government, Planning, Sport and Recreation, 2007).

Public Transport Services: It is likely that on completion of the SHMD there will be increased demand for a public transport service linking Shute Harbour and surrounding service centres. Although there will be some retail development at Shute Haven it is likely that visitors will want to access the wider range of goods and services available at Airlie Beach, Cannonvale and other larger service centres. Initially SHMD Pty Ltd will provide a courtesy shuttle service, which may also provide some community benefit. Once demand reaches a point where the operation of the route becomes commercially viable, it is anticipated an appropriate service provider will be selected to take over the service. See section 6.5.3 for additional discussion on public transport services in the region.

Cultural and Education Services: SHMD Pty Ltd has committed to developing a "Reef Conservation Fund" to be operated as a charitable fund by the Great Barrier Reef Marine Park Authority. The fund will be funded from the sale of the marina berths, with an initial contribution provided by the proponent upon the settlement of each marina berth that would contribute approximately $1.0 million in total, with an ongoing contribution of approximately $150,000 per annum from leaseholders as part of the lease agreement. This fund will contribute to the ongoing sustainability of the marine habitat by providing environmentally/ coral friendly moorings on the reef. Part of this funding is anticipated to be directed to ongoing public education and awareness campaigns, as well as a traditional owner and marina environment interpretive centre.

7.4.8 Impact of SHMD on Existing Businesses

Economic and business activities currently occurring at or near the development site that may be impacted, either positively or negatively, include:

- Transit Facility including 'Fantasea' tourist services establishment and tourist café in the wharf complex;
- Charter boat operations;
- Engwirda Marine;
- Service Station and Car Park;
- Shute Harbour Motel; and
- Coral Sea Motel/Café.

The following section reviews the concerns and potential beneficial and detrimental impacts identified on the existing businesses during the construction and operating phases following consultation with business owners/ operators.

7.4.8.1 Impacts on Existing Local Economic Activities

Ferry Terminal: There may be some disruption to visitors travelling to and from the terminal building during the construction phase, although given that most construction will be site based with little impact on access roads it is anticipated that this will not have a significant impact on passenger numbers or the operation of the terminal. Mitigation strategies are outlined in the Transport section of the EIS (section 4.2). The operational phase of the development may see a small increase in terminal user numbers as awareness of the area increases along with visitor numbers.

Consultation with Port Binnli Pty Ltd, who own the lease over the Shute Harbour Ferry Terminal, identified no concerns relating to the construction or operation of the proposed development. Discussions with Fantasea (ferry and tour operator) indicate that the construction phase presents few, if any, concerns and that the operational phase may actually slightly increase their business.

Currently some private boat owners use the ferry terminal as a temporary mooring point whilst they replenish their supplies on the mainland. They are charged a fee for this service, a proportion of which is paid to Council, which has a financial interest in the facility. In 2007, the fee for this service was $1.10 per metre per hour (minimum charge $55) or $5.50 per metre for overnight stays (minimum charge $110). Consultation with Council (*pers. comm*. S. Hunt, Business Services Manager, Whitsunday Shire Council, 1st October 2007) suggests that this is considered relatively expensive compared to other similar facilities and Council estimate that only five yachts per year use this facility.

There are also five commercial operators who access the terminal by dinghy. Where they can demonstrate that they have a legitimate commercial need, they are granted access to the terminal and the only charge levied on these users is the cost of having an additional key cut for the gate to the premises. These uses are not anticipated to be impacted by SHMD.

On completion of SHMD it would be anticipated that the majority of boat users would use the new facilities and the revenue stream to the ferry terminal would be reduced. Consultation with the local government suggests that this revenue stream is not material in its day to day operations (*pers. comm*. S. Hunt, Business Services Manager, Whitsunday Shire Council, 1st October 2007).

Hamilton Island Enterprises barge: Hamilton Island Enterprises use Shute Harbour as the base for their barge operations, which they use to re-supply their island resort. There are no identified economic impacts from the construction or operational phases of the development, with the marina designed to ensure barge operations are not impeded (see section 6.5.2).

Charter Boat Operations: There may be some potential for increased business activity from visitors to the SHMD precinct chartering bareboats. However, consultation with the Whitsunday Bareboat Association identified the main benefit of SHMD as being the competition brought to what is perceived to be a current monopoly in the marina market with the Port of Airlie and Able Point marinas currently owned by Meridian.

Engwirda Marine: No negative impacts were identified for the salvage operator who though that once operational, the proposed development may present some business development opportunities.

Service Station and Carparks: The SHMD includes car parking facilities but these will be provided for the use of guests only. Consultation with Council suggests that during peak periods at Shute Harbour demand for car parking spaces often significantly outstrips supply placing significant pressure on the available car parking especially from visitors with boat trailers. There are currently three off-street car parks at Shute Harbour, all of which charge for use:

- The Island view – Council owned, 120 spaces of which 20 are for cars & boat trailers and costs $2 for less than 8 hours, $4 for more than 8 hours up until midnight and $16 for seven days.

- The Transit Facility car park - Council owned, 180 car parking bays (no boat & trailer spaces) and costs ($5 for up to four hours, $10 for more than four hours until midnight and $40 for seven days.

- Shute Harbour Secured Parking and Storage – Commercially owned, 340 multi deck bays, 20 bays under the boat storage area and an additional 100 spaces on surrounding land that can be used for vehicles with or without boat trailers ($5 per day for island workers, $10 for 12 hours for non island workers and $16 overnight).

There are also 15 on-street car and boat trailer parking spaces in a specially zoned area, and these are currently available free of charge. Consultation with Whitsunday Shire Council identified significant shortages of car parking spaces, especially during busy periods, which can lead to problems associated with incorrectly parked vehicles. Council also identified the potential to fill in the bay between motel and ferry terminal to provide additional parking. Although the plans for this project have been developed it will not be progressed before the decision on the SHMD is made. SHMD has committed a $2.5 million contribution to this development, if the development proceeds.

The commercial carpark and service station are some few hundred metres from the proposed development site. It is also expected that the service station would see an increase in business levels during the construction phase with additional vehicle movements in the area associated with construction workers.

Consultation with the owners of the service station and carpark identified the operational phase of the development as a significant opportunity to grow both the carparking and service station businesses (*pers. comm.* Rob Turner, Partner, Sabre Parking Services, 1st October 2007).

Based on consultation with the operators of the existing Shute Harbour car parks and the forecast growth in visitor numbers it does not appear that the development would have a negative impact on the income of the existing car parks, in fact the business owners identify the SHMD as a business development opportunity.

Motel and other accommodation providers: The owners of the motel adjacent to the proposed development site expressed concerns about the impact of the construction phase on their business through a reduction in visitor numbers due to a potential noise impacts (*pers. comm.* David McInerney, motel owner, 13th August 2007). However, the work will be carefully managed to reduce impacts, and at the same time any decrease in demand due to noise impacts could be offset by accommodation demand from construction workers.

Concerns were also raised by some motel owners in the surrounding area during the consultation process regarding potential loss of turnover should any of their current customers stop using the accommodation in Shute Harbour and Shutehaven and instead use accommodation at SHMD. It is considered that this scenario is unlikely as the hotel and Managed Resort Accommodation will offer a highly differentiated product from the accommodation that is currently available in the Shute Harbour and surrounding area. The specific market sector that SHMD Pty Ltd are seeking to target are high net worth individuals, in particular those with a strong interest in marine based leisure pursuits. Existing accommodation providers at Shute Harbour and Shutehaven do not specifically cater for this market segment (the motel adjacent to the proposed development site, for example, caters for backpackers, some workers and sales representatives).

The accommodation demand assessment (AEC*group*, 2008a) highlights the highly differentiated nature of the accommodation provided by SHMD and also identifies there to be sufficient future demand to facilitate the development.

7.4.8.2 Impacts on Other Maritime Sector Businesses

During the consultation stage, two chandlery stores in Airlie Beach were consulted regarding the potential impacts of the development on their business. Neither business considered the development to be a threat. Both considered there to be little opportunity to service boat owners outside their immediate proximity, and thereby considered there to be little risk of any loss of business.

7.5 Implications for Future Developments in the Local Area

7.5.1 Finite Use of Land and Alternative Development Opportunities

The proposed site has no identified current productive agricultural or aquaculture value, and opportunities for this into the future would appear limited. The site has been identified by State Government as a safe natural harbour with potential as a marina site, and the establishment of a term lease for the investigation of this purpose provides further evidence of the State Government's position in this regard. In addition, the Whitsunday Region Marina Demand Analysis prepared by Brown and Root Services Asia Pacific Pty Ltd (2001) indicated that Shute Harbour is ideally suited for development of a marina.

The proposed site is geologically constrained by Conway National Park, limiting the potential of the site for alternate development uses. During consultation, it was suggested that the area had some potential as a deep-sea port with the site regarded as one of the last potential sites of an additional deep seaport in Northern Queensland. However, feedback on previous proposals identified significant community opposition to the inclusion of a deep-sea port, with this identified through consultation to be contrary to the current tourism focus and amenity of the area.

7.5.2 Future Economic Development

If the SHMD is approved, the marina and associated land based developments have the potential to encourage additional economic development at Shute Harbour into the future, largely related to the potential upgrade of the existing ferry terminal and expansion of the marine services industry. The upgrade would be expected to improve facilities and increase the size and number of vessels that could be accommodated. Any upgrade is likely to be driven by demand for these services from the islands and resorts that the ferries currently service and fits in with the proposed development.

The anticipated increase in private vessels (Pacific Southwest Strategy Group, 2006a) could support further expansion of the marine service sector. By accessing advantages from clustering, facilitated and supported by the SHMD, it may be possible for the marine service sector to access greater value adding opportunities. Potential advantages of clustering in the marine sector include (Berk & Associates, 2007):

- Facilitating the creation of business to business networks and co-operation;
- Enhanced business and industry productivity through increased access to specialised suppliers, skills, and information;
- Improved targeting and impact of marketing activities;
- Increased industry efficiency through improved industry coordination and collaboration; and
- Other supply chain synergies between companies (for example between a boat builder and a boat sales dealer).

7.6 Summary of Economic Impacts

7.6.1.1 Economic Impacts on Employment and Households

The SHMD would be expected to directly generate 552 FTE positions during the construction phase and a further 195 FTE positions in the operational phase within the Mackay SD. Further, indirect impacts of the development would be expected to create 269 FTE positions during the construction phase and 76 FTE positions in the operational phase in the Mackay SD. At the State level, it would be anticipated that 1,174 FTE positions would created during the construction phase and 220 FTE positions during the operational phase.

Household incomes in the Mackay SD would be expected to increase by $51.6 million during the construction phase and $13.4 million per annum in the operating phase.

7.6.1.2 Economic Impacts on Existing Businesses

During the construction phase, it is estimated that Mackay SD regional output would increase by $322.9 million and $452.5 million at the State level. This would include an increase in value added production of approximately $137.2 million and $195.7 million at the regional and State levels respectively.

During the operating phase, it is estimated that Mackay SD regional output would increase by $78.8 million per annum and $61.4 million at the State level. This would include an increase in value added of $37.0 million and $28.9 million at the regional and State levels respectively.

Consultation identified the majority of businesses in the Shute Harbour area to be in favour of the development driven by anticipated additional business opportunities that may flow on to them associated with the demand for goods and services from the growth in visitor numbers especially given the characteristics of the SHMD target market. There were some concerns regarding the impact of the construction phase and any associated increase in marine traffic in the Shute Harbour area, however, these are addressed through mitigation strategies proposed in section 8.2.

7.6.1.3 *Economic Diversity*

It is likely that employment created during the construction phase will help to provide employment for the existing construction sector employees rather than driving any significant change in the proportion of workers in the region or state that are employed in this sector. Thereby contributing to the maintenance rather than an increase in economic diversity.

The operational phase is not identified to have any significant impact given the relatively small number of employees involved relative to the labour force as a whole.

7.6.1.4 *Economic Impacts on Non-Business Groups*

Although infrastructure costs are still subject to negotiation, no requirement for extensive expansion or improvements to the existing local government services has been identified (Cardno, 2007c). There may be potential for the local government to improve existing facilities at Shute Harbour as a result of the SHMD, such as car parking and the boat ramp. SHMD Pty Ltd has committed a contribution of $2.5 million to the Whitsunday Shire Council to upgrade the existing boat ramp and associated facilities at Shute Harbour should the proposed marina proceed.

The economic loss to Council from no longer charging for the use of the ferry terminal appears to be minimal and the potential contribution towards the costs of the new boat ramp represents a considerable saving. Assuming an appropriate agreement is reached regarding infrastructure costs and that the full costs of providing services to the development are recovered through an appropriate charging regime, there should not be a net cost to Council from the SHMD.

Some residents have expressed concerns about the impact of the development on property values. However, it is considered more likely that the development may contribute to an increase in property values resulting from increased services in the region.

7.6.1.5 *Economic Impacts on Current Land Use*

Outside the footprint of the site itself, it is not anticipated that the Shute Harbour Marina Development will constrain land use in the surrounding area. The development will provide opportunities for existing business growth and expansion due to enhanced local access to the marina and associated facilities, particularly for businesses in related upstream and downstream industries.

7.6.1.6 *CBA*

The CBA assessment found that development of the Shute Harbour Marina is expected to deliver a total net benefit of $299.2 million in present value terms (NPV) at a discount rate of 10% for direct impacts (i.e. incurred by the proponent) and 6% for indirect impacts (i.e. to stakeholders other then the proponent), with present value of benefits of $984.5 million and a present value of costs of $685.3 million. Overall, the development provides a benefit cost ratio (BCR) of 1.44 (i.e. returns $1.44 for every dollar spent in delivery of the project).

All aspects across the triple bottom line (economic, social and environmental) are anticipated to record a net benefit as a result of the project. From the outcomes of the CBA, it is clear that the direct (i.e. incurred by the proponent), indirect (i.e. to stakeholders other then the proponent) and overall impacts of the project result in a net benefit to the community.

8. Mitigation Measures

8.1 Social Impacts

8.1.1 Labour Force Impacts

The following strategies are recommended to mitigate the anticipated labour force impacts identified in section 6.2.3.

Table 8.1. Source Labour from the Local Labour Pool

Mitigation Procedure	Description
Phase	• Construction. • Operation.
Objective	• Utilise available labour from the local labour pool during construction and operation.
Mitigation Measures	• Target local skilled labour where possible when recruiting. • Develop specialised education, training and skills development programs in consultation with education and training providers to develop the requisite skills in the local labour force, particularly in unemployed, youth and school leaver groups. • Undertake consultation with local businesses and industry groups to assist their preparation for supply of goods and services to the project.
Monitoring	• Annual review of the number of local workers employed during construction period to assess education, training and skills development programs.
Responsibility	• Proponent, in partnership with the Barrier Reef Institute of TAFE.

8.1.2 Population Impacts

Impacts of the increase in population are expected to be experienced in terms of changes to the demographic profile, values and lifestyle of the local community, and increases in demand for social, cultural and recreational facilities and services and housing. Flow on impacts from the anticipated increase in population during the first stage of construction and operation, and the mitigation strategies to address these, have been identified in section 8.1.3 below.

To minimise population impacts during the second stage of construction, the following mitigation measures are recommended.

Table 8.2. Ensure Population Impacts from Second Stage Construction are Minimised

Mitigation Procedure	Description
Phase	• Second stage construction.
Objective	• Ensure population impacts from second stage construction are minimised.
Mitigation Measures	• Develop labour force skills capacity during stage one construction of the marina (see section 8.1). • Encourage developers to utilise local construction labour where possible. • Consult with adjacent property owners, Department of Communities and Whitsunday Regional Council to monitor project impacts (demand) on local social infrastructure, and any concern about impacts on local community values, and take action to redress impacts where possible.
Monitoring	• Through consultation.
Responsibility	• Construction companies.

8.1.3 Demographic, Social and Cultural Impacts

Demographic Impacts

No mitigation strategies are required as no impacts were identified.

Community Values and Lifestyle

The following strategies are recommended to mitigate potential impacts on community values and lifestyle identified in section 6.4.7.

Table 8.3. Reduce the Potential Impact on Access to Water for Recreational Boating

Mitigation Procedure	Description
Phase	• Operation.
Objective	• Facilitate public access to water for recreational boating activities.
Mitigation Measures	• Proponent to provide financial contribution for construction of an all-tide public boat ramp and support infrastructure.
Monitoring	• None required.
Responsibility	• Proponent. • Whitsunday Regional Council.

Table 8.4. Integrate the Values of the Existing Community and their Lifestyle in the Proposed Development

Mitigation Procedure	Description
Phase	• Construction.
Objective	• Integrate the values of the existing community and their lifestyle in the proposed development.
Mitigation Measures	• Engage and consult with the community during the planning, construction and operational stages of the development to enhance community acceptance of the marina and minimise potential negative impacts on community cohesiveness and identity. • Design covenants to ensure second stage development is in accordance with the vernacular of the region and expressed local values.
Monitoring	• Application of design covenants through second stage development.
Responsibility	• Proponent.

Table 8.5. Enhance Recreational, Leisure and Employment Options in the Longer Term

Mitigation Procedure	Description
Phase	• Operation.
Objective	• Enhance recreational, leisure and employment options for the local community in the longer term.
Mitigation Measures	• Promote the use of local labour at the marina and associated facilities during the operation phase (see section 8.1.1). • Engage and consult with the community during the planning, construction and operational stages of the development to promote and maximise the community benefits from the use and visitation of the marina and associated recreational and leisure facilities. • Monitor and address demand for recreational facilities in the region.
Monitoring	• Monitor demand for recreational facilities in the region.
Responsibility	• Proponent. • Whitsunday Regional Council.

Access and Availability of Social and Community Infrastructure and Services

The following strategies are recommended to mitigate potential impacts on access and availability of social and community infrastructure and services identified in section 6.4.7.

Table 8.6. Reduce Impacts on Access to Health Services from Additional Population

Mitigation Procedure	Description
Phase	• Construction. • Operation.
Objective	• Reduce impacts on access to health services from additional population.
Mitigation Measures	• Source labour from the local labour pool where possible to reduce number of workers/ families needing to relocate to the region during both construction and operation (see section 8.1.1). • Consult with local GPs, medical centres, hospitals and other affiliated health practitioners on an ongoing basis to identify any changes in access (e.g. increased waiting lists/ times). • Consider on-site provision of medical services if demand from workforce is causing stress on local health service access.
Monitoring	• Ongoing consultation with local GPs, medical centres, hospitals and other affiliated health practitioners to identify any changes in access.
Responsibility	• Proponent.

Access and Availability of Recreational Activities

The following strategies are recommended to mitigate potential impacts on access and availability of recreational activities identified in section 6.4.7.

Table 8.7. Reduce Impacts on Provision and Access to Sporting Facilities from Additional Population

Mitigation Procedure	Description
Phase	• Construction. • Operation.
Objective	• Reduce impacts on provision and access to sporting facilities from additional population.
Mitigation Measures	• Source labour from the local labour pool where possible to reduce number of workers/ families needing to relocate to the region during both construction and operation (see section 8.1.1). • Consult with local sporting bodies/ organisations/ facility providers and Whitsunday Shire Council to identify any reduction in access. • Encourage the use of Marina recreational facilities by local community members.
Monitoring	• Ongoing consultation with local sporting organisations, facility providers and Whitsunday Shire Council to identify any reduction in access.
Responsibility	• Proponent. • Whitsunday Regional Council.

Table 8.8. Facilitate Local Community Access to Recreational Facilities Provided by Project

Mitigation Procedure	Description
Phase	• Operation.
Objective	• Facilitate local community access to recreational facilities provided by the project.
Mitigation Measures	• Engage and consult with the community during the planning, construction and operational stages of the development to inform the community of the recreational facilities and activities to be provided by the development. • Enable future public transport access to/ from the marina (see section 8.1.4). • Provide sufficient car parking at the marina and associated facilities to accommodate visitors. • Undertake local educational and marketing campaign to disseminate the facilities and activities on offer at SHMD.
Monitoring	• None required.
Responsibility	• Proponent.

Property Access and Relocation

The following strategies are recommended to mitigate potential impacts on property access and relocation identified in section 6.4.7.

Table 8.9. Reduce Potential Impacts on Short Stay Accommodation Availability, Rental Prices and the Accessibility to Traditional Low-Cost Housing Options

Mitigation Procedure	Description
Phase	• Construction. • Operation.
Objective	• Reduce potential impacts on short stay accommodation availability, rental prices and the accessibility to traditional low-cost housing options.
Mitigation Measures	• Source labour from the local labour pool where possible to reduce number of workers needing to relocate to the region during both construction and operation (see section 8.1.1). • Consult with accommodation providers, real estate agents and relevant Government departments to identify sufficient, suitable accommodation for construction workforce. • Assist construction workers in locating suitable accommodation. • Monitor effect of workforce demand on housing in consultation with real estate agents, local community housing providers and the Department of Housing. • If required, provision of accommodation for construction workers, which could add to the supply of affordable housing in the area after the construction phase is completed.
Monitoring	• Ongoing consultation with short stay tourist accommodation providers, real estate agents and community housing organisations during the construction phase and for the first 12 months of the operational phase to assess potential demand issues.
Responsibility	• Proponent, in partnership with Department of Housing, and in consultation with Whitsunday Regional Council.

Traditional Owner Impacts

The potential impacts on traditional owners of the subject site have been investigated in the Cultural Heritage Assessment undertaken by Northern Archaeology Consultants. The results of this study have been used to develop a Cultural Heritage Management Plan (CHMP) to ensure the inclusion of Indigenous people in the construction and operation of the proposed development. Mitigation strategies for impacts to traditional owners are presented in section 4.10 of the EIS, including the provision of space for a cultural centre adjacent to the Charter Boat Waiting Lounge for displays and material designed to extend local and regional Indigenous culture and artwork and provide retail opportunities.

8.1.4 Transport Accessibility and Safety Impacts

Road Access, Mobility and Safety

Refer to section 4.2 of the EIS for relevant mitigation strategies.

Water Access, Mobility and Safety

Refer to section 4.2 of the EIS for relevant mitigation strategies.

Public Transport

The following strategies are recommended to mitigate potential impacts on public transport identified in section 6.5.7.

Table 8.10. Enable Future Public Transport Access to/ from the Marina

Mitigation Procedure	Description
Phase	• Operation.
Objective	• Facilitate and enable future public transport access to/ from the marina.
Mitigation Measures	• Design the development to accommodate bus access by standard services at the marina village. • Provision of a courtesy bus service between SHMD and nearby settlements.
Monitoring	• None required.
Responsibility	• Proponent. • Whitsunday Transit.

Bicycle and Pedestrian Access

The following strategies are recommended to mitigate potential impacts on bicycle and pedestrian access identified in section 6.5.7.

Table 8.11. Improve Connectivity Between the Marina and Ferry Terminal

Mitigation Procedure	Description
Phase	• Operation.
Objective	• Improve connectivity between the marina development site and ferry terminal.
Mitigation Measures	• Provide a pedestrian path connecting the marina with the ferry terminal as part of the new boat ramp facility.
Monitoring	• None required.
Responsibility	• Proponent.

Equality of Access

The following strategies are recommended to mitigate potential impacts on equality of access identified in section 6.5.7.

Table 8.12. Ensure Equitable Access within the Marina and Associated Facilities for All Persons

Mitigation Procedure	Description
Phase	• Operation.
Objective	• Ensure equitable access within the marina and associated facilities for all persons.
Mitigation Measures	• Design of the Shute Harbour Marina Development to satisfy Whitsunday Shire Council's Universal Equity Access policy requirements for equitable access for all persons, including those with diverse abilities.
Monitoring	• None required.
Responsibility	• Proponent, in consultation with Whitsunday Regional Council.

Emergency Access

No mitigation strategies are required as no impacts were identified.

8.1.5 Economic and Business Impacts

Mitigation strategies for potential economic and business impacts are provided in section 8.2.

8.1.6 Impacts on Current Land Use

Mitigation strategies for potential impacts on current land use are provided in separate sections of the EIS as identified in section 6.7.3.

8.1.7 Potential Environmental Harm on the Amenity of Adjacent Areas

No mitigation strategies are required as no impacts were identified.

8.1.8 Implications for Future Developments in the Local Area

No mitigation strategies are required as no impacts were identified.

8.2 Economic Impacts

The following strategies are recommended to manage economic impacts.

Table 8.13. Retain as Much Construction Expenditure as Possible in the Regional Economy

Mitigation Procedure	Description
Phase	• Construction.
Objective	• Retain maximum amount of construction expenditure in the region.
Mitigation Measures	• Facilitate discussion with local businesses to establish which services are available in the region. • Encourage local suppliers to tailor their services to better meet the requirements of the developer. • Encourage the primary contractor to utilise local suppliers, where possible in the development of the facility.
Monitoring	• None required.
Responsibility	• Proponent. • Local Business Sector. • Chambers of Commerce. • Whitsunday Shire Council.

Table 8.14. Retain as Much Visitor Expenditure as Possible in the Regional Economy

Mitigation Procedure	Description
Phase	• Operating.
Objective	• Extension of visitor information regarding facilities and attractions in the region. • Packaging of water and land based tourism experiences.
Mitigation Measures	• Visitor information regarding facilities and attractions in the region.
Monitoring	• Whitsunday Shire Council.
Responsibility	• Proponent. • Local Business Sector. • Chambers of Commerce. • Tourism Whitsunday's. • Whitsunday Shire Council.

Table 8.15. Facilitate Benefits to and Opportunities for Local Business

Mitigation Procedure	Description
Phase	• Construction. • Operation.
Objective	• Facilitate benefits to and opportunities for local business.
Mitigation Measures	• Encourage the use of locally produced products for required construction materials where possible. • Enhance links between the marina, associated facilities and local business, in particular businesses in related industries such as marine and tourism through a local skills/ capability marketing campaign. • Source labour from the local labour pool during the construction phase to maximise the retention of income and expenditure in the local region (see section 8.1.1). • Engage and consult with local business during the planning, construction and operational stages of the development to inform businesses of the opportunities available for supply of goods and business linkages.
Monitoring	• None required.
Responsibility	• Proponent. • Primary construction company. • Local businesses. • Chamber of Commerce. • Whitsunday Shire Council.

Table 8.16. Reduce Potential Impacts on Short Stay Accommodation Availability for Tourists

Mitigation Procedure	Description
Phase	• Construction.
Objective	• Reduce potential impacts on short stay accommodation availability for tourists.
Mitigation Measures	• Source labour from the local labour pool where possible to reduce number of workers needing to relocate to the region during construction (see section 8.1.1). • Consult with accommodation providers, real estate agents and relevant Government departments to identify sufficient, suitable accommodation for construction workforce. • Assist construction workers in locating suitable accommodation. • If required, provision of accommodation for construction workers, which could add to the supply of affordable housing in the area after the construction phase is completed.
Monitoring	• Ongoing consultation with short stay tourist accommodation providers during the construction phase to assess potential demand issues.
Responsibility	• Proponent. • Whitsunday Shire Council. • Department of Housing.

References

121 Childcare (2007). *121 Childcare – Home.* http://www.121childcare.com.au/index.html. Last accessed 8th October 2007.

AEC*group* (2008a). *Shute Harbour Marina Development Accommodation Demand Assessment.* Report prepared by the AEC Group Limited for Shute Harbour Marina Development Pty Ltd.

AEC*group* (2008b). *Shute Harbour Marina: Net Benefit Assessment.* Report prepared by the AEC Group Limited for Shute Harbour Marina Development Pty Ltd.

AEC*group* (2007a). *Economic Baseline Audit of the Mackay Region*. Report prepared by the AEC Group Limited for Mackay Whitsunday Regional Economic Development Corporation, Mackay.

AEC*group* (2007b). *Review of Standards Guiding the Provision of Council's Community and Recreational Facilities*. Report prepared by the AEC Group Limited for Port Stephens Council, NSW.

Andrea Young Planning Consultants, Briggs & Mortar and Elliott Whiteing (2005). *Community Facilities and Services Strategy*. Report prepared for Maroochy Shire Council, Queensland.

Australian Bureau of Statistics (2007a). *Regional Population Growth, Australia and New Zealand, 2004-05*. Cat. No. 3218.0, ABS, Canberra.

Australian Bureau of Statistics (2007b). *2006 Census of Population and Housing.* Cat No. 2068.0, ABS, Canberra.

Australian Bureau of Statistics (2007c). *Counts of Australian Businesses Including Entries and Exits (June 2003 to June 2006)*. Cat. No. 8165.0, ABS, Canberra.

Australian Bureau of Statistics (2007d). *Tourist Accommodation, Small Area Data Queensland June 2007*. Cat. No. 8635.1.55.001, ABS, Canberra.

Australian Bureau of Statistics (2007e). *Building Approvals Australia, June 2007*. Cat. No. 8731.0, ABS, Canberra.

Australian Bureau of Statistics (2003). *C-Data 2001, Second Release.* Australian Bureau of Statistics, Canberra, 2003.

Boating Industry Association of Queensland (2007). *Latest BIAQ News – Media Release: Marine Queensland – A Name Change With Teeth.* *http://www.biaq.com/content/standard.asp?name=NewsAndEvents* Last accessed 6th September 2007.

Brown and Root Services Asia Pacific Pty Ltd (2001). *Whitsunday Region Marina Demand Analysis – 2001.* Report prepared by Brown and Root Services Asia Pacific Pty Ltd on behalf of the Whitsunday Region Inter-Departmental Committee.

Cannonvale Kidz Early Learning Centre (2007). *Cannonvale Kidz Early Learning Centre – Home.* http://www.cannonvalekidz.com.au/about.html. Last accessed 8th October 2007.

Cardno (2007a). *Shute Harbour Marina EIS – Traffic Impact Assessment.* Report prepared by Cardno Eppell Olsen on behalf of Shute Harbour Marina Development Pty Ltd.

Cardno (2007b). *Shute Harbour Marina EIS -Draft*. Report prepared by Cardno Eppell Olsen on behalf of Shute Harbour Marina Development Pty Ltd.

Cardno (2007c). *Water Supply and Sewerage Investigation Report*. Prepared by Cardno Eppell Olsen on behalf of Shute Harbour Marina Development Pty Ltd.

Collins PRD (2007). *Property Watch – Inner Brisbane Berths and Property Report, June 2007.* Collins PRD Research, Brisbane.

Connell Wagner (2005a). *Shute Harbour Marina Development: Environmental Impact Statement.* Report prepared for Shute Harbour Marina Developments Pty Ltd by Connell Wagner, Melbourne.

Connell Wagner (2005b). *Shute Harbour Marina Development Draft Aboriginal Cultural Heritage Management Plan*. Report prepared for Shute Harbour Marina Developments Pty Ltd by Connell Wagener Pty Ltd, Brisbane.

Council of Australian Government (2007). *Overcoming Indigenous Disadvantage, Key Indicators Report 2007*.

CRC Reef Research Centre (2004). *Seagrasses in Queensland Waters – Current State of Knowledge.* CRC Reef Research Centre.

Fantasea Adventure Cruising (Undated). *Passenger Statistics*. Provided by Operations Coordinator (Kate Thornton), Fantasea Advenrure Cruises.

Federal Department of Employment and Workplace Relations (2007). *Small Area Labour Market Data.* Department of Employment and Workplace Relations, Canberra.

Francour, P., Ganteaume, A. and Poulain, M. (1999). *Effects of boat anchoring in Posidonia oceanica seagrass beds in the Port-Cros National Park (north-western Mediterranean Sea)*. Journal of Aquatic Conservation: Marine and Freshwater Ecosystems, Volume 9, pp. 391-400.

FRC Environmental (2007). Aquatic Ecology. Prepared by FRC Environmental on behalf of Port Binnli Pty Ltd.

Hornby, F. (2006). *Opportunities for Affordable Housing in the Whitsunday Shire.* Report prepared by Frank Hornby, Social Planning Services, on behalf of Whitsunday Shire Council.

Jackson Planning and Buckley Vann (2007). *Shute Harbour Planning Study: Interim Report – Issues and Directions*. Prepared for the Department of Local Government, Planning, Sport and Recreation and Whitsunday Shire Council by Jackson Planning and Buckley Vann Town Planning Consultants.

Larson S, (2007). Wellbeing and Livelihoods Survey of the Whitsunday Shire: Report for the community. CSIRO: Water for a Healthy Country National Research Flagship, Canberra.

Lectel (2007). *Electricity and Communications Report*. Prepared by Lectel Pty Ltd on behalf of Prot Binnli Pty Ltd.

Mackay City Council (1999). *Strategic Plan*. Mackay City Council, Queensland.

Mackay City Council (2007). *Mackay's Internet Mapping and Property System.* Mackay City Council, Mackay.

Mackay Whitsunday Regional Economic Development Board (2007a). *Mackay / Whitsunday Regional Economic Report.* Report prepared by AEC Group Ltd on behalf of MWREDC.

Mackay Whitsunday Regional Economic Development Board (2007b). *Mackay Economic Baseline Audit*. Report prepared by AEC Group Ltd on behalf of MWREDC.

Malcolm Hall-Brown (2007). *Shute Harbour Marina Development Assessment – Financial Summary.* Unpublished data.

Maritime Safety Queensland, (2007). Shute Harbour Marina Development (Letter). Prepared by Captain John Ellyett, Regional Harbour Master Mackay, on behalf of Maritime Safety Queensland.

Nagelkerken, I., Van der Velde, G., Gorissen, M.G., Meijer, G.J., Vant Hof, T. and Den Hartog, C. (2000). *Importance of Mangroves, Seagrass Beds and the Shallow Coral Reef as a Nursery for Important Coral Reef Fishes, Using a Visual Census Technique*. Estuarine, Coastal and Shelf Science, Volume 51 (1), pp. 31-44.

Natural Solutions (2007). *Marine Megafauna Impact Assessment and Management Plan – Working Draft Report.* Prepared by Natural Solutions on behalf of Shute Harbour Marina Developments Pty Ltd.

Office of Economic and Statistical Research (2006). *The Contribution of International and Domestic Visitor Expenditure to the Queensland Economy: 2003-04.* Office of Economic and Statistical Research, Brisbane.

Pacific Southwest Strategy Group (2007). *Northeast Business Park – Marina Demand Update, 10 September 2007.* Report prepared for Northeast Business Park Pty Ltd by Pacific Southwest Strategy Group Pty Ltd, Spring Hill, Queensland.

Pacific Southwest Strategy Group (2006a). *Shute Harbour Marina Study*. Report prepared for Shute Harbour Marina Developments Pty Ltd by Pacific Southwest Strategy Group Pty Ltd, Brisbane.

Pacific Southwest Strategy Group (2006b). *Whitsunday 2015: A Whitsunday Shire Economic Development Strategy*. Report prepared for Whitsunday Shire Council and Whitsunday Development Corporation by Pacific Southwest Strategy Group Pty Ltd, Brisbane.

Panapitukkula, N., Duarteb, C. M., Thampanyaa, U., Kheowvongsria, P., Srichaia, N., Geertz-Hansenc, O., Terradosb, J. and Boromthanaratha, S. (1998). *Mangrove Colonization: Mangrove Progression Over the Growing Pak Phanang (SE Thailand) Mud Flat*. Journal of Esturarine and Coastal Shelf Science, Volume 47, Issue 1, July 1998, pp. 51-61.

Place Environmental (2007). *Shute Harbour Marina Development: EIS Terrestrial Ecology Assessment.* Prepared by Place Environmental on behalf of Shute Harbour Marina Developments Pty Ltd.

Queensland Coordinator General (2007). *Shute Harbour Marina Project - Terms of Reference for an Environmental Impact Statement*. May, 2007. Queensland Coordinator General and Department of Infrastructure

Queensland Department of Local Government, Planning, Sport and Recreation and Department Housing (2007). *State Planning Policy 01/07 including Guideline: Housing and Residential Development.* Queensland Department of Housing, Brisbane.

Queensland Department of State Development, Trade and Innovation (2006). *Projects Queensland 2005-2006 Issue 25*. Department of State Development, Trade and Innovation, Queensland Government, Brisbane.

Queensland Department of State Development (2003). *Coordinator General's Report on the Supplementary Environmental Impact Statement for the Port of Airlie Marina Development Project.* Department of State Development, Queensland Government, Brisbane.

Queensland Department of Local Government and Planning (2006a). *Whitsunday Hinterland and Mackay (WHAM) Regional Plan.* WHAM Project Office, Queensland Department of Local Government and Planning, Mackay.

Queensland Department of Local Government and Planning (2006b). *Projected Resident Population, Queensland LGAs, 2001-2026*. Planning Information and Forecasting Unit, Department of Local Government and Planning, Brisbane.

Queensland Department of Treasury (2006). *Cost Benefit Analysis Guidelines – Achieving Value for Money in Public Infrastructure and Service Delivery*. Queensland Department of Treasury. http://www.treasury.qld.gov.au/office/knowledge/docs/project-eval/index.shtml. Last accessed 31 July, 2007.

Queensland Environmental Protection Agency (2006). *Draft Mackay Whitsunday Coastal Management Plan.* Environmental Protection Agency and Queensland Parks and Wildlife, Rockhampton.

Queensland Environmental Protection Agency (2003a). *Environmental Economic Valuation – an introductory guide for policy-makers and practitioners.* Environmental Protection Agency, Brisbane.

Queensland Environmental Protection Agency (2003b). *Techniques for Environmental Economic Valuation.* Information Sheet – Environmental Impact Assessment, Environmental Protection Agency and Queensland Parks and Wildlife, Brisbane.

Queensland Government (2006). *Living the Queensland Lifestyle*. Queensland Government, 19 August 2006.

Randwick City Council (2003). *Community Facilities and Study Plan*. Randwick City Council, NSW.

Rawlinsons (2007). *Australian Construction Handbook – Edition 25.* Rawlinsons, Perth.

Real Estate Institute of Queensland (2006). *'Median House Prices'*, *Queensland Property and Lifestyle Magazine,* Vol. 10-18. Real Estate Institute of Queensland (REIQ), Brisbane.

Recreation Planning Associates (2000). *Hornsby Leisure Strategic Plan: Demand, Supply & Service Gap Analysis*. Report prepared for Hornsby Shire Council, NSW.

Reserve Bank of Australia (2008a). *RBA Bulletin Table F11 – Exchange Rates.* Reserve Bank of Australia, Canberra.

Reserve Bank of Australia (2008b). *RBA Bulletin Table G2 – Consumer Price Index.* Reserve Bank of Australia, Canberra.

Residential Tenancies Authority (2007). *Median Weekly Rents – Northern Queensland (Cairns, Thuringowa & Townsville, Rockhampton, Whitsunday and Mackay).* Residential Tenancies Authority, Brisbane.

RP Data (2007). *http://www.rpdata.net.au/.* Viewed on 21St December 2007.

SA Dept. of Housing & Urban Development (1994). *Human Service Planning Kit*. South Australian Urban Land Trust, Department of Housing and Urban Development.

SGS Economics and Planning, Elliott Whiteing, Briggs and Mortar, and Andrea Young Planning Consultants (2007). *South East Queensland Regional Plan - Implementation Guideline No. 5*. Report prepared for the Queensland Department of Infrastructure by SGS Economics and Planning, Elliott Whiteing, Briggs and Mortar, and Andrea Young Planning Consultants.

SGS Economics & Planning (2006). *Community Facilities Study Verification*. Report prepared for Brisbane City Council.

Shute Harbour Marina Development (2008). *Voluntary Cultural Heritage Management Plan between the Gia People and Ngaro/Gia People and Shute Harbour Marina Development Pty Ltd for the Shute Harbour Marina Project Area.* Shute Harbour Marina Development Pty Ltd.

Shute Harbour Marina Development (2006). *Shute Harbour Marina Project – Initial Advice Statement.* Shute Harbour Marina Development Pty Ltd, Spring Hill.

Stratcorp Consulting (2003). *Penrith City Council Recreation and Cultural Strategy*. Report prepared for Penrith City Council, NSW.

Studio Tekton (2007). *Draft Unit Schedule*, October 2007. Spring Hill, Queensland.

Studio Tekton (2008a). *General Area Schedule*. January 2008, October 2007. Spring Hill, Queensland.

Studio Tekton (2008b). *Shute Harbour Marina Development Master Plan.* Spring Hill, Queensland.

Thomson Clarke Shipping (2007). *Shute Harbour Marine Traffic Study.* Report prepared by Thomson Clarke Shipping on behalf of Shute Harbour Marina Development Pty Ltd.

Three Plus (2006). Shute Harbour Marina Project: Community Consultation Report, 21 October 2006. Prepared by Three Plus Pty Ltd on behalf of Shute Harbour Marina Development Pty Ltd.

Three Plus (2007). EIS Community Engagement Draft: Interim Report. Prepared by Three Plus Pty Ltd on behalf of Shute Harbour Marina Development Pty Ltd.

Tourism Queensland (2007). *Queensland Data Sheet – Year Ended March 2007.* Tourism Queensland, Brisbane.

Tourism Queensland (2006). *Regional Tourism Activity Monitor (R-TAM).* Tourism Queensland, Brisbane.

Tourism Queensland (2004a). *Whitsundays Destination Management Plan.* Tourism Queensland, Brisbane.

Tourism Queensland (2004b). *Queensland Data Sheet – Year Ended June 2004.* Tourism Queensland, Brisbane.

URS (2005). *Rozelle Bay Dry Boat Storage Centre – Environmental Impact Statement.* Report prepared for Rozelle Bay Pty Ltd by URS Asia Pacific, Sydney.

WBM (1998). *Whitsunday Sailing Club Port of Airlie Marina Development Proposal: Draft Impact Assessment Study.* WBM Pty Ltd, Brisbane.

Whitsunday Shire Council (2007a). About Us. http://www.whitsunday.qld.gov.au. Last accessed 21 January.

Whitsunday Shire Council (2007b). *Whitsunday Shire Council Directory.* http://www.whitsunday.qld.gov.au/Directory/s2.asp?S1Key=2&S2key=5&S3Key=42&Show=y&h=0. Last accessed 9/10/2007.

Whitsunday Shire Council (2007c). Vision and Mission. http://www.whitsunday.qld.gov.au. Last accessed 21 January.

Whitsunday Shire Council (2005). *Whitsunday Shire Corporate Plan 2005-2008.* Whitsunday Shire Council, Proserpine.

Yurrah Pty Ltd (2007). Visual Amenity and Landscape Character Assessment Report. Prepared by Yarrah Pty Ltd on behalf of Shute Harbour Marina Developments Pty Ltd.

Appendix A: Accommodation

Table A.1: Accommodation Supply, Airlie Beach and Surrounding Localities

Name	Address	Rooms	Daily Tariff ($)
Apartment			
Baybreeze Whitsunday Coast Resort	21 Shute Harbour Rd	20	160 to 270
Holiday Penthouse	N/a	N/a	N/a
Le Jarden	10 Hermitage Dr	3	150 to 170
Marina Shores	Shingley Dr	25	240 to 500
Martinique Whitsunday	18 Golden Orchid Dr	19	200
Pinacles Resort and Spa	16 Golden Orchid Dr	29	380 to 550
Seastar Apartments	2 Nara Ave	20	160 to 295
Sunlit Waters Studio Apartment	20 Airlie Cres	7	85 to 105
Waterfront Whitsunday	438 Shute Harbour Rd	6	165 to 240
Whitsunday Terraces Resort	5 Golden Orchid Dr	75	118 to 255
Whitsunday Vista Resort	1 Hermitage Dr	32	135 to 270
Total Rooms		*236*	
Bed & Breakfast			
Airlie Beach Myaura Bed and Breakfast	23 Nara Ave	3	95 to 120
Airlie Waterfront B&B	N/a	N/a	N/a
Island View Bed and Breakfast	19 Nara Ave	2	130
Whitsunday Moorings B&B	37 Airlie Cres	2	150 to 175
Whitzend Hideaway Bed and Breakfast	N/a	N/a	N/a
Total Rooms		*7*	
Backpackers			
Airlie Beach YHA	394 Shute Harbour Rd	16	26.5 to 83.5
Airlie Waterfront Backpackers	N/a	N/a	N/a
Backpackers by the Bay	N/a	N/a	N/a
Beaches Backpackers	N/a	N/a	N/a
Koala Beach Resort Airlie Beach	N/a	N/a	N/a
Reefo's Resort	N/a	N/a	N/a
Total Rooms		*16*	
Caravan Park			
Airlie Cove Resort and Van Park	Shute Harbour Rd	92	25 to 42
BIG4 Adverture Whitsunday Resort	25 Shute Harbour Rd	121	22 to 47
Island Gateway Holiday Park	Shute Harbour Rd	157	20 to 45
Mountain Valley Caravan Park	65 Manooka Dr	100	17 to 26
Seabreeze Caravan Park	N/a	N/a	N/a
Whitsunday Wanderers Caravan Park	N/a	N/a	N/a
Total Sites		*470*	
Cottage			
Whitsunday Heritage Can Cutters Cottage	N/a	N/a	N/a
Total Rooms		*0*	
Holiday Unit			
Airlie Apartments	22 Airlie Cres	15	114 to 159
Airlie Court Holiday Units	382 Shute Harbour Rd	6	120 to 180
Airlie Island Traders	N/a	N/a	N/a
Azure Sea Whitsunday Grand Mercure Apartments	Raintree Pl	17	157 to 395
Bay of Airlie Accommodation and Tours	11 Orana St	1	130 to 200
Beach Court Holiday Villas	24 Beach Rd	20	120 to 155
Best Western Mango House Resort	Cnr Shute Harbour Rd and Erromango Dr	33	105 to 290
Boathaven Spa Resort	440 Shute Harbour Rd	27	150 to 490
Colonial Court Holiday Apartments	Cnr Shute Harbour Rd and Broadwater Ave	6	85 to 140
Coral Sea Vista Apartments	5 Hermitage Dr	9	115 to 210
Mediterranean Resorts	14 Golden Orchid Dr	19	170 to 360
Orana Lodge Whitsunday	13 Beach Rd	8	90

Name	Address	Rooms	Daily Tariff ($)
Paradise Court Holiday Units	181 Shute Harbour Rd	8	75 to 125
Portside Whitsunday Resort	406 Shute Harbour Rd	19	155 to 625
Reefside Villas Whitsunday	12 Eshelby Dr	20	145 to 175
Rogers Lagoonfront Units	N/a	N/a	N/a
Sailz Boutique Holiday Villas	24 Pandarus Dr	32	165 to 245
Seaview Apartments	N/a	N/a	N/a
Shingley Beach Resort	1 Shingley Dr	32	140 to 330
Toscana Village Resort	10 Golden Orchid Dr	23	180 to 200
Waters Edge Resort	4 Golden Orchid Dr	46	200 to 490
Whitehaven Beachfront	285 Shute Harbour Rd	6	99 to 140
Whitsunday on the Beach	N/a	N/a	N/a
Whitsunday Palm Tree Resort	N/a	N/a	N/a
Whitsunday Wanderers Resort	N/a	N/a	N/a
Whitsunday Waterfront Apartments	48 Coral Esp	19	85 to 117
Total Rooms		*366*	
Hotel			
Airlie Beach Hotel	Cnr The Esplanade and Coconut Gr	80	109 to 239
Airlie Beach House	13 Oceanview Ave	1	295 to 345
Cannonvale Reef Getaway	Shute Harbour Rd	24	65 to 120
Coral Sea Resort	25 Ocean View Avenue	78	220
Luxury Holiday Home	19 Airlie Cres	1	350 to 500
Seaview House	N/a	N/a	N/a
Total Rooms		*184*	
Motel			
Airlie Beach Motor Lodge	6 Lamond St	9	105 to 112
Best Western Colonial Palms Motor Inn	Cnr Shute Harbour Rd and Hermitage Dr	30	109 to 135
Crocodile Airlie Beach	Shute Harbour Rd	160	98 to 193
Downtown Airlie	346 Shute Harbour Rd	6	80 to 250
The Islands Inn	N/a	N/a	N/a
Total Rooms		*205*	
Serviced Apartment			
Double Cone Whitsunday	Horizons Way	45	230 to 750
Peninsula Airlie Beach	Shingley Dr	42	409 to 589
Total Rooms		*87*	
Villa			
Pallion Villas	N/a	N/a	N/a
Total Rooms		*0*	

Source: RACQ

Appendix B: Community Values & Lifestyle – Literature Review

Whitsunday Local Government Area

Whitsunday Shire Council

The Whitsunday Shire Council is the key local decision making authority in the area with the ability to legislate on local matters pertaining to the Whitsunday community (Local Government Act 1993). The Council produces key planning, corporate and strategic documents which set the operating context for residents and business in the region. These documents, along with the vision of Council provide insight into the values and lifestyle of the Whitsunday community. Key phrases that relate to the values and lifestyle of the Whitsunday are outlined in the following section.

Vision and Mission

The following vision and mission has been adopted by the Whitsunday Shire Council and appears on their website.

> *To be the premier Australian destination of choice, where the Council, the community and the Government work in partnership to ensure a sustainable future for the region, whilst preserving the unique characteristics that are the Whitsundays.*

The following description of the Whitsunday Shire is provided by the Council:

> *The Whitsundays is one of the world's most desirable destinations. It has 74 idyllic islands and is the major gateway to the magical Great Barrier Reef. More than 750,000 tourists flock to the region each year to wonder at what nature bestowed on it. Increasingly, people from all over the world are seeking to make their home here – lured by the charms of a tropical lifestyle.*
>
> *Fortunately, the Whitsundays' future as a protected environment is assured. More than half of the Shire is national parkland, providing a vital life support system for ancient rainforests and exotic wildlife. Yet the area has a vibrant business sector. The driving forces for the local economy are tourism, sugarcane, farming and cattle grazing. Employment prospects are good.*
>
> *The region has a full range of services and facilities, which is why many people are choosing to raise their families here. The Whitsundays will continue to grow – although the growth will be managed with care. After all it's the Whitsundays' natural attributes that bring people here in the first place.*

Source: Whitsunday Shire Council (2007c) www.whitsunday.qld.gov.au

Guiding Principles for Council

The Whitsunday Shire Council summarises its vision for Whitsunday Shire in its 'Guiding Principles for Council' (Whitsunday Shire Council, 2005). These are outlined as follows:

- To act in the best interests of the whole community
- To manage the Shire's finances prudently and effectively
- To provide for the community quality services on a day-to-day basis
- To initiate sustainable capital works programs to enhance the local economy
- To provide excellent customer service for both citizens and visitors
- To support Council's workforce with appropriate training and safe-working practices; and
- To act in the best interests of the natural environment at all times.

Corporate Plan Objectives

The Whitsunday Shire Council's Corporate Plan summarises their objectives for the region between 2005 and 2009 into a series of goal statements outlined below[11]:

Environment
- To provide for development options that reflect local community expectations and government legislation and minimise the impact on the natural environment
- To protect, enhance and promote the Shire's natural assets

Economic
- To foster and support economic development in the Shire
- To be a key player in economic growth in the Shire, in terms of town planning, essential services, advocacy frameworks and financial management'

Lifestyle
- To preserve and enhance the region's cosmopolitan, relaxed, leisure-based lifestyle
- To enhance opportunities for the creation of tourism in the Shire
- To improve the services available to youth, families and communities in the Shire
- To identify and encourage a range of residential opportunities

Shire Profile

The Whitsunday Shire Profile is the key document produced by Council describing the characteristics of the Whitsunday community.

The following description of the Whitsunday area was provided

> *"The Whitsunday Shire is a diverse tropical community where family, lifestyle choice and prosperity go hand in hand. With a stunning location, serviced by modern amenities, the Whitsunday Shire has a relaxed lifestyle and easy going fun loving atmosphere. While the Whitsundays is a modern, progressing shire with all the benefits of a major population centre and international tourist destination, residents can still enjoy peace and quiet with relaxed living."*

Source: Whitsunday Shire Council (2007a)

Whitsunday, Hinterland and Mackay Regional Plan

The Whitsunday Shire Council has been involved in the development of the Whitsunday Hinterland and Mackay Regional Plan (WHAM Regional Plan). This plan outlines the broader vision for the Whitsunday Shire to 2015 within a regional planning context. The following statements are taken from the Regional Plan and describe the future vision for social infrastructure in the WHAM region. These statements are considered indicative of the values that the community seeks to enhance and protect:

- "The region has social infrastructure that creates and inspires the highest quality of life for all people of the region
- Citizens feel at ease and enjoy a safe and secure lifestyle
- Living a healthy life is promoted and practised throughout the region
- The region is enlaced with a network of learning communities
- The region benefits from a comprehensive network of open space, protected by sound environmental management practices supported by a hierarchy of recreational and leisure facilities and opportunities
- The diverse and discrete character and charm of the region's districts and towns and the role of these places in the development of the region is recognised, retained and valued
- Living a healthy life is promoted and practiced throughout the region
- Social infrastructure services and facilities are provided in an efficient and timely manner to meet the needs of the community
- Threats to public safety and health associated with the natural and built environments are minimised and properly managed
- All areas of the region have access to adequate health services

[11] Goal statements referring specifically to the Organisational Operations of Council have been excluded.

- The region has an integrated system of education, training and adult learning for its communities"

Source: WHAM Regional Plan (2006)

The following statements are taken from the regional overview chapter of the report in the Lifestyle subsection.

> *"The lifestyle is distinctly casual with a focus on the outdoors. The region's residents enjoy life, and leisure pursuits are increasingly acquiring a national or international orientation. This can be seen in the commercialisation of tourism, entertainment, fashion, sport and the arts*
>
> *The region's community is diverse with specific housing, service and infrastructure and liveability needs, reliant on the employment opportunities provided in the region. There is also a strong sense of community and a desire to determine the region's own future as well as maintain strong cultural and community values*
>
> *The appropriate approach for managing growth and development in the region is to foster its strengths and enhance the benefits to the region's community whilst minimising any negative impacts. The key regional economic, social, environment and urban development values need to be protected and enhanced where possible and for economic and community development to be support with timely and effective delivery of infrastructure and services"*

Source: WHAM Regional Plan (2006)

Wellbeing and Livelihood Study – Whitsunday Shire

This study conducted by Larson on behalf of the CSIRO in 2007 involved surveying a sample population from the Whitsunday Shire to establish the key factors influencing their personal wellbeing, and to generate a measure of the average level of wellbeing of residents in the region across key areas.

The survey involved a mail out survey questionnaire and face-to-face interviews with community members. The results were then analysed to obtain information regarding the key factors that members of the community considered important to their personal wellbeing.

A total of 194 persons participated in the study. The following summarises the results from the study. These results were published in the Report for the Community released in June 2007.

Respondents were asked to select five to seven factors that are the most important to their personal wellbeing. The following areas were selected by more than half of the respondents as important to their wellbeing across the three domains of society, ecology and economy.

Table B.1. Wellbeing and Livelihood Study - Results

Domain/area	% respondents
Society domain (family and community issues)	
Personal/family health	91%
Family relations	86%
Personal/family safety	85%
Sport, travel and entertainment	71%
Personal/family educational levels	60%
Community relations	58%
Ecology domain (issues related to the natural environment)	
Water quality	88%
Air quality	78%
Condition of landscape/beaches	78%
Beauty of landscape/beaches	74%
Access to natural areas	67%
Swimming and bushwalking	66%

Domain/area	% respondents
Soil quality	57%
Fishing and collection of produce	52%
Economy domain (issues related to employment and services)	
Health services of respondents	81%
Income	81%
Condition of the roads	68%
Recreational facilities	64%
Housing	60%
Work	60%
Training/educational services	51%

Source: Larson (2007)

Respondents were also asked to assign points to indicate importance of each factor they selected. The areas receiving the greatest number of points are outlined below

Society domain
- Family relations
- Personal/family health
- Personal/family safety
- The society domain received 43% of the total points allocated across the survey

Economy domain
- Income
- Health services
- Condition of the roads
- The economy domain received 29.5% of the total points allocated

Ecological domain
- Water quality
- Air quality
- Condition of landscape and beaches
- The ecology domain received 27.5% of all points allocated across the survey

The Surrounding Area – Airlie Beach, Cannonvale, Jubilee Pocket

The following descriptions of the localities surrounding Shute Harbour were provided by the Whitsunday Shire Council and published on their website in the 'About Us' section. The following excerpts have been taken from the descriptions provided on this website of each of the communities in the Shire (Whitsunday Shire Council, 2007).

Whitsunday Shire Council- Locality Descriptions

Proserpine

- The administrative hub for the Whitsunday Shire
- Lies amid a sea of lush green canefields
- An anchor for the Whitsundays region providing some key infrastructure including the rail station, the mainland airport for scheduled jet services, a high school, the hospital and other vital services.
- Has grown from its 19th century foundations on the success of the sugar and cattle industries
- The town has an operating sugar mill and during the winter months of harvest the evening skies are often lit up with the spectacle of massive cane fires set before the harvest — a highlight for visitors to the region
- The Cultural Centre is a focus for the community and is the venue for regular cinema screenings
- Discover the variety of country shops and the life of one of Queensland's rural towns with its friendly people and welcoming pubs, where you can cool off with a cold beer and fill up with a typical country-sized Australian Counter Lunch
- Ideal spot for sailing and watersports and an even better location for freshwater fishing
- Prepare yourself for some of the wildlife to be seen on the local eco tour of the Proserpine River with Whitsunday Crocodile Safari

- Offers a change in scenery and pace with a chance to taste a little of regional Australia

Cannonvale

- On the way to Airlie Beach
- Fast becoming a prominent business centre
- Two good size shopping centres, two primary schools (one public, one private)
- Support base for the boating and tourism industries
- Caters to the tastes and activities of younger families

Shingley Beach

- Lovely area overlooking the marina where soft grassy slopes lead down to the beach
- Local Outrigging group launch from here, which is a popular sport in the Whitsundays.
- Romantic place for wedding ceremonies
- Hypnotic view over the water and the sound of the gentle lapping of the waves upon the shore
- Tucked into the hill is resort accommodation, so you can have this view every day should you choose
- This is the place to go to if you yearn for a little privacy

Airlie Beach

- The gateway to the Whitsunday Islands
- A colourful, cosmopolitan and inviting holiday town
- Part of a picturesque peninsula that reaches out to the Whitsunday Passage
- Provides the ideal mainland base for holiday fun and adventure in the Whitsundays
- Relaxed tropical ambience as you wander around the village streets
- Offers visitors a broad array of accommodation
- Provides many of the essential services for travellers in the region
- Dining and entertainment options centre around Airlie Beach, ranging from silver service resort dining to al fresco cafes and cheap eats
- Clubs and bars provide plenty of entertainment well into the night

Kelsey Creek and Dittmer

- During the gold rush era Kelsey Creek became a central vibrant township
- Now…quiet spots with a few residents, buildings and early remains of the past

Conway Beach and Wilson Beach

- A typically laid back Aussie beachside community
- It has a spectacular beach ideal for long strolls. Conway Beach has a caravan park, toilets and shaded picnic spots.
- A short drive away is Wilson Beach, an even quieter haven.

Hydeaway Bay and Dingo Beach

- Laidback beachside haven
- Rapidly putting itself on the real estate map
- It is a beachcomber's joy
- Stroll along several kilometres of long, wide sands
- Picnic under the shady trees
- Enjoy talking to the great Aussie characters at the local store and bar
- Visit the dugong sanctuary.
- Explore the secluded bays of Gloucester Island. East Side Bay has a lagoon that abounds with crabs and fish.
- Peaceful Hydeaway Bay -another budding real estate oasis with magnificent views over the less-well known northern group of Whitsunday Islands

Source: 'Whitsunday Shire Council (2007a) (http://www.whitsunday.qld.gov.au)

The Immediate Area – the Shute Habour Community

The following information has been taken from the results of specific studies involving the Shute Harbour community. These results are considered to be indicative of the views of residents in Shute Harbour/Haven.

Shute Harbour Marina Project – Community Consultation Report (Three Plus)

This data was collected via a survey provided to those attending the information day. The survey questions related to the benefits and limitations that were perceived to be likely as a result of the proposed development. These were then categorised into key themes, and the number of benefits or limitations relating to these key themes were analysed. The results are provided in the table below.

Table B.2. Content analysis of open-ended questions

Social Variables	No. of Benefits	No. of Limitations	Total
Demographic & population change	1	1	2
Housing and accommodation	0	0	0
Mobility and access	1	2	3
Community facilities (social infrastructure)	3	1	1
Social and political institutions	1	0	0
Heritage & cultural values and beliefs	0	0	0
Community identity and cohesion	2	0	2
Health	0	0	0
Leisure and recreation	1	1	2
Natural environment	3	4	7
Risk perception	0	0	0
Crime and public safety	1	0	1
Social and visual amenity	0	4	4
Employment	2	0	2
Local economic effects	4	4	8
Property values	0	0	0
Total	**19**	**17**	**36**

Source: Three Plus (2007)

The following summary outlines the concerns that were raised by attendees at the briefings regarding the proposed development. Individual issues have been grouped into themes that are indicative of the main area of concern identified by stakeholders.

Summary of key consultation themes

Table B.3. Themes raised at briefings

Themes	Number of Issues Raised	Percent Share
Moorings/constraints to recreational boating	9	13.4%
Boating infrastructure needs	7	10.4%
Planning Concerns	7	10.4%
Environmental concerns	5	7.5%
Lease arrangements/property rights	4	6.0%
Road/traffic issues	4	6.0%
Communication between developer and community	3	4.5%
Economic opportunities	3	4.5%
Link to transit terminal	3	4.5%
Community engagement - Community Reference Group	2	3.0%
Community infrastructure needs	2	3.0%
Design/character of development	2	3.0%
Height of development	2	3.0%
Marina berths	2	3.0%
Marine House concept	2	3.0%
Support development/positive towards proposal	2	3.0%
Visual amenity	2	3.0%
Consultation	2	3.0%
Construction duration	1	1.5%
Fees for Marina use	1	1.5%
Parking	1	1.5%
Population density impact	1	1.5%
Total	67	100.0%

Source: Three Plus (2006), AEC*group*

Themes raised during the information day across stakeholder groups are provided in the table below along with indicative comments relating to that theme.

Table B.4. Themes raised during information day

Themes	Comments
EIS	• Commencement date • What will be included?
Loss of recreational yachting amenity	• Swing moorings currently available to owners of recreational boats will be sacrificed to marina berths • Loss of public boating area • How many swing moorings will be lost? • Compensation
Dredging	• What will be required? Will the channel be dredged? • Impact on sensitive ecosystem?
Disposal of Dredging Spoil	• Where will spoil be deposited? • What will the spoil area look like from Shute Harbour Road? • How long will spoil take to dry out?
Marina berths	• How many? Cost? Maintenance facility?
Safety	• Narrow access to existing area used by recreational boats and boat ramp • Super yachts - navigation of channel? • Increased traffic through Airlie Beach and along Shute Harbour Road
Environment	• Sensitive ecosystem
Height	• Built form - how high above ground level? • Proposed height of residences (five storeys) against Whitsunday Council's Strategic Plan
Infrastructure	• Power supply already inadequate • Sewerage treatment • Upgrade of Shute Harbour Road
Iconic vista	• Visual impact • Need to preserve vista along Shute Harbour Road • What will be visible from road?
Footprint	• How far will marina extend
Construction	• When would it start? How long will it take? Will it be staged?
Residential precinct	• How wide are the frontages along #2? • What is the wall fronting Shute Harbour Road made from?

Source: Three Plus (2006)

Shute Harbour Planning Study: Interim Report –Issues and Values

The Shute Harbour Planning Study: Interim Report – Issues and Values was prepared by Jackson Planning and Buckley Vann Town Planning Consultants on behalf of the Whitsunday Shire Council and the Department of Local Government, Planning, Sport and Recreation.

The report, published in June 2007 outlines the outcomes of the first two stages of the Planning Study project. The final report, encompassing the final stage of the project, aims to outline a strategic direction to guide future planning decisions in the Shute Harbour area.

Consultation with the Shute Harbour community was undertaken as part of this study. The consultation involved individual discussions with key community representatives, and two public forums where participants were asked to consider “the key issues facing Shute Harbour”, and “the potential options for its future role.” (Jackson Planning and Buckley Vann, 2007).

The following consultation summary was provided in the report:

- “All stakeholders appeared to agree that the environmental and visual values should be maintained;
    - This included keeping Shute Harbour as pristine and natural as possible, allowing access for all people to the unique environment and maintaining biodiversity;

- The majority of stakeholders appeared to agree that the existing port function (including transit Facility, barge facility and other marine based functions) needs to remain at Shute Harbour;

- Most stakeholders appeared to agree that the existing Shutehaven residential area should not be expanded (ie development should be kept to the existing footprint);

- All stakeholders appeared to agree that future development must be at an appropriate scale and height, and many suggested that development should remain within the existing footprint;

- The majority of stakeholders appeared to agree that conflicts between land uses should be avoided and where necessary, managed;

- Most stakeholders appeared to agree that waterways management (for recreational and commercial Marine activities) needed to be resolved;

- There was some disagreement about whether there was a need for a marina in Shute Harbour. The majority of stakeholders appeared to feel that there was no identified need for a marina at Shute Harbour, while some stakeholders held an alternative view;

- All stakeholders appeared to agree that safe and efficient access to/ from all port functions is required, that conflicts between heavy vehicle movements and other vehicle movements should be minimized and access on Shute Harbour Road should be addressed; and

- Most stakeholders appeared to agree that car parking and public transport issues needed to be resolved."

Source: Jackson Planning and Buckley Vann, (2007)

Community Values and Lifestyle

Community values

Recreational values and the quiet character of residential and recreational areas are highly valued by the community, as are its environmental values.

Consultation results from the Shute Harbour Planning Study, and Shute Harbour Marina Project, indicate that the Shute Harbour community values the following aspects of their community and lifestyle:

- Accessibility to waterways and moorings for recreational boating;
- Preservation/protection of the area's environmental values and biodiversity, including marine water quality;
- Restrictions on development activity in Shute Harbour– including limitations on height, scale and further expansion of the urban footprint;
- Visual amenity and aesthetic values relating to scale of development and 'iconic views';
- Management of waterways for recreational and commercial marine activities;
- Safety – including road and water safety;
- The importance of Shute Harbour as a transit terminal and port;
- The existing quiet character of the area;
- Connection to place and custodianship over the environment; and
- Identification with a 'tropical' lifestyle that was distinct from a 'southern' lifestyle and influenced the design of the township.

Residents also expressed both positive and negative views of the amenities within their community. Issues frequently occurring within the consultation conducted by Three Plus and Jackson Planning & Buckley Vann were:

- Limited or constrained infrastructure, including power, sewerage and public transport; and
- Road/traffic issues, including the safety of Shute Harbour Road.

The consultation also suggests that Shute Harbour is viewed as having a distinct and separate character and identity from Airlie Beach.

Within the broader context of the Whitsunday local government area, the following characteristics are also considered likely to exist in the Shute Harbour community:

- Identification of clearly delineated nodes of activity within the Shire, particularly Airlie Beach, Proserpine and Cannonvale;
- A focus on sustainable development at a local and regional level;
- Centrality of the Whitsunday Islands to the region's economic prosperity;
- Recognition of the unique environmental values of the region and a desire to protect these values;
- Sense of a coastal 'retreat' or 'hideaway' associated with the less densely populated areas of the Whitsunday Shire (including Shutehaven) as opposed to the busier character of Airlie Beach;
- Laidback and casual lifestyle focusing on the outdoors, in particular recreational use of waterways and beaches; and
- A desire to manage growth pressure in the community in accordance with social justice and ecological sustainability principles.

Demographic Characteristics

Based on the 2006 Census data for the Shutehaven community and area immediately bordering Shute Harbour Road, residents of Shute Harbour exhibit the following characteristics:

- Significantly higher median age (50 years) than the Whitsunday average (36 years);
- Significantly higher proportion of couple families without children (70.7% of all families) than the Whitsunday average (46.6% of all families);
- More than double the proportion of other dwellings (caravan, cabin, houseboat) than the Whitsunday average (32.4% compared to 14.3%);
- Below average proportion of flats, apartments and unit dwellings;
- Higher than average levels of dwelling ownership and lower than average levels of renting;
- Employment primarily in services, tourism and water transport industries, including accommodation, school education, water transport support services, transport equipment manufacturing and adult, community and other education;
- Slightly higher than average levels of household income;
- No unemployed persons; and
- No persons identifying as Indigenous.

A sense of community is apparent in the local area, including neighbourly connections, and an affinity with local recreational and employment places.

Given the limited facilities and infrastructure within Shute Harbour (see Section 4) it is anticipated that residents of Shutehaven would utilise the community, retail and commercial services in neighbouring townships for their day-to-day needs. The primary service sites are anticipated to be Airlie Beach, Proserpine and Cannonvale. The recreational amenity and quiet lifestyle are seen locally as a compensation for lack of more immediate community and commercial facilities. That notwithstanding, access to facilities provided as part of the development are likely to be valued by some community members.

Appendix C: Cost Benefit Assessment

This Appendix provides an assessment of the net benefit of the SHMD using a Cost Benefit Analysis (CBA) framework. The assessment aligns with the CBA conducted and reported in the *Shute Harbour Marina: Net Benefit Assessment* (AEC*group*, 2008b).

Methodology

Overview

A Cost Benefit Analysis (CBA) is utilised in this analysis to identify if the benefits delivered by the proposed development are anticipated to outweigh the costs of the development, which in this case is applied across the triple bottom line.

CBA is an analytical tool that identifies and attempts to quantify the relative costs and benefits of a project and converts available data into manageable and comparable information units. The strength of the method is that it provides a framework for analysing complex and sometimes confusing data in a logical and consistent way.

CBA assesses the impact of a development by comparing the “with” and “without” scenarios, and is useful in assessing the net benefits accruing to society as a whole as a result of a project. The CBA method considers the effect of real resource costs and benefits, and excludes, for example, taxes and subsidies, which are regarded as transfer payments from one part of the economy to another.

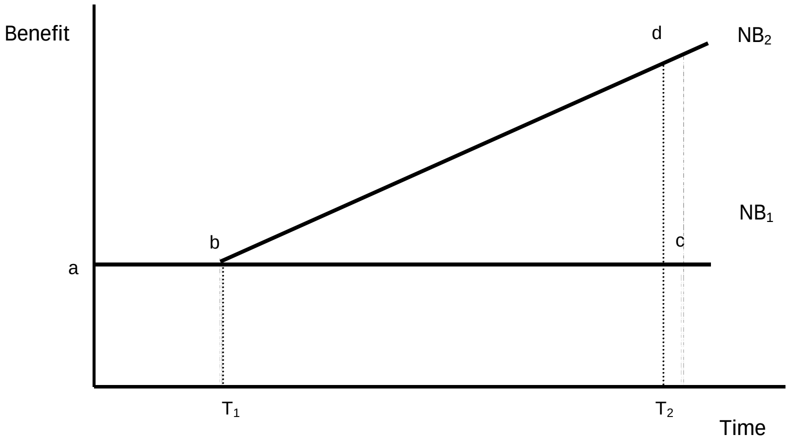
A detailed overview of the steps undertaken in the CBA process is discussed below. The methodology used is consistent with the Queensland Department of Treasury’s Cost Benefit Analysis Guidelines (2006), the Environmental Protection Agency’s guidelines for Environmental Economic Valuation (2003a) and the Environmental Protection Agency’s Information Sheet on techniques for environmental economic valuation (2003b).

Step 1: Define the Scope and Boundary

To enable a robust determination of the net benefits of undertaking a given project, it is necessary to specify base case and alternative case scenarios. The base case scenario represents the “without project” scenario and the alternative or “with project” scenario examines the impact with the program in place.

The base case (without) scenario is represented by line NB_1 (bc) over time T_1 to T_2 (Figure 9.2). The investment at time T_1 is likely to generate a benefit, which is represented by line NB_2 (bd). Therefore the net benefit flowing from investment in the SHMD is identified by calculating the area (bcd) between NB_1 and NB_2.

Figure C.1. With and Without Scenarios



Source: AEC*group*

In this assessment the CBA is conducted over a 30 year time frame. 30 years has been selected as the generally acceptable point at which future flows of benefits and costs approximate zero due to discounting.

Step 2: Identify Costs and Benefits

A comprehensive quantitative specification of the benefits and costs included in the evaluation and their various timings is required and includes a clear outline of all major underlying assumptions. These impacts both positive and negative are then tabulated and where possible valued in dollar terms.

Some impacts, such as environmental and social impacts may not be quantifiable. Where this occurs the impacts and their respective magnitudes will be examined qualitatively for consideration in the overall analysis.

Step 3: Quantify and Value Costs and Benefits

CBA attempts to measure the value of all costs and benefits that are expected to result from the activity in economic terms. It includes estimating costs and benefits that are 'unpriced' and not the subject of normal market transactions but which nevertheless entail the use of real resources. These attributes are referred to as 'non-market' goods or impacts. In each of these cases, quantification of the effects in money terms is an important part of the evaluation.

However, projects frequently offer non-market benefits and costs that can be difficult to quantify. Where the impact does not have a readily identifiable dollar value, proxies and other measures should be developed as these issues represent real costs and benefits. Some commonly utilised techniques for valuing non-market impacts are outlined in the table below.

Table C.1. Valuation Techniques

Type of Valuation	Valuation Technique	Description
Stated Preference Valuation	Contingent Valuation (CVM)	This technique uses a simulated or hypothetical market to directly assess the willingness to pay (WTP) or the willingness to accept compensation (WTAC) for a particular environmental outcome. The survey-based approach can be used to measure both use and non-use values, and is generally applied in assessing a dollar value to a change in or preservation of environmental quality.
	Choice Modelling (CM)	Similar to CVM, choice modelling (CM) utilises stated preferences of respondents to rank or rate different scenarios. Respondents must choose between specific options presented to them. CM can produce independent values for the specific attributes of an environmental program.
Revealed Preference Valuation (surrogate market based)	Hedonic Pricing	Hedonic pricing employs the use of surrogate markets to value environmental quality. Property and labour markets are widely used for this technique.
	Travel Cost	This valuation technique is based on the assumption that demand for an asset is revealed by a willingness to spend money and time travelling to the particular site. It is also assumed that expenditure is higher for travel to more valuable sites. This methodology is best used in assessing amenity or recreational value.
Revealed Preference Valuation (market based)	Factor of Production	The factor of production technique is limited to assets that are used in the production process of goods and services within the market, as it uses the direct value in production as an indicator of the environmental worth.
	Producer/ Consumer surplus	This technique is a calculation of both producer and consumer surplus.
	Defensive Expenditure	This valuation technique is based on expenditure that is made on behalf of the public or specific industry in prevention or counteraction of environmental damage (such as pollution).

One commonly used method of approximating values for non-market impacts is 'benefit transfer'. Benefit transfer (BT) means taking already calculated values from previously conducted studies and applying them to different study sites and situations. In light of the significant costs and technical skills needed in using the methodologies outlined in the table above, for many policy makers utilising BT techniques can provide an adequate solution.

Context is extremely important when deciding which values to transfer and from where. Factors such as population, number of households, and regional characteristics should be considered when undertaking benefit transfer. For example, as population density increases over time, individual households may value nearby open space and parks more highly. Other factors to be considered include, depending on the location of the original study, utilising foreign exchange rates, demographic data, and respective inflation rates.

Benefit transfer should only be regarded as an approximation. Transferring values from similar regions with similar markets is important, and results can be misleading if values are transferred between countries that have starkly different economies (for example a benefit transfer from the Solomon Islands to Vancouver would likely provide limited accuracy of results). However, sometimes only an indicative value for environmental assets is all that is required.

Step 4: Tabulate Annual Costs and Benefits

All identified and quantified benefits and costs are tabulated to identify where and how often they occur. Tabulation provides an easy method for checking that all the issues and outcomes identified have been addressed and provides a picture of the flow of costs, benefits and their sources.

Step 5: Calculate the Net Benefit in Dollar Terms

Because costs and benefits are specified over time it is necessary to reduce the stream of benefits and costs to present values. The present value concept is based on the time value of money – the idea that a dollar received today is worth more than a dollar to be received in the future. The present value of a cash flow is the value today that is equivalent to a cash flow in the future. The time value of money is determined by the given discount rate to enable the comparison of options by a common measure.

The selection of appropriate discount rates is of particular importance because they apply too much of the decision criteria and consequently the interpretation of results. The higher the discount rate, the less weight or importance is placed on future cash flows.

The choice of discount rates should reflect the weighted average cost of capital. For this analysis, impacts accruing to the proponent (for the purposes of this analysis termed direct impacts) and those accruing to other stakeholders (termed indirect impacts[12]) have been discounted at different rates, as outlined below.

Table C.2. Discount Rates Used

Direct Impacts	Indirect Impacts
6%	5%
8%	6%
10%	7%
12%	10%

Note: The cells shaded grey represent the base scenario used for the CBA.

The formula for determining the present value is:

$$PV = \frac{FV_n}{(1+r)^n}$$

Where:

PV = present value today
FV = future value n periods from now
r = discount rate per period
n = number of periods

[12] The terms "direct" and "indirect" used in this CBA should not be confused with the terminology of direct and indirect impacts in a standard Economic Impact Assessment (EIA). For the purposes of this assessment, direct impacts refer to those accruing to the proponent, while indirect impacts are those accruing to other stakeholders. In an EIA, direct impacts are those accruing directly as a result of expenditure on a project and represent the first round of effects of expenditure on goods and services, while indirect impacts comprise the second and subsequent round effects of increased purchases by suppliers in response to increased sales. In a CBA, the indirect impacts assessed in an EIA should not be included.

Extending this to a series of cash flows the present value is calculated as:

$$PV = \frac{FV_1}{(1+r)^1} + \frac{FV_2}{(1+r)^2} + \cdots + \frac{FV_n}{(1+r)^n}$$

Once the stream of costs and benefits have been reduced to their present values the Net Present Value (NPV) can be calculated as the difference between the present value of benefits and present value of costs.

Step 6: Scenario and Risk Analysis

Scenario and risk analysis allows for the testing of the key assumptions and the identification of the critical variables within the analysis to gain greater insight into the drivers to the case being examined. Variables such as the adoption rate or percentage of uptake may have a significant impact on the outcome of the analysis.

Decision Criteria

The key decision criteria that are investigated in the CBA are:

- **Net present value (NPV)**: represents the present value of all benefits minus the present value of all costs. If the net present value is positive, (i.e. present value of benefits is greater than the present value of costs) then the option or project is considered economically desirable and will provide net benefit; and
- **Benefit cost ratio (BCR)**: is the present value of benefits divided by the present value of the costs. If the resulting BCR is greater than one (1) then the option or project is considered economically desirable and will provide net benefit. The higher the BCR the greater the quantified economic benefits compared to the quantified economic losses.

Key Assumptions

- The economic planning period is 30 years due the impact of discounting beyond this time scale;
- It is assumed that no alterations or additional features to the proposed development will occur over the next 30 years;
- The base assessment is conducted from the point of view of the State, with a regional (Mackay SD) context for the assessment outlined in the sensitivity analysis; and
- All values are expressed in 2007 dollars.

Identification of Impacts

The following section outlines the potential environmental, economic and social costs and benefits associated with the proposed Shute Harbour Marina development identified in the relevant technical documents, including their causal activity and description. The impacts are also characterised as either direct (i.e. experienced by the proponent) or indirect (experienced by external stakeholders) impacts. For full details of the impacts associated with the Shute Harbour Marina Development refer to the relevant sections of the EIS and the associated technical documents.

The impacts identified in the tables below are those that are expected to occur as a result of the development and are included in the CBA as relevant. Potential impacts that are considered unlikely to occur (for instance, due to appropriate strategies to be applied to mitigate or prevent an impact) are not included in the tables below as they are not deemed relevant to the CBA. Each impact is quantified where possible and valued in monetary terms. All values are presented in 2007 dollar terms.

Not all impacts can be readily quantified in dollar terms. To ensure all project impacts are adequately considered, those impacts not readily attributed a monetary value are discussed qualitatively. These impacts are predominantly social amenity and lifestyle impacts, which are inherently difficult to quantify in monetary terms.

Costs

Impact	Activity and Description	Impact Type (Direct / Indirect)	Impact Quantified (Yes / No)	Phase	
				Construction	Operation
Economic					
Cost of approvals	The proponent is expected to incur a cost of approximately $4.0 million in obtaining development approval for SHMD. This cost is assumed to occur in the first year of the analysis (2008).	Direct	Yes	Yes	
Construction cost of the marina and related amenities	The proponent will incur costs in developing the marina and associated marina amenities. Construction of the marina and related amenities will be undertaken during the 30 month construction period. Marina construction costs include all expenditure incurred in constructing the sea wall, breakwater, marina berths, marina office and associated car parking and amenities, as well as dredging of the marina site. Development of the marina and related amenities is anticipated to have a total cost of approximately $72.5 million.	Direct	Yes	Yes	
Construction cost of the land based aspects of the development	The proponent will also incur costs related to constructing the land based aspects of the development. Construction of the land based aspects of the Shute Harbour Marina Development will be undertaken during the 30 month construction period. Costs associated with the land based aspects of the development include reclamation of the site and site development, as well as construction of the tourist resort, retail and commercial areas, open space, roads and pathways and includes a provision for appropriate headworks charges (a discussion of additional infrastructure requirements is included in Appendix D). Development of the land based aspects of SHMD is anticipated to have a total cost of approximately $171.9 million, distributed over the 30 month construction period.	Direct	Yes	Yes	
Ancillary costs including contributions to the community	Additional ancillary costs will be incurred by the proponent during the course of the development, including initial expenditure of approximately $2.5 million assumed to occur in the second year of development (2009) and a $2.5 million contribution to Whitsunday Shire Council for the development of a boat ramp (separate to this project) in 2010.	Direct	Yes	Yes	Yes

Impact	Activity and Description	Impact Type (Direct / Indirect)	Impact Quantified (Yes / No)	Phase	
				Construction	Operation
Reef Conservation Fund	As part of the development the proponent will develop a "Reef Conservation Fund" to be operated as a charitable fund with the funds administered by the Great Barrier Reef Marina Park Authority, and will be funded from the sale of leases for marina berths. The initial contribution, to be provided by the proponent upon settlement of each marina berth, is identified to be approximately $1.0 million. The terms of the lease will also require ongoing contributions from marina berth lessees, with a total value of approximately $150,000 per annum to be contributed from lessees starting from 2011. This fund will contribute to the ongoing sustainability of the reef by providing environmentally friendly moorings on the reef that minimise disruption to benthic communities and provide space for boaters to safely moor their boat away from environmentally sensitive sites. [a]	Direct & Indirect	Yes	Yes	Yes
Cost of Managed Resort Accommodation development	When the site preparation works have been completed, the 117 lots in the Managed Resort Accommodation precinct will be sold to secondary parties who will then undertake secondary development work in accordance with the site master plan (i.e. construction of buildings on the divided lots). The total cost to secondary investors of purchasing the lots is estimated to be approximately $202.5 million. When fully operational, the Managed Resort Accommodation precinct is anticipated to include approximately: • 146 one, two or three bedroom units/ suites, comprising 91 water front units and 55 non-water front units; and • 61 single lots, comprising 32 water front single lots and 29 non-water front single lots (it is assumed that separate dwelling managed resort accommodation will be developed on these single lots). Using construction cost estimates from Rawlinsons (2007) for prestige quality house and unit accommodation in the Mackay and Rockhampton regions, it is estimated that the total building costs in the Managed Resort Accommodation precinct will be approximately $104.5 million. The first land release is anticipated to occur in 2010, with lots released over a four year period, with the last lot sold in 2013. For the purposes of the CBA it is assumed that building construction expenditure by secondary developers occurs one year after the release and purchase of the land, with the final building expenditure costs forecast to be incurred in 2014. The total development cost of the Managed Resort Accommodation, including the capital cost of purchasing land and developing the accommodation, is estimated to be $307.0 million.	Indirect	Yes	Yes	

Impact	Activity and Description	Impact Type (Direct / Indirect)	Impact Quantified (Yes / No)	Phase	
				Construction	Operation
Cost of purchasing a lease on a marina berth	The proponent will sell long term (assumed 35 years) leases to third parties for the 669 marina berths, charged on a linear metre basis. The development will result in approximately 11,859 lineal metres of marina berths, with an estimated lease cost of approximately $12,000 per lineal metre. The expected schedule for release of marina berths is as follows (Malcolm Hall-Brown, 2007): • 1,000 lineal metres/year between 2010 and 2013; • 1,500 lineal metres in 2014; • 1,000 lineal metres in 2015; • 500 lineal metres/year between 2016 and 2025; and • 359 lineal metres in 2026. The overall cost to third parties is estimated to be approximately $142.3 million over the 30 years of the analysis, which is paid to the proponent as identified in the direct impacts section.	Indirect	Yes		Yes
Additional social, community and recreational infrastructure and services	The analysis of population-based benchmarks outlined in Sections 6.4.3 and 6.4.4 indicates that the current level of social, community and recreational infrastructure and services should generally have capacity to cater to the increase in population expected as a result of the SHMD. However, health care service levels and the provision of sports fields and tennis courts appear to be currently under stress. It is not possible to quantify the cost of these facilities, as the exact nature of the demand will not be known until the market develops. The provision of health services and sports fields is generally provided by the public sector, while tennis courts are commonly provided by both the private and public sectors. It is assumed the provision of private sporting (tennis) facilities would not occur unless demand was sufficient for them to be commercially viable. In the case of additional publicly provided facilities and services, developer contributions are assumed to be set at the level where there is no upward pressure on rates or utilities charges, which implies no marginal cost to external stakeholders and no impact on this analysis (for example, rates charges are a transfer payment between external stakeholders). Additionally, SHMD Pty Ltd has committed a contribution of $2.5 million to the Whitsunday Shire Council to upgrade the existing boat ramp and associated facilities at Shute Harbour should the proposed marina proceed. As well as adding to the local amenity, this would reduce the current overcrowding at the existing facility and provide some capacity to accommodate predicted growth in community demand for this facility. This funding support would also save Whitsunday Shire Council from having to fund this expenditure from their capital budget.	Indirect	No		Yes

Impact	Activity and Description	Impact Type (Direct / Indirect)	Impact Quantified (Yes / No)	Phase	
				Construction	Operation
Transfer of business activity from elsewhere in Queensland	The SHMD is expected to result in the transfer of some business activity flowing from the attraction of visitors and their expenditure from elsewhere in Queensland to the marina, charter boat base, tourism precincts, retail and commercial precincts, and other businesses in the surrounding service centre of Shute Harbour. For the purposes of assessing the economic impact to Queensland, the analysis needs to consider the transfer of business from other areas of the State to the SHMD associated with the attraction of visitors (and their expenditure) from these areas due to the development of the SHMD. For the purposes of assessing the impact of SHMD, it is assumed that approximately 40% of expenditure at the various elements of the SHMD would have otherwise occurred within other areas of Queensland, with the exception of the marina itself where it is anticipated that only 10% of visitors would have gone elsewhere in the State. This is considered to be a highly conservative assumption with the actual transfer likely to be much lower. For the purposes of this analysis, only the value added component of this output has been used to reflect the economic value of this loss. In the analysis, the business activity transferred from elsewhere in Queensland as a result of the SHMD is estimated to be approximately $12.16 million per annum once in steady state operation.	Indirect	Yes		Yes
Social					
Increased road traffic (Shute Harbour Road)	The activity surrounding the marine precinct and associated facilities will increase local traffic including larger numbers of vehicles, boats and trailers on Shute Harbour Road (refer Section 6.5.1).	Indirect	No	Yes	Yes
Decreased water safety from increased water traffic	The marina will increase the number of vessels using and located in Shute Bay, increasing the risk of accident incidence (refer Section 6.5.2).	Indirect	No		Yes
Loss of cultural heritage	Development of the SHMD has the potential to result in a loss of cultural heritage values associated with the site to traditional owners (refer Section 6.4.6).	Indirect	No	Yes	Yes
Increased demand for accommodation and housing	The influx of construction and operational workers to the region may place additional pressure on an already limited housing supply in the Whitsunday Shire and surrounding regions (refer Section 6.4.5).	Indirect	No	Yes	Yes
Increased demand for community and recreational services and facilities	Growth in employment and population during both construction and operation will increase the demand for community and recreational service and facilities in Whitsunday Shire and the broader service centre (refer Sections 6.4.3 and 6.4.4).	Indirect	No	Yes	Yes
Noise impacts	Noise impacts include those generated through the use of machinery and equipment during the construction phase. Noise impacts during the operational phase of the development are not assessed as individual businesses will be required to operate within the requirements of the governing agency so as not to have external affects (refer Section 6.4.2).	Indirect	No	Yes	

Impact	Activity and Description	Impact Type (Direct / Indirect)	Impact Quantified (Yes / No)	Phase	
				Construction	Operation
Changing community values and lifestyle	The development has the potential to impact on the accessibility to and enjoyment of recreational boating activities in the area, which is a key characteristic of the local community's lifestyle. Additionally, the attraction of up to 493 people in the marina, tourism precinct and related facilities has the potential to change the level of community cohesiveness and the identity of the Shute Harbour community (refer Section 6.4.2).	Indirect	No		Yes
Environmental					
Removal of seagrass/ macroalgae	Dredging of the marina basin is expected to result in the removal of approximately 14.68 hectares of seagrass and 34.0 hectares of macroalgae beds that exist within the marina footprint (FRC Environmental, 2007). These communities play an important role in the overall ecosystem function of Shute Bay, in particular by providing habitat for a number of aquatic species and a source of organic matter for nutrient cycling. Nutrient cycling occurs when mineral bearing rocks or organic matter (i.e. from decomposing plants or animals) is broken down and absorbed by the soil. These nutrients are then made available to growing plants and subsequently animals, thus continuing the cycle. The removal of seagrass and macroalgae is likely to reduce the level of nutrient cycling, which could result in degraded water and soil quality in and around the marina footprint (CRC Reef Research Centre, 2004). Seagrass and macroalgae communities are estimated to provide a total ecosystem value, adjusted to 2007 dollar terms (refer Appendix E), of approximately $35,000 per hectare per year (Costanza, 1997). Following dredging, water depths in the marina basin are expected to be too great to support significant communities of seagrass and macroalgae (FRC Environmental, 2007), meaning this habitat will be lost permanently.	Indirect	Yes	Yes	Yes
Removal of mangroves	Reclamation and alteration of the shoreline is expected to result in the removal of approximately 1.84 hectares of mangroves along the Shute Harbour coast (FRC Environmental, 2007). Mangroves play an important role in the overall ecosystem function of Shute Bay in terms of habitat, nutrient cycling, and erosion prevention. The removal of mangroves and topsoil is likely to increase the risk of erosion and sedimentation from rainfall, overland flow and wind action/wave action. An increase in erosion and sedimentation may have an adverse effect on coastal water quality and associated seabed flora and fauna through a smothering effect within the marina basin and a decrease in flushing and intermixing from fresh water with marine waters in the project area. Mangrove communities are estimated to provide a total ecosystem value of approximately $17,190 per hectare per year (Costanza, 1997 – refer Appendix E). These mangrove communities will be lost permanently following development of the land based aspects of SHMD.	Indirect	Yes	Yes	Yes

Impact	Activity and Description	Impact Type (Direct / Indirect)	Impact Quantified (Yes / No)	Phase	
				Construction	Operation
Removal of coral communities	There are 10 coral communities identified within the marina basin that are expected to be permanently removed as a result of dredging. The removal of these communities will impact on the overall ecosystem function of Shute Bay. Coral communities are estimated to provide a total ecosystem value of approximately $5,650 per hectare per year (Costanza, 1997 – refer Appendix E). These coral communities are expected to be lost permanently following development of the marina.	Indirect	Yes	Yes	Yes

Notes: (a) The proponent has indicated that a portion of the trust will be utilised to facilitate marine best practice and Indigenous education programs through the interpretative centre to be co-located with the charter boat transit centre. However, whilst anticipated to be predominately focussed on the implementation of EzyRider moorings, this disaggregation has not been identified. For the purposes of this assessment the analysis assumes that 100% is allocated to the development of EzyRider moorings.

Benefits

Impact	Activity and Description	Impact Type (Direct / Indirect)	Impact Quantified (Yes / No)	Phase	
				Construction	Operation
Economic					
Land sales income to proponent	As the site preparation for land in the Managed Resort Accommodation precinct is completed, the 67 waterfront and 50 dry lots will be released and sold to secondary developers with the cash flows accruing to the proponent. In this analysis, it is assumed that the release of lots commences in 2010, with the last cash revenue received by the proponent in 2013. Waterfront land is estimated to sell for an estimated $2.5 million per lot on average (Malcolm Hall-Brown, 2007), with a total value of $167.5 million, while the land based lots are estimated to sell for approximately $700,000 per lot on average, with a total value of $30 million. The overall revenue from the sale of land to secondary developers in the Managed Resort Accommodation precinct is estimated to be $202.5 million.	Direct	Yes		Yes
Revenue to proponent from lease of marina berths	The proponent will sell long term (assumed 35 years) leases to third parties for the 669 marina berths, charged on a linear metre basis. The development will result in approximately 11,859 lineal metres of marina berths, with an estimated lease cost of approximately $12,000 per lineal metre. The marina berths are expected to be leased according to the schedule outlined in the costs section (Malcolm Hall-Brown, 2007). The overall revenue to the proponent is estimated to be approximately $142.3 million over the 30 years of the analysis.	Direct	Yes		Yes
Revenue to proponent from sale of land based facilities	The proponent will make a return from the construction and sale of the land based aspects of the development to secondary investors to own and operate, including the hotel accommodation and the commercial and retail space. The hotel will include 109 serviced apartments that are anticipated to be sold to secondary investors and managed by either these secondary investors or a third party. The apartments are expected to sell for approximately $795,000 each on average, and are estimated to be sold over a three year period, with 48 apartments sold in 2013 and 2014, and 13 apartments sold in 2015 (Malcolm Hall-Brown, 2007). Overall, the sale of the hotel accommodation to secondary investors is expected to result in approximately $86.7 million in revenue for the proponent. The 2,000 m^2 of commercial and retail space is also expected to be sold to secondary investors over a three year period for $4,000/m^2$, generating revenues for the proponent of $3.2 million in 2013 and 2014 and $1.6 million in 2015 (overall revenue of $8.0 million) (Malcolm Hall-Brown, 2007).	Direct	Yes		Yes

Impact	Activity and Description	Impact Type (Direct / Indirect)	Impact Quantified (Yes / No)	Phase	
				Construction	Operation
Revenue to secondary developers from sale of Managed Resort Accommodation	Secondary developers are expected to sell the Managed Resort Accommodation to third parties following the completion of construction. Based on market rates it is assumed that an average margin of between 12.0% and 17.5% would be achieved by secondary developers through the sale of Managed Resort Accommodation (an average of 15.0% is used in the analysis). With a cost to secondary developers of purchasing the land $202.5 million) and construction ($104.5 million), the total gross revenue received by secondary developers from the sale of Managed Resort Accommodation is estimated to be $353.0 million. Sales are assumed to occur in the same year as completion of construction of the Managed Resort Accommodation.	Indirect	Yes		Yes
Increased business activity at SHMD	It is anticipated that the marina, charter boat base, hotel, managed resort accommodation, retail and commercial areas will begin trading on completion of the primary construction phase. It is recognised the facility will not be fully operational on day one of operation and will take some time to reach full operational capacity. This assessment assumes that the marina and charter boat base will ramp up to full operational capacity over a six-year period following the completion of the facilities, while the land based aspects of the development will ramp up over a five year period. For the purposes of this analysis, only the value added component of the estimated annual operating output of SHMD has been used to take into consideration the operating costs associated with the operation of the facilities. The annual value added from additional business activity for each aspect of the SHMD once in steady state is outlined below: • Marina - $1.9 million; • Charter boat base - $1.9 million; • Hotel - $5.6 million; • Managed Resort Accommodation - $12.4 million; • Commercial space - $2.4 million; and • Retail space - $1.4 million. In total, the additional business activity generated by the SHMD is estimated to be approximately $25.6 million per annum once in steady state operation.	Direct & Indirect	Yes		Yes
Increased business activity outside of SHMD	In addition to expenditure undertaken at SHMD (above), visitors would also be expected to undertake expenditure on goods and services in the wider region, in particular in the surrounding service centre. It is estimated that the average expenditure per visitor per day will be approximately $175 (refer Section 7.2.2). This level of expenditure is estimated to result in additional output of $15.1 million per annum for businesses located in the surrounding service centre, with a value add component of $7.6 million (the value added component is incorporated into the analysis to ensure impacts are not overstated).	Indirect	Yes		Yes

Impact	Activity and Description	Impact Type (Direct / Indirect)	Impact Quantified (Yes / No)	Phase	
				Construction	Operation
Appreciation of property values	An increase in the availability of services and leisure facilities from SHMD has the potential to increase property values in the immediate area of Shute Harbour and Shutehaven (e.g. having the ability to purchase basic supplies such as bread and milk, or pursue activities such as going to cafes/ restaurants) (refer Section 7.3.6).	Indirect	No		Yes
Enhanced networking and linkages in the marine sector	The development of SHMD in close proximity to the existing ferry terminal and salvage operation will provide opportunities for enhanced networking and linkages within the local and regional marine sector and local marine businesses (refer Section 7.3.8).	Indirect	No		Yes
Increased business confidence (investment attraction)	The development of the SHMD is expected to provide a significant boost to regional business confidence and increase the attractiveness of the area to new business investment. The development is expected to result in an increase in economic activity within the local area and surrounding service centre, which provides an incentive for business investors to invest in the regional economy. As the number of businesses expending or locating to the region increases additional opportunities to leverage business to business transactions and networking would become apparent, further increasing economic activity within the region.	Indirect	No		Yes

Impact	Activity and Description	Impact Type (Direct / Indirect)	Impact Quantified (Yes / No)	Phase	
				Construction	Operation
Tourism support	The SHMD is primarily targeted towards the tourism market, and is focused on providing visitors access to water and aquatic based activities in the region. A recently conducted Economic Baseline Audit of the Mackay region (AEC*group*, 2007) identified transport and infrastructure linkages between water and land based tourism activities often constrain the expansion of the tourism sector. SHMD will provide a first class facility that enables easy linkages between land and water based activities, which is in line with the state government priorities outlined in the Living the Queensland Lifestyle (Queensland Government, 2006) document for encouraging and facilitating participation in boating leisure activities. There are significant opportunities to create high value tourism services around the development with significant flow on benefits for other tourist attractions in the region. There is also a significant shortage of appropriate berthing facilities in the Mackay SD (Pacific Southwest Strategy Group, 2006a), with a total capacity of 1,384 wet berths available at six marina / marine precincts. Registration of boats requiring mooring or berths for storage (typically those greater than 8 metres in length) in Queensland has been growing at approximately 7.1% per annum since 2002 and this rapid growth is expected to continue in coming years. Boat registration has been growing at a faster rate in the Mackay SD than in Queensland, and is anticipated to result in a lack of capacity of approximately 1,313 berths by 2020 (Pacific Southwest Strategy Group, 2006a). This increases the risks of boat owners mooring their vessels inappropriately with associated environmental and health and safety risks. The marina, tourist resort and managed resort accommodation are expected to be popular with local residents and visitors from outside of the region given the rapidly expanding Whitsunday Coast tourism market and high demand for water based activities in the Whitsundays. The proposed 4½ star hotel and managed resort accommodation is expected to attract high value customers given the high quality of the accommodation and ancillary facilities such as the marina, boardwalk and parkland area.	Indirect	No		Yes
Social					
Increased amenity from lease of marina berths	Third parties leasing the marina berths are expected to derive some recreational and amenity benefits from the access to and use of the marina and land-based aspects of the development, as well as the knowledge of a 'safe' berth in rough weather. At a minimum, this social amenity value is expected to be equivalent to the cost associated with leasing a marina berth.	Indirect	Yes		Yes

Impact	Activity and Description	Impact Type (Direct / Indirect)	Impact Quantified (Yes / No)	Phase	
				Construction	Operation
Maintenance of the recreational value of the Great Barrier Reef World Heritage Area	As part of the development the proponent will develop a "Reef Conservation Fund" to be operated as a charitable fund with funds administered by the Great Barrier Reef Marina Park Authority, and will be funded from the sale of the marina berths. The initial contribution, to be provided by the proponent upon settlement of each marina berth, is identified to be approximately $1 million, with an ongoing contribution of approximately $150,000 per annum from marina berth leaseholders. The Great Barrier Reef Marina Park Authority is expected to use this fund to develop environmentally friendly "EzyRider" swing moorings[(a)] that would provide easy access to the Great Barrier Reef World Heritage Area while allowing boaters to safely moor their boat away from environmentally sensitive sites. The EzyRider swing mooring system is a low-impact, strong swing mooring that minimises the environmental impact to soft bottom and benthic communities by lifting the chain off the seabed, thereby stopping damage caused by chain dragging as occurs from traditional swing moorings or from anchoring boats. The estimated cost of developing EzyRider swing moorings is approximately $15,000 per mooring. Based on an initial investment of $1 million dollars and an ongoing investment of $150,000, this equates to approximately 66 swing moorings from the initial investment (assumed to be developed in line with the release of marina berths between 2010 and 2026) with additional swing moorings developed on an annual basis from ongoing contributions, ramping up to 6 additional moorings per year once all berths are leased. Currently, a large number of boat users visiting the Great Barrier Reef drop anchor overnight in the marine park. This is partly due to a limited number of moorings available within easy access of the reefs. Anchoring within the reef area can cause damage to soft bottom and benthic communities over the extent of the anchor and chain drag area, including coral, seagrass and macroalgae (Francour *et. al*., 1999). The area potentially damaged by anchoring is conservatively estimated to be equivalent to the area a traditional swing mooring chain would disturb (approximately 30m^2). The development of swing moorings will enable these boats that currently drop anchor overnight to safely moor their boat without damaging the environmentally sensitive areas and assist in preserving soft bottom and benthic communities in these areas within the Great Barrier Reef World Heritage Area. It is estimated that these moorings would be approximately 90% utilised throughout the year. This equates to an overall area preserved by the use of an EzyRider swing mooring of approximately 0.49 hectares per mooring (30m^2 x 365 days x 90% occupancy). The preservation of coral communities within the Great Barrier Reef will assist in maintaining the recreational value of the reef for visitors. Coral reefs are estimated to provide recreational value of approximately $5,540 per hectare per year (Costanza, 1997 – refer Appendix E).	Indirect	Yes		Yes

Impact	Activity and Description	Impact Type (Direct / Indirect)	Impact Quantified (Yes / No)	Phase	
				Construction	Operation
Increased mangrove habitat along western fringe	Currently, mangrove communities are established along the coast line of the development site and adjacent areas. Mangroves spread rapidly in unvegetated, wetland areas, and at the tree line have been found to progress at a rate of up to approximately 50 metres per annum (Panapitukkula *et. al.*, 1998). The Shute Harbour Marina Development will include reclamation of land currently under water for development of the Managed Resort Accommodation and parkland along the western side of the development site. Consultation with FRC Environmental (authors of the Aquatic Ecology Report for the SHMD) suggests that mangrove communities may colonise along approximately 0.93 hectares of the western fringe (the non-marina side) of the parkland area, spreading at a rate of approximately 50 metres per annum. This mangrove habitat will be accessible to the public via the parkland area and will provide some recreational value. Costanza (1997) estimates that mangrove communities provide recreational value of approximately $1,210 per hectare per year (refer Appendix E).	Indirect	Yes		Yes
Improved access to areas for recreational and leisure activity	The proximity of the marina and associated facilities, retail, café and restaurant precincts, open space and recreational infrastructure (boardwalk, etc.), as well as provision of a new four lane boat ramp (separate to this development) contribute to the development of lifestyle, recreation and leisure activities in the region. This will contribute significantly to the wellbeing of local residents and visitors to the development (refer Section 6.4.2).	Indirect	No		Yes
Enhancement of community interaction and cohesion	SHMD will provide additional facilities in Shute Harbour and the surrounding service centre for community interaction and meeting places. The collective community use and benefit of the marina and land based aspects of the development has the potential to enhance community cohesion, interaction, vitality, wellbeing and prosperity (refer Section 6.4.2).	Indirect	No		Yes
Additional employment opportunities	The development is expected to directly provide 78 FTE additional employment positions during construction on average, and 142 employment positions during operation. Additional employment positions are also expected to be generated as a result of additional expenditure and business activity outside of SHMD itself (refer Section 7.2).	Indirect	No	Yes	Yes
Environmental					
Increased habitat from development of breakwater	The fixed breakwater component of the marina development will provide 1.8 kilometres of habitat capable of accommodating different aquatic species, such as mangrove jack, a common sport fish species in the region (FRC Environmental, 2007). The breakwater is expected to be completed and providing additional habitat in the 41st week of construction. The value of this habitat is assumed to be equivalent to the existing habitat in the marina basin (primarily mangroves, seagrass and macroalgae), which is estimated to have a habitat value of approximately $240 per hectare per year (Costanza, 1997 – refer Appendix E).	Indirect	Yes		Yes

Impact	Activity and Description	Impact Type (Direct / Indirect)	Impact Quantified (Yes / No)	Phase	
				Construction	Operation
Reestablishment of seagrass from removal of swing moorings	The proposed marina and access channel will necessitate the removal of approximately 57 swing-moorings. These moorings currently impact on the seabed through chronic physical disturbance caused by chain dragging as the vessel responds to changing winds and tides. The removal of swing moorings will enable approximately 950m^2 of seagrass to re-establish following the completion of the marina development in 2011 (FRC Environmental, 2007), allowing a more stable and productive benthic community to develop. Seagrass is estimated to have a total ecosystem value of approximately $35,000 per hectare per year (Costanza, 1997 – refer Appendix E).	Indirect	Yes		Yes
Increased mangrove habitat along western fringe	As outlined in the indirect social benefits above, the Shute Harbour Marina Development will include reclamation of approximately 0.93 hectares of land along the western side of the development site that is expected to be colonised by mangrove communities. This mangrove habitat will provide some ecosystem value, in particular in terms of increased habitat for aquatic species, increased organic matter for nutrient cycling and erosion prevention. Costanza (1997) estimates that the total ecosystem value of mangrove communities is approximately $17,190 per hectare per year (refer Appendix E).	Indirect	Yes		Yes
Maintenance of the environmental and ecosystem services value of the Great Barrier Reef World Heritage Area	As outlined in the social benefits above, the proponent will develop a "Reef Conservation Fund" to be operated as a charitable fund with funds administered by the Great Barrier Reef Marina Park Authority, which will be used for the development of environmentally friendly swing moorings away from environmentally sensitive sites. These swing moorings are expected to be used by boaters that would otherwise drop anchor overnight, potentially causing significant damage to soft bottom and benthic communities, such as seagrass and coral reefs (Francour *et. al.*, 1999). The preservation of these areas will assist in maintaining key ecosystem functions such as habitat for aquatic species, food production and providing organic matter for nutrient cycling (CRC Reef Research Centre, 2004). Given the dispersal patterns of seagrass, coral reefs and other benthic communities in the Great Barrier Reef, it is unlikely that every anchor drop would damage each community. As such, it is assumed that an average ecosystem value per hectare for seagrass and coral would be more applicable in the analysis. Based on per hectare ecosystem values of seagrass ($35,000) and coral ($5,650) from Costanza (1997 – refer Appendix E), the average ecosystem value per hectare of the Great Barrier Reef is estimated to be approximately $20,320 per hectare per year.	Indirect	Yes		Yes

Notes: As outlined in the costs section, part of this funding is expected to be allocated to developing and interpretative centre to be co-located with the charter boat transit centre. However, this disaggregation has not been identified, and for the purposes of this assessment the analysis assumes that 100% is allocated to the development of EzyRider moorings.

Cost Benefit Analysis

This section uses a cost benefit analysis (CBA) framework, as outlined in the methodology above, to assess the quantifiable impacts of the proposed Shute Harbour Marina Development.

To clearly identify impacts by stakeholder two forms of impacts are examined throughout the analysis:

- **Direct impacts**: Those borne by the proponent, have been discounted at 10.0%, which is the indicative risk adjusted rate; and
- **Indirect impacts**: Those externalities or impacts borne by those other than the proponent, are discounted at 6.0% (Queensland Treasury, 2006).

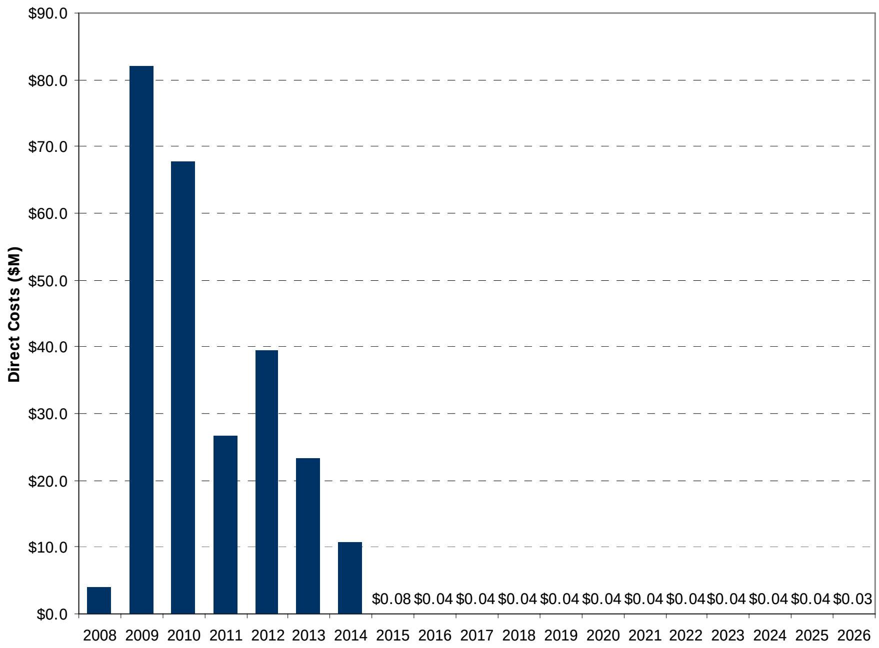
These impacts should not be confused with the terminology frequently used to describe the flow-on impacts of an input-output style multiplier analysis, which in accordance with Cost Benefit Analysis Guidelines (Queensland Treasury, 2006), has NOT been used in this analysis.

As with any *ex ante* assessment assumptions must be made regarding the future flow of costs and benefits. For confidentially reasons, the following assessment is undertaken utilising existing industry benchmarks, which have been clarified with the proponent regarding their relative accuracy.

Direct Development Impacts

Direct impacts refer to the economic, social and environmental costs and benefits that apply directly to the project proponent. Direct costs are estimated to total approximately $254.4 million over the course of the development, with a maximum annual spend of approximately $82.0 million in 2009 and the last direct cost expenditure undertaken in 2026 (between 2015 and 2026 direct costs are assessed to accrue through contributions to the Reef Conservation Fund as marina berth leases are released and sold). The following figure summarises the distribution of direct costs associated with the proposed Shute Harbour Marina Development.

Figure C.2. Direct Costs of the Shute Harbour Marina Development ($M2007)

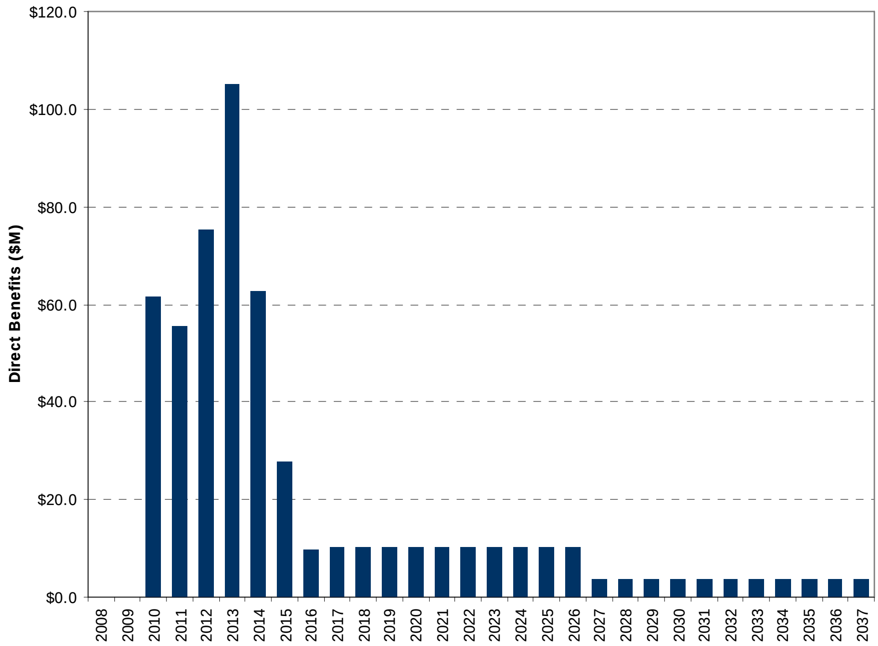


Source: Shute Harbour Marina Development Pty Ltd (2007)

The construction of the Shute Harbour Marina Development is expected to cost approximately $254.4 million to 2037, which has a present value of $202.2 million (discount rate 10%).

Over the lifetime of the project, direct benefits are expected to total approximately $536.1 million. The largest estimated annual benefit of approximately $105.2 million is due to be received in 2013. The following figure summarises the flow of direct benefits associated with the proposed Shute Harbour Marina Development.

Figure C.3. Direct Benefits of the Shute Harbour Marina Development ($M2007)



Source: Shute Harbour Marina Development Pty Ltd (2007)

The total benefit from site development revenues is forecast to be approximately $536.1 million, which has a present value of approximately $295.8 million (discount rate 10%).

The net present value (NPV) of the direct impacts of the Shute Harbour Marina is calculated by subtracting the present value of the direct costs from the present value of the direct benefits as outlined in the following table. All direct impacts are economic impacts, with no direct social or environmental impacts identified as resulting from the development of SHMD.

Table C.3. Direct NPV & BCR of the Shute Harbour Marina Development ($2007)

Real Discount Rate	PV of Direct Benefits ($M)	PV of Direct Costs ($M)	Direct Net Present Value ($M)	BCR
6%	$363.7	$220.5	$143.2	1.65
8%	$326.7	$211.0	$115.8	1.55
10%	$295.8	$202.2	$93.6	1.46
12%	$269.5	$194.1	$75.5	1.39

Source: AEC*group*

The net present value of the direct impacts of the Shute Harbour Marina, assuming a discount rate of 10.0% is estimated to be $93.6 million, and has a benefit to cost ratio (BCR) of 1.46, which implies a return in present value terms of $1.46 for each dollar invested.

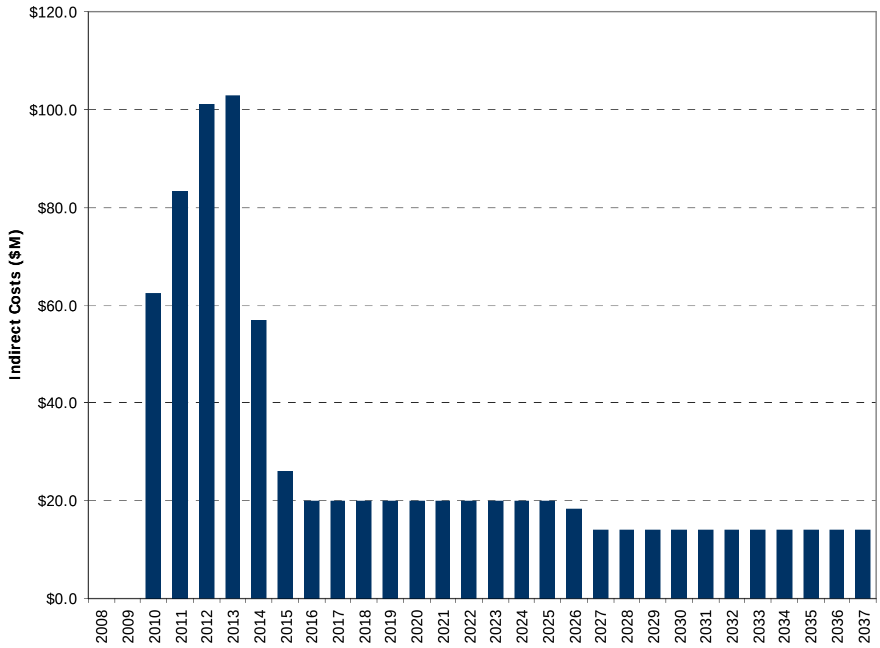
Indirect Development Impacts

The following section outlines the quantum of indirect economic, social and environmental impacts associated with the development of the Shute Harbour Marina.

Indirect impacts are those that accrue beyond those experienced by the project proponent.

Over the 30 years of analysis, indirect costs of the Shute Harbour Marina Development (as outlined in the Identification of Impacts section) are expected to total approximately $805.6 million. The largest estimated annual cost of approximately $103.0 million is anticipated to occur in 2013. The following figure summarises the flow of indirect costs associated with the proposed Shute Harbour Marina Development.

Figure C.4. Indirect Costs of the Shute Harbour Marina Development ($M2007)

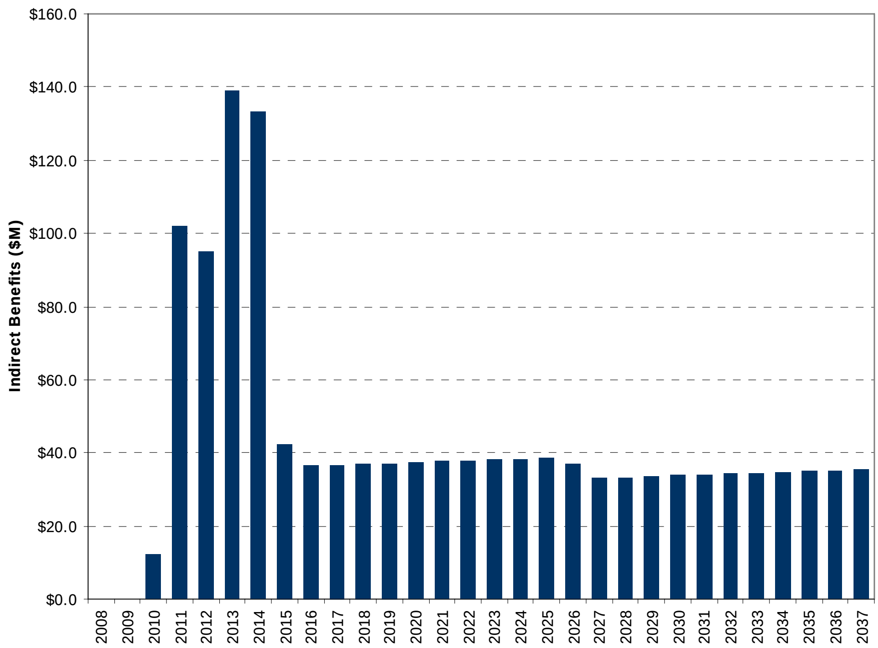


Sources: AEC*group*.

The majority of indirect costs are incurred in the early stages of the project and are due to secondary stage development expenditure. Over the period of the analysis, total indirect costs are estimated to be $805.6 million, which has a present value of $483.1 million (discount rate 6%).

Indirect benefits of $1.31 billion are anticipated to be delivered by the Shute Harbour Marina Development over the 30 year horizon of the analysis, with a maximum annual benefit of $139.2 million in year 2013. The following figure summarises the flow of indirect benefits associated with the proposed development.

Figure C.5. Indirect Benefits of the Shute Harbour Marina Development ($M2007)



Sources: AEC*group*.

Over the period of the analysis, total indirect benefits are estimated to be $1.31 billion, which has a present value of $688.7 million (discount rate 6%) over the period of the analysis.

The net present value of the indirect impacts of the Shute Harbour Marina is calculated by subtracting the present value of the indirect costs from the present value of the indirect benefits.

Table C.4. Indirect NPV & BCR of the Shute Harbour Marina Development ($2007)

Real Discount Rate	PV of Indirect Benefits ($M)	PV of Indirect Costs ($M)	Indirect Net Present Value ($M)	BCR
Economic				
5%	$625.5	$494.9	$130.6	1.26
6%	$570.6	$461.4	$109.2	1.24
7%	$523.3	$431.9	$91.4	1.21
10%	$414.3	$361.0	$53.2	1.15
Social				
5%	$101.1	$0.0	$101.1	N/a
6%	$94.0	$0.0	$94.0	N/a
7%	$87.7	$0.0	$87.7	N/a
10%	$72.3	$0.0	$72.3	N/a
Environmental				
5%	$28.5	$24.3	$4.2	1.17
6%	$24.0	$21.6	$2.4	1.11
7%	$20.4	$19.4	$1.0	1.05
10%	$12.9	$14.4	-$1.5	0.89
Total				
5%	$755.0	$519.3	$235.8	1.45
6%	$688.7	$483.1	$205.6	1.43
7%	$631.4	$451.3	$180.1	1.40
10%	$499.4	$375.4	$124.0	1.33

Source: AEC*group*

The net present value of the indirect impacts of the Shute Harbour Marina is estimated to be $205.6 million over the next 30 years (discount rate of 6.0%), and has a benefit to cost ratio of 1.43. The project is anticipated to provide a net indirect benefit across all aspects across the triple bottom line (economic, social and environmental).

CBA Results

The CBA assessment found that development of the Shute Harbour Marina is expected to deliver a total **positive net benefit** (the sum of all benefits and costs incurred by both the proponent and external stakeholders) of $299.2 million in present value terms (NPV), with present value of benefits of $984.5 million and a present value of costs of $685.3 million. Overall, the development provides a benefit cost ratio (BCR) of 1.44 (i.e. returns $1.44 for every dollar spent in delivery of the project).

The project provides a positive:

- **Direct net benefit** (i.e. to the proponent) in present value terms of $93.6 million with a BCR of 1.46 and
- **Indirect net benefit** (i.e. to stakeholders other then the proponent) in present value terms of $205.6 million with a BCR of 1.43.

Table C.5. Quantitative CBA Summary

Impact	PV of Benefits ($M)	PV of Costs ($M)	Net Present Value ($M)	BCR
Direct Impacts	$295.8	$202.2	$93.6	1.46
Indirect Impacts	$688.7	$483.1	$205.6	1.43
Total Impacts	**$984.5**	**$685.3**	**$299.2**	**1.44**

Source: AEC*group*

The following table outlines the impact that an increase or decrease in the discount rates used would have on overall project NPV. In the base scenario (shaded grey in the table below) the NPV of the project, including both the direct and indirect components, is estimated to be $299.2 million and a BCR of 1.44. The table shows that for discount rates for direct impacts between 8% and 12% and for indirect impacts between 5% and 7% the NPV of the project varies between $255.6 million and $351.6 million.

Table C.6. NPV & BCR of the Shute Harbour Marina Development ($2007)

Real Discount Rate	PV of Benefits ($M)	PV of Costs ($M)	Net Present Value ($M)	BCR
Economic				
Direct @ 8% & Indirect @ 5%	$952.3	$705.9	$246.3	1.35
Direct @ 10% & Indirect @ 6%	$866.5	$663.6	$202.8	1.31
Direct @ 12% & Indirect @ 7%	$792.8	$626.0	$166.9	1.27
Social				
Direct @ 8% & Indirect @ 5%	$101.1	$0.0	$101.1	N/a
Direct @ 10% & Indirect @ 6%	$94.0	$0.0	$94.0	N/a
Direct @ 12% & Indirect @ 7%	$87.7	$0.0	$87.7	N/a
Environmental				
Direct @ 8% & Indirect @ 5%	$28.5	$24.3	$4.2	1.17
Direct @ 10% & Indirect @ 6%	$24.0	$21.6	$2.4	1.11
Direct @ 12% & Indirect @ 7%	$20.4	$19.4	$1.0	1.05
Total				
Direct @ 8% & Indirect @ 5%	$1,081.8	$730.2	$351.6	1.48
Direct @ 10% & Indirect @ 6%	$984.5	$685.3	$299.2	1.44
Direct @ 12% & Indirect @ 7%	$900.9	$645.3	$255.6	1.40

Source: AEC*group*

Sensitivity Analysis

In conducting this sensitivity analysis, a range of magnitudes for key inputs have been modelled to determine the sensitivity of the project outcomes to the inputs driving these results. The key inputs that have been tested are outlined in the table below, as well as the value(s) used in the base scenario examined above.

To ensure a conservative approach, the assessment as focussed on the 'down-side' rather than the 'up-side' when testing the variables in the sensitivity analysis.

Table C.7. Inputs Tested Using Sensitivity Analysis

Input	Value in Base Scenario
Construction Cost of SHMD	$253.4 million
Sale Price of Marina Berth Leases	$12,000 per lineal metre
Sale Price of Land to Secondary Developers (per lot)	$2.5 million for waterfront $700,000 for land based
Value Added Business Activity from Operation of SHMD [(a)]	$33.15 million
Total Sale Revenue of Serviced Apartments in the Hotel and Retail and Commercial Space	$86.7 million
Margin Received by Secondary Developers from Sale of MRA	15%
Contribution to the Reef Conservation Fund	$1.0 million initial $150,000 ongoing
Area of Seagrass and Coral Reef Preserved per EzyRider Swing Mooring installed	0.49 hectares
Increased Mangrove Habitat Along Western Fringe	0.93 hectares

Note: (a) This includes operation of the marina, charter boat base, hotel, managed resort accommodation, commercial and retail space, as well as additional business activity elsewhere in the region.
Source: AEC*group*.

Sensitivity assessment of key inputs has been conducted at discount rates of 10.0% for direct impacts and 6.0% for indirect impacts. In addition to the inputs outlined above, an assessment of the net benefit of the SHMD to the Mackay SD (instead of to the State, as per the base scenario) has also been included. Findings from the sensitivity assessment are provided in the sub-sections below.

Construction Cost of SHMD

The total cost of constructing the SHMD is estimated to be $253.4 million, comprising:

- $4.0 million in approvals;
- $171.9 million in land-based developments;
- $72.5 million in marina and related facility development; and
- $5.0 million in ancillary costs.

Sensitivity analysis was conducted for construction costs of the SHMD ranging from 75% ($190.0 million) and 200% ($506.7 million) of total estimated development costs. The table below outlines the findings of the sensitivity analysis. As can be seen, even where the costs of constructing the SHMD are double the anticipated construction costs, the project is expected to result in a considerable net benefit to the State, with an NPV of $101.51 million and a BCR of 1.11. All aspects of the triple bottom line achieve a positive net result across all ranges of construction costs, although at a cost of $506.7 million (200%) the net economic benefit is only marginally positive.

Given that the project returns a positive net benefit even at double the anticipated construction costs, any discrepancies between the actual construction costs of the SHMD and the estimates used in the assessment are not considered to significantly alter the findings of the analysis.

Table C.8. Sensitivity Analysis of Construction Costs of SHMD

% Change from Base Scenario	Total Development Cost ($M)	PV of Benefits ($M)	PV of Costs ($M)	NPV ($M)	BCR	*NPV ($M) Economic*	*NPV ($M) Social*	*NPV ($M) Environmental*
75%	$190.0	$984.50	$635.86	$348.64	1.55	*$252.25*	*$94.03*	*$2.37*
90%	$228.0	$984.50	$665.52	$318.99	1.48	*$222.59*	*$94.03*	*$2.37*
100%	$253.4	$984.50	$685.29	$299.22	1.44	*$202.82*	*$94.03*	*$2.37*
110%	$278.7	$984.50	$705.06	$279.45	1.40	*$183.05*	*$94.03*	*$2.37*
125%	$316.7	$984.50	$734.71	$249.79	1.34	*$153.39*	*$94.03*	*$2.37*
150%	$380.0	$984.50	$784.14	$200.37	1.26	*$103.97*	*$94.03*	*$2.37*
200%	$506.7	$984.50	$882.99	$101.51	1.11	*$5.12*	*$94.03*	*$2.37*

Source: AEC*group*.

Sale Price of Marina Berth Leases

The proponent will sell long term leases to third parties for the 669 marina berths, charged on a linear metre basis. Approximately 11,859 lineal metres of marina berths will be leased at an estimated lease cost of approximately $12,000 per lineal metre.

Sensitivity analysis was conducted for the sale price of marina berths per lineal metre, with prices ranging from $6,000 per metre (50%) to $15,000 per metre (125%). Sensitivity analysis shows that even where the sales price per lineal metre is half that assumed in the base scenario, the project is expected to result in a considerable net benefit to the State, with an NPV of $263.92 million and a BCR of 1.41, with all aspects of the triple bottom line achieving a positive net result across all ranges of sales prices.

Given that the project returns a positive net benefit even at half of the anticipated marina berth sale price, any discrepancies between the actual sale price and the estimates used in the assessment are not considered to significantly alter the findings of the analysis.

Table C.9. Sensitivity Analysis of Sale Price of Marina Berth Leases

% Change from Base Scenario	Sale Price per Lineal Metre ($)	PV of Benefits ($M)	PV of Costs ($M)	NPV ($M)	BCR	*NPV ($M) Economic*	*NPV ($M) Social*	*NPV ($M) Environmental*
50%	$6,000	$903.82	$639.90	$263.92	1.41	*$212.91*	*$48.64*	*$2.37*
75%	$9,000	$944.16	$662.59	$281.57	1.42	*$207.87*	*$71.34*	*$2.37*
90%	$10,800	$968.37	$676.21	$292.16	1.43	*$204.84*	*$84.95*	*$2.37*
100%	$12,000	$984.50	$685.29	$299.22	1.44	*$202.82*	*$94.03*	*$2.37*
110%	$13,200	$1,000.64	$694.36	$306.28	1.44	*$200.80*	*$103.11*	*$2.37*
125%	$15,000	$1,024.85	$707.98	$316.87	1.45	*$197.77*	*$116.72*	*$2.37*

Source: AEC*group*.

Sale Price of Land to Secondary Developers

The proponent will develop and sell land to secondary developers to construct the Managed Resort Accommodation Precinct. There will be 67 water front lots sold at an estimated average price of $2.5 million and 50 land based lots sold at an estimated average price of $700,000.

Sensitivity analysis on land sales prices was conducted over ranges between 50% of expected sales price ($1.25 million waterfront and $350,000 land based) and 150% of estimated prices ($3.75 million waterfront and $1.05 million land based). Even where land sales prices are just 50% of the anticipated sales price used in the base assessment, the project is expected to result in a considerable net benefit to the State, with an NPV of $219.64 million and a BCR of 1.36. All aspects of the triple bottom line achieve a positive net result across all ranges of sales prices.

Given that the project returns a positive net benefit even at half of the anticipated land sales prices, any discrepancies between the actual sales prices and the estimates used in the assessment are not considered to significantly alter the findings of the analysis.

Table C.10. Sensitivity Analysis of Sale Price of Land to Secondary Developers

% Change from Base Scenario	Sale Price (Water Front) ($)	Sale Price (Land Based) ($)	PV of Benefits ($M)	PV of Costs ($M)	NPV ($M)	BCR	*NPV ($M) Economic*	*NPV ($M) Social*	*NPV ($M) Environmental*
50%	$1,250,000	$350,000	$822.44	$602.79	$219.64	1.36	*$123.24*	*$94.03*	*$2.37*
75%	$1,875,000	$525,000	$903.47	$644.04	$259.43	1.40	*$163.03*	*$94.03*	*$2.37*
90%	$2,250,000	$630,000	$952.09	$668.79	$283.30	1.42	*$186.90*	*$94.03*	*$2.37*
100%	$2,500,000	$700,000	$984.50	$685.29	$299.22	1.44	*$202.82*	*$94.03*	*$2.37*
110%	$2,750,000	$770,000	$1,016.92	$701.78	$315.13	1.45	*$218.73*	*$94.03*	*$2.37*
125%	$3,125,000	$875,000	$1,065.54	$726.53	$339.01	1.47	*$242.61*	*$94.03*	*$2.37*
150%	$3,750,000	$1,050,000	$1,146.57	$767.78	$378.79	1.49	*$282.40*	*$94.03*	*$2.37*

Source: AEC*group*.

Value Added Business Activity from Operation of the SHMD

Once operational, the marina, charter boat base, hotel, managed resort accommodation, and commercial and retail areas will begin trading. Once in steady state, the SHMD is expected to generate approximately $69.3 million in additional turnover in the region (Shute Harbour and the surrounding service centre) per annum, with a value add of approximately $33.2 million per annum. The table below provides a breakdown of value add generated by each aspect of the SHMD, as well as additional business activity generated elsewhere in the region.

Table C.11. Operating Output of Charter Boat Base and Marina ($M 2007)

SHMD Element	Value Add ($M)
Marina	$1.9
Charter Boat Base	$1.9
Hotel Accommodation	$5.6
Managed Resort Accommodation	$12.4
Commercial	$2.4
Retail	$1.4
Activity Elsewhere in the Region	$7.6
Total	**$33.2**

Source: AEC*group* (2008a).

Sensitivity analysis has been conducted on the additional business activity generated by the SHMD over ranges between 50% of expected total value add ($16.6 million) and 150% of estimated total value add ($49.7 million)[13].

Sensitivity analysis shows that even where the level of economic activity (measured as value added product) to the Queensland economy is just 50% of that estimated to occur, the project would still be expected to result in a net benefit to the State, with an NPV of $137.09 million and a BCR of 1.20.

As outlined in the table below, at a value add of additional business activity of $16.6 million (50%) the NPV of economic impacts is reduced to $40.69 million from $202.82 million in the base scenario. It is important to note, however, that the estimates for additional value added business activity used in the base scenario are conservative estimates and it is considered more likely that the actual value add business activity generated by the SHMD will be higher than that used in the base scenario rather than lower. If additional business activity were to be 50% higher than the estimated level used in the base scenario, the project could be expected to result in an NPV of economic impacts of $364.95 million (with total project NPV of $461.34 million), which is approximately 80% more than the net economic benefit of the project in the base scenario.

Given that the project returns a positive net benefit to the State even at half of the anticipated value added business activity, and combined with the expectation that the values used in the base scenario for each component of the SHMD are conservative estimates, any discrepancies between the actual additional business activity generated by

[13] In assessing the net benefit to the State, a lower than expected level of value add could result due to a number of factors, such as lower business activity at the SHMD than anticipated, or the attraction of higher than anticipated business activity from elsewhere in Queensland.

the SHMD and the estimates used in the assessment are not considered to significantly alter the findings of the analysis.

Table C.12. Sensitivity Analysis of Value Added Business Activity from Operation of the SHMD

% Change from Base Scenario	Value Add Business Activity ($M)	PV of Benefits ($M)	PV of Costs ($M)	NPV ($M)	BCR	*NPV ($M) Economic*	*NPV ($M) Social*	*NPV ($M) Environmental*
50%	$16.6	$822.38	$685.29	$137.09	1.20	*$40.69*	*$94.03*	*$2.37*
75%	$24.9	$903.44	$685.29	$218.15	1.32	*$121.76*	*$94.03*	*$2.37*
90%	$29.8	$952.08	$685.29	$266.79	1.39	*$170.39*	*$94.03*	*$2.37*
100%	$33.2	$984.50	$685.29	$299.22	1.44	*$202.82*	*$94.03*	*$2.37*
110%	$36.5	$1,016.93	$685.29	$331.64	1.48	*$235.24*	*$94.03*	*$2.37*
125%	$41.4	$1,065.57	$685.29	$380.28	1.55	*$283.88*	*$94.03*	*$2.37*
150%	$49.7	$1,146.63	$685.29	$461.34	1.67	*$364.95*	*$94.03*	*$2.37*

Source: AEC*group*.

Sale Price of Serviced Apartments in the Hotel and Retail and Commercial Space

The proponent will develop and sell 109 serviced apartments in the hotel as well as 2,000m^2 of retail and commercial space. The serviced apartments are estimated to be sold at an average price of $795,000, while retail and commercial space is estimated to be sold at a price of approximately $4,000 per square metre.

Sensitivity analysis on serviced apartment and retail/ commercial space sales prices was conducted over ranges between 50% of expected sales price ($397,500 per serviced apartment on average and $2,000/m^2 retail and commercial space) and 150% of estimated prices ($1.19 million per serviced apartment on average and $6,000/m^2 retail and commercial space). Even where sales prices are just 50% of the anticipated sales price used in the base assessment, the project is expected to result in a considerable net benefit to the State, with an NPV of $271.64 million and a BCR of 1.40. All aspects of the triple bottom line achieve a positive net result across all ranges of sales prices.

Given that the project returns a positive net benefit even at half of the anticipated sales prices for serviced apartments and retail/ commercial space, any discrepancies between the actual sales prices and the estimates used in the assessment are not considered to significantly alter the findings of the analysis.

Table C.13. Sensitivity Analysis of Sale Price of Serviced Apartments and Retail/ Commercial Space

% Change From Base Scenario	Sale Price (Serviced Apartments) ($)	Sale Price (Retail/ Commercial Space) ($ / sqm)	PV of Benefits ($M)	PV of Costs ($M)	NPV ($M)	BCR	*NPV ($M) Economic*	*NPV ($M) Social*	*NPV ($M) Environmental*
50%	$397,500	$2,000	$956.93	$685.29	$271.64	1.40	*$175.24*	*$94.03*	*$2.37*
75%	$596,250	$3,000	$970.72	$685.29	$285.43	1.42	*$189.03*	*$94.03*	*$2.37*
90%	$715,500	$3,600	$978.99	$685.29	$293.70	1.43	*$197.30*	*$94.03*	*$2.37*
100%	$795,000	$4,000	$984.50	$685.29	$299.22	1.44	*$202.82*	*$94.03*	*$2.37*
110%	$874,500	$4,400	$990.02	$685.29	$304.73	1.44	*$208.33*	*$94.03*	*$2.37*
125%	$993,750	$5,000	$998.29	$685.29	$313.01	1.46	*$216.61*	*$94.03*	*$2.37*
150%	$1,192,500	$6,000	$1,012.08	$685.29	$326.79	1.48	*$230.40*	*$94.03*	*$2.37*

Source: AEC*group*.

Margin Received by Secondary Developers from Sale of Managed Resort Accommodation

Secondary developers are expected to sell the Managed Resort Accommodation to third parties following the completion of construction with an average margin of between 12.0% and 17.5% (average of 15.0% used in the base scenario).

Sensitivity analysis on the margin received was conducted over ranges between 5.0% and 20.0%. Even where the margin received is just 5.0%, the project is expected to result in a considerable net benefit to the State, with an NPV of $275.62 million and a BCR of 1.40. However, the margin received is expected to be between 12.0% and 17.5%, which corresponds to an expected NPV of between $292.14 million and $305.12

million. All aspects of the triple bottom line achieve a positive net result across all ranges of margins.

Given that the project returns a positive net benefit even at half of the anticipated margin received by secondary developers from the sale of Managed Resort Accommodation, any discrepancies between the actual margin and the estimates used in the assessment are not considered to significantly alter the findings of the analysis.

Table C.14. Sensitivity Analysis of Margin Received by Secondary Developers from Sale of MRA

Margin Received (%)	PV of Benefits ($M)	PV of Costs ($M)	NPV ($M)	BCR	*NPV ($M) Economic*	*NPV ($M) Social*	*NPV ($M) Environmental*
5.0%	$960.91	$685.29	$275.62	1.40	*$179.23*	*$94.03*	*$2.37*
10.0%	$972.71	$685.29	$287.42	1.42	*$191.02*	*$94.03*	*$2.37*
12.0%	$977.43	$685.29	$292.14	1.43	*$195.74*	*$94.03*	*$2.37*
13.5%	$980.96	$685.29	$295.68	1.43	*$199.28*	*$94.03*	*$2.37*
15.0%	$984.50	$685.29	$299.22	1.44	*$202.82*	*$94.03*	*$2.37*
17.5%	$990.40	$685.29	$305.12	1.45	*$208.72*	*$94.03*	*$2.37*
20.0%	$996.30	$685.29	$311.01	1.45	*$214.62*	*$94.03*	*$2.37*

Source: AEC*group*.

Contribution to the Reef Conservation Fund

As part of the development the proponent will develop a “Reef Conservation Fund” to be operated as a charitable fund with the funds administered by the Great Barrier Reef Marina Park Authority. The Reef Conservation Fund will be funded from the sale of leases for marina berths, with an initial contribution to be provided by the proponent upon the settlement of each marina berth totalling approximately $1 million and ongoing contributions from marina berth lessees of approximately $150,000 per annum.

This fund will contribute to the ongoing sustainability of the reef by providing environmentally friendly moorings on the reef that minimise disruption to benthic communities and provide space for boaters to safely moor their boat without damaging environmentally sensitive sites.

The table below outlines the sensitivity of the net benefit assessment to the contribution of the Reef Conservation Fund (in terms of overall project NPV) in with and without scenarios, as well as over a range of initial and ongoing contribution levels. The NPV of any resultant combination of initial investment (rows) and ongoing payment (columns) can be read from the table below. For example, the scenario of no Reef Conservation Fund is identified by the combination of $0 initial payment in row one and $0 ongoing payment in column one. The base case of $1.0 million initial contribution and $150,000 ongoing contribution is shaded and in bold (NPV of $299.22 million).

As can be seen, even without the contribution from the Reef Conservation Fund, the project returns a highly positive NPV of $273.81 million.

Table C.15. NPV ($M) of SHMD for Different Levels of Investment in the Reef Conservation Fund

Initial Payment	Ongoing Payment: $0	$25,000	$50,000	$75,000	$100,000	$125,000	$150,000	$200,000
$0	$273.81	$274.95	$277.34	$279.90	$282.32	$284.64	$287.20	$292.33
$200,000	$275.16	$277.10	$279.45	$282.21	$284.47	$287.00	$289.52	$294.59
$400,000	$277.98	$279.74	$282.08	$284.77	$286.82	$289.52	$291.88	$296.71
$600,000	$279.61	$281.68	$284.27	$286.93	$289.27	$291.92	$294.66	$299.07
$800,000	$282.23	$284.20	$286.97	$289.13	$291.69	$294.03	$297.10	$301.43
$1,000,000	$283.86	$286.40	$289.10	$291.68	$293.93	$296.78	**$299.22**	$303.53
$1,250,000	$287.89	$289.75	$292.19	$294.94	$297.21	$299.74	$301.87	$307.33
$1,500,000	$290.77	$292.67	$295.07	$297.60	$299.76	$302.57	$305.33	$309.90

Note: The cell shaded grey with bold text represents the level of investment in the Reef Conservation Fund used in the base scenario.
Source: AEC*group*.

The table below outlines the present value of environmental benefits provided by the Reef Conservation Fund over the same range of initial and ongoing contributions. The table shows that in order for the SHMD to provide a net environmental benefit, contributions to the Reef Conservation Fund are required, and that an initial contribution of $1.0 million and ongoing contribution of $150,000 provides a net environmental benefit of over $2 million. Even where the initial contribution is reduced to $800,000, with ongoing contributions of $150,000 the project would return a net environmental benefit to the State. Similarly, where the ongoing contribution is reduced to $125,000 per annum, at an initial contribution of $1.0 million the project would still return a net environmental benefit to the State.

Table C.16. PV ($M) of Environmental Benefits for Different Levels of Investment in the Reef Conservation Fund

Initial Payment	Ongoing Payment: $0	$25,000	$50,000	$75,000	$100,000	$125,000	$150,000	$200,000
$0	$0.00	$1.17	$3.44	$5.86	$8.15	$10.36	$12.78	$17.63
$200,000	$1.27	$3.15	$5.39	$7.97	$10.13	$12.53	$14.91	$19.71
$400,000	$3.85	$5.56	$7.78	$10.32	$12.29	$14.83	$17.07	**$21.66**
$600,000	$5.37	$7.35	$9.80	$12.31	$14.53	$17.03	$19.61	**$23.82**
$800,000	$7.76	$9.66	$12.27	$14.33	$16.75	$18.97	**$21.84**	**$25.98**
$1,000,000	$9.28	$11.68	$14.23	$16.66	$18.81	*$21.48*	**$23.79**	**$27.92**
$1,250,000	$12.94	$14.74	$17.05	$19.64	**$21.80**	**$24.20**	**$26.23**	**$31.37**
$1,500,000	$15.58	$17.42	$19.69	**$22.09**	**$24.16**	**$26.79**	**$29.40**	**$33.74**

Note: Cells in red text represent levels of investment in the Reef Conservation Fund that result in a negative NPV of environmental impacts. Cells in blue italic text represent levels of investment in the Reef Conservation Fund that result in a positive NPV of environmental impacts when other environmental benefits of the SHMD are included in the assessment but in isolation do not result in a net benefit. Cells in green text represent levels of investment in the Reef Conservation Fund that provide a level of environmental benefits greater than the total environmental costs of SHMD independent of other environmental benefits of SHMD.
Source: AEC*group*.

Area of Seagrass and Coral Reef Preserved by an EzyRider Swing Mooring

The Reef Conservation Fund will be used to develop EzyRider swing moorings to reduce the level of impact on coral reefs and other benthic communities from boats dropping anchor. The area potentially preserved is estimated to be approximately $30m^2$ per EzyRider mooring. It is estimated that these moorings would be approximately 90% utilised throughout the year, which equates to an overall area preserved by the use of an EzyRider swing mooring of approximately 0.49 hectares per mooring.

Sensitivity analysis on the area of seagrass and coral reef preserved by an EzyRider swing mooring was conducted over ranges between 50% of expected area (0.25 hectares) and 150% of estimated area (0.74 hectares). Where the area preserved is only 50% of the anticipated area used in the base assessment, the project still provides a considerable net benefit to the State, with an NPV of $285.70 million and a BCR of 1.42. However, sensitivity analysis shows that at an estimated preservation of 0.25 hectares per swing mooring, the present value of environmental benefits from using the EzyRider swing moorings would not be sufficient to offset the present value of environmental costs associated with the SHMD, with an NPV of environmental impacts of -$9.5 million.

Whilst this variable influences the net environmental position, given that the project returns a positive net benefit to the State even at half of the anticipated area of seagrass and coral reefs preserved by an EzyRider swing mooring, any discrepancies between the actual preserved area and the estimates used in the assessment are not considered to significantly alter the findings of the analysis.

Table C.17. Sensitivity Analysis of Area of Seagrass/ Reef Preserved by an EzyRider Swing Mooring

% Change from Base Scenario	Area Preserved (Ha)	PV of Benefits ($M)	PV of Costs ($M)	NPV ($M)	BCR	*NPV ($M) Economic*	*NPV ($M) Social*	*NPV ($M) Environmental*
50%	0.25	$970.99	$685.29	$285.70	1.42	*$202.82*	*$92.41*	*-$9.53*
75%	0.37	$977.74	$685.29	$292.46	1.43	*$202.82*	*$93.22*	*-$3.58*
90%	0.44	$981.80	$685.29	$296.51	1.43	*$202.82*	*$93.71*	*-$0.01*
100%	0.49	$984.50	$685.29	$299.22	1.44	*$202.82*	*$94.03*	*$2.37*
110%	0.54	$987.21	$685.29	$301.92	1.44	*$202.82*	*$94.36*	*$4.75*
125%	0.62	$991.26	$685.29	$305.98	1.45	*$202.82*	*$94.84*	*$8.32*
150%	0.74	$998.02	$685.29	$312.74	1.46	*$202.82*	*$95.65*	*$14.26*

Source: AEC*group*.

Increased Mangrove Habitat Along Western Fringe

The SHMD will include reclamation of land under water for the development of land based aspects of the SHMD. Approximately 0.93 hectares of this reclaimed land along the western side of the development site is expected to be colonised by mangrove communities.

Sensitivity analysis has been conducted on the area along the western fringe that will be colonised by mangroves, with areas ranging from no colonisation (0% of area used in base scenario) to 0.93 hectares (100% of estimated area colonised in base scenario). Analysis shows that even where no colonisation of mangrove habitat occurs along the western fringe, the project NPV is reduced by approximately $180,000, which is relatively insignificant compared to the estimated total NPV of almost $300 million (i.e. less than 0.1% of total project NPV). As such, any discrepancies between the actual area colonised by mangroves and the estimates used in the assessment do not significantly alter the findings of the analysis.

Table C.18. Sensitivity Analysis of Increased Mangrove Habitat Along the Western Fringe

% Change from Base Scenario	Area of Mangrove Habitat (Ha)	PV of Benefits ($M)	PV of Costs ($M)	NPV ($M)	BCR	*NPV ($M) Economic*	*NPV ($M) Social*	*NPV ($M) Environmental*
0%	0.00	$984.32	$685.29	$299.04	1.44	*$202.82*	*$94.02*	*$2.20*
50%	0.47	$984.42	$685.29	$299.13	1.44	*$202.82*	*$94.03*	*$2.29*
75%	0.70	$984.46	$685.29	$299.18	1.44	*$202.82*	*$94.03*	*$2.33*
90%	0.84	$984.49	$685.29	$299.20	1.44	*$202.82*	*$94.03*	*$2.35*
100%	0.93	$984.50	$685.29	$299.22	1.44	*$202.82*	*$94.03*	*$2.37*

Source: AEC*group*.

CBA Summary of the Impact of the SHMD to the Mackay SD

The majority of benefits and costs that will be delivered by the SHMD are expected to be local in nature, and as such will deliver the same quantum of benefit or cost to the Mackay SD as that estimated for the State. However, as outlined in Section 7.2.2, the expected transfer of business activity from elsewhere in the Mackay SD to the SHMD is expected to be lower than that transferred from the State.

The following table outlines the net benefit of the SHMD when assessed from a Mackay SD perspective. As can be seen, the net benefit of the SHMD to the Mackay SD is higher than for the State, with an NPV of $359.4 million (compared to $299.2 million for the State scenario) and a BCR of 1.58.

Table C.19. Summary of the Impact of the SHMD to the Mackay SD

Real Discount Rate	PV of Benefits ($M)	PV of Costs ($M)	Net Present Value ($M)	BCR
Economic	$866.5	$603.4	$263.0	1.44
Social	$94.0	$0.0	$94.0	N/a
Environmental	$24.0	$21.6	$2.4	1.11
Total	**$984.5**	**$625.1**	**$359.4**	**1.58**

Source: AEC*group*.

Summary of Findings

The CBA assessment found that development of the Shute Harbour Marina is expected to deliver a total net benefit of $299.2 million in present value terms (NPV) at a discount rate of 10% for direct impacts (i.e. incurred by the proponent) and 6% for indirect impacts (i.e. to stakeholders other then the proponent), with present value of benefits of $984.5 million and a present value of costs of $685.3 million. Overall, the development provides a benefit cost ratio (BCR) of 1.44 (i.e. returns $1.44 for every dollar spent in delivery of the project).

The project provides a positive direct net benefit (i.e. to the proponent) in present value terms of $93.6 million with a BCR of 1.46. The project delivers a positive indirect net benefit (i.e. to stakeholders other then the proponent) in present value terms of $205.7 million with a BCR of 1.43.

All aspects across the triple bottom line (economic, social and environmental) are anticipated to record a net benefit as a result of the project.

It is anticipated that the overall net benefit is understated by these results as where possible a conservative approach has been applied. A number of economic and social benefits were unable to be quantified, with these benefits expected to outweigh the economic and social costs identified from the SHMD project that have not been able to be quantified, which further supports this assessment potentially understating the benefits delivered by the SHMD development.

Table C.20. Quantitative CBA Summary

Impact	PV of Benefits ($M)	PV of Costs ($M)	Net Present Value ($M)	BCR
Economic				
Direct Impacts	$295.8	$202.2	$93.6	1.46
Indirect Impacts	$570.6	$461.4	$109.2	1.24
Total Impacts	**$866.5**	**$663.6**	**$202.8**	**1.31**
Social				
Direct Impacts	N/a	N/a	N/a	N/a
Indirect Impacts	$94.0	$0.0	$94.0	N/a
Total Impacts	**$94.0**	**$0.0**	**$94.0**	**N/a**
Environmental				
Direct Impacts	N/a	N/a	N/a	N/a
Indirect Impacts	$24.0	$21.6	$2.4	1.11
Total Impacts	**$24.0**	**$21.6**	**$2.4**	**1.11**
Total				
Direct Impacts	$295.8	$202.2	$93.6	1.46
Indirect Impacts	$688.7	$483.1	$205.6	1.43
Total Impacts	**$984.5**	**$685.3**	**$299.3**	**1.44**

Source: AEC*group*

From the outcomes of the CBA, it is clear that the direct, indirect and overall impacts of the project result in a net benefit to the community.

Appendix D: Additional Infrastructure

Additional and upgraded infrastructure, such as electricity, telecommunications, water, wastewater and roads, may be required to meet the needs of business, tourists and visitors of the SHMD. The requirements for additional infrastructure costs are currently under discussion with the Whitsunday Shire Council and the level of developer contribution and subsequently the contribution from Whitsunday Shire Council has not been identified. It is assumed that developer contributions will be negotiated with Whitsunday Shire Council with costs being shared between the proponent and other infrastructure providers. The proponent's costing for the development includes some provision for these facilities. The facilities are anticipated to be operated on a cost recovery basis and as such, excluding the developer contribution, are not required to be included in the analysis as they constitute a transfer payment within the community (indirect).

Electricity

As the development is to be under a community title, Ergon will only provide underground high voltage reticulation and ground mounted substations. Low voltage reticulation to individual residential lots and to the hotel and commercial developments will be private reticulation (Lectel, 2007). It is estimated that the total electrical demand of the development, including marina and associated facilities, hotel, managed resort accommodation and commercial and retail areas, will be approximately 1.9MVA (Megavolt Amperes).

Ergon may be required to upgrade or duplicate its current 66kV Mount Rooper zone substation to meet the electricity requirements of the SHMD. Should a zone substation be required, Ergon would most likely require a financial contribution by the developer toward its cost (Lectel, 2007). Upgrading of an existing zone substation or construction of a new zone substation would take approximately 2 years from agreement of a site and for it to proceed to energisation.

Where development of a new zone substation is not undertaken, upgrading of the existing 66kV network may be necessary and could require heavier grade poles and/or overhead conductors (Lectel, 2007). Further, connection of the development to the existing 11kV route will most likely require an easement between Proserpine Shute Harbour Road and the existing Ergon 11kV route along the north side of Proserpine Shute Harbour Road (Lectel, 2007).

The SHMD is expected to require 11kV/240V padmount transformer substations (PMTs) to be located within the marina. It is expected these PMTs will be pontoon mounted, and will be privately owned and provided by the proponent (Lectel, 2007).

The internal electricity reticulation and street-lighting will require underground high voltage (HV) and low voltage (LV) cables to be installed. A number of 125mm conduits and PMTs will be required at intervals throughout the development.

Depending on customer loads a single PMT can supply up to 90 residential customers and is located on an easement of 3m by 2.8m. On sloping ground a slightly larger area would be required to accommodate retaining walls outside the easement. Each PMT may require an earth grid. Should an earth grid be required for an Ergon PMT, the padmount easement would be 12m by 7.2m (Lectel, 2007).

The HV reticulation to pontoon mounted PMTs would be privately owned and would be connected to an HV metering point on land. It is considered that HV reticulation cabling within the marina should be run underground to below each PMT and should rise to accommodate tidal variation and pontoon motion. An LV switchboard to control circuits to power outlets on bollards would be installed adjacent to each PMT. LV circuits could be installed below pontoon decking.

Telecommunications

Telstra are currently mandated to provide a copper cable telephone network, or PSTN, in all new freehold developments free of charge to the developer except for the cost of trenching and any possible civil headworks (Lectel, 2007). Although the PSTN will be fully owned by Telstra, other service providers would be able to resell their services across it.

Adequate existing conduits and optic fibre cable is available in the vicinity of the development. Telstra's adjacent existing assets include a fibre optic cable in conduit along the north side of Shute Harbour Road and a copper cable in conduit along the south side of Shute Harbour Road connecting to a pillar at the boundary with the property east of the development site. The existing network is broadband data transmission enabled via ADSL technology. No additional conduits should be required but Telstra may need to upgrade mains cabling (Lectel, 2007).

The area should receive adequate mobile phone coverage from Telstra and Optus repeater stations as well as wireless data coverage from existing base stations. The area is also located within the Austar satellite digital pay TV footprint for pay TV services (Lectel, 2007).

Water and Sewerage

Water and sewerage costs will be shared between the developer and Whitsunday Shire Council. The actual contributions are yet to be identified.

Roads

A condition to provide provision for a three lane cross section has been identified as part of the SHMD. Land has been dedicated to meet this requirement, with the Department of Main Roads to construct the additional lane in the future as and when required as follows (Cardno, 2007a):

- 3 x 3.5 metre lanes for two through lanes plus one overtaking lane;
- 2 x 2.0 metre shoulders; and
- 2.0 metre central median.

Car Parks

Car parking in Shute Harbour is already over subscribed and Queensland Transport have informed the Whitsunday Shire Council that they will only contribute to the a new boat ramp when an additional 90 car and boat trailer spaces are provided for users (AEC*group*, 2008a). Council has prepared preliminary plans to create some additional parking at Shute Harbour although no decision will be taken before the SHMD is considered.

Appendix E: Valuation of Environmental Impacts

Original environmental and recreational values for marine communities in US 1994 dollar terms have been taken from Costanza (1997) and inflated to Australian 2007 dollar terms using an exchange rate of AUD 0.73/ USD, and an inflation multiplier for 1994 to 2007 of 1.42 (Reserve Bank of Australia, 2008a and 2008b).

Table A.1. Environmental/ Social Value of Marine Communities in $/Ha

Aspect	US$1994 Value/ Ha	AU$2007 Value / Ha
Total Ecosystem Values		
Seagrass/ macroalgae	$19,004.00	$34,999.10
Mangroves	$9,332.00	$17,186.46
Coral reefs	$3,067.00	$5,648.40
Habitat Value		
Breakwater [(a)]	$130.57	$240.47
Recreational Values		
Coral reefs	$3,008.00	$5,539.74
Mangroves	$658.00	$1,211.82

Note: (a) The habitat value for breakwater is estimated as the replacement value for the existing seagrass communities.

AECgroup

› BRISBANE

› SYDNEY

› CANBERRA

› TOWNSVILLE

› CAIRNS

E: aec@aecgroupltd.com
W: www.aecgroupltd.com