

Gladstone Ports Corporation Growth, Prosperity, Community.

# Chapter 13 – Social Impact





# 13. Social Impact

#### Overview

A Social Impact Assessment (SIA) has been undertaken to identify the potential impacts of the Project on the surrounding social environment. This chapter directly addresses Section 4.1 Social from the ToR (Appendix A). A full copy of the Social Impact Assessment Report and the Stakeholder and Community Consultation Report are provided Appendix W and Appendix F, respectively. A summary of the key results are provided in this section.

# **13.1** Description of Environmental Values

#### 13.1.1 Method of Assessment

#### Social Impact Assessment

A SIA is defined as "the process of analysing (predicting, evaluating and reflecting) and managing the intended and unintended consequences on the human environment of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions so as to bring about a more sustainable and equitable biophysical and human environment" (Vanclay 2003).

This SIA has been prepared following the International Principles for Social Impact Assessment (IAIA 2003). In accordance with these principles, this SIA report seeks to provide a true analysis of the likely social consequences of the Project and outline the monitoring and management processes to minimise identified adverse impacts and enhance the opportunities.

This SIA has been compiled using data collected via desktop research and consultation with stakeholders. Key sources include:

- ABS census community profile for the Gladstone State Electoral Division, Fitzroy Statistical Division and Queensland;
- Direct consultation with key stakeholders;
- Reports and information from Gladstone Regional Council and the former Calliope and Miriam Vale Shires and Gladstone city;
- Data from state government departments;
- Various published studies relevant to the site and the Gladstone community;
- Information provided by the GPC project team;
- Information provided by GHD technical specialists;
- Relevant case studies and academic literature; and
- The Fisherman's Landing Northern Expansion Social Impact Assessment developed by GHD for GPC (used as a reference document).

The methodology used to predict, analyse and manage potential impacts follows four steps, summarised in Figure 13-1.



#### Figure 13-1 Key Steps of the SIA Process

#### **Consultation and Engagement Outcomes**

Consultation was undertaken through one-on-one-meetings with key stakeholders, including recreational and commercial fishers, environmental organisations, indigenous groups, local and state government representatives and business groups (Table 13-1). A community open day was also held on 1 July 2009. A summary of consultation activities and stakeholder feedback is available in the Stakeholder and Consultation Report (Appendix F).

The values expressed during consultation were as follows:

- Environmental values: Community member and environmental organisations in particular value the relatively untouched nature in and around the Western Basin, Graham's Creek and Curtis Island. Particular concerns included limiting industrial development on Curtis Island and preserving dugong habitat in the harbour.
- Recreational values: Many residents of Gladstone are boat owners and value the proximity and access to the sea for recreational fishing and boating activities. There are concerns that proposed developments will limit access to key quality recreational areas.
- *Economic values*: Economic and industrial development and related employment opportunities are also likely to be strong values present in the community.

Stakeholder Category	Agency/Organisation	Number of representatives
Proponent	Gladstone Ports Corporation (GPC)	5
Local government authority	Gladstone Regional Council	10
State Agencies/ Authorities & Elected Representatives	Department of Infrastructure and Planning	3
	Department of Communities	1
	Great Barrier Reef Marine Park Authority	1

#### Table 13-1 Community Organisations Engaged in SIA Consultation Meetings



Stakeholder Category	Agency/Organisation	Number of representatives
State Agencies/ Authorities & Elected Representatives	Member for Gladstone	1
	Department of Employment, Economic Development and Innovation – inclusive of Department of Mines and Energy, Department of Primary Industries and Fisheries, Department of Tourism, Regional Development and Industry	4
	Department of Environment and Natural Resource Management – inclusive of Department of Natural Resources and Water and Environmental Protection Agency	7
Federal Government Agencies	Department of the Environment, Water, Heritage and the Arts	2
Environmental organisations	Fitzroy Basin Association	1
	Tannum-Boyne Coast Care	1
	Central Queensland University – Centre for Environmental Management	3
	Capricorn Conservation Council	3
Business and industry groups	Gladstone Area Promotion and Development Limited	1
	Local commercial fishing representatives	3
	Queensland Seafood Industry Association	1
Recreational groups	Gladstone Local Marine Advisory Committee (LMAC)	4 (one was joint LMAC and GSC)
	Gladstone Sportsfishing Club (GSC)	2
	Info Fish	1
Local Indigenous groups	Port Curtis Coral Coast People (PCCC)	10
Broader local community	Community Working Group	12
	General community	4

There were a large number of values expressed during consultation and these were consolidated into three overarching themes: economic growth and employment, equitable social outcomes and natural assets and recreation. These themes are summarised under the following headings.



#### **Economic Growth and Employment**

Much of the local community is employed by large private industrial groups, Queensland Government agencies associated with heavy industry or small/medium businesses providing support and services to industry. The local community appears to place strong value on the industrial development and the benefit it brings to the community in terms of employment and standards of living.

#### **Equitable Social Outcomes**

There are recurring concerns about some of the adverse social effects of strong growth. Issues such as provision of social services, housing affordability and income inequality appear to be pertinent to at least parts of the community. The value expressed is essentially one of equity in social outcomes, ensuring that the less well-off also benefit from economic growth and prosperity.

#### **Natural Assets and Recreation**

The Project's consultation activities identified that strong community value is placed on the local area's natural assets. This value is also reflected in the promotion of the area as an attractive lifestyle choice and desirable tourist destination. The popularity of various recreational activities, particularly fishing (Section 13.1.12), also reflect the community value placed on the area's natural assets. Gladstone has one of the highest proportional boat registration levels in Queensland, with registrations increasing by over 110 % between 1985 and 2005 (Platten *et al.* 2007).

#### 13.1.2 Description of the Local Area

#### Early History

Prior to European settlement, the Gladstone region was home to the Baiali (or Byellee) and Goreng Goreng Aboriginal tribes. The Goreng Goreng people are an Australian Aboriginal language group, their range was between Baffle Creek to Agnes Waters, extending west as far as Kroombit Tops. More detail on Indigenous history of the region is available in Section 11 Cultural Heritage. A detailed description is contained in Appendix W.

#### Local Area

The local study area is defined as the Gladstone State Electoral Division (SED 30031). This area covers 6709.7 square kilometres, and is equivalent to the former shires of Gladstone and Calliope (ABS 2007a) (Figure 13-2). The Gladstone State Electoral Division is the area which is most likely to experience the majority of the social impacts resulting from the Project.





#### Figure 13-2 Local Study Area

Source: ABS (2007a), Gladstone State Electoral Division, image retrieved from www.abs.gov.au 12 May 2009.

The city of Gladstone is the closest major urban centre to the Project area, and the largest urban and main residential area in the Gladstone region. Gladstone is a major port and industrial hub, and major service centre. Calliope (~17,538), Boyne Island (~4,662), Tannum Sands (~4,146) and Mount Larcom (~350) are the next largest towns in the Gladstone region in terms of population. There are also various rural residential townships and localities spread throughout the Gladstone region. These smaller towns service the greater regional area, which contain predominantly rural land uses, particularly beef cattle grazing. Other land uses throughout the region include forestry reserves, mining and conservation lands.

The following towns are located throughout the broader Gladstone region and are listed in order of proximity, by road, to the Western Basin site: Targinie, Yarwun, Aldoga, Gladstone City, Mount Larcom, Boyne Island, Tannum, Calliope, Benaraby. The GRC area also incorporates various other towns and communities (includes the Town of 1770 and Agnes Waters), which are not considered as being in close enough proximity to Western Basin to be included here.

The city of Gladstone is at the forefront of the community and industrial development in Australia and represents an area of National and State economic significance. Major industry in Gladstone now includes the world's largest alumina refinery, Australia's largest aluminium smelter, a thriving fishing industry and a growing tourism industry. The region surrounding Gladstone is also home to a broad range of rural primary industries.

#### 13.1.3 Description of Regional Study Area

The regional study area is defined as the Fitzroy Statistical Division (SD 330). The statistical division covers an area of 122,966.5 square kilometres, and holds the two major centres of Rockhampton and Gladstone.



#### Figure 13-3 Regional Study Area

#### 13.1.4 Community History

Prior to European settlement, the Gladstone region was home to the Baiali (or Byellee) and Goreng Goreng Aboriginal tribes. The Goreng Goreng people are an Australian Aboriginal language group, their range was between Baffle Creek to Agnes Waters, extending west as far as Kroombit Tops. More details on indigenous and European history of the region, including the development of the Port, are provided in Chapter 12 and Appendix W.

The Gladstone region has more recently been governed as individual shires / cities including Calliope Shire, Gladstone City and Miriam Vale Shire. As a result of Local Government Reform undertaken by the Queensland State Government, a new council was formed on the 15th March 2008. The new Gladstone Regional Council (GRC) represents an amalgamation of the former Calliope Shire Council, Gladstone City Council, and Miriam Vale Shire Council. The GRC consists of a publicly elected Mayor and eight Councillors which have an estimated operating budget of A\$84 million. The GRC covers an area of 10,488 square kilometres, containing an estimated resident population of 51,351 (in 2006) and has no internal council boundaries / divisions.

#### 13.1.5 Population and Demographics

The demographic profile is based on data from the 2006 Census of Population and Housing. The data has been retrieved from the basic community profiles for each of the study areas (Table 13-2). The basic community profiles in the 2006 census are based on place of usual residence<sup>1</sup>.

<sup>&</sup>lt;sup>1</sup> Place of usual residence refers to the place where a person lived or intended to live for a total of six months or more in 2006. Using the place of usual residence count minimises seasonal population fluctuation.



### Historical Population Trends

Table 13-2 depicts the local, regional and state study area populations from 1981 to 2007. Figure 13-4 shows the population change from the previous period (five year intervals). All study areas experienced a slowing growth in the five year period to 2001, and an increased growth after this period. However, the local study area experienced the strongest population change of the study areas in the period to 2006 (16 %). The 2007 populations of the local and regional study areas correspond to 1.2 % and 4.9 % of the state study area population respectively.

Study Area	1981	1986	1991	1996	2001	2006	2007
Local Study Area	32,275	33,290	36,113	40,149	41,885	48,483	50,033
Regional Study Area	146,562	160,120	168,368	178,028	181,747	200,385	204,537
State Study Area	2,345,208	2,624,595	2,960,951	3,338,690	3,628,946	4,090,908	4,182,062

#### Table 13-2 Estimated Resident Population (1981 – 2007)



Source: Queensland Future Population 2008 edition, appendix B ERP 1981-2007 pre-reformed LGA's

Source: Queensland Future Population 2008 edition, appendix B ERP 1981-2007 pre-reformed LGA's

#### Figure 13-4 Population Change from Previous Period (Five Year Intervals)



#### Population Projections

Table 13-3 and Figure 13-5 identify the projected population change for the local, regional and state study area (medium series). The local study area is projected to grow strongly to 2011 with an expected increase of 17 % from 2006. After 2011 population growth is expected to slow down, but still remain between 10 % and 12 % per five year interval. Population growth is expected to follow a similar, although slightly slower, pattern in the regional and state study areas. The local study area is expected to be home to 86,174 people in 2031, a growth of 37,691 persons since 2006.

Study Area	2006	2011	2016	2021	2026	2031
Local Study Area	48,483	56,639	63,449	70,622	78,419	86,174
Regional Study Area	200,385	224,753	243,492	262,703	283,248	303,793
State Study Area	4,090,908	4,567,713	5,040,325	5,478,715	5,884,389	6,273,885

Table 13-3	Projected	Population	(Medium	Series),	2006 -	2031
------------	-----------	------------	---------	----------	--------	------

Source: Queensland Future Population 2008 edition, Appendix F Estimated resident population and projected resident population (medium series), Queensland's Statistical Divisions, pre-reformed Local Government Areas.

Note: The population figure for 2006 is estimated resident population. As such, it differs from the census data from the same year.



Source: Queensland Future Population 2008 edition, Appendix F Estimated resident population and projected resident population (medium series), Queensland's Statistical Divisions, pre-reformed Local Government Areas

#### Figure 13-5 Projected Population Change (Medium Series), 2011 - 2031



# 13.1.6 Socio Economic Profile

This section provides a socio-economic profile for the local region. ABS Census data is presented and analysed in relation to the local labour force profiles, income levels and education and general information is provided on local economic activity, particularly commercial fishing operations. Further economic information is provided in Chapter 15.

#### Gladstone Region Labour Force Profile

The local, regional and state study areas had similar levels of employment and unemployment at the time of the 2006 census (Table 13-4). However, the local study area had a higher proportion of labour force participation and a lower percentage of people not in the labour force compared to the regional and state study areas in 2006.

More recent labour force data is published by the federal Department of Education, Employment and Workplace Relations in the quarterly publication Small Area Labour Markets. The most recent data available is from the December quarter 2008. Figure 13-6 shows the unemployment rates for the Statistical Local Areas (SLA) in the local study area. There is a trend towards increasing unemployment rates over the last year, although there appears to be a slight decrease between the September and December quarters 2008. In the December quarter 2008 unemployment rates in the local study area ranged between 4.2 % and 5.1 %.

	Local Study	Local Study Area		Regional Study Area		State Study Area	
	Total Number	Percentage (%)	Total Number	Percentage (%)	Total Number	Percentage (%)	
Labour force	23,102	67 %	91,753	63 %	1,915,947	62 %	
of which employed	21,940	95 %	87,627	96 %	1,824,997	95 %	
of which unemployed	1,162	5 %	4,126	4 %	90,950	5 %	
Not in the labour force	9,286	27 %	42,861	30 %	971,828	31 %	
Not stated	2,126	6 %	10,394	7 %	210,220	7 %	
Total	34,514	100 %	145,008	100 %	3,097,995	100 %	

#### Table 13-4 Labour Force Status

Source: ABS (2007a), 2006 Census Community Profile Series, Basic Community Profile, Gladstone SED, Fitzroy SD and Queensland, table B41

Note: Population includes persons aged 15 years and over. Employment and unemployment have been calculated as a percentage of the labour force.



Source: Department of Education, Employment and Workplace Relations (2009), Small Area Labour Markets December Quarter 2008, table 3, retrieved from www.workplace.gov.au 18 May 2009

#### Figure 13-6 Unemployment Rate for Statistical Local Area's Within Local Study Area

Quarter

#### Gladstone Region Economic Profile

The Gladstone Regional Council area has a history of strong economic growth based around industrial development, port facilities and extraction of natural resources (Calliope Shire Council 2004). The area is the most significant heavy industry area in Queensland, and prides itself as one of Australia's industrial 'powerhouses'. The regional area has extensive mineral deposits, and mining, mineral processing and service industries are important industries, both in Gladstone and the regional study area.

There is a broad range of infrastructure in place to support Gladstone's industrial development, with major projects implemented through associations with private entities, GRC and Queensland Government agencies such as Queensland Rail, the Department Main Roads and the Gladstone Ports Corporation. The port of Gladstone is Australia's largest multi-commodity port and it houses the world's fourth largest coal export terminal.

While heavy industry has been, and is likely to remain, a crucial economic driver for Gladstone, the economy has matured and diversified. Emerging industries include service based industries and tourism (Futureye 2008). Major heavy industrial projects located in Gladstone which are currently underway, committed and under investigation are listed in Table 13-5.



# Table 13-5 Major Heavy Industrial Projects Located in Gladstone

Projects Underway	Projects Committed	Projects Under Investigation
Rio Tinto Alcan – Yarwun Alumina Refinery	Jemena Limited – Capacity building for Rio Tinto Aluminium's Yarwun expansion	Arrow Energy Limited and AGL Limited (Joint venture) – High pressure gas transmission pipeline development
Cement Australia – New Cement Mill	Origin Energy – Walloon coal seam gas fields development	Gladstone Ports Corporation Limited – Berth expansion on 153ha of reclamation adjacent to existing Fisherman's Landing
Boyne Smelters Limited – Construction of new baking furnace and upgrade of crane runway	Wiggins Island Coal Terminal – Stage 1	Arrow Energy Limited – Boyne River coal seam gas exploration and appraisal
	Gladstone Pacific Nickel Limited – Stage 1 laterite nickel ore processing plant	Transpacific Industries Group Limited – Expansion of regional waste management facility
	Powerlink – Infrastructure upgrades	Surat Basin Rail (SBR) ATEC DVR, Xstrata Coal Anglo Coal and QR – Dawson Valley railway development
		Queensland Rail – Moura Link – Aldoga Rail project
		Australian Inland Rail Expressway (AIRE) – Inland railway to link
		Gladstone Area Water Board – Gladstone-Fitzroy Pipeline project
		Queensland Energy Resources Limited (QER) – Oil Shale technology development facility
		Boulder Steel Limited – Blast furnace based steel plant development
		SANTOS GLNG (Santos and Petronas) – Curtis Island LNG production facility development

Western Basin Dredging and Disposal Projec

Projects Underway	Projects Committed	Projects Under Investigation
		Queensland Curtis LNG (QGC – a BG group business) – Curtis Island LNG production facility development
		Gladstone LNG Pty Ltd (LNG Ltd with Arrow Energy NL) – Fisherman's Landing LNG production facility development
		Australian Pacific LNG (Origin and ConocoPhillips) – Curtis Island LNG production facility development
		Southern Cross LNG (LNG Impel) - Curtis Island LNG production facility development
		Project Sun LNG (Soiitz Corp) – Fisherman's Landing LNG production facility development

Tourism is also an important economic driver in the Gladstone region. In 2006, 356,300 visitors travelled to Gladstone, 86 % of these being Australians (Futureye 2008). Major tourist attractions include Heron Island, the historic Town of 1770 and easy access to the Great Barrier Reef and Boyne Tannum.

In addition, the Gladstone region has extensive quality agricultural lands and agriculture is still one of the area's main industries. The region surrounding Gladstone supports a well established cattle industry, supplemented by dairying, grain, fruit and vegetable growing and timber production (Travel Australia 2008). Various rural centres, such as Calliope, have gradually developed outside of Gladstone city. There is also a forestry industry in the region, based on softwood plantations.

#### Commercial Fishing in the Gladstone Region

Gladstone supports a significant commercial fishing industry. The commercial fishing fleet operating out of Gladstone Harbour includes line fishers, net / crab fishers, trawl fishers and seasonal prawn fishers. Commercial operators utilise various locations in and around Gladstone harbour, Port Curtis and further off shore. Trawlers operate around and south of Gladstone Marina but are not allowed to trawl in various areas within Gladstone Harbour.

The Coastal Habitat Resources Information System (CHRIS)<sup>2</sup> is a resource centre for Queensland coastal fish habitat, fisheries resources and environmental datasets (layers) developed by Queensland Primary Industries and Fisheries (QPIF) and other agencies. The CHRIS resource facilitates monitoring

<sup>&</sup>lt;sup>2</sup> The Coastal Habitat Resources Information System can be accessed at: http://chrisweb.dpi.qld.gov.au/CHRIS/.



of the condition and trend of coastal fisheries habitats for the Commercial Fishers Information System (CFISH).

For reporting purposes, the Australian coastline is divided by a grid system, with large grid squares divided into smaller compartments. Figure 13-7 shows grid S30, which captures the Gladstone Harbour and broader Gladstone regional area.



Source: http://chrisweb.dpi.qld.gov.au/CHRIS. Accessed: 04 March 2009.

# Figure 13-7 Commercial Fishing Logbook Data Collection Grid System Under the Commercial Fishers Information System (CFISH)

Due to confidentiality agreements, QPIF do not provide data on smaller grid sites if the specific commercial fishing activity (i.e. line netting, pot crabbing or trawling) recorded for these sites involve five (5) or less individual operators. Table 13-6 provides a summary of annual commercial catches by all commercial fishing activities in the Grid S30 area.

Year	Tonnes	Boats	Days	GVP (AUS \$)
1988	97.6	71	1774	\$809,400.00
1989	132.1	76	2050	\$1,079,900.00
1990	127.9	96	2459	\$1,300,000.00
1991	265.5	128	3458	\$2,642,700.00
1992	237	118	3510	\$2,319,700.00
1993	249.4	143	4041	\$3,135,400.00
1994	159.9	108	3541	\$1,425,300.00

#### Table 13-6 Annual Commercial Catches in the S30 Area



Year	Tonnes	Boats	Days	GVP (AUS \$)
1995	190.5	133	3674	\$1,976,500.00
1996	227.2	127	3710	\$1,847,900.00
1997	167.9	125	3757	\$1,404,800.00
1998	210.8	105	3852	\$1,955,000.00
1999	221.2	108	4343	\$2,127,300.00
2000	224.2	114	4175	\$2,019,200.00
2001	227.4	103	3223	\$1,910,600.00
2002	287.5	82	3676	\$2,332,000.00
2003	467.7	95	4842	\$3,857,500.00
2004	527.5	85	4806	\$3,990,800.00
2005	421.6	65	3772	\$2,826,600.00

Source: http://chrisweb.dpi.qld.gov.au/CHRIS. Accessed: 04 March 2009. Search results for: Fishery Type = 'All (Listed)', Year = 'All', Month = '99', Species = 'All Species', Selected Sites(s)/Grid(s) = ("S30"), returned 137 records.

Consultation meetings with local commercial fishers revealed that there are around six (6) commercial fishing operations that use the areas in and around the Port of Gladstone. The commercial activities include:

- Mud crabbing: conducted along the mainland coast north and south of the existing Fisherman's Landing facility. Commercial crabbers are allowed to put out up to 50 crab pots each. Consultations with commercial operators indicated that there can be up to 150 crab pots placed along the coast north and south of the existing Fisherman's Landing facility at any one time;
- Fish netting: commercial fishers do net 'shots' at various locations off the mainland coast adjacent to and north of the proposed reclamation site. Specific sites are generally selected based on their ability to intercept coastal tidal flows on particular tide changes. Friend Point is a particularly productive site as it is generally highly turbid and can be fished on various tides due to the site's protection from the main currents; and
- Trawlers also use the Port of Gladstone. However, they are not allowed to trawl in the Port area and mainly use the port as a thoroughfare to access the ocean, the Narrows and northern Curtis Island.

#### 13.1.7 Utilities and Municipal Services

The major utility services operating in the Gladstone region include electricity and water. Lake Awoonga is the main water source for the Gladstone region (Travel Australia 2008). The Gladstone Area Water Board (GAWB) supplies raw and treated water for industrial purposes to Gladstone and surrounding areas by pipeline from Lake Awoonga. The major electricity generating facility in Gladstone is the NRG Gladstone Power Station. The station is one of the biggest in Queensland, with a large proportion of the electricity produced going to industrial use, particularly local refineries.



### 13.1.8 Community Facilities and Services

Gladstone contains a broad range of services and facilities catering for local residents and surrounding communities. Community members generally travel to Gladstone or Rockhampton to access vital services, as there is a limited range of community services and facilities throughout the various regional towns and communities. The lack of any real hub of community services and facilities in the Yarwun and Targinie areas can mainly be attributed to the provision of these services in the Gladstone city area and additional specialist services and retail facilities provided in Rockhampton. Appendix W provides a detailed summary of the community facilities and services in the Gladstone area.

#### 13.1.9 Community Values, Vitality and Lifestyles

Community values have been identified through direct consultation with community groups and a review of Gladstone Regional Council (including the former shires) plans, reports and surveys.

#### **Gladstone Regional Council Documents**

#### **Community Visioning Project 2028**

Gladstone Regional Council is currently undertaking a visioning project, with the aim of guiding the regions' development to 2028. As a part of this project a community survey was undertaken (Futureye 2008), indicating the following key points:<sup>3</sup>

- Two thirds of the respondents believed that the community members care about the environment;
- More than half of the respondents agreed with the statement that the community tends to have traditional family values;
- More than half of the respondents believed that Gladstone people embraced multiculturalism;
- The vast majority of the respondents agreed to, or strongly agreed to the statement "I am optimistic about the future of Gladstone";
- Although not addressed in the survey, health is indicated as a major community issue;
- The main feature of living in Gladstone that the respondent's wished to retain was the "community spirit / friendliness / lifestyle";
- The most important social issues identified by the respondents were "housing and accommodation", "health and health services" and physical infrastructure;
- In relation to the industrial growth in Gladstone, 72% of the respondents believed that the current rate of growth is appropriate. A significant minority, 20%, believed too much industrial growth occurred; and
- The key opportunities identified for Gladstone were "more jobs" and "industrial growth".

Key challenges and opportunities to 2028 identified in the report are:<sup>4</sup>

Society

<sup>&</sup>lt;sup>3</sup> The results are reported as they are described in the visioning report. No notes were provided as to survey methods, sample size or response rates. It is thus difficult to verify with which degree of certainty inference to the whole Gladstone community can be made.

<sup>&</sup>lt;sup>4</sup> The results below appear as described in the report. The issues have been identified by the visioning committee. The method for selecting the committee and methods applied for identifying these issues are however unknown, limiting the reliability of the representativeness of it.



- Affordability: housing costs, rental costs and inequity of salaries contribute to low affordability for some residents;
- Recognition of Indigenous heritage;
- The transient population of Gladstone; and
- Insufficient community services: There are issues related to the provision of childcare, access to services, health services, mental health support, sports facilities, youth activities and facilities, youth homelessness, recognition of spiritual values, police service, aged care and education.

#### Economy

- Need to foster partnerships between industry, government and community organisations;
- Need for appropriate training facilities;
- Need to upgrade infrastructure including upgrade to the Gladstone Airport, safer roads and improve disability access; and
- Address the cost of living.

#### Environment

- Protection of remnant vegetation;
- Initiatives to clean up and protect local environment;
- Water reliability;
- Air and water quality;
- Monitoring of environmental impacts; and
- Climate change.

#### Governance

- Develop connection between all (former) local governments in the area; and
- Government funding is directed to Rockhampton rather than Gladstone.

#### Draft Corporate Plan 2009 – 2013

Gladstone Regional Council is preparing a corporate plan for the period 2009-2013 (Gladstone Regional Council 2009). A draft version of the report is currently (July 2009) available on Council's website.

The vision statement of the Gladstone Regional Council is to "... be the region of choice with strong leadership and delivering quality infrastructure and services". Key identified values relating to the community include:

- Valuing community input into local decision making;
- Sustainable, environmentally managed growth;
- Quality of life for our community; and
- A community rich in cultural diversity, civic pride and regional identity.

Community outcomes identified in the draft plan are:

• A strong overarching regional identity which also recognises and supports local community identity;



- A vibrant community with strong support networks;
- A range of quality community facilities and services that serve the varied lifestyle choices of the region's residents;
- Healthy and safe communities where residents are protected through public health, safety and counter disaster programs; and
- Provide appropriate green open spaces that support a diverse range of recreational, community and conservation activities.

#### **Council Surveys**

The former Gladstone City Council (GCC) and Calliope Shire Council (CSC) have undertaken surveys which address important aspects of community values. The key findings of these surveys are detailed below:

- Benchmark Community Satisfaction Survey (Market Facts 2005):
  - The survey was conducted as part of consultations for the GCC Corporate Plan 2005 to 2010. It
    incorporated specific questions on the community's visions and priorities for Gladstone City. The
    overall rating of Council performance was 73.28%. Community expectation and levels of
    satisfaction with service delivery from Council are summarised in Table 13-7.

Satisfaction	Importance				
	Least	Moderate	High		
Low	Shopping centres Public transport	Road construction Parking facilities Footpaths curbing & guttering	Road maintenance Community health Town planning Traffic management		
Medium	Heritage protection Community development	Environmental protection and conservation Community services Building control Providing leadership & advocacy Street lighting Community safety			
High	Cultural & entertainment facilities Development of tourism Pet/animal control	Libraries and other information access Sport & recreation facilities Parks playgrounds & park amenities Economic development/ local employment	Sewage Water supply Drainage & flood mitigation Waste management		

#### Table 13-7 Benchmark Community Satisfaction Survey



Source: Gladstone City Council, Draft Corporate Plan 2005-2010, 2005: 34.

- Survey of the Calliope Shire Population 2005 (R and Z Consulting 2005). The project was designed to provide information on community perceptions regarding local government, demands for local government services and to identify particular areas of concern. Community services and facilities that were identified as most important included water supply, sewage, mosquito control, community sharps management, drainage, domestic water collection and school based vaccination programs.
- Gladstone Doing Business Survey (Gladstone City Council 2004). The purpose of the survey was to identify local business opinion relating to needs and concerns, perception of business within the area, reasons for relocation, product and service distribution and possible improvements for the Gladstone business sector. Key findings of the survey included:
  - Businesses pride themselves on the provision of a quality product backed by a high standard of service and strong community and customer relationships;
  - Limited competition and a good locally based market share is seen as an advantage is generating strong market positioning;
  - Personal quality of life is seen as important;
  - There are significant gaps in the availability of skilled labour across various fields;
  - Expansions are usually market driven, however, closures, sales and relocations out of the region are more likely to be for personal reasons;
  - Major industry peaks and troughs are perceived to be impacting on small and medium businesses; and
  - The greatest need for business support is for programs and services that will enhance the ability
    of operators to plan and manage their business strategically.

#### Previous Council Plans and Policies

Various policies and plans of the former Gladstone City Council (GCC) and Calliope Shire Council (CSC) also address community values and aspirations. The key aspects of these plans relating to community values include:

- Gladstone Draft Corporate Plan 2005-2010 (Gladstone City Council 2005b):
  - The vision statement for the plan is "Gladstone will be the City of Choice for Lifestyle and Opportunity". This recognises that the city draws people to the area for employment opportunity, and aims to offer superior lifestyle options through the provision of facilities and social networks and through maintaining a balance between development and the environment.
- Cultural and Quality of Life Policy 2004:
  - The policy is the result of detailed research and cultural mapping which took into account both the City of Gladstone and the Calliope Shire. It is the vision of the cultural policy to contribute to maintaining the balance between economic and industrial growth and the provision of "human needs". It is acknowledged that the achievement of the intent of the policy will depend on the ability of local people, business, industry and government to think and act strategically and holistically, to communicate widely, anticipate change, reframe problems, mobilise the community and make informed decisions.



- Calliope Corporate Plan 2004-2008 (Calliope Shire Council 2004):
  - Recognises that regional growth will always be intrinsically liked to industrial development, port
    facilities, the extraction of natural resources and the success of State and Federal Government
    initiatives to promote the region for the development of internationally competitive facilities. It
    acknowledges that the shire must be ready to meet future challenges for development, whilst
    maintaining quality of life. The mission statement of the former Calliope Shire Council was:

"The Council, in partnership with the community, environment and industry, will strive to achieve sustainable development and the provision of quality infrastructure and services to the community."

#### 13.1.10 Accommodation and Housing

Appendix W provides a housing and accommodation profile for the local area and surrounding regions. Information is provided on private housing and temporary accommodation.

#### 13.1.11 Education and Childcare

Appendix W provides an education profile for the local area and surrounding regions. Information is provided on educational institutional facilities, other education facilities associated with primary and secondary education and childcare facilities.

#### 13.1.12 Sport and Recreation

Appendix W outlines the recreational / leisure and sporting facilities and activities that are currently conducted and in operation throughout the Gladstone region. In the following section, particular attention is given to recreational fishing in the Project Area as dredging and reclamation activities are likely to have implications for recreational fishing in the area.

#### Recreational Fishing and Boating in the Gladstone Region

Fishing is a major recreational activity throughout the entire Gladstone region, with Gladstone city having one of the highest rates of boat ownerships of any community in Australia (GAPDL 2008). Mud crabs are harvested from the rivers and estuaries during the summer months and prawns are fished offshore (Travel Australia 2008). Boat ramps are available at Gladstone Harbour, Boyne Island, Tannum Sands, Calliope River and the Narrows.

Popular fishing spots in close proximity to Gladstone include (Travel Australia 2008 and GAPDL 2008):

- Gladstone harbour (including Cement Australia Wharf, Auckland Point Wharf, Barney Point Wharf, Q.
   A. L Wharf and Boyne Smelter Wharf);
- Gladstone Power Station; and
- Barney Beach.

Popular fishing spots in the broader Gladstone region include (Travel Australia 2008):

- Calliope River (offering barbecue facilities and 48 hour camping);
- Boyne River;
- Wild Cattle Creek (at the southern end of Tannum Sands Main Beach);
- Gatcombe Head (at the south end of Facing Island and accessible by boat only);



- Farmers Point (at the northern end of Facing Island);
- South End (at the southern end of Curtis Island);
- Various estuaries;
- Various offshore reefs, particularly Swains Reef and the Capricorn and Bunker Groups; and
- Lake Awoonga (offering Barramundi fishing assisted by the Gladstone Area Water Board which operates a fish hatchery breeding approximately 300,000 selected fish species for release each year).

#### Recreational Fishing in the Western Basin Area

Fishing is by far the most prominent recreational activity undertaken in the Western Basin of the Gladstone Harbour. Recreational fishing activity predominantly includes line fishing, prawning and mud crabbing. Gladstone Harbour is closed to commercial fishers from Friday 6 pm until Sunday 6 pm to provide access for recreational fishers.

The coastal areas directly in the area of interest contain extensive mangrove systems and various creek mouths that are common places for recreational mud crabbing, especially on weekends. The area along the coast north of the existing Fisherman's Landing (commonly referred to as "the Pines", due to a distinctive rows of pine trees positioned there) offers road access to crabbing areas and is one of the few easy access points for crabbing in close proximity to Gladstone. According to consultation meetings held with local recreational fishers, this road access will generally be frequented by 4 - 5 vehicles at any one time on the weekends and approximately two vehicles on weekdays. Recreational crabbers are restricted to a maximum of four pots each and potting is the only legal method of crab fishing. The catch is generally seasonal with mud crab captured more frequently in warmer months.

Recreational line fishing is mainly conducted off privately owned boats. Activity and catches are dictated by the seasons, with Barramundi captured more frequently in the warmer months, and Yellowfin Bream, Blue Threadfin, Salmon and Sand Whiting caught more commonly in winter (Platten et al 2008). Much of the winter fishing activity, particularly for Salmon, occurs at night. Day fishing occurs year round, particularly in areas with turbid waters.

Seasonal recreational prawning occurs between February and March. Prawns are caught with a cast net and catches are typically better during the evening, on high tide and dependent on rain events. "The Pines" area offers road access to prawning areas and is one of the few easy access points for prawning in close proximity to Gladstone.

#### Fishing Effort

#### **Estimated Number of Fishing Trips**

Most of the fishing and boating trips to the Western Basin of the Gladstone Harbour depart either the Morgan Street or VMR ramp on Auckland Creek or the Calliope River boat ramp (near the NRG power station) (Figure 13-8). Table 13-8 shows the estimated number of fishing trips from each ramp from 2005/06 to 2008/09<sup>5</sup>. In total, it is estimated that 11,000 fishing trips occurred from these three ramps in

<sup>&</sup>lt;sup>5</sup> The estimated number of trips is based on trailer count at the respective ramp. The Auckland VMR count occurred over 390 days between 1/7/2005 and 30/6/2009, the Calliope count took place over 198 days between 1/7/2007 and 30/6/2009 and the Morgan Street ramp count occurred over 23 days between 1/7/2007 and 30/6/2009. Due to the lower number of counting days there is a lower degree of confidence in the estimates for the Morgan Street ramp. The Gladstone Marina ramp has been excluded as its' usage is relatively low and boats departing this ramp are generally heading offshore.



2008/09, equivalent to an average of 30 trips per day. The actual number of recreational boat departures is however, likely to be larger as non-fishing trips have been excluded from this count. As noted above, about 25 % of total trips are not for fishing purposes. It is thus likely that there were more than 14,600 recreational boat departures from the Gladstone boat ramps in 2008/09, corresponding to a daily average of 40 trips<sup>6</sup>.

Year	Auckland Creek VMR	Morgan Street	Calliope River	Total
2005/06	3,700	N/A	N/A	3,700
2006/07	4,100	N/A	N/A	4,100
2007/08	4,200	1,800	5,400	11,400
2008/09	4,300	1,800	4,900	11,000

Table 13-8	Estimated Number	er of Fishing Trips	s from Boat Ram	ps in Gladstone

The boat ramps in Gladstone are thus very well used. On days, particularly weekends, when the weather is ideal for offshore fishing it is estimated that the trailer capacity of Auckland VMR is exceeded by 50 %. On these occasions, parking of trailers spills over beyond the parking area into adjacent streets and onto footpaths (Platten et al. 2007). Analysis of survey results shows that more trips were conducted on weekends and public holidays for the Auckland VMR boat ramp at Gladstone. Just under half as many trips occurred on weekdays compared with weekends in Gladstone.

Survey data revealed that virtually all recreational fishing vessels leaving Calliope River boat ramp fished in or near the site area (Sawknock 2009; Table 13-9). Vessels leaving Auckland Creek ramps tended to fish in the outer harbour or offshore areas to a larger degree (about 70 %). In addition, 378 or 24 % of the departures from Auckland Creek ramps fished in locations in or near the site area. In total, 750 fishing vessels, corresponding to 46 % of all departures, stated they fished in areas in or near the Western Basin Project Area (Sawknock 2009). The survey data thus indicates that the Western Basin Project Area is a popular and frequently used area for recreational fishing, with almost half of all fishing trips going to this area.

Ramps	In or near site area <sup>7</sup>	Elsewhere	Unable to locate	Total trips
Calliope River	372	0	1	373
Auckland Creek Ramps (VMR and Morgan Street)	378	1,115	103	1,596

#### Table 13-9 Fishing Trip Locations (Number of Trips)

Source: Compiled from data provided by Sawknock (Info Fish), 2009

<sup>&</sup>lt;sup>6</sup> It should be noted that Info Fish considers these estimates to be "reasonable but not robust". Any conclusion based on these numbers should be made with caution.

<sup>&</sup>lt;sup>7</sup> Graham Creek and the Narrows which are located outside of the site area have been included in this category as they are relatively close and as fishers need to travel through the Project Area to reach these destinations.









Level 4 201 Charlotte Street Brisbane QLD 4000 Australia T +61 7 3316 3000 F +61 7 3316 3333 E bnemail@ghd.com W www.ghd.com



# **13.2 Potential Impacts and Mitigation Measures**

This section identifies the potential social impacts of the Project. This section focuses on the construction period of the Project, which involves dredging activities, construction of the revetment (bund) wall and dredged material disposal into the reclamation. While some maintenance dredging will be required, this will be incorporated with GPC's current annual maintenance dredging program and is unlikely to represent substantial additional social impact.

#### 13.2.1 Method of Assessment

For each social impact, a significance assessment has been carried out and stakeholders likely to be impacted have been identified. Where the likelihood / consequence have been determined to be negligible, no further analysis has been made.

The social impact identification has been based on a review and analysis of the local area profile, technical data from the project proponent and other sections of this EIS, and input from stakeholder consultations. The process for identifying the significance of each social impact is outlined in the SIA Methodology (Figure 13-1), with further detail in Appendix W. The results of the assessment process are provided as a summary table in Appendix W.

Impacts are categorised following the framework suggested by Vanclay (2002) which identifies seven impact categories:

- 1. Health and social wellbeing;
- 2. Quality of the living environment;
- 3. Economic and material wellbeing;
- 4. Cultural impacts;
- 5. Family and community impacts;
- 6. Institutional, legal, political and equity impacts; and
- 7. Gender relations impacts.

These seven impacts were used as a guideline to assess the impacts for the Project and these impacts are detailed in the following sections. A likelihood / consequence rating assessment (Table 13-10) was also undertaken for each impact with consequence referring to the *consequence on the impacted stakeholder*.

Likelihood of Social	Consequence of Social Impact					
Impact	Insignificant	Minor	Moderate	Major	Extreme	
Certain	Low	Medium	High	Excessive	Excessive	
Very Likely	Low	Medium	High	High	Excessive	
Likely	Low	Low	Medium	High	Excessive	
Possible	Negligible	Low	Medium	High	High	
Unlikely	Negligible	Low	Low	Medium	High	
Very Unlikely	Negligible	Negligible	Low	Medium	High	

#### Table 13-10 Assessment of Likelihood and Consequence of Social Impact



The process for assessing the significance of potential social impacts is described in detail in Appendix W. The process employs a matrix as the main tool for identifying the significance of potential social impacts. The matrix identifies the significance of potential social impacts, and analyses them in terms of the following characteristics:

- Groups of stakeholders impacted;
- The likelihood of the impact occurring;
- The impact's consequence (should it occur);
- Status of the impact (whether it is positive or negative);
- The duration of the impact;
- Spatial extent of the impact (which of the study areas will primarily be impacted);
- Mitigatory potential (the potential for the project proponent to mitigate a negative impact); and
- Acceptability to the community.

A social impact has to be experienced or felt by a stakeholder. Whether a social impact occurs and the magnitude of it depends on the stakeholders responses, behaviours, experiences or feelings related to the change processes caused by the Project. These changes cannot be predicted with absolute certainty; however by analysing a wide variety of sources the uncertainty of the predicted impacts can be reduced.

The change processes that have been identified for the Project are as follows:

- Presence of construction workforce;
- Presence of construction activities on land and sea; and
- Biophysical changes, including land reclamation and dredged channels.

Impacts likely to be caused by these change processes are shown in Table 13-11. The following section details these impacts and assesses their significance.

#### **Table 13-11 Change Process and Potential Social Impacts**

Change Process	Potential Social Impact
Presence of construction workforce	Employment
	<ul> <li>Business opportunities</li> </ul>
	<ul> <li>Property values and marketability</li> </ul>
	<ul> <li>Increased demand for housing</li> </ul>
	<ul> <li>Increased demand for services</li> </ul>
	<ul> <li>Reduced community cohesion</li> </ul>
Presence of construction activities	Reduced road safety
	<ul> <li>Reduced marine safety</li> </ul>
	<ul> <li>Noise, dust and vibration</li> </ul>
	<ul> <li>Reduced viability of commercial fishing</li> </ul>



Change Process	Potential Social Impact		
	<ul> <li>Loss of natural and recreational areas</li> </ul>		
	<ul> <li>Reduced access to culturally important areas and landscapes</li> </ul>		
Biophysical changes	Reduced viability of commercial fishing		
	<ul> <li>Visual amenity / aesthetic quality</li> </ul>		
	<ul> <li>Loss of natural and recreational areas</li> </ul>		
	<ul> <li>Reduced access to culturally important areas and landscapes</li> </ul>		
	<ul> <li>Impacts on community values and aspirations</li> </ul>		
	<ul> <li>Formation of opinions and attitudes about the project</li> </ul>		

A cumulative impact assessment was also carried out to assess the impacts of the current project in conjunction with other current and future projects of the area. To assess these, it was necessary to determine which other projects are likely to cause cumulative impacts. In determining this, the following criteria were applied:

- Location: projects located in the Gladstone State Development Area (GSDA);
- Scale: projects declared State Significant by the Queensland Government; and
- Timing: projects likely to occur concurrently, or whose impacts are likely to occur concurrently with the Western Basin Dredging and Disposal Project.

Based on these criteria, nine projects (listed in Table 13-12) were identified as relevant to the assessment of cumulative impacts for the Project. These projects have been analysed to determine whether it is likely that they will cause similar change processes to those of the Project and whether these would occur at the same time and in the same area. As such, the analysis considers the timing, location and likely biophysical changes of the relevant projects. It should be noted however, that the likelihood and timing of the listed projects was not certain at the time of writing. Table 13-12 provides a summary of the projects identified as relevant potential contributors to cumulative social impacts.

#### Table 13-12 Change Processes Occurring Concurrently

Project	Construction Activities	Peak construction workforce	Biophysical changes to environment
Gladstone LNG (Santos/Petronas)	Proposed construction start 2010 (operation by	Estimated 3,080 jobs (February	Direct impacts on Curtis Island within the GSDA
	2014)	2012)	Direct impacts on Gladstone Harbour
Queensland Curtis LNG (BG	Proposed construction start 2010 (operation	Estimated 3,600 jobs (October 2011)	Direct impacts on Curtis Island within the GSDA
Group/QGC)	late 2013)		Direct impacts on Gladstone Harbour



Australia Pacific LNG (Origin/Conoco	Proposed construction start unknown	Estimated 3,000- 5,000 jobs at peak	Direct impacts on Curtis Island within the GSDA
Phillips)	(operation by 2014)		Direct impacts on Gladstone Harbour
Gladstone LNG Pty Ltd (GLNG PL/Arrow	Proposed construction start 2010 (Q1)	Estimated 157 jobs (September 2010)	Direct impacts on Fisherman's Landing
Energy)			Direct impacts on Gladstone Harbour
Gladstone Pacific Nickel Refinery	Stage 1: construction 2008- 2010.	Stage 1: Estimated 2,600 (September	Direct impacts on the Yarwun precinct of the
	Stage 2: construction	2009)	GSDA
	2013-2015 (depending on market demand).	Stage 2: Estimated 840 (late 2013)	
Wiggins Island Coal Terminal (GPC)	Stage 1: construction: 2009 – 2011	Stage 1: Estimated 520 (November	Direct impacts on Gladstone Harbour and
	Stage 2: construction:	2009)	areas within the GSDA
	2012 – 2015	Stage 2: Estimated 450 (early 2015)	
Sun LNG (Sojitz)	Unknown	Estimated 400 jobs (June 2010)	Unknown
Shell/Arrow	Unknown	Unknown	Unknown
LNG Impel	Unknown	Unknown	Unknown

It is likely that the Project development will instigate or contribute to future developments in the area that may collectively have cumulative and/or significant social impacts. The relevant projects listed above have the potential to cause change processes and social impacts similar to those invoked by the Project. It will be important for GPC and proponents of operating facilities within the Western Basin to work closely with the Gladstone Community to minimise these impacts where possible.

The potential cumulative impacts caused by the change processes listed above include:

#### Impacts Related to Construction Activities

#### **Road Safety**

Increased traffic volumes and increases in heavy vehicle movements caused by the various projects' construction activities may reduce road safety for drivers and passengers on the local road network particularly along common transport corridors such as Landing Road.

#### **Marine Safety**

The cumulative construction works may impact on the safety of recreational and commercial marine activities, particularly where industrial equipment is used in close proximity to recreational and commercial fishing areas.



#### Impacts Related to Project Workforces

#### Loss of Recreational and Natural Areas

The Western Basin Reclamation and relevant related projects will lead to a loss of natural and recreational areas within Gladstone Harbour and land areas on Curtis Island and the surrounding mainland.

In addition, the various projects will involve construction exclusion zones, exclusion zones around constructed berths and facilities and marine exclusion zones around an increased number of industrial ships accessing the Western Basin area. There is a potential for various exclusion zones to be operating simultaneously. This will further reduce access to recreational and natural areas and thus significantly reduce areas available for recreational activities.

#### Increased Industrial Focus of the Area

As the Project's purpose is to provide for the future development of the port and GSDA, it is inevitable that this will increase the industrial focus of the area.

Any increase in industrial focus may affect the level and nature of public use of the area, particularly for those groups who visit the site and adjacent areas for the purpose of environmental appreciation or recreation. Users already experience prominent industrial developments found in neighbouring areas and therefore may be sensitive to any increase in the industrial focus of the area. Previous industrial developments in the local area have also caused some concern in neighbouring communities such as Targinie, Mt Larcom and Yarwun.

The broader project area is however, already experiencing an increase in the level of industrial activity as a result of ongoing development. There are broad areas zoned for future industrial use as part of the GSDA. It is likely that some industrial growth of the area will continue regardless of the Western Basin project, particularly as initiatives such as the Materials Transport Corridor come online.

#### **Reduced Viability of Commercial Fishing**

The viability of commercial fishing in the Western Basin and broader Gladstone Harbour may be affected by cumulative impacts from various projects in addition to the direct impacts caused by the Western Basin dredging and dredge material disposal activates. The Gladstone LNG Project EIS recognises the potential for impacts on commercial fishers caused by the construction its LNG facility on Curtis Island (Santos Limited 2009).

The most direct cumulative impacts will likely come as a result of exclusion zones around LNG port facilities and marine exclusion zones around an increased number of industrial ships accessing the Western Basin area. There is a potential for various exclusion zones to be operating simultaneously. This will further reduce access to commercial fishing sites and transit routes within the Western Basin.

#### 13.2.2 Population and Demographic Impacts

Due to the relatively short-term nature of the Project (24 months) the impact on demographics of the local Gladstone community is anticipated to be minimal. While the influx of workers may cause a short-term change in the population structure of the region, this change is expected to be for the duration of the project only. In addition, some workers may choose to settle in Gladstone, thereby adding to their respective age group; however quantification of this prior to project completion is not possible. The



significance of a potential change in demographic structure of the local Gladstone community is described in the following table. A detailed assessment is included in Appendix W.

Status of Impact	Likelihood	Conse- quence	Likelihood/ Consequence Rating	Duration	Spatial Extent	Mitigatory Potential	Acceptability
Neutral	Possible	Minor	Low	Short	Local	Low	High

#### 13.2.3 Socio-Economic Impacts

#### Impacts on Local and Regional Labour Markets

The Project is anticipated to employ relatively few people from the local area as construction of the bund and dredging works will be carried out by contractors and the impact on the local labour market is therefore anticipated to be minor. However, for those individuals employed as a result of this Project and their families, the impacts will be positive.

It is estimated that bund construction will need a workforce of approximately 50 people during an expected 18 month construction period. The majority of this workforce is expected to be sourced locally. The workforce required for dredging operations may vary between 100 and 300 people during an expected 24 month period. The majority of these personnel are expected to be sourced regionally and internationally. The significance of the likely impacts on the local labour market and the Project workforce and their families is shown in the following table. A detailed assessment is included in Appendix W.

Status of Impact	Like- lihood	Conse- quence	Likelihood/ Consequence Rating	Duration	Spatial Extent	Mitigatory Potential	Accept- ability
Positive	Certain	Minor	Medium	Short	Regional	N/A	High

In addition to the impacts on the local labour market, local businesses may also benefit from the Project. Local services such as accommodation, entertainment, food service, motoring (including vehicle hire) and other light industrial services are likely to be required. Chapter 15 (Economy) provides a more detailed assessment of these potential impacts. The significance of the likely impacts on the local businesses is shown in the following table.

	Gladstone Area	Local Businesses
Status of Impact	Positive	Positive
Likelihood	Very Likely	Very Likely
Consequence	Minor	Moderate
Likelihood/Consequence Rating	Medium	High
Duration	Short	Short



	Gladstone Area	Local Businesses
Spatial Extent	Local	Local
Mitigatory Potential	N/A	N/A
Acceptability	High	High

#### Impacts on Housing Demand

It is likely that the wider Gladstone community will experience a small increase in demand for housing, primarily rental housing, during the dredging stage of the Project (i.e. a 24 month period). As noted above, the majority of workers are to be sourced locally with the remainder likely to be sourced from outside the local area during the bund construction stage of the Project. Even if all of these seek to access accommodation from the Gladstone rental market, the effects on the market are not expected to be noticeable.

During the dredging stage of the project a larger regionally and internationally recruited workforce will however be required. Between 80 and 240 persons from outside of Gladstone are likely to be working on the Project at any time during the 24 month dredging stage. Some of these may however be accommodated on their vessels.<sup>8</sup> Due to the short-term nature of the Project, few workers are likely to be accompanied by families or partners.

Assuming that all of the regionally and internationally sourced workforce will seek accommodation on the local rental market, the likely additional demand for temporary rental housing caused by the project will be for 80-240 persons. The number of additional dwellings required will depend on the type of accommodation sought.

	People Seeking to Access Rental Accommodation	People Seeking to Let Out Rental Accommodation
Status of Impact	Negative	Positive
Likelihood	Likely	Likely
Consequence	Minor	Minor
Likelihood/Consequence Rating	Low	Low
Duration	Short	Short
Spatial Extent	Local	Local
Mitigatory Potential	Medium	Medium
Acceptability	Medium	Medium

The significance of an increased demand for housing is shown in the following table.

<sup>&</sup>lt;sup>8</sup> This depends on which type of dredger is used. Should a Trailer Suction Hopper Dredger be used the crew required to operated this vessel (55 persons) will be lodged on board.



# 13.2.4 Impacts on Commercial Fishing

The Project area, particularly the dredging and reclamation sites, are used for various types of commercial fishing. Access to the dredging sites will be reduced during the Project period as operations will have an exclusion zone. In addition, the reclamation site will be permanently removed from activities such as crabbing and fishing. Moreover, the dredging and reclamation activities may alter hydrodynamics in these areas impacting on fish habitats, spawning grounds and juvenile nursery areas. The significance of the likely impacts is shown in the following table. The marine ecological impacts are discussed in Chapter 9.

Status of Impact	Likelihood	Conse- quence	Likelihood/ Consequence Rating	Duration	Spatial Extent	Mitigatory Potential	Acceptability
Negative	Very Likely	Moderate	High	Long	Local	Low	Low

# 13.2.5 Social Wellbeing

#### Impacts on Community Values and Aspirations

The current SIA has found that a direct impact of the Project on the community values and aspirations is likely to be minimal given the changing demographic of the Gladstone area. Some individuals who wish to protect the environment may see this Project as lowering local environmental and recreational value, conversely, other individuals may see this Project as fulfilling employment and industrial development in the Gladstone area. The significance of potential social impacts on community values and aspirations is described in the following table. The detailed description is contained in Appendix W.

	Community Expressing Employment and Development Values	Community Expressing Conservation Values
Status of Impact	Positive	Negative
Likelihood	Likely	Likely
Consequence	Minor	Moderate
Likelihood/Consequence Rating	Low	Medium
Duration	Short	Long
Spatial Extent	Local	Local
Mitigatory Potential	N/A	Low
Acceptability	High	Low



# 13.2.6 Family and Community Impacts

A detailed description of family and community impacts is contained in Appendix W.

#### 13.2.7 Formation of Opinions and Attitudes about the Project

Due to the negative impacts to recreational and commercial fishing in the Western Basin and the loss of environmentally valuable areas, the formation of negative public opinion and attitudes relating to the project is possible. Consultation with stakeholders revealed that negative opinions or concerns about the project already exist, particularly among environmental groups, and recreational and commercial fishers. There may also be some concern among the general public about the environmental impacts of the project. The significance of the formation of opinions and attitudes about the Project is described in the following table.

Status of Impact	Like- lihood	Conse- quence	Likelihood/ Consequence Rating	Duration	Spatial Extent	Mitigatory Potential	Accept-ability
Negative	Very Likely	Moderate	High	Long	Regional	Medium	Low

#### 13.2.8 Quality of the Living Environment (Amenity and Liveability)

#### Reduced Visual Amenity/Aesthetic Quality

The visual impact assessment undertaken for the Project (Chapter 14) identified major impacts of the Project on viewpoints from Port Curtis and Friend Point. Visible Project elements will include, bund wall construction, dredging operations, reclamation construction including the final mound and lighting associated with night dredging operations. Disruption of views is anticipated for the duration of the Project and may result in an increasingly industrial visual landscape.

Due to the distance from residential areas, the wider Gladstone community is not likely to experience any direct changes to their visual amenity caused by the project. The mound will be visible from Gladstone city, but the visual impacts are likely to be minimal. Direct users of the harbour, such as bird watchers, recreational and commercial fishers and workers in the area, are however likely to experience the visual impacts more directly.

The potential social impact of the Project on visual amenity/aesthetic quality is shown in the following table. The full description is contained in Appendix W.

	Gladstone Area	Commercial and Recreational Fishers; Other users of the Western Basin
Status of Impact	Negative	Negative
Likelihood	Likely	Certain
Consequence	Insignificant	Minor
Likelihood/Consequence	Low	Medium



	Gladstone Area	Commercial and Recreational Fishers; Other users of the Western Basin
Rating		
Duration	Long	Long
Spatial Extent	Local	Site
Mitigatory Potential	Low	Low
Acceptability	Medium	Medium

#### Reduced Access to Culturally Important Areas and Landscapes

The proposed dredging and reclamation construction activities may lead to reduced access to culturally important seafood harvesting areas. Chapter 9 provides an assessment of the quality of the marine habitat and coastal fauna and provides background to this section.

Indigenous groups are the main stakeholders likely to be impacted by any reduction in access to culturally important areas and landscapes. Consultations with the PCCC (local Indigenous group) identified various sites within close vicinity of the proposed dredging channels and Reclamation Area that are important for traditional practices and that some families currently use fishing and crabbing to supplement their incomes.

It is possible that some traditional sites may be impacted to such an extent that traditional practises are no longer possible, and a reduction in the availability of fishing and crabbing areas will carry with it economic impacts for some Indigenous groups.

The significance of a reduction in access to culturally important areas and landscapes is described in the following table.

Status of Impact	Likelihood	Conse- quence	Likelihood/ Consequence Rating	Duration	Spatial Extent	Mitigatory Potential	Acceptability
Negative	Likely	Moderate	Medium	Long	Site	Low	Low

#### Increased Demand for Services

The small inflow of workers associated with the Project is not likely to cause any noticeable change in the demand for community services and facilities. Of maximum 240 workers expected to relocate, 5% are likely to be accompanied by families. If this occurs, ten to fifteen families will relocate to Gladstone. While these groups of people are likely to access services such as health, education, child care, sport and recreation, the increased demand is negligible in the context of the wider Gladstone community. Unaccompanied workers may also access certain services, although the increased demand for services caused by unaccompanied workers is not likely to be significant.



The significance of an increased demand for services is described in the following table.

Status of Impact	Like- lihood	Conse- quence	Likelihood/ Consequence Rating	Duration	Spatial Extent	Mitigatory Potential	Accept- ability
N/A	Possible	Insignificant	Negligible	N/A	N/A	N/A	N/A

#### 13.2.9 Disruption to Existing Recreational Uses

Access to sites impacted by dredging operations may be restricted given the required exclusion zone around dredging activities. In addition, access to the reclamation site will be permanently altered, thereby removing this area from recreational activity utilisation.

It is difficult to quantify specific recreational usage of the dredging and reclamation sites. There is however, data indicating that the Western Basin of the Gladstone harbour is both a relatively frequented destination for fishing trips and an often used thoroughfare for fishing destinations in Graham's Creek and the Narrows (Sawknock 2009).

The significance of the potential social impacts from a loss of natural and recreational areas is shown in the table below. The full report is contained in Appendix W

Status of Impact	Likelihood	Conse- quence	Likelihood/ Consequence Rating	Duration	Spatial Extent	Mitigatory Potential	Acceptability
Negative	Certain	Moderate	High	Long	Site	Low	Low

#### 13.2.10 Community Infrastructure and Services

Investigations undertaken as part of this social impact assessment have identified a possible increase in housing demand, primarily rental housing during dredging operations. Those workers employed from outside the Gladstone area will require housing for the duration of dredging operations, however some personnel may be accommodated on their vessels. In addition, due to the short-term nature of the work, it is likely that few individuals will be accompanied by their families or partners.

#### 13.2.11 Health and Safety

#### Road Safety

Stakeholders impacted by the road safety include road users (including the Project's construction workforce) and workers in nearby businesses and industries. Reduced road safety will only occur if quarry materials are transported on-road to the Reclamation Area. Other stakeholder groups that may also, to a lesser degree, be adversely affected by any reduction in safety include the Gladstone and regional community, recreational fishers and visitors to the area. The significance of a reduction in road safety is outlined below. A detailed assessment is included in Appendix W.



Status of Impact	Likelihood	Conse- quence	Likelihood/ Consequence Rating	Duration	Spatial Extent	Mitigatory Potential	Acceptability
Negative	Unlikely	Extreme	High	Short	Local	High	Medium

#### **Reduced Marine Safety**

The main stakeholders likely to be impacted by any reduction in marine safety are recreational fishers and other recreational users of the project site and surrounding area. The significance of a reduction in the marine safety is described in the following table. While a reduction in marine safety can potentially have extreme consequences, including serious accidents, the likelihood of a marine safety incident would be reduced through the implementation of management measures such as safety buffers around dredgers. A detailed assessment is included in Appendix W.

Status of Impact	Likelihood	Conse- quence	Likelihood/ Consequence Rating	Duration	Spatial Extent	Mitigatory Potential	Acceptability
Negative	Unlikely	Extreme	High	Short	Site	High	Low

#### 13.2.12 Mitigation Measures

This section recommends mitigation and monitoring strategies for the social impacts identified above. It also recommends a framework for the management of cumulative social impacts in collaboration with other project proponents.

The purpose of the mitigation and management measures is to:

- Maximise potential positive social impacts;
- Avoid significant adverse impacts in the first place;
- Minimise significant adverse impacts, where they cannot be avoided; and
- Consider community offsets/compensation for significant impacts that cannot be reduced to an acceptable level.

In addition, a monitoring strategy is proposed, which will seek to quantify and measure the expected social impacts caused by the project.

Management and mitigation responses to social impacts were identified in response to the terms of reference and rely on the previous identification and assessment of impacts. Input to the monitoring and management responses was sought via consultation with key stakeholders and discussions within the EIS team. These strategies and actions are recommended to be incorporated in detailed construction planning and ongoing management of the Project.

#### Mitigation Plan

The most significant negative impacts identified above relate to the loss of recreational and natural areas, the reduced viability of commercial fishing, and the potential health and safety hazards caused by



the Project. Significant positive impacts include employment and increased local business opportunities related to the construction phase of the project. The mitigation plan focuses on communicating project activities, reducing the risk of accidents and maximising local employment and local spend.

Table 13-13 provides an outline of the proposed mitigation measures for each of the impacts identified in the previous sections.

Potential Social Impact	Relevant Stakeholder Group	Recommended mitigation measures/management responses
Health and Social We	llbeing	
Reduced safety on	Road users	GPC and contractor OH&S procedures.
land	Workers in nearby businesses	Implement appropriate signage near project site, quarry and along haul route.
	Recreational users of area	Communicate updates to bund construction activities through GPC communication channels and local media.
Reduced marine	Recreational and	GPC and contractor OH&S procedures.
safety	commercial fishers Other users of Western	Establishment of appropriate marine exclusion zones, and other measures such as navigational markers.
	Basin	Erect signage with project information at Auckland Creek and Calliope river boat ramps.
		Communicate update to dredging activities through GPC communication channels and local media, with particular attention to notification of mariners.
Economic Impacts an	d Material Wellbeing	
Employment	Gladstone community	Prioritise local employment in recruitment where possible.
	Project workers and their families	Include appropriate levels of local recruitment as a condition for engaging contractors, where possible.
Business	Local businesses	Provide a higher rating for contractors who commit to higher local
opportunities	Gladstone community	spend when engaging contractors.
Impact on commercial fishing	Commercial fishers	Commercial fishing offsets are not directly addressed in this EIS. Should monitoring establish a loss of fish catch directly linked to the Project, a coordinated approach involving local commercial fishers, representative bodies (such as the Queensland Seafood Industry Association) and relevant State Government agencies (such as the Queensland Primary Industries and Fisheries section of DEEDI) may be established to review direct and cumulative impacts. GPC will participate in the fore mentioned process and in any future negotiations lead by the Queensland State Government as part of the management of commercial fishing impacts in the Western Basin of the Port.
Property values and marketability	Current and aspiring property owners	No significant impacts expected.

#### Table 13-13 Mitigation of Social Impacts



Potential Social Impact	Relevant Stakeholder Group	Recommended mitigation measures/management responses			
Quality of the Living E	Environment				
Noise, dust and	Gladstone community	Establishment of appropriate exclusion zones.			
vibration		Noise, dust and vibration mitigations measures to be included as part of the project's EMP.			
Visual	Gladstone community	Landscaping and planting of reclamation area and mound.			
quality	Recreational users of western basin				
Loss of natural and recreational areas	Recreational users of the area	Provide access points for safe recreation areas during the construction and communicate the location of these access points and areas to user groups and potential vicitors. This could be			
	Environmental groups	through signage at public access points. Signage should also			
	Indigenous groups	describe the project, project timeline and what the reclamation site will look like after construction.			
	Gladstone Community	GPC may consider measures that help to offset/minimise impacts on recreational fishers based on the likely loss of recreational fishing sites associated with the Project. This would require a coordinated approach involving local recreational fishers, representative bodies and relevant State Government agencies; and may consider broader cumulative recreational fishing impacts. GPC will participate in any future negotiations lead by the Queensland State Government as part of the management or recreational fishing impacts in the Wastern Basin of the Dart			
Increased demand for housing	Gladstone Community	Impact is likely to be minor.			
Increased demand for services	Gladstone Regional Council	Communicate workforce numbers to GRC and service providers in advance.			
	Government departments				
Cultural impacts					
Reduced access to culturally important areas and landscapes	Local Indigenous groups	Identify culturally important areas, and work in conjunction with the PCCC and individuals to maintain or develop alternative access where possible.			
		Proponent to continue to develop their relationship with the PCCC and explore opportunities to further build the capacity and role of this group.			
Impacts on community values and aspirations	Community expressing employment and	Implement an appropriate public information program describing the project and highlighting proposed benefits.			
	Community expressing	Identify areas that can be used for environmental education in collaboration with local environmental groups.			
	conservation values	(These measures should address environmental values and communicate the purpose and benefits of the project, to help improve the public perception of the project).			



Potential Social Impact	Relevant Stakeholder Group	Recommended mitigation measures/management responses
Family and community impacts		
Change in demographic structure of the local community	Gladstone Community	Impact is likely to be minor.
Reduced community cohesion	Gladstone Community	Impact is likely to be minor.
Institutional, legal, political and equity impacts		
Formation of opinions and attitudes about the project	GPC	Communicate project updates regularly to general community. Keep Community Working Group updated.

#### 13.2.13 Cumulative Social Impact Management

The projects identified in Table 13-13 as relevant potential contributors to cumulative social impacts are likely to cause change processes and social impacts similar to those invoked by the Project. Consultations with the Queensland Department of Infrastructure and Planning's Social Impact Assessment Unit revealed a preference for the development and implementation and a cooperative and strategic approach to managing these cumulative social impacts from an early stage. Suggestions centred on the development of an expert group or panel and community consultation.

Under such an approach the expert group would initially be involved in brainstorming potential cumulative impacts. The community or representative stakeholder group<sup>9</sup> would then provide input on the proposed impacts, allowing proponents to access local knowledge and gauge public opinion. The expert group would then identify impacts that require further investigation or information. Key components of this approach include the consideration of other social planning initiatives that may be occurring and the ability for the broader community to see where their input has lead to increased benefit or effective impact management and mitigation.

Monitoring cumulative social impacts should also be a collaborative effort involving all relevant project proponents and community representatives. Details of a cumulative social impacts monitoring framework should be worked out in collaboration with other project proponents, service providers and key stakeholders.

#### 13.2.14 Social Monitoring Plan

The social monitoring plan is recommended consisting of a framework for monitoring and quantifying change processes and related social impacts directly caused by the Project. A detailed description of this framework is contained in Appendix W.

<sup>&</sup>lt;sup>9</sup> Community representation may be made up of key stakeholders, such as commercial and recreational fishers, who are likely to be most impacted by the proposed projects.