



Australia Pacific LNG Project

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Attachment 45: Economic Baseline Report for the Gladstone Region



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Economic Baseline Report for the Gladstone Region

Report for Australia Pacific LNG project

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1. Introduction

1.1 Project background

This baseline economic overview was prepared by the Centre for Environmental Management (CEM) at Central Queensland University (CQU), as part of the economic impact assessment for the proposed construction of the Australia Pacific LNG Project (APLNG) at Gladstone. The research undertaken in this study focuses on potential impacts for the Gladstone Regional Local Government Area which is within close proximity to the proposed Project site and is most likely to experience any potential impact. Wider economic and social impacts for Central Queensland and Queensland have also been reported.

This study is an important document for regional businesses and the public as it indicates the potential impacts (both positive and negative) the proposed Project may have for the region's economic welfare. This assessment combines the analysis of various levels of research and modelling to identify the impact of the Project on the Gladstone Regional Local Government Area. It was not undertaken to recommend a preferred option but rather to identify the full range of economic impacts anticipated to occur as a result of the proposed project. By providing appropriate information, the report will enable various stakeholders to make more informed contributions to the assessment options and project planning.

1.2 Project description

To be provided elsewhere in EIS.

1.3 Requirements for EIA

To be provided elsewhere in EIS.

1.4 Report structure

This report is structured in the following way: A brief overview of the project area and the methodology is provided in section 2. In section 3.1, an overview is provided of the output of the regional area surrounding Gladstone, the Fitzroy regional area. This identifies the broad economic structure in the region. Section 3.2 contains an overview of the labour market in Gladstone, while existing infrastructure is reviewed in section 3.3. A description of the key industries and their contribution to the regional economy is provided in section 3.4, while competitive advantage and expected future growth is reviewed in section 3.5. Key input markets are described in section 3.6, and the property market is reviewed in section 3.7.

2. Methodology

2.1 The study area

Gladstone is a small industrial city of approximately 32,000 people located in the Central Queensland region. Rockhampton to the north is the hub of the Fitzroy Statistical Division (SD), with Gladstone forming the second major community in the region. The Gladstone area has been represented by a single local government authority, the Gladstone Regional Council, since 2008, when three previous shires of Gladstone City, Calliope and Miriam Vale were amalgamated. The population of the new Gladstone Regional Council was approximately 57,000 people in 2008, about 1.3 percent of the state's population. The bulk of that population was in the Gladstone and Calliope communities in close proximity to the Gladstone area.

The economy of the Fitzroy region is dominated by mining (particularly coal), agriculture (beef cattle, cropping, cotton and horticulture), and minerals processing as primary export industries that drive regional activity. Rockhampton is a central hub for service industries, as well as providing important transport and education facilities. Gladstone is a major industrial centre for minerals processing, transport (port and rail) and power generation. While Rockhampton remains the major hub for service industries, the growth in Gladstone means that there is an increasing demand for services in the community, with corresponding growth in the business and public sector to provide these.

Since the early 2000's, substantial investment in mineral processing coupled with increases in coal production in the Bowen Basin has generated improvements in employment and economic conditions in Gladstone and the Fitzroy region more generally. Queensland's coal production is predicted to increase significantly over the next decade, and regional Queensland is expected to benefit from substantial increases in regional income, output and employment. With the bulk of Queensland's export coal coming from Central Queensland's Bowen Basin, Gladstone and the Central Queensland region is well positioned to benefit from this growth. Gladstone also has strong prospects for growth in other sectors of minerals processing and energy exports, particularly with the development of the LNG industry.

Whilst rapid growth provides economic opportunities, efficient planning is necessary to ensure that the region's infrastructure and service industry providers are appropriately equipped to facilitate this growth. Such planning is necessary to ensure the economic benefits accrue within the Central Queensland economy and that there are not offsetting social or economic impacts that might disadvantage communities. The benefits of major projects are expected to accrue both directly and indirectly. Direct impacts will be realised through employment and purchase of goods and services from local businesses. Indirect benefits will result through the flow-on effects of an increase in spending and employment.

Rapid industrial growth can create a number of associated adjustment problems for the Gladstone region. These include potential shortages in the skilled and unskilled labour market, congestion of rail and port infrastructure, and management of the environmental and social impacts associated with rapid industrial growth. New projects have the potential to contribute to adjustment pressures, particularly when there is a rapid and large increase in the workforce and population, and subsequent impacts on demands for housing, services and infrastructure.

A key factor in planning is to identify the scale at which any assessment should be undertaken. The boundaries of local government areas are often used to define the relevant local area, as this matches the institutional framework and helps to coordinate any appropriate policy responses. In physical terms, the impacts of the new project at Curtis Island will largely accrue to Gladstone and the

surrounding communities of Calliope, Boyne Island and Tannum Sands. These communities fall within the Gladstone Regional Council, and account for approximately 75% of the population in the regional council area. Given the dominance of the local population base within the regional council area, the focus of the economic baseline is largely concentrated on the Gladstone Regional Council and the wider Fitzroy SD.

2.2 Economic baseline

An economic baseline report can perform several roles in an EIS. First, the baseline report should provide a general description of the economy in the area of interest so that an understanding is developed about the key drivers for the economy and the types of industry relationships that may exist. Second, the baseline report should provide some overview of the key sectors or services in the economy that are likely to provide inputs to a new project so that predictions can be made about the likely impacts on those sectors. Third, the baseline report should describe other key sectors that may be subject to indirect or induced economic impacts of a new project. This then provides a basis for predicting the level of likely impact and the potential application of mitigation strategies.

2.3 Impact identification and assessment

To be provided elsewhere in EIS.

2.4 Cumulative impacts

To be provided elsewhere in EIS.

2.5 Mitigation and enhancement

To be provided elsewhere in EIS.

3. Economic baseline summary

3.1 Gross regional product

The Office of Economic and Statistical Research (OESR) (2008) estimated that in 2005-06, Queensland's gross state product (GSP) totalled \$184.0 billion (B) (Table 3.1.1) and recorded average annual growth of 9.9% over the five years to 2005-06. The average annual growth of Rest of Australia during the same period was 6.4% with Gross Rest of Australia Product of \$783.5 B.

The four regions making up South East Queensland accounted for \$114.7 B in 2005-06, representing 62.3% of Queensland's total GSP.. Mackay and Fitzroy were the only regional areas of Queensland to increase their share of GSP over the five years to 2005-06, largely driven by developments in the mining industry. The Mackay region had the highest rate of growth in Gross Regional Product (GRP) with an average annual growth rate of 18.9%, followed by Fitzroy with an average annual growth rate of 12.3%. These growth rates are based on nominal prices, which have inflated by large increases in commodity prices. When growth rates are adjusted to hold price changes constant, the Fitzroy region grew by an average annual rate of 3.2% in real terms over the five years to 2005-06.

Table 3.1.1 Nominal Gross Regional Product (GRP), Queensland

Region	2000-01	2005-06	Average annual growth
	\$m	\$m	Per cent
Brisbane	54,617	85,317	9.3
Gold Coast	na	18,340	na
Sunshine Coast	na	9,375	na
West Moreton	na	1,642	na
Moreton(a)	17,410.0	29,357	11.0
<i>South East Queensland</i>	<i>72,027</i>	<i>114,674</i>	<i>9.7</i>
Wide Bay-Burnett	5,380	7,815	7.8
Darling Downs	6,124	9,119	8.3
South West	1,342	1,663	4.4
Fitzroy	7,913	14,126	12.3
Central West	629	557	-2.4
Mackay	5,773	13,698	18.9
Northern	5,800	8,557	8.1
Far North	6,566	9,055	6.6
North West	3,130	4,719	8.6
Total Queensland	114,684	183,983	9.9
Rest of Australia	574,579	783,471	6.4

(a) In 2005-06 Moreton is the sum of Gold Coast, Sunshine Coast and West Moreton
na not available

Source: OESR (2008a)

3.1.1 Industry composition

Table 3.1.2 details the industry composition of the Fitzroy SD based on 2005-06 price estimates of Gross Value Added (GVA). Mining is the prominent industry in the Fitzroy SD at 39.3% of nominal GVA in 2005-06, up 18.0 percentage points from 2000-01. Manufacturing, at 10.2% and construction, at 6.8% were the next largest contributors to Fitzroy's economy.

The largest changes in composition after mining were observed in agriculture, forestry and fishing (down 3.8 percentage points) and electricity, gas and water (down 3.7 percentage points) from

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2000-01. Construction recorded a strong rise in its share of nominal GVA, up 1.5 percentage points on 2000-01.

Table 3.1.2 Composition of Gross Value Added, Fitzroy

Fitzroy	Composition		Change in Composition Percentage points
	2000-01	2005-06	
	Per cent	Per cent	
Agriculture, forestry and fishing	7.4	3.6	-3.8
Mining	21.3	39.3	18.0
Manufacturing	13.0	10.2	-2.8
Electricity, gas and water	9.6	5.9	-3.7
Construction	5.3	6.8	1.5
Wholesale trade	4.1	2.7	-1.4
Retail trade	5.4	4.2	-1.2
Accommodation, cafes and restaurants	2.3	1.7	-0.6
Transport and storage	5.6	4.8	-0.8
Communication services	1.5	0.9	-0.6
Finance and insurance	2.2	2.0	-0.2
Property and business services	5.1	4.3	-0.8
Government administration and defence	2.2	1.9	-0.3
Education	4.2	3.2	-1.0
Health and community services	3.9	3.1	-0.8
Cultural and recreational services	0.5	0.4	-0.1
Personal and other services	1.6	1.2	-0.4
Ownership of dwellings	5.0	3.9	-1.1
Gross Value Added	100.0	100.0	

Source: OESR (2008)

Figure 3.1.1 presents average annual growth in real GVA¹ by industry and the contribution of each industry to regional growth.

The Fitzroy SD recorded an average annual growth in real GRP² of 3.2% between 2000-01 and 2005-06. With the exception of the agriculture, forestry and fishing, and electricity, gas and water industries, both of which detracted 0.3 of a percentage point from growth, all other industries in the Fitzroy SD recorded contributions to regional growth (OESR 2008).

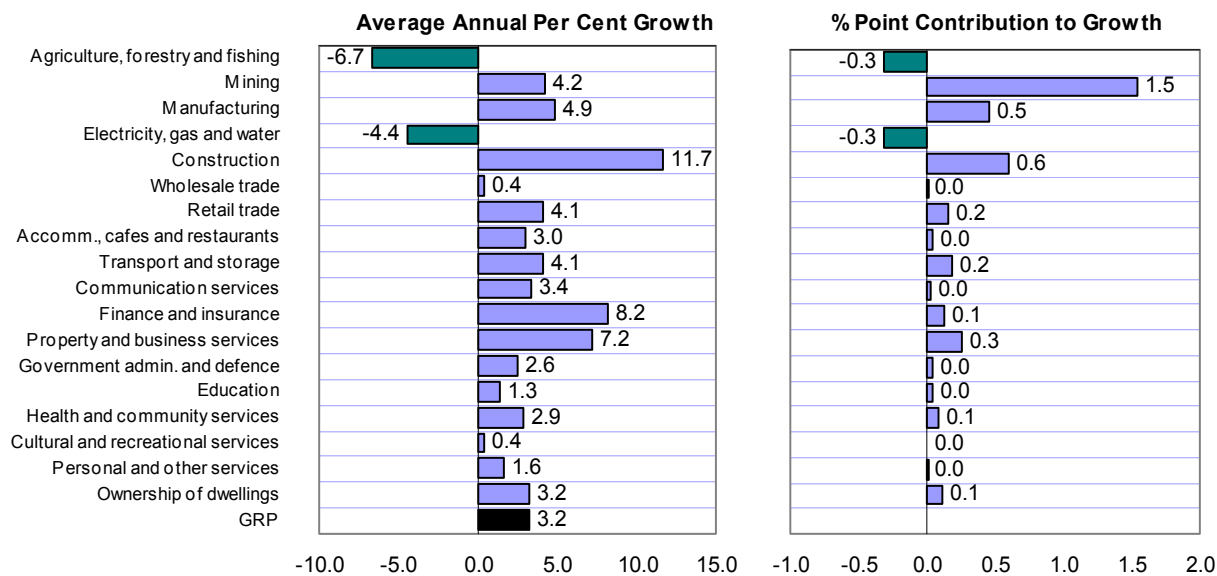
The fastest growth over the period was evident in the construction industry with 11.7%, contributing 0.6 of a percentage point to growth in the region. Finance and insurance (at 8.2%) and property and business services (at 7.2%) also experienced high average annual growth.

The Fitzroy SD recorded 4.2% growth in mining (an industry which had a 39.3% share of total nominal GVA in 2005-06) resulting in a strong contribution of 1.5 percentage points to growth. Manufacturing contributed 0.5 of a percentage point as a result of 4.9% growth in the second largest industry in Fitzroy SD.

Agriculture, forestry and fishing contracted with an average annual decline of 6.7% over the period. Adverse conditions such as droughts contributed to this decline in production. The decline in electricity, gas and water came after increases in coal prices and a decrease in the pool price of electricity over the period.

¹ Real GVA is calculated net of any inflationary impacts on price levels.

² Real GRP is calculated net of any inflationary impacts on price levels.



SOURCE: OESR (2006)

Figure 3.1.1 Growth in Real Gross Value Added (GVA), 2000-01 to 2005-06, Fitzroy Chain volume measures (\$, 2005-06)

3.2 Labour force statistics

3.2.1 Population size and distribution

The demographics of the Gladstone region are key factors underpinning current and future economic activity. The population base of the region provides some indication of the size of the regional economy, as well as providing some indication of the level of public and commercial services that are available in the regional area. As well, it is important to understand the population base in order to identify the potential impacts of a project on housing and labour markets.

The Gladstone Regional Council area hosts a number of population centres. Gladstone is the major centre, with the city built in close proximity to the port and industrial processing sectors. The city is also associated with three key population centres of Tannum Sands, Boyne Island and Calliope, which essentially act as dormitory suburbs for Gladstone. There are also some smaller communities such as Mt Larcom and Benaraby and some rural residential areas which are also in close proximity to Gladstone. The communities of the previous Miriam Vale Shire (Miriam Vale, Agnes Waters) and the rural areas are more distant, and not within commuting distance of Gladstone City.

Population estimates for the Gladstone Regional Council area are shown in Table 3.2.1. This reveals that of an estimated shire population of 57,587 people in June 2008, about 85 percent or 49,000 people were within commuting distance of the Gladstone City. The population of the Rockhampton Regional Council, slightly over 100 kilometres to the north, was approximately double the size of the Gladstone area. This has implications for the development of the Gladstone region, as Rockhampton has the potential to supply labour, business and industrial services, and wider consumer and public services into the area. The proximity of Rockhampton as a regional centre may help to provide a more extensive pool of services into the Gladstone area and to buffer Gladstone from the economic shocks of lumpy investments.

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Table 3.2.1 Estimated population 30th of June 2008

Local Government Area	Population	Estimated distribution
Gladstone Regional Council	57,587	
Gladstone City		32,591
Tannum Sands		4,714
Boyne Island		4,209
Calliope		1,856
Mt Larcom		284
Other proximate area (Part A Calliope SLA)		5,357
Previous Miriam Vale Shire		5,606
Remoter rural areas (Part B Calliope SLA)		2,969
Rockhampton Regional Council	111,528	
Project Area (Gladstone and Rockhampton)	169,115	
Queensland	4,293,915	

Estimated from ABS 2006 Census data, ASGC 2006, and PIFU 2008.

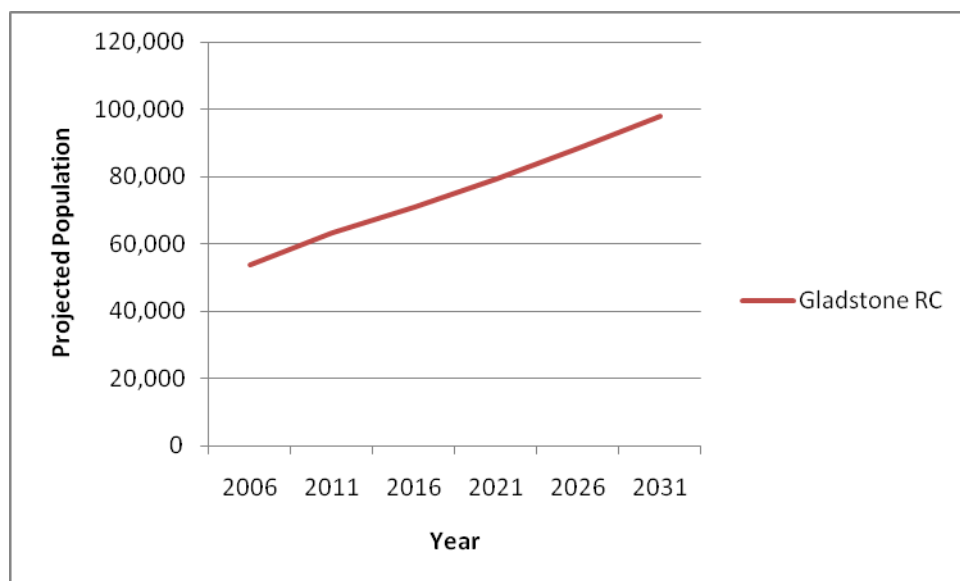
3.2.2 Population growth

Population growth projections for the Gladstone and Fitzroy Regional Council areas are summarised in Table 3.2.2. These show that the Gladstone Regional Council area is expected to have an annual population growth rate of 2.1% between 2006 and 2031, higher than the projected growth rate for Queensland of 1.7% and the Rockhampton Regional Council of 1.2%.

Table 3.2.2 Population Projections

Area	Projected resident population – medium growth forecast					
	2006	2011	2016	2021	2026	2031
Gladstone Regional Council	53,941	63,120	70,927	79,102	88,265	98,041
Rockhampton Regional Council	107,517	119,422	127,771	136,069	144,684	153,256
Queensland	4,090,908	4,567,713	5,040,325	5,478,715	5,884,439	6,273,885

Source: PIFU, Department of Infrastructure & Planning (2008)



Source: Department of Local Government, Planning, Sport and Recreation Queensland's Future Population, 2008.

Figure 3.2.1 Population projections for Gladstone Regional Council, 2006 to 2031

3.2.3 Labour force

The extent of the available labour force depends on a number of factors, including a range of demographic characteristics such as age and workforce participation rates. Data from the 2006 Census reveals that 21,481 people were in the workforce in the Gladstone Regional Council area. The total population of the Gladstone regional area at the 2006 Census was 50,752 people, with 34,311 people aged between 15 and 64. Comparing the workforce size against the population aged between 15 and 64 years indicates that the workforce participation rate is approximately 62.6%.

Table 3.2.3 Labour force by gender in Gladstone Regional area

	Males	Females
15-19 years	868	830
20-24 years	1,070	929
25-29 years	1,125	860
30-34 years	1,362	1009
35-39 years	1,499	1146
40-44 years	1,585	1312
45-49 years	1,631	1218
50-54 years	1,314	939
55-59 years	1,051	582
60-64 years	594	231
65-69 years	140	66
70-74 years	50	20

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	Males	Females
75 years and over	37	13
Total	12,326	9,155

Source: Australian Bureau of Statistics 2006 Census Data.

The distribution of employment across industry sectors in 2006 is summarised in Table 3.2.4. This shows the distribution across the three previous shires in the Gladstone Regional area, as well as the total employment across the now Gladstone Regional Council. As well, the distribution of employment across industries in the Gladstone region is reported, together with a comparison to the Queensland averages.

The results show that the Gladstone region (particularly Gladstone and Calliope areas) has more than double the state average of employment in the manufacturing sector, as well as higher average employment in the services, construction, accommodation and transport sectors. This matches closely with the role that Gladstone plays as a major industrial centre.

Table 3.2.4 Labour force by industry sector in Gladstone Regional area in 2006

	Gladstone City	Calliope LGA	Miriam Vale LGA	Gladstone Region	Share of Region	Share by Qld sector
	Number	Number	Number	Number	%	%
Agriculture, forestry and fishing	32	241	206	479	2.23	3.38
Mining	137	93	3	233	1.08	1.68
Manufacturing	2,594	1,913	46	4,553	21.20	9.87
Electricity, gas, water and waste services	474	64	15	553	2.57	1.02
Construction	1,664	475	212	2,351	10.95	9.04
Wholesale trade	459	40	24	523	2.44	3.95
Retail trade	1,798	392	170	2,360	10.99	11.64
Accommodation and food services	1,008	345	174	1,527	7.11	6.99
Transport, postal and warehousing	1,309	142	66	1,517	7.06	5.07
Information media telecommunication	120	7	3	130	0.61	1.44
Financial and insurance services	246	24	10	280	1.30	2.85
Rental, hiring and real estate	291	96	43	430	2.00	2.08

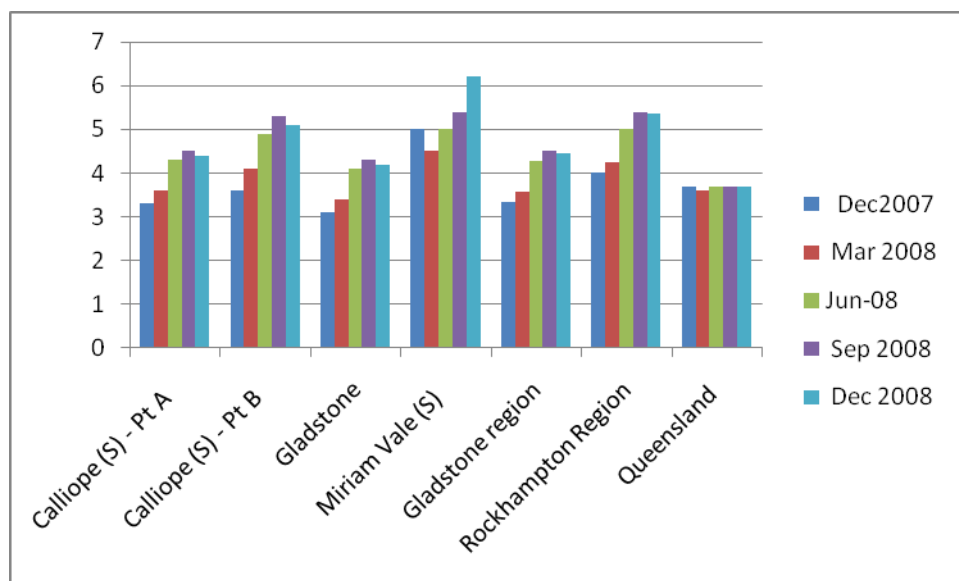
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	Gladstone City	Calliope LGA	Miriam Vale LGA	Gladstone Region	Share of Region	Share by Qld sector
	Number	Number	Number	Number	%	%
services						
Professional, scientific and technical services	922	155	40	1,117	5.20	5.61
Administrative and support services	359	95	30	484	2.25	3.05
Public administration and safety	597	202	105	904	4.21	6.71
Education and training	1,101	395	128	1,624	7.56	7.62
Health care and social assistance	1,119	202	43	1,364	6.35	10.21
Arts and recreation services	87	23	18	128	0.60	1.35
Other services	543	71	28	642	2.99	3.75
Inadequately described/Not stated	190	59	30	279	1.30	2.67
Total	15,050	5,034	1,394	21,478	100	100

Source: Australian Bureau of Statistics 2006 Census Data.

Unemployment in the Gladstone region has risen slightly from December 2007 to December 2008, particularly in comparison to Queensland trends (Figure 3.2.2). While the state average for unemployment remained steady at around 3.7% over this time period, the rate in the Gladstone Regional area increased from 3.3% to 4.5% over this time period. This was lower than the corresponding unemployment rates in the Rockhampton region of 4.0% to 5.4% in the same time period. Within the Gladstone area, the previous Miriam Vale Shire had the highest unemployment rate (increasing to 6.2% in December 2008), and Gladstone City had the lowest unemployment rate of 4.2% at December 2008 (DEEWR 2008).



Source: Estimated from DEEWR (2008).

Figure 3.2.2 Unemployment rates in Gladstone region from Dec 2007 to Dec 2008

3.3 Existing infrastructure

Gladstone has a competitive advantage in attracting industrial development because of geographical and infrastructure advantages³.

3.3.1 Natural capital factors

The key geographical features that distinguish Gladstone are the world-class natural deep water port and proximity to major mineral reserves. This means that the city has developed as a key coal export terminal for coking and steaming coal, as it is about 10-12 days sailing time from the Asia Pacific Region. Other key mineral reserves that are within the regional area or economically feasible to transport to Gladstone include oil shale, limestone and calcite, magnesite, salt, mineral sands and coal seam gas.

There are a number of natural features which are also important in defining the Gladstone community. These include the range of attractive landscape, rural and coastal environments that support liveable communities, together with proximity to coastal waters and the Great Barrier Reef. Tannum Sands and Boyne Island are two coastal communities servicing Gladstone that utilise the coastal environment to generate attractive lifestyle communities.

3.3.2 Transport infrastructure

There are four key elements of transport infrastructure that contribute to the competitive advantage of Gladstone.

The first is the infrastructure relating to the port facilities at Gladstone, managed by the Gladstone Port Authority. The port in Gladstone is the largest multi-commodity port in Queensland and can accommodate vessels in excess of 220,000 dwt. The port currently has six wharves along a 20 kilometre foreshore, and can berth up to 14 vessels at any one time. The port has recently been upgraded with the expansion of the RG Tanna Coal Terminal from 45 million tons to 75 million tons

³ Some of the material in this section has been sourced from the Gladstone Economic and Industry Development Board.

capacity, and can be upgraded further with the future development of the Wiggins Island Facility and potential expansions at Fisherman's Landing and Curtis Island.

The second key transport asset is the railway hub facilities, with electrified rail links to Brisbane, Rockhampton and two separate rail lines to the Bowen Basin coal mines.

The third key transport asset is the access to the road network, with key access to the Bruce Highway to the north and south, and the Dawson and Capricorn Highways to the west.

The fourth key asset is the regional airport at Gladstone with daily connections to Brisbane, Rockhampton, Mackay, Townsville and Cairns. In 2009, the Gladstone Regional Council announced plans to upgrade and extend the airport so that it can cater for a larger variety of planes in the future.

3.3.3 Energy infrastructure

The supply of energy to Gladstone has helped to underpin the development of the minerals processing sector in the region. There are three major power stations within 100 kilometres of Gladstone, at Gladstone, Stanwell (near Rockhampton) and Callide (near Biloela). The state power transmission network is capable of supplying the current industries in the region, and there has been ongoing development and upgrading of the network in past years. Natural gas is also available through the Queensland Gas Pipeline, and future development of coal seam gas resources will increase the potential for this energy source to be utilised.

3.3.4 Water infrastructure

Water for industrial and urban supplies in Gladstone is available from the Awoonga Dam through the Gladstone Area Water Board. To address the risk of water shortages in drier years, the Gladstone Area Water Board has raised the wall of the Awoonga Dam to a height of 40 meters, increasing the capacity to 777,000 megalitres and the No Failure Yield to approximately 80,000 megalitres per year. Water supplies to Gladstone will be further augmented and guaranteed through the construction of a pipeline to the Fitzroy River at Rockhampton. That project is currently under study with potential construction in 2011 – 12.

3.3.5 Industrial land

To help to streamline development at Gladstone and to ensure appropriate planning and infrastructure development occurs, the Queensland Government has set aside 28,000 hectares of land as a State Development Area. This land is situated on the north-western side of Gladstone and will allow for substantial future development of industrial activities in the region. The initial reserve of 6,800 hectares was made in 1993, and there have been several additions made since then, in 1997, 2001, and 2002. In 2008, the Queensland Government added land on the west coast of southern Curtis Island to the Gladstone State Development Area so that appropriate planning and development of the natural gas industry could be facilitated. This additional area is referred to as the Curtis Island Industry Precinct, and lies alongside the Environmental Management Precinct on Curtis Island so that ecological assets in the area are recognised and maintained. A development scheme exists to facilitate land planning and coordination of development within the State Development Area.

3.3.6 Key industries and contribution to economy

The Gladstone regional area supports a number of key industries in refining, minerals processing, chemicals and mining. Major industries within the region include:

- Queensland Alumina Limited (QAL) – major aluminium refinery, commenced in 1964

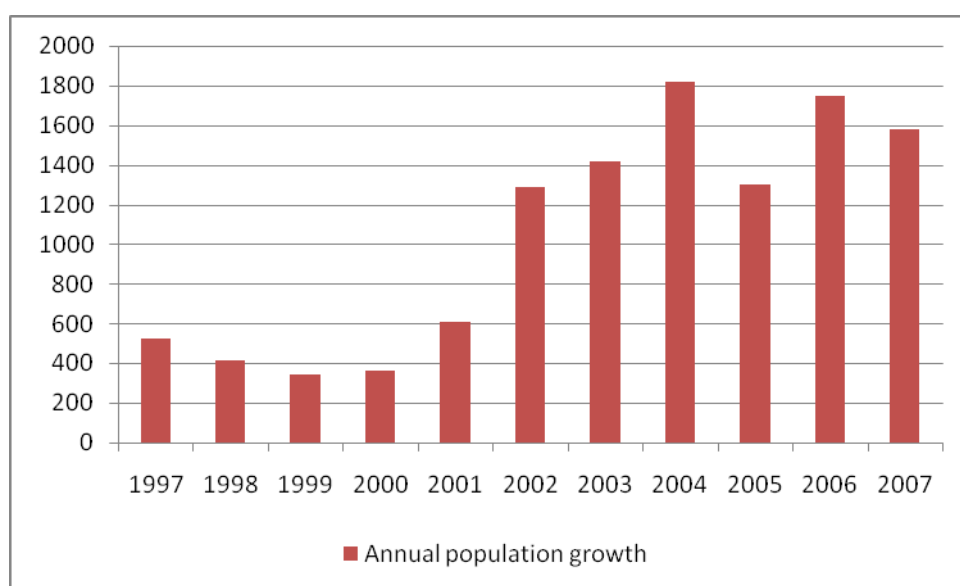
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- Cement Australia – major cement manufacturer, commenced in 1981
- Boyne Smelter Limited – major aluminium smelter, commenced in 1982
- Orica – major chemical manufacturer, commenced in 1990
- Rio Tinto Alcan Yarwun Refinery – major alumina refinery, commenced in 2002

There has also been a trial to refine oil shale with the Stuart Oil Shale Project, an approval to build the Aldoga Aluminium Smelter that has not yet been taken up, and a more recent (2009) approval to build the Gladstone Pacific Nickel Refinery. The latter project has been delayed following the global financial crisis in 2008-09.

The development of the Rio Tinto Alcan Yarwun Refinery from 2002 (Stage 1 followed by Stage 2) as well as other industrial developments over the same time period has generated substantial growth in the local and regional economy. This is best demonstrated by the change in population for the region, with the industrial developments since 2002 driving a sustained increase in population growth.



Source: GAPDL (2009)

Figure 3.4.1 Estimated population growth in Gladstone Regional Area

The contribution of infrastructure and industry to the economy can also be seen through the operations of the Port of Gladstone. This is the largest multi-commodity port in Queensland, and handled a record 76.48 million tonnes of cargo in 2007-08. Major commodities that were exported through the port in this year were coal (54.1 million tonnes), alumina (4.1 million tonnes), cement and clinker (1.3 million tonnes), and aluminium (0.3 million tonnes). Major commodities that were imported through the port were bauxite (13.0 million tonnes), caustic soda (1.4 million tonnes), petroleum products (0.8 million tonnes), ammonia (0.2 million tonnes) and petroleum coke (0.2 million tonnes). There has been a significant increase in total throughput at the Port of Gladstone over the previous five years, with a 28.2% increase from 59.66 million tonnes in 2003-04 (Queensland Transport 2008). A total of 1,368 ships visited the port in 2007-08.

3.4 Regional resource endowment, competitive advantage and expected future growth

Gladstone has major competitive advantages because of its geographical features (deep water port, coastal features), infrastructure (transport, power, water and other facilities) and location (proximity to

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major mining areas). The area has a highly skilled workforce, and the liveability, services and social infrastructure in the region make it relatively easy to attract a new workforce.

The future growth for Gladstone is expected to revolve around transport of commodities and mineral products through the port, and the minerals processing sector. A number of other infrastructure and transport developments are expected to be able to service the growing industry over time. In the longer time frame, the co-location of minerals, energy and infrastructure should help to develop more opportunities for advanced minerals processing and manufacturing. In the shorter to medium term, the development of major industrial projects will stimulate the further development of the supply chain and services sector in Gladstone and other major centres.

A summary of potential development activities at Gladstone (excluding the APLNG project) is provided in the following tables. The first table shows projects that have been recently completed, are commencing, or have been committed. These show significant committed growth in the area. The global financial crisis has slowed some development, with Rio Tinto slowing the construction of the Alcan expansion and Gladstone Pacific Nickel delaying the start of the nickel plant for approximately two years.

The second table shows the major projects that are currently under study at Gladstone to approximately 2015. There are a number of major projects to ship coal seam gas through Gladstone, a number of large infrastructure projects, and a potential steel works under consideration. The range and number of projects suggests that Gladstone should have a period of sustained growth over the next decade.

Table 3.5.1 Identified projects in the Gladstone Region.

Status	Name	Estimated Cost	Construction employment	Operational employment	Timing
Completed projects	Yarwun Precinct— Sodium Cyanide Plant Expansion	\$35 M			
Completed projects	RG Tanna Coal Terminal	\$780 M		80	
Completed projects	Mantra Pavillions on 1770	\$162 M			
Completed projects	Agnes Water Substation — Reinforcement of Supply	\$51 M		50	
Projects under construction	RG Tanna Coal Terminal — Upgrade Supply	\$39 M			to be completed in 2009
Projects under construction	Cement Mill	\$50.6 M	100	TBA	2008 - 2009
Projects under construction	Rio Tinto Alcan Expansion	\$1.8 B	2200 at peak	270	2007 – 2010
Projects under	Yarwun Alumina	\$2.1 B	2800 at peak	250	2007 –

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Status	Name	Estimated Cost	Construction employment	Operational employment	Timing
construction	Refinery				2010
Projects Committed	Larcom Creek 275/132 kV Substation Establishment	\$74.3 M		nil ?	2009 - 2010
Projects Committed	Queensland Gas Pipeline Expansion	\$112 M		TBA	to be completed in 2010
Projects Committed	Boyne Smelters	\$385 M		TBA	2009 - 2011
Projects Committed	Walloon Coal Seam Gas Field	\$260 M		TBA	to be completed in 2010
Projects Committed	Wiggins Island Coal Terminal (WICT)	Stage 1: \$1.3 B	500	130	2009 - 2012
Projects Committed	Gladstone Pacific Nickel Refinery	\$4 B	1000-2000	> 500	Delayed - Subject to demand

Source: GEIDB (2009), GAPDL (2009) and CQU data.

Table 3.5.2 Potential projects in the Gladstone Region.

Status	Name	Estimated Cost	Construction employment	Operational employment	Timing
Projects under study	Gladstone LNG Project— Fisherman's Landing	\$500 M	50-120	32	2010 - 2012
Projects under study	Queensland Curtis LNG Project (BG— QGC)	\$8 B	3600	820	to be completed in 2013
Projects under study	Sun LNG Project	\$450 M	400	TBA	2011 - 2013
Projects under study	Gladstone— Fitzroy Pipeline Project	\$320 M	190 - 200	< 10	2009 - 2011
Projects under study	Fisherman's Landing Port Expansion	Stage 1: \$92 M	65		Subject to demand

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Status	Name	Estimated Cost	Construction employment	Operational employment	Timing
Projects under study	Hummock Hill Island Development Project	\$125 M	110	400	15 year project development program
Projects under study	Central Queensland Gas Pipeline	\$400 M	300	8	2009 - ?
Projects under study	Gladstone-Fitzroy Pipeline	\$345 M	TBA	TBA	2011 - 2012
Projects under study	Boyne River Coal Seam Gas Exploration and Appraisal	\$1.5 - \$2 M		TBA	
Projects under study	Expansion Regional Waste Management Facility	\$30 M plus	40	35	
Projects under study	Dawson Valley Railway	\$1 B	1350	44	2009 - 2012
Projects under study	Australian Inland Rail Expressway	\$3 B	TBA	TBA	
Projects under study	Oil Shale Technology Development Facility	\$100 M	TBA	TBA	
Projects under study	Blast Furnace Steel Plant	\$1.4 B (Stage 1)	900-1500	700	
Projects under study	Santos GLNG	\$7.7 B	3000	200	2010 - 2014
Projects under study	Shell LNG Curtis Island	TBA	2500-3000	200-300	2014-15
Projects under study	Southern Cross LNG	TBA	300-350	80-90	2013 - ?

Source: GEIDB (2009), GAPDL (2009) and CQU data.

3.5 Key regional markets

3.5.1 Labour market

Information about the structure of the labour market in the Gladstone Region can be summarised from Australian Bureau of Statistics (ABS) data (Table 3.6.1). ABS data from 2007 shows that 1,746 businesses in the Gladstone Regional Council area were employing labour in 2007, of which 210 were employing 20 or more employees⁴.

Table 3.6.1 Counts of Businesses by Number of Employees in Gladstone Region 2007

	Number of Employees							Total
	Nil	1-4	5-19	20-49	50-99	100-199	200+	
Agriculture, Forestry & Fishing	567	96	33	3	0	0	0	699
Mining	9	6	3	0	0	0	0	18
Manufacturing	96	39	51	30	6	3	0	225
Electricity, Gas & Water supply	3	0	0	0	0	0	0	3
Construction	417	264	78	12	6	3	3	783
Wholesale trade	69	24	18	3	0	0	3	117
Retail trade	156	195	150	27	3	9	3	543
Accommodation, Cafes & Restaurants	33	42	36	33	0	6	0	150
Transport & Storage	141	63	27	3	0	0	0	234
Communication Services	15	3	3	0	0	0	0	21
Finance & Insurance	123	24	12	0	0	0	0	159
Property & Business Services	474	186	66	42	3	0	3	774
Education	9	9	0	0	0	0	0	18
Health & Community Services	54	27	21	0	0	0	0	102
Cultural and Recreational Services	36	12	0	6	0	0	0	54
Personal & Other Services	75	36	12	0	0	0	0	123

Source: Australian Bureau of Statistics, 2007 Cat:8165

The labour market in Gladstone has softened in 2009, as Rio Tinto shed several hundred jobs across its operations in April. The mining company slowed the construction of the Yarwin alumina refinery, putting off about 570 contractors there. It also reduced its workforce at the Yarwin refinery and Boyne Smelters by a further 35 permanent positions. In addition, there have been approximately 3,000 job

⁴ The data may not include some of the major minerals processing industries as these businesses are registered for GST purposes in different cities.

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losses across the mining industry in the Bowen Basin in 2008 and 2009, suggesting that the labour market at the regional level has also softened. While official data is not yet available for 2009 for Gladstone, it appears likely that the unemployment rate has risen higher than the levels of December 2008.

3.5.2 3.6.2 Construction services and building inputs markets

Information about the size of the key construction sectors has already been provided through an analysis of labour market statistics and information about the regional economy. Additional information about the extent of the construction services sector can be provided in several ways. First, an overview of the number of businesses by industry sector and the number of employees is shown in Table 3.6.2. This demonstrates that there are a large number of businesses in the manufacturing, construction and property & business services sectors, but a more limited number of businesses with a turnover of more than \$5 million per annum.

Table 3.6.2 Counts of Businesses in Gladstone Region 2007 by gross turnover

	Zero to less than \$100k	\$100k to less than \$1m	\$1m to less than \$5m	\$5m to less than \$20m	\$20m to less than \$200m	Total
Agriculture, Forestry & Fishing	480	204	15	0	0	699
Mining	6	9	3	0	0	18
Manufacturing	66	96	45	18	0	225
Electricity, Gas & Water supply	0	3	0	0	0	3
Construction	315	381	63	21	3	783
Wholesale trade	57	45	9	6	0	117
Retail trade	135	297	81	27	3	543
Accommodation, Cafes & Restaurants	39	84	21	6	0	150
Transport & Storage	93	123	18	0	0	234
Communication Services	15	6	0	0	0	21
Finance & Insurance	78	54	15	12	0	159
Property & Business Services	363	336	63	9	3	774
Education	9	9	0	0	0	18
Health & Community Services	45	48	9	0	0	102
Cultural and Recreational Services	30	24	0	0	0	54
Personal & Other Services	72	45	6	0	0	123

Source: Australian Bureau of Statistics, 2007 Cat:8165

Second, a review has been undertaken of businesses involved in the Gladstone Engineering Alliance, a network of businesses in Gladstone that help to supply the engineering and construction sectors in

Gladstone. The businesses in this network tend to be focused on supplying the larger and mid-size industrial sector in Gladstone, with details available at <http://www.gea.asn.au/pages/members/>.

The review identified approximately 50 members of the alliance that could be classified as local businesses or entities. From the available data, the average business in the alliance had 34 employees and an annual turnover of \$7 million. Extrapolation across 50 businesses in the alliance suggests that there are 1,700 employees in this broadly defined supply chain which is generating approximately \$450 million per annum in gross turnover.

3.6 Property values

Large projects can create significant demands for land for industrial and housing requirements. Projects that stimulate higher levels of demand through upstream and downstream supply chains are likely to have larger impacts on demands for industrial land, while projects that attract more population through direct, indirect and induced employment effects are likely to have more impacts on housing markets. These types of impacts can be minor in larger centres where there are ample stocks and development to cater for growth, but have the potential for more impact in regional centres such as Gladstone where stocks and changes in property stocks tend to be relatively smaller.

3.6.1 Industrial land

The stocks of industrial land can be classified into two broad groups. The first cater for the major projects where large areas of land are required for industrial plants and associated buffer purposes. The Gladstone State Development Area caters for these needs, and with 28,000 hectares of land available, most future projects have the potential to be accommodated.

The second group of industrial land supplies cater for the smaller industrial firms that are involved in upstream and downstream supply chains to industry, and to the commercial sector. Herron Todd White (2008) identified that the market for industrial premises in Gladstone had peaked by December 2008, with an oversupply of available property relative to demand.

Currently most of the industrial land for this group is in the sub \$3 million range and current stocks of available industrial land that is well located is limited (Herron Todd White 2009). Herron Todd White (2009) identify that prices range from around \$1,250/m² for smaller industrial sites of around 2,000 m² with a shed of around 500 m² to approximately \$1,750 / m² for small strata title properties of 100 – 300 m². The market for industrial land has been very quiet in 2009, with some smaller sheds vacant. The retail market is also quiet, with very few sales in 2009 and subdued leasing activity.

Herron Todd White (2009) identify that the effects of new industrial development is most likely to be concentrated on the larger industrial sector for activities such as warehousing and fabrication. The preferred industrial areas in the market appear to Hanson Road, Callemondah and Clinton.

3.6.2 Current status of rental and house markets

A review of the Gladstone housing and rental markets indicates a tightening market in 2009 not too dissimilar to the rest of Queensland. For the March quarter of 2009, the vacancy rate for all types of residential rental accommodation in Queensland was 3.4% (increased from 2.6% in 2008). The Gold Coast had the highest residential vacancy rate (4.5%), whilst the remainder of Brisbane had the lowest rate (2.2%) (OESR 2009).

OESR (2009) report that only 37% of residential rental managers believed that demand for residential rental accommodation had increased in their area in the last 12 months.

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The rental market in Gladstone has also experienced strong growth from June 2007 to June 2009 with the median rent on three bedroom housing increasing from \$280 / week to \$300 / week (7% increase) and four bedroom houses increasing from \$330 / week to \$360 / week (8% increase). Whilst these increases are comparable to the increases experienced in Brisbane over the same period (16% and 17% respectively) the prices paid per week for rental units increased substantially higher for units. The median rent on one bedroom units increased from \$123 / week to \$200 / week (63% increase). Table 3.7.1 presents the median weekly rents paid for private accommodation in the Gladstone Regional Council area from June 2007 – June 2009.

Table 3.7.1 Median Weekly Rents

Local Government Authority	Type of Housing	Median Weekly Rent June 2007	Median Weekly Rent June 2008	Median Weekly Rent June 2009	% Change 07-09
Gladstone Regional Council	4 bedroom house	\$330	\$360	\$360	8%
	3 bedroom house	\$280	\$300	\$300	7%
	3 bedroom unit	\$250	\$310	\$315	26%
	2 bedroom unit	\$190	\$225	\$240	26%
	1 bedroom unit	\$123	\$128	\$200	63%

Source: Queensland Rental Tenancy Authority 2009

Table 3.7.2 presents a breakdown of the bonds held by the Queensland Residential Tenancies Authority (RTA) by dwelling type for the Gladstone Regional Council area. The data indicates that there are 4,496 dwellings currently rented in the project area with bonds held by the RTA. Of these 3,017 are houses, 1,351 are flats/units, 83 townhouses, 27 moveable dwellings and 17 other dwelling types.

Table 3.7.2 Bonds held by RTA for Gladstone Regional Council as at 30 June 2009

	Gladstone	Calliope	Miriam Vale	Total
Boarding	1			1
Flat	1301	2	48	1351
House	2704	49	264	3017
Townhouse	78		5	83
Moveable	27			27
Other	11	1	5	17
Grand Total	4122	52	322	4496

Source: Queensland Rental Tenancy Authority 2009

In line with strong growth in rental incomes, house prices within the project area have substantially increased from 2003/4 – 2008/9. The level of annual increase within the Gladstone Regional Council ranged from a high of 31% in 2007/2008 to a low in 2% in 2008/2009 (Table 3.7.3). The volume of annual house sales within the Gladstone Regional Council appears to have peaked for the project

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area in 2006/2007 with the single largest annual increase in median sale prices occurring in 2007/2008. This suggests that the excessive demand for housing experienced in 2005-2007 within the project area may have been partially offset by an increase in housing supply, completed house lots and a general decline in investor confidence attributable to the global financial crises.

Table 3.7.3. Median Sale Price for Housing from 2003 to 2009

	Number of sales	Median Sale Price	Annual increase (%)	Cumulative Annual Increase
2003/2004	3,326	\$160,000	n/a	n/a
2004/2005	2,479	\$188,500	18%	18%
2005/2006	2,913	\$213,000	13%	31%
2006/2007	3,359	\$258,000	21%	52%
2007/2008	2,466	\$338,500	31%	83%
2008/2009	1,356	\$344,500	2%	85%

Source: Price Finder August 2009

As is the case for most of Queensland, demand for housing within the project area appears to have peaked after a sustained period of strong growth. Low vacancy rates (estimates ranging from 0-2% for housing) have contributed to significant increases in median weekly rent and median house sale prices between 2004/5 and 2008/9.

Herron Todd White (2008) characterised the rental housing market in Gladstone at December 2008 as balanced, with a steady vacancy trend and soft demand for new housing. The trend in the new housing market was declining, with the volume of new house construction and housing sales falling.

3.6.3 Housing supply

Due to a shortage of housing within Gladstone and a desire by many working in the region to settle their families in centres close to the coast, the analysis of housing and residential land supplies has been extended to include all the major population centres within the Gladstone Regional Council's boundaries including Calliope, Gladstone, Benaraby, Agnes Waters, Town of 1770, Boyne Island, Tannum Sands and Turkey Beach.

There were 35,748 published dwelling approvals in Queensland in the year to December 2008, lower by 21.9 per cent than the previous year's total of 45,788. Approvals for separate houses were down by 19.4 per cent and approvals for other dwellings (townhouses and units) were down by 27.0 per cent. Dwelling approvals for Queensland in the December quarter 2008 were 51.6 per cent lower than in the December quarter 2007. Brisbane City (18.7 per cent) and Gold Coast City (13.5 per cent) accounted for just under one third (32.2 per cent) of annual dwelling approvals in Queensland (PIFU 2009).

In the year to December 2008, Gladstone Regional Council was ranked 7th in the top 10 LGA's outside SEQ for dwelling approvals in Queensland. For the Gladstone Regional Council the number of new building approvals decreased slightly in 2008 with 628 approvals. Compared to 727 approvals in the previous year, these figures represent a decrease of 14% in dwelling activity. Table 3.7.4 provides a summary of the number of new residential dwellings approved for the Gladstone Regional Council from 2000 to 2008. The data in Table 3.7.4 indicates Gladstone Regional Council approved

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4,866 residential dwellings since 2000. New dwelling approvals have increased in the region on average 16% per annum during this period (PIFU 2009).

Table 3.7.4 Private Dwelling Approval Numbers and Value

Year	Total Residential Dwelling Approvals for Gladstone Regional Council	Average annual increase in Dwellings (%)
2000	262	n/a
2001	276	5
2002	571	107
2003	723	27
2004	495	-32
2005	553	12
2006	631	14
2007	727	15
2008	628	-14
Total	4,866	16.25%

Source: PIFU (2008c)

3.6.4 Residential land supply

Planning, Information and Forecasting Unit (2009c) report a significant decline in the number of residential lots approved and produced in the year ending September quarter 2008. Regional Councils in the central Queensland region approved 5,087 residential lots in the year ending September quarter 2008. This was a decline of 39% compared with the same period in 2007 when 8,296 lots were approved. 3,420 residential lots were produced in the central Queensland region in the year ending September 2008. Compared with the previous year when 3,574 lots were produced, this was a decrease of 4%. The number of lots registered in central Queensland in the September quarter 2008 decreased by 54% to 555 registrations compared to 1,205 registrations recorded in the same period in 2007. The number of lots consumed in the region in the year to December 2008 decreased by 20% to 661 lots when compared with the same period in 2007 (829 lots). An individual summary for the Gladstone Regional Council follows:

Gladstone Regional Council

Gladstone Regional Council approved 1,475 residential lots in the year to December quarter 2008. This was an increase of 104.9 per cent compared with the same period last year when 720 lots were approved.

457 residential lots were produced in the Gladstone Regional Council in the year to December quarter 2008. Compared with the previous year when 338 lots were produced, this was an increase of 35.2 per cent.

The number of lots registered in Gladstone (RC) in the December quarter 2008 remained the same as last year, when 144 lots were registered. Lot registrations in the year ending December 2008 were up 28.2 per cent over the previous year.

The number of lots consumed in Gladstone (RC) in the December quarter 2008 decreased by 40.8 per cent to 100 lots when compared with the same period last year. Lot consumption for the year ending December 2008 was down 21.7 per cent over the previous year.

In the December quarter of 2008, 22 vacant land sales were recorded with a median value of \$150,500. This was a decrease of 80.7 per cent in land sales volume and a decrease of 11.5 per cent in median value compared with the same quarter last year.

In the year ending December 2008, Gladstone Regional Council recorded a 13.6 per cent decrease in new residential dwelling approvals over the previous year. A total of 628 approvals, 77.2 per cent of which were for separate houses, compares to 727 approvals in 2007.

3.6.5 Accommodating non-resident workers – the Bowen Basin experience

The *Bowen Basin Population report* (PIFU 2007) which is produced by the Queensland Department of Infrastructure and Planning identifies an increasing trend towards the use of non-resident population in many mining communities in central Queensland. These communities are located in the Bowen Basin to the west of Mackay, Rockhampton and Gladstone. These trends towards a non-resident workforce are worth noting because they may become more commonplace in other centres, including industrial locations such as Gladstone. While a non-resident workforce is often used in Australia during construction periods, the developing pattern in the mining industry is for these arrangements to also apply to the operational phase of project.

The full-time equivalent (FTE) population in the Bowen Basin comprised 11,075 non-resident workers and 78,228 permanent residents in 2007 (PIFU 2007). As an FTE position is normally held by at least two workers rotating in block shifts, this suggests that more than 22,000 workers are non-resident in the Bowen Basin area. An estimated 27% of all jobs in the Bowen Basin in 2006 were performed by non-resident workers. Most of these jobs were in mining, construction and technical services (PIFU 2007).

These non-resident workers typically travel to the workplace area for a block shift period (e.g. seven days), and work longer shifts for that period. They then have a block period off work in the rotational cycle when another worker replaces them in the block shift. Accommodation in the workplace area for these non-resident workers tends to be in purpose-built workers accommodation, often provided by specialist companies. In the Bowen Basin, around 9,200 non-resident workers (or 83% of total) were counted in single person quarters (SPQs) across the Bowen Basin on 31 July 2007. Caravan parks were the next largest source of accommodation (around 1,030 persons, or 10%) followed by hotels/motels (657 workers, or 6%) (PIFU 2007).

There is an increasing use of non-resident labour force in Gladstone. Gladstone Area Promotion and Development Limited (GAPDL) (2009) report that in 2006 approximately 900 workers (about 4.2% of employment in Gladstone) did not reside in the region but lived elsewhere. The major communities that provided non-resident labour into Gladstone were Rockhampton (100 workers) and Bundaberg (80 workers), while the remainder came from further away. These non-resident workers have been commuting from their own residence or relying on standard accommodation options in Gladstone to house them during shift periods. The level of the non-resident workforce is likely to have decreased in 2009 following the reduction by Rio Tinto in contractor numbers in April 2009.

There is also potential for purpose built workers accommodation to be built in the area to service increased use of a non-resident workforce. The Gladstone Regional Council has supplied the following information about the status of development approvals for the these units:

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- A development permit exists to build a 300 unit workers accommodation facility in Calliope
- A development permit exists to build 240 unit workers accommodation facility in Stage 1 at the Calliope River Road in Calliope,
- A development permit exists to build 2025 unit workers accommodation facility in Stages 2 and 3 at the Calliope River Road in Calliope, and
- An application is currently in process with the Gladstone Regional Council to build 140 workers accommodation units on the Awoonga Dam Road at Benaraby.

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