

GLADSTONE – FITZROY
PIPELINE PROJECT
Environmental Impact Statement

Social Economic
Environment



Gladstone Area
Water Board



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15. Social and Economic Environment

15.1 Introduction

This chapter describes the social and economic environment in the project area and the potential impacts that could arise as a result of construction and operation of the Gladstone–Fitzroy Pipeline project (the project). The assessment was completed in February 2008.

As social and economic values and potential impacts are not confined to the immediate project area, for the purposes of this chapter the project area (or “local region” or “regional economy”) is defined as the local government areas (LGAs) through which the project passes. Prior to the council amalgamations in March 2008, this included Rockhampton City, Fitzroy Shire, Calliope Shire and Gladstone City (refer Figure 1.3 Locality Map), however the new LGAs are the Rockhampton Regional Council area and the Gladstone Regional Council area. The statistical and demographic information for the new LGAs was not available at the time of writing therefore the information used in this chapter has been based on the four original LGAs, for which information is available. The economies and social characteristics of these LGAs may potentially be either directly or indirectly affected by the construction and operation of the project.

The data inputs for the economic modelling have been sourced for the project as a whole and the majority of the potential social and economic impacts of the project are project-wide. For these reasons, this chapter has not been divided into two sections (Fitzroy to Bajool and Bajool to Gladstone) as has been done for other chapters of the EIS.

15.1.1 Structure of this Chapter

The chapter is structured to describe the socio-demographic, economic and accommodation baseline environment in the project area, followed by potential impacts that may arise as a result of the project and measures to mitigate or reduce the identified impacts. The residual impact is then described with use of the significance criteria outlined in Table 15.1. Assumptions and limitations and relevant legislation or policy are also included.

15.1.2 Objectives of the Economic Impact Assessment

The objectives of the economic impact assessment were to analyse and explain:

- The economic make-up of the current catchment area, and the potential for the local residents to fulfil the requirements for employment in the construction and on-going phases of the project
- The economic impact of the proposed pipeline with regard to employment, income and value adding to the regional, state and national economies, and the ability for the industries in the local region (as defined in Section 15.1) to meet the requirements of the project
- The ability of the local region to cater for the accommodation requirements for the construction and the ongoing operation of the project.

15.2 Methodology

15.2.1 Socio-demographic and Economic Baseline

For the purpose of this economic impact assessment, the project area is the LGAs through which the project passes. The information for this assessment was gathered prior to council amalgamations in March 2008 and therefore refers to the former LGAs of Fitzroy, Calliope, Gladstone and Rockhampton. The project is geographically situated within or adjacent to these LGAs (now Rockhampton Regional Council area and Gladstone Regional Council area). Subsequently, their economies are either directly or indirectly affected by the construction and operation of the pipeline.

The social baseline environment has been described with reference to local data available about the local region. This includes but is not limited to information from local government websites, the Australian Bureau of Statistics (ABS), and the Planning Information and Forecasting Unit.

The data for the socio-demographic and economic baseline was sourced largely from the ABS 2006 and 2001 censuses, local government websites, the Planning Information and Forecasting Unit, and in some cases via discussions with Council officers and industry representatives. To meet the requirements stated in the Terms of Reference, the project area was compared to Queensland and Australia.

Information about the properties and land uses in the project area has also been gained during consultation with landowners and other stakeholders as a result of interactions during the detailed design for construction for the project.

15.2.2 Data Collection and Consultation

The collection of data was a vital component of completing the economic and accommodation impact of the project, particularly in obtaining information such as the expected employment and expenditure associated with the construction and maintenance phase of the pipeline project. An analysis of this information allowed the confirmation of the economic benefits that are likely to flow into the local communities and beyond.

Stakeholders such as the local councils, Gladstone Economic and Industry Development Board (GEIDB) and real estate agents were consulted via telephone to ensure important local contextual information was incorporated into the analysis. The GEIDB is the Queensland Government authority established to facilitate investment attraction and project development in the Gladstone State Development Area (GSDA) and the Gladstone Region and is an important point of contact for information about the region.

This enabled a deeper analysis of the potential economic impacts and impacts on accommodation in the area.

15.2.3 Economic Modelling and Analysis

An input-output model was developed and used to determine the impact of the project on the project area's economy. Industry and employment information from the ABS was used as a basis for developing assumptions about the linkages between activities associated with the construction, ongoing operation and maintenance stages of the project, and other industry sectors in the project area. A tailored regional input-output model was built for the purpose of this project, in order to capture economic impacts and multiplier effects.

15.2.3.1 Understanding the Outputs of the Modelling

The purpose of assessing economic impacts is to examine how the project affects the economy of the project area through all of the linkages between all industries in the economy. It is the sum of the direct contribution (or economic stimulus) of the project, and the indirect contribution (flow-on effect) to the economy. The final result is an overall picture of the project's total economic contribution (Figure 15.1).

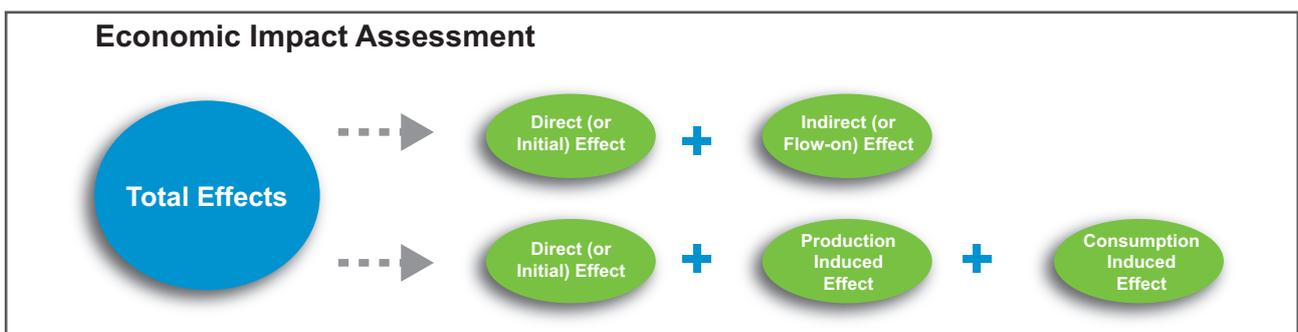
The input-output model produces the following three indicators which together provide the overall picture of the economic impact the project has on the project area economy:

- **Output (or total turnover)** – refers to the value of total expenditure associated with the project
- **Value added** – the equivalent of total turnover less the amount spent on non-labour inputs and imported inputs
- **Employment** – the number of full time equivalent (FTE) jobs supported by the project.

The total impact or contribution is comprised of direct effects (also known as the 'initial effects') and indirect effects (also known as the 'flow-on effects'). The direct effect measures the level of output, employment or value added directly generated through the operations of the business, industry or project. In the case of the project the direct effect of the construction phase would be the total construction cost.

The 'indirect contribution' to the economy of the project area exists because the construction and maintenance of the pipeline would require purchase of inputs from companies who would in turn spend those dollars on their inputs, and so on. Indirect contributions will also be realised through expenditure from, say, construction workers on food and travel locally. The indirect contribution therefore traces the flow of money spent in the local economy¹ and is the measure of the additional value generated in the economy due to the project. Calculation of the total indirect contribution is based on all expenditures associated with the project.

Figure 15.1 Economic Impact Assessment.



¹ The "local economy" is used to refer to the economy of the project area comprising of the former Fitzroy, Calliope, Gladstone & Rockhampton LGAs.

These indirect contributions can be measured in terms of the dollars of spending that they generate, in terms of the value added they generate and also the additional jobs they generate in other sectors of the local economy.

In the second (or bottom) equation of this diagram, production induced effects relate to how local upstream industries benefit from the increased demand for their goods and services as a result of winning project related supply contracts (in this case supply contracts awarded as a result of the pipeline project), and their increased local purchasing in servicing these supply contracts. Consumption induced effects relate to the increased regional spending of the pipeline project associated wage and salary earners on items such as food, clothing, housing, etc. and how local suppliers' purchases change in order to meet these demands.

Assumptions and limitations associated with the modelling are outlined in Section 15.3.

15.2.4 Significance Criteria

Based on the information gathered during the baseline phase and on the known characteristics of the project, potential impacts arising from the project were able to be identified and mitigation measures proposed where relevant. An assessment of the residual impact level with the proposed or current mitigation measures in place was then undertaken using the significance criteria shown in Table 15.1.

Table 15.1 Impact Significance Criteria for Social and Economic Environment

Significance	Criteria for Social and Economic Environment
Major Adverse	Irreversible and significant negative change to current amenity, lifestyle and community activities and functioning. Displacement or relocation of several houses or businesses. Severance of many communities in the area from facilities, services or of a community itself. Significant impact to many community facilities and long-term constraints to the regional accommodation market. An 'unhealthy' demographic structure is created in a community. Permanent closure of one or more businesses or industries with resulting detrimental impacts to the regional economy.
High Adverse	Considerable adverse change to current amenity, lifestyle and everyday community activities with limited scope for mitigation. Displacement or relocation of houses or businesses. Separation of a number of communities or residential properties from facilities and services. Impact to a large number of community facilities and significant long-term constraints to the regional accommodation market. Temporary closure of one or more businesses or industries with some resulting detrimental impacts to the local region's economy. Mitigation measures and detailed design for construction work are unlikely to remove all of the significant effects upon the affected communities or interests.
Moderate Adverse	Noticeable adverse change to current amenity, lifestyle and everyday community activities, but with scope for some mitigation. Separation of a small number of residences from facilities and services. Impact to a number of community facilities and some impacts to the local accommodation market. Adverse impact upon businesses, with local economic effects however their operations remain viable.
Minor Adverse	Localised or limited noticeable change to current amenity, lifestyle and everyday community activities, which can be largely mitigated. Some residual effects will still arise. The functional useability of community facilities affected and temporary localised impact to the accommodation market. Localised or limited change to the operation of businesses.
Negligible	Very little change in the current situation. No appreciable impact on local amenity, resident lifestyle and everyday community activities. Imperceptible changes to the amenity of nearby residences. Temporary access alterations to residential properties, businesses, community facilities and recreational areas during construction. Temporary alteration to operation of businesses, community facilities and recreational areas during construction.
Moderate Beneficial (economic only)	Promotion of investment locally. Improvements to the operation of local businesses or industries. Significant direct and indirect contribution to the local region's economy and the creation of jobs in the local region.
High Beneficial (economic only)	Promotion of investment regionally. Improvements to the operation of local and regional business or industries. Significant direct and indirect contribution to the regional and state economy and creation of many long-term jobs in the region.

15.3 Assumptions and Limitations

The economic modelling conducted as part of this study provides an assessment of economic impacts arising from the construction and operation of the project. It provides detailed analyses on the industries likely to be impacted upon and the levels of those impacts. The economic modelling is, however, based on a certain assumptions. The assumptions utilised are carefully considered, as the accuracy of the economic impact assessment outcomes depends on the validity of the assumptions used.

The use of certain assumptions for the modelling process, while appropriate for the current scope of information required, also has limitations with regards to the outputs produced. The general assumptions in the economic modelling process and the limitations on the information available for the project are discussed below.

15.3.1 Modelling Assumptions

The multipliers utilised in this study are from a localised version of a national input-output table, with the base information being the 2001-02 national input-output tables produced by the ABS. These are the latest available national tables. An assumption behind input-output models is that industry dynamics are static, when in reality an economy will evolve over time. It is important to understand the nature of the static input-output tables when interpreting the results of the analysis.

The multipliers are calculated based on sound methodology; however they should be viewed as having a theoretical element. They are estimates of the potential impacts associated with the project, and do not completely reflect phenomenon such as the economy evolving differently as a result of the project and, for example, local industries changing their business operations to better capture the benefits of the impacts. Nonetheless, the results produced by using the multipliers generated by the input-output tables will provide reliable information regarding the impact under current conditions and interactions.

15.3.2 Information Availability Limitation

Although a sufficient amount of data was provided to generate reliable estimates of impact, the availability of information relating directly to the project was limited to some extent, and this is common for these sorts of assessments. The limitations refer to the difficulty in obtaining information on all expenditures associated with the project and the destination location of those expenditures, which enable a non-theoretical understanding of the geographic distribution of the impacts. The outputs associated with the analyses conducted here estimated where workers on the project would spend their money and what the likely housing situation would be for the workers on the project.

A range of assumptions is required to estimate these phenomena as obviously the workforce for the project is not yet present so actual information on expenditures are not known. Instead, these assumptions are based on current generalised patterns within the economy, and this is considered to be appropriate for the level of analysis required.

15.3.3 Pipeline Project Assumptions

Table 15.2 summarises the data utilised in the modelling process specifically relating to the project.

For the purposes of this assessment, the total construction cost of the project is assumed to be \$293.2 million (Arup, July 2007) (NB: This figure is an estimate only and could differ from the actual cost of construction) and the component of this being spent locally is assumed to be \$57.4 million (Arup, July 2007). This represents almost 20 percent of the total construction expenditure. This is consistent with estimates used in other public processes such as the current Queensland Competition Authority review. A detailed, risk adjusted price is currently being developed in parallel to detailed design for construction, and the real economic impacts will be affected by any differences in this detailed estimate.

Approximately 95 percent of the total construction expenditure (or \$278.5 million) is expected to remain within Queensland, while the remaining 5 percent will be spent in the rest of Australia.

With regard to labour requirements, it is expected that 60 percent will be full-time direct hire while 40 percent will be contractors. It is assumed that 60 percent of full-time direct hire staff would be sourced from outside and 40 percent from within the local region, while with sub-contracted staff are expected to be 50 percent local and 50 percent from outside the local region.

In addition to infrastructure sites, it is assumed that the project footprint will be an area approximately 30 m wide and 115 km long. It is anticipated that GAWB will require an additional four to eight workers in order to operate the Alton Downs Water Treatment Plant (WTP).

Table 15.2 Assumptions for the Project Economic Modelling (based on proposed construction program, as of July 2007, which allowed for a 27-month construction program).

Quarter (of the Construction Period)	Expenditure on Construction (\$million)	Jobs
Qtr 1	4.9	29
Qtr 2	12.1	72
Qtr 3	34.8	207
Qtr 4	47.6	283
Qtr 5	55.7	331
Qtr 6	55.5	330
Qtr 7	42.6	253
Qtr 8	32.5	193
Qtr 9	7.4	44
Total Construction Cost	\$293.2 million	%
Local region	\$57.4 million	19.6%
Outside region	\$235.9 million	80.4%
Within Queensland	\$278.5 million	95.0%
Labour and Machinery	\$109.5 million	
Local region	\$48.2 million	44.0%
Outside region	\$61.3 million	56.0%
Materials	\$183.7 million	
Local region	\$9.2 million	5.0%
Outside region	\$174.6 million	95.0%
Other assumed costs:		
WTP chemicals cost (annual)	\$6.5 million	
Power costs (annual)	\$2.4 million	
General repairs and maintenance cost (annual)	\$1.2 million	

Source: Arup, 2007

It is also worth noting that the modelling was based on July 2007 construction cost estimates and as such there is no guarantee that the assumptions outlined above will remain the same in future years, however the modelling is still considered to be a reasonable indication of the economic effects of the project.

15.4 Relevant Legislation and Policy

15.4.1 Queensland Government Building and Construction Contracts Structured Training Policy (The 10 percent Policy)

The Queensland Government Building and Construction Contracts Structured Training Policy has been in place since 1993. The policy requires that on any Queensland Government building or civil construction project (with a value more than \$250,000 for a building project or more than \$500,000 for a civil construction project) a minimum of 10 percent of the total labour hours be carried out by apprentices, trainees or cadets or used to increase the skill levels of current employees (up to a maximum of 25 percent of the deemed hours). A Local Industry Participation Plan will be developed in consultation with the Department of Tourism, Regional Development and Industry. This policy is applicable to the project and aims to address the skills shortage and to facilitate the employment of apprentices, trainees and cadets in both the building and construction industry. How this policy will be addressed for the project is described in Section 15.7.

15.4.2 Indigenous Employment Policy for Queensland Government Building and Civil Construction Projects

This policy aims to enhance the Queensland Government's reconciliation process and only applies in certain Indigenous communities, none of which are relevant to this project.

15.4.3 Local Industry Policy

The Local Industry Policy aims to make sure Queensland and Australian suppliers have full, fair and equal opportunity to tender for major infrastructure and resource projects. Infrastructure and resource projects worth more than \$5 million that are publicly funded are required, under the Local Industry Policy, to prepare Local Industry Participation Plans and implement the use of local content as one of the broad tender evaluation criteria. How this policy will be addressed for the project is described in Section 15.7.

15.4.4 Council Planning Schemes

The local government authorities relevant to the project address social/community issues throughout their respective planning schemes. Commonly these considerations include the provision of open space and community facilities under Desired Environmental Outcomes and through the management of development through the development approval process. The approvals processes for this project are described in Chapter 1, Introduction.

15.5 Baseline Environment

This section presents a socio-demographic and economic baseline of the project area. It outlines the current socio-economic make-up of the project area, the current accommodation situation, relevant to assessing the potential economic impact of the project.

Information in this section is sourced largely from the ABS Census data for 2006 and 2001. Other sources referred to in this section include information from Real Estate Institute of Queensland (REIQ), local council websites, Department of Employment and Workplace Relations (DEWR) and the telephone interviews conducted with Councils, Economic Development Boards and real estate agents.

15.5.1 Socio-Demographic Baseline

In March 2008, council amalgamations occurred to form the Rockhampton Regional Council (including the current Rockhampton City and Fitzroy Shires) and the Gladstone Regional Council (including the current Calliope Shire and Gladstone City). The statistical and demographic information for these new shires is not currently available and the information below has therefore been based on the four original shires, for which information is available.

15.5.1.1 Shire Summary (Prior to Amalgamation of Shires)

- **Fitzroy Shire (now part of Rockhampton Regional Council)** – the majority of the pipeline route (approximately 60 km) including the Fitzroy River intake and WTP will be in this shire. It has a population of approximately 10,000 people with Gracemere and Bajool as its centre. The land use in the shire is predominantly rural agricultural with intensive industrial development around the Stanwell Energy Park. Relevant townships within this shire that are adjacent to the project area include Gracemere (approximately 2 km south of the project area) and Bajool (approximately 2 km west of the project area)
- **Rockhampton City (now part of Rockhampton Regional Council)** – 9 km of the pipeline traverses the edge of Rockhampton City. Rockhampton has a population of approximately 60,000 with a large commercial and business centre surrounded by mining and rural industries. Major industries in this local government area are agriculture, fishing and tourism
- **Calliope Shire (now part of Gladstone Regional Council)** – the southern section of the pipeline route including the Raglan booster station and the Aldoga reservoir in the GSDA (approximately 42 km) is within Calliope Shire. This shire has a population of approximately 16,000 and includes the major urban centres of Tannum Sands, Boyne Island, Benaraby, Raglan, Mt Larcom, Yarwun, Calliope Township and surrounds, as well as other rural centres
- **Gladstone City (now part of Gladstone Regional Council)** – the pipeline route does not enter Gladstone City although the pipeline will connect to GAWB's existing water infrastructure. Gladstone City is in an industrial region and has a population of approximately 27,000. The City is situated between the Calliope River to the north and the Boyne River 14 km to the south, with Port Curtis being the major industrial port in the region and the focus of large scale industrial and resource development.

15.5.1.2 Total Population and Population Change

- At the time of the 2006 Census, the project area had a population of 116,778, as illustrated in Table 15.3. This accounted for 2.9 percent of the Queensland population
- The project area had a lower average annual population growth rate than Queensland but slightly higher than Australia (1.2 percent compared with 2.1 percent and 1.1 percent respectively) over the 2001–2006 Census periods
- Within the project area, Rockhampton had the lowest average annual population growth rate (0.04 percent) over the 1996–2006 Census periods, while Calliope had the largest (2.0 percent).

Table 15.3 Average Annual Change in Growth, Fitzroy Shire, Calliope Shire, Gladstone City, Rockhampton City, Project Area, 1996, 2001, 2006.

	Fitzroy Shire	Calliope Shire	Gladstone City	Rockhampton City	Project area	Queensland	Australia
2001	9,553	15,091	26,835	58,382	109,861	3,655,139	18,972,350
2006	10,310	17,002	29,523	59,943	116,778	4,046,880	20,061,651
Average Annual Change 2001–2006	1.5%	2.4%	1.9%	0.5%	1.2%	2.1%	1.1%
Average Annual Change 1996–2006	0.8%	2.0%	1.10%	0.04%	0.6%	1.9%	1.2%

Source: ABS Census of Population and Housing, 2006 (Historical Data)

15.5.1.3 Age and Sex Structure

The following points provide a summary of the relevant information relating to the age and sex structure of the project area population, which is also shown in Figure 15.2.

- The median age for the project area (34) was moderately lower than that observed in the broader comparative regions of Queensland (36) or Australia (37). This was largely due to a relatively young population observable in Gladstone, with a median age of 32, but it is noted that all other LGAs had a lower median age than Australia
- Changes in population demographics over the 1996–2006 Census periods indicate that the project area is ageing significantly, with proportionate increases in the number of residents aged 45 and older, and a proportionate decrease in residency in all younger age brackets. This trend was reflected across both Queensland and Australia, as well as in all LGAs within the project area
- Nonetheless, over 27.6 percent of the population were of a young working age, aged between 25 and 44.

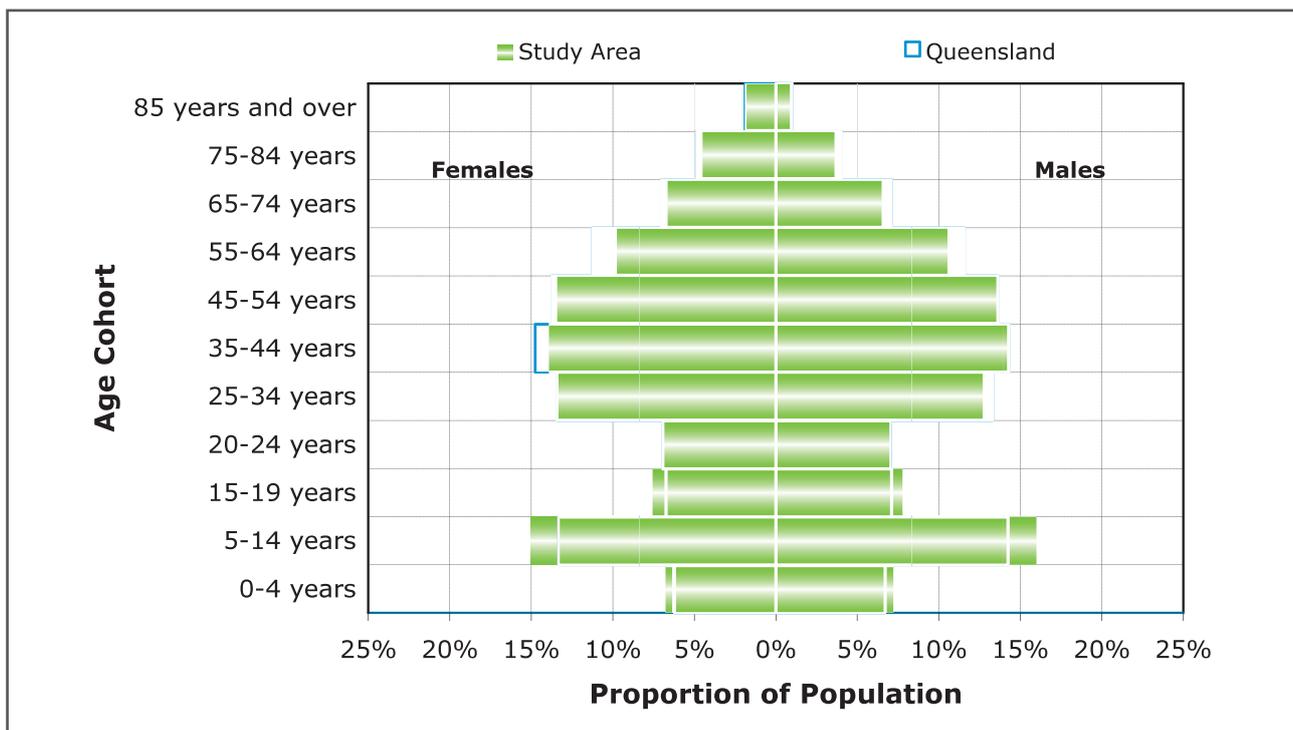


Figure 15.2 Age Sex Structure in the Project Area, Queensland, 2006 Source: ABS Census of Population and Housing, 2006

15.5.1.4 Population Projections

Forecast average annual population growth over the 2006–2026 period was moderately lower in the project area (1.3 percent) when compared against Queensland (2.0 percent). This was largely due to the low forecast average annual growth of 0.2 percent in Rockhampton during this period. Conversely, both Calliope and Gladstone are forecast to outgrow the State's growth, with forecast average annual growth rates of 2.7 percent and 2.4 percent respectively. This is summarised in Table 15.4. Data in this table differs from that presented in Figure 15.2 as ABS provides historical population information, whilst the Queensland Government's Planning Information and Forecasting Unit provides forecasts for local areas.

15.5.1.5 Indigenous Profile

The following points summarise the relevant information relating to the Indigenous profile in the project area:

- Indigenous residents accounted for 4.7 percent of the resident population in the project area. This was moderately higher than the 3.2 percent and 2.3 percent observable in Queensland and Australia respectively
- The project area's Indigenous population was most prominently concentrated in Rockhampton, where Indigenous residents accounted for 5.8 percent of the population, and Fitzroy, where they accounted for 4.9 percent of the LGA's population.

In relation to Aboriginal cultural heritage, the *Aboriginal Cultural Heritage Act 2003* recognises that Aboriginal cultural heritage can be both traditional and contemporary in nature. Sections 9 and 10 of the Act state that a significant Aboriginal area or object is of particular significance to Aboriginal people because of either or both Aboriginal tradition and the history, including the contemporary history, of any Aboriginal party for the area.

Chapter 14, Cultural Heritage, provides background on the Aboriginal history in the project area. During the development of a Cultural Heritage Management Plan (CHMP), the cultural heritage survey (which is an integral aspect of the CHMP) will specifically assess all Aboriginal cultural heritage in the project area, and will define any significant Aboriginal areas or objects. All endorsed Aboriginal parties will be part of the overall assessment. Almost all of the project area is within the external boundaries of two registered native title claims, namely the Darumbal People and the Port Curtis Coral Coast (PCCC) applications. The CHMP and survey will be undertaken prior to the commencement of construction.

15.5.1.6 Family Type

The points below provide a summary of the family types within the project area:

- 'Couple families with children' was the dominant family type in the project area, indicating no significant differences between the project area, Queensland and Australia
- Within the project area, lone persons households were of a similar level to Queensland at 20.9 percent but slightly lower than the Australian level (22.0 percent nationally)
- Couple families with children held the highest share out of any family type in each of the council areas with 40.1 percent of households in Calliope consisting of this household type, followed by Fitzroy at 37.3 percent, 33.6 percent in Gladstone and 27.3 percent in Rockhampton. Rockhampton demonstrated the highest levels of single parent families, lone person households and group households.

Table 15.4 Population Projections for the Project Area, 2006–2026

	Calliope Shire	Fitzroy Shire	Gladstone City	Rockhampton City	Project Area	Queensland
2006	17,538	11,213	31,028	62,610	122,389	4,091,546
2011	18,949	11,303	31,550	61,542	123,344	4,518,093
2016	21,964	12,287	36,666	62,573	133,490	5,027,679
2021	25,709	13,788	43,078	63,864	146,439	5,559,674
2026	29,980	15,138	49,694	65,190	160,002	6,097,144
Average Annual Growth 2006–2026	2.7%	1.5%	2.4%	0.2%	1.3%	2.0%

Source: Planning Information + Forecasting Unit, 2007 (Projection Data)

15.5.1.7 Health Status and Sensitive Groups

The Queensland Health report 'Health Determinants Queensland' provides a health determinants summary for Rockhampton and Gladstone regions and is the most recent public data available (Queensland Health 2004).

This report provides a summary of the key health issues and their causes in the regions. According to this report, the key socio-demographic predictors of health status of a population are the age structure, sex distribution, proportion of Indigenous people and socio-economic profile, and to a lesser extent urban, rural or remote location. In general, socio-economically disadvantaged people experience poorer health and shorter life expectancy than more socio-economically advantaged people, for nearly all disease causes and populations studied. Indigenous peoples in these regions were found to be more likely to live in areas of greater socio-economic disadvantage than the non-Indigenous population.

In summary, compared to Queensland, Rockhampton has:

- Generally a similar age and sex profile to Queensland population
- A higher proportion of Indigenous people
- Evidence of socio-economic disadvantage.

In summary, compared to Queensland, Gladstone has:

- A higher proportion of children
- A higher proportion of younger adults (aged 35 to 44 years)
- A higher proportion of males and projected to increase
- Population growth to affect young people, adult and older population particularly
- A higher proportion of Indigenous peoples.

Considering the whole population in both the Rockhampton and Gladstone regions, the major causes of death and illness were found to include coronary heart disease, stroke, chronic obstructive pulmonary disease, depression and lung cancer (Queensland Health 2004).

15.5.1.8 Properties and Land Uses

Social impacts have been considered during the route and site selection process which is described in Chapter 1, Introduction. As a result, the project area has been selected to avoid towns and residential areas where possible. The majority of properties traversed by the project area are zoned as rural in the relevant planning schemes, with the exception being the Alton Downs zone in Fitzroy Shire and the Gladstone State Development Area in Calliope Shire which has its own zoning classification system. Queensland Land Use data (Department of Natural Resources, Mines and Water 1999) shows that the vast majority (greater than 95 percent) of the project footprint traverses land that is classified as 'production from relatively natural environments'. This land use is further classified as 'grazing natural vegetation'. Chapter 4, Land Use and Infrastructure, provides further detail on the land uses in the project area.

15.5.1.9 Health Facilities

The aim of this section is to provide an overview of the health facilities within the vicinity of the project area and the services that they provide.

The project area is located within the Queensland Government Central Queensland Health Service District. Government hospital facilities identified within 50 km of the project area are shown in Table 15.5.

Table 15.5 Identified Hospitals near the Project Area

Government Hospitals	Services
Rockhampton Hospital Total patients 2005/06: Approx 250,000 Approx 10% admitted	Red Cross Blood Transfusion Service, Emergency Medicine, Anaesthetics, Radiology and Ultrasound, Specialist Outpatient Department review, Central Sterilising Services and Supply, Rehabilitation, Renal, Coronary Care, Intensive Care, Palliative Care & Chemotherapy, Day Surgery Unit, Operating Rooms, General Surgery, General Orthopaedics, Visiting Urology, Visiting Neurosurgical, ENT, General Medicine, Visiting Facio/Maxillary, Obstetrics and Gynaecology, Ophthalmology, Visiting Haematology, Visiting Rheumatology, Visiting Oncology, Paediatrics, including Neonatal (Special care nursery), Visiting Paediatric Cardiology, General Respiratory Medicine.
Gladstone Hospital Total patients 2004/05: Approx 78,000 Approx 7% admitted	Emergency, Outpatients, General Medicine and Surgery (including Day Surgery), basic Orthopaedics, Obstetrics and Gynaecology, Medical Imaging, Pharmacy, Pathology, Central Sterilising.
Mt Morgan Hospital	Emergency Department, Acute Inpatient, Aged Care and Community Health Services.
Yeppoon Hospital and Nursing home Total Patients 2005/06: Approx 22,000 Approx 6% admitted	Emergency Medicine, Acute Inpatient Services, Rehabilitation And Palliative Care, Residential Aged Care, Women & Family Health Programs, Adult Health Programs, Oral Health Services.

There are also private hospitals in the region, including the following

- Mater Hospital Yeppoon
- Mater Misericordiae Hospital Rockhampton
- Rockhampton Surgicentre
- Rockhampton Private Hospital
- Mater Misericordiae Hospital Gladstone.

In addition to the hospitals identified above there are a wide range of other health care facilities in Rockhampton and Gladstone including the following:

- Aged care facilities
- Doctors' surgeries
- Private clinics
- Radiologists
- Optometrists
- Medical centres
- Dermatologists
- Psychiatric and psychological services
- Aboriginal community health service.

These and other facilities currently service the populations of Rockhampton and Gladstone and surrounding smaller communities. Rockhampton appears to have a greater number of facilities.

15.5.1.10 Education Facilities

Childcare

There are a number of childcare facilities located in the Rockhampton to Gladstone region. A desktop review of the Queensland Government Department of Communities website, utilising the Childcare Service Geographic Search tool (Department of Communities, 2008) over the broadly defined project area identified 39 child care facilities. These consisted of nine kindergartens, two family day care services, eight school age care services and one limited hours care service provided by a Police Citizens Youth Club.

Schools

A desktop review was undertaken to determine the number of schools in the Rockhampton to Gladstone region. The number of schools identified from a review of district maps from the Queensland Education Department (Department of Education, Training and Arts, 2007) included 17 primary schools of which several were included with secondary schools, 10 secondary schools and two special schools (one in Gladstone and one in Rockhampton). Six of the identified schools are private schools. A number of the schools offer boarding programs and specialist facilities for students with disabilities. The schools closest to the project area include Bajool State School, Bouldercombe State High School, Marmor

State School and Mt Larcom State School all of which are more than 1 km from the project area with the exception of Mt Larcom State School, which is approximately 800 m from the project corridor.

Tertiary and Vocational Education

There are two primary institutions offering tertiary and vocational education opportunities. These are the Central Queensland University that has campuses at both Gladstone and Rockhampton, and Central Queensland Institute of TAFE also with campuses in Gladstone and Rockhampton.

The Central Queensland Institute of TAFE provides a range of courses and nationally recognised training for apprentices and trainees. Such training aims to address the current skills shortage in Queensland and contribute to the local economy.

Central Queensland University offers a range of undergraduate and postgraduate courses that include courses accessible both on campus and via distance education. The university has a Cooperative Education Program that formally integrates a student's academic studies with on-the-job experience in cooperating employer organisations (CQU 2008). This program allows both practical and theoretical education to coincide and provides greater employment opportunities for students by allowing them to gain experience whilst studying.

15.5.1.11 Local Government and Public Services

The local governments relevant to the project area include Rockhampton City, Fitzroy Shire and Calliope Shire. Gladstone City, although not within the project area, is adjacent to the south. The local government councils offer a range of public services including environmental services (waste disposal, recycling, mosquito control), planning and development (administered through the shire planning schemes), roads maintenance, sewerage services and water supply.

15.5.1.12 Other Community Services and Facilities

There are a range of community facilities provided by the local authorities in the Rockhampton to Gladstone region. These include:

- Swimming pools
- Community halls
- Skate parks
- Parks and gardens
- Sporting grounds and facilities
- Museums and art galleries
- Libraries
- Cemeteries.

These facilities are located within the towns along the project route and none are located within the construction corridor.

15.5.2 Economic

This section provides the current economic environment of the project area, with relevant comparisons made to Queensland and Australia.

15.5.2.1 School Qualifications

- At the time of the 2006 Census, 33 percent of the project area's population aged 20 or older, had completed their education to a grade 12 or equivalent level. This was relatively low when compared to Queensland and Australia, where 42 percent and 44 percent of similarly aged residents had completed grade 12. This trend was reversed for graduates of a year 10 or equivalent level, where the project area was proportionately over-represented (32 percent compared with 27 percent and 23 percent for Queensland and Australia respectively)
- Gladstone and Rockhampton had the highest proportion of residents within the project area who had completed a year 12 or equivalent certificate, with 35.9 percent and 34.7 percent of residents aged 20 years or older having done so. Both of these were lower than the proportions for Queensland and Australia.

15.5.2.2 Tertiary Qualifications

- Approximately two thirds (62.6 percent) of the project area over the age of 15 did not possess a tertiary qualification, as of the 2006 Census. This is relatively high when compared to the figure for Queensland (49.6 percent) and Australia (47.5 percent)
- The prominent field of tertiary study was Engineering and Related Technologies. This was also prominent in both Queensland and Australia, however was proportionately over-represented in the project area, accounting for 24 percent of tertiary degrees, compared with 16 percent and 15 percent respectively for Queensland and Australia
- The majority of residents with a tertiary qualification held a Certificate, accounting for 42 percent of nominated qualifications. This was proportionately larger than the figures for either Queensland (35 percent) or Australia (31 percent). The project area was under-represented in the proportionate level of Bachelor and Diploma qualifications completed when compared against Queensland and Australia.

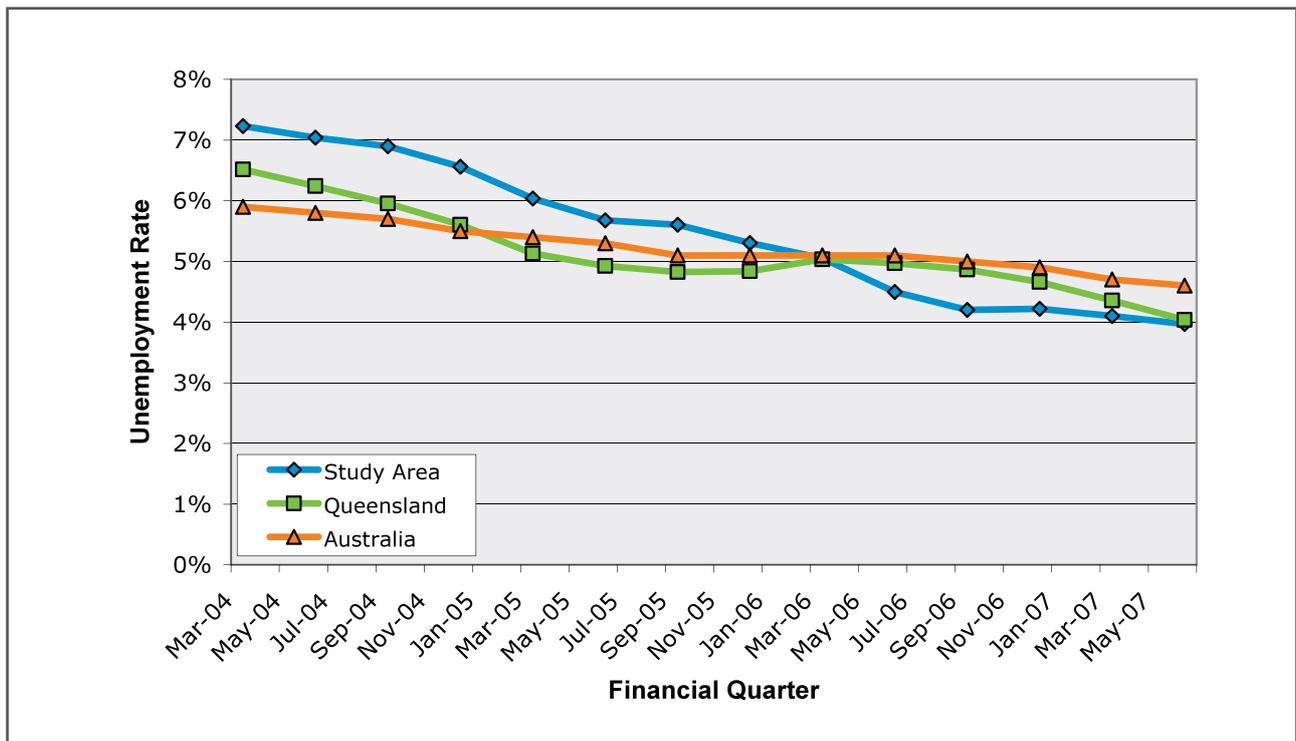


Figure 15.3 Unemployment Rate in the Project Area, Queensland, Australia, 2006

Source: Australian Department of Employment and Workplace Relations Small Area Labour Market Data 2004, 2007

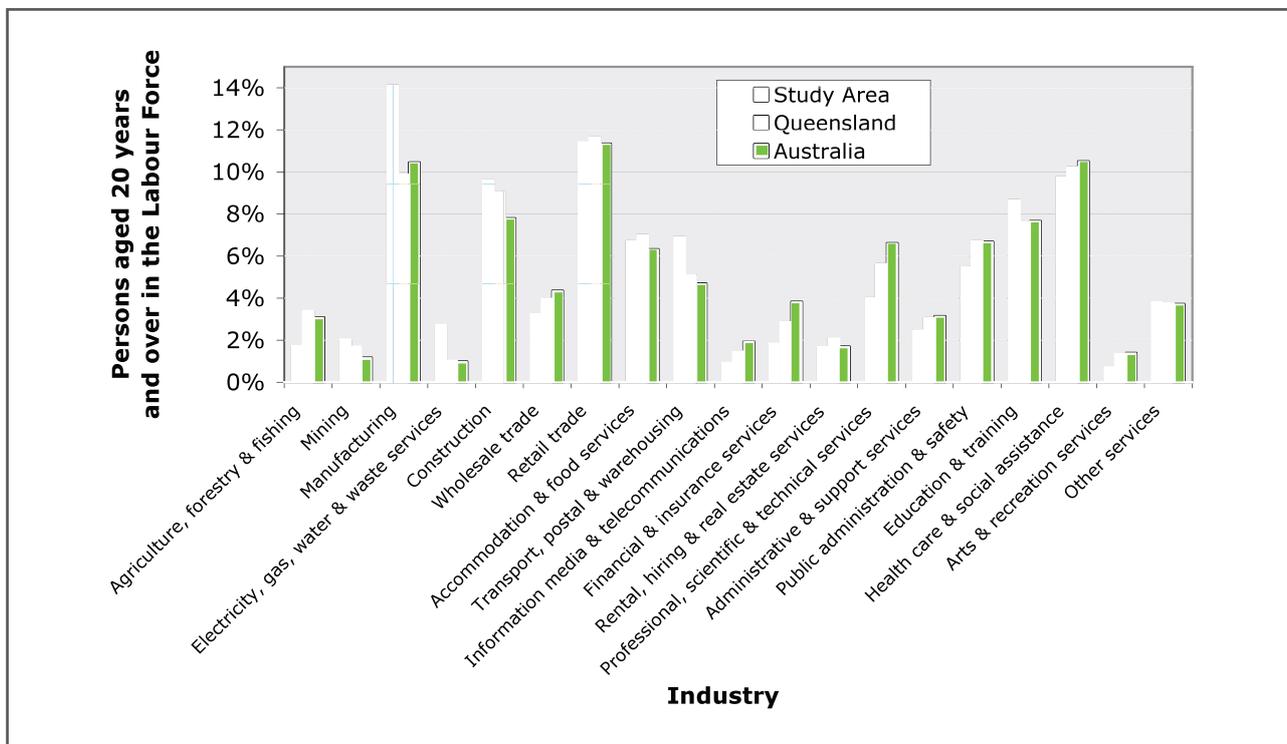


Figure 15.4 Employment by Industry of Working Residents in the Project Area, Queensland, Australia, 2006
 Source: ABS Census of Population and Housing, 2006

15.5.2.3 Unemployment

- Both the project area and Queensland had unemployment levels of 4.0 percent as of June 2007. These were both lower than the figure for Australia for the same period (4.6 percent) (Figure 15.3). All three areas showed a decline in unemployment rate over the 2004–2007 period
- Fitzroy had the lowest unemployment rate of the LGAs in the project area, with a rate of 2.0 percent as of June 2007. Conversely, Rockhampton had the highest, with a figure of 4.7 percent.

15.5.2.4 Employment Self-Sufficiency

- The project area had an employment self-sufficiency ratio² of 98.0 percent with approximately 52,800 jobs located in the local region. This indicates that the number of labour force residents and jobs in the local region is roughly equivalent, with a slightly higher number of residents in the labour force than positions
- Gladstone and Rockhampton both exhibited self-sufficiency ratios over 100 percent (106.6 percent and 113.9 percent) indicating that they had a surplus of jobs in the region compared to qualified persons. This means that these LGAs attract workers from the surrounding areas³

- Fitzroy had a relatively low self-sufficiency ratio of 41.3 percent as of the 2006 Census of Population and Housing. This is consistent with observations in other rural regions
- With 4,074 jobs in construction and 5,068 working residents in the construction sector, the self-sufficiency of the construction sector is around 80 percent.

15.5.2.5 Skills Attraction and Retention

- Based on the stakeholder consultation undertaken for this study, the project area has a skills shortage in accountancy, doctors, builders, planners, plumbers, and engineers. The key factor for the skills shortage was retaining workers in the region.

15.5.2.6 Income

- Median household income as of the 2006 Census was the same across the project area, Queensland and Australia, this being a median income range of \$800-999 per week
- Gladstone was the only LGA within the project area to differ from the regional and national trend, with a median household weekly income of \$1,000 to \$1,199.

² Self-sufficiency is the ratio of jobs located in the region to workers living in the region.

³ Although it is noted that even for less than 100 percent people could be travelling from outside the LGA to access work

15.5.2.7 Industry Employment and Output

- Technicians and trade workers are the most common occupation in the local region, with nearly 20 percent dedicated to these classifications (also see Figure 15.4). These occupations employed 5,068 workers in 2006
- According to ABS Journey to Work data, 4,070 persons were employed in the construction sector, and manufacturing is the largest employer (14 percent of all jobs in the project area).

The economy of the local region (industry output in the project area) was approximately \$12 billion and was clearly dominated by the manufacturing sector, contributing approximately \$3.5 billion to the local region's economy. The next most prominent was the construction sector, which contributed \$1.2 billion.

15.5.3 Accommodation

This section describes the current accommodation situation in the project area. Existing and future supply for residential, tourist and short-term accommodation has been documented in order to determine the ability of the region to cater for the accommodation requirements during the construction and ongoing operation stages of the project.

15.5.3.1 Resident Accommodation

Table 15.6 provides an outline of the number of dwellings present in each of the LGAs within the project area. It is noted that approximately 8.5 percent of dwellings within the region were unoccupied at the 2006 Census, but that this is declining in more recent times (see vacancy rates below). The number of unoccupied dwellings at 2006 totalled approximately 4,000.

15.5.3.2 Dwelling Types

The majority of occupied private dwellings within the project area were located in Rockhampton (52.5 percent), while Gladstone accounted for 25.3 percent and Fitzroy and Calliope made up the remainder (8.5 percent and 13.7 percent respectively).

The dominant household type in the project area is separate houses, accounting for 87.5 percent of the housing stock in the region. This is significantly higher than the proportion observed in either Queensland (79.5 percent) or Australia (76.6 percent). This proportion was even higher in rural areas of the project area, with separate houses in Fitzroy accounting for 95.7 percent of the LGAs housing stock.

15.5.3.3 Dwelling Tenure

The most prominent form of dwelling tenure across the project area and Queensland, as of the 2006 Census, was dwellings in the process of being purchased. This form of tenure was slightly over-represented in the project area, accounting for 33.5 percent of dwellings, when compared with 31.4 percent in Queensland and 32.2 percent in Australia.

Fully owned houses were the most dominant tenure type in Australia (32.6 percent), while these were marginally less prominent in Queensland (30.4 percent) and the project area (29.9 percent).

State owned housing also made up a larger than average proportions of dwellings in the project area than in Queensland or Australia, accounting for 4.3 percent of dwellings in the project area, compared with 3.2 percent in Queensland and 4 percent in Australia.

15.5.3.4 Vacancy Rates

Vacancy rates for residential housing within the project area have shown a steady increase between December 2006 and September 2007 (except Rockhampton which declined in September quarter 2007), however they declined significantly in the December 2007 quarter. Housing vacancy rates were reported as 1.1 percent for Rockhampton and 1.9 percent for Gladstone as at December 2007.

Vacancy rates for units and townhouses were slightly lower, with Gladstone (2.4 percent) and Rockhampton (2.2 percent).

15.5.3.5 Median Prices

Within the project area, Calliope had the highest median sale price of \$412,500 as of sales recorded in the March quarter 2008. Fitzroy recorded a median housing sale price of \$360,000. The Gladstone City Council LGA recorded a median housing sale price of \$370,000 and Rockhampton city Council LGA recorded the lowest median housing sale price across the LGAs of \$304,000.

Conversely, Rockhampton recorded the highest median sale price for vacant land (\$235,000). Gladstone followed at a median of \$200,000 while the other areas within the project area recorded a significantly lower vacant land median sale price, Calliope and Fitzroy recording \$154,000 and \$120,000 respectively.

Table 15.6 Occupied Private Dwelling Numbers in former Local Government Areas

	Fitzroy Shire	Calliope Shire	Gladstone Shire	Rockhampton Shire	Project area
Number of Dwellings	3,363	5,462	10,048	20,895	39,768

Source: ABS Census of Population and Housing, 2006

Table 15.7 Weekly Household Rent Payments for former Local Government Areas in the Project Area, 2006

	Fitzroy Shire	Calliope Shire	Gladstone City	Rockhampton City	Project Area	Queens-land	Australia
Median Household Rent Payments	\$140- \$179	\$180–224	\$140–\$179	\$140–\$179	\$180–\$224	\$180–\$224	\$180–\$224

Source: ABS Census of Population and Housing, 2006

15.5.3.6 Home Loan Repayments

The median monthly household home loan repayment for the project area was in the \$950 to \$1,199 range at the time of the 2006 census. This figure was lower than both the Queensland and Australian average of \$1,200 to \$1,399.

Mortgage repayments in both Calliope and Gladstone were higher than the project area average, at \$1,200 to \$1,399, while Rockhampton was lower at \$750 to \$949.

The project area had a higher proportion of monthly home loan repayments between \$550 and \$1,399 per month than either Queensland or Australia. Nearly one-fifth (18.4 percent) of all home loans in the project area had monthly repayment rates of between \$950 and \$1,199. This compares to 14.4 percent in Queensland and 13.6 percent in Australia.

15.5.3.7 Rental Payments

Median rental prices in the project area were relatively consistent with both Queensland and Australian figures, with all areas reporting median weekly household rental payments falling in the \$180 to \$224 bracket. Significantly, Calliope was the only area in the region to fall into this bracket, with Fitzroy, Gladstone and Rockhampton all falling into the lower \$140 to \$179 bracket.

Rent prices are reported in the 2006 Census, comparing LGAs within the region (Table 15.7). Calliope demonstrated the highest proportion of households in the higher end rent brackets (32.7 percent of rented households paying between \$225 and \$550 per week) compared to the other LGAs. In Gladstone, proportions of rents in the higher bracket half was 23.8 percent, in Fitzroy 14.1 percent and in Rockhampton 11.6 percent.

Consultation indicated significant demand for rental properties in the region with low vacancy rates recorded for the project area at 1 to 2 percent.

15.5.3.8 Household Size

The project area had a moderately higher average household size (2.9) than either Queensland or Australia (both 2.6). This was primarily driven by higher average household sizes in Fitzroy and Calliope (both 2.9), with Gladstone and Rockhampton both reporting lower average household sizes of 2.7 and 2.5 respectively (Table 15.8).

Table 15.8 Average Household Size for Former Local Government Areas in the Project Area, Queensland and Australia, 2006

	Average Household Size
Fitzroy Shire	2.9
Calliope Shire	2.9
Gladstone City	2.7
Rockhampton City	2.5
Project Area	2.9
Queensland	2.6
Australia	2.6

Source: ABS Census of Population and Housing, 2006

15.5.3.9 Tourist or Short-term Accommodation

While the previous section presented the current situation of permanent accommodation in the project area, this section describes the availability of tourist accommodation. The information provided in this section is sourced primarily from the ABS with confirming information from telephone surveys carried out in February 2008. Ten tourism providers participated in the survey.

As can be seen in Table 15.9, the majority of tourist or short-term accommodation in the project area is of hotel, motel or serviced apartment type. More than four-fifths (84.9 percent) of the tourist and short-term accommodation fell into this category, translating to 11,797 beds within the project area (as at the time of the 2006 Census).

Table 15.9 Tourist and Short-term Accommodation Indicators Summary, Calliope Shire, Gladstone City and Rockhampton City, 2007

	Former Calliope Shire	Gladstone City	Rockhampton City
Hotels, Motels and Serviced Apartments - All - Bedspaces	123	3,204	8,470
Caravan Parks - Sites	453	187	403
Caravan Parks - All - Number of Cabin Flats, Units and Villas	58	62	229
Caravan Parks - All - Bedspaces of Cabin Flats, Units and Villas assuming 2 Persons per Dwelling	116	124	458
Number of hostels	0	1	2

Source: ABS Tourist Accommodation, small area data, June Qtr 2007

15.5.3.10 Accommodation Type

There are significant numbers of caravan parks identified in the project area, with a large concentration of caravan parks found in Calliope. There were 453 caravan parking sites identified in Calliope Shire, or 43.3 percent of the total project area. A further 698 beds were available in cabins, flats, units or villas on site at caravan parks, or 2.51 percent of all accommodation in the region.

The majority of the short-term accommodation within the project area was found in Rockhampton (68.8 percent). Approximately 25.8 percent of short-term accommodation was located in Gladstone and the balance of accommodation found in Calliope (5.40 percent).

Consultation with real estate agents carried out for this study identified that vacancy rates for accommodation types were low all year round, with seasonal effects in the demand for tourist and short-term accommodation being minor. Certain events, however, such as the Beef Expo (Rockhampton), the Brisbane to Gladstone Yacht Race and sales at the Gracemere Saleyards place temporary but further pressure on the already tight existing accommodation market within the project area.

15.5.3.11 Cost of Accommodation

Based on a small sample of tourist accommodation providers interviewed in the project area, the cost of accommodation ranges from \$20 per night for a dorm bed in a backpacker hostel to \$130 per night in a motel.

The approximate cost of a powered site at a caravan park ranged from \$95 to \$120 per week in the project area.

15.5.3.12 Demand for Worker Accommodation

According to the telephone interviews, most tourist accommodation providers in the project area were currently providing long-term housing for labourers and workers. In particular, accommodation providers in Gladstone noted that a significant majority of their clients were workers rather than tourists. Some workers were likely to 'fly in and fly out', meaning that they stayed in a tourist accommodation during the week but not on weekends.

Generally, tourist accommodation in the project area is being occupied largely by permanent residents rather than those seeking short-term or tourist accommodation and as noted, vacancy rates are low.

15.5.3.13 Potential for Future Dwellings

This section outlines the major development projects planned in the region and their implications on the accommodation situation in the project area. The information presented in this section has been drawn from the telephone interviews carried out with Fitzroy Shire, Calliope Shire, Gladstone City and Rockhampton City Councils and the GEIDB between January and February 2008 prior to council amalgamations.

15.5.3.14 Zoned Residential Land

Councils in the project area were unable to provide information regarding the amount of residential land zoned under their current planning schemes. However, a desktop review of the planning schemes indicates that the zonal plans for the four councils identify urban and rural residential uses, with some plans identifying urban expansion zones. These zones are in place to accommodate unexpected demand for additional housing that the areas require should an immediate and large scale response be required. From the information provided, it would seem that there is considerable (unzoned and unserved) land available.

Fitzroy Shire Council was of view that development approvals issued to date had consumed the land bank set aside in the current council planning scheme which was to be in force until the year 2012, denoting the already high demand for residential environments within the area.

15.5.3.15 Development Applications

At the time of this chapter being written (February 2008), there were over 7,500 lots being considered for reconfiguration or residential development in Calliope, Gladstone and Rockhampton LGAs⁴. Based on the information provided by the three councils, key considerations regarding future residential development include:

- In Calliope Shire, the majority of development applications were for lot reconfigurations. A preliminary approval had been issued for a 2,000 dwelling unit master-planned community in Tannum Waters (East Calliope)
- Similarly in Gladstone, the majority of applications lodged to Council were for lot reconfigurations. Applications for multi-unit residential dwellings were found largely in the north and Port area of Gladstone whilst applications for duplex units were found mainly in the southwest area
- In Rockhampton, the majority of residential lot reconfiguration applications were present in northern areas between the upper reaches of the Fitzroy River and the Mt Archer National Park accounting for a total of 5,345 lots. Applications for unit developments, predominantly located closer to the city centre, totalled 294 units and non-residential applications were limited to a 50 unit motel, a shopping centre, a master shopping outlet (which spans the region-dividing creek) and a retail showroom.

The map on the following page (Figure 15.5) presents the number of units and lots under application with Gladstone, Calliope and Rockhampton Councils. It is noted that Fitzroy Shire Council was unable to provide similar data for their LGA within the reporting timeframe.

The information presented in Figure 15.5 suggests that there is the possibility that approximately 1,200 multi-storey units and 9,500 residential lots (urban and rural) could be added to the system, as these are currently under application with Councils in the project area. Should these applications be approved, the housing stock in the project area is likely to increase by approximately 10,700 dwellings. If this figure is multiplied by the average household size for the project area (2.9) and provided that all of the dwellings are approved and constructed, it is estimated that the project area is able to accommodate an additional 31,000 people.⁵ It is noted that none of the development applications under assessment are guaranteed to occur, so these figures should be seen as an optimistic view of the likely future housing situation.

15.5.3.16 Major Planned Developments

The telephone interviews conducted with planning officers from Gladstone, Calliope, Rockhampton and Fitzroy Councils revealed the following major planned developments within the project area:

- Motel developments (Fitzroy, Gladstone and Calliope)
- Tannum Waters Residential Community (Calliope)
- A 219 site mobile home park (Calliope)
- A master-planned shopping outlet (Rockhampton).

The interview also revealed that, based on the opinions of the interviewees, North Rockhampton, Yeppoon and Gracemere are becoming desirable places to live due to the increase in lifestyle services and retail offer in the areas. Accordingly, new residential developments are occurring in these areas.

15.5.3.17 Other Major Projects

Information on other major projects within the region was also sought to assist in understanding the *relative* contribution of the project in relation to other major activities in the Region. This information, provided by the GEIDB (February, 2008), is presented in Table 15.10 and assists in determining the likely or potential overall impact of major activities in the region on the housing situation.

⁴ Fitzroy Shire Council was unable to provide the relevant data.

⁵ This is likely to be a conservative estimate given that the development applications data for Fitzroy Shire Council were unable to be obtained, thus have been excluded from the analysis.

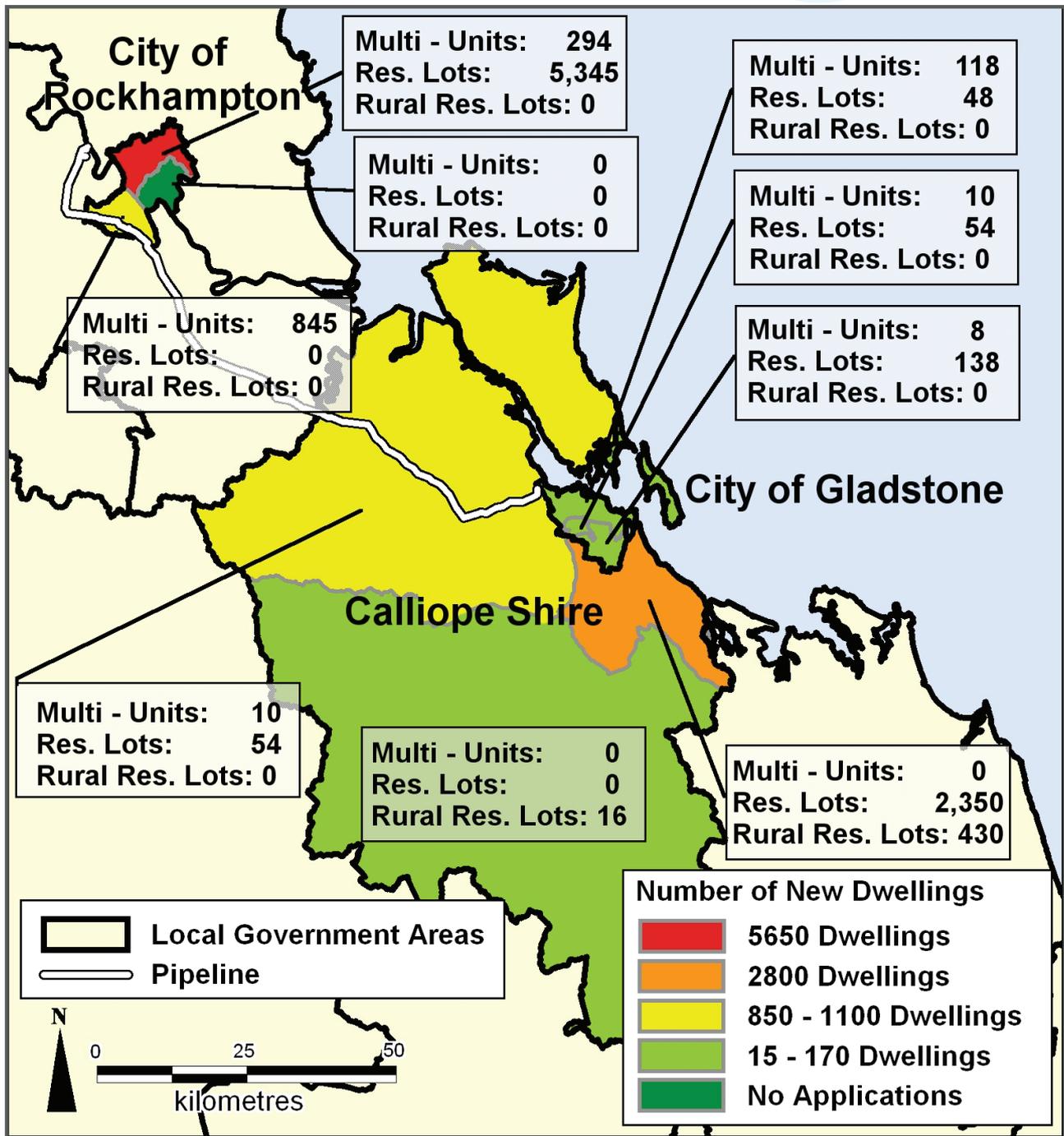


Figure 15.5 Proposed Residential Development, Rockhampton, Gladstone and Calliope LGAs⁶
 Source: Rockhampton, Gladstone and Calliope Council Development Applications, January 2008

⁶ Note: Multi-Units include multistorey units and duplex units. The number of new dwellings was calculated based on the sum of Multi-Units and urban and rural residential lots. As the information is based on development applications, the total number of new dwellings should be interpreted as a number of dwellings currently under application, rather than actual number of dwellings constructed.

Table 15.10 Other Major Projects in the Vicinity of the Gladstone–Fitzroy Pipeline Project

Project	Construction Employment	Operational Employment	Timeline
Central Queensland Ports Authority (CQPA) and Queensland Rail – Proposed Wiggins Island Coal Terminal	Additional 800 contract staff	125	Environmental impact statement completed and approved. Stage one construction is targeted for 2008–2011.
Central Queensland Ports Authority (CQPA) – Fisherman’s Loading Wharf	n/a	n/a	Significant project status was announced in October 2005, while terms of reference for environmental impact study were finalised in July 2006. Stage 1 includes land reclamation, revetment wall, capping and three berths. Long-term timeframe subject to demand.
Goondicum Industrial Minerals Project	50	60	Construction commenced August 2006. The plant is currently in commissioning stage and is expected to be in full production shortly.
Rio Tinto Aluminium Limited – Yarwun Alumina Refinery	2200	250	Work commenced in the third quarter 2007. First shipments are due in the second half of 2010.
Alinta Limited – Queensland Gas Pipeline	n/a	n/a	Gas delivery is expected to begin 2010.
Cement Australia – New Cement Mill	100	n/a	Single stage project with commencement expected early 2008.
Powerlink Queensland – Infrastructure upgrades and New Large Network Assets Proposal	n/a	n/a	First four stages are projected to be complete as of early 2010. Planning is underway for fifth stage and sixth stage is expected to run from 2011–2013.
Ergon Energy – Infrastructure Upgrades	n/a	n/a	Project is complete.
Arrow Energy NL and AGL Ltd Joint Venture – Gas Transmission	300	8	Environmental Impact statement completed in fourth quarter 2007. Construction is targeted to finish in 2009 for gas delivery in 2010.
Gladstone Pacific Nickel Limited – Nickel Ore Processing Plant	1600	530	Public response for environmental impact statement has now closed. Financing and construction requirements are being investigated to inform a construction timeframe.
Arrow Energy – Boyne River Coal Seam Gas Exploration and Appraisal Project	n/a	n/a	Application for a petroleum lease has been made. Coal seam gas plant is targeted for 2011.
Transpacific Industries Group – Regional Waste Management Facility	70	n/a	Stage 1 is complete while later stages of development are advised to be dependent on demand.
Australian Inland Rail Expressway	900	n/a	Major project status has been granted. Sector 1 is complete and significant funding has been garnered from state and federal agencies.
LNG Ltd and Arrow Energy – LNG Production Facility	100	12	Financial close is targeted for September 2008 to allow for first deliveries in late 2010.
Santos Ltd – LNG Production Facility	3000	200	Final investment decision by end of 2009 to enable cargo export by 2014.
Queensland Energy Resources Limited – Process Plant	n/a	n/a	Feasibility studies currently underway.

Note: The construction employment figures shown are for peak construction periods.

Source: Gladstone Economic and Industry Development Board, February 2008



The GEIDB was unable to provide the local and non-local employment breakdown for the construction and operational employment shown in Table 15.10. Based on the information contained in the table, three projects have been completed as at February 2008 (and therefore these will not require further housing) but 13 major projects, in addition to the project under consideration here, are expected to be completed over the next five to six years. This information is utilised in the assessment of impacts to assist in understanding the accommodation impacts in the region (refer Section 15.6.4).

15.5.3.18 Constraints to Housing Supply

Interviews with planning officers from councils in the project area identified the following constraints with regard to supplying additional housing in the area:

- It was noted that there is a lack of capacity for building companies in the region to meet the demand for the construction of new dwellings
- That even when developments do occur, given the high level of demand, the timely and adequate provision of utility infrastructure to new residential communities is proving to be difficult.

As noted previously, land availability was not perceived as a constraint to providing new housing in the project area, although much of the land that is available is not zoned or serviced.

15.6 Assessment of Impacts

15.6.1 Social Impacts

15.6.1.1 Affected Landholders

The land required for the pipeline alignment and infrastructure sites is located largely on freehold tenure, the majority of which is rural grazing land. A detailed site and route selection process has been undertaken during the planning of the project to mitigate the social and environmental impacts; this is described further in Section 15.7.

Within the GSDA the pipeline is located on freehold land owned by the State (administered by the Department of Infrastructure and Planning [DIP]) and the Central Queensland Port Authority (now known as Gladstone Ports Corporation). GAWB will be granted a licence to construct and operate a pipeline within the GSDA. GAWB will acquire and manage an easement for the pipeline corridor in the Alton Downs area, with land remaining available for use by the landowner under the terms of the easement agreement. GAWB will acquire and own the land required for the Alton Downs WTP, Raglan Pump Station and Aldoga Reservoir. The State Government will acquire and manage easements for the Stanwell - Gladstone Infrastructure Corridor (SGIC).

GAWB's use of the easement is subject to a licence agreement between GAWB and the State.

Temporary impacts to landholders may occur during construction of the pipeline and associated infrastructure, intake and WTP and may include:

- Traffic impacts on local roads as a result of construction vehicles and machinery (see Chapter 13, Transport and Access Arrangements for further detail on these impacts)
- Temporary access delays during pipeline construction across local roads (see Chapter 13, Transport and Access Arrangements for further detail on these impacts)
- Amenity impacts associated with noise and dust generated during construction (see Chapter 10, Air Environment and Chapter 12, Noise and Vibration for further detail on these impacts)
- Disruption to grazing land, fencing and gates, irrigation, farm dams and Good Quality Agricultural Land (GOAL) (Described in Chapter 4, Land Use and Infrastructure and in Chapter 5, Soils and Contamination).

As the project pipeline will be largely underground once it is operational, amenity or access impacts to landowners or the public from the pipeline itself are not expected. However depending on the terms of the easement and license agreement there are likely to be restrictions to the future land uses within the pipeline corridor, because land uses which may damage the pipeline may not be permitted to occur. Pre-existing land operations will be allowed to resume with some restrictions. Maintenance works may also require access by GAWB to different sections of the pipeline during operation and possible disruption to land uses depending on the nature of the required maintenance. Where possible, access for operations and maintenance activities will be via existing roads to minimise the disruption to landowners.

Potential visual impacts to residential properties located in proximity to the WTP are discussed in Chapter 17, Landscape and Visual Impact Assessment.

Possible air quality or noise impacts arising from the operation of the WTP and pump stations to residential properties have been assessed in Chapter 10, Air Environment and Chapter 12, Noise and Vibration.

15.6.1.2 Long-term Implications on Operations and Maintenance within the Gladstone City Local Government Area

The Terms of Reference for the EIS require discussion of this issue where relevant to the project. It is noted that the Gladstone City Local Government Area is now the Gladstone Regional Council area, which also encompasses the former Calliope Shire and Miriam Vale Shires. The Rockhampton City Local Government Area is now the Rockhampton Regional Council area, encompassing the former Fitzroy, Livingstone and Mount Morgan Shires. The southern half of the project area is approximately located within the Gladstone Regional Council Area. As with all aspects of the project, the operations and maintenance requirements will be the responsibility of GAWB and will be managed to ensure the efficient operation of the pipeline and infrastructure, with minimal disruption to landowners and the public. Any necessary approvals required under the provisions of the Gladstone Regional Council planning framework for maintenance or operational works will be obtained by GAWB as maintenance needs arise, and liaison with the Council regarding the project will continue as required.

15.6.1.3 Public Health and Safety

Construction and operation of the project will be managed in accordance with relevant health and safety legislation and with GAWB's and the contractor's health and safety management systems. These have been described in Chapter 16, Hazard and Risk. Also described in Chapter 16 is the Hazard and Risk Assessment (HRA) that was undertaken for the project including consideration of risks to the public and property. The HRA did not identify any risks that cannot be adequately managed through existing or proposed management measures. These measures are described in Section 15.7. Risk identification and review is an ongoing process which will occur throughout the life of the project so that appropriate mitigation measures can be put in place.

Possible impacts to public health and safety may occur during construction at road and rail crossings as a result of disruption to traffic flow and presence of personnel and machinery at the site. Mitigation measures to address this risk are described in Section 15.7.

15.6.1.4 Human Services

As identified in Section 15.5, there are a range of public services in the project area, including schools, hospitals and council facilities. None of these services are located within the project corridor and as such are not expected to be directly affected during either construction or operation. Indirect effects associated with the project may include the increased patronage of these services as a result of the movement of construction personnel to the area. The average workforce for the project

during construction is expected to be between 190 and 200 people and less than 10 for the operational phase. Of these workers a percentage (approximately 40 percent of full time staff and 50 percent of contractors) are expected to be from the local area and therefore do not represent an increase as a result of the project. Given the wide range of facilities and services available in the region, the additional personnel moving to the region as a result of the project are not expected to place a significant strain on the capacity of the facilities and services.

15.6.2 Economic Impacts

In this section the potential impacts on the local economy (including employment) and accommodation associated with the project have been identified and assessed.

15.6.2.1 Summary of the Economic Impacts for the Project

Drawing on information summarised in Table 15.10 and tailoring the input-output model to account for the structure and dynamics of the local economy, the economic analysis identifies the interface between the activities associated with the project and all industries in the economy of the project area (the local economy). It estimates the contribution that the project makes to the economy in terms of both the direct contributions - in terms of the output, value added and employment - as well as the indirect or 'flow-on' contributions. The indirect or 'flow-on' contributions result from the additional output, value added and employment generated by other businesses due to the project. It is important to note that the 'flow-on' contribution may not be realised immediately and refers to the generation of output, value added or employment in years to come. However, it is expected that the 'flow-on' contributions would primarily be realised in the earlier years post-construction and diminish thereafter.

Figure 15.6 shows the assumed construction cost broken down by quarter for the construction period. The estimated average quarterly cost of construction throughout the construction stage is approximately \$33 million. This is around 12 percent of the total construction output of the region. Note that this is the average quarterly cost and is based on 2008 dollars so does not take into account inflation that would occur prior to and during the construction phase. Estimated expenditure at the start of the construction phase is approximately \$5 million per quarter and would then peak in quarters five and six at an estimated expenditure of around \$56 million per quarter.

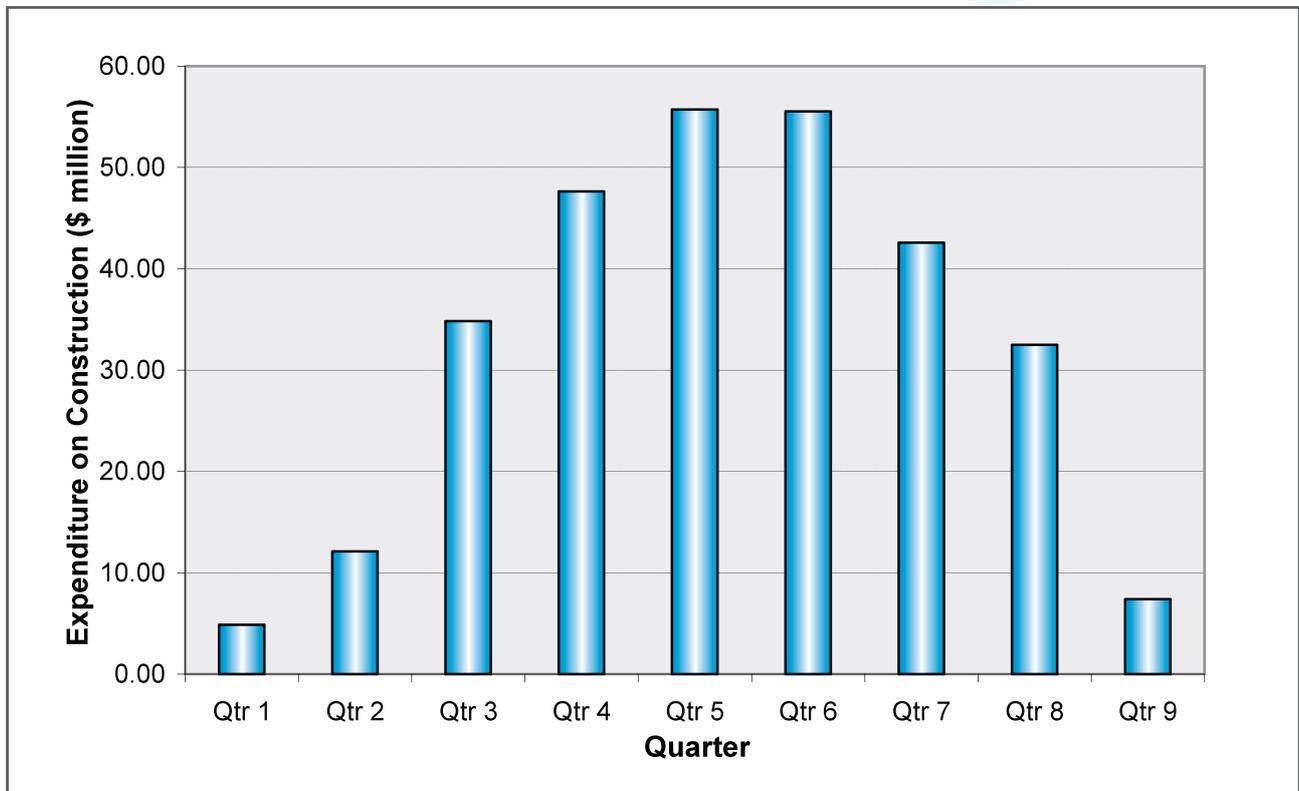


Figure 15.6 Estimated Expenditure on Construction per Quarter
Source: Arup, 2007

Figure 15.7 provides a summary of the economic contribution of the total construction phase of the project to the local economy. The value of output is segregated into various industries. The total construction cost is estimated to be \$293.2 million. It is assumed that approximately \$57.4 million (or 20 percent) of this would be spent in the local area.

The multiplier for the construction sector in the region is estimated to be 1.98. This implies that as a result of the total direct expenditure into the construction sector, which includes an estimated \$57.4 in the local construction sector, other industries in the local economy are estimated to produce an additional \$56.3 million worth of output (the indirect contribution to the economy). It is expected that the primary benefits to the economy will be largely channelled through the construction sector.

The total contribution to the economy is the sum of the direct and indirect contributions. The total contribution to the local economy by the construction phase of the pipeline project is estimated at approximately \$113.7 million.

These 'flow-on' or multiplier effects will not necessarily occur immediately but are expected to be realised over time. It is anticipated that Rockhampton will be one of the positively impacted areas in the short and medium-term.

Economic benefit in Rockhampton will be generated as a result of increased demand in the accommodation, earthmoving and construction sectors. The economic benefit is dependant on the proportion of locally based companies within these sectors.

The ABS information presented in Section 15.5.2 indicates that a range of qualified persons are currently residing in the region (see Figure 15.4). This would suggest that the skills do exist in the region. However, given the current and likely future construction activity in region (when all major projects are considered) it is likely that there will be tight competition for construction workers both for the project and for housing projects to accommodate future workers. Consultation with key stakeholders in the region supported this statement and noted that it is difficult to find suitably skilled contractors, particularly construction workers, who are available. Nonetheless, it is noted that major construction companies are present in the region and that they may have the capacity to increase their workforce, and/or some of their workforce may be wish to take up external opportunities. Given the low unemployment rate in the project area (4.0 percent) and the labour participation rate, which is unlikely to change significantly in the future given the family profile of the region (62.8 percent), additions to the workforce are very likely to be required from outside the region.

The first row of Figure 15.7 shows that the project is expected to produce \$57.4 million of direct construction expenditure in the region (or output) and the value added component of that output to the local economy is \$23.7 million. Value added is an important measure as it does not focus solely on the size of the expenditure associated with pipeline but highlights the contribution that is going directly into the economy through items such as employee salaries and surplus (as opposed to going back into other industries). It is purely the value added component of the products measured and not the total sale value being recounted as the product moves from industry to industry.

The indirect contribution to the region's value added is \$23.1 million. Therefore the total contribution to value added due to the project is estimated at \$46.8 million.

The final row of Figure 15.7 outlines the direct and indirect contributions made by the project in the local region. The direct contribution to jobs is purely the average number of employees required to work on the project. The indirect impact is an estimate of the additional jobs that are being generated as a result of the operations of the project. According to data supplied by the project team, the estimated average annual number of jobs for the project is 190 - 200 people. Based on this, it is likely that an additional 207 annual jobs are generated in the remainder of the local economy. The total jobs generated is therefore 397 - 407 at any given time. The additional jobs are generated because the project will generate expenditure in the local economy which, in turn, creates new jobs.

The measure of employment impacts needs to be interpreted carefully. The job generation, either direct or 'flow-on', is not solely the extent of the impact. The nature of the workforce in the regions determines whether the towns must attract the skills and accommodate additional workers or whether the jobs can be absorbed amongst the working residents in the project area. As previously noted based on the statistics and also verified through consultation regions such as Gladstone are seen as 'tradie towns' and have a great deal of experience with development projects. This potentially indicates that the employment requirements have a better chance of being met locally through industry adjustments. This could, in turn, indicate a potentially lower impact on accommodation than what might be expected, if current residents are re-deployed to address employment requirements. It is noted, however, that the employment situation in the local region is currently very competitive.

Given the limitations associated with solely using economic modelling as a basis for understanding the economic impacts of the project, gaining an understanding of the impact of major past projects in the region is very useful. Consultation findings suggest that the construction of the Stanwell Power Station region resulted in great economic stimulus to the greater Rockhampton region and brought significant numbers of new people to Rockhampton which was beneficial economically and also from a community development perspective. In terms of scale, the impact of the project on the project area's employment situation is likely to be marginal compared to the Stanwell Power Station project (An \$11.6 billion construction project) and compared to the other major projects currently occurring in the region (Table 15.10), but again, it is noted that even with minimal impact, the competition for employment in the region is high.

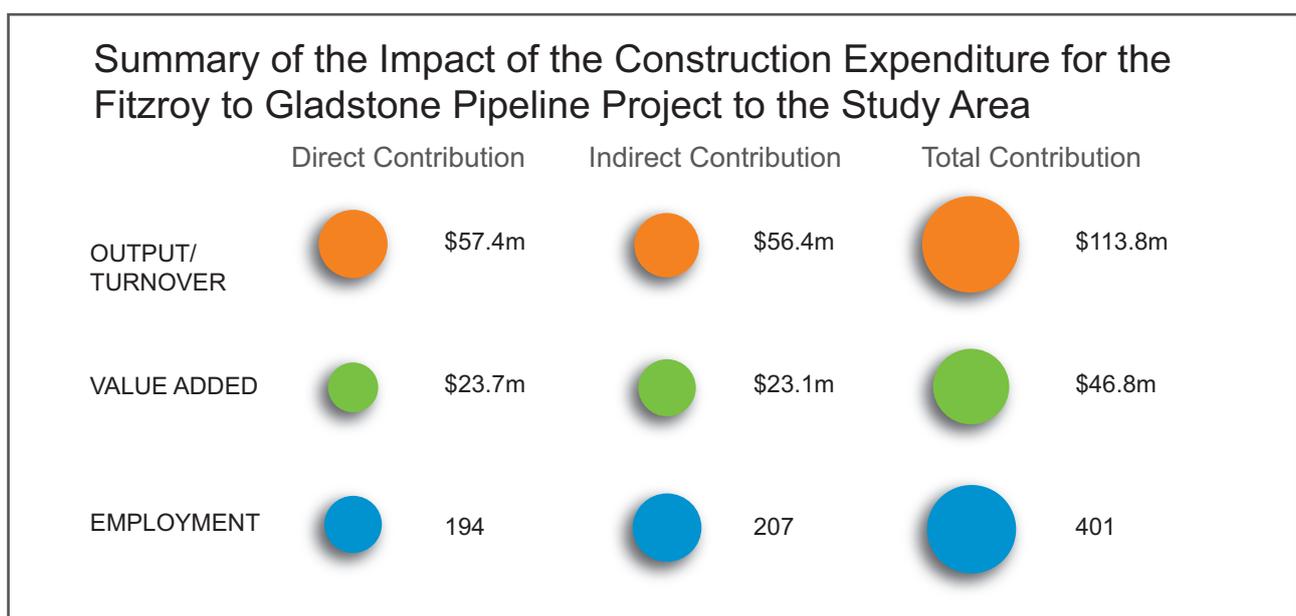


Figure 15.7 Project Area Economic Contribution Summary from Construction Expenditure

Source: SGS Economics and Planning, 2008

The Distribution of the Economic Impacts from the Construction of the Project

Figure 15.8 provides a distribution of these economic contributions across various industries in the local economy. It outlines the key supply chain in the local region. The linkages described are based on ABS one digit ANZSIC industry classifications. An understanding of the activities encapsulated by the industries defined under these classifications is important in accurately interpreting the results.

Figure 15.8 lists the top seven ANZSIC industries receiving the largest 'flow-on' impacts as a result of the construction phase of the project. This is essentially a list of those industries which increase their output the greatest in order to meet the demands of the construction phase of the pipeline project. Figure 15.8 shows that the project's most significant indirect contribution of \$12.7 million is to the property and business services sector. This can be interpreted as the property and business services sector would increase their output by \$12.7 million in response to a \$57.4 million dollar local expenditure from the construction of the pipeline.

Figure 15.8 also indicates that the second most significant impact is calculated to be on the retail trade sector with a contribution of \$5.0 million. A large component of this 'flow-on' would be the 'consumption induced impact'. That is, a large part would result from the retail consumption expenditure of the wages paid to construction workers. The remainder of the sectors not listed in the top seven are categorised into "Other Industries" category.

Other Economic Impacts

Figure 15.9 illustrates the calculated economic impacts associated with the annual costs aside from construction associated with the project. The three outlined are WTP chemicals, power costs, and repair and maintenance of the pipeline. They each have different multipliers. The total combined annual impact is estimated at \$17.8 million.

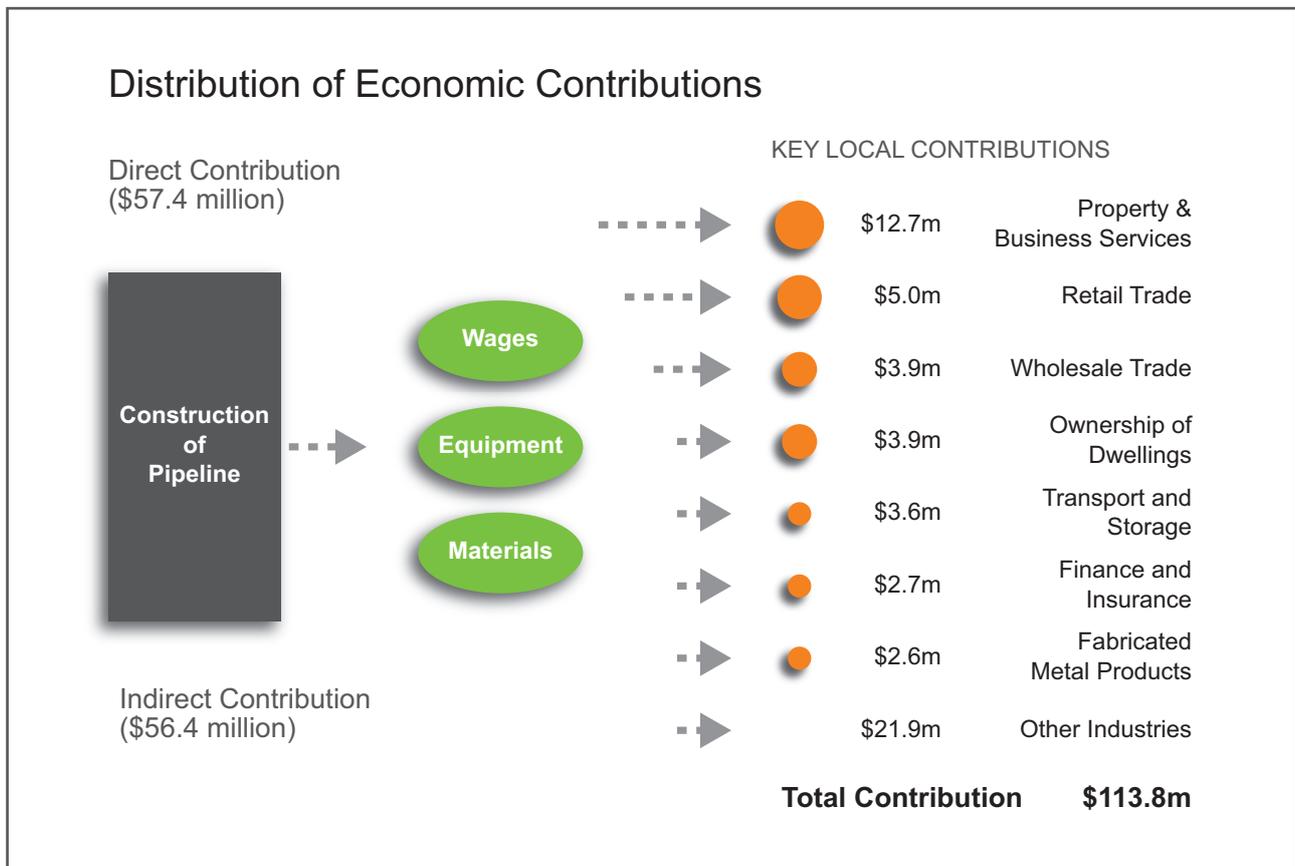


Figure 15.8 Distribution of the Economic Contributions from Construction Expenditure
Source: SGS Economics and Planning, 2008

Summary of the Impact of the Other Annual Expenditure for the Fitzroy to Gladstone Pipeline Project to the Study Area

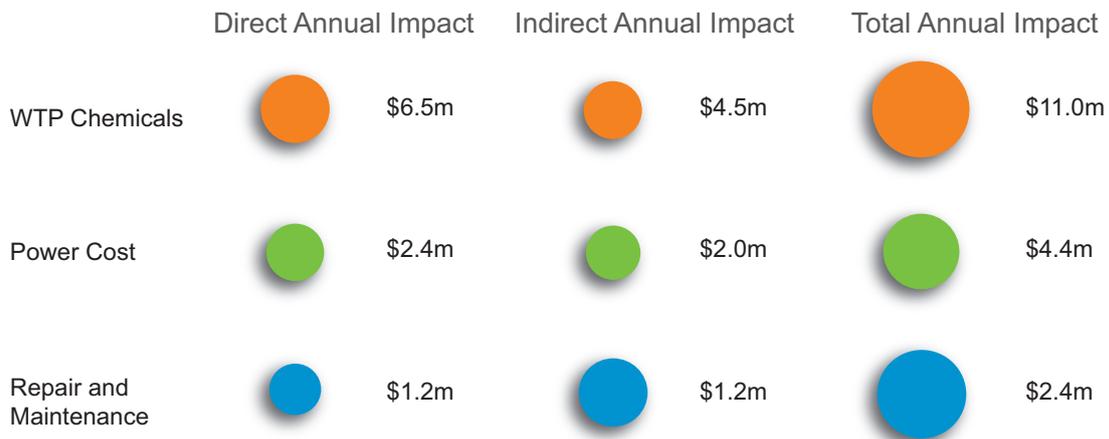


Figure 15.9 Project Area Summary of the Economic Contributions from other Expenditure
Source: SGS Economics and Planning, 2008

Economic Impacts to the Queensland Economy

Utilising the information acquired from the project team, the economic impact assessment model was expanded to assess the State-level impacts. This analysis looks at the contributions made by the project to Queensland. Although it was estimated that part of the materials and labour for the project were to be sourced from the local area, for the assessment it is assumed that the 95 percent of the total construction expenditure will be captured in the Queensland economy. As a result, as evident in this assessment, there are additional direct and indirect contributions once the State economy is being considered as opposed to the local.

Figure 15.10 summarises the economic impacts to the Queensland economy, resulting from the project. The direct expenditure has increased to encapsulate 95 percent of total construction expenditure i.e. \$278.5 million. The 'flow-on' or indirect contributions to the State economy are \$453.3 million, resulting in a total economic contribution of \$731.8 million. This means that approximately \$618 million of the total contributions are estimated to be flowing beyond the local project area and into other parts of Queensland.

The project is estimated to contribute \$120 million to the State's value added directly. With a 'flow-on' of approximately \$180 million, the total contribution to the State economy's value added was calculated at \$300.6 million. The indirect jobs generated as a result of the operations of the project was calculated to be 313 jobs. Adding this to the average employment level at any given time during the construction phase (190 - 200 jobs), the total contribution to jobs in Queensland was estimated at 507 jobs per annum.

Figure 15.11 illustrates the calculated economic impacts related to the annual costs of the project on the Queensland economy. The three items have higher indirect components. The total impacts of each are: WTP chemicals \$15.5 million; power costs \$6.2 million; and repair and maintenance \$3.2 million.

15.6.3 Economic Impacts to the National Economy

In this section, the economic impact assessment was extended to the national economy. This analysis looks at the contributions made by the pipeline project to Australia. This assessment is based on the assumption that Figure 15.12 summarises the impacts of the construction of the pipeline to the national economy.

The direct expenditure is full cost of the construction phase, estimated at \$293.2 million. With a national multiplier of 3.07, this direct expenditure generated a 'flow-on' contribution calculated to be \$606.9 million and therefore a total economic contribution of \$900.1 million.

The project is estimated to contribute \$128 million to the national value added directly. With a 'flow-on' of approximately \$239.7 million, the total contribution to the national economy's value added was calculated to be \$367.8 million. The indirect jobs generated as a result of the operations of the project was estimated at 393 jobs. Adding this to the average employment level at any given time during the construction phase (190 - 200 jobs), the total contribution to jobs in Australia is approximately 583 - 593 jobs per annum.

Summary of the Impact of the Construction Expenditure for the Fitzroy to Gladstone Pipeline Project to Queensland

	Direct Contribution	Indirect Contribution	Total Contribution
OUTPUT/ TURNOVER	 \$278.5m	 \$453.3m	 \$731.8m
VALUE ADDED	 \$120.2m	 \$180.4m	 \$300.6m
EMPLOYMENT	 194	 313	 507

Figure 15.10 Economic Contribution Summary from Construction Expenditure, Queensland Economy
Source: SGS Economics and Planning, 2008

Summary of the Impact of the Other Annual Expenditure for the Fitzroy to Gladstone Pipeline Project to the Queensland

	Direct Annual Impact	Indirect Annual Impact	Total Annual Impact
WTP Chemicals	 \$6.5m	 \$9.0m	 \$15.5m
Power Cost	 \$2.4m	 \$3.8m	 \$6.2m
Repair and Maintenance	 \$1.2m	 \$2.0m	 \$3.2m

Figure 15.11 Summary of the Economic Contributions from other Expenditure, Queensland Economy
Source: SGS Economics and Planning, 2008

Summary of the Impact of the Construction Expenditure for the Fitzroy to Gladstone Pipeline Project to the Australian Economy

	Direct Contribution	Indirect Contribution	Total Contribution
OUTPUT/ TURNOVER	 \$293.2m	 \$606.9m	 \$900.1m
VALUE ADDED	 \$128.1m	 \$239.7m	 \$367.8m
EMPLOYMENT	 194	 393	 587

Figure 15.12 Economic Contribution Summary from Construction Expenditure, Australian Economy
Source: SGS Economics and Planning, 2008

Summary of the Impact of the Other Annual Expenditure for the Fitzroy to Gladstone Pipeline Project to the Australian Economy

	Direct Annual Impact	Indirect Annual Impact	Total Annual Impact
WTP Chemicals	 \$6.5m	 \$13.3m	 \$19.8m
Power Cost	 \$2.4m	 \$4.5m	 \$6.9m
Repair and Maintenance	 \$1.2m	 \$2.5m	 \$3.7m

Figure 15.13 Summary of the Economic Contributions from Other Expenditure, Australian Economy
Source: SGS Economics and Planning, 2008



Figure 15.13 illustrates the economic impacts associated with the other annual costs (aside from construction phase) associated with the project to the national economy. The three items have higher indirect components compared to other items as a result of the higher national multipliers. The total impacts of each are: WTP chemicals estimated at \$19.8 million; power costs estimated at \$6.9 million; and repair and maintenance estimated \$3.7 million.

15.6.4 Accommodation Impacts

This section discusses the impacts of the pipeline project on accommodation in the local region. In a sense it is a conservative estimate purely focussing on employment generated housing demand and not impacts associated with other residential migration into the region resulting from other reasons associated with projects such as infrastructure and industry developments in the region.

As noted throughout this chapter, the pipeline project will directly employ between 190 and 200 persons at any given time, and a further 207 employees are likely to result as a consequence of indirect impacts. These employees will need to be accommodated within areas that are accessible to the project area. Some of these employees will already reside in the region, while others are likely to be attracted to the region due to the employment prospects. It is the latter component that has an impact on accommodation in the region.

There a number of factors that needs to be considered to assess the impacts on accommodation in the project area due to the project. Firstly, the skills shortages noted above will impact quite markedly on housing issues. Attracting workers from outside the region implies that there is a need to accommodate these new workers regionally. Often the cycle that occurs is that rentals are firstly sought by new entrants to the region and then, if residents decide to stay for the longer term home ownership may be considered. Given the very low levels of vacancies in the owned or being purchased dwellings, the very low levels of occupancies in the rental markets and the high number of workers already being accommodated in local motels and caravan parks, new persons entering the region are likely to experience difficulties in securing rental housing, at least in the short-term.

The information provided from the former Gladstone, Rockhampton and Calliope Councils suggest that approximately 1,200 units (multi-storey) and 9,500 lots (urban and rural residential) are currently under application (and it is noted that there is no guarantee that all will be approved). Although the project will employ fewer construction workers as compared to other major projects occurring in the region, direct and indirect workers associated with the project will be affected when trying to source accommodation, as supply within the region is already out of equilibrium with demand. Given that Council officers note that it is difficult to keep up with demand due to

delays associated with the construction of new housing and infrastructure provision, despite the relatively small impact of the project on the accommodation situation, finding appropriate accommodation is likely to be somewhat difficult. This issue is exacerbated once new residents moving to the region as a result of significant infrastructure and industry development are taken into account.

Discussions with real estate agents across the project area revealed that the housing market is already under strain, and most agreed that, in isolation, the project will not be the impetus for any significant increases in rental prices and/or sale prices. Nonetheless, the project will have a marginal, yet cumulative, impact on the accommodation situation in the project area as other major projects come on line, increasing the demand for housing. If supply cannot match demand, prices are very likely to continue to rise. As such, workers employed for the project are likely to experience difficulties in findings a suitable accommodation in the region. Depending on the family make up and accommodation preferences, this might be exacerbated by the relatively low level of multi-unit dwellings likely to come on stream in the short to medium term.

15.7 Mitigation

15.7.1 Social

15.7.1.1 Route and Site Selection

The focus of the route selection process within the series of easements in Alton Downs (referred to as the Alton Downs easement) has been the minimisation of social and environmental effects. In the Alton Downs easement, the alignment of the route was selected to align with existing easements where possible to minimise the disruption to land uses in this area. Prior to the finalisation of alignments in this area, discussions were held with landowners and changes made to the alignment where possible based on their preferences, for example to reduce impacts to existing irrigation infrastructure. This is discussed in Chapter 1, Introduction.

One of DIP's objectives in establishing the SGIC was to lessen the disruption on individual landowners, surrounding communities and the environment that would otherwise occur if access to multiple pipeline routes was sought on a project by project basis. The route selection process for the SGIC is described in Chapter 1, Introduction, and included consultation with affected landowners. Similarly in the selection of project infrastructure sites, several criteria were used including consideration of land uses and residential areas. The intake structure and pump station have been located within the boundary of the existing SunWater intake property to reduce the impact to adjacent residential properties. The selection of the WTP site has been undertaken through the use of a number of

criteria, which are described in Chapter 1, Introduction. These criteria included the relative distance to residences of the different site options, and the presence of existing infrastructure on the property. Similarly the selection of the Raglan Pump Station site considered different options and used criteria to select the preferred site.

Route selection for this project within the GSDA was undertaken by DIP with consideration of other land uses, topography and existing infrastructure.

Chapter 4, Land Use and Infrastructure further describes the land use and property impacts.

15.7.1.2 Consultation

As described in Chapter 1, Introduction, a consultation program has been ongoing throughout the planning stages of the project. This has included meetings with affected landowners and government representatives, newsletters to relevant stakeholders including landowners within and adjacent to the project corridor and the use of a project specific 1800 number to answer queries or complaints relating to the project.

Consultation is planned to continue during the EIS public display period and during construction. This will keep the public and landowners informed of the project as it develops and provide an avenue for complaints or issues raised to be addressed.

15.7.1.3 Strategies for Local and Indigenous Employment

Local labour and sub-contractors will be used where possible during construction and the Local Industry Policy will be complied with for the project. A project office will be established in Rockhampton which will potentially increase the opportunities for local and Indigenous residents in Rockhampton to gain employment on the project. This is expected to partially mitigate the effects of low unemployment rates in the region and the possible shortage of local labour. Also due to the relatively small labour force required for this project, it is likely that the necessary percentage of local labour will be fulfilled. Other possible measures to secure local labour include strategies such as employment incentives.

15.7.1.4 Strategies Responding To Government Policies

Queensland Government Building and Construction Contracts Structured Training Policy (the 10 percent policy)

Compliance with this policy will be achieved for this project through the following:

- GAWB will include a requirements to comply with the policy in the Construction Contract Agreement
- As the project value is greater than \$100 million, the contractor will develop a Skills Development Plan and engage a training coordinator as required by the policy
- A minimum of 10 percent of the total labour hours on the project will be carried out by apprentices, trainees or cadets or used to increase the skill levels of current employees
- The Department of Education, Training and the Arts will be consulted regarding reporting requirements and any further requirements for compliance with the policy.

Local Industry Policy

Compliance with this policy will be achieved for the project through the development of a Local Industry Participation Plan in consultation with the Department of Tourism, Regional Development and Industry.

15.7.1.5 Strategies to Foster Cross Cultural Awareness

Consultation with the traditional owners in the project area, the PCCC and Darumbal people, began in 2007 prior to the commencement of the geotechnical preliminary investigations for the project. Subsequently a Section 23 agreement under the *Aboriginal Cultural Heritage Act 2003* was reached with the Traditional Owner groups and representatives of each group were engaged to undertaken cultural heritage monitoring during the geotechnical works.

Consultation with the traditional owners is ongoing as part of the Cultural Heritage Management Plan (CHMP) process for the project. During this process the traditional owners will undertake a survey of the project route prior to construction to identify items of traditional or contemporary cultural heritage significance.

15.7.1.6 Public Health and Safety

The project is considered to be an efficient and safe means of transporting water and does not have the same risks as those that may be associated with a gas or petroleum pipeline. However as construction will require the crossing of railways, roads and other third party infrastructure, there are some risks associated with these activities. The management of health and safety (for project personnel and the public) during the project is outlined in Chapter 16, Hazard and Risk and also in the Planning EMP (see Chapter 20, Planning Environmental Management Plan). Measures to manage health and safety on the project include the following:

- Adherence to GAWB's and the contractor's Health and Safety Management System
- Preparation and implementation of health and safety plans relevant to the construction and operation of the project
- Preparation of emergency planning procedures for construction, and inclusion of the project in GAWB's disaster management plan for operation
- Preparation and implementation of a traffic management plan(s) for the construction of the project and consultation with relevant infrastructure authorities/owners.

15.7.1.7 Complaints Procedure

The project 1800 number will remain active throughout the construction of the project to provide stakeholders with a channel of communication to the project team. Information updates will be distributed to relevant stakeholders (e.g. adjacent properties) at regular intervals during construction or when disturbance is expected from a particular construction activity.

A queries/incident/complaint register will be in place prior to the commencement of construction (as described in Chapter 20, Planning Environmental Management Plan) and will be used to record the following information:

- Date, time and nature of the incident/complaint
- Contact details of the complainant – where available
- Whether it is a repeat complaint
- Record of communication with the complainant
- Corrective action undertaken and date of action
- The person responsible for investigating/addressing the complaint.

15.7.2 Economic

No economic mitigation measures are proposed for the identified economic impacts as the project is expected to have a beneficial impact to the local and regional economies.

15.7.3 Accommodation

Based on the information collected and analysed for this study, it is clear that the project will place additional pressures on the already tight housing and rental market in the project area. As discussed in previous sections, there are several factors contributing to the impacts on accommodation, including:

- The skills shortages experienced in the project area (as well as in Queensland) which if fulfilled impacts quite markedly on temporary and permanent accommodation opportunities
- The population in the Gladstone–Fitzroy region continues to increase, particularly in Calliope and Gladstone where there is a high level of dwelling activity, but demand is still outstripping supply
- The vacancy rate for owned and being purchased dwellings is very low, currently ranging between 2 to 4 percent in the project area
- The vacancy rate for rental dwellings are also at a very low level, estimated at 1 to 2 percent of total rental dwellings
- A high number of workers are already being accommodated in local motels and caravan parks and vacancy rates in these accommodation types are low.

Based on the above factors, the mitigation measures for addressing the accommodation impacts for the project include:

- Utilising local labour and sub contractors wherever possible (noting that there is low unemployment in the region, strategies to attract local labour will need to be devised as outlined in Section 15.7.1)
- Scheduling the works to avoid concurrent operations where possible
- Where practicable, securing rental properties to accommodate the workers for the duration of the construction phase of the project, particularly in Rockhampton. Given the low vacancy rates in the rental property sector, and not wanting to add to the rental price inflation that can easily occur when 'out-bidding' for existing houses exists, rentals will be sought as far in advance of construction as practicable
- In addition, or in isolation, short-term contractors may also be accommodated in motels or caravan parks within the project area. In such cases, pre-arrangements with these accommodation types would be undertaken to secure accommodation for the duration of the project, and given the low vacancy rates in these types of accommodation, would be actioned as far in advance of construction as practicable.
- Construction camps may be utilised to accommodate staff if required.

15.8 Residual Impacts

The proposed mitigation measures are likely to reduce the impact of the project on socio-demographic and accommodation issues however there may still be some residual impacts which have been assessed minor adverse (in the case of social amenity issues) to moderate adverse (for accommodation impacts). The economic impacts of the project to the regional economy and employment have been assessed as moderate beneficial. The residual impacts have been summarised in Table 15.11, making use of the significance criteria that are described in Table 15.1.

15.9 Cumulative and Interactive Impacts

The cumulative and interactive impacts associated with the aspects noted in this component of the report of the project are applicable to accommodation and labour force issues. As stated in previous sections, the project will directly employ an estimated 190 - 200 persons at any given time with an additional 207 jobs created due to the indirect impacts associated with the project. Despite the low number of jobs expected to be produced by the project when compared to the other major projects occurring in the region, the project's impact on the overall housing situation in the project area is likely to contribute to the already tight housing and rental market, therefore adding extra demand on permanent, long-term and short-term accommodation within the project area. With the housing supply not being able to 'catch up' with the demand created by the growth in the project area's population and mining and related activities, the project will place extra strain on the region's housing and rental market. Consequently, difficulties in finding accommodation for the project's workforce will have implications on attracting and retaining the skilled workforce required for the project. Particularly if the workforce is to be sourced outside the region, the accommodation impact will affect the recruitment and timely mobilisation of workers into the project area. As already noted, the terms of employment for workers of the project will need to be attractive and competitive with other major projects either underway or likely to commence in the near term.

In addition to these, the EIS process has added to the knowledge base of the region over a range of themes (such as the location of Threatened species), bringing it into one publically available document.

15.10 Summary and Conclusions

This section and Table 15.11 provide a summary of the expected social, economic and accommodation impacts of the project.

15.10.1 Social Impacts

The potential social impacts resulting from the construction and operation of the project include:

- Temporary disturbances to land uses during the construction phase which will be minimised through the measures in the Planning EMP (see Chapter 20, Planning Environmental Management Plan)
- Temporary traffic and access impacts as discussed in Chapter 13, Transport and Access Arrangements, which will be managed through the development of construction traffic management plans and through the mitigation measures outlined in the Planning EMP (see Chapter 20, Planning Environmental Management Plan)
- Temporary amenity impacts during construction which are discussed in Chapter 10, Air Environment; Chapter 12, Noise and Vibration; and Chapter 17, Landscape and Visual Impact Assessment
- Acquisition of land for infrastructure siting and for the pipeline easement
- Possible air quality, noise, and visual amenity impacts during the operation of the WTP as discussed in Chapter 10, Air Environment; Chapter 12, Noise and Vibration; and Chapter 17, Landscape and Visual Impact Assessment.

15.10.2 Economic Impacts in the Project Area

The estimated potential economic impacts on the project area's economy (or local region) resulting from the construction and operation of the project are outlined as follows:

- The construction expenditure of the project is estimated at \$293.2 million, including an estimated \$57.4 million of expenditure being spent in the project area comprising of Gladstone, Fitzroy, Calliope and Rockhampton
- The multiplier for the construction sector in the economy of the project area is 1.98. Therefore the 'flow-on' or indirect contribution of the construction expenditure to the project area is \$56.4 million and the total impact is \$113.7 million
- The direct contribution of the construction phase to value added is \$23.7 million. The indirect component is \$23.1 million and the total contribution is \$46.8 million
- The average number of jobs at any time of the construction phase is estimated to be 190 - 200. The project indirectly contributes to supporting an additional 207 jobs, and therefore the total contribution is 397 - 407 jobs
- Property and business services are predicted to be the most impacted industry. The indirect contribution to this sector is \$12.7 million. The second highest impact is predicted to be to the retail trade sector for \$5 million and then wholesale trade for \$3.9 million
- Other annual impacts on the project area were calculated as: WTP chemicals \$11 million total annual impact; power costs \$4.4 million total annual impact; and general repairs \$2.4 million.

15.10.3 Economic Impacts on Queensland

The estimated potential economic impacts on the Queensland economy resulting from the construction and operation of the project are outlined as follows:

- The total construction expenditure is the direct impact on the Queensland economy
- The multiplier for the construction sector in the Queensland economy is 2.63. Therefore the 'flow-on' or indirect contribution of the construction expenditure to the project area is \$453.3 million and the total impact is \$731.8 million
- The direct contribution of the construction phase to Queensland's value added \$120 million. The indirect component is \$180 million and the total contribution is \$300.6 million
- Of the 190-200 estimated average number of jobs during the construction phase the indirect impact on jobs is 313, the total impact is 503 - 513 jobs
- Other annual impacts on the project area were calculated as: WTP chemicals \$15.5 million total annual impact; power costs \$6.2 million total annual impact; and general repairs \$3.2 million.

15.10.4 Economic Impacts on Australia

The estimated potential economic impacts on the Australian economy resulting from the construction and operation of the project area are outlined as follows:

- The total construction direct expenditure of the pipeline project on the national economy is calculated as \$293.2 million
- With a national multiplier of 3.07, this direct expenditure generated a 'flow-on' contribution of \$606.9 million and therefore a total economic contribution of \$900.1 million
- The pipeline project directly contributes an estimated \$128 million to the national economy's value added. With a 'flow-on' of approximately \$239.7 million, the total contribution to the national economy's value added was \$367.8 million
- The indirect jobs generated as a result of the operations of the project was calculated at 393 jobs. Adding this to the average employment level at any given time during the construction phase (estimated at 190-200 jobs), the total contribution to jobs in Australia is approximately 583 - 593 jobs
- The total calculated impacts of other items include: WTP chemicals \$19.8 million; power costs \$6.9 million; and repair and maintenance \$3.7 million.

15.10.5 Impacts on Employment

The following summarises the estimated impacts on job creation in the project area, Queensland and the Australian economy, resulting from the construction and operation of the project.

- The estimated average annual number of jobs for the project is 190-200 people. Based on this figure, it is likely that an additional 207 annual jobs are generated in the remainder of the local region's economy. The total jobs generated is therefore 397 to 407 at any given time
- In terms of employment impacts at the state level, the average number of jobs during the construction phase of the pipeline project (190-200 jobs), the indirect impact on jobs is 313. The total employment impact on Queensland is 503 to 513 jobs
- At the national level, the indirect jobs generated as a result of the operations of the project is 393 jobs. Adding this to the average employment level at any given time during the construction phase (190-200 jobs), the total contribution to jobs in the national economy is approximately 583 - 593 jobs
- The project area is made of LGAs that are affected by the resource boom and hence are seen as 'tradie towns' and have a great deal of experience with development projects. This indicates that the employment requirements have a better chance of being met locally given their historical ability to re-deploy activities to meet general project requirements
- However, given the current and likely future construction activity requirements in the region, the project is likely to require labour from outside the region to ensure that consultation timetables can be met without significant time delays. Consultation findings indicate that currently it is difficult to find suitably skilled contractors, particularly construction workers
- Sourcing of workers from outside the region will also have implications on accommodation demand, especially if a suitable accommodation is not available to house the workers required for the construction of the project.

15.10.6 Impacts on Accommodation

The estimated impacts on accommodation in the local region are outlined as follows:

- The pipeline project will directly employ an estimated 190-200 persons at any given time with an additional calculated 207 persons requiring employment due to the indirect impacts associated with the project. Although this number of employees is low compared to the other major projects occurring in the region, the project's impact on the overall housing situation in the project area is considered to place additional pressures on the already tight housing and rental market
- As the project area undergoes rapid population growth, particularly in Calliope and Gladstone LGAs (now within the Gladstone Regional Council area), coupled with the number of major projects occurring in the region, there is likely to be a stronger demand placed on permanent, long-term and short-term accommodation. The pipeline project is likely to add to the stresses of the housing situation in the project area, albeit marginally
- Despite having approximately 1,200 multi-storey units and 9,500 residential lots (urban and rural) currently under application with Councils in the project area, the lack of capacity within the construction sector to meet the demand for constructing new housing, combined with the delay in the provision of essential infrastructure to service new residential developments will limit the supply of housing stock available for accommodating workers, particularly in the short term
- It is unlikely that project will be the impetus for any significant increases in rental prices and/or sale prices, but the project will have a marginal, yet cumulative impact on the accommodation situation in the project area, particularly as other major projects come on line. If supply cannot match demand, prices are very likely to continue to rise. As such, workers employed for the project are likely to experience difficulties in finding a suitable accommodation in the region. Depending on the family make up and accommodation preferences, this might be exacerbated by the relatively low level of multi-unit dwellings likely to come on stream in the short to medium-term
- In a relative sense, the project is also likely to marginally contribute to an increase in demand for short-term accommodation, with tourist accommodation providers in the project area already servicing labourers and workers more so than short-term visitors and tourists. It is difficult to see how further employees can be accommodated in the current short-term housing markets unless further supply is provided.



15.11 References

- Australian Bureau of Statistics (2007), *National Input-Output Tables 2001-02*, Canberra
- Australian Bureau of Statistics (2006), *Census Data*, Canberra
- Australian Bureau of Statistics (2006), *Journey to Work Data*, Unpublished, Canberra
- Australian Bureau of Statistics (2001), *Census Data*, Canberra
- Australian Bureau of Statistics (1996), *Census Data*, Canberra
- Department of Communities (2008), *Child Care Service Geographical Search*, accessed February 2008 from <http://maps.communities.qld.gov.au/childcare/index.jsp>
- Department of Education, Training and Arts, 2007, *District Maps*, accessed February 2008 from <http://education.qld.gov.au/schools/maps/>
- Department of Employment and Workplace Relations (2007), *Small Area Labour Markets*, September 2007
- Gladstone Economic and Industry Development Board (2008), *Gladstone Region Development Review*, February 2008
- GAWB (2007), submission to Queensland Competition Authority (QCA), *Investigation of Contingent Water Supply Strategy Pricing Practices*, April 2007
- Real Estate Institute of Queensland, September 2007, *Property and Lifestyle*
- Queensland Health: Harper C, Cardona M, Bright M, Neill A, McClintock C, McCulloch B, Hunter I, Bell M. (2004) *Health Determinants Queensland*, Public Health Services, Queensland Health, Brisbane

Table 15.11 Summary of Impacts for Social and Economic Environment

EIS Area: Socio Economic Feature/Activity	Current Value + Substitutable Y/N	Description of Impact	Mitigation Inherent in Design/Standard Practice Mitigation	Residual Impact using significance Criteria
		Description in Words		
Regional Economy	Regional Economic Function Partially Substitutable	<p>The construction expenditure of the project is \$293.2 million, including an estimated \$57.4 million of expenditure being spent in the project area.</p> <p>The 'flow-on' or indirect contribution of the construction expenditure associated with the pipeline project to the project area is \$56.4 million and the total impact is \$113.8 million.</p> <p>The direct contribution of the construction phase to value added is \$23.7 million. The indirect component is \$23.1 million and the total contribution is \$46.8 million.</p> <p>The project will impact largely on the property and business services industry as the indirect contribution to this sector is \$12.7 million. The second highest impact is to the retail trade sector for \$5 million and then wholesale trade for \$3.9 million.</p> <p>In addition, the project will have impacts on WTP chemicals (\$11 million total annual impact); power costs (\$4.4 million total annual impact); and general repairs (\$2.4 million).</p>		Moderate Beneficial
State Economy	State-wide Economic Function Partially Substitutable	<p>The total construction expenditure of \$293.2 million is the direct impact on the Queensland economy.</p> <p>The direct contribution of the construction phase to Queensland's value added was \$126.6 million. The indirect component is \$190 million and the total contribution is \$316.5 million.</p> <p>Of the 190-200 average number of jobs during the construction phase the indirect impact on jobs is 313, the total impact is 503 - 513 jobs.</p> <p>Other annual impacts on the project area were: WTP chemicals \$15.5 million total annual impact; power costs \$6.2 million total annual impact; and general repairs \$3.2 million.</p>		Negligible
National Economy	National Economic Function Partially Substitutable	<p>The total construction direct expenditure of the pipeline project on the national economy is estimated at \$293.2 million.</p> <p>The direct expenditure associated with the pipeline project has a 'flow-on' contribution of \$606.9 million and therefore a total economic contribution of \$900.1 million.</p> <p>The pipeline project directly contributes \$128 million to the national economy's value added. With a 'flow-on' of approximately \$239.7 million, the total contribution to the national economy's value added was \$367.8 million.</p> <p>The total impacts of other items include: WTP chemicals \$19.8 million; power costs \$6.9 million; and repair and maintenance \$3.7 million.</p>		Negligible
Employment	Employment Partially substitutable	<p>The project will directly employ 190-200 persons at any given time with an additional 207 persons requiring employment due to the indirect impacts associated with the project. The total jobs generated for the project area is therefore 397 - 407 at any given time.</p> <p>In terms of employment impacts at the State level, the average number of jobs during the construction phase of the pipeline project (190-200 jobs), the indirect impact on jobs is 313. The total employment impact on Queensland is 503 - 513 jobs.</p> <p>At the national level, the indirect jobs generated as a result of the operations of the project is 393 jobs. Adding this to the average employment level at any given time during the construction phase (190 0 200 jobs), the total contribution to jobs in the national economy is approximately 583 - 593 jobs.</p> <p>Given the low unemployment rate in the project area (4.0%) and the relatively high labour participation rate (62.8%) additions to the workforce are likely to be required from outside the region. Moreover, with other major projects taking place in the region, the project is likely to contribute to the overall skills shortage in Queensland, particularly in construction.</p> <p>Sourcing of workers from outside the project area region will inevitably increase the demand for worker accommodation, placing extra pressures on the already tight housing and rental market.</p>	<p>Pursue terms of employment for employees that are competitive in the region.</p> <p>Works will be scheduled to avoid concurrent operations where possible</p> <p>To address accommodation issues, rental properties will be secured in advance wherever possible to accommodate the workers for the duration of the construction phase of the project, particularly in Rockhampton.</p>	<p>Moderate Beneficial</p> <p>Should employment be able to be fulfilled there will be a positive impact on employment at regional, State and national levels. The higher the local employment ratio, the higher the positive impacts to the region.</p>
Social	Amenity Societal Function Services and Facilities	<p>Temporary disturbances to land uses during the construction phase.</p> <p>Temporary traffic and access impacts.</p> <p>Temporary amenity impacts during construction.</p> <p>Acquisition of land for infrastructure siting and for the pipeline easement.</p> <p>Possible air quality, noise, and visual amenity impacts during the operation of the WTP as discussed in Chapter 10, Air Environment, Chapter 12, Noise and Vibration and Chapter 17 Landscape and Visual Impact Assessment.</p>	<p>Social and environmental considerations in siting of the pipeline and infrastructure.</p> <p>Construction Environmental Management Plan.</p> <p>Construction traffic management plan.</p> <p>Compensation for land acquisition.</p> <p>Social and environmental considerations in siting and design of the WTP.</p>	Minor Adverse
Accommodation	Accommodation Partially substitutable	<p>Although the number of jobs (190-200 workers) expected to be directly produced by the project is low compared to the other major projects occurring in the region, the project will contribute to the overall housing shortage experienced in the project area.</p> <p>With the housing and rental market in the project area being tight, difficulties in providing accommodation will have a negative impact on attracting appropriately skilled workforce for the pipeline construction.</p> <p>As the project area undergoes rapid population growth, particularly in Calliope and Gladstone LGAs, coupled with the number of major projects occurring in the region, there will be a stronger demand for permanent, long-term and short-term accommodation. This will impact on the ability of the project area's accommodation providers to meet the housing needs of the construction workers required for the project.</p> <p>There are currently 1,200 multi-storey units and 9,500 residential lots (urban and rural) under application with Councils in the project area. Even if all of these applications are approved by the Councils, the housing market will be still under strain as the construction sector lacks capacity to meet the demand for constructing new housing and the delay associated with the provision of essential infrastructure to service new residential developments.</p> <p>The pipeline project is also likely to contribute to an increase in demand for short-term accommodation, with tourist accommodation providers in the project area already servicing labourers and workers more so than short-term visitors and tourists.</p>	<p>Explore means to cater for the accommodation needs of workers during the construction phase of the project.</p> <p>Short-term contractors may be accommodated in motels within the project area. In such cases, pre-arrangements with motels are required to secure accommodation for the duration of the project.</p>	<p>Moderate Adverse</p> <p>Although the direct impact of the project on accommodation will be negligible, finding accommodation will be difficult, given the combined with the accommodation impacts resulting from other major projects in the region. Should the options noted in the preceding column be actioned, the residual impact will be Negligible. It is noted, however, that securing accommodation in the existing or even likely near term future market is likely to be difficult.</p>