4 SOCIAL IMPACT ASSESSMENT OF GAS FIELDS – WESTERN DOWNS REGIONAL COMMUNITIES

4.1 INTRODUCTION

Assessment of social impacts from the Gas Field Component of the Queensland Curtis LNG (QCLNG) Project is required under Terms of Reference (TOR) set down for this Environmental Impact Statement (EIS). This assessment involves descriptions of impacts, analysis and identification of mitigation strategies.

Based on the Project TOR this chapter outlines Project activities in the Gas Field Component, details the existing social conditions in the area, assesses the impacts of Project activities, and develops mitigation strategies to minimise social impacts.

4.2 PROJECT ACTIVITIES WITH RELEVANCE TO SOCIAL IMPACTS

To supply the LNG Facility, expansion of QGC's existing well development, in-field processing, associated water management, land access and infrastructure activities will be required. Development and expansion of the coal seam gas production areas, including associated well construction, will continue over the life of the Project. The Project in the gas field area will develop in two main phases – construction and operation. Key phases and activities and their relevance from a social impact perspective are described below.

4.2.1 Gas Field Construction – Key Phases and Activities

The Gas Field to be developed for the Project is located within QGC's existing exploration and petroleum leaseholds, which covers approximately 468,000 ha. The gas field area is located within the boundaries of Western Downs Regional Council with a small portion of the Field south-west of Wandoan on land within Roma Regional Council.

The Project development area is located between the small towns of Moonie in the south, Wandoan and Miles in the north, Condamine and Tara in the west and Chinchilla and Kogan in the east. Detailed location of the Gas Field is discussed in *Volume 2, Chapter 4.*

An estimated total of 6,000 wells will be required over the life of the Project to supply the LNG Facility. These wells will be supported by approximately 27 FCSs and nine CPPs. It is proposed to develop the Gas Field facilities in the stages set out in *Table 8.4.1*. The flow rate of gas from wells to FCSs will vary over the life of the Project. The rates required for delivery of 1,360 million standard cubic feet per day (mmscfd) to the LNG Facility necessitate the compression and processing facilities to be in place early in the Project life. The number of CPPs should remain static from initial development throughout the life of the Project as their design capacity is sufficient to meet the LNG Facility requirements. FCS design will need to be flexible over the life of the

Project. As gas from a development area depletes, replacement flows will be sourced from within subsequent development areas. Screw compressors will be relocated to minimise the capital outlay while maintaining delivery of gas to the CPPs. This sequencing of well development and field compression will be progressive over the life of the Project.

Table 8.4.1 Staging of Gas Field Development

Stage	Year	Wells	FCS	CPP
1	2010	600	2	2
2	2013	2,000	27	9
3	2020	4,300	27[1]	9
N[1]	2030	6,000	27[2]	9

Key activities during the construction period are detailed in *Table 8.4.2* below.

Table 8.4.2 Gas Field Construction – Key Phases and Activities

Activity	Relevance of Activities from a Social Impact Perspective
Pre-construction – Commercial well development	
Selection of wellhead sites	The selection of the wellhead sites will be primarily based on geological analysis and factors such as topography, environmental and heritage considerations, land access and landholder disturbance.
Drill site preparation Drilling Site clean-up and rehabilitation	• access to land, and moving heavy machinery in and out of the area • onsite drilling labour camps of approximately 25 workers. Day and night drilling activity for 5 to 14 days per well will need lighting through the night time work. Total site preparation and drilling activity will be for 15 to 25 days per well.
Construction - Associated surface equipment and gas gathering	
Production wells Gas-gathering pipelines Field compressor stations (FCSs) Central processing plants (CPPs)	• establishment of temporary construction workers camps • digging, drilling, trenches may cause erosion; need for sediment control • moving material, equipment and machinery • clearing of a site of approximately 5 to 7 ha for each station • The progressive construction of the gathering system will be undertaken by a small crew of workers, and around 400 m to 500 m of pipeline could be laid per day in good conditions.
Flares	Vents will be constructed at each FCS. One flare will be installed at each CPP.
Associated water infrastructure	
Water-gathering pipelines	Water lines will be buried at least 1 m below the ground in accordance with the QGC pipeline standards.
Ponds	Associated water produced during gas extraction is collected through water-gathering lines and transported to water balancing ponds, depending on the location.

1 Stages will be iterative from Stage 3 to Stage N

2 Dependent on field performance

Activity	Relevance of Activities from a Social Impact Perspective
Water treatment facilities	Water treatment facilities are anticipated to develop over the next few years to treat water produced during the ramp-up of gas production.
Accommodation camps and administration	
Accommodation	Each temporary construction camp site will occupy around 7 ha of land and require effluent treatment and waste disposal facilities.
Transport	A logistics study identifying import sites, traffic and transport routes, lay down and other logistics sites is being prepared.

4.2.2 Gas Field Operations – Key Phases and Activities

The Gas Field Component of the Project covers the expansion of QGC's existing CSG operations in the Surat Basin, for LNG and domestic gas markets. Over the Project period this expansion will comprise the development of:

- about 6,000 wells
- surface equipment associated with wells
- gas and water-gathering systems
- gas processing and compression infrastructure
- management, storage and potential beneficial use of associated water.

The key phases and activities associated with Gas Field operations are summarised in *Table 8.4.3*.

Table 8.4.3 Gas Field Operations – Key Phases and Activities

Activity	Relevance of Activities from a Social Impact Perspective
Well operation	Workers activities Operation of machinery and infrastructure Transport activities
Wellhead and separator function	
Well maintenance	
Infield gas and water-gathering lines and trunklines	
FCS operation and maintenance	
CPPs operation and maintenance	
Associated water infrastructure operation and maintenance	The current operational management of associated water is via evaporation ponds. Options for beneficial reuse of associated water are being assessed (refer to Volume 3, Chapter.11)

4.3 EXISTING SOCIAL AND CULTURAL ENVIRONMENT OF THE GAS FIELD COMMUNITIES

The Gas Fields Component includes communities located across the area of the gas tenements. This includes localities in the Western Downs Regional Council, specifically the Dalby Statistical Local Area (SLA), Tara SLA, Wambo SLA, Murilla SLA, Chinchilla SLA and Division 2 of Taroom SLA.

The Gas Field is also spread over small parts of Roma Regional Local Government Area (LGA). Toowoomba LGA located to the south and Roma LGA located to the west of Dalby offer a regional context to the area (refer to *Figure 8.4.1*).

Over the past five years the Western Downs Regional Council increased in population, reversing the trend of rural decline. This was partly due to energy sector and mining projects developing in the region. The estimated residential population as at June 2007 was 30,230.

Most settlement in the region is concentrated in the towns and communities of the region including Tara, Kogan, Chinchilla, Condamine, Miles, Wandoan and Dalby. Major population centres within the Project area and Western Downs LGA are presented in *Figure 8.4.1.*

Businesses in the region have begun to diversify from traditional markets in the agricultural sector into components, parts and services for the energy sector. Agriculture, forestry and fishing dominate the economy, representing 22.6 per cent of the region's A$1.3 billion gross domestic product (2006–07). Strong growth and development is evident across the region in electricity, gas, water supply, professional services, transport and manufacturing.

The region boasts of a relaxed country lifestyle and moderately accessible social amenities and infrastructure. Dalby is the largest population centre in the Gas Field area with Toowoomba and Roma offering the regional context and regional level services to the Gas Field area.

4.3.1 Demographic Profile

4.3.1.1 *Population Size and Growth*

The total population of Western Downs Region LGA in 2007 was 29,656 people. Roma LGA was smaller in its population size compared with Western Downs LGA with a population of 13,103 people in 2007, while Toowoomba LGA was a larger regional centre with a population of 152,912 people in 2007 (refer to *Table 8.4.4*).

Dalby SLA, which also represents the former Dalby Shire Council, is the main urban centre in the Gas Field area with a population of 10,402 in 2007, followed by Chinchilla SLA with 6,359, Wambo SLA with 5,597, Tara SLA with 3,887, Murilla SLA with 2,846 and Taroom division 2 SLA with a population of 545 people.

Legend

- Towns
- Study Boundary
- Statistical Boundary
- Western Downs Local Government Area

Source Note:
ABS (Australian Bureau of Statistics) 2006

Projection: UTM MGA Zone 56 Datum: GDA 94

0 10 20 40 km

N

QUEENSLAND CURTIS LNG A BG Group business	Project: Queensland Curtis LNG Project	Title: Western Downs Regional Council Area and Population Centres	
	Client: QGC - A BG Group business		
ERM Environmental Resources Management Australia Pty Ltd	Drawn: JB	Volume 8	Figure 8.4.1
	Approved: PM	File No: 0086165b_EIS_SIA_GIS004_F8.4.1	
	Date: 17.03.09	Revision: 2	

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As seen in *Table 8.4.4* from 2001 to 2007 the Western Downs LGA population grew at the rate of 0.6 per cent, increasing the population by 1,050 persons. Within the Western Downs LGA, Wambo SLA recorded the highest average annual growth rate of one per cent, followed by Murilla SLA and Chinchilla SLA; while Division 2 of Taroom SLA experienced negative growth of -1.7 per cent. While well below Queensland averages, growth in the Dalby area reversed the negative growth trend which has been experienced in other parts of the South West Statistical Division. Growth in neighbouring Roma LGA was at 0.6 per cent, with a total increase in population of 493 from 2001 to 2007, while Toowoomba LGA experienced a higher growth of 1.8 per cent which was equal to 15,319 people in the 2007.

Table 8.4.4 Gas Field Population Growth

Region	Estimated Population			Average Annual Growth Rate (%) 2001 to 2007
	2001	2006	2007	
Dalby SLA	10,113	10,384	10,402	0.5%
Tara SLA	3,865	3,906	3,887	0.1%
Wambo SLA	5,259	5,535	5,597	1%
Murilla SLA	2,720	2,846	2,866	0.9%
Chinchilla SLA	6,046	6,290	6,359	0.8%
Division 2 of Taroom SLA	603	562	545	-1.7%
Western Downs LGA	28,606	29,523	29,656	0.6%
Roma LGA	12,610	13,099	13,103	0.6%
Toowoomba LGA	137,593	151,276	152,912	1.8%
Darling Downs Statistical Division (SD)	210,351	227,074	229,254	1.4%
South West SD	27,002	26,408	26,161	-0.5%
Queensland	3,628,946	4,091,546	4,182,062	2.4%

Source: Australian Bureau of Statistics (2008a)[3], Australian Bureau of Statistics (2007a)[4], Australian Bureau of Statistics (2003)[5].

Future population growth projections for the gas field communities as shown in *Table 8.4.5* below, anticipate the area will experience a modest and steady growth up to 2028[6]. The four years from 2008 to 2011, will see an estimated growth rate of 1.1 per cent per year in Western Downs LGA[7]. Western Downs LGA is expected to grow by 5,559 people between 2006 and 2026 taking the

3 Australian Bureau of Statistics (2008a). *Regional Population Growth, Australia and New Zealand, 2006-07*. Cat. No. 3218.0, ABS, Canberra. Taken from Queensland Curtis LNG Baseline Communities Assessment prepared by AEC Group

4 Australian Bureau of Statistics (2007a). *2006 Census of Population and Housing.* Cat No. 2068.0, ABS, Canberra. Taken from Queensland Curtis LNG Baseline Communities Assessment prepared by AEC Group

5 Australian Bureau of Statistics (2003), *C-Data 2001, Second Release.* Australian Bureau of Statistics, Canberra, 2003. Taken from Queensland Curtis LNG Baseline Communities Assessment prepared by AEC Group

6 These projections were prepared by the Queensland Government's Planning Information and Forecasting Unit in 2008. The projections considered committed coal mining projects but have not considered population growth which may result due to coal seam gas projects.

7 http://www.dalbyrc.qld.gov.au/visitors/index.shtml. Accessed on 21 January, 2009.

total population count to 35,677 people and the population of Roma LGA is expected to increase by around 1,500 people taking the total population count to 14,714. Toowoomba LGA is expected to experience a significant growth with its population increasing to 61,484 people to 2026.

Table 8.4.5 Gas Field Projected Population Growth

	Projected Population					Average Annual Growth Rate (%)
Region	**2006**	**2011**	**2016**	**2021**	**2026**	**2008 to 2028**
Dalby SLA	10,405	10,925	11,470	12,037	12,499	0.9%
Tara SLA	3,896	3,949	3,998	4,040	4,085	0.2%
Wambo SLA	5,526	5,933	6,181	6,420	6,618	0.8%
Murilla SLA	2,847	3,017	3,180	3,349	3,499	1%
Chinchilla SLA	6,302	6,662	7,042	7,408	7,671	0.9%
Division 2 of Taroom SLA*	562*	555*	580*	605*	626*	0.5%*
Western Downs LGA	30,118	31,620	33,037	34,477	35,677	0.8%
Roma LGA	13,070	13,521	13,918	14,438	14,714	0.5%
Toowoomba LGA	151,297	166,289	181,154	197,340	212,781	1.7%
Darling Downs SD	225,745	244,731	263,382	283,372	302,332	1.4%
South West SD	26,366	26,334	26,800	27,473	28,024	0.2%
Queensland	4,0909,08	4,567,713	5,040,325	5,478,715	5,884,439	1.7%

* Source: Queensland Department of Infrastructure and Planning (2008)[8], Australian Bureau of Statistics (2008a)[9].

Indigenous people form an integral part of the communities in the Gas Field. As seen in *Table 8.4.6,* in 2006 the Indigenous population in Western Downs LGA represented approximately 4 per cent (approximately 1,179 persons) of its total population[10].

In 2006 at SLA level the population of Indigenous people was 597 in Dalby SLA, 175 in Chinchilla SLA, 157 in Tara SLA, 139 in Wambo SLA and 111 in Murilla SLA. Between 2001 and 2006 the region experienced a positive growth in Indigenous population, with the highest growth (7 per cent) recorded in Tara SLA and a lowest of 2 per cent recorded in Dalby SLA.

8 Office of Economic and Statistical Research (2008). *Experimental Estimates of Gross Regional Product.* Office of Economic and Statistical Research, Queensland Treasury Department, Brisbane. Taken from AEC Baseline Report.

9 Australian Bureau of Statistics (2008a). *Regional Population Growth, Australia and New Zealand, 2006-07*. Cat. No. 3218.0, ABS, Canberra. Taken from AEC Baseline Report

10 this data is approximate because data from Taroom Division 2 was not available for the year 2006; refer to *Table* 8.4.6.*)*.

Table 8.4.6 Indigenous Population in the Gas Field Area: 2001 - 2006

Region	Estimated Population		Ave Growth Rate (%)
	2001	2006	2001 to 2006
Dalby SLA	541	597	2%
Tara SLA	112	157	7%
Wambo SLA	114	139	4%
Murilla SLA	98	111	2.5%
Chinchilla SLA	146	175	3.7%
Taroom Division 2	Not available	Not available	Not available
Western Downs LGA	-	-	-
Roma LGA	739	911	4.3%
Toowoomba LGA	3,518	4,123	3.2%
Darling Downs SD	5,524	6,531	3.4%
South West SD	2,597	2,736	1.0%
Queensland	112,772	127,578	2.5%

A detailed description of Indigenous communities and impacts of the Project on them is presented in *Volume 8 Chapter* 7.

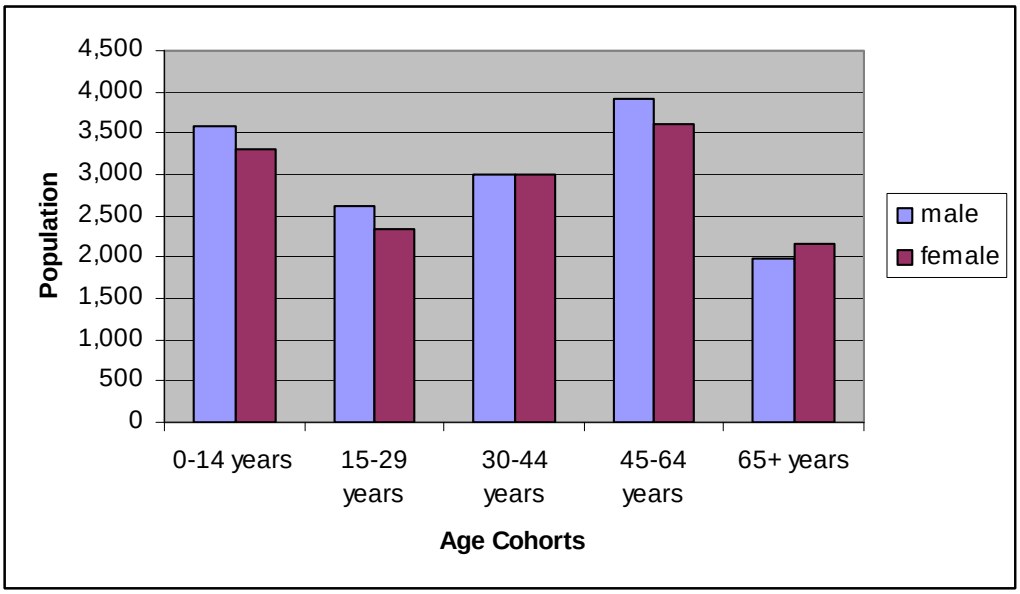
4.3.1.2 Age and Gender Profile

An age profile in the Western Downs LGA (refer to *Figure 8.4.2* and *Table 8.4.7*) shows that the two largest population age cohorts are 0 to 14 years and 45 to 64 years. Secondary evidence and community consultations show that the dip in the age group of 15 to 25 reflects people in this age group leaving home for further education, employment and travel opportunities.

Roma LGA and Toowoomba LGA also generally showed a similar age profile to that of Western Downs LGA, except that Toowoomba LGA had a slightly higher proportion of young people aged between 15 to 29 years, which reflects more diverse employment and tertiary education opportunities in Toowoomba (refer to *Table 8.4.7*).

Based on *Table 8.4.7* and *Figure 8.4.2* it can be seen that in Western Downs LGA the proportion of males was slightly higher in most age cohorts, except 30 to 44 years where it was almost equal and over 65 years where the proportion of females was more than males. Toowoomba LGA and Roma LGA also exhibited similar gender profiles to Western Downs LGA.

Figure 8.4.2 Age and Gender Profile of Western Downs LGA: 2006



4.3.1.3 Household Size and Structure

Average household size in Western Downs LGA decreased slightly from 2001 to 2006 from 2.7 to 2.6, but remained constant in Roma and Toowoomba LGAs at 2.6 and 2.7 respectively (refer to *Table 8.4.8*).

In 2006 household structure across the Gas Field communities was relatively consistent between LGAs (refer to *Table 8.4.9)*. Dalby, Roma and Toowoomba LGAs reported a higher proportion of couple families with children at 32 per cent, 33 per cent and 32 per cent respectively. Similarly the proportion of couple families without children was also higher and consistent between the Gas Field LGAs, at 31 per cent in Dalby and 29 per cent in both Roma and Toowoomba. The proportion of single person households represented 24 per cent of total households for each of the three LGAs. Within Western Downs LGA a higher proportion of sole person households were recorded in Dalby (23 percent), Murilla (Miles) (27 per cent), Tara (25 per cent) and Chinchilla (25 per cent) SLAs.

4.3.1.4 Population Stability

Western Downs LGA recorded a higher percentage of people living at the same address from 2001 to 2006 at 50 per cent than the State average of 45 per cent. Within Western Downs LGA, Dalby SLA recorded a lower proportion of people at the same address (45 per cent) while the other SLA recorded a population of more than 50 per cent who were at the same address from 2001 to 2006.

Further to that, Western Downs LGA recorded 15 per cent of people who changed their address but continued to stay within the LGA, while 35 per cent moved elsewhere.

Table 8.4.7 Population Distribution by Age: 2006

Region	0–14 Years		15–29 Years		30–44 Years		45–64 Years		65+ Years		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Dalby SLA	1,273	1,199	1,070	998	1,047	1,080	1,204	1,151	579	783	5,173	5,211
Tara SLA	450	458	309	277	411	385	627	528	258	203	2,055	1,851
Wambo SLA	723	614	417	342	567	570	802	761	382	357	2,891	2,644
Murilla SLA	325	326	221	197	274	287	379	358	243	236	1,442	1,404
Chinchilla SLA	741	642	554	493	657	616	818	759	467	543	3,237	3,053
Division 2 of Taroom SLA	62	76	39	31	55	65	77	64	59	34	292	270
Western Downs LGA	3,574	3,315	2,610	2,338	3,011	3,003	3,907	3,621	1,988	2,156	15,090	14,433
Roma LGA	1,595	1,492	1,259	1,138	1,385	1,484	1,660	1,514	759	813	6,658	6,441
Toowoomba LGA	16,872	16,345	15,223	15,279	14,287	15,407	17,949	18,886	9,296	11,732	73,627	77,649
Darling Downs SD	25,761	24,498	21,605	21,252	21,545	23,048	28,128	28,715	14,698	17,824	111,737	115,337
South West SD	3,228	3,017	2,413	2,283	2,882	3,001	3,398	3,012	1,555	1,619	13,476	12,932
Queensland	433,708	411,459	416,365	409,535	434,772	456,169	509,916	513,607	233,317	272,698	2,028,078	2,063,468

Source: Australian Bureau of Statistics (2007a)[11].

11 Australian Bureau of Statistics (2007a), *2006 Census of Population and Housing.* Cat No. 2068.0, ABS, Canberra. Taken from Queensland Curtis LNG Baseline Communities Assessment prepared by AEC Group

Table 8.4.8 Household Size in Gas Field Communities

Region	2001	2006	Change
Dalby SLA	2.7	2.7	-0.1
Tara SLA	2.6	2.6	0
Wambo SLA	2.7	2.7	0
Murilla SLA	2.5	2.5	-0.1
Chinchilla SLA	2.7	2.5	-0.1
Division 2 of Taroom SLA	2.6	2.6	-0.1
Western Downs LGA	2.7	2.6	-0.1
Roma LGA	2.6	2.6	0
Toowoomba LGA	2.7	2.7	0
Darling Downs SD	2.7	2.7	0
South West SD	2.7	2.5	-0.1
Queensland	2.7	2.6	-0.1

Note: The change in average number of persons per household may not equal the difference between the 2001 and 2006 reported in the table due to rounding.

Source: Australian Bureau of Statistics (2007a), Australian Bureau of Statistics (2003), AEC*group.*

This shows that Western Downs LGA has a fairly stable population, with the exception of young people who move out of the area for further opportunities. Stable population also indicates a higher tendency for social capital as stability in the population reflects stronger social networks and formation of social safety nets.

4.3.1.5 Country of Origin

According to the 2006 Census, a great majority of residents in the Gas Field region were born in Australia (95 per cent in Dalby, 96 per cent in Roma and 90 per cent in Toowoomba). People who were born overseas represented 5 per cent of the population in Western Downs LGA, and only 4 per cent in Roma LGA. This proportion is well below the Queensland average of 18 per cent and the Australian average of 22 per cent. As shown in *Figure 8.4.3* more than half of those people born overseas resident in Western Downs LGA were from the United Kingdom and New Zealand. After these two nationalities, the largest groups were from South Africa (62 persons), Germany (75 persons), the Philippines (65 persons) and the Netherlands (66 persons). There was also a large number of people (347 persons) who were born in other countries than those listed.

4.3.1.6 School Level Educational Participation

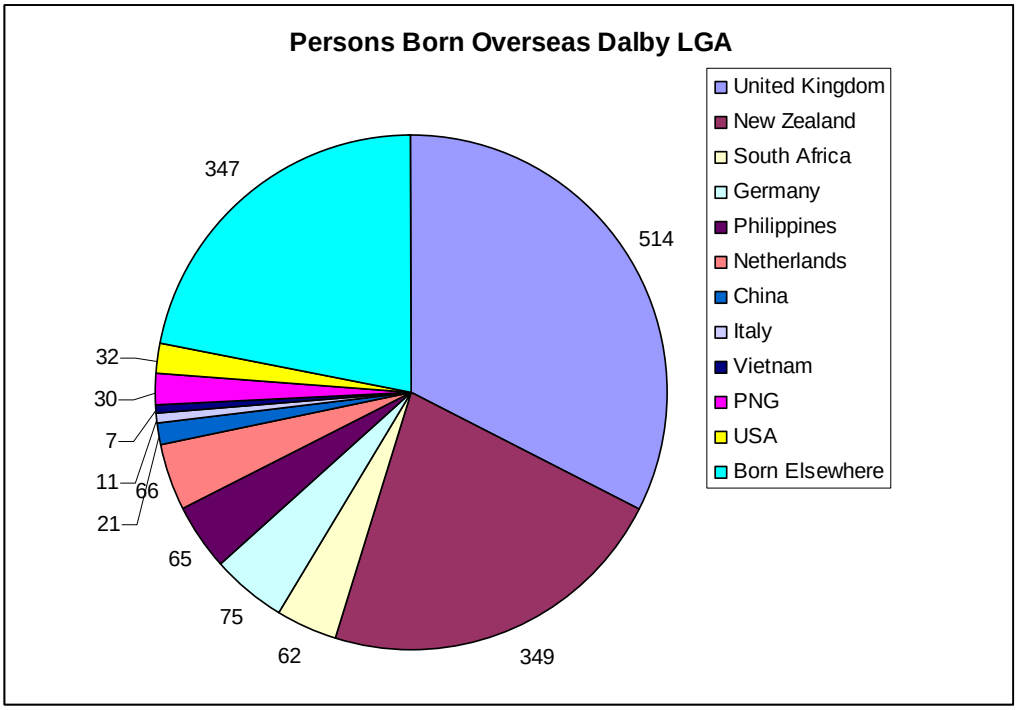
In 2006 Western Downs LGA had a slightly higher proportion of pre-primary and secondary school students than in Queensland (56 per cent compared to 54 per cent). The majority of the students in the region attended government-run schools, however Toowoomba had a larger proportion of students in Catholic and other non-government schools. This primarily reflects the number and type of education facilities available, although socio-economic status may also have played a role.

Table 8.4.9 Household Structure in Gas Field Communities: 2006

Region	Couple Family with Children		Couple Family without Children		Single Parent Households		Lone Person Household		Group Household		Other		Total Households
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Dalby SLA	1,081	32%	956	28%	415	12%	793	23%	143	4%	40	1%	3,428
Tara SLA	396	30%	403	30%	149	11%	329	25%	43	3%	13	1%	1,333
Wambo SLA	658	36%	615	33%	146	8%	373	20%	33	2%	19	1%	1,844
Murilla SLA	280	27%	345	34%	80	8%	275	27%	27	3%	15	1%	1,022
Chinchilla SLA	671	31%	704	32%	168	8%	546	25%	61	3%	20	1%	2,170
Division 2 of Taroom SLA	73	38%	76	39%	6	3%	35	18%	0	0%	3	2%	193
Western Downs LGA	3,159	32%	3,099	31%	964	10%	2,351	24%	307	3%	110	1%	9,990
Roma LGA	1,478	33%	1,305	29%	409	9%	1,086	24%	132	3%	39	1%	4,449
Toowoomba LGA	16,170	32%	14,804	29%	5,518	11%	12,064	24%	1,808	4%	635	1%	50,999
Darling Downs SD	24,217	31%	22,993	30%	8,041	10%	18,504	24%	2,488	3%	883	1%	77,126
South West SD	2,875	32%	2,527	28%	828	9%	2,300	26%	260	3%	98	1%	8,888
Queensland	440,393	32%	398,117	29%	161,886	12%	312,288	22%	61,972	4%	16,976	1%	1,391,632

Source: Australian Bureau of Statistics (2007a)

Figure 8.4.3 Persons Born Overseas Western Downs LGA: 2006[12]



As seen in *Table 8.4.10,* the highest numbers of students in the Western Downs LGA were recorded in the five to nine-year-old cohort. Within the LGA, Dalby SLA, Murilla SLA and Taroom 2 SLA recorded a higher proportion of school age children in this cohort. The other SLAs, such as Chinchilla, Wambo and Tara, recorded a higher proportion of school-age children in the 10 to 14 year age group.

Table 8.4.10 Distribution of school-age children in the Gas Field Region

Region	5–9 years	10–14 years	15–19 years	Total
Dalby SLA	844	771	767	2,382
Tara SLA	296	305	217	818
Wambo SLA	448	497	320	1,265
Murilla SLA	229	204	162	595
Chinchilla SLA	473	476	377	1,326
Division 2 of Taroom SLA	52	45	22	119
Western Downs LGA	2,342	2,298	1,865	6,505
Roma LGA	1,092	995	772	2,859
Toowoomba LGA	10,739	12,095	11,616	34,450

12 Australian Bureau of Statistics (2007), *2006 Census of Population and Housing.* Cat No. 2068.0, ABS, Canberra and Australian Bureau of Statistics (2003), *C-Data 2001, Second Release*. Australian Bureau of Statistics, Canberra, 2003. Taken from Queensland Curtis LNG Baseline Communities Assessment prepared by AEC Group

Region	5–9 years	10–14 years	15–19 years	Total
Darling Downs SD	16,530	17,883	16,439	50,852
South West SD	2,235	1,934	1,476	5,645
Queensland	280,748	295,028	283,247	859,023

Source: Australian Bureau of Statistics (2007) [13]

The lowest number of persons was recorded in the 15 to 19 year-old cohort across the Dalby region. In Western Downs LGA the decline between the 10 to 14 year and the 15 to 19 year cohorts was 433 people or 19 per cent, while in the adjacent Roma LGA the decline was more than 22 per cent. This decline in numbers reflects the movement of young people to other urban centres for work or further education and training. The rate of decline for Toowoomba LGA was similar to that of Queensland at approximately 4 per cent.

4.3.1.7 Student Destinations Post School Education

The former Department of Education and Training and the Arts in its "The Next Step Survey 2007 Darling Downs/South West Regional Report" provides the following information on student destinations[14]:

- 31 per cent of the students who completed Year 12 pursued a university degree
- 25 per cent of students headed for vocational education and training (VET) courses. A further breakdown of VET courses shows that 9.3 per cent and 7.5 per cent students pursued apprenticeships and traineeships respectively
- 22.7 per cent engaged in full-time work
- 14.4 per cent engaged in part-time work
- 5.7 per cent were seeking work and 1.1 per cent was neither engaged in further education nor were they seeking work.
- At high school level in Western Downs LGA, the destination of Year 12 students varies between schools (refer to *Figure 8.4.4*). With the exception of Tara Shire State College, the percentage of Year 12 students heading to university from Chinchilla, Miles and Dalby State High Schools (SHSs) was very similar, at around 20 per cent. No students reported attending university for Tara Shire State College.
- Participation in VET courses was high at Tara Shire State College compared to other schools in the region, accounting for over 20 per cent of

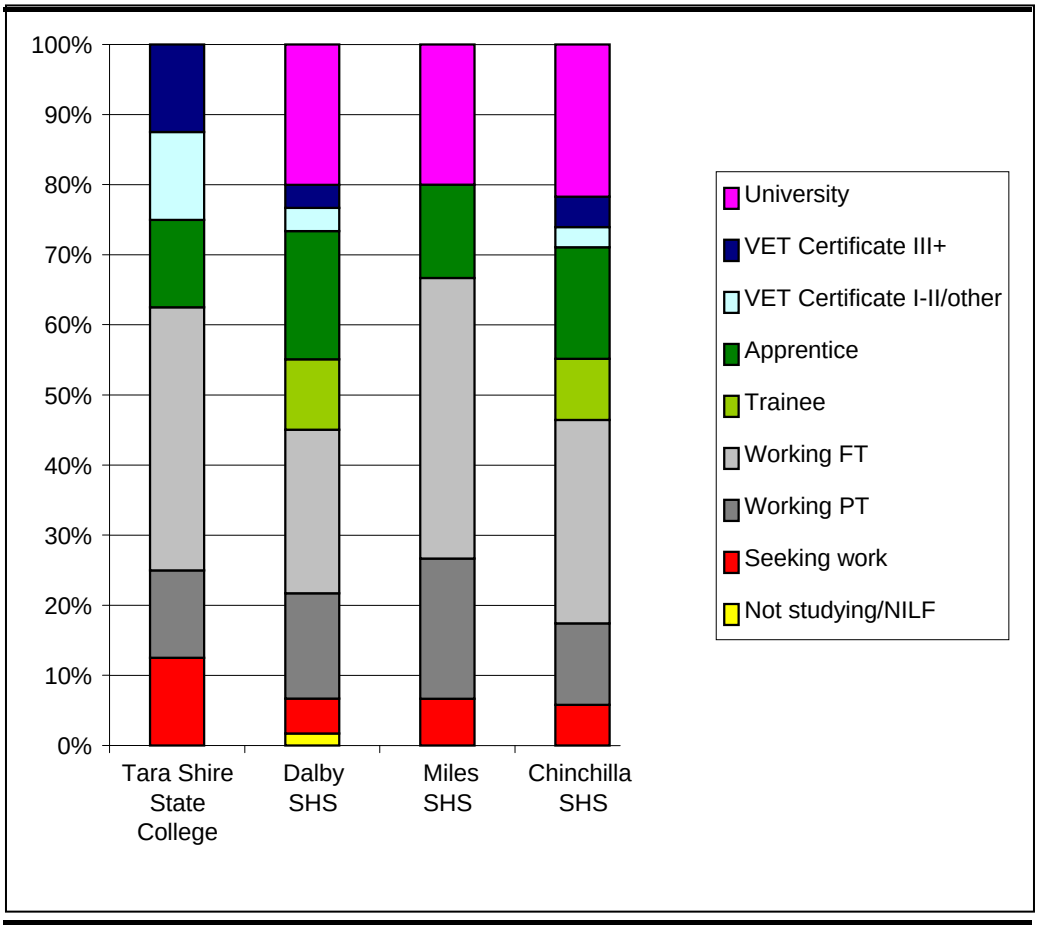
13 Australian Bureau of Statistics (2007), *2006 Census of Population and Housing.* Cat No. 2068.0, ABS, Canberra and Australian Bureau of Statistics (2003), *C-Data 2001, Second Release.* Australian Bureau of Statistics, Canberra, 2003. Taken from Queensland Curtis LNG Baseline Communities Assessment prepared by AEC Group

14 The Next Step Survey 2007 Darling Downs/South West Regional Report, Department of Education and Training updated from DETA because of the Queensland Government restructure post the state election, Queensland Government viewed on 15 March, 2009 at http://education.qld.gov.au/nextstep/pdfs/2007pdfs/regionalreports07/darlingdownssouthwest07.pdf. This was a sample survey of student preferences after school in the Toowoomba Sub-region (which includes schools in Western Downs LGA)

total Year 12 student destinations. This figure may be misrepresentative due to the small number of survey respondents for this school, but may also reflect students gaining technical proficiencies in locally relevant skills. VET participation at Chinchilla and Dalby SHSs was relatively low accounting for approximately 7-8 per cent of their students.

- The proportion of Year 12 students entering an apprenticeship or traineeship was much higher than Miles SHS and Tara Shire State College (over 20 per cent compared to around 10 per cent). In fact, no trainees were recorded for Miles SHS and Tara Shire State College. These figures may reflect the different training and employment opportunities available across the region, with more employment opportunities and therefore on-the-job training opportunities available in Dalby and Chinchilla.
- For Tara Shire State College and Miles State High School, a larger proportion of students entered into part-time work than full-time work at the end of Year 12. The number of students seeking work in these areas was also higher, which indicates that employment opportunities in these areas are more limited than in Dalby or Chinchilla.

Figure 8.4.4 Main Destinations of Year 12 State High School Students in Western Downs LGA, 2007



4.3.1.8 *Post-school Education Attainment*

The proportion of residents over the age of 15 years who have a Bachelor Degree or higher in Western Downs LGA (7 per cent) and Roma LGA (8 per

cent) is lower than the Queensland average of 13 per cent, and slightly less than the Darling Downs Statistical Division average of 10 per cent (refer to *Table 8.4.11*). The proportion of people with Diploma qualifications in the three LGAs was also slightly lower than the Queensland average (of 7 per cent), at 5 per cent in Dalby and Roma and 6 per cent in Toowoomba. Dalby and Roma LGAs also recorded the same percentage of people with Certificate qualifications, at 16 per cent. Toowoomba LGA was slightly higher at 17 per cent, but all LGAs were still below the Queensland total of 18 per cent.

At SLA level, 18 per cent of the population over 25 years in Chinchilla and Dalby had Certificate qualifications in 2006. Overall, Toowoomba LGA had higher proportions of residents who held post-school qualifications, while Roma LGA showed similar proportion of post school attainments as Western Downs LGA.

Table 8.4.11 Gas Field Post-school Qualification: 2006

Region	Bachelor Degree or Higher	Diploma	Certificate
Dalby SLA	7%	4%	18%
Tara SLA	6%	4%	15%
Wambo SLA	6%	5%	16%
Murilla SLA	8%	6%	14%
Chinchilla SLA	7%	4%	18%
Division 2 of Taroom SLA	9%	8%	7%
Western Downs LGA	7%	5%	16%
Roma LGA	8%	5%	16%
Toowoomba LGA	12%	6%	17%
Darling Downs SD	10%	6%	17%
South West SD	8%	5%	15%
Queensland	13%	7%	18%

Note: By place of usual residence.

Source: Australian Bureau of Statistics (2007a), AEC*group*.

4.3.1.9 SEIFA Indices

The Australian Bureau of Statistics (ABS) developed the Socio-Economic Indices for Areas (SEIFA) to allow ranking of regions or areas, providing a method of determining the level of social and economic wellbeing in each region. There are four indices which summarise different aspects of the socio-economic conditions of people living in an area, with each based upon a different set of social and economic information from the 2006 Census. The indices provide more general measures of socio-economic status than is given by measuring, for example, income or unemployment alone.

The SEIFA indices presented here are:

- Index of Relative Socio-economic Disadvantage derived from Census

variables related to disadvantage, such as low income, low educational attainment, unemployment, and dwellings without motor vehicles

- Index of Economic Resources focuses on Census variables like the income, housing expenditure and assets of households.

The Index of Relative Socio-economic Disadvantage 2006 for the Project area (refer to *Figure 8.4.5*) shows that the scores of most SLAs within the Project area were in the late 900s (demonstrating a level of disadvantage approaching the average). Tara SLA is a notable exception with a score of 899.8 identifying this as an area of higher disadvantage within the region.

Figure 8.4.5 SEIFA Index of Socio-economic Disadvantage

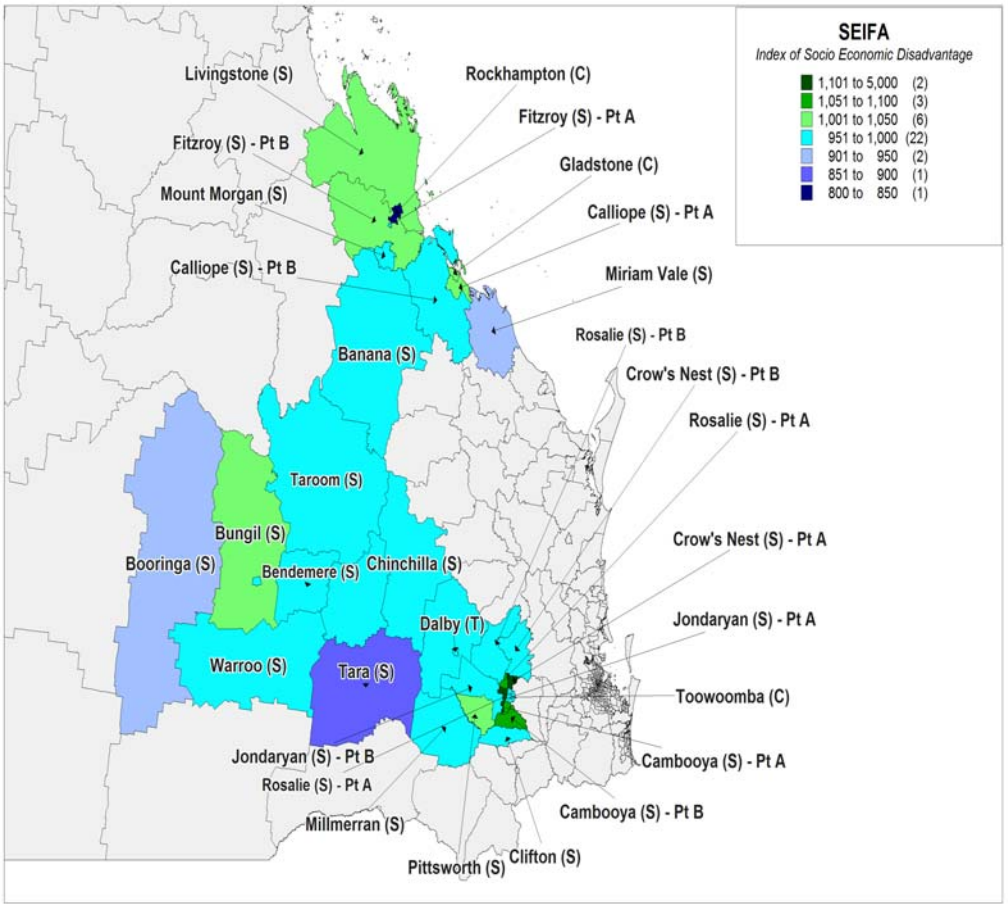
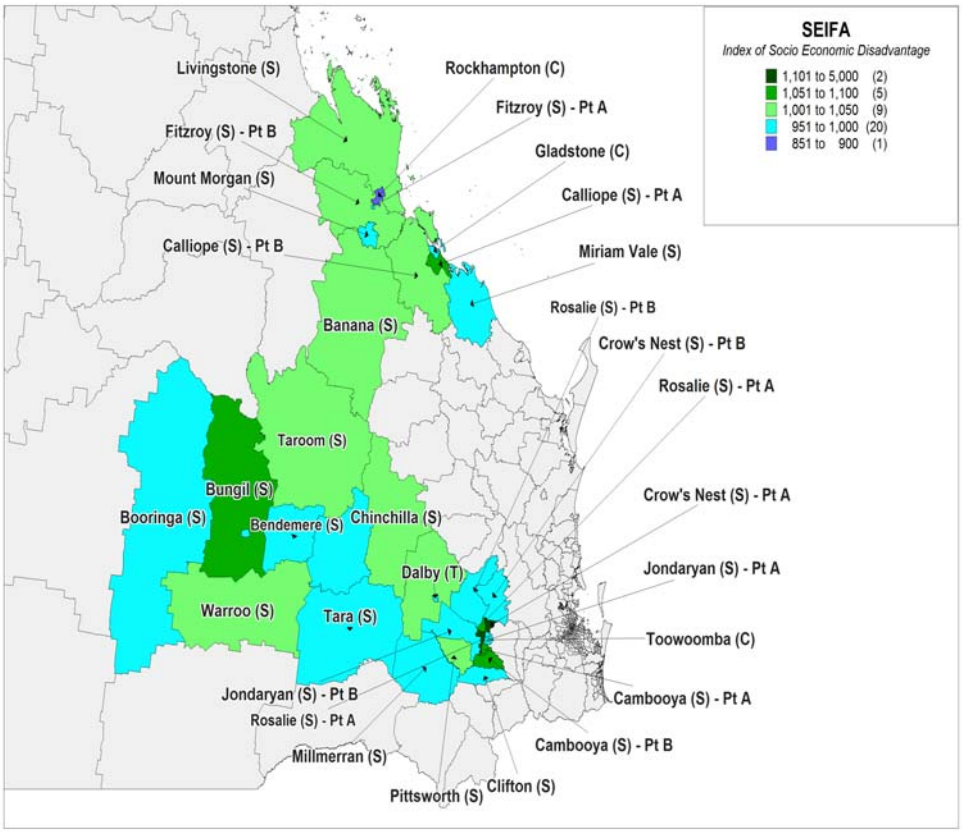


Figure 8.4.6 shows the Index of Economic Resources 2006 for the Project area. Western Downs LGA (986.8), Toowoomba LGA (997.9) and Roma LGA (999.5) also all recorded economic resources scores below the Queensland benchmark (1,000), indicating a lower level of economic resources in the Gas Field region compared to the Queensland average as well as compared to the Pipeline and LNG Facility areas. At a more localised level (SLA level) in Western Downs LGA higher scores were reported in Wambo, Chinchilla and Division 2 of Taroom SLA. A number of different factors may be behind these results. Wambo has a significant employment inflow; in Chinchilla there was a higher level of employment in the construction industry; and the economy of Division 2 Old Taroom has been influenced by the level of mining activity in the adjacent Banana Shire LGA.

Roma LGA also showed a variance between SLAs with scores above and below the benchmark. Both Bungil and Warroo had scores above the benchmark while the remaining three SLAs in Roma LGA received scores of less than 1,000.

Figure 8.4.6 SEIFA Index for Economic Resources 2006



4.3.1.10 Need for Assistance

The "need for assistance" indicator derived from the ABS Census data is intended to measure the number of people with a profound or severe disability. These are people who require help or assistance in one or more of the three core activity areas of self-care, mobility and communication because of a disability, and/or long-term health condition or old age. This measure is used to plan and target delivery of a range of services including health, aged care and community care. People with core activity assistance needs are generally high users of specialist health services, supported accommodation services and specialist transport services.

As shown in *Table 8.4.12* in 2006, the percentage of the population identified as requiring assistance in the Gas Field area was 4.4 per cent in Dalby, 3.2 per cent in Roma and 4.15 per cent in Toowoomba. The number of people in the Gas Field communities that were identified as requiring core activity needs assistance was just under 8, 000 people.

Table 8.4.12 Core Activity Need for Assistance

Region	Persons	% of Population
Dalby SLA	408	3.9%
Tara SLA	261	6.7%
Wambo SLA	209	3.8%
Murilla SLA	132	4.6%
Chinchilla SLA	265	4.2%
Division 2 of Taroom SLA	11	2.1%
Western Downs LGA	1,286	4.4%
Roma LGA	424	3.2%
Rockhampton LGA	4,233	3.9%
Toowoomba LGA	6,256	4.1%
Darling Downs SD	10,034	4.4%
South West SD	859	3.3%
Queensland	154,707	3.8%

(Source: Australian Bureau of Statistics (2007), AEC*group)*

However, there were marked differences between SLAs on the need for assistance, e.g. Division 2 Taroom SLA had only 2.1 per cent of the population identified as requiring assistance, in contrast to Tara SLA which had 6.7 per cent of its population requiring assistance. This higher need for assistance perhaps reflects a higher proportion of dependent population, high age and lower income access of the area for the local people, coupled with low levels of income and high unemployment which indicates potential disadvantage in the community.

A much lower proportion of Roma LGA's population identified as requiring core activity need assistance, at 3.2 per cent. In Roma LGA, only Booringa SLA reported a figure above the Queensland average, at 3.9 per cent. In Toowoomba LGA, 4.1 per cent of the population were identified as requiring core activity assistance.

4.3.2 Existing Labour Force and Employment

4.3.2.1 Working Population

The working-age population (defined as the number of people aged between 15 and 64 years)[15] in the Gas Field communities including Dalby, Roma and Toowoomba LGAs totalled 141,773 in 2006. The working-age population in

15 ABS definition viewed at http://www.abs.gov.au/AUSSTATS/abs@.nsf/MF/3201.0 on 20 March, 2009.

Western Downs LGA was 21,346, representing 77 per cent of the total population. Toowoomba LGA had a total of 111,038 people with the working-age group forming 78 per cent of the total population and Roma had a population of 9,389 with the working-age group forming 76 per cent of the total population. All three LGAs recorded a lower proportion of working-age population compared with the Queensland average of 79 per cent. *Table 8.4.13* shows that the majority of the working-age population in Western Downs LGA in 2006 were residents in Dalby SLA and Chinchilla SLA. Women represented a smaller proportion of the working population than men in each SLA, except Dalby SLA. The higher proportion of males in the workforce may reflect a dominance of employment opportunities available for males in the region, including people who travel for work to Bowen Basin coal operations.

Referring to *Table 8.4.13* it can be seen that Roma LGA was similar to Western Downs LGA with a higher proportion of males in working age population and a lower proportion of working-age females. On the other hand Toowoomba LGA showed a higher proportion of females (41 per cent) in the working-age group compared with males (38 per cent). This could be due to the higher level of employment opportunities available in Toowoomba in the health care, aged care, education and hospitality sectors.

Table 8.4.13 Working-age Population by Gender: 2006

Region	Working-age Population			% of Total Population		
	Male	Female	Total	Male	Female	Total
Dalby SLA	3,672	3,778	7,450	38%	39%	76%
Tara SLA	1,511	1,311	2,822	41%	36%	77%
Wambo SLA	2,049	1,917	3,966	39%	37%	76%
Murilla SLA	1,056	1,018	2,074	39%	38%	77%
Chinchilla SLA	2,358	2,278	4,636	40%	38%	78%
Division 2 of Taroom SLA	216	182	398	41%	35%	76%
Western Downs LGA	10,862	10,484	21,346	39%	38%	77%
Roma LGA	4,748	4,641	9,389	39%	38%	76%
Toowoomba LGA	53,380	57,658	111,038	38%	41%	78%
Darling Downs SD	80,933	85,512	166,445	38%	40%	78%
South West SD	9,616	9,303	18,919	39%	38%	76%
Queensland	1,521,496	1,576,501	3,097,997	39%	40%	79%

Source: Australian Bureau of Statistics (2007), AEC*group*

4.3.2.2 *Employment and Unemployment*

As seen in *Table 8.4.14* there were a total of 12,728 people employed[16] and a total of 578 unemployed[17] in Western Downs LGA in 2006. Roma LGA had a total of 6,516 employed and 159 unemployed people, and Toowoomba LGA had a total of 64,753 employed people and a total of 2,993 unemployed people (also refer to *Appendix 8.1)*. In 2006, the total labour force (the sum of employed plus unemployed persons)[18] in Western Downs LGA was 13,306 persons, in Roma LGA was 6,675 and in Toowoomba LGA was 67,746.

In 2006, the unemployment rate in Western Downs LGA was recorded at 4.3 per cent; 2.4 per cent in Roma LGA and 4.4 per cent in Toowoomba LGA which was below the Queensland average of 4.7 per cent. However unemployment rates varied considerably at the SLA level within Western Downs LGA. Unemployment was 5 percent at Dalby SLA and 7.3 per cent at Tara SLA, much higher than the regional (3 per cent) and Queensland (4.7 per cent) average. Division 2 Taroom and Murilla SLAs recorded the lowest unemployment rates at 0.9 per cent and 2.4 per cent respectively (refer to *Table 8.4.14).*

At the LGA level, the unemployment rate for females was higher than males across the Gas Field area (refer to)However at the SLA level, the differences in unemployment rates based on gender varied across Western Downs LGA. Wambo, Chinchilla and Taroom Division 2 SLA recorded higher female unemployment; Dalby SLA recorded lower female unemployment and Tara recorded an equal for male and female unemployment (refer to *Table 8.4.14*).

16 The ABS Labour Force survey defines employed persons as all persons 15 years of age and over who, during the reference week:
- worked for one hour or more for pay, profit, commission or payment in kind, or were employees who had a job but were not at work and were:
- away from work for less than four weeks up to the end of the reference week;
- away from work as a standard work or shift arrangement; or
- on strike or locked out; or
- on workers' compensation and expected to be returning to their job; or
- were employers or own-account workers, who had a job, business or farm, but were not at work.

This definition was viewed at http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/47BFB611A97C91F2CA25710E007321C6?opendocument on 20 March, 2009.

17 The ABS Labour Force Survey defines unemployed persons as those aged 15 years and over who satisfy all three of the following: a) The person must not be employed, i.e. they must be 'without work'. b) The person must be 'looking for work'. A person must have, at some time during the previous four weeks, undertaken specific 'active' steps to look for work, such as applied to an employer for work, answered an advertisement for a job, visited an employment agency, used a touchscreen at Centrelink offices, or contacted friends or relatives. The search may be for full-time or part-time work. In either case, however, the person must have done more than merely read job advertisements in newspapers. c) The person must be 'available to start work'. This is taken to mean that they were available to start work in the survey reference week (i.e. the week before the interview). Viewed at http://www.abs.gov.au/AUSSTATS/abs@.nsf/dc057c1016e548b4ca256c470025ff88/c35049fcb841741bca256a1f0002c384!OpenDocument on 20 March, 2009.

18 http://abs.gov.au/AUSSTATS/abs@.nsf/DSSbyCollectionid/139689E1A84FE4F0CA256BD00028B0E5?opendocument

Table 8.4.14 Gas Field Employment and Unemployment by Gender: 2006

Region	Employed Persons			Unemployment Rate (%)		
	Male	Female	Total	Male	Female	Total
Dalby SLA	2,475	1,909	4,384	5.1%	4.9%	5.0%
Tara SLA	856	600	1,456	7.3%	7.3%	7.3%
Wambo SLA	1,428	1,065	2,493	3.1%	4.4%	3.6%
Murilla SLA	725	546	1,271	2.8%	1.8%	2.4%
Chinchilla SLA	1,611	1,200	2,811	3.0%	4.2%	3.5%
Division 2 of Taroom SLA	178	135	313	0.0%	2.2%	0.9%
Western Downs LGA	7,273	5,455	12,728	4.2%	4.6%	4.3%
Roma LGA	3,589	2,927	6,516	2.2%	2.6%	2.4%
Toowoomba LGA	34,962	29,791	64,753	4.1%	4.8%	4.4%
Darling Downs SD	52,820	43,944	96,764	4.2%	4.8%	4.5%
South West SD	7,019	5,701	12,720	2.9%	3.1%	3.0%
Queensland	984,568	840,429	1,824,997	4.4%	5.1%	4.7%

Note: By place of usual residence.

Source: Australian Bureau of Statistics (2007a).

Table 8.4.15 highlights the level of unemployment by age in the Gas Field area in 2006. As shown in the table, the proportion of unemployment was the highest in the age cohort of 15 to 24 years across all the three Gas Field LGAs: Dalby 8 per cent, Roma 4.4 per cent and Toowoomba 8.4 per cent, yet it was below the Queensland average of 8.9 per cent.

Table 8.4.15 Gas Field Unemployed Persons by Age in Percentage: 2006

Region	15–24	25–34	35–44	45–54	55–64	65+	Total
Dalby SLA	9.4%	4.5%	4%	3.1%	5.0%	0%	5%
Tara SLA	14.2%	9%	9.2%	4.5%	3.8%	0%	7.3%
Wambo SLA	6.8%	3.7%	3.6%	3.3%	2.3%	2.1%	3.6%
Murilla SLA	3.1%	3%	3.1%	0%	3.9%	0%	2.4%
Chinchilla SLA	5.6%	3.8%	3.3%	2.3%	3.5%	2.1%	3.5%
Division 2 of Taroom SLA	0%	6.4%	0%	0%	0%	0%	0.9%
Western Downs LGA	8%	4.6%	4.2%	2.8%	3.6%	1%	4.3%
Roma LGA	4.4%	2.6%	1.8%	2%	2.1%	0%	2.4%
Toowoomba LGA	8.4%	4.9%	3.5%	2.6%	2.7%	1.7%	4.4%
Darling Downs SD	8.6%	5%	3.7%	2.8%	3%	1%	4.5%
South West SD	6.1%	3.8%	2.3%	1.9%	1.9%	0.5%	3%
Queensland	8.9%	4.6%	3.8%	3.2%	3.6%	1.8%	4.7%

Source: Australian Bureau of Statistics (2007a).

Table 8.4.16 shows that the residential workforce statistics were not available for Western Downs LGA for 2006, but based on SLA level data within Western Downs LGA it was evident that there were more employment positions available in Dalby and Chinchilla SLAs than there were residents in the workforce. This indicates that there would be higher inflow of workers in these areas to occupy the available positions. Dalby and Chinchilla SLAs together showed a difference of approximately 800 positions over resident workers. Tara, Wambo and Murilla results showed there were more residents in the workforce than suitable employment positions, indicating a resultant outflow of workers from the area.

On the other hand, Roma LGA indicated an inflow of workers with 6,516 residents in the workforce and 7,475 positions available, while Toowoomba indicated an outflow of workers with 59,997 jobs and 64,753 residents in the workforce.

Table 8.4.16 Gas Field: Percentage of Resident Workforce: 2006

Region	Employment Positions In Region	Residents In the Workforce	Employment Positions As a % of Resident Workforce
Dalby SLA	5,103	4,384	85.9%
Tara SLA	1,281	1,456	113.7%
Wambo SLA	1,469	2,493	169.7%
Murilla SLA	1,166	1,271	109.0%
Chinchilla SLA	2,975	2,811	94.5%
Division 2 of Taroom SLA	N/a	N/a	N/a
Western Downs LGA	N/a	N/a	N/a
Roma LGA	7,475	6,516	87.2%
Toowoomba LGA	59,997	64,753	107.9%
Darling Downs SD	90,049	96,764	107.5%
South West SD	12,152	12,720	104.7%
Queensland	1,737,619	1,824,997	105.0%

Note: By place of usual residence and place of employment. (a) Data not available for place of work at this level.

Source: Australian Bureau of Statistics (2007a).

In 2006, the proportion of persons in the Gas Field in full-time employment was generally higher than the Queensland average of 69 per cent. Roma LGA had the highest proportion of persons in full-time employment at 75 per cent, followed by Western Downs LGA at 72 per cent and Toowoomba LGA at 69 per cent *(*refer to *Table 8.4.17*). This is likely due to the economic vitality and the number of large projects in the region.

At the SLA level within Western Downs LGA, people in Division 2 of Taroom SLA recorded the highest full-time employment at 82 per cent, followed by Wambo SLA at 74 per cent, Tara and Murilla at 73 per cent and Chinchilla and Dalby SLAs both at 71 per cent.

Table 8.4.17 Gas Field Employment by Tenure Percentage: 2006

Region	Full Time	Part Time	Total Number
Dalby SLA	71%	29%	4,384
Tara SLA	73%	27%	1,456
Wambo SLA	74%	26%	2,493
Murilla SLA	73%	27%	1,271
Chinchilla SLA	71%	29%	2,811
Division 2 of Taroom SLA	82%	18%	313
Western Downs LGA	**72%**	**28%**	**12,728**
Roma LGA	**75%**	**25%**	**6,516**
Toowoomba LGA	**69%**	**31%**	**64,753**
Darling Downs SD	**69%**	**31%**	**96,764**
South West SD	**75%**	**25%**	**12,720**
Queensland	**69%**	**31%**	**1,824,997**

Note: By place of usual residence. Percentages may not sum to 100 per cent due to rounding.

Source: Australian Bureau of Statistics (2007a).

4.3.2.3 Employment by Industry

The employment by sector profile of the region highlights the difference between Dalby, Roma and Toowoomba LGAs. Dalby and Roma LGAs are predominantly agricultural areas with 27 per cent of the employed population in Western Downs LGA and 24 per cent of the employed population in Roma in the agricultural sector (refer to *Table 8.4.18*). At the SLA level, the dominance of the agricultural industry as an employer is demonstrated with more than 40 per cent of employment generated in this industry in Tara, Wambo and Division 2 of Old Taroom. In contrast, employment in the agricultural industry in Dalby SLA represented only 5 per cent of employment in 2006.

As seen in *Table 8.4.18* in Western Downs LGA the other industries providing employment are retail trade (14 per cent), manufacturing (8 per cent), construction (9 per cent) and community services (8 per cent). At the SLA level, Dalby recorded the highest employment in retail trade (19 per cent), manufacturing (12 per cent), construction and health/community services (9 per cent each), education (8 per cent) and wholesale trade (7 per cent). Chinchilla SLA recorded a higher proportion of its employed population in retail trade and construction industries, after agriculture. Similarly, Wambo and Murilla SLAs recorded a higher proportion of employment in retail trade.

In Roma LGA, the main areas of employment outside agriculture were in the retail trade (13 per cent) and community services (10 per cent) industries. This largely reflects Roma's role as a commercial and service centre for the surrounding community.

In contrast to Dalby and Roma LGAs, only 7 per cent of the working

population in Toowoomba LGA were employed in the agricultural, forestry and fishing industries in 2006. Toowoomba's role as a regional centre is reflected by higher proportions of employment in retail trade (15 per cent), manufacturing and health and community services (12 per cent each), education (10 per cent), construction (8 per cent), and property and business services (7 per cent).

The mining industry accounted for a comparatively small proportion of employment within the Gas Field, representing only 2 per cent of employment in the Western Downs LGA, 4 per cent in Roma LGA and 1 per cent in Toowoomba LGA.

4.3.2.4 Income by Industry

The average weekly household income in the Western Downs LGA in 2006 was $1,000 and average individual income was $536. The Roma LGA recorded an average household income of $1,107 and individual weekly income of $612, while the Toowoomba LGA recorded an average household income of $1,073 and individual income of $558.

In the Western Downs LGA, industries with the highest average incomes were mining, electricity, gas and water supply, and construction, each averaging over $1,000 per week. However, these industries accounted for a small share of employment in the region of Dalby. Average income in industries with higher employment in the region was recorded as: agriculture $611 per week, retail trade $511, wholesales trade $754, manufacturing $707, and health and community services $681.

The average income in the agricultural industry, the highest employer in Roma LGA, was slightly higher than in Western Downs LGA at $679 per week.

Industries such as construction, wholesale trade, finance and insurance, and business services industries reported higher average incomes than agriculture. The Toowoomba LGA had a similar profile with the average income in the agricultural industry among the lowest at $625, higher only than retail trade ($519) and accommodation, cafes and restaurants ($469). The higher-paying industries in the Toowoomba LGA were mining, and electricity and gas, which together accounted for only 2 per cent of employment. Manufacturing and health services paid an average income of more than $700 per week and retail trade which had the highest employment in Toowoomba had an average income of $519.

Table 8.4.18 Employment by Industry in Percentage: 2006

Industry	Agriculture, Forestry and Fishing	Mining	Manufacturing	Electricity, Gas and Water Supply	Construction	Wholesale Trade	Retail Trade	Accommodation, Cafes and Restaurants	Transport and Storage	Communication Services	Finance and Insurance	Property and Business Services	Government Administration and Defence	Education	Health and Community Services	Cultural and Recreational Services	Personal and Other Services	Total
Dalby SLA	5%	2%	12%	2%	9%	7%	19%	4%	4%	1%	3%	6%	5%	8%	9%	1%	3%	100%
Tara SLA	45%	1%	2%	0%	6%	4%	9%	4%	4%	1%	0%	2%	7%	9%	6%	0%	2%	100%
Wambo	42%	2%	8%	1%	6%	4%	10%	3%	4%	1%	1%	3%	4%	6%	7%	1%	1%	100%
Murilla SLA	35%	1%	7%	0%	6%	3%	10%	4%	4%	1%	1%	3%	6%	7%	9%	1%	2%	100%
Chinchilla	20%	1%	6%	2%	14%	3%	15%	5%	4%	1%	2%	5%	3%	7%	9%	1%	2%	100%
Division 2 of	50%	1%	3%	1%	3%	3%	7%	4%	2%	1%	1%	2%	8%	6%	7%	0%	2%	100%
Western	27%	2%	8%	1%	9%	5%	14%	4%	4%	1%	2%	4%	5%	7%	8%	1%	2%	100%
Roma LGA	24%	4%	7%	1%	5%	4%	13%	4%	4%	1%	1%	4%	8%	7%	10%	1%	2%	100%
Toowoomba	7%	1%	12%	1%	8%	4%	15%	4%	4%	1%	3%	7%	6%	10%	12%	1%	3%	100%
Fitzroy SD	6%	7%	11%	2%	9%	4%	14%	5%	6%	1%	2%	7%	4%	8%	9%	1%	3%	100%
Darling	13%	1%	11%	1%	8%	4%	15%	4%	4%	1%	3%	6%	6%	9%	11%	1%	3%	100%
South West	27%	2%	6%	1%	5%	3%	12%	5%	4%	1%	1%	3%	8%	7%	10%	1%	3%	100%
Queensland	4%	2%	11%	1%	9%	5%	15%	5%	5%	1%	3%	10%	6%	8%	11%	2%	4%	100%

Source: Australian Bureau of Statistics (2007) [19]

19 Australian Bureau of Statistics (2007), *2006 Census of Population and Housing.* Cat No. 2068.0, ABS, Canberra and Australian Bureau of Statistics (2003), *C-Data 2001, Second Release.* Australian Bureau of Statistics, Canberra, 2003. Taken from Queensland Curtis LNG Baseline Communities Assessment prepared by AEC Group

4.3.3 *Existing Social Values*

This section outlines social values in the Gas Field, including harmony, well-being and sense of community; access to recreation; access to community and social services, infrastructure and amenities; and regional and local planning values.

4.3.3.1 *Regional Planning Values*

Two regional plans are relevant to the Gas Field study area. The Draft Maranoa Regional Plan includes Tara, Miles and areas to the west, while the Eastern Downs Regional Plan addresses the Chinchilla and Dalby areas. Regional values identified in the Draft Maranoa Regional Plan vision include:

- safe, healthy communities
- thriving, sustainable industries
- respect for the past
- nurturing diverse landscapes
- creating a wealth of opportunity for future generations
- achieving a welcoming and growing region for all.

The draft Maranoa Regional Plan identifies the rural culture and relaxed lifestyle of the area as a key value. It also recognises that services in the region will need to 'meet or exceed those of other Queensland centres and offer a viable alternative to metropolitan living' in order to attract new residents, particularly energy workers and their families[20].

Key issues, identified in the draft Maranoa Plan as reflecting local values of sustainability and liveability, include[21]:

- managing growth associated with the development of energy resources in the Surat Basin
- maintaining profitability for enterprises reliant on transport services and facing fluctuating commodity prices
- addressing irregular climatic and weather conditions
- providing opportunities for young people who have traditionally migrated to urban areas
- attracting and retaining skilled staff; and
- accessing and providing essential services in smaller centres.

The Eastern Downs Regional Framework for Growth Management is known as 'New Horizons[22]' and is the major regional planning initiative for the district including the Chinchilla and Dalby areas. The regional profile for the area prepared for the Darling Downs notes regional values including:

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20 Draft Maranoa Regional Plan, page 11 viewed at www.dip.qld.gov.au/resources/plan/maranoa/ maranoa-districts-regional-plan.pdf on 30 September 2008.

21 Draft Maranoa Regional Plan, page 11 viewed at www.dip.qld.gov.au/resources/plan/maranoa/ maranoa-districts-regional-plan.pdf on 30 September 2008.

22 Eastern Downs Regional Planning Advisory Committee (2008) "New Horizons – Eastern Downs Regional Framework for Growth Management", viewed at http://www.ddroc.com.au/index 30 September 2008

- the agricultural sector as the area's most significant industry, including animal industries, grazing, cropping, horticulture, floriculture and related activities
- a range of housing styles and options
- strong manufacturing, retail and wholesale, mining and education sectors
- a strategic location at the junction of a network of highways
- emerging industries including energy, tourism and wine production.

4.3.3.2 Local Government Planning Values

Local planning plays an important role in measuring and achieving social, economic and environmental management goals within a community. The desired outcomes reflect community expectations and needs and provide an understanding of the core values of community.

Local planning in the Gas Field region is governed by the Western Downs Regional Council. Formed on 15 March, 2008, the new council consists of six former Council areas: Dalby Town, Chinchilla Shire, Murilla Shire, Tara Shire, Wambo Shire, and Division Two of Taroom Shire (Wandoan area). Each of these councils has its own planning scheme and until a common scheme is developed, these plans continue to guide the strategic direction and development of communities in the Western Downs Local Government Area.

The desired outcomes for social, economic and ecological development for each former council is presented in *Table 8.4.19.* Overall, the strategic direction of local government is consistent throughout the region. Communities value their rural lifestyle and local planning values reflect this through the encouragement of activities which protect and enhance the character of towns. The agricultural industry has shaped the character of many towns. Future economic activities based on existing industries and agricultural resources are encouraged. Diversification of industries consistent with town character is also considered vital in increasing economic and employment opportunities and improving the range of facilities and services available to the community.

The present day Western Downs Regional Council area has been in drought or close to drought conditions for a large period of time since 1995[23]. This has had various socio-economic impacts on the communities. Farming communities, which are predominant in the region, have been most directly affected by drought. Some of the key social impacts on farming communities are adverse economic impacts which affect direct consumption and adverse impacts on mental, physical and emotional health[24], as well as access to key services such as mental, emotional and physical health and education. Drought has also affected other business communities in the Dalby region exerting social impacts similar to that of farming communities[25].

23 http://www.longpaddock.qld.gov.au/QueenslandDroughtMonitor/QueenslandDroughtReport/index.html. Accessed in March, 2009

24 http://www.csu.edu.au/research/crsr/research/Social%20Impacts%20of%20Drought.pdf. Accessed in April, 2009.

25 http://www.isrd.cqu.edu.au/FCWViewer/getFile.do?id=21758. Accessed in April, 2009.

Table 8.4.19 **Desired Outcomes of Planning Schemes in the Gas Field region**

Dalby Town TPS 2007	Tara Shire TPS 2006	Chinchilla Shire TPS 2006, Murilla Shire TPS 2006, Wambo Shire TPS 2005, Taroom Shire TPS 2006
• Historic architecture and cultural heritage is protected. • Convenient access to a diversity of housing, shopping and other business services, community and recreational facilities, and employment. • Community infrastructure is diverse and meets the needs of the entire community including residents, the aged, youth, visitors and people with disabilities. • Future development is consistent with the character of the community – safe and relaxed with a sense of place. • Development minimises adverse environmental impacts. • Residential development reflects the characteristics of the population yet maintains the character of a country town. • Future economic activities are based on existing industries and agricultural resources, yet allow for diversification consistent with the town's character. • Dalby is economically stronger and an increasingly attractive place to work and live. • Economic resources, especially GQAL, are not comprised by incompatible land uses or development.	• Natural habitats are protected from inappropriate development. • The quality of Shire's water, land and air resources is improved. • Good Quality Agricultural Land (GQAL) and mineral reserves are protected from incompatible development. • Economic activity and employment opportunities need to grow. • Development reinforces a sense of community, providing residents with open spaces for recreation and appropriate access to social services. • Development has consideration for impacts on cultural heritage. • The character of towns in the Shire is protected and enhanced. • Open spaces and natural landscapes characteristic of the shire are preserved.	• Development is managed to minimise adverse impacts on ecological systems and unique natural features. • Main towns continue to be the principal place for business and commerce within the shire. • Development provides a range of services and facilities and diverse housing options and supports the health and safety of communities. • Infrastructure reflects community expectations and maintains the amenity and rural character of a community. • The economy is enhanced by sustainable use of natural resources. • Rural industries, economic resources and productive rural land are protected and enhanced to ensure future economic potential and viability.

Note: The planning schemes adopted by the shires of Chinchilla, Murilla, Wambo and Division 2 of Taroom are based on the same environmental outcomes and therefore grouped together.

Dalby 2013 Strategy

The Dalby 2013 Strategy was developed in 2003 to provide a strategic framework for addressing economic, social and environmental issues and improving community wellbeing. Key issues or areas of concern which were identified by the community during development of the strategy include:

- Access to educational and training infrastructure – Improving access to

educational and training infrastructure is seen as a critical step in developing Dalby as a major manufacturing and service centre. Suggestions included expanding local educational facilities (e.g. Dalby Agricultural College and Dalby SHS) and developing relationships with research-based universities whose work underpins the region's industrial base.

- Retention of young people – As in many rural centres, the retention of young people is considered a major problem in Dalby. The community recognises that in many cases it is necessary for young people to leave the area for study purposes, but believes more can be done to increase the attractiveness of the area to both current and previous students. Conducting student placements across a wide range of services and industrial sectors was suggested as a solution to improving the integration of young people in the community. Work is viewed as a critical step in youth developmental experience by both young and old members of the community because it helps counteract boredom and encourages greater community involvement.
- Industrial and service development – While rural industries will continue to account for the majority of the Dalby region's future exports, a number of issues such as an ageing workforce and dwindling farm incomes challenge these industries. Much like the rest of rural Australia, only a small percentage of farm enterprises are profitable with many farmers struggling or dependent on supplementary income to remain viable. Members of the community recognise the importance of industrial and service development in supporting the future viability of farming industries and character of Dalby and the surrounding district.
- Social planning – Despite having a high labour force participation rate, Dalby has a significant number of persons who have special needs or are in receipt of government benefits. Improved social planning is recognised as an important step in encouraging greater participation of differently able people in a range of activities (e.g. education, employment and training) and increasing community cohesion.
- Integration of Indigenous people – Aboriginal organisations currently provide 115 jobs in Dalby and spend several million dollars in the economy. In discussions with these organisations, it was apparent that attention needs to be paid to achieve the attitudinal change necessary for more harmonious relationships with better economic integration. The Dalby community recognised that a strategic approach was needed to address these issues and encourage sustainable development. The Dalby 2013 Strategy was developed to cater to these needs and achieve an overall vision:
- 'By 2013 the Town of Dalby will have consolidated its position as one of Australia's most liveable major inland manufacturing and rural industry centres.'

Dalby's aim is to be a competitive and attractive area that offers sustainable community wellbeing while retaining its valued characteristics.

4.3.3.3 Sense of Community and Well-being

At the most southerly end of the upstream area are the towns of Tara and Kogan, with Chinchilla north-west of Kogan, and Condamine north-west of

Tara. Miles, north of Condamine is in the heart of the upstream area, while Wandoan is at its northern end. Dalby is the regional centre in the south east.

The towns are briefly described below, with an indication of community values in the area based on secondary data reviews and primary data collected through community survey and community consultations.

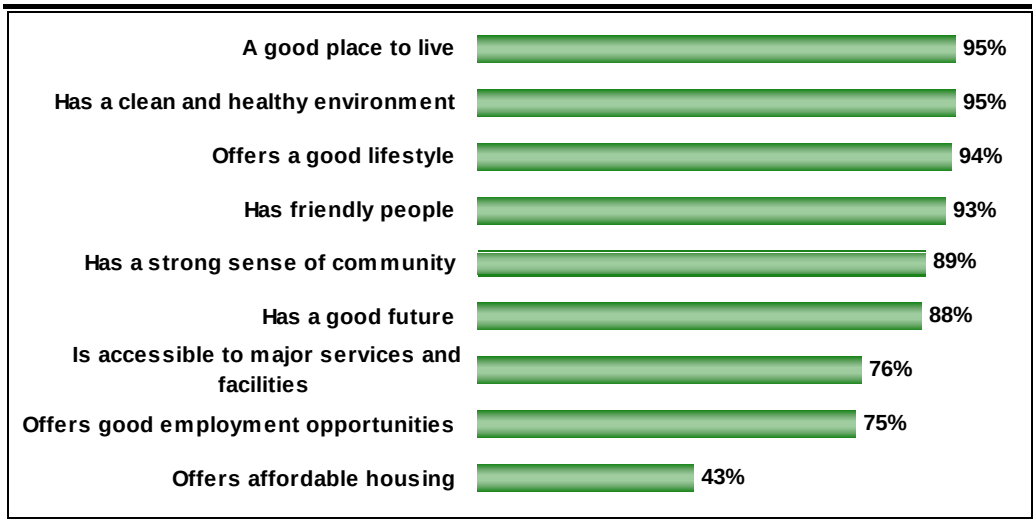
A survey of 400 people living in the Gas Field communities was undertaken by the Project to assess overall community values and attitudes in the Western Downs region (for survey details refer to *Appendix 8.2*). This survey is hereon referred to as the "Community Attitudes Survey". The survey results indicate that a large majority of the local communities in the Gas Field area are positive about the emergent development boom that Queensland and their region. The communities are content with their lives; they perceive that there is a strong sense of community in their towns, a healthy environment, good lifestyle, good living conditions and access to good services and facilities. However, compared with other quality of life indicators, few (43 per cent) people in the Gas Field thought that their community offered affordable housing.

The community attitudes survey results are illustrated in Figure 8.4.7 below. Where available for towns within the LGA, results are presented in each section.

Tara

The Tara region, southwest of Dalby, was a rural shire until amalgamation with other local councils to form Western Downs Regional Council in March 2008. The region has around 4,000 residents, and includes the townships and locations of Tara, Meandarra, Glenmorgan, The Gums, Moonie, Westmar, Inglestone, Hannaford and Flinton. Tara, as the centre, is a town of some 900 people.

Figure 8.4.7 Community Attitudes Survey Results: Gas Field Sense of Community and Quality of Life



Source: UMR (2008) Community Attitudes Survey for QCLNG Project

The region is known for its diverse industries including wheat, beef and wool production, oil (at Moonie, since 1961) and more recent industries such as ostrich and goat farming, and arts and crafts. The Tara community's vision is to'provide all residents with continual growth and improvement of lifestyle, prosperity and stability'[26].

Tara has a strong and cohesive community, as evidenced by the range of social infrastructure and cultural and recreational activities available in the area.

Kogan

Kogan is at the crossroads between Chinchilla, Dalby and points east and north, and was originally an exchange point and timber centre. Kogan has a close-knit and active community, centred on the school and country values.

Although small, Kogan has benefited from an active community and partnerships between the Regional Council and energy companies operating locally, with significant upgrading in progress of the town and its facilities. The upgrading includes a major investment in the town's social infrastructure with the development of a multi-purpose building for community-group meetings and workshops, and the development of an interpretive walkway commemorating former local Australian artist Hugh Sawrey.

Chinchilla

Chinchilla was also a shire with a history dating as early as 1881. It was amalgamated into the Western Downs LGA in March 2008. The Chinchilla region had a population of more than 6,000 people at the 2006 Census, with around 4,000 living in Chinchilla town which serves as a regional service centre. Key local industries include grain, cotton, melon production, horticulture and forestry.

Chinchilla is described as a family-friendly and culturally diverse community, with an active community life, good social infrastructure, and a rural lifestyle with a range of amenities. The Chinchilla community's vision as expressed by the former council[27] is for 'a progressive, vibrant, friendly and viable community within a safe, healthy and attractive environment':

Expansion of Surat Basin industrial operations has brought new demands and benefits to Chinchilla, which is positioning itself for the demands and benefits of the resources sector expansion. The announcement and construction of the Kogan Creek power station in 2004 brought an increased stimulus to the Chinchilla area, with for example the rate of new dwelling approvals tripling between 2004 and 2005.

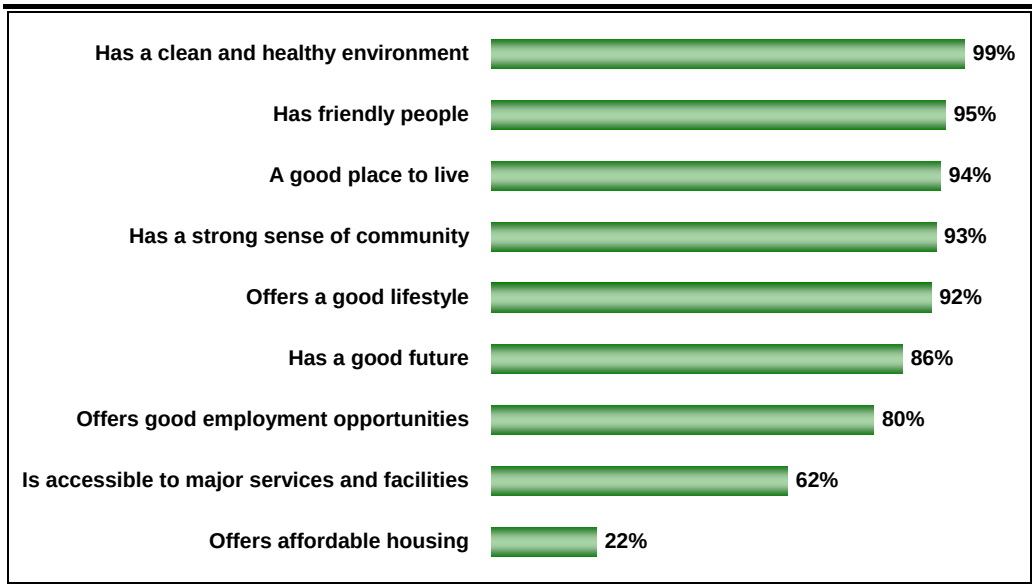
The community attitudes survey of residents of Chinchilla shows that a large majority of the community perceived that they have: a strong sense of community; a good place to live as it offers a good lifestyle, good future and good employment opportunities. However, the survey indicates that only 22 per cent in Chinchilla perceive that it offers affordable housing, indicating that

26 Former Tara Shire council website, viewed 30 September at www.tara.qld.gov.au

27 http://www.chinchilla.org.au/tweb/uplfiles/fil610.pdf. Accessed on 20 January, 2009

this is a critical issue in Chinchilla (refer to *Figure 8.4.8*).

Figure 8.4.8 Community Attitudes Survey Results: Chinchilla Sense of Community and Quality of Life



Source: UMR (2008) Community Attitudes Survey for QCLNG Project

Condamine

Condamine was formerly part of the Murilla Shire. It is a small rural town located 34 km from Miles on the Condamine River, and originated as a stopping place for the bullock teams on their way to Roma and Longreach. Condamine has less than 100 residents, but a strong sense of its history, and a strong sporting culture with football predominating.

Condamine's facilities include a hotel, caravan park and a roadhouse. Residents are generally reliant on services and shops in Chinchilla and Miles. The surrounding area includes feedlots and a fish farm.

Miles

Miles is situated at the crossroads between the Warrego and Leichhardt Highways. The town developed in 1878 to service the construction of the railway from Brisbane, and was formerly the railhead for supplies to the west. More than 20 historical buildings remain in Miles, giving it a strong sense of character and history.

Miles is the centre of the Murilla District which was a former shire before March 2008. The area boasts scenery including gorges, forests and rivers, and a strong heritage character in town. The former Murilla council vision was "to maintain a safe, healthy and friendly rural community underpinned by a solid economy and appropriate services"[28].

28 http://www.murilla.qld.gov.au/council/index.shtml. Accessed on 20 January, 2009

Miles has an active cultural and community life, with local productions, events and festivals. The area has a strong focus on visual arts, with the Murilla Shire Community Art Gallery as the centre. The schools are also hubs for activity and learning in Miles. Miles is part of the Queensland Heritage Trails Network, and has recently developed the 'Dogwood Crossing @ Miles' interpretive centre as part of the network.

Miles also has a range of active sporting, service and environmental groups. These services and the active rural lifestyle provide a strong sense of amenity in Miles, notwithstanding some limitations on services available.

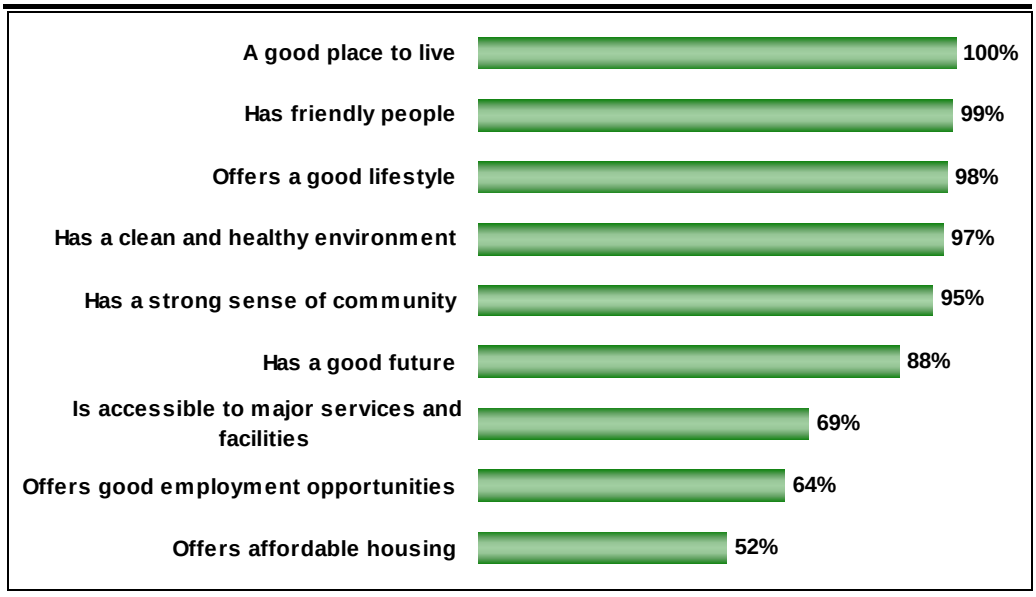
The community attitudes survey of residents of Miles shows that a large majority of the locals perceives that they have a strong sense of community and it is a good place to live as it offers a good lifestyle.

However, a relatively smaller percentage of people perceive that it offers a good future (88 per cent) and good employment opportunities (64 per cent). Compared to Chinchilla and Dalby, a larger percent (52 per cent) of respondents in Miles perceive that Miles offers affordable housing (refer to *Figure 8.4.9*).

Wandoan

Wandoan is a quiet rural town with a population of more than 400 people, located on the Leichhardt Highway about halfway between Taroom and Miles. It was formerly part of the Taroom LGA. Wandoan is a centre of longstanding local cattle and wheat industries, and for cattle trucking.

Figure 8.4.9 Community Attitudes Survey Results: Miles Sense of Community and Quality of Life



Source: UMR (2008) Community Attitudes Survey for QCLNG Project

Although small, Wandoan has a strong and cohesive local community, which has developed the Wandoan Cultural Centre housing the local library and a public hall. The area's amenities and attractions include a school, emergency services, an environmental park and historical points of interest.

Dalby

Dalby is on the crossroads of the Warrego, Moonie and Bunya Highways, and is a thriving town of some 10,000 people. It was proclaimed a municipality in 1851. Following council amalgamations in 2008, Dalby became the centre for the Western Downs Regional Council which incorporates several former shires (as detailed elsewhere).

Dalby's vision (formulated in 2003) is that: "by 2013 the Town of Dalby will have consolidated its position as one of Australia's most liveable major inland manufacturing and rural industry centres"[29]. Agriculture is the regional strength of Dalby's economy, but Dalby also has a strong manufacturing sector and is the regional centre for shopping and services. There are productive local partnerships between businesses and the Council, and a focus on renewing the town's amenities and infrastructure.

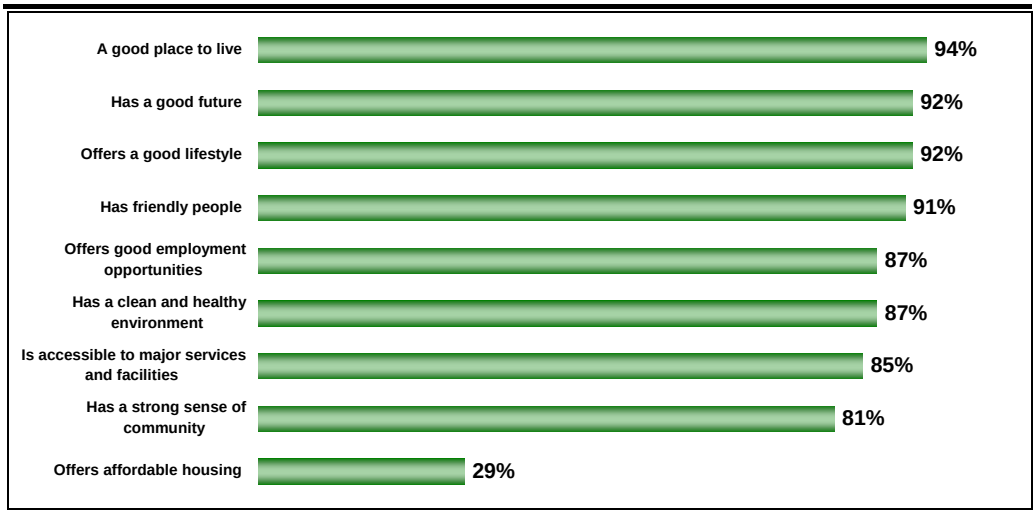
Dalby is also a district educational centre, providing access to the high school, agricultural college and local TAFE. Local attractions include a museum, heritage walking trial, memorial parks and a regional art gallery, while events which typify local community and cultural values include the Australian Cottonweek Festival, several country picnic races, and an annual Field Day and Stock Horse Show.

Prior to council amalgamations, Dalby was surrounded by the Wambo Shire. This rural and rural residential district has a population of more than 5,000 people, and includes the townships of Jandowae, Bell, Kaimkillenbun, Warra, Jimbour, Macalister and Mowbullan.

The community attitudes survey of Dalby residents shows that a large majority of the community perceives that: they have a strong sense of community, and it is a good place to live, with friendly people, a good lifestyle and good employment opportunities (refer to *Figure 8.4.10*). Only 29 per cent perceive that it offers affordable housing, indicating that housing is a critical issue in Dalby.

29 http://www.dalby.qld.gov.au/Council/Docs/Dalby%202013_Final%20Submitted%20Dec%2019%202003.pdf. Accessed in December, 2008.

Figure 8.4.10 Community Attitudes Survey Results: Dalby Sense of Community and Quality of Life



Source: UMR (2008)Community Attitudes Survey for QCLNG Project

4.3.4 Existing Community Infrastructure and Amenities

This section outlines the level of community infrastructure available in the Dalby region, including community services and facilities, health and emergency services, educational, recreational and sporting facilities, cultural events, and water and transport networks. The community attitudes survey of the local residents in Western Downs LGA shows that 76 per cent of the respondents in the Gas Field considered that the region offers good access to community infrastructure. Specifically, 62 per cent in Chinchilla, 85 per cent in Dalby, 69 per cent in Murilla Shire and 89 per cent in Toowoomba considered that the region offers access to major services and facilities. The community attitudes survey indicates that most residents in the Gas Field region appear to be satisfied with the level of community services and facilities available to them, however 15 per cent of survey respondents expressed moderate or serious concern about accessibility to community services and facilities.

An overview of existing social infrastructure in Western Downs LGA is provided in *Table 8.4.20,* below (for a more detailed inventory refer to *Appendix 8.3*). The capacity (ability to meet current demand) and quality (maintenance needs) of the facilities are not commented on here, but the capacity and benchmarking issues are discussed in the impact assessment section (refer to *Section 4.4.4*). Western Downs LGAs contain a large number of facilities, which reflects how the dispersed settlement pattern demands a higher rate of provision to ensure access for smaller and more remote communities. For some facilities, such as the provision of ambulance stations and community halls, the higher rate of provision reflects the efforts of small, isolated communities in developing their own facilities to meet their needs.

Table 8.4.20 provides a list of social infrastructure facilities available in Western Downs LGA. Western Downs LGA has a number of regional-level facilities including:

- Dalby is the main service centre providing a range of district-level facilities

and regional education facilities such as TAFE (two campuses in Dalby and Chinchilla) and the Australian Agricultural College Cooperation, and two courthouses in Dalby and Chinchilla. Dalby also has district-level services such as a high school and health centre

- Chinchilla is a significant local centre with regional-level and district-level education, arts, cultural and courthouse facilities
- Miles is another albeit smaller, local centre providing district-level facilities such as emergency services, a high school and a recently redeveloped rural, community hospital
- Wandoan and Tara are rural villages with a district-level role in education services. Tara has emergency services also, supporting the northern and south-western remote areas of the LGA respectively.

Toowoomba is the base for a number of high-order infrastructure facilities and services such as specialist medical services and regional cultural facilities.

Table 8.4.20 Overview of Existing Social Infrastructure in Western Downs LGA

Facility by Type	Existing Provision of Social Infrastructure in Western Downs LGA
GENERAL / CIVIC	
Regional: Entertainment Centre	0
Correctional Centre	0
Courthouse	2
District: Community Centre	0
Library	1
Youth Facilities	2
Local: Library	6
Community Hall/Centre	13
ARTS/CULTURAL	
Regional: Art Gallery	0
Performing Arts Spaces/Convention Centre	0
Museum	0
District: Performing Arts Spaces/Convention Centre	2
EDUCATION	
Regional: TAFE College/Other	3
University	0
District: Secondary School (public	6
Local: Child Care Centre	6
Kindergarten	13
Primary School (public)	24
HEALTH	
Regional: Community Health Hub	0

Facility by Type	Existing Provision of Social Infrastructure in Western Downs LGA
Hospital – public	1
District: Aged Care Service/Respite Centre	3
Community Health Centre	0
Local: Rural Community Health Centre	5
EMERGENCY SERVICES	
District: Ambulance	3
Fire and Rescue	6
Police Station	6

4.3.4.1 *Community Infrastructure Facilities, Services and Amenities*

Health and Aged Care Facilities and Services

Western Downs LGA is serviced by the Toowoomba, Darling Downs and Southern Downs Health Service Districts. It has one public hospital (including a district-level community health centre) located in Dalby as well as five other rural community health centres serving Miles, Millmerran, Chinchilla, Jandowae and the regional indigenous community (Goondir Health Services). The Miles Hospital (classified for the purpose of the needs assessment as the Rural Community Health Centre) has recently been redeveloped to incorporate a new emergency department, x-ray unit, pharmacy, acute-care ward, hospital kitchen and laundry area, 14-bed residential aged-care facility and 13-bed acute-care ward. Outpatient clinics operate at Glenmorgan, Moonie and Wandoan. Wandoan is serviced by an Outpatients Clinic with a full-time director of nursing and visiting doctor from Taroom twice a week. Services offered through the Outpatients Clinic include accident and emergency, community palliative care and domiciliary nursing and visiting allied health professionals.

Despite there being a number of health service facilities in the Gas Field region, it should be noted that physical access to these services is often difficult for many residents, particularly those on low incomes or without access to a private vehicle. There is a high reliance on private road transport due to the size of the Western Downs LGA and the Health District, and low population densities. Public transport is also limited, with only one bus service operating in the township of Dalby. Transfer programs operate for hospital inpatients and a number of government-funded specialist services provide transport for eligible older people and people with disabilities. Residents also have access to emergency air services such as those operated by the Flying Doctor Service.

There is evidence of a lack of general practitioners in the area, as is experienced in many areas of rural Queensland. Lack of access to medical practitioners was the second highest cause of concern of participants in the community attitudes survey, with 44 per cent of respondents concerned about the issue.

There are three aged-care services in Western Downs LGA run by Bluecare in Chinchilla, Miles and Dalby. A number of retirement villages, hostels and nursing homes exist also.

Education and Child-Care Facilities and Services

Within the LGA, there are six State secondary schools and 24 primary schools (two each as Prep to Year 10 schools), with five secondary schools located in the main townships of Dalby, Chinchilla, Miles, Tara and Wandoan. In addition, there are five Special Education Units (three in Dalby, one in Chinchilla and one in Tara), a University of the Third Age/U3A program (adult education) in Dalby, Parents and Citizens/Friends. The community attitudes survey indicates that a lack of local schools and educational facilities is not of major concern in Gas Field communities. Only 7 per cent of participants in the survey were worried about the level of educational facilities available.

Western Downs LGA has regional-level facilities including TAFE (two campuses in Dalby and Chinchilla), the Australian Agricultural College Cooperation, and two courthouses (in Dalby and Chinchilla). The provision of these regional-level facilities should be acknowledged in light of the recent local government boundary changes which resulted in the amalgamation of Dalby, Wambo, Chinchilla, Murilla, Tara and Taroom to form the Western Downs Regional Council.

There are six child-care centres and 13 kindergartens servicing the Western Downs LGA. Half of the child-care centres are found in Dalby while the remaining three centres are based in Moura, Chinchilla and Tara. Kindergartens have an important role in rural communities and the current supply of kindergartens in the Western Downs LGA reflects the dispersed settlement pattern of the communities here.

Police and Emergency Services

There are a number of emergency facilities in the Gas Field region including six police, six fire and rescue (all auxiliary facilities), three ambulance stations and six state emergency services. The number of emergency facilities available in the region reflects the dispersed settlement patterns of communities in Western Downs LGA. In the case of fire and rescue, smaller townships may have their own rural fire brigades which are run entirely by volunteers.

There are no correctional facilities in Western Downs LGA. This region is serviced by facilities in South East Queensland.

Community Facilities

There is a range of community centre, library and youth facilities available in the LGA:

- library: one district (central) library in Dalby and six local libraries in Chinchilla, Meandarra, Miles, Tara, Jandowae and Bell
- community centres/halls: 13 local-level community centres and halls located throughout the LGA
- youth facilities: two district-level centres, the Myall Youth and Community

Network Centre and the Police Citizens and Youth Club, both located in Dalby.

Dalby also has art centres and galleries, theatres, and community centres to support its cultural life. Several cultural events and festivals are held annually and biannually in Dalby, Chinchilla, Miles, Tara and Wandoan. A large number of cultural festivals indicate good social and cultural capital and reflect good community cohesion.

Recreational and Sporting Facilities

There are about 13 sporting and recreational facilities located in Western Downs LGA. Additional facilities proposed for Dalby include the Dalby Wambo Events Centre, an aquatic centre and a combined sporting complex including an indoor pool. Further sporting and recreation facilities are available in the neighbouring Toowoomba LGA including regional facilities such as the Toowoomba Indoor Sports Centre, Milne Bay Aquatic Centre and sporting fields.

Sport is an important part of life within the Gas Field with more than 70 active sporting clubs and recreational associations, ranging from horticultural societies through to tennis associations and water-skiing clubs.

The Dalby Town and Wambo SLA Community Facilities Development Plan has identified that some of these clubs need better planning and identification of a direction; better understanding of funding grants and sponsorships; training in volunteer recruitment, management and financial management, and strategies to increase overall participation.

There is also a variety of passive and active recreation spaces located within the Western Downs LGA. These include walking trails, cycle paths, parks and gardens, golf courses, picnic areas, cycling paths and showgrounds, which are located in Tara, Dalby, Chinchilla, Miles, Meandarra and Glenmorgan. Some facilities such as the Lions Park in Tara include active as well as passive recreation infrastructure such as basketball courts and children's play areas[30].

The community attitudes survey indicates that only 10 per cent of respondents expressed concern over a lack of sporting facilities available in the region. This is consistent with the Community Facilities and Development Plan of Western Downs Regional Council which documents that residents appear to be satisfied with the number of sporting and recreational facilities in the region.

Roads and Transport

Western Downs LGA is serviced by air, rail and road infrastructure. The Warrego, Moonie, Leichhardt and Bunya Highways all pass through Dalby linking it to Toowoomba and Roma, providing access to Brisbane and the coast. The local road networks provide access between towns and settlements within Western Downs LGA, and are managed by Western Downs Regional Council.

30 Western Downs Regional Council, Tara Profile, http://www.tara.qld.gov.au/visitors/Parks.shtml Accessed September 2008

The residents of the Western Downs LGA primarily depend on private transport by road and there is limited public transport available outside the township of Dalby, which may contribute to limited access issues in the region.

A bus service operates within the town of Dalby and overnight courier services are available to Brisbane[31]. Long-haul bus services are operated by Kynoch Coaches and Greyhound buses. Kynoch Coaches operates a return service six days a week from Cunnamulla to Toowoomba via St George, Moonie, The Gums, Tara and Dalby. Greyhound operates daily services from Dalby to Toowoomba, as well as longer routes from Rockhampton to Brisbane via Biloela, Moura, Theodore, Miles and Toowoomba.

Dalby is serviced by the main western rail line which originates in Brisbane passing through Toowoomba, Dalby and on to south-west Queensland. The main western line provides the Qlink freight service and Westlander passenger rail service connections from Toowoomba to Dalby[32]. The western line also transports coal from the region to the Port of Brisbane. A new rail link from the Tarong Power Station to Chinchilla has been proposed.

There are four regional aerodromes servicing the region. The Dalby Aerodrome Airport provides courier services overnight throughout Australia as well as charter services, crop spraying and gliding facilities, whils thre Chinchilla Areodrome provides similar servies but at a smaller scale.[33] . An airport located 30 km from Toowoomba in Oakey is primarily used for military purposes. A small airport is located in Toowoomba; however there are no regular scheduled passenger flights. Its major use is for charter services and repair and servicing of small aircraft[34].

The quality of roads and their capacity to handle future traffic increases due to rapid development is a major Western Downs LGA community concern. The community attitudes survey showed that 53 per cent of respondents worry about this issue. Consultations with the community, during the traffic and transport study and the heritage survey, as part of the EIS, also identified the demands of various projects on road infrastructure.

Water

The Gas Field communities are within the Condamine–Balonne Basin Water Catchment Area. The Department of Environment and Resource Management in Toowoomba is responsible for operational management of this catchment.

Water management in this area has long been a contentious issue with demand for agricultural, industrial and urban development outstripping availability. For example, while most urban settlements have access to potable water, Toowoomba City's referendum in mid-2006 on the use of recycled

31 Western Downs Regional Council, Road Network http://www.dalby.qld.gov.au/business/road_network.asp, Accessed September 2008.

32 Western Downs Regional Council, Railways, http://www.dalby.qld.gov.au/business/rail.asp, Accessed September 2008.

33 Western Downs Regional Council, Air Services, http://www.dalby.qld.gov.au/business/air_services.asp. Accessed September 2008.

34 Total Travel – Toowoomba Airports, http://www.totaltravel.com.au/travel/qld/toowoomba/toowoomba/travel-guides/airports/toowoomba-airport Accessed September 2008

water highlighted the growing competition for water resources within the region.

The situation is exacerbated because the area has experienced prolonged drought. The lack of reliable water sources for agriculture and industry is a contributing factor in the location and development of industry within the region over the past 10 years[35].

The water issue in the region is compounded by the perceptions of the potential impact of the CSG industry on the groundwater levels and the issues around the production of associated water (water from coal seams) (refer to *Volume 3, Chapters 10* and *11*). Social implications of above-mentioned water-related issues in the Gas Field are discussed in *Section 4.4.6.7* of this chapter.

4.3.4.2 Social Infrastructure Needs Assessment

Social infrastructure for this impact assessment is defined as it is in the South East Queensland Regional Plan Implementation Guideline No. 5[36] referring to the services, facilities and networks that enhance the community's wellbeing and their capacity for development.

A baseline assessment of existing social infrastructure needs (i.e. without project) in the Project area was undertaken by QGC. Key factors and findings of the community infrastructure needs analysis based on the population growth are presented in *Table 8.4.21* below (also refer to *Appendix 8.3*). Comparisons in the table relate to the data for the study area as a whole.

Table 8.4.21 Social Infrastructure Needs Assessment for Western Downs LGA

Topic	Analysis
Main service centres	An agricultural and resources-based local economy with a dispersed rural settlement pattern, supported by regional facilities at Toowoomba. Main service centres are: Dalby – main service centre with district-level facilities and services Chinchilla – significant local centre, second-largest town (also offering some district and regional-level facilities) and a base for a number of large camps for resources industry workers Miles – local centre Tara and Wandoan – rural villages with some district facilities.
Population growth	Small growth (+5,300 people) reaching nearly 34,800 by 2026. Growth is expected in the following areas (SLAs): Dalby +1,800 (to 12,200 people) Chinchilla SLA +1,100 (to 7,400 people) Wambo SLA +1,000 (to 6,500 people) including the towns of Miles and Condamine, and the villages of Dulacca and Drillham.
Population profile	A relatively ageing community with highest proportion of people 65+ years in the study area A relatively lower income community Highest proportion of households with no car Highest representation of indigenous people High proportion of single-parent and lone-person households Highest proportion of people who follow Christianity

35 http://www.siqacc.com/news/Documents/Strategic_Regional_Plan_07_10.pdf, Accessed September 2008

36 Queensland Government (Office of Urban Management) and Briggs, S., Elliott D., Young A. & SGS (2005): South East Queensland Regional Plan Implementation Guideline N. 5: Social Infrastructure Planning

Topic	Analysis
Expressed needs	Maintain supportive and cohesive communities focused on the network of towns and rural villages Provide employment and training opportunities for young people (who drift to urban areas) Access essential services in smaller centres Attract and retaining skilled staff More child care centres in Dalby which is experiencing a very high demand because of a shortage already exists.
General/Civic	
Benchmarked need to 2026	District facilities: Two community centres (one by 2011 and one by 2026) One district library (by 2021) Local facilities: apparent oversupply of local libraries (two) and community halls (one) allowing for growth by 2026
Arts/Cultural	
Benchmarked need to 2026	District facilities: none indicated. Local facilities are assumed to be accommodated in local halls/community centres.
Education	
Benchmarked need to 2026	Local facilities: Five primary schools (two by 2011, two by 2021 and one by 2026) Six child-care centres (four by 2011, one by 2021 and one by 2026) Apparent oversupply of kindergartens (five) allowing for growth to 2026
Health	
Benchmarked need to 2026	Local facilities: 0.5 aged care/respite centre (by 2026)
Emergency Services	
Benchmarked need to 2026	Local facilities: 0.5 ambulance station (by 2026)

Community Facilities

For the community services such as community centres, town halls, libraries, the benchmarking results have overstated the facilities required given the distribution of the population. Benchmarking indicates two district community centres, however given the low-density and dispersed settlement pattern it is unlikely that two could be justified. A more appropriate outcome is likely to be to maintain the presence of existing local halls (13) across rural towns and villages, and to provide one district community centre in Dalby, consistent with its role as a district service centre. This may be able to be achieved as an extension of the existing hall, or as a new centre.

Given the high level of disadvantage in the LGA, and the expressed need for better access to essential services, selected local halls may need upgrading to accommodate outreach service delivery for more remote areas (such as children's health programs and youth employment training programs).

Similarly, the Dalby district library could best assume a central library function (likely under recent local government amalgamations), supported by the existing local libraries in the outlying rural villages. If needed, library services could be extended to outer-lying areas through mobile library services.

Education and Child Care Facilities

The LGA currently has 24 primary schools. While the benchmarking results indicate five new primary schools for the LGA, these are overstated as they aggregate population growth in what is a dispersed pattern of settlement. Given this, it is necessary to examine the benchmarking results against the

likely distribution of growth, and review the likely effect on triggering thresholds in existing school catchments.

While Queensland Education does not use population size alone for benchmarking in school planning, it is useful to compare the current rate of provision of primary schools in Dalby (currently provided at the rate of 1 school to 5,000 people) with the comparative rate for urban areas of 1:7,500. On this basis, schools in Dalby township have capacity for a population of up to 15,000 people, 3,000 more than the peak population of 12,200 expected by 2026. Population growth is unlikely to exceed 1,000 people in any other settlement, and is not considered to be sufficient to trigger the need for an additional school. Applying this logic, the need for any additional primary schools in the LGA is unlikely. Also an older age profile of the region might explain the lower number of students in secondary schools. Although there are sufficient secondary schools in the LGA, consultations indicate they require an upgrade of facilities and education programs to cater to the changing needs of the community.

Benchmarking indicates the need for six additional child-care centres in Western Downs LGA which may also be overstated in a similar way as for schools. Dalby Shire currently provides child care well below the benchmarked rate (at 1:4,900 compared with 1:3,000 for Rural LGAs and 1:4,000 for urban areas). There is also a very strong need expressed for child care in Dalby township where there are currently three centres with long waiting lists, with a likely demand for two additional centres. A further two centres may also be needed, one in Division 2 of Taroom SLA (reaching a population of 626 people by 2026) and Wambo SLA (at 6,500 people by 2026) which includes the villages of Jandowae, Bell, Warra, and Jimbour. This analysis reduces the number of centres indicated in the benchmarking to take into account the sparse distribution of the population. The oversupply indicated by the benchmarking for kindergartens is due to the need to provide facilities to a dispersed population.

Health and Emergency Facilities

The Dalby hospital/community health centre is supported by five rural community health centres (including community hospitals). No additional facilities are indicated in the benchmarking, though there may be a need for facility modification and service re-alignment to be more responsive to community demands. However, the benchmarking indicates a growing demand for an aged care/respite centre. Some residential care facilities are provided in the Dalby Hospital. However, there appears to be a need to expand respite care capabilities in the LGA, possibly at Dalby or more centrally at Chinchilla.

Ambulance stations are already provided in the expected growth areas (three already exist in Dalby, Chinchilla and Miles). Given that these stations are located on the basis of response-time criteria, no additional demand for ambulance stations is anticipated. Fire and rescue stations and police stations are adequately provided, according to benchmarked results.

In summary, the population increase is not sufficient to trigger the need for additional community facilities, but will generate additional demand for community and family services, child care, health facilities, school attendance. Access to, or attracting specialists such as medical practitioners and high

school teachers to the region, are issues. Public transport services are also inadequate and may need augmentation to respond to the needs of the low-income population.

There are immediate needs identified for youth and young children support services related to issues associated with workers' camps based on the regions past experience as these camps induce an imbalance in population composition with dominance of single males with high salaries indulging in unaccepted behaviour.

4.3.5 Existing Health and Safety and Security Profile

4.3.5.1 Health Status

Health determinants for Queensland as a whole were published by the Queensland Government in 2004, and are described in *Volume 8, Chapter 6*.

Hospital admissions

The Gas Field Component is within the Toowoomba and Darling Downs Health Services District. During 2007–08, the district managed over 44,725 admissions (of which 20,009 were day-only admitted patients), over 644,611 total non-admitted occasions of care, and 2,515 births[37]. The highest diagnostic-related groups for the district were related to renal dialysis, antenatal and other obstetric admissions, chemotherapy, births, chest pain, colonoscopy, gastric disorders and other factors.

Self-reported Health Status

The community attitudes survey indicated that 95 per cent of residents felt that they had a clean and healthy environment. The key health concern was access to medical practitioners. Forty-four per cent of respondents were concerned about this issue, with 25 per cent highly concerned and 19 per cent fairly concerned. It should be recognised that such concerns are not limited to this area, but are generally concerns for regional places throughout Queensland and Australia.

Social Determinants of Health

The following section focuses on social determinants of health as other determinants are covered elsewhere in the EIS. In general, the significant health determinants can be predicted based on broad socio-demographic characteristics. In general, compared to Queensland as a whole, Toowoomba and Darling Downs Health Service District (which includes the Gas Field communities) has[38]:

- a higher proportion of females

37 Queensland Health (2007): *Queensland Health – Annual Report 2007-08*, Queensland Government, Brisbane. http://www.health.qld.gov.au/publications/corporate/annual_reports/annualreport2008/docs/QH_section-3.pdf. Accessed on 24 November, 2008.

38 Queensland Government (2004) Health Determinants Queensland 2004 Toowoomba Health Service District

- a higher proportion of young people (aged 15 to 24 years)
- a higher proportion of older people (aged 65 years and above).

The key health determinants or preventable morbidity factors which are currently more prevalent in this population than Queensland as a whole are believed to be[39]:

- overweight/obesity
- physical inactivity
- tobacco smoking
- poor diabetes management
- poor asthma management
- risk and protective factors for mental health
- hazardous and harmful alcohol consumption
- falls in older people.

Within the boundaries of the district, the socio-demographic distribution of the population varies considerably. Some areas have higher proportions of young children or young people and others have higher proportions of older people. The location of indigenous people and areas of greater socio-economic disadvantage also varies across the district.

Health Infrastructure and Services

The dispersed rural settlement pattern that has grown around the agricultural and resources-based local economy challenges equitable access to health services. Trends are towards increasingly remote service delivery in specialist medical care. Full details of the available health infrastructure and services are detailed in the community infrastructure section of this chapter.

During consultation, a shortage of child-care centres and a growing demand for aged care or respite care were highlighted. Attracting and retaining skilled staff was also highlighted as a challenge for the Gas Field communities.

Housing Adequacy

Among the general population there is an adequate stock of housing for the population and a higher proportion of dwellings are owned or being purchased than the Queensland average. Nevertheless, the growth in rental costs in the Gas Field area was higher than the national average between 2001 and 2006, and there are pockets where a high proportion of dwellings are rented. Both trends probably reflect the rapid increase in housing demand driven by the resources industry and construction developments.

As housing is an important determinant of health, it is important to ensure that the Project does not impact on housing availability or affordability. This is addressed in *Section 4.4.3.*

39 Queensland Government (2004) Health Determinants Queensland 2004 Toowoomba Health Service District

Social Capital

Communities with strong social capital, that is where there is enjoyment of social relationships and community connections, high levels of volunteerism, active community groups, and a prevalence of people helping each other, generally have a higher level of health and wellbeing.

As described in detail in *Section 4.3.3.3* the Gas Field region communities have very high social capital. The community attitudes survey found that 89 per cent of people agreed that the Gas Field area have a 'strong sense of community' and 93 per cent that it has 'friendly people'. The upstream and surrounding communities report levels of volunteering (22 per cent) considerably above the state level (14.6 per cent)[40]. The large number of service clubs, volunteer fire brigades, social clubs, community organisations and sporting and recreational facilities (refer to *Section 4.3.4*) are a good indicator of a culture of engagement and a supportive community. During consultation, a desire to maintain the existing supportive and cohesive communities was expressed.

Physical activity has a direct impact on health outcomes, and recreational facilities and opportunities are major contributors to promoting a healthier community. Appendix 8.3 - Social Infrastructure Baseline Report lists the sporting and recreational facilities and clubs which have been identified within the upstream communities, such as aquatic centres, tennis clubs, cricket grounds, and ballroom dancing clubs. Local government websites also promote the natural advantages of their areas for such pursuits as bushwalking, fishing, horse riding and water sports, as well as cycle paths, picnic areas, and parks and gardens. Access to some of these attractions and facilities is impeded due to the large distances in this region and lack of public transport.

Vulnerable Groups

This section presents baseline data on vulnerable groups in the general population, such that the impact analysis can consider whether they have the potential to be disproportionately affected by the Project activities. The groups described in *Table 8.4.22* are considered 'vulnerable' due to increased propensity to illness (e.g. older people and children), decreased capacity to pay for health services (e.g. low income, aged or unemployed), difficulty accessing culturally and socially appropriate health services (e.g. people speaking languages other than English, and people with disability). These health vulnerabilities are detailed in Queensland Health's 'Health Determinants of Queensland'[41] and briefly discussed below.

The section presents *Table 8.4.22* with the numbers and percentages of vulnerable groups in the Gas Fields area population, then describes each of these groups.

As seen in *Table 8.4.22*, the elderly population forms part of the vulnerable groups because the elderly tend to be more susceptible to change as they already experience higher rates of illness and disability, isolation due to lack of

40 ABS (2007): 2006 Census Community Profiles by Location, ABS, Canberra w.abs.gov.au/websitedbs/D3310114.nsf/Home/Census+Data Accessed September 2008

41 http://www.health.qld.gov.au/hdq/documents/22418_glance.pdf. Accessed in January, 20009

transport options or poor mobility, and fixed incomes which do not allow them to spend on private health care. Western Downs LGA shows significantly higher levels of people aged 65 years or over than the state average. This is likely to result in a growing demand for age-related health services in the years ahead.

Generally, more householders in Dalby are on lower incomes and may be experiencing socio-economic disadvantage. Dalby has a higher proportion of households earning less than $500 per week (22 per cent) compared to the study area as a whole (15.5 per cent) and the region (13.6 per cent) while the proportion of householders earning more than $1,000 per week is lower (37.3 per cent) than the study area (48.9 per cent) and the region (49.2 per cent[42]).

A profile of socio-economic disadvantage includes variables like unemployment, lower income and lower level of skilled occupations. People who are socio-economically disadvantaged experience poorer health and shorter life expectancy than the rest of the population as they cannot access quality health services, leisure and active health pursuits, disposal income for health issues and private transport to facilitate mobility to access health facilities.

Information about the number of people who need assistance with daily core activities is a crude indicator of the level of disability in a community and assists the planning of local services such as day-care and in the provision of information and support to carers.

42 ABS (2007): *2006 Census Community Profiles by Location*, ABS, Canberra www.abs.gov.au/websitedbs/D3310114.nsf/Home/Census+Data Accessed September 2008

Table 8.4.22 Gas Field Community Vulnerable Groups: 2006[43]

Sensitive Group	Age 0–14 years		Age 65 years +		Low income[1]		Unemployment		PWD[3]		LOTE[4]		Total Population
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
Location													
Western Downs LGA													
Chinchilla (S)	1,309	22	947	15.9	187	3.1	105	3.6	265	4.5	77	1.3	5,942
Dalby (T)	2,339	23.9	1,284	13.1	242	2.5	232	50	408	4.2	157	1.6	9,778
Murilla (S)	616	22.9	450	16.7	114	4.2	32	2.5	132	4.9	39	1.5	2,687
Tara (S)	857	23.3	438	11.9	165	4.5	112	7.1	261	7.1	60	1.6	3,677
Taroom (S)	520	21.8	329	13.8	103	4.3	21	1.5	85	3.6	3	0.1	2,389
Wambo (S)	1,264	24.2	690	13.2	191	3.7	95	3.7	209	4.0	39	0.7	5,228
Toowoomba (C)	18,431	20.4	13,808	15.3	2,458	2.7	2,152	5.1	4,633	5.1	4,105	4.6	90,199
Queensland	806,532	20.7	482,891	12.4	92,756	2.4	90,950	4.7	154,707	4.0	303,096	7.8	3,904,532

Notes:

1. Income of $299 or less a week.
2. Unemployed people over 15 years, looking for work. Percentage is based on the labour force, not the total population.
3. People with disabilities.
4. Language other than English spoken at home.

43 ABS (2007): *2006 Census Community Profiles by Location*, ABS, Canberra w.abs.gov.au/websitedbs/D3310114.nsf/Home/Census+Data Accessed September 2008

People with a disability tend to have poorer long-term health, and restricted employment opportunities and therefore less financial resources to maintain their quality of life. Western Downs LGA has a higher proportion of people requiring assistance with a core activity than Queensland as a whole.

Cultural background can adversely influence health outcomes due to a range of factors. These include limited service knowledge, poor language skills, and difficulty accessing services. The proportion of the population that speaks a 'language other than English' (LOTE) at home indicates the cultural diversity of a population and the level of difficulty that language barriers may pose to accessing services. The number of people in the Gas Field area who reported speaking a LOTE at home was significantly below the state and national average (both around 4 per cent). While Toowoomba had the highest proportion at 4.6 per cent, most LGAs hovered around 1.5 per cent. This suggests that the number of people facing difficulty accessing services due to language barriers is low. However, low numbers can also suggest greater isolation and less access to information, necessitating a more innovative way to provide support. The highest reported other languages across Western Downs LGA included Afrikaans, Portuguese and German[44].

As inferred from the baseline research distances and low density of population particularly those on low incomes or without access to a private vehicle find it challenging to physically access health services in the Gas Field area. Dalby has the highest proportion of households without a motor vehicle (6.9 per cent compared to 5.7 per cent for Banana LGA and 5.3 per cent for Gladstone45) indicating more restricted access to services and facilities for some households. Public transport is also limited, with only one bus service operating in the township of Dalby. Transfer programs operate for hospital inpatients and a number of government-funded specialist services provide transport for eligible older people and people with disabilities. Residents also have access to emergency air services such as those operated by the Flying Doctor Service.

Active Lifestyle, Community Capacity and Wellbeing

Physical activity has a direct impact on health outcomes, and recreational facilities and opportunities are major contributors to promoting a healthier community.

Appendix 8.3 Infrastructure Baseline Report lists the sporting and recreational facilities and clubs which have been identified within the upstream communities, such as aquatic centres, tennis clubs, cricket grounds, and ballroom dancing clubs. Local government websites also promote the natural advantages of their areas for such pursuits as bushwalking, fishing, horse riding and water sports, as well as cycle paths, picnic areas, and parks and gardens[46]. Lake Broadwater represents one such attraction in the Darling Downs. This is a declared conservation park and the only naturally occurring body of water. Located 30 km south-west of Dalby, it is popular for boating, skiing and windsurfers (when it has water), and for picnicking, camping and

44 ABS (2007): *2006 Census Community Profiles by Location*, ABS, Canberra w.abs.gov.au/websitedbs/D3310114.nsf/Home/Census+Data Accessed September 2008

45 ABS (2007): Census QuickStats by Location and 2006 Census Community Profiles by Location, ABS, Canberra w.abs.gov.au/websitedbs/D3310114.nsf/Home/Census+Data Accessed September 2008

46 Tara profile www.tara.qld.gov.au/community/Sport&Recreation.shtml Accessed August 2008

bushwalking. Bushwalking trails are also an attraction in the Bunya Mountains located north-east of Dalby[47]. Further sporting and recreation facilities are also available in Toowoomba LGA, including the development of over 70 km of cycle ways, mountain bike trails and walking paths, as part of the Council's Toowoomba Cycle and Pedestrian Strategy[48]. However, access to some of these attractions and facilities is impeded due to the large distances in this region and lack of public transport.

Social participation and interaction combined with the support of a strong and caring community generally enhances health and wellbeing[49]. The upstream and surrounding communities report levels of volunteering considerably above the state level (14.6 per cent), the highest being Jondaryan (33.4 per cent) and Taroom (28.6 per cent)[50]. The large number of service clubs, volunteer fire brigades, social clubs, community organisations and sporting and recreational facilities (refer to *Appendix 8.3: Social Infrastructure Baseline Report*) are another indicator of a culture of engagement and a supportive community.

Transport and communication are also key indicators of community capacity and wellbeing. A range of transport opportunities is thought to contribute to community capacity and individual wellbeing. As mentioned earlier, due to lack of public transport in the region, the residents are forced into reliance on private motor vehicles, which may not be necessarily accessible to all due to certain disadvantages.

Internet access is another indicator used to assess community capacity and wellbeing in light of the trend for both government and the private sector to conduct more and more business online. This means that internet access is becoming increasingly important for undertaking business. In the Western Downs LGA, 50.1 per cent of households had internet access compared with 62.8 per cent in the State[51]. However, connectivity to the internet in remote areas may be an issue.

4.3.5.2 Safety and Security Status

The community attitudes survey showed that a small proportion of respondents are concerned about break-ins and crime (16 per cent are 'worried a lot' and another 16 per cent are 'worried a fair bit').

The crime statistics for the Police Service Districts covering the Gas Field area are summarised in *Table 8.4.23* below. There are no clear trends in the data, with some offences falling and others rising over time and no clear difference from Toowoomba, the regional comparator. Given the small dataset, statistically significant information on trends has not been drawn.

47 Dalby tourist attractions www.dalby.qld.gov.au/tourism/ Accessed August 2008

48 Toowoomba City Council (TCC) (2002), Toowoomba Cycle & Pedestrian Strategy, TCC, Toowoomba

49 Public Health Services and Health Information Centre, Queensland Health (2004): Health Determinants Queensland: Gympie Health Service District, Queensland Government, Brisbane

50 ABS (2007): 2006 Census Community Profiles by Location, ABS, Canberra www.abs.gov.au/websitedbs/D3310114.nsf/Home/Census+Data Accessed September 2008

51 ABS (2007): 2006 Census Community Profiles by Location, ABS, Canberra www.abs.gov.au/websitedbs/D3310114.nsf/Home/Census+Data Accessed September 2008

Table 8.4.23 Reported Crime Per 100,000 Population in the Gas Field Communities 2000–08

Police District	Dalby			Toowoomba		
Reported Offences	**2000–01**	**2005–06**	**2007–08**	**2000–01**	**2005–06**	**2007–08**
Offences Against Person						
Homicide	10	3	5	0	0	0
Other homicide	-	9	-	0	0	3
Assault (excluding sexual assaults)	501	405	716	582	607	358
Sexual offences	177	384	146	85	190	187
Robbery	14	12	23	4	9	6
Other offence against person	82	-	164	-	56	89
Offences Against Property						
Unlawful entry	1,093	1,634	1,564	697	693	1,102
Other theft	1,791	1,858	1,975	1,437	1,296	1,417
Fraud	232	203	579	162	1,120	879
Handling stolen goods	78	86	141	51	65	46
Other Offences						
Drug offences	793	1,520	1,076	1,046	1,417	958
Prostitution	0	0	0	0	0	0
Weapons Act offence	293	181	392	128	134	138
Traffic and related offences	919	1,158	743	1,007	857	741
Good Order offences	725	786	999	1,407	1,753	827

(Source: from http://www.police.qld.gov.au/Resources/Internet/services/reportsPublications/statisticalReview/documents/2000_2001_district.pdf; http://www.police.qld.gov.au/Resources/Internet/services/reportsPublications/statisticalReview/documents/2005_2006_district.pdf; http://www.police.qld.gov.au/Resources/Internet/services/reportsPublications/statisticalReview/documents/2007_2008_district.pdf. Accessed on 1 December, 2008)

4.3.6 Existing Housing and Accommodation Status

4.3.6.1 Housing Stock

There were approximately 9,990 dwellings in Western Downs LGA in 2006 and 4,449 dwellings in Roma LGA. Ninety per cent of dwellings in Western Downs LGA were separate houses, and 3 per cent and 4 per cent were semi-detached and flats, respectively. Similarly, in Roma the percentage of separate houses was 92 per cent, 5 per cent units and flats, and 1 per cent semi detached houses. The high proportions of separate houses is typical of regional towns (refer to *Table 8.4.24*).

Total new dwelling approvals in 2007 were 181 (163 houses and 18 others) and in 2008 were 86 (79 houses and seven others)[52]. Therefore the total dwelling stock was approximately10,171 dwellings for 2007 and 10,257 dwellings for 2008.

52 Dalby Regional Housing Fact Sheet 2008. http://www.dip.qld.gov.au/resources/map/population-housing-factsheets/dalby.pdf. Accessed on 25 February, 2009

4.3.6.2 *Housing Tenure*

As illustrated in *Table 8.4.25* the proportion of dwellings owned or being purchased in Western Downs LGA was 68 per cent, slightly higher than the Queensland average, the same as in Toowoomba LGA and slightly higher than in Roma LGA. Home ownership within Western Downs LGA was highest outside the Dalby SLA, but at 41 per cent higher overall than the Queensland and Australian averages.

The proportion of dwellings that are fully owned in Dalby and Roma LGAs is higher than the Queensland average (refer to *Table 8.4.25*), which is common for older populations such as these. At SLA level fully owned dwellings account for 41 per cent of households, and. in Roma, 37 per cent. The proportion of dwellings being purchased or rented in Dalby and Roma LGAs at 27 per cent and 28 per cent is consequently lower than the Queensland average.

The highest proportions of renting households were in the more urban areas like Dalby SLA. This probably reflects the recent influx of people into the region due to the resource and energy industry boom, and the more transient nature of township populations compared to rural property owners. However rental availability is difficult, as evident from consultations with the community in Chinchilla and Dalby and as described in the *Section 4.3.6.4.*

4.3.6.3 *Cost and Availability for Purchase*

Table 8.4.26 highlights the estimated average advertised house purchase costs for houses in the Gas Field area in September 2008, and shows some variability between SLAs. Miles had the most affordable purchase cost for smaller houses, but was among the most expensive for larger houses.

For Dalby, and Chinchilla, the average advertised cost of a two to three-bedroom house ranged between $260,000 and $284,000, higher than in Toowoomba. Prices ranged between $355,000 (in Chinchilla) and $409,000 (Dalby) for a four-bedroom house, which was also more expensive than the Toowoomba average. This probably reflects the relative paucity of dwelling stock in comparison to resource sector demands for housing.

Table 8.4.24 Housing Stock and Dwelling Structures: 2006

Region	Separate House		Semi-Detached Dwelling		Flat, Unit or Apartment		Other		Not Stated		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Dalby SLA	3,050	89%	61	2%	266	8%	51	1%	0	0%	3,428	100%
Tara SLA	1,221	92%	26	2%	8	1%	78	6%	0	0%	1,333	100%
Wambo SLA	1,777	96%	9	0%	9	0%	49	3%	0	0%	1,844	100%
Murilla SLA	922	90%	27	3%	19	2%	51	5%	3	0%	1,022	100%
Chinchilla SLA	1,873	86%	128	6%	87	4%	82	4%	0	0%	2,170	100%
Division 2 of Taroom SLA	190	98%	0	0%	0	0%	3	2%	0	0%	193	100%
Western Downs LGA	9,033	90%	251	3%	389	4%	314	3%	3	0%	9,990	100%
Roma LGA	4,113	92%	61	1%	207	5%	68	2%	0	0%	4,449	100%
Toowoomba LGA	43,744	86%	2,507	5%	4,375	9%	373	1%	0	0%	50,999	100%
Darling Downs SD	67,318	87%	3,099	4%	5,765	7%	917	1%	27	0%	77,126	100%
South West SD	8,192	92%	96	1%	378	4%	219	2%	3	0%	8,888	100%
Queensland	1,106,874	80%	105,917	8%	156,298	11%	21,503	2%	1,040	0%	1,391,632	100%

Source: Australian Bureau of Statistics (2007a), AECgroup

Table 8.4.25 Household Tenure (Percentage): 2006

Region	Fully Owned	Being Purchased	Renting	Other	Not Stated	Total
Dalby SLA	33%	31%	32%	1%	3%	100%
Tara SLA	43%	24%	27%	2%	4%	100%
Wambo SLA	45%	27%	23%	2%	3%	100%
Murilla SLA	44%	22%	28%	1%	5%	100%
Chinchilla SLA	44%	26%	25%	2%	3%	100%
Division 2 Taroom SLA	52%	18%	26%	2%	3%	100%
Western Downs LGA	41%	27%	28%	1%	3%	100%
Roma LGA	37%	28%	31%	1%	3%	100%
Toowoomba LGA	35%	33%	29%	1%	3%	100%
Darling Downs SD	37%	31%	28%	1%	3%	100%
South West SD	37%	25%	33%	1%	3%	100%
Queensland	32%	34%	31%	1%	3%	100%

Note: Percentages may not sum to 100 per cent due to rounding.

Source: Australian Bureau of Statistics (2007a), AEC*group*

Table 8.4.26 Average Advertised Dwelling Costs, September 2008, Gas Field Communities

Locality	Average Advertised Cost($)	
	2–3 bed house	4+ bed house
Dalby	284,000	409,000
Chinchilla	260,000	355,000
Miles	205,000	400,000
Toowoomba	220,000	395,000
Roma	285,000	397,000

Source: Realestate.com.au

4.3.6.4 Cost and Availability for Rent

Table 8.4.27 below shows data from the Queensland Residential Tenancies Authority which demonstrates that all LGAs in the Gas Field area recorded higher growth in rent costs than the national average between 2001 and 2006.

Average weekly rent in the Western Downs LGA increased by 50 per cent from 2001 to 2006, almost 10 per cent higher than the Queensland average and 20 per cent higher than the national average. The other LGAs recorded rental increases between 28 per cent (Roma LGA) and 33 per cent (Toowoomba LGA).

This was likely due to the increased demand for housing from resource, construction and mining development.

Chinchilla SLA recorded an exceptionally large increase in rents between 2001 and 2006, at 99 per cent. This is probably due to the influx of industry and construction workers putting a high demand on the rental housing. Dalby and Wambo SLAs recorded rent increases close to the Queensland average

of 42 per cent, and Tara and Murilla SLAs recorded a low increase compared with the Queensland average.

Table 8.4.27 Average Weekly Rent in Gas Field Communities

Region	2001	2006	% Change
Dalby SLA	$115	$164	42%
Tara SLA	$56	$68	22%
Wambo SLA	$53	$77	46%
Murilla SLA	$76	$95	24%
Chinchilla SLA	$85	$168	99%
Division 2 of Taroom SLA	$49	$53	9%
Western Downs LGA	$87	$131	50%
Roma LGA	$90	$114	28%
Toowoomba LGA	$129	$172	33%
Darling Downs SD	$119	$158	34%
South West SD	$82	$103	25%
Queensland	$153	$217	42%

Source: Australian Bureau of Statistics (2007a), Australian Bureau of Statistics (2003), AEC*group*.

Anecdotally, residents in the Dalby area have seen house rental costs increase from $120 to $400 in the four years to 2008.

Rental vacancy rates in Western Downs LGA for the year 2007–08 were 6.9 per cent overall, and more specifically 6.6 per cent for houses and 9.2 per cent for units[53]. A search of www.realestate.com.au on 6 March, 2009 showed that there were 38 dwellings available for rent in Dalby, 34 in Chinchilla, eight in Miles and one in Wandoan for 81 properties in total. A similar search of properties for sale showed that there were 200 dwellings available for sale in Dalby, 182 in Chinchilla, 30 in Tara, 57 in Miles and 42 in Wandoan.

4.3.6.5 Land for Residential Development

Available serviced residential lots

Information from the Planning Division of the Western Downs Regional Council indicates approximately 300 serviced residential blocks coming on to the market in the next 12 months in 2009–10 and approximately 200 rural residential blocks coming on to the market in the same time period[54]. Western Downs LGA has not carried out comprehensive needs analysis to determine the level of residential demand for housing across the Regional Council area so more detailed information is unavailable.

Land use analysis for potential residential use has been undertaken for Chinchilla township, which is currently in draft form[55]. This report details the current demographic situation in Chinchilla; and, based on projected future population changes, its potential future residential land demand requirements.

53 Email correspondence from the Office of Economic and Statistical Research

54 Personal communication, 16 February 2009, Western Downs Regional Council Planning Manager

55 Foresight Partners Pty Ltd, February 2009, Chinchilla Township Demographic Profile and Residential Land Demand Assessment- Draft for Discussion.

It includes a calculation of the current amount of vacant land remaining within the town that is appropriately zoned for residential development. As at February 2009 approximately 130 ha of vacant land was available. This land is capable of supporting a maximum of 220 dwellings at standard residential-lot densities (800 m^2) and an additional 125 dwellings on rural residential lots of a minimum 8,000 m^2. These figures are gross yield and do not take into account land unsuitable for development such as areas suffering from groundwater vulnerability.

For the other townships in Western Downs Regional Council zoning maps were compared to aerial photography to estimate the availability of suitable zoned land for future residential development. This methodology only provides an estimate of availability due to inconsistencies between the age of the zoning maps and the dates of available aerial photography. However, it provides an approximate figure to consider as stated below:

- The town of Miles shows the largest unsubdivided area of land that is appropriately zoned for residential development. This land is located north of the Warrego Highway and is approximately 350 ha.
- The township of Tara shows approximately 45 ha of vacant land for residential development, located south of the railway line and Glenmorgan Branch Road.
- Wandoan Township has the least appropriately zoned land with 23 ha identified available for residential development. The township is surrounded by pastoral land with a large industrial area south of the commercial centre.

Constraints and opportunities

Information from Western Downs Regional Council indicates that the condition and extent of existing infrastructure, especially water and sewerage, constrains zoning additional land for residential purposes at this stage. Council is unlikely to zone more land for residential purposes when difficulties are experienced in servicing the amount of land that is already zoned for residential development. Even relatively small developments that are already in train may have difficulty finding capacity in existing infrastructure.

The proximity of Wandoan to the Xstrata Coal project means that this township may be more likely to experience growth pressures in the medium term.

4.3.6.6 New House Building Approvals

There was an upward trend in new house building approvals in Western Downs LGA from 2003–04 to 2006–07. However, there was a significant fall in the new house approvals from 162 in 2006–07 to 78 in 2007–08. Most approvals in Western Downs LGA were in Chinchilla SLA, followed by Dalby SLA and Wambo SLA (refer to *Table 8.4.28)*.

On a regional level Roma LGA has had a steady increase in the new house building approvals from 2003–04 to 2007–08. Similar to Dalby, in Toowoomba LGA the number of new house approvals rose steadily from 2003 to 2006 and approval numbers have reduced significantly from 2006 to 2008.

The Darling Downs SD reported 1,111 new house approvals in 2007–08, of which the Toowoomba LGA accounted for 71 per cent, reflective of Toowoomba's position as the main population and service centre of the Darling Downs SD.

Table 8.4.28 Building Approvals, Houses in Gas Field Communities 2003–04 to 2007–08

Region	2003–04	2004–05	2005–06	2006–07	2007–08
Dalby SLA	22	41	49	54	27
Tara SLA	4	1	6	4	7
Wambo SLA	14	22	30	32	13
Murilla SLA	4	8	16	29	11
Chinchilla SLA	19	32	62	42	18
Division 2 of Taroom SLA	0	0	1	1	2
Western Downs LGA	63	104	164	162	78
Roma LGA	26	35	37	45	43
Toowoomba LGA	987	1,016	1,018	742	786
Darling Downs SD	1,216	1,339	1,480	1,175	1,111
South West SD	49	55	52	68	71
Queensland	29,340	24,653	25,192	28,714	30,052
Australia	120,629	107,357	115,851	106,083	109,167

Source: Australian Bureau of Statistics (2008b).

4.3.6.7 Unit, Townhouse and Apartment Building Approvals

In 2007–08, the Darling Downs SD reported 367 new apartment approvals, of which 84 per cent were in Toowoomba LGA. The South West SD only reported six new apartment approvals in 2007–08 (refer to *Table 8.4.29).*

Table 8.4.29 Building Approvals, Apartments in Gas Field Communities

Region	2003–04	2004–05	2005–06	2006–07	2007–08
Dalby SLA	6	3	3	12	5
Tara SLA	0	0	0	0	0
Wambo SLA	4	0	0	0	0
Murilla SLA	0	0	2	0	0
Chinchilla SLA	0	16	33	6	2
Division 2 of Taroom SLA	0	0	0	0	0
Western Downs LGA	10	19	38	18	7
Roma LGA	145	145	67	116	88
Toowoomba LGA	323	399	309	243	308
Darling Downs SD	345	438	384	310	367
South West SD	2	2	4	6	6
Queensland	14,309	13,673	12,522	12,599	13,547

Source: Australian Bureau of Statistics (2008b).

Western Downs LGA accounted for few new apartment buildings with most SLAs reporting zero or small figures. Chinchilla SLA accounted for most of the new apartment approvals, particularly in 2005–06 when 33 approvals were recorded.

4.3.6.8 *Housing Affordability and Stress*

Appropriate and affordable housing contributes to household and community wellbeing[56]. Housing affordability is currently in crisis in Queensland[57]. The state has been experiencing a shortage of adequate and affordable housing due to rising housing costs, market influences, rapid population growth, and increasing demand for affordable accommodation. Increasing demand for affordable housing is also triggered by population in the sensitive groups such as elderly people more than 65 years of age, people with low income, the unemployed and people with disabilities, as shown in *Table 8.4.22.* Susilawati and Armitage (2004) note that without adequate additional residential supply, increasing demands will continue to cause housing prices to rise, reducing the availability of low-priced accommodation and resulting in an increase in social disadvantage and housing stress[58]. If housing affordability continues to decline, this can escalate the number of homeless Australians and people seeking crisis accommodation[59]. This is particularly an issue in Queensland, where housing affordability has been declined markedly over the past ten years[60]. The 2006 Census revealed that over 300,000 Queenslanders were in rental or mortgage stress[61].

Housing and rental affordability refers to the capacity of an individual to meet the cost of their dwelling while also being able to meet the costs of maintenance and energy consumption as well as lifestyle needs (Queensland Department of Housing, 2007). While there are many other considerations than cost in determining housing affordability, the benchmark for affordable housing in Queensland is that 'low-income households (the bottom 40 per cent of households in the income distribution) spend no more than 30 per cent of their income on mortgage or rental costs' (Queensland Department of Housing, 2007). Based on this benchmark, the following can be noted regarding housing affordability of dwellings being purchased or rented by households.

In 2006, 50.6 per cent of households within the bottom 40 per cent of household incomes in Queensland purchasing their home were under housing stress (i.e., with mortgage payments costing more than 30 per cent of household income).

All LGAs within the Gas Field area recorded a lower proportion of low-income households (i.e., bottom 40 per cent of household incomes) purchasing their home experiencing housing stress than the Queensland average (refer to *Table 8.4.30* below). This is attributable to a greater disparity between rents and incomes than in urban areas where higher land prices are driving higher housing costs. Dalby and Roma both recorded 33.6 per cent of

56 QCOSS, Submission to Proposed State Planning Policy, 28th March 2006. Available at http://www.qcoss.org.au/upload/683__Submission%20to%20State%20Planning%20Policy%20V_1_28_03_2006.pdf. Accessed in August, 2008.

57 http://www.housingaffordabilityaustralia.com/content/queensland-state-government-and-housing-affordability. Accessed on 9 October, 2008 and Housing Industry Association, Media Release, 8 August 2007

58 C. Susilawati & L Armitage, Queensland University of Technology, Affordable Housing: Who Supply it?, PRRES Conference 2004.

59 Housing Industry Association, Media Release, 27 February 2007.

60 http://www.brisbanetimes.com.au/news/queensland/housing-costs-at-crisis-point/2007/05/30/1180205283557.html. Accessed on 9 October, 2008

61 HIA, Rates Rise to Increase Housing Stress in Qld, Media Release, 8 August 2007.

the bottom 40 per cent of mortgaged households in housing stress, followed closely by Toowoomba on 32.2 per cent. Booringa SLA (55.2 per cent) and Warroo SLA (50 per cent) were the only SLAs to record 50 per cent or more households experiencing housing stress.

Table 8.4.30 Households in Housing Stress (Mortgage), Bottom 40 per cent of Household Income, Gas Field communities, 2006

Region	Households In Housing Stress Due to Home Loan	Dwellings Being Purchased	Proportion of Dwellings Being Purchased Stress
Dalby SLA	84	347	24.2%
Tara SLA	25	78	32.1%
Wambo SLA	57	126	45.2%
Murilla SLA	12	48	25.0%
Chinchilla SLA	76	155	49.0%
Division 2 of Taroom SLA	2	7	28.6%
Western Downs LGA	256	761	33.6%
Roma LGA	100	298	33.6%
Toowoomba LGA	1,676	5,211	32.2%
Darling Downs SD	1,165	2,859	40.7%
South West SD	179	549	32.6%
Queensland	69,721	137,875	50.6%

Source: Australian Bureau of Statistics (2007a).

In line with home loan stress, all of the regional LGAs in the Gas Field area reported a lower proportion of low-income households (i.e., bottom 40 per cent of household incomes) renting their home in housing stress than the Queensland average (65.1 per cent). The Toowoomba LGA reported the highest level of low-income households renting their home under housing stress in the Gas Field area (58.6 per cent) (refer to *Table 8.4.31*).

Table 8.4.31 Households in Housing Stress (Rental) Bottom 40 per cent of Household Income, Gas Field communities, 2006

Region	Households In Housing Stress Due to Rent Payment	Total Dwellings Being Rented (Households In Bottom 40% of Household Income)	Proportion of Dwellings Being Rented in Housing Stress
Dalby SLA	190	368	51.6%
Tara SLA	49	124	39.5%
Wambo SLA	57	139	41.0%
Murilla SLA	31	99	31.3%
Chinchilla SLA	65	184	35.3%
Division 2 of Taroom SLA	5	17	29.4%
Western Downs LGA	397	931	42.6%
Bungil SLA	20	38	52.6%
Bendemere SLA	9	27	33.3%
Warroo SLA	17	37	45.9%
Booringa SLA	15	54	27.8%
Roma SLA	144	284	50.7%

Region	Households In Housing Stress Due to Rent Payment	Total Dwellings Being Rented (Households In Bottom 40% of Household Income)	Proportion of Dwellings Being Rented in Housing Stress
Roma LGA	208	440	47.3%
Toowoomba LGA	3,050	5,204	58.6%
Fitzroy SD	3,667	6,951	52.8%
Darling Downs SD	4,074	7,667	53.1%
South West SD	363	949	38.3%
Queensland	97,622	150,044	65.1%

Source: Australian Bureau of Statistics (2007a).

The community attitudes survey also identified housing affordability and rising cost of living as an issue in the Gas Field area, particularly in Chinchilla and Dalby where approximately 80 per cent of the respondents thought that housing was not affordable in their communities.

4.3.6.9 *Short-stay Accommodation*

Short-stay housing includes hotels, motels and serviced apartments. Data for tourism accommodation establishments is only available for establishments with five or more rooms in order to maintain the confidentiality and privacy of smaller businesses. In addition to this, the ABS does not include Bed and Breakfasts in its tourism accommodation data count. As such, a significant amount of data for small accommodation establishments is unaccounted for in the ABS Tourism Accommodation reports.

Toowoomba (as the regional centre) reported the highest number of accommodation establishments of the regional LGAs comprising the Gas Fields communities, with 53 accommodation establishments in the March Quarter 2008. There were a total of 44 hotel/motel establishments in Western Downs LGA (with eight at Chinchilla, eight at Miles, 14 in Dalby and the rest in Tara, Wandoan, Wambo and Taroom SLAs). In terms of bed spaces, Roma SLA and Dalby SLA had the highest number of bed spaces available with a total of at least 695 and 903 bed spaces, respectively (refer to *Table 8.4.32*).

Table 8.4.32 Hotels, Motels and Serviced Apartments March Quarter 2008, Gas Field communities

Region	Establishments with 5–14 rooms		Establishments with > 15 rooms		Total Establishments (With >5 rooms)	
	Number	Bed Spaces	Number	Bed Spaces	Number	Bed Spaces
Dalby SLA	0	0	7	482	7	482
Tara SLA	1	N/a	2	N/a	3	N/a
Wambo SLA	1	N/a	0	0	1	N/a
Murilla SLA	2	N/a	2	N/a	4	198
Chinchilla SLA	1	N/a	3	N/a	4	203
Division 2 of Taroom SLA	1	23	0	0	1	23
Western Downs LGA	8	N/a	14	N/a	22	906+
Bungil SLA	0	0	1	N/a	1	N/a

	Establishments with 5–14 rooms		Establishments with > 15 rooms		Total Establishments (With >5 rooms)	
Bendemere SLA	0	0	0	0	0	0
Warroo SLA	2	N/a	0	0	2	N/a
Booringa SLA	1	N/a	1	N/a	2	N/a
Roma SLA	2	N/a	10	695	12	N/a
Roma LGA	5	N/a	12	N/a	17	N/a
Toowoomba LGA	14	N/a	39	N/a	53	N/a
Fitzroy SD	39	1,116	99	10,646	138	11,762
Darling Downs SD	39	1,191	80	5,956	119	7,147
South West SD	15	N/a	27	N/a	42	N/a
Queensland	427	13,359	1,118	186,198	1,545	199,557
Australia	1,931	54,506	4,250	627,952	6,181	682,458

Source: Australian Bureau of Statistics (2008c)[62].

4.3.7 *Existing Land Use Values in the Region*

4.3.7.1 *Land Use – Townships*

The planning schemes of the former shire councils amalgamated to form the Western Downs Regional Council remain in force until such time that they are replaced by a comprehensive planning scheme for the whole regional council area.

The closest townships to the Gas Field Component are Dalby to the east, Miles, Chinchilla, Condamine; Kogan and Tara in the centre; and Wandoan to the north. Land use in the townships reflects the population and complexity of businesses and industries which are located there.

In the larger towns of Chinchilla and Dalby and in the smaller towns of Kogan, and Condamine the centres are zoned 'Small Town Zone' which allows for residential and a variety of other uses to support the amenity and character of the towns. The townships are characterised by compact commercial hubs usually orientated around the main street. These are surrounded by areas of residential development and, on the fringes, light and general industrial uses. Residential development predominantly consists of single detached houses; although the proximity of Chinchilla and Miles to large-scale industrial developments has stimulated the supply of a diversity of housing choices including multi-unit dwellings. The townships also provide access to rural residential living on large lots.

Residential land is generally located close to the commercial centres to provide efficient access to services and existing commercial and community facilities. Locating future residential development in proximity to existing services and infrastructure is a desired outcome expressed in the former Dalby Town Council planning scheme[63].

62 Australian Bureau of Statistics (2008c). *Tourist Accommodation, Small Area Data Queensland December 2007*. Cat. No. 8635.1.55.001, ABS, Canberra. Taken from Queensland Curtis LNG Baseline Communities Assessment prepared by AEC Group

63 Dalby Town Council Planning Scheme, 2007.

4.3.7.2 *Land tenure - other*

QGC's Gas Field leases cover approximately 468,000 ha, containing predominantly freehold lots. The number of blocks and the approximate extent of the tenure type are summarised in *Table 8.4.33. Figure 8.4.11* shows the tenure of land in the Gas Field area.

Table 8.4.33 Land Tenure in Gas Field

Type of Tenure	Number of Blocks	Extent (ha)
Freehold	3,189	359,449
State leasehold	123	124
Lands lease	141	64,941
Crown reserves	111	2,108
State forest	46	56,358
Profit a prendre	1	144
Unallocated state land	0	0
Railway corridors	n/a	2,349
Stock routes	n/a	5,703
Road reserves	n/a	11,970
Total		503,146

Note: The total area of Gas Field (468,000 ha) does not reconcile to the above as some tenures overlap, especially lands lease and state forest; and road reserves and stock routes.

4.3.7.3 *Good Quality Agricultural Land*

State Planning Policy 1/92 – the Development and the Conservation of Agricultural Land protects Good Quality Agricultural Land (GQAL) from fragmentation into uneconomic units. It also serves to minimise the potential for incompatible land uses that will impact on existing and future productivity of agricultural land. As anticipated in an agricultural region, GQAL is located throughout the Gas Field area.

Figure 8.4.12 illustrates the distribution of GQAL throughout the Gas Field in relation to the proposed location of the tenement areas. Each tenement is approximately 8 km x 8 km and represents the land area to be affected by well exploration and compressors.

The majority of the land within the CSG tenement boundaries is Class C pasture land which comprises 65 per cent of the total. The remainder is comprised of GQAL Class A (18 per cent) and Class B which involved moderate cropping and grazing (17 per cent). The presence of GQAL is linked to the predominant land uses found in the Gas Field, with Class A crop land being used for cropping and irrigated cropping, and Class C pasture land associated with grazing uses.

Class A crop land is found in approximately half of the tenements located south of Chinchilla, with a small proportion of the GQAL Class B, and the remainder Class C (pasture land, not GQAL). Of the tenements located south-east of Tara and south-west of Dalby the land is predominately Class C with small areas of Class A and B GQAL. In the tenements south-west of Miles the land is predominately Class C with areas of Class B and small amounts of

Class A land. The tenements located around Condamine are composed of an even distribution of Class A, B and C land.

North-west of Wandoan the tenements are primarily Class A GQAL. The blocks south and south-west of Wandoan are composed mainly of Class B land with smaller areas Class A GQAL. The tenements furthest south from Wandoan are Class C land. The predominance of grazing and forestry uses in the southern part of the Gas Field area illustrates the shift from the more fertile land of the Darling Downs region to the drier grazing land uses in the Western Plains region.

Figure 8.4.13 illustrates the land uses identified in the Gas Field in relation to the proposed location of the tenements. The figure shows that the southern extent of the Gas Field tenements, south of and closest to Kogan, are used for grazing and natural vegetation. Further south and to the east of the township of Tara this land use is interspersed with areas of production forestry, rural residential allotments and pockets of land used for cropping. North of Tara the tenements are also located over rural residential allotments.

The principal land uses on the tenements south of Chinchilla are cropping and irrigated cropping, moving to grazing areas at the southern extent of the blocks.

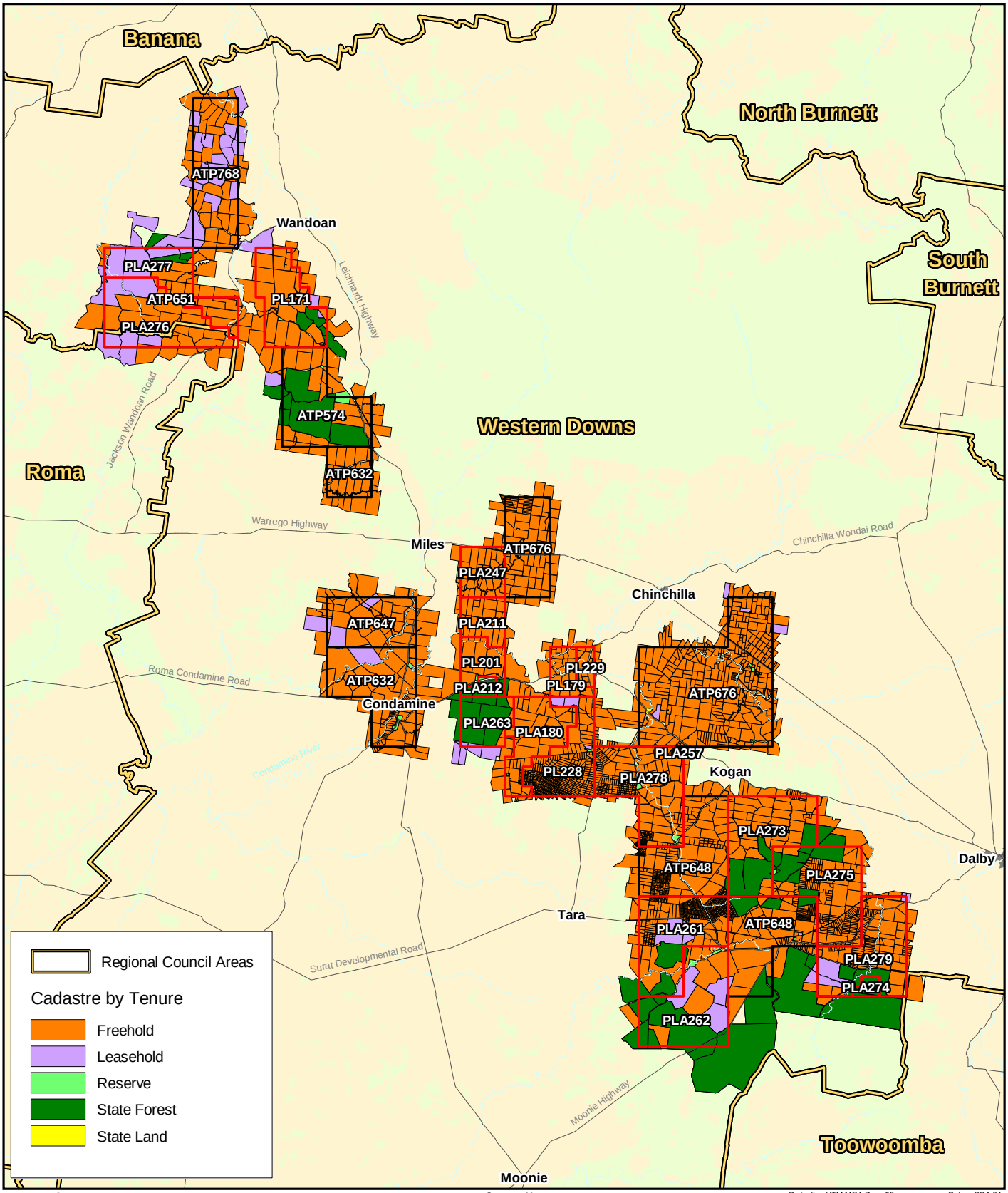
East of Condamine the tenements are used for production forestry, and cropping with small areas of irrigated cropping. Blocks east of Miles are used for grazing with minor cropping areas. East of Wandoan the land use in identified tenements is cropping and grazing. The blocks approximately 20 km south of Wandoan are situated on land used for forestry purposes.

4.3.7.4 Industrial Developments in the Region

There are several large-scale industrial projects proposed in the vicinity of the Gas Field. The Xstrata Wandoan Coal Mine would cover 32,000 hectares of mining lease area west of Wandoan, comprising an open-cut coal mine, a coal handling and preparation plant, and support facilities. With an expected mine life of over 30 years, the mine would produce thermal coal for export markets and possibly domestic markets.

Construction for the project is proposed to begin in 2010 with operations commencing in 2012. Submissions on the Wandoan Coal Mine EIS closed on 2 February, 2009.[64]

64 www.wandoancoalproject.com.au Accessed 28 February, 2009.



Legend:

Gas Fields - Petroleum Lease/Petroleum Lease Application

Gas Fields - Authority to Prospect

Source Note:

1:250,000 Topographic Vector copyright Geoscience Australia
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DCDB data copyright State of Queensland (2008)

Projection UTM MGA Zone 56 Datum GDA 94

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QUEENSLAND CURTIS LNG
A BG Group business

Project: Queensland Curtis LNG Project

Client: QGC - A BG Group business

Title: **Land Tenure Cadastre**

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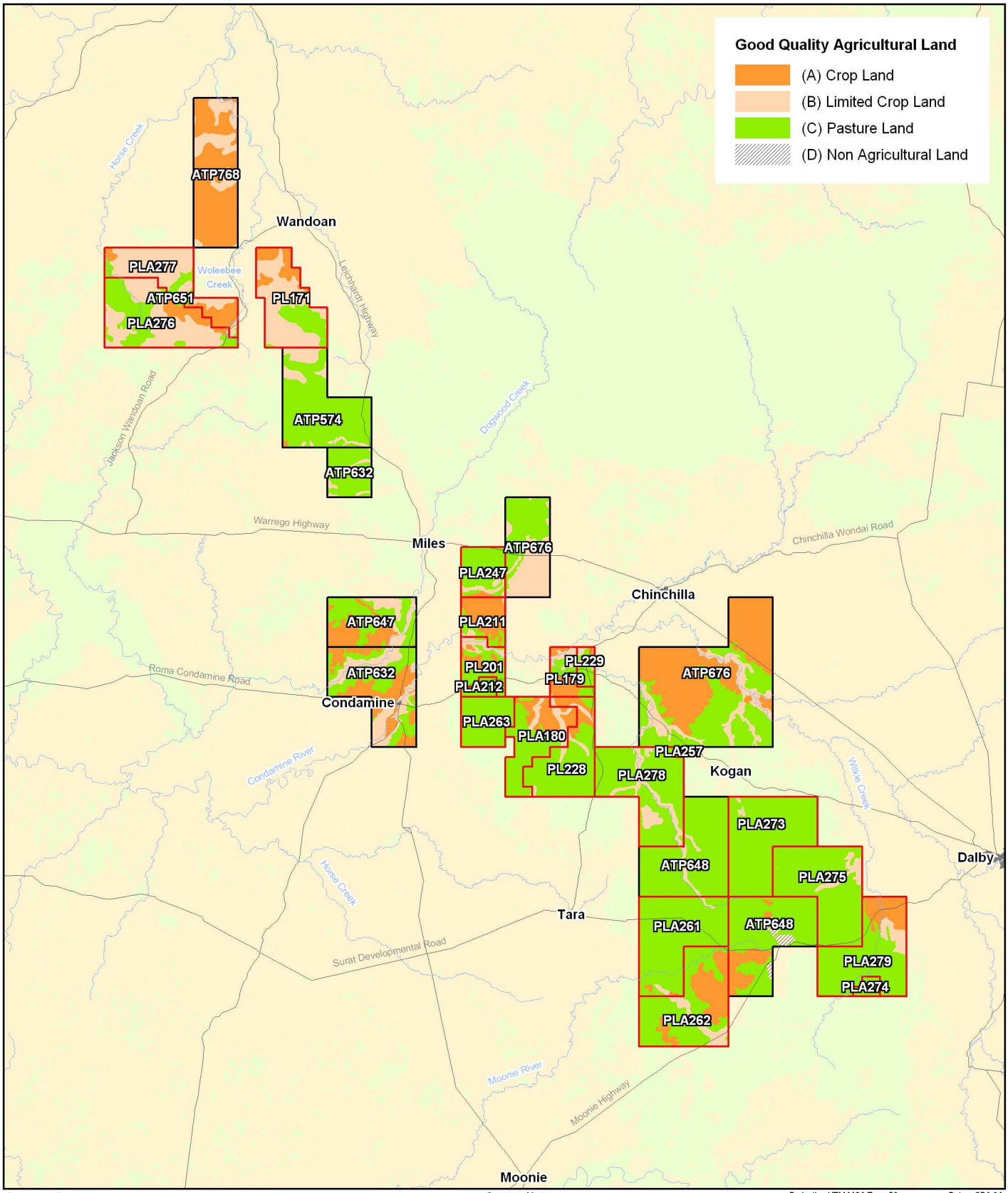

Legend:

Gas Fields - Petroleum Lease/Petroleum Lease Application

Gas Fields - Authority to Prospect

Source Note:

1:250,000 Topographic Vector copyright Geoscience Australia
Agricultural Land Class Information from LRAM PTY LTD

Projection UTM MGA Zone 56 Datum GDA 94

0 10 20 30 40

Kilometres

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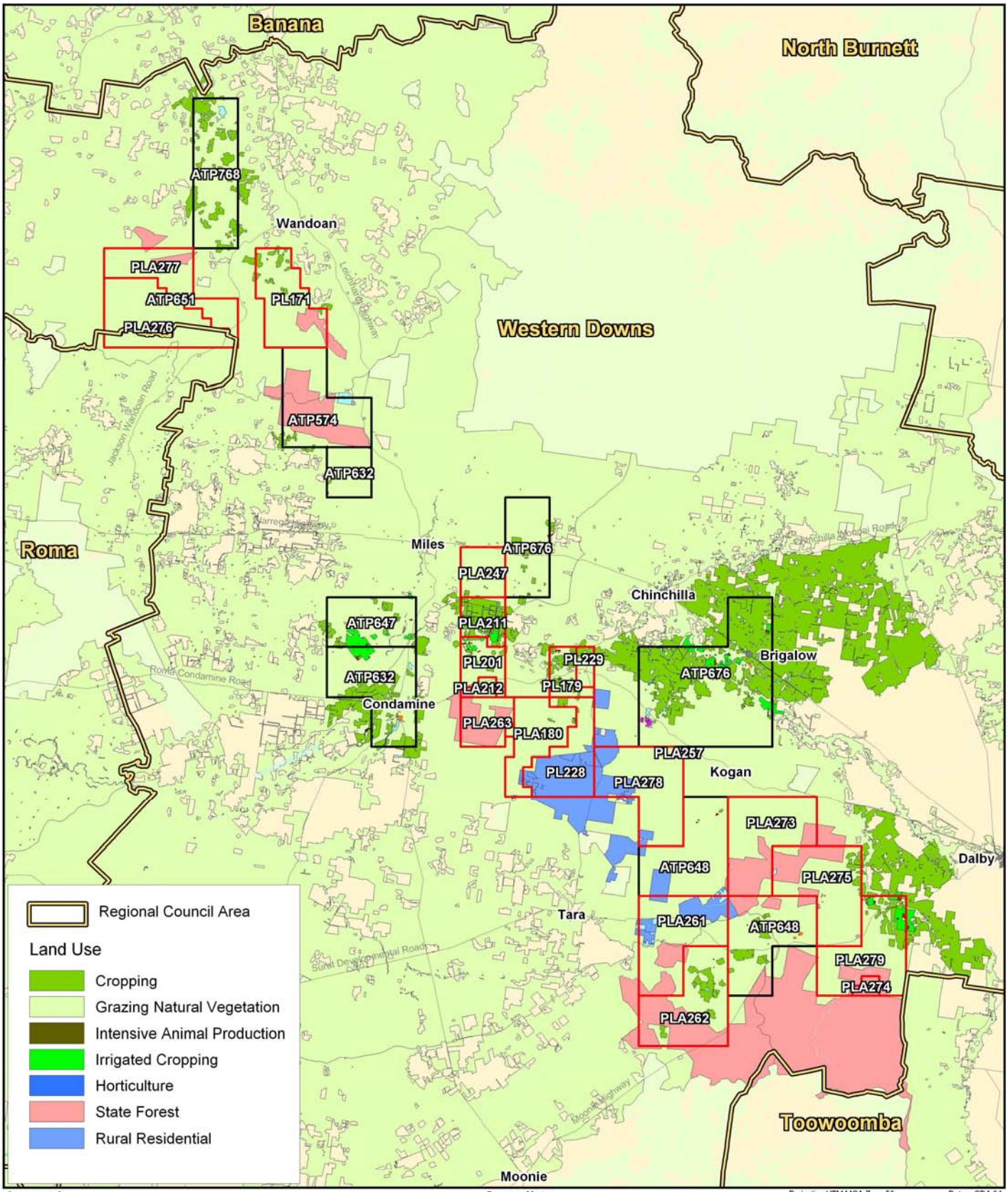
QUEENSLAND CURTIS LNG A BG Group business	Project: Queensland Curtis LNG Project		Title: **Good Quality Agricultural Land**
	Client: QGC - A BG Group business		
ERM Environmental Resources Management Australia Pty Ltd	Drawn: Mipela	Volume: 8 Figure: 8.4.12	Disclaimer: Maps and Figures contained in this Report may be based on Third Party Data, may not be to scale and are intended as Guides only. ERM does not warrant the accuracy of any such Maps and Figures.
	Approved: CDP	File No: QC02-T-MA-00080	
	Date: 10.06.09	Revision: A	



Legend:

Gas Fields - Petroleum Lease/Petroleum Lease Application

Gas Fields - Authority to Prospect

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Projection UTM MGA Zone 56 Datum GDA 94

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QUEENSLAND CURTIS LNG A BG Group business	Project: Queensland Curtis LNG Project	Title: **Land Use**
	Client: QGC - A BG Group business	
ERM Environmental Resources Management Australia Pty Ltd	Drawn: Mipela; Volume: 8; Figure: 8.4.13	Disclaimer: Maps and Figures contained in this Report may be based on Third Party Data, may not be to scale and are intended as Guides only. ERM does not warrant the accuracy of any such Maps and Figures.
	Approved: CDP; File No: QC02-T-MA-00081	
	Date: 10.06.09; Revision: A	

The Surat Basin Rail Joint Venture is the proposed development of a new section of rail linking the Western Railway system near Wandoan with the Moura Railway system in the Banana shire. The proposed railway would connect resources and industry within the Surat Basin with the Port of Gladstone. The Surat Basin Rail Joint Venture is associated with the Wandoan Coal Project and together these projects form the Surat Basin Coal Value Chain[65]. Chinchilla is being targeted for infrastructure investment based around the energy and power sectors. Other proposed projects in the Gas Field region are listed in *Table 8.4.36*.

4.3.8 Summary of Social Conditions in the Gas Field

Based on the detailed description of the existing social conditions in the above sub-sections of *Section 4.3* the social conditions in the Gas Field communities can be summarised as follows:

4.3.8.1 Local values

In summary, the following common values are apparent from research and consultation.

- a peaceful, rural lifestyle, with in most cases, active and vital town centres, some with upgrading plans in place
- a family-friendly environment, with a network of educational options
- more affordable compared to south-east Queensland, with a wide range of property purchase options available, very low unemployment and good employment opportunities for dual-income families and youth;
- less commuting time and a less pressured lifestyle
- supportive and cohesive communities, with a strong commitment to local wellbeing
- good local amenity, with clean air, good recreational facilities, basic shopping and access to district centres for higher order shopping and services
- a strong vision for healthy, liveable, and prosperous places
- a strong reliance on agricultural and extractive industries
- endeavours to broaden the local economic base of the region through new industrial development are welcomed
- a strong connection to the area's heritage and traditional values
- good local social infrastructure, with need for recourse to regional centres for district and regional level services
- environmental landscapes and biodiversity values supporting a healthy lifestyle

The communities are also faced with issues of an increasing ageing

65 www.suratbasinrail.com.au Accessed 28 February, 2009.

population, migration of younger people out of the region in search of alternative education and employment or travel opportunities, drought conditions, and associated impacts on agriculture, small and medium-size industries and people's lifestyles.

4.3.8.2 Population Size and Growth

The total population of Western Downs LGA in 2007 was 29,656 people. The main population centres in the region are Dalby SLA with a population of 10,402 in 2007, followed by Chinchilla SLA with 6,359, Wambo SLA with 5,597, Tara SLA with 3,887, Murilla SLA 2,846 and Taroom division 2 SLA with a population of 545 people.

From 2001 to 2007 there has been a small growth in the population in Western Downs LGA at an average annual growth rate of 0.6 per cent, increasing the population by 1,050 persons. But from 2007 to 2011 the growth is projected to almost double in Western Downs LGA at an average annual growth rate of 1.1 per cent, increasing the population by just under 6,000 people. *Table 8.4.22* shows that 3 to 5 per cent of the population in various communities in Western Downs LGA have low incomes ($299 or less per week). Low income has significant adverse impacts on the quality of life.

4.3.8.3 Housing

Rental vacancy rates in Western Downs LGA area for the year 2007–08 were 6.9 per cent overall, and more specifically 6.6 per cent for houses and 9.2 per cent for units. The total dwelling stock in 2008 was around 10,257 dwellings, of which 2,975 dwellings (29 per cent) were rented. Applying a vacancy rate of 6.9 per cent, there are likely to be around 205 rental dwellings currently available.

A search of www.realestate.com.au on 6 March, 2009 showed that there were 38 dwellings available for rent in Dalby, 34 in Chinchilla, eight in Miles and one in Wandoan. A similar search of properties for sale showed that there were 200 dwellings available for sale in Dalby, 182 in Chinchilla, 30 in Tara, 57 in Miles and 42 in Wandoan.

Average weekly rent in Western Downs LGA increased by 50 per cent from 2001 to 2006 and Chinchilla SLA showed an increase of 99 per cent. Anecdotal evidence tells that Dalby area has seen house rental costs increase from $120 to $400 in the four years to 2008.

4.3.8.4 Social infrastructure

Western Downs LGA offers a range of health, education, child care, community and cultural services. It was noted in stakeholder consultations that communities perceive that family support, child-care and health services are stretched beyond capacity, and that a range of specialist medical and therapeutic services are only available in Toowoomba and Brisbane.

Existing facilities in local centres and rural villages will continue to serve the dispersed rural settlements and are critical for the wellbeing of small communities that are not close to the nearest district and regional centres.

There is a growing trend towards providing service delivery to rural areas through more remote models of delivery including outreach and technologically based models with implications for the role of services, community expectations and the built infrastructure required to support them.

The specific capacity and quality of equity of each existing facility has not been assessed here, but much of the infrastructure in rural and remote areas is old and unlikely to be well-suited to contemporary needs (as is the case for old hospitals providing modern community health services and local halls supporting outreach services and multiple programs).

4.4 SOCIAL IMPACTS OF THE PROJECT IN THE GAS FIELD

This assessment examines the potential social impacts of:

- the project's work force, employment creation and labour demand;
- field development, including the establishment of the gas collection system and access to project sites;
- construction of processing and compression infrastructure,
- workforce accommodation;
- associated water collection and treatment facilities; and
- traffic and transport activities.

Variability in gas production rates across the field is the primary constraint to forecasting precise locations for field infrastructure, gas and water-gathering systems, gas processing and compression infrastructure. The Field Development Plan for QCLNG is being developed, with locations for Central Processing Plants and Field Compression stations being refined with consideration to engineering, social and environmental factors. The assessment process and social criteria for placement of infrastructure are outlined in *Section 4.4.6*.

The strategy and location for water production, treatment and beneficial reuse options is being developed in detailed project design. Beneficial reuse options are likely to require water treatment using desalination and brine concentration plants, prior to release of water for re-injection, forestry or other beneficial uses. A detailed assessment of the social risks and opportunities of beneficial reuse of associated water are discussed in *Volume 3, Chapter 11*.

Specific locations for a range of logistics nodes and routes will be developed during detailed project design.

4.4.1 Labour Force Impacts

4.4.1.1 *Local Labour Force Availability*

The total labour force in the Dalby region was estimated at 13,306 people in 2006. Unemployment in Dalby (town) was 2.6 per cent in the December quarter of 2008, and 2.1 per cent in Chinchilla. The number of unemployed

people in Dalby in December 2008 was 157, and in Chinchilla 71, indicating a paucity in available workers in the area[66].

Surat Basin labour studies[67] indicate that there is an existing shortage of skilled labour in the region, given the number of current mining, resources and energy projects in the local and regional area. There is also a more general labour shortage in the region partially due to labour draw by the resources sector, which offers better pay than many other industries thereby attracting labour from other sectors, and leaving a shortage in other areas of work such as agriculture.

The Project's labour requirements, its sourcing and impacts are discussed below.

4.4.1.2 Construction Labour Requirements and Sourcing

Construction of infrastructure for well establishment, gas gathering, compression and water treatment would begin from July 2011, with an average of 2,100 personnel during the peak from November 2011 to December 2012, and a total peak of 2,225 personnel plus some 200 drilling contractors.

The total construction period for Gas Field infrastructure, and gas and water gathering is approximately 18 months, from around June 2011 to December 2012. For the purpose of population and housing impact assessment, the average peak of 2,100 people has been applied throughout the construction period, as this will be maintained for at least 14 months (from November 2011 to December 2012). Water treatment and gas-gathering development will continue in the first half of 2013, with an average workforce of 750 workers during those six months. Drilling of wells and development of the gas and water gathering network will continue throughout the life of the Project.

Table 8.4.34 below summarises the average peak labour force requirements for construction of Gas Field development and infrastructure for the average peak months from November 2011 to December 2012.

Table 8.4.34 Gas Field Construction Labour Force Requirement

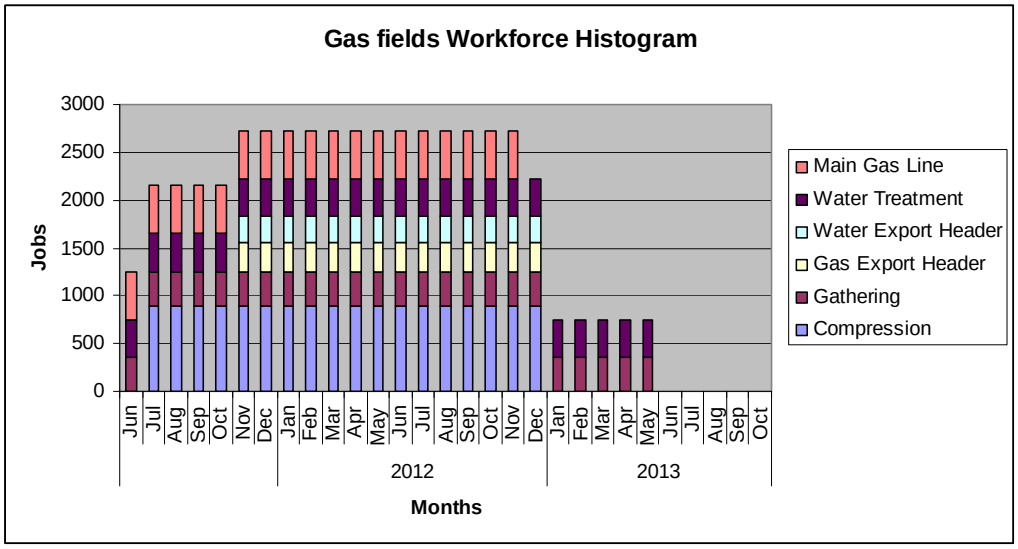
Construction activity	Number of personnel
Compressor construction for CPPs and FCSs	900
Infield gas-gathering lines	350
Water treatment facilities	400
Associated water ponds	100
Drilling and well establishment (wellhead and separator)	200
Supervision, administration and support[1]	150
Total	**2,100**

66 Small Area Labour Markets Australia, 2008. Australian Government Department of Education, Employment and Workplace Relations.

67 http://www.csiro.gov.au/files/files/pm7h.pdf. Accessed in November, 2008.

The histogram below (*Figure 8.4.14*) shows the Gas Field construction workforce over the 18-month construction period. *Figure 8.4.14* data includes estimated workforce requirements for the Pipeline, at around 500 workers, indicating a total Gas Field and Pipeline workforce of around 2,600 people.

Figure 8.4.14 Gas Field Construction Workforce Histogram



For the average peak, it is estimated that 1,950 manual workers will be required along with 150 non-manual workers.

The manual workforce required for the construction in the Gas Field is predominantly a specialised skilled labour force. At this stage it is estimated that 95 per cent of the total required construction labour force, including all of the manual skilled workers, will be sourced from outside of the local area, and 5 per cent of the total workforce (predominantly non-manual workers) will be locally sourced from Western Downs LGA.

The expected breakdown of the average workforce peak (2,100 workers) during construction is as follows:

- 105 workers (5 per cent) will be locally sourced (including 3 per cent or 63 workers, from the existing local labour force, and 2 per cent or 42 workers who will move to the area for work on the Project, as discussed below)
- 420 workers (20 per cent) from the regional area including Roma and Toowoomba regions
- 1,575 workers (75 per cent) sourced from other parts of Queensland and Australia, operating on a fly-in fly-out basis.

4.4.1.3 Operational Labour Requirements

The labour force requirement for the operations phase is summarised in *Table 8.4.35* below. There will be an average of 800 jobs available during operations (based in and around Western Downs LGA), of which 700 are estimated to be manual, and 100 are estimated to be non-manual workers. Operational activities are expected to commence from the first quarter of 2014.

Table 8.4.35 Gas Field Operations Labour Force Requirements

Activity	Number of personnel
Exploration and survey	50
Well drilling	200
Gas and water gathering including well establishment and gathering lines	350
Maintenance/workover of infrastructure	50
Support staff – onsite offices, warehouses and camp	100
Water treatment/evaporation pond maintenance	50
Total	**800**

The expected breakdown of the total workforce during operations is as follows:

- 15 per cent (120 workers) will be locally sourced (of which 60 would be existing residents by 2014 with another 60 estimated to move to the area for work on the Project)
- 20 per cent (160 workers) will be sourced from the regional area including Roma and Toowoomba regions
- 65 per cent (520 workers) will be sourced from other parts of Queensland and Australia, operating on a fly-in fly-out basis.

4.4.1.4 Labour Force Impacts

Construction

It is possible that the current economic downturn (and subsequent down-scaling in the mining sector) has slightly increased the local availability of skilled labour, however this could revert or worsen in the period before construction begins.

Given low unemployment locally, and the skilled nature of the workforce required, it is expected that the project's construction workforce will draw labour from across Queensland and other states. As the Project does not plan to draw skilled manual from the local labour pool during construction, it is not expected to directly impact on the existing skilled labour shortage in the Dalby region. As stated above it has been assumed that 3 per cent of the construction workforce including non manual workers (63 people) will be drawn from the existing local workforce, and that an additional 2 per cent (43 people) are estimated to move to the area during 2010 to 2011 to work on this Project. This would see a total of 105 local people employed in Gas Field construction, which will provide a boost to local employment opportunities in both direct and indirect employment.

The remaining workers (up to 2,000 at the ultimate peak) would be drawn from the broader region and other parts of Australia. Impacts of this labour draw on the regional and national labour market and are further discussed in *Volume 8, Chapter 10*.

The impacts of the current economic downturn on skilled construction labour availability are yet to be determined at regional and state level. Should unemployment in relevant fields increase markedly throughout the region,

employment demand from this Project will contribute to local and regional employment stability, and be a measure of broader stability in the State's employment levels. It is also likely that local people employed in the project would experience better income levels given relativities to other employment options in e.g. manufacturing and agriculture.

The project will also need to manage expectations regarding the extent to which job requirements can or will be met from the local labour pool, through provision of timely, accurate information about job opportunities, required skills and skills development pathways.

The economic stimulus provided by the project will increase other job opportunities, and draw labour from other industries. This is discussed below and in more detail in the economic impact assessment (*Volume 8, Chapter 10*).

Operation

Direct novation of construction workers to operations is not possible given the different skill sets required and the fact that many will continue to reside in other areas. However construction of the Project and a number of other local projects is expected to build the local workforce capacity for some operational work in the Gas Field region, and increase the availability of specialist construction skills in the Dalby and Roma regions.

The Project intends to maximise local employment. Dalby has low unemployment and a trend for young people to leave the region in search of employment, education and other opportunities, and the availability of Project jobs may encourage young people to stay in the area, creating consequent positive effects for community vitality.

It has therefore been assumed that local labour availability will be at least 15 per cent for the operational period, which means that approximately 120 locally based workers will be employed long term. This is expected to contribute to greater security in employment and diversification of employment options.

Local employment will be gradually built over the course of operations period, however it will depend on factors such as:

- capacity of local housing stock in the Western Downs LGA
- capacity for local workforce training
- the region's ability to attract and service an adequate population to support local employment
- the number of competing projects in the region.

The first two of these factors will be addressed in the Project's mitigation strategies to reduce the influence of other factors on local labour availability, while some broader community development activities will be supported by the Project's Social Performance Plan and Social Investment Strategies.

The remaining operational workers would be drawn from the broader region and other parts of Australia. Of these 680 non-local workers, it is assumed that 200 would be sourced from the regional workforce, and 480 from other

parts of the country. This is expected to have a positive effect on employment for gas industry employers, trades people and non-manual workers. However due to higher wages offered by this resources industry project it is likely that the Project may attract workers from other industries creating a potential shortage of workers in other industries.

Assessment of population and housing impacts for operations has therefore considered a scenario with 15 per cent locally sourced labour for operations.

The economic modelling (refer to *Volume 8, Chapter 10*) suggests the operational phase of the Project could lead to the creation of approximately 1,229 full-time equivalent (FTE) positions in the Darling Downs region in 2014. This implies indirect employment creation of approximately 421 FTE employees in the region by 2014.

Total employment creation in the Darling Downs region from the proposed project is forecast to increase to 1,953 by 2021. This will provide a substantial stimulus for economic growth and population growth over the operational period, as discussed in *Section 4.4.2* below. It will also require the development of a co-ordinated local labour recruitment and housing response over the next ten years.

4.4.1.5 Cumulative Labour Impacts

The project's employment creation is substantial, with peak jobs estimated at 2,225 in the Gas Field Component, 500 for the Pipeline Component, and more than 1,500 for the LNG Component, as discussed in *Volume 8, Chapter 6* of this volume.

Table 8.4.36 shows a list of proposed projects which could be undertaken between 2010 and 2013 in the Dalby region. The table shows a list of projects considered in *Volume 1, Appendix 1.6* as well as lists some other projects which also being considered or are under study for this region. Dates for commencement and completion of construction projects are provided where available.

Table 8.4.36 Major Construction Projects Proposed for Western Downs LGA 2010 to 2013

Proposed Projects	Commence	Complete
Projects Considered for Cumulative Impacts in the Gas Field area for this EIS (refer to *Volume 1, Appendix 1.6)*		
Condamine Power Station (operational)	2009	
Expansion of gas fields for domestic gas supply	2010	
Gladstone LNG Project: CSG field	2011	2012
New Acland Coal Mine: Stage 3 Expansion		
Wandoan Coal Project	2010	2011
Linc Energy Underground Coal Gasification		
Spring Gully Power Station		
Felton Mine and Dimethyl Ether Pilot Plant Project		

Proposed Projects	Commence	Complete
Kunioon Open-cut Coal Mine	2010	2012
Other Projects Planned for the Region		
Wallumbilla–Darling Downs Power Station Gas Pipeline (Dalby and Roma LGA)		2010
Wandoan Coal–Electricity Infrastructure (Western Downs LGA)		2012
Cameby Downs Coal Project (Western Downs LGA)	2010	
Elimatta Open-cut Coal Mine (Western Downs LGA)	2010	2012
Surat Basin Railway (Southern Missing Link)	2010	2013
Fairview Power Project	Under study	
Lacerta Coal Seam Gas Project	Under study	
Kogan (Arrow Energy Power station)		2010

Given the limited information available about each of the projects and the current economic uncertainty it is difficult to quantify the cumulative impacts arising from other projects, but potential cumulative impacts include:

- heavy demand on the Queensland labour pool, resulting in restricted availability for other projects in other parts of Queensland
- knock-on effects for the availability of other labour in the region
- a rise in labour prices in the region to attract workers from other regions, which could increase labour incomes but also the price of labour for other industries
- a requirement for labour from overseas, which could have a range of cultural diversity-related impacts.

This will need to be addressed in co-operative planning between relevant Queensland Government departments and industry. Other cumulative impacts of the Project across the three components are considered in *Volume 8, Chapter 6* and *Chapter 10*.

4.4.1.6 Mitigation

In order to avoid creating a drain on skills and labour in an already tight labour market in Dalby, the Project proposes to source the major part of its labour force from other parts of Queensland and Australia, as seen in the labour origin and labour estimate numbers in the previous section. However, the Project recognises that heavy reliance on fly-in fly-out or drive-in drive-out worker arrangements is not sustainable over a longer period from a social sustainability perspective, as it does not contribute to population stability, constrains the contribution of the workforce to the local community and economy, and perpetuates a separation between workforces and the communities that host them.

A local employment policy will be developed, including a commitment that QGC will work towards maximising the local content of the workforce at all levels and at all stages of the Project, in line with our commitment to

maximising benefits for local people. For the purposes of this policy, local employment refers to labour sourced from the LGAs in which Project components sit. However, in light of the discussion in the previous paragraph the local employment policy will be supported by a local training and skills development program, which is discussed later in this mitigation section.

QGC will implement a public information strategy to increase local and regional employment in relation to the QCLNG Project. This will include:

- As part of contractor recruitment processes, information will be disseminated relating to the number and types of jobs available, their location, the duration of employment anticipated, the types of skills required, and the recruitment process to be followed.
- Interested people will be invited to 'express an interest' in a job or training opportunity and send in details of skills and experience (which will provide basic information relating to the local capacity to supply and requirements for training).

Implementation of the local employment policy will also include the following:

- The local employment policy will be included in invitations to tender for contracts, with a request to bidders to set out their approach to maximising local employment.
- Bidders will be expected to outline local recruitment and training policies to be adopted, and to stipulate percentage / numbers of jobs to be targetted from the local workforce.
- Contractor recruitment policies will be required to outline how local people have the opportunity to apply for jobs, the approach to recruitment of local people, and their approach to ensuring recruitment processes are transparent and include feedback for unsuccessful candidates.
- Contractor training policies will be required to set out their approach to on-the-job training, pre-recruitment training initiatives for local people designed to raise capacity to levels required for employment (e.g. Health, Safety, Security and Environment [HSSE] training etc).

QGC will invest in local training and skills development programs to build local labour force capacity for the long term. In particular, this will include:

- a particular focus on employment programs with Indigenous people
- identifying local labour force availability and skill set match to Project requirements, beginning with a current project identifying Indigenous community members' skills and employment aspirations
- identifying the skills sets and skills development programs required to involve women from the Western Downs LGA in the Project employment
- targeted skills development and job placement programs for young and unemployed people in the Dalby region. This is expected to help retain some of the younger population within the area. Further efforts to retain young adults would include establishing industry and school partnerships in order to build increased opportunities for apprenticeships and employment.

In line with the energy sector trends, the Project could potentially offer better paying and long-term employment opportunities to locals. This could result in a drain from other industries due to the increased employment opportunities

created by the Project as well as other potential projects in the area. Industries such as agriculture and related trades and services may experience a shortage or lack of labour availability. The Project will monitor the effects of its labour draw in consultation with local businesses and industries, and adjust the balance of recruitment strategies between local, regional and broader labour pools as far as is practicable.

A potential benefit of the Project is that increased employment opportunities in the Darling Downs region may stimulate population stability in the immediate region of Dalby, Roma and Toowoomba, by allowing existing locals the opportunity to work in their region, and supporting the area's overall economic diversity and stability.

If imported labour is required to address cumulative impacts, an integration program would be introduced to support workers to function well in local conditions. This could include accessing the State Government's Queensland Skills Matching database to identify registered skilled migrants wishing to move to Queensland and support for workers to attend English classes.

4.4.2 Population Impacts

4.4.2.1 Population Growth Impacts

Assumptions on the percentage and number of new resident workers moving into the area are detailed below. The impacts on population growth, community infrastructure needs and housing are discussed in the following sections.

Direct Population Impacts

Construction

As previously discussed, the ultimate peak construction workforce for the Gas Field will reach 2,225 people, and have an 'average peak' of 2,100 workers for the 14 months from November 2011 to December 2012.

The local workforce for construction is expected to reach around 5 per cent by 2012, (105 workers) for the average peak. Of these, it is assumed that approximately:

- 63 people (3 per cent) would already be living in the Western Downs LGA
- 42 people (2 per cent) would move from other regions for work in the Project and with an eye to permanent employment
- 420 people (20 per cent) will drive in and out from the regional area (Toowoomba, Banana, Roma and as far as Brisbane)
- 1,575 people (75 per cent) will fly-in fly-out (FIFO) from other parts of Australia.

The total non-resident workforce at average peak would be 95 per cent (1,995 workers). *Table 8.4.37* below details how new resident workers moving into the Dalby region will add to population growth. It is assumed that, of the workers who would move to the area for employment, 60 per cent would have

dependents, with an average of two dependents each, of which one would be a child[68].

Based on the construction workforce assumptions above, the table shows that of the 42 new resident workers moving into the area, there will be a direct population increase of approximately 93 people in Western Downs LGA due to construction.

The operations workforce based in Western Downs LGA will total 800 workers. An additional 100 positions required to support Gas Field operations are likely to be based in Brisbane.

Population impacts due to operation will begin during the construction period as people move to the area for long-term employment, and this is expected to commence in 2011. *Table 8.4.37* outlines the expected direct population increase due to the Project's construction and operational phases. It indicates that the direct population increase due to the construction phase will be less than 100 people, and the total direct population increase by 2014 (beginning operations) will be approximately 225 people. Not all construction workers will be employed in operation, so some workers may have left by 2014 and the total population increase would be less than 225 people.

Table 8.4.37 Direct Population Increase in the CSG Fields

Workers	Construction (Peak) 2011	Operations 2014
Average peak (Gas Field)	2,100	800
National (FIFO)	1,575 (75%)	520 (65%)
Regional[69] (drive-in drive-out)	420 (20%)	160 (20%)
Resident workers (existing at 2009)	63 (3%)	
New resident workers (at 2011)	42 (2%)	
Married (60%) workers	25	
Dependents @ 2 per worker	50	
Single (40%) at 2011	18	
Population increase @ 2011	93	
Resident workers (existing at 2014)		60 (7.5%)
New resident workers (at 2014)		60 (7.5%)
Married (60%) workers		36
Dependents @ 2 per worker		72
Single (40%) at 2011		24
Population increase @ 2011	93	
Population increase at 2014		132
Total population impact by 2014		225

In addition to the population increase, the area will host a non-resident workforce of around 1,995 people (refer to *Table 8.4.37*). The impacts of the

68 This assumption is based on the fact that approximately 80 per cent of the household structures in Australia are families with children, families without children and single parent households, however since construction workers are usually from a younger age group, it is estimated that 60 per cent of the workforce will have an average of two dependents.

69 Toowoomba, Banana, North Burnett, and Roma LGAs

non-resident workforce on social infrastructure and other social values are discussed later in this section.

There will be an additional 200 contractors engaged in well drilling and establishment activities, and this additional workforce component will be required throughout construction and operations. Drilling crews would be transient and primarily non-local workers, accommodated in temporary camps.

Operations

As noted in the previous section, construction workers will not necessarily be novated to operational employment, but a proportion of the required operation workforce (around 15%) is expected to be living locally by 2014 in anticipation of, or contracted for operations.

As shown in *Table 8.4.37* It has been assumed that the 800 operational workforce would consist of:

- 15% (120 people) local residents of Dalby, of which 50% (60 workers) will be local residents pre-2011 and the other 50% (60 workers) will include some who have moved in during construction or after construction, leading to a population increase of 132 for operations by 2014
- 20% (160 people) who will drive from their homes from within the broader region (Roma, Toowoomba, Banana LGAs and possibly Brisbane) and stay in the camps during shifts
- 65% (520 people) travelling from other parts of Queensland and Australia who will stay in camps during shifts.

Over time, it is expected that the local proportion of the workforce will grow, with some workers moving to the area, and others found within industries whose requirements are declining. Assuming 450 of the 520 non-local workers will be replaced by people moving to the area, Western Downs Regional Council could see approximately 50 additional workers per year move into the area each year for nine years. As an estimate the resulting annual population increase between 2014 and 2024 could be around 110 people per year for nine years, including:

- 20 single workers
- 30 workers with dependents
- 60 dependents, including around 30 children.

This is seen as part of organic population growth in the region, and will be constrained or facilitated by the availability of housing and land for residential development.

Indirect Population Impact

Indirect population increases are likely to occur as the result of:

- stimulation of commercial, manufacturing, hospitality, retail, personal services and other business growth
- the likelihood of other major projects and local businesses recruiting from outside the region to replace workers drawn to QCLNG, adding an additional population inflow.

Construction

On average, the Project is estimated to result in an increase of 2,100 direct employment positions in the Darling Downs SD during the construction. An estimate of indirect employment can be developed based on industry transaction tables which identifies that for every direct employee in the non-residential construction sector in the Darling Downs SD approximately 0.3 FTE positions are generated. Using this assumption, the indirect employment increase is estimated to be 630 jobs. This is a regional employment benefit where the region includes Toowoomba LGA, Roma LGA and Western Downs LGA. However indirect employment includes jobs primarily due to business stimulation and service demand and workers to replace those drawn from other businesses to Project employment. As such, the majority are expected to centre in Western Downs LGA.

It may be assumed that:

- 10 per cent of "indirect jobs" will be filled by existing residents, (63 people, equivalent to around 40 per cent of currently unemployed Dalby region residents)
- 30 per cent (189 people) will travel to local jobs from within the region
- 60 per cent (378) will move into Dalby as new residents.

Assuming 50 per cent (189) of the new residents are single and 50 per cent (189) of them have two dependents each, the total indirect population increase is estimated to be 756 people by 2014 (of which 189 could be children).

It will be necessary for the population increase due to indirect employment in the QCLNG Project and other local CSG field developments to be monitored by the Queensland Government to ensure timely planning for expanded social infrastructure such as schools and family support services. The QCLNG Project will contribute to increased local community capacity through the QGC Community Development Fund as described in *Chapter 8*.

Operations

Based on the economic impact assessment modelling results (refer to *Volume 8, Chapter 10*) it is suggested that the operational phase of the Project could lead to the creation of approximately 1,909 FTE positions in the Darling Downs region in 2014. This implies indirect employment creation of approximately 1,099 FTE employees in the region in that year. Further details of indirect employment increases are outlined in *Volume 8, Chapter 10.*

If it is assumed that 20% of people taking up indirect jobs (219 persons) will be existing residents including those who moved to the area during QCLNG construction), 30% (329 persons) drive from within the region, and using the same assumptions about status and dependents as above, the indirect population increase is estimated to be 1,096 people by 2014, including around 274 children.

Other major projects in the area will also recruit from outside to fulfil their labour requirements, some of whom may move into the area as new residents. However, it is not possible to quantify this population growth impact.

Total Population Impacts of the Project

With gradual increase in local employment within QCLNG it is expected that there could be a population increase of approximately 110 people per year in the Gas Field area. The total direct and indirect population increase due to QCLNG and its flow-on effects would total more than 2,000 people in the Dalby region by 2014 and a further 800-900 people by 2024.

The total (direct and indirect) population impact caused by the Project construction and operations over the period from 2011 to 2014 is 2,077, including:

- a direct increase during construction of approximately 93 people by 2011
- a direct increase at the beginning of operations of approximately 132 people by 2014
- an indirect increase during construction from 2011 to 2014 of 756 people
- an indirect increase at the beginning of operation in 2014 will be 1,096 people, depending on the availability of residential land, and including the indirect increase during construction.

The effects of this population growth are likely to include:

- a contribution to steady and sustainable growth in the Dalby region
- an increase in local employment levels and average incomes in the Gas Field communities, over the construction and operational period of the Project
- an increased diversity of employment for young people which may retain more 15 to 29-year-olds in the region
- a likely increase in household formation and particularly young families
- Community cohesion, greater community vitality, and stronger, more robust local economies in the Gas Field communities are likely due to the collective effect of the above factors.

This is expected to be a positive contribution to the social sustainability of the Dalby region, however planning for sufficient housing and social infrastructure will be required, and this is addressed in ensuing sections.

4.4.2.2 Other Demographic Impacts

Gender Profile

Due to the nature of the work and existing profile of the construction workforce, it is estimated that at least 90% of the construction workforce will be male.

The majority of the workers who move permanently to the area will bring partners and/or children as discussed above, so it is not expected that this component of the workforce will cause a significant gender imbalance in the

area. To the extent that single men move to the area for operational employment, this could cause a small variation in the ratio of working-age men to women.

The FIFO workforce and drive in drive out (DIDO) workforce accommodated in the workers' accommodation camps during construction, this would support an additional 1,520 non-resident males in the area, living as single men for their three-week shifts. This will significantly increase the single male population in the area. Potential impacts for community values are discussed in following sections.

During operations the influx of single male workforce in the region would be reduced mainly to 520 workers who would be FIFO workers and 160 DIDO workers from the wider region. The other 120 workers would be residents in the local area, the majority of them with dependents. Some of these local resident employees would be women engaged in construction, administration and support services. The Project's recruitment and training strategy will include a focus on the employment of local women.

Age Profile

As described in the housing section and the Project description, a large majority of the workers will be housed in temporary or permanent workers' camps to avoid impacts on housing availability and affordability.

With the proposed workers camps, the estimated direct contribution to Western Downs LGA's population is forecast at approximately 132 people by 2014. As stated in *Table 8.4.37* the composition if these 132 people includes 24 single new resident workers, 36 married new resident workers, assuming an average of one dependent adult and one dependent child for each of these married workers, a total of 96 adults and 36 children would be added to the resident population of Western Downs LGA. Given the small number of people added to different age groups it will not skew the age profile of the region. Considering the education and career avenues available for young children in the region it is likely that the additional children in the area will be within the service capacity of the region's educational system.

Work opportunities may also encourage the retention of young people between 15 and 29 years, thereby making a small increase in that age group, which would be benefit the region's age profile given the current trend of young people leaving the Dalby region.

Cultural Diversity

In 2006, 5 per cent of the total population of Western Downs LGA was born overseas. Of these the majority were born in English-speaking countries such as the United Kingdom and New Zealand, and a small proportion (between 1 per cent and 2 per cent across the Dalby SLA) were born in non English-speaking countries.

It is assumed that some of the new families moving to Western Downs LGA for the Project are overseas born, as approximately 18 per cent of Australians in 2006 were born overseas. If 18 per cent of the total 132 adults expected to move into the area by 2014 are overseas born, then there would be an increase of around 23 new residents who were born overseas. Of these,

some may be people for whom English is a second language. It will be important for services to support them if required, but numbers are expected to be very small.

There is a possibility that if the required amount of labour is not found within Australia then some construction workers may be required from overseas. This will increase the cultural diversity in the region which was predominantly Australian in composition in 2006 giving rise to issues related to community cohesion. The requirement for imported workers is not expected to lead to a need for specific services in the local community.

Mitigation

If a part of the workforce needs to be imported the Project will where possible try to import workers who have a better cultural fit with local communities, and/or are provide comprehensive support to assimilate with local social conditions. A contingency plan will be developed for the importation of foreign labour, if required. Given the duration of employment, it is unlikely that families would move to the area with imported workers.

The Project will work with relevant community organisations and agencies to generate awareness and avenues in the community to co-exist with people of different origins.

4.4.3 Housing Impacts

This SIA has assumed that up to 5 per cent of the construction workforce could be drawn from the local area by 2011, including 63 existing residents and 42 workers who would have moved to the area. It assumes a total of 132 people by 2014.

4.4.3.1 Housing Demand

Approximately 33.6 per cent of low-income (bottom 30 per cent) local households with mortgages and 42.6 per cent of low-income rental households in the Dalby region were experiencing housing stress in 2006. It is therefore important to ensure that the project's housing requirements are managed and impacts mitigated to avoid impacting on this vulnerable group.

Based on population growth anticipated in the area due to the Project (refer to *Section 4.4.2.1*) the following housing demand can be assumed (refer to *Table 8.4.38*):

- a direct requirement for 33 dwellings by 2011
- a direct requirement for 48 dwellings by 2014, mostly cumulative with the previous requirement but with some loss of new (at 2011) households

If appropriately skilled local workers can be found locally, and sufficient residential land remains available, local employment for the Project could grow during operations, with a long-term requirement for around 40 dwellings per year to 2023.

The housing requirement for an increased population due to indirect job

creation could be more than 800 dwellings by 2014.

The table below outlines the projected housing demand in the Western Downs LGA between 2011 and 2014, coinciding with the construction period and beginning of operations.

Table 8.4.38 Projected Housing Demand in Dalby

Workers	Construction (Peak) 2011	Operations 2014	Housing Demand by 2011	Housing Demand by 2014 –15
Direct impacts				
New resident workers (at 2011)	42 (2%)			
Married (60%) workers	24		24	
Single workers (40%) at 2 people/dwelling	18		9	
Total dwellings required at 2011			*33*	
New resident workers (at 2014)		60		
Married (60%) workers		36		36
Single workers (40%) at 2 people/dwelling		24		12
Total dwellings required			*33*	*48 (81 total)*
Indirect impacts				
Total new residents	378	721		
Married (50%) workers	189	360	360	549
Single workers (50%) at 2 people/dwelling	189	360	95	180 (total 275)
Total Indirect demand			455	824

*Numbers have been rounded.

Against the total housing available, the average rental vacancy rate in Western Downs LGA in 2007–08 was 6.9 per cent. The total dwelling stock in 2008 was around 10,257 dwellings, of which 2,975 dwellings (29 per cent) were rented. Applying a vacancy rate of 6.9 per cent, there are likely to be around 205 rental dwellings currently available in the Western Downs LGA and this level has been assumed for 2011.

Should 30 per cent of the in-coming (2011) Project workers seek to purchase housing, this would lead to purchase of 11 houses, and reduce demand for rental housing at 2011 to 22 dwellings (and around 32 rental dwellings in 2014).

Given rental availability of more than 200 houses, it is expected that the Project will make a small demand on the housing stock in Western Downs

LGA during construction, and therefore put little pressure on the housing availability and affordability. This will need to be monitored to ensure that no effects are felt in terms of increased rental costs and displacement of low-income households.

As proposed in the Project description the remaining 95 per cent of the construction phase workforce would be non-local workers and will be housed in permanent or temporary camps. Hence the construction phase of the Project will not otherwise directly impact the local housing supply. Proposed camp accommodation arrangement for the construction phase of the Project is described in *Volume 2, Chapter 6 and 11*.

During the operations phase, it is assumed that some of the workers who have moved into the region during construction will continue to stay for long-term employment and some new people may move in after construction (in search of long term work). Local residents are expected to form 15 per cent of the initial total operations labour force. As seen in *Table 8.4.38* the beginning of the operations phase (2014) could see a direct housing demand of 48 dwellings. Based on earlier assumptions (30 per cent of these people purchasing their house), the rental housing demand would reduce to 32 dwellings.

Given the recent Council amalgamations, an integrated picture of residential land availability in the Western Downs Regional Council LGA is not yet available. Indications of current or potential supply include:

- Information from Western Downs Regional Council indicates approximately 300 serviced residential blocks and 200 rural residential blocks coming on to the market during 2009–10[70]
- A draft land use analysis for potential residential use in Chinchilla township, identifying a gross yield of suitable land of up to 220 serviced lots and 125 rural residential lots[71].

This EIS compared Council zoning maps to aerial photography to estimate the availability of suitable zoned land for future residential development, which has provided a rough indication that:

- The town of Miles shows approximately 350 ha unsubdivided appropriately zoned for residential development, located north of the Warrego Highway
- The township of Tara shows approximately 45 ha for residential development, located south of the railway line and Glenmorgan Branch Road
- Wandoan Township has little appropriately zoned land with 23 ha identified available for residential development.

Information from Western Downs Regional Council indicates that the condition and extent of existing infrastructure, especially water and sewerage constrain the zoning of additional land for residential purposes. Council may not zone more land for residential purposes when difficulties are experienced in servicing the amount of land that is already zoned for residential development.

70 Advice provided by Western Downs Regional Council in consultation for QCLNG, May 2009

71 Foresight Partners Pty Ltd, February 2009, Chinchilla Township Demographic Profile and Residential Land Demand Assessment- Draft for Discussion.

Building approvals have been highly variable in Western Downs LGA (e.g. 63 in 2003–04, 164 in 2005–06 and 78 in 2007–08). If it is assumed that an average of 100 dwellings can be produced per year in the Western Downs LGA, and that one third of these become available for rental, an additional 600 houses could be added to Western Downs LGA's housing stock between 2008 and 2014. Of these, up to one third (or an additional 200) could be rental dwellings.

It is therefore not expected that the direct housing demand induced by the Project during the operational phase would cause negative impacts on housing availability or affordability.

The remaining 85 per cent of the operational workforce will be housed in workers' accommodation camps, and the rate of housing supply will govern the speed at which the local workforce grows during operations. Proposed camp accommodation for operations labour is summarised in *Volume 2, Chapter 6 and 7.*

The effect of indirect population growth on demand for housing is likely to be around 455 dwellings by 2011, and more than 800 dwellings by 2015 (including those required at 2011). The current capacity in Western Downs LGA to accommodate all the new residents to the area (cause as a result of direct as well as indirect employment) is low. It is therefore expected that the rate of in-migration will be strongly controlled by housing availability and could lead to more regional employees rather than local employees, until the housing supply catches up with demand.

Based on an average of 133 dwellings approved per annum in Western Downs LGA and 37 approved per annum in Roma LGA (refer *Volume 8, Chapter 10*) between 2009 and 2014 (when operation is expected to commence) approximately 850 new dwellings may be developed. It is likely that the increase in demand will be partly accommodated by an increase in supply, so long as the project's timing and anticipated population impacts are clearly communicated to the market in advance of the project commencing.

However, with the impacts of flow-on demand from the construction phase, as well as flow-on employment impacts from the operation phase, it is very likely that this will impact on the local property market and prices, in the short to medium term, if additional supply is not provided to meet demand. Demand-pull inflation is likely to place pressure on housing affordability. Referring to *Table 8.4.36* it is estimated that 15 projects (two projects listed in the table were under study at the time this EIS was written) could be constructed in the region between 2010 and 2013, the likelihood of impacts on housing affordability and availability is strengthened causing high pressure on the region's housing stock.

Mitigation

The Project will develop and implement a comprehensive Housing and Accommodation Management Plan and strategy (refer to *Volume 8, Chapter 8*). This will include:

- a Camp Management Strategy and team
- avoiding or reducing impacts of camps on existing and surrounding uses, and townships

- investment in housing partnerships to address the Project's direct demands
- consideration of Western Downs Regional Council's planning regulations and local laws
- a strategy to influence affordable housing for low-income people in the Dalby region, to ensure that the most vulnerable community members are not excessively impacted by increased housing costs as a result of indirect population demands.

As the local labour force increases, impacts on housing will be monitored and reviewed. An ongoing monitoring system will monitor housing impacts, and provision will be made to mitigate those impacts, as described in *Volume 8*, *Chapter 8*.

4.4.3.2 Short-stay Accommodation Requirements

Due to the large number of FIFO workers, 21-days-on and seven-days-off shifts during construction and operations, and the provision of workers' accommodation camps for the workforce in the Gas Field, it is unlikely that the Project will create demand for short-stay accommodation. QGC currently operates two workers' accommodation camps in the Gas Field. These camps can be used to accommodate workers and contractors employed early in the construction phase, with accommodation camps to be constructed as early works. This will avoid impacts on the availability of short stay accommodation.

4.4.4 Community Infrastructure Impacts

A social infrastructure assessment was carried out as part of the EIS, to identify existing community needs for community services and facilities, against which to measure the Project's impacts (refer to *Appendix 8.3).*

With respect to the capacity of existing social infrastructure, the assessment found:

- There is a good distribution of community halls with 13 across the Western Downs LGA, but a lack of community capacity to maintain and upgrade halls and community centres to meet growing needs and serve contemporary uses
- As determined by benchmarking analysis, there is a current need to provide one district-level (i.e. large, multi-purpose) community centre in the Western Downs LGA, which could constitute upgrading of an existing centre or development of a new centre
- There is difficulty attracting and retaining sufficient numbers of health and medical practitioners, due to demanding conditions, the Australia-wide doctor shortage and the particular difficulty rural areas experience in attracting medical staff
- Health and medical services are too stretched to provide primary and secondary health care services for disparate needs across the LGA
- There is difficulty accessing and providing essential services in smaller centres, as a number of small centres don't meet population thresholds for comprehensive services

- There is a perceived need for a major upgrade to Chinchilla Hospital
- There is a lack of physiotherapy services throughout the area
- There are significant waiting lists in relationship to GPs

The community service network is working hard to meet demand, but there is a lack of capacity in service delivery to support:

- Families affected by the resources industry including socially dislocated resource industry families
- Young people and children with particular support needs
- Workers and families with particular language and cultural needs.

A shortage of child-care services was also identified in the town of Dalby.

Consultation indicated that the region is currently experiencing issues such as:

- family and financial stress relating to increasing rental and house prices
- increased population, leading to stressed health and medical services
- stresses on education facilities, with increased families moving into the area, particularly transient families
- lack of cohesion between workforce 'communities' within broader communities.

The Project's direct contribution to population increase at 2011 has been calculated at 93 people, with an additional direct increase of 132 people by 2014. This represents an increase of 225 people by 2014, including approximately 30 children.

The workforce is likely to constitute around 95 per cent non-local workers during construction. As stated in the Project description and detailed in the mitigation section below, the Project will provide health and personal support to workers' camp residents, and medical services.

However, a small additional pressure is expected on health and medical services provided by general practitioners and community health centres and hospitals, due to the small population increase attributable to the project. This was identified as an issue in the community attitudes survey in Dalby, Miles and Chinchilla, where 41 per cent of the respondents in Dalby were concerned that the Project would have a negative effect on the access to medical facilities in the community.

This will contribute to existing pressure on health services, which are already characterised by excessive demand on the public health system and a shortage of affordable private health services (including acute and emergency services). Attracting and maintaining appropriately trained health staff is an existing local issue. There may be some scope to augment local health services with the services of primary health care personnel brought in to the area by QGC to support the health needs of workers. As noted in the following section, the employment of a doctor by the project for the peak construction period is likely to be required. It will also be desirable for the Project to invest in increasing rural health service capacity, by developing partnerships with other stakeholders, such as Queensland Health, the Australian College of Rural and Remote Medicine and the Australian Medical Association. This is being considered as part of QGC's social investment strategy.

There is also potential for an increase in demand for local emergency services, including Fire and Rescue, Ambulance and Police services. QGC's over-riding business principle is to strive for zero incidents, and this will be implemented through a comprehensive and ongoing program including behavioural, attitudinal, governance and enforcement provisions. This will involve local emergency service providers to ensure local conditions and values are respected. The project is also in regular consultation with emergency service and health providers in the Dalby region, to ensure alignment on public safety and emergency response objectives, and appropriate support for emergency services from the project. This is discussed in the following section.

The Project is expected to make minimal demand on other community services during construction, given that the workforce is likely to constitute around 95 per cent non-local workers. This was identified as an issue in the community attitudes survey, however, while 29 per cent thought the Project would have a negative impact on access to community or health services, 35 per cent thought it would be a positive impact, presumably on the expectation that a larger population would be able to attract more social infrastructure. Social investment by the project will be designed to strengthen the capacity of local services and facilities, and this is outlined further in *Volume 8, Chapter 8*.

A potential impact exists in that workers will be able to access local hotels, clubs and public places, which, in sufficient numbers, may alienate local use. All workers and contractors will undergo awareness training about local values, and the Project's behavioural standards for will be strictly enforced with respect to behaviour in public places.

The indirect population growth attributed to the Project is likely to impact social infrastructure as follows:

- An increased demand for local school enrolments
- An increased demand for general practitioner, community health and emergency services
- Increased demand on child care, family support and youth support services
- Incremental increased demand on community and cultural facilities such as libraries, parks, community centres and sporting grounds
- Increased membership pool for community, cultural and sporting associations.

The Project's impact will also be cumulative along with other similar projects impacting on the region. Gas Field construction may occur concurrently with construction of other major projects on the area, generating cumulative demands on social infrastructure across the board, including family support, child care and health services. This is unable to be quantified, but will need to be closely monitored, with corrective action such as increased community-service funding and community development program investment, as required.

In terms of transport infrastructure such as roads, parking and other transport infrastructure facilities in the Dalby region, this Project as well as cumulative impacts from others, is expected to add pressure on these facilities. Transport infrastructure impacts of the project activities in the Gas Field area are addressed in *Volume 3, Chapter 14.*

The FIFO workforce could use the airport facilities in Chinchilla, based on the results of the preliminary investigation for FIFO arrangements. Potential impacts of project use of local and regional airports are being investigated and appropriate negotiations and consultations are in progress in relation to the airport capacity and quality. There will also be cumulative impacts from other projects, which cannot be assessed as relevant information for those projects is unavailable.

Operations

As local participation in the Project workforce grows, a further small and sustained increase of approximately 110 people per year for a period of nine years between 2014 to 2024 is expected as a direct result of the Project. The capacity of community services may need a small increase in capacity to support Project-related demand. QGC will maintain regular consultation with Queensland Education and Queensland Health to ensure a shared understanding of service capacity and demand issues. As noted below, QGC will provide an ongoing QGC Community Development Fund, which will be sustained for the life of the Project, to assist in building local community capacity.

Mitigation

To minimise demand on local primary health services, the Project will provide health care services to support onsite operations for workers and their families. Consultation with health practitioners and centres in the Gas Field area indicated that given the need for doctors to certify Work Cover agreements, any work place accidents will require the services of a GP. In addition, the general range of illnesses such as colds and flu, skin conditions and muscle strains will require medical attention. A protocol for medical evacuation arrangements with Queensland Health will be developed as part of occupational health and safety obligations.

The QGC Community Development Fund which will support the capacity of local organisations and service providers to maintain quality access to social infrastructure as the population grows. Details are outlined in *Volume 8, Chapter 8*. Mitigation of Project workforce families' demands on social infrastructure will require capacity building of local services and social networks. To achieve this, the QGC Community Development Fund would support the following initiatives:

- contribute funds to appropriate local agencies providing family support services
- contribute to social infrastructure upgrades
- contribute funds to support positive behaviour initiatives associated with the high incidence of single males, e.g. personal safety and resilience programs for young women.

In order to mitigate the potential impact on local and regional emergency services, the Project will ensure that all demands on social, health and emergency services are monitored and reviewed, and corrective action will be taken with respect to the project's direct impacts on local services.

4.4.5 *Community Health and Safety Impacts*

This section outlines Project benefits and potential impacts on community health and safety. It describes potential impacts on social determinants of health, and potential impacts on Project management determinants of health.

Technical detail supporting analysis of environmental health factors is contained in *Volume 3*, as follows:

- water quality in *Chapters 9, 10* and *11*
- air emissions in *Chapter 12*
- noise impacts in *Chapter 13*
- transport impacts in *Chapters 14*
- health and safety compliance and hazard and risk assessment in *Chapter 17*.

4.4.5.1 *Health and Safety Impacts – Construction*

Demographic change

Changes to health and safety status can occur if the demography changes, for example with a skewed gender balance. While the Project embraces an equal opportunities policy, the pool of skilled workforce from which the company recruits is already biased towards men and recruitment will reflect this bias. The employment of construction workers is likely to increase the proportion of males living in the area in construction camps on a temporary basis, but have negligible impact on the demographics of the permanent community during construction.

The health determinants of significant impact for men are smoking, alcohol consumption, illicit drug use, sun protection, and risk and protective factors for mental health[72]. When considering social investment projects, the Project will take into account both the specific health determinants impacting the increased male demographic as well as the priority needs of the community as a whole.

Access to health infrastructure and services

The project's demands with respect to health services are outlined in *Section 4.4.4*, and include a small population increase during construction and increased demand for health services from FIFO workers. Provisions to address local health service capacity include, as previously noted, partnerships to increase the capacity to attract and retain GPs, provision of a doctor for the FIFO workforce, and investment in local social infrastructure.

Impacts on Vulnerable Groups

Consideration of vulnerable groups (refer to Section *4.3.5.1*) in an impact analysis focuses on whether there is potential for the Project to disproportionately affect their wellbeing.

72 Queensland Government (2004) Health Determinants Gladstone Health Service District

Low socio-economic status and lack of employment are closely linked to almost every major cause of mortality and morbidity. During construction the Project will have a positive direct and indirect impact on the regional economy and hence on the socio-economic status of those involved. The economic impact assessment provides further details of the nature and extent of the economic benefits of the Project (*Volume 8, Chapter 10)*.

Indigenous people are disproportionately represented in lower income groups, and the Project's relationship to Indigenous communities is discussed in detail in *Volume 8, Chapter 7*.

Direct and indirect employment during the operating life of the Project will be more stable and secure than construction employment and will contribute to socio-economic status and the health and wellbeing of the employees and their dependents.

It is possible that there will be some reduction in access to health facilities and services during the construction period. This may disproportionately impact pensioners and/or those with disabilities and/or children. The prioritisation by the Project of the recruitment of local workers maximises the potential benefit of this impact on the health status of the population as a whole. The Project will monitor access to ensure no negative impacts and will work with local providers to contribute towards the provision of health services in the locality.

It is not considered that the other vulnerable groups will be disproportionately impacted by the Project's activities.

Stress

Psychological stress has been defined as 'a condition or feeling, experienced when a person perceives that demands exceed the personal and social resources the individual is able to mobilise'[73]. The demands of coping with change, which may be perceived and actual, positive and negative, have demonstrable effects on stress levels.

The Gas Field communities have been exposed to industrial development over the last few years. Changes such as land use change, increased workforce numbers and increased traffic throughout the region are not expected to have a significant impact on community stress levels due to the mitigation measures which will be put in place by the Project. Also, the Project's economic benefits to the region are likely to counter-balance some stress that is inevitable during a time of broader economic and employment uncertainty.

Nevertheless, given the potential for cumulative impacts from a range of other projects, this issue will be monitored through community relations activities developed for this Project, as outlined in *Volume 12*.

Worker Health and Safety

The Project will be compliant with Australian legislative requirements on worker health and safety, and further, has adopted BG Group's Health, Safety, Security and Environment (HSSE) standards and policies. Details of the

73 Lazarus, R. S. and Folkman, S. (1984) Stress, appraisal and coping. New York: Springer P 13

HSSE Management System are in *Volume 5, Chapter 18.*

BG Group's Statement of Principle related to HSSE is that:

> 'Outstanding business performance requires outstanding health, safety and environmental performance. This means the protection of the health and safety of our people and of those affected by our business, the protection of our physical assets and reputation and the protection of the environment'.

The Project recognises and acknowledges the importance of achieving world-class performance with respect to protection of HSSE on all projects. Its strategy for HSSE performance is based on a philosophy that all incidences are preventable and a commitment to:

- achieve zero incidents through pursuing the goal of no harm to people or the environment
- provide leadership in promoting best practice and the use of valuable lessons learned
- manage HSSE matters as any other critical business activity
- use an integrated management program to make HSSE a responsibility of all employees
- promote a culture in which Project employees share this commitment.

The Project is committed to achieving zero incidents and eliminating all potential adverse impacts on the health and safety of Project stakeholders and on the environment, wherever practicably achievable.

The Project will develop and implement a system of health management to ensure that:

- all health hazards arising from the design or fabrication, construction and commissioning of Project facilities are identified, assessed and managed to reduce the risks of persons developing occupational related illness.
- appropriate means are provided and implemented to treat and to assist the return to work of those disabled by disease or injury.
- all personnel employed on the Project are aware of the health hazards and control measures available to them and are fit to carry out their assigned tasks.

A health-risk management program will be implemented during construction and operations. This is based on a health risk assessment, from which a health surveillance program will be developed and a health-risk control plan will be implemented. During construction, a set of Project-specific procedures that include those for managing occupational health hazards will be developed for execution by every works contractor and subcontractor. The Project-specific procedures selected will complement the health-risk management program. The procedures assure a uniform application of Project HSSE policies, interpretations, and compliance.

Perceived impacts – concerns about safety

In the community attitudes survey 72 per cent of respondents from the Gas Field area reported no concerns about safety standards and practices in the LNG industry. Thirteen per cent had some concerns and 15 per cent were

unsure. The focus groups indicated that people in the Gas Field area held some safety and security concerns associated with the LNG industry, specifically public safety on the roads as traffic increases, as well as leakages of the gas, rupture of pipelines and terrorist activity.

Concerns may increase as people begin to see construction activities underway in their neighbourhood.

The Project has undertaken a detailed impact assessment of all relevant potential environmental issues. This has included qualitative and quantitative hazard and risk studies, security risk assessments, and modelling of potential issues such as noise and air emissions, and the associated mitigation requirements.

The Project will need to be transparent about the management and monitoring of such potential impacts in order to ensure that the community has free access to and understands the activities. Moreover, the Project will need to communicate clearly information on safety standards and respond quickly to community questions as they arise.

Construction Worker Behaviour Management

During peak construction, up to 2,500 workers will be employed in the Gas Field (including approximately 200 drilling workers). Of these, it is likely that the vast majority will be a FIFO workforce. There will be several workers' camps (approximately up to eight camps), with some accommodating up to 300 people. The majority of these camps will move annually, although the smaller drilling and well establishment camps will shift approximately every month. *Section 4.4.1* outlines the labour requirements in detail, including the prioritisation and assumptions around the recruitment of local labour.

Construction workers will come into contact with the local community in the following ways:

- job-related activities off site, such as transporting equipment or whilst travelling to the construction site from the camp
- travel to and from camps to local towns for small shopping needs and for recreation
- locally based workers returning home each night.

The workers' accommodation camps will generate a temporary imbalance of single males in the area around Dalby, Chinchilla and Miles. The Project will exacerbate the imbalance from existing workers' camps on some of these settlements. The potential impacts arising from the presence of construction workers are mostly associated with the behaviour of men during time off work and include:

- there may be some incidents of construction workers obtaining and consuming illegal substances and/or excessive amounts of alcohol. Experience from previous construction projects shows that this can have a negative impact on the local community through increasing the incidents of crime and/or violence and real or perceived threats. These impacts are particularly felt by women and would be concentrated in public places such as hotels and clubs.

- relationships between men on leave (whether single or in a relationship) and local residents can lead to family breakdown issues and tensions with local communities.
- cultural differences between construction workers and local residents, particularly if workers disregard local cultural norms, or generate an increase in prostitution, can lead to tensions with local community.
- the arrival of new workers associated with construction projects is often associated with an increase in sexually transmitted diseases (STDs) in the local resident population.
- adolescent and young men witnessing poor role modelling from construction workers on leave can lead to changes in local young men's behaviour and tensions with the community.

Mitigation

Mitigation of changes to social determinants is discussed in the preceding sections. Mitigation of health and safety impacts relating to worker behaviour is discussed below in two key areas: management of the camps themselves, and the management of community relations in connection with the camp.

Camp management

Unlike the camp on Curtis Island in Gladstone, where the geographical location limits accessibility to the camp, the worker accommodation camps in the Gas Field will not be closed camps, however location of the camps will be subject to Western Downs LGAs planning approvals and by-laws.

Some recreational and sporting facilities will be provided within the camp. Entry to the camp by unauthorised personnel will be managed in accordance with the Project Security Management Plan.

Workers will be trained on Camp Rules and Code of Conduct and failure to adhere to these procedures will lead to disciplinary measures. The procedures will include:

- limits on hours of movement outside the camp
- no access to camps by unauthorised personnel and use of security passes for workers
- zero tolerance of illegal activities, including use of illegal drugs
- strict policies with respect to alcohol use and abuse
- no hunting or fishing
- zero tolerance of bribery or requesting gifts from communities
- no use of company vehicles for non-work purposes
- a description of disciplinary measures for infringement of the camp rules and code of conduct
- a description of community liaison activities
- community relations orientation, including expectations of their behaviour outside the camp and who to contact for community relations issues
- awareness-raising of health considerations, including STDs.

Disciplinary procedures will be standardised for all contractors and subcontractors so that subcontractors are required to ensure similar standards of behaviour within their own workforce.

There will be a zero tolerance of alcohol consumption during working hours. The Project will have a program for drug and alcohol abuse prevention and testing.

There will be a personal health program associated with occupational health responsibilities that will include access to advice on communicable diseases, including STDs. Nevertheless, when considering social investment projects, the Project will take into account not only the priority needs of the community as a whole but those services where the Project may have an impact.

Community Relations

The Project will develop a detailed community relations plan. This will include responsibilities for contractors and subcontractors as well as QGC. Contractor responsibilities will be built into their contract and enforced.

The Project will coordinate with local and regional police and other agencies to ensure activities have the minimal impact on local emergency services. Community liaison personnel will work alongside the construction activities and will ensure the social mitigation measures outlined in this EIS are implemented.

In the event a community member wishes to make a complaint, a formal procedure will record and address their concern. Details of the procedure, including contact details, will be distributed to communities at community meetings or via leaflets and posters. There will be a free telephone hotline for contacting the Project, and as outlined in the grievance procedure the Project will ensure a timely and transparent response.

Traffic Safety

Increased traffic will be generated from the transportation of personnel, drilling machinery, interconnecting pipes for gathering lines, bore casings, campsite components, quarry material and heavy plant for construction (such as bulldozers).

A transport and logistics impact assessment is to be carried out for the field construction activities, the main focus of which is the potential impacts on existing traffic and transport infrastructure. The findings are detailed in *Volume 3, Chapter 14*.

Further assessment will be required to identify the locations, volumes, and movement patterns of Project traffic in relation to social uses and potential impacts on communities. For example, the interaction of haulage traffic routes and school bus routes will be assessed during detailed engineering design, and the routes will be optimised to minimise potential impacts on sensitive community receptors. This will include the development of a detailed traffic management plan, in consultation with relevant local authorities and law enforcement within each jurisdiction that will take into account routes, speeds, times of travel, key roads in terms of local services such as school bus routes, and measures to limit impacts on the roads and existing users.

Traffic safety is a high priority for the Project, and mitigation measures will be taken to reduce the risk of accidents. Mitigation will focus on two areas: Project driving standards, and health and safety awareness in the community. Measures to ensure a high benchmark for driving standards will include:

There will be zero tolerance for Project workers not adhering to the rules of the road.

- There will be a vehicle monitoring system to track vehicle movements and driving habits and to support emergency response systems
- The Project health and safety management plans will include commitments to ensure that no employee is obliged to undertake a long journey when too tired to do so safely
- Defensive driver training will be offered to ensure a high standard of Project driving
- Contractors and sub-contractors will be held to the same Health, Safety, Security and Environment (HSSE) standards and their compliance will be audited

There will be a well-publicised community grievance procedure such that any member of the public observing poor driving by a Project employee can report the incident to management.

The Project will undertake a road awareness education initiative throughout the Gas Field area. This initiative will be designed in consultation with the relevant authorities, but is likely to be focused on the most sensitive receptors, such as schools and hospitals, as well as the most at-risk groups, such as school children and cyclists.

Construction Noise

Noise and vibration has the potential to impact on the quality of life and general wellbeing of the community if it interferes with activities such an individual's ability to sleep, relax and engage in everyday activities.

During the construction phase, the noise levels emitted from construction equipment are likely to temporarily increase background noise levels in the vicinity of the activity. Trenching, drilling, construction of CPPs and FCPs and restoration work are predicted to create the highest levels of noise during construction. Other potential sources include noise from campsites and traffic movements.

The predominantly rural location of the gas field and the temporary nature of the construction work should ensure avoidance of adverse noise impacts during construction. There may be individual instances where construction will occur near an existing residence but in most instances construction will be at distances where noise will not be discernible.

Potential sources of vibration include blasting and the operation of bulldozers during clearing and rehabilitation works and trenching equipment. However, vibration impacts are expected to remain predominantly within the RoW and subsequently have a negligible impact on communities.

Mitigation

The relatively short period of intensive construction activity will minimise impacts.

The Project will comply with the Queensland standards for mitigation of noise during construction. Noise mitigations in the Gas Field are detailed in *Volume 3, Chapter 13*. Some of the mitigation measures include:

- Limiting construction activities near residential areas as far as practicable to between the hours of 7am and 6pm
- Ensuring machinery and equipment are well maintained
- Locating campsites to ensure noise impacts at nearest residences are at an acceptable level
- Managing vehicle movements and access locations to avoid adverse noise impacts.

4.4.5.2 Operations Health and Safety Impacts

The operational workforce for the Gas Field will be approximately 800 people. There will be permanent single persons' quarters for maintenance, support staff and water treatment staff. In addition, temporary camps for exploration and surveys, well drilling and gas and water-gathering including well establishment and gathering lines will be required throughout the life of the Project. Details on population increase and accommodation in camps are dealt with earlier in this chapter.

Most community health and safety issues associated with operations, such as the quantitative risk assessment and management of environmental qualities, are dealt with elsewhere in the EIS. Potential impacts on social determinants are summarised below:

- The expected population increase will contribute to cumulative pressure on health services, when there is already excessive demand on the public health system and a shortage of affordable private health services (including acute and emergency services). This could be exacerbated by families with higher demands for mental health, community, children and family health services associated with the social dislocation of moving to a new town. The Project will work with Queensland Government agencies, Council and local organisations to develop social investment programs to assist in the mitigation of this impact
- Direct and indirect employment during the operating life of the Project will be more stable and secure than construction employment and will contribute to socio-economic status and the health and wellbeing of the employees and their dependents
- There will be a long-term increase in traffic volumes during operations. As outlined in *Volume 3, Chapter 14*, this traffic will be much less significant than the traffic volumes during construction. Nevertheless, the Project will assess the need to continue the traffic safety awareness programs initiated during construction.

Noise impacts caused by the Project's operation activities in the Gas Field area may impact on people's health in terms of stress levels as well as affect local amenity and lifestyle detailed discussion on noise impacts during operation phase of the Project is carried out in *Section 4.4.6.1*.

4.4.6 Lifestyle, Values and Amenity Impacts

Amenity refers to a place's liveability, including scenic values, access to daily needs, quiet enjoyment of private and public places, connections to local places of importance, and a feeling of comfort in the surrounds.

Project impacts relate primarily to the location of gas processing and compression facilities, impacts on amenity may occur during either construction or operation and may include :

- noise impacts on family and community life
- dust, other air emissions, artificial light from infrastructure construction and drilling operations
- visual impacts on rural character from the number of facilities distributed in Western Downs LGA
- severance of community movement patterns or traffic congestion, due to the location of facilities

This section is informed by:

- the community attitudes survey and focus groups conducted in the Dalby region
- stakeholder engagement meetings
- local and regional planning values
- assessment of social constraints on the location of compression and processing facilities
- indicative noise modelling as described below
- secondary information sources.

Dust and noise impacts are discussed in the health impact section of this chapter and are also addressed in individual technical studies on noise and air emissions (refer to *Volume 3, Chapter 12 and Chapter 13*). Character, severance and lifestyle issues are discussed below.

4.4.6.1 Quiet rural character (Noise Impacts)

There is potential for Project infrastructure to cause noise impacts (that is, noise levels above accepted Queensland and/or international standards) during operations. The sources of noise include well drilling, FCSs, CPPs, flares and traffic.

A limited proportion of the rural community already experiences some noise associated with gas compression facilities, but most do not. Some residents may, over a period of time, adjust to the additional noise, while others may find the adjustment more difficult. Social impacts of noise may include increased

stress, impediments to social or leisure activities at home, reduction in the quiet rural character of the area and sleep disturbance. The long-term nature of potential noise impacts is of particular concern, as there is often a disparity between the Department of Environment and Resource Management (DERM) noise standards and community's tolerance of noise.

Preliminary noise modelling based on an estimated distribution of FCS and CPPs throughout the Gas Field area suggests that without mitigation approximately 350 houses would be affected by noise according to the DERM standard.

The location of FCSs and CPPs will consider long-term noise impacts, with buffer zones provided to mitigate operational noise impacts on residential uses, and as such it is not expected that construction noise will impact on local townships or dwellings. This will require further assessment throughout the detailed design phase, and the development of mitigation measures (at source, at receptor or in combination) to ensure noise impacts do not impact on local amenity or community health.

Mitigation

Operational noise impacts are likely to constrain the location of CPP and FCS facilities such that construction noise impacts are less likely.

Facilities will be located with reference to dwellings, towns and other sensitive receptors. Further assessment of noise impacts will be undertaken as facility locations are determined.

Detailed engineering design to minimise noise production is underway. Variables include the number of compressor stations, the precise location of compressor stations and the extent of electric drive compressors used.

The following high-level mitigation measures are proposed prior to identification of specific impacts. Mitigation measures of operational noise impacts include:

- selecting the optimal location for infrastructure
- purchasing the least noisy equipment for a particular infrastructure requirement
- construction of a complete or partial acoustic enclosure around the noise source
- construction of acoustic barriers (i.e. walls)
- noise reduction techniques at the affected receptor.

The Project will be transparent on noise monitoring procedures and will make results of noise monitoring available on request.

A detailed community grievance procedure will be developed to ensure that individuals are able to easily contact the company and have their concern promptly addressed (refer to *Volume 12* for details of grievance procedure).

Other potential mitigation measures include the construction of acoustic barriers such as walls. In the event such measures are insufficient, treatment at the receptor residences, such as air conditioning, upgraded glazing and

insulation in the ceiling cavity could be considered. At worst, individual properties could be purchased.

It is assumed for the purposes of this section that the mitigation measures proposed in *Volume 3, Chapter 13* will result in noise at all residences falling within DERM standards. Full details of the noise modelling and associated mitigation measures are provided in *Volume 3, Chapter 13.*

4.4.6.2 Visual amenity

It is possible that the presence of more than 30 compression and processing facilities (by 2014) along with the gas gathering network will change the visual character of some areas of the Gas Field. Given the number of facilities required, and the need to minimise their distance to roads for service access, some facilities may be seen by people moving around the district, which could detract from the existing rural character which includes grazing, cropping and other agricultural uses. This in turn could impact on existing and emerging tourism values, and on residents' enjoyment of the region. The presence of multiple camps, with facilities, could also impact on the visual amenity and the rural character of the region. Visual impact assessment in the Gas Field is discussed in *Volume 3, Chapter 15*. However once specific locations of the facilities are identified a more detailed visual impact assessment and mitigations will be developed.

Broadly, visual amenity will be managed by ensuring infrastructure locations are set back from key tourist routes and recreation areas, and maintain a visual distance from townships so as not to towns' visual character, some of which is based on heritage and rural architecture. It is inevitable though that, for the period in which coal seam gas production continues, that some areas of the landscape will share both rural and industrial characteristics as part of the landscape.

4.4.6.3 Inclusion and Cohesion

The Western Downs LGA communities are small and rural in character. The community attitudes survey and the stakeholder consultations show that the people within Western Downs LGA have a strong sense of community, are friendly and believe that they have a good future. As quoted by some residents, 'Everything is good. Good friends, good town, it's like a big family'. Communities are also highly uniform in terms of their ethnic composition with approximately 95 per cent of people born in Australia and an additional 3 to 4 per cent born in English-speaking countries.

Much of the communities' identity is based on the traditional rural life and agricultural economy. While oil and coal extraction have occurred in the adjacent regions for many years, the last five years have increased the Dalby and Roma regions' exposure to industrial activities, and a large influx of temporary workers.

With this background, consultation indicated that inclusion and cohesion of other projects' workforces have been a concern in the past, with workers 'enclosed' in camps or using short-stay accommodation, and making little contribution to community vitality through organisational membership, sporting

participation, voluntary activity or other contributions to community resources. Highly paid industrial labour forces, predominantly composed of single men, can also create equity issues with respect to their use of local hotels and recreational spots such as water holes, and the potential discouragement of locals to use these places as a result. Also, if expatriate workers are used on the Project, in communities with little cultural diversity, it may create issues related to inclusion and cohesion. Consultations with stakeholders indicate that stakeholders consider that one of the ways to minimise cohesion and inclusion impacts is by encouraging more families to move into the area.

Mitigation

In order to mitigate cohesion and inclusion issues, the Project intends to maximise local employment.

The region's communities have highlighted the opportunity to encourage new workforces associated with mining industries to settle in the region with their families. The integration of new residents will mean giving attention to existing local values (such as the quiet country life and small, strong communities). It will also require a focus on the base population's needs to ensure they do not become a neglected group, investment in community development, and formally welcoming, orienting and inviting new residents to become involved in the existing community activities.

The new resources industry-based employment boom may also be viewed as potentially widening the tension between the older, more often, agriculturally oriented residents and younger, more entrepreneurial, non-agricultural residents. This could potentially increase the gap between generations and contribute to some social dysfunction.

Discussion of workers' behaviour and the potential need to mitigate impacts on the local community is outlined in *Section 4.4.5*. The workers' camps would need to be located in locations which are remote from townships, and provided with recreational facilities to ensure a high degree of self-containment for workers' needs. This would reduce potential interaction between communities and the workforce on a day-to-day basis.

The Project's social performance will be critical in ensuring that its benefits are shared with the wider community, and that social infrastructure has appropriate capacity to deal with issues of inequity, cohesion and exclusion. As stated in the community infrastructure mitigations, the Project will support community services which are critical to managing such impacts.

4.4.6.4 Social and economic uses

QGC owned land will be used for sitting of major infrastructure such as compressors, storage ponds and water treatment facilities. Land will also be required for the construction and operation of:

- water collection and treatment infrastructure
- workers' accommodation camps
- the UIC including collection header.

The Project intends to purchase land for CPPs and where possible for all

FCSs, and for water treatment facilities. In locating facilities, QGC will seek to minimise their development on land used for economic activity (including cropping land, intensive animal rearing, and rural residential land.). Where this is not possible, QGC will seek a negotiated agreement for purchase or lease of appropriate sites.

Preferred CPP and FCS sites are currently being selected based on engineering needs, and assessed with reference to social and environmental constraints. A social constraints map is being prepared in relation to the location of FCSs and CPPs, to identify areas which are heavily, moderately or minimally constrained by social values, including 'no go' areas for facilities, and determine mitigation strategies which will apply in each area. A desk-top analysis was undertaken of existing social constraints within the gas fields tenements relevant to the siting of upstream facilities. This considered a range of social and community factors including:

- locations of noise sensitive receptors, including dwellings, schools, tourist accommodation, health and aged care services, etc;
- locations of towns and their immediate surrounds;
- existing rural residential uses (i.e. land less than 20 ha) and land zoned for future rural residential purposes;
- land used for economic activity, including cropping land, good quality agricultural land and intensive animal rearing;
- locations of community facilities, including local halls, schools and education facilities, health facilities, cemeteries and sport and recreation facilities;
- cultural heritage sites and places of community importance, such as tourism and informal recreation uses, and scenic routes; and
- existing movement patterns.

Areas of environmental constraint due to topography, soils, ecological values and land use were also mapped.

Varying levels of sensitivity were assigned to each social constraint based on the likely impacts of upstream facilities and consideration to distance and type or use of the community facilities. For example, areas considered to be highly constrained in relation to CPPs and FCSs included those areas within 1 km of noise sensitive receptors or 2.4 km of towns, and rural residential allotments less than 20 ha in size. Conversely, those areas greater than 4.9 km from a noise sensitive receptor were considered to have a low level of constraint in relation to CPPs and FCSs location.

The desk-top analysis of social constraints identified areas in which:

- upstream facilities should be avoided (due to high levels of social constraints); and
- upstream facilities may be developed, (subject to the implementation of mitigation measures to minimise or avoid impacts of the facility on local residents and communities)

Following the desk-top analysis of social constraints and the identification of suitable sites for the location of upstream infrastructure, a detailed site

investigation will be undertaken during detailed Project design to confirm the outcomes of the desk-top analysis and to site facilities within the identified properties. During detailed Project design further assessment will also be undertaken of potential social impacts of the facilities on the surrounding communities and mitigation measures will be identified to manage the impacts.

The siting of facilities will avoid those areas where the constraints analysis indicates that facilities should be avoided. In addition, the siting of facilities on identified properties will seek to mitigate impacts of facilities by:

- maximising distance from the facility to the nearest sensitive receptors, to reduce noise impacts of construction activities and operation, minimise dust impacts associated with construction activities, and reduce visual impacts from surrounding dwellings;
- maintaining where possible, areas of existing vegetation that may assist in reducing the visual impact of facilities from surrounding dwellings or adjoining roadways; and
- considering topography to assist in reducing noise and visual impacts for surrounding residents; and
- considering access for construction traffic, that minimises potential impacts on road safety and local access for surrounding communities.

Consideration will also be given in the siting of facilities to avoiding impacts on the use and operation of adjoining properties, such as on private roads either through severance or unapproved use.

The Project will avoid locating facilities near property boundaries to avoid impacts due to interfaces with other uses and avoiding impacts on landholders' private roads either through severance or unapproved use.

All related water ponds will be decommissioned and rehabilitated as part of any DERM licences issued. Volume 2, Chapter 15 of the EIS discusses rehabilitation and decommissioning after depletion of CSG reservoirs. Mitigation of possible or prospective contamination and salinity of land caused by associated water ponds are discussed in Volume 3, Chapter 11.

4.4.6.5 Community lifestyle

Rural lifestyle (including community events, shared agricultural pursuits, a connection to the landscape, seasonal factors and a relaxed pace) will be most impacted by the Project in terms of local life style in the Dalby region. Much of the Dalby region's community and family life revolves around outdoor social activities, a relaxed but hard-working life and rural community networks. The region strongly values its rural lifestyle, which is less pressured than city life, well supplied with amenities, and built primarily around an agricultural community and small business vitality.

The combined effects of prolonged drought and the energy and mining boom in the region have shifted the balance somewhat, with a loss of agriculture related jobs, skill shortages due to workers moving to jobs in the energy and resource sector and an increase in fly-in fly-out workforces.

The Project would contribute to increased incomes for those employed locally, and increase activity in the local centres, which would support small business growth. It would also contribute to support for community development, and increased retention of young people through training and employment options. As such it is expected to have some positive effects for lifestyle, by increasing local vitality, discretionary incomes and skills levels.

Assuming impacts on visual character, traffic safety and social uses are well mitigated and to community satisfaction, the primary potential for lifestyle impacts on landholders, and specifically land use for gas gathering and conveyance.

4.4.6.6 Impacts on movement patterns

The Project will require an UIC (including collection header and water pipeline). It is intended to purchase properties for the location of the corridor, to minimise impacts on land holders.

The UIC is planned to pass between the towns of Wandoan, Miles, Chinchilla, Condamine, Kogan and Tara, and would traverse six major roads. As the towns' communities rely on each other to access the local services and business required for daily life, disruption to movement patterns by severing local roads during construction, in combination with construction traffic, may cause inconvenience and disruption to local movement patterns. The construction sequencing plan will be developed with consideration to local movement patterns and interruption to major roads, to minimise impacts on local movement patterns. A traffic management plan will address the specific locational constraints and impacts of the services corridor in relation to local roads and highways.

The volume of traffic generated by delivery, construction and worker vehicles is likely to increase traffic volumes on some highways and local roads (refer to *Volume 3, Chapter 14*), some of which (including the Warrego Highway) are already experiencing markedly increased traffic volumes due to other local developments. In particular, transportation of pipes, equipment, drill rigs and infrastructure components is likely to cause a noticeable change in traffic levels in the region. This combined with the potential that the Project construction access roads may disrupt road connections between towns which may discourage some locals from travelling around the district, particularly for leisure activities.

The Project's construction contractors will develop a comprehensive, integrated traffic and transport management plan to ensure traffic disruptions and congestion do not significantly impede local movements. This will make specific provision for the safety of school bus routes, key tourist routes and roads connecting population centres in the Gas Field.

Other logistics aspects of relevance to social conditions include:

- the potential to deliver pipes and other components by rail (currently under investigation)
- worker transport, parking, buses and muster points, including impacts on airports

- fabrication, laydown and loading areas, and relationship to existing land uses of social value
- traffic management strategies, including co-ordination of traffic management plans for different project components across all contractors, and coordination across different projects to manage cumulative transport impacts; and
- provision of communication infrastructure such as phone towers which will be operational across the field and will increase phone network coverage across the development area.

A logistics strategy for the CSG field development, facility construction and operations is being developed.

Mitigation

Mitigation strategies likely to be required will include:

- identification of preferred routes which minimise impacts on towns and sensitive receptors
- meeting or exceeding the Transport Operations (Road Traffic Use Management) Act 1995 (Qld) requirements, other regulatory requirements and relevant Australian Standards
- comprehensive safety planning in compliance with BG Group's HSSE standards as part of contractor responsibilities
- the requirement for contractors to provide quality assured transport management plans
- hours of work for logistics sites which avoid or minimise impacts on uses of nearby sites
- upgrading roads to allow safe usage and capacity to withstand increased traffic volumes
- access to individual sites through the established QGC land access procedures.

4.4.6.7 Water Use and Production

Water is a scarce resource in the Gas Field due to drought conditions in the area over the last seven years. There is a concern among some local people that associated water extraction will lead to depletion of groundwater reserves. Water analysis for the project indicates that links between aquifers and coal seam water production are minimal and that water extraction is not expected to affect aquifer use for agricultural and domestic purposes (Refer to *Volume 3, Chapter 10* which describes the technical studies undertaken to assess the groundwater impacts of the Project). However, monitoring mechanisms will be put in place to assess future impacts on groundwater caused by the Project. This will require consultation with land holders and water users to ensure any potential impacts and mitigations are understood. The current strategy for use of coal seam water may include re-injection to the aquifer, which should allay concerns. Compensation agreements may be entered into, should it be demonstrated that QGC's activities have caused a lowering of groundwater bore levels.

Farmers are also concerned that that due to the salt content of the associated water, it may prove to be dangerous to good quality agricultural land. There is a fear of stored pond water overflowing into surrounding properties in case of heavy downpours of rain, and also about the possibility of leakage in the water collection network. These issues will need to be considered in engineering studies and management regimes for associated water management. The current strategy for water use includes water for forestry to be developed by QCLNG, avoiding good quality agricultural land.

Conversely, people hope that coal seam water may be of beneficial use to the local communities and agriculture, redressing drought conditions. Options for supply of water to communities, private and industrial users are currently being considered and will be addressed in detailed Project design. Options for beneficial reuse of associated water are discussed in detail in *Volume 3, Chapter 11*.

The Project proposes to source, as far as reasonably practical, its own water for construction through treated associated water. The water will be delivered in tanker trucks or via the gathering network (refer to *Volume 2, Chapter 11*). It is also likely that a desalination plant will be constructed on QGC land to treat associated water prior to beneficial reuse, and this is another potential source of water for construction purposes.

Mitigation

Options for the management of associated water are discussed in *Volume 3, Chapter 11*. A strategy for production, storage, treatment and use is being developed, and social impacts will be assessed.

Community concerns will be addressed through a consultation program instituted as part of the Project's associated water management strategy. This will include full disclosure of the water production and treatment methods, management of saline brine and water balancing ponds, and potential beneficial use options, any potential for impacts on water supply, and the Project's strategies to ensure no adverse impact on existing water reserves and rights.

4.4.7 Land Use and Property Impacts

The Gas Field will require a total of 6,000 wells over the life of the Project. Approximately 2,000 wells would be drilled during the construction period, with an additional 4,000 wells to be drilled over the ensuing life of the Project. The well investigation/construction phase is to be undertaken in stages meaning that impacts will shift across the Gas Field over the life of the Project.

The tenement areas are located outside of the townships in the Gas Field and will not impinge on areas of built-up residential development.

Approximately 30 km outside of Tara, the tenements are located on areas of rural residential land. Allotments in these areas are on average 12 ha and the land is generally not used for productive purposes, however there are a number of dwellings associated with the subdivisions which maybe impacted.

The predominant land uses within the Gas Field are cropping and grazing as described in *Section 4.3.7*. Areas used for production forestry occur throughout the Gas Field with the largest areas located south-east of Tara, and south of Kogan and Wandoan.

Table 8.4.39 below shows land use areas within the Gas Field tenements which could be impacted by the gas gathering network. As can be seen from the *Table 8.4.39,* the main land use for gas gathering will be on grazing land, followed by production forestry and agriculture/cropping land. The impacts on land used for production forestry may be significant, due to the requirement for the clearing of all vegetation to install the Project infrastructure.

Table 8.4.39 Land Use by type and area affected by gas gathering network

Land Use	Area (ha) within the Gas Field	Percentage of Gas Field by Land Use
Cropping	51,388	11%
Grazing/natural vegetation	332,362	71%
Intensive animal production[1]	31	0%
Irrigated cropping	5,097	1%
Horticulture	309	0%
Rural residential	21,679	5%
State forest[2]	53,289	11%
Other (rivers, wetlands, dams, urban)	4,545	1%
Total	468,000	100%

Note 1: Intensive animal activities (i.e. feedlots) occur within the Gas Field area for piggeries and cattle.

Note 2: The only large-scale forestry conducted within the Gas Field is in state forest.

Mitigation

If exploration is required on rural residential properties, standard access procedures may need to be refined to address the primary use as residential rather than rural uses, with specific provision put in place to protect residential amenity.

Detailed analysis of impacts on production forestry will be possible once the location of the Project infrastructure is available in detailed Project design. Land used for forestry will be rehabilitated with planting of agreed forest tree species when the land is no longer required for gas collection.

Effects on property owners

Land in the CSG study area is predominantly freehold, including private and state owned land, so a number of private properties (approximately 2,000 properties over the life of the project) will accommodate gas gathering infrastructure, consisting of well sites and gathering lines. Easements for pipelines will also be required on some properties. Each well investigation site will cover an area of approximately one hectare, resulting in cumulative well lease and infrastructure disturbance to 6,000 ha of land plus land required for gas and water lines.

Construction of the well sites requires the clearing of existing vegetation and levelling of the sites. The maximum impacts on land use from gas-gathering infrastructure will be felt during the construction phase through the use of excavators, heavy cranes and heavy transport vehicles to access sites and turn around within Pipeline corridors. Land holders are also concerned that wells will disrupt irrigation channels, and this will need to be discussed on an individual basis as part of access negotiations.

After the establishment of the wellheads, only the wellheads and pumping, compression and maintenance stations will be left above ground. They will be fenced off, occupying an area of up to 80 m by 60 m. Prior land uses will be able to re-establish outside the fenced-off area, with access for maintenance and decommissioning of the infrastructure negotiated with the landholder.

A loss of privacy during construction and in some cases during operations could be experienced due to the Project's activities on otherwise quiet farming properties. There could be a loss of access, or long-term restriction to access, in areas where wells or other Project infrastructure will be established, both during construction and operation. This may cause inconvenience to landholders and local residents wanting to use the land or previous access points. The impacts arising from loss of access/use to areas within private properties will depend on the placement of wells and lines within the site and their proximity to other wellheads. Several wellheads placed closely together, for example, would result in loss of productive use of a significant parcel of land. They could also result in land fragmentation and loss of connectivity between different areas of an allotment.

Site clearance, access road construction, infrastructure installation and vehicle movements may impact air quality in the local area through dust generation. This may subsequently affect land use activities and productivity if dust levels have a significant impact on crops, livestock and ecologically sensitive sites. Dust impacts are addressed in *Volume 3, Chapter 12*.

There is also concern from landholders that contractors may not treat the land's existing prior use for agricultural or other purposes, and, for example, leave gates open, lack respect for livestock and crops, or otherwise impede the general functioning of the property.

Restrictions to land access due to construction in pipeline right of ways, use for lay-down areas or construction camps will be temporary, and compensated through agreements with landholders. However use for gas and water-gathering (wells and lines) will occur over several years (potentially up to 15 years in some locations).

Mitigation

To maintain use and access to land for exploration, construction and operation of wells and gathering lines, QGC will follow a comprehensive land liaison procedure based on the principles of integrity, fairness and respect. This process will entail early consultations with affected landholders and negotiated compensation for lost economic productivity, and negotiated alternative routes for access if necessary. Landholders and stakeholders will be consulted early in the planning of activities and will be given a clear and concise description of proposed activities and any likely impact. All property impacts will be managed in accordance with the *Acquisition of Land Act 1967 (Qld)* to ensure fair compensation for landholders and proper recourse and protection measures.

QGC is currently working with landholders to gain access to land for the exploration, construction and operation of wells, gathering lines and pipeline easements. Notification about the proposed QCLNG project and an invitation to participate in consultation prior to or during the EIS exhibition has been extended to all land owners in the area, including absentee land owners.

Impacts on property values will be considered as part of access agreements. However, over time, the impact may reflect the relative value of the land for agricultural purposes versus gas extraction. As this Project develops, as also with the other LNG projects throughout the region, it is possible that any impact on property values would intensify. This is further discussed in the economic impact assessment in *Volume 8, Chapter 10*.

Specific mitigations for impacts of well establishment will include:

- consultation with landholders to determine location and management conditions
- Strategic location of wells where possible - as remotely as possible from sensitive receptors; where possible efforts will be made to drill multiple wells through a single well pad thereby reducing the number of wells; close to boundaries and roads where possible; between cropping paddocks

Wells and gas-gathering pipes would be placed in easements as agreed with landholders, and by the terms of the negotiated access agreement and lease conditions. Sensitive areas which need to be avoided will be determined through consultation with landholders. Access tracks will be rehabilitated and returned to original land soon after construction or use in the area.

Measures will be taken to minimise disruptions to graziers such as installation of stock crossing points at key locations during construction. Trench breakers and ramps will also be adopted to prevent entrapment of livestock. Grievance procedure will be in place to deal with loss or injury to livestock. Property gates and fences may need to be temporarily removed during construction to make way for the construction material to pass through. To minimise impacts to landholders and surrounding land use activities, impacts will be managed in consultation with landholders to ensure correct placement of temporary and permanent fences.

Irrigation systems will be restored after construction. Consultation will be undertaken with landholders to discuss management of irrigation systems and methods for minimising impacts. Permanent disruption will be avoided where possible and if there is a permanent disruption appropriate compensation negotiations will be carried out.

Confirmation of any agreed arrangements are provided to landholders in writing. Land access negotiations and compensations with each individual landholder will address impacts on private land use, and temporary loss of access will be restored after construction activities.

Contractors carrying out the work will be bound by QGC standards and procedures in the way they carry out their actions, and strict compliance will be required as a condition of contracts. Grievance procedures will be in place. All property impacts will be managed in accordance with the *Acquisition of Land Act 1967 (Qld.)* to ensure fair compensation for landholders and proper recourse and protection measures.

Permanent or long-term loss of access will be mitigated with QGC's established process to minimise impacts on landholders (such as loss of productivity, loss of occupation related to land, loss of access to land, fragmentation of land and loss of connectivity between lots of land). Progressive rehabilitation and ongoing maintenance will be undertaken to minimise the spatial footprint of the Project and the impacts on land use.

Land rehabilitation at the conclusion of production for a specific gas well will be undertaken with the key objective for rehabilitation would be to return the land to its former use, that is grazing, agriculture or forestry.

4.5 SUMMARY OF IMPACTS AND SIGNIFICANCE OF IMPACTS

This section summarises the impacts identified in this chapter and establishes their level of significance. Significance is assessed using the criteria in *Table 8.4.40* in relation to indicators of social conditions as outlines in *Table 8.4.41.*

A summary of impacts is presented in *Table 8.4.42*. The table also describes the significance of the impacts identified; indicates where mitigation is required and notes the potential for residual impacts.

Table 8.4.40 Significance Assessment Criteria

Assessment Criteria	Neutral (neither positive or negative)	Minor Impact (positive or negative)	Significant Impact (positive or negative)
The degree of change likely to arise due to the Project	Insignificant/no change	Some low-level change, but not likely to be of importance to individual or community wellbeing	Change affecting existing social conditions or equity
The number and nature of people likely to be affected	None	A small number of people (e.g. immediate neighbours) Limited effects only	A large number of people (e.g. local community, regional impact) Likely effect on disadvantaged people
Whether the impact will be direct or indirect	No impact	Indirect impact	Direct impact
The duration of the impact	N/a	During Project planning or construction only	Permanent, or pertaining to operations
The level of expressed or anticipated community concern	None	Low level of reaction from the people affected	High level of reaction from people affected (may include local community or wider communities).
The potential for cumulative impacts	Insignificant/none	Little likelihood of leading to an increase in the overall affects on the area	High likelihood of leading to a substantial accumulation of affects over time

A summary of the status of selected social indicators is included in *Table 8.4.41.* This summary will inform the assessment of the changes to social conditions which may occur as a result of social impacts, and the monitoring of Project impacts and benefits.

Table 8.4.41 Status of Social Conditions

Indicator	Measures	Status[74] Western Downs LGA	Comparator
Population stability	• same address five years	50%	45% (Qld)
Economic resources	• SEIFA Economic Resources Score	986.8	1,000 (Qld)
Community cohesion	• feel part of the community (survey)	89%	N/A
Cultural diversity	• % of overseas born people	5%	18%
Indigenous population	• % of indigenous people	6.5%	3.1% Qld
Health status	• self reported good health	91%	NA
Employment rates	• unemployment rate	3.2%[75]	3.6% (Qld).
Workforce skills levels	• % of workforce with certificate qualifications	16%	18% (Qld)
Community safety	• reported crimes against the person	478[76]	N/A
Housing availability and affordability	• rental vacancy rate • average weekly rental (2006)	6.9%[77] $131	2.8% (Qld) $217
Social infrastructure access	• quantitative and qualitative assessment	sufficient facility numbers, services under stress	
Business and commercial services access	• number of businesses	4,444	NA

74 Latest available comparable data is from 2006 Census if not otherwise noted.

75 June 2008

76 2007-08

77 September 2008 - OESR

Table 8.4.42 Summary of Impacts and Significance

Potential Impact	Likely Significance					Indicators affected	Mitigation/ Enhancement	Likely Residual Impact
	Major Positive	Minor Positive	Neutral or None	Minor Negative	Major negative			
Labour force (employment)								
Stable employment with peak jobs of 2,225, and an average of 2,100 jobs for 14 months during construction. An average of 800 jobs during operating life of the project	X					• employment rates • population stability • income levels	• Local recruitment and training strategy paramount	No
Project's objective for local employment will build local workforce capacity	X					• workforce skills levels	• Institutional and community partnerships for local skills development • Identifying local labour force availability and skill set match to project requirements • A particular focus on employment programs with Indigenous people • Targeting Project recruitment programs, skills development, public information strategy to increase local and regional employment and job placement programs to include young people and unemployed people • Invest in local training and skills development program	No
Some local businesses and agricultural industry are likely to lose staff to the Project				X		• service access • industry size	• Source part of skilled workforce from outside of local region	Possibly
Encouragement for retention and an increase in people aged 15-30 years	X					• population age median		
Demographic Impact								
Direct population increase of up to 225 people by 2014-15 Indirect population increase of approx	X					• Population growth rates and stability	• Ensure relevant agencies are aware of project development and likely consequent population	No

	Likely Significance			
1,000 people by 2014-15			• growth • Invest in community capacity and social infrastructure through QGC Community Development Fund	
Greater cultural diversity through workers from other states and countries	X	• Cultural diversity • Demand for social infrastructure • Community cohesion	• Integration program required and support for social infrastructure	No
Housing and Accommodation				
Total direct demand for housing will be approx. 33 dwellings by 2011 and 48 dwellings by 2014	X	• Total available housing stock	• Provision of workers' camps for majority of the Gas Field construction workforce • Develop a housing management and accommodation strategy • Develop a camp management strategy	No
Indirect housing demand of more than 800 dwellings by 2014-2015	X	• Total available housing stock • Rental costs	Investment in housing production partnerships including affordable housing. The Project intends to make a contribution to affordable housing for low-income people in the Dalby region, to ensure that the most vulnerable community members are not excessively impacted by indirect population demands.	Unlikely
Social Infrastructure				
Increased need for child care	X	• Social infrastructure access • Family strength	Liaison with community and private child care providers to monitor Project demand	No
Increased demand from population increase on health care services	X	• Health service access	• Augment existing health services	Unlikely

Likely Significance				
(especially primary health care[78] services). (Direct/Cumulative impact)			by providing a doctor for camp residents for the peak average construction period • Work with other stakeholders to increase local capacity for rural medicine and health service provision • Project will have its own medi-evac arrangements. • Liaison with local and regional emergency services	
Increased demand on community development, health, family and other human services, associated with the social isolation of newcomers. (Direct/Cumulative impact)	X	• Cultural diversity • Demand for social infrastructure • Community cohesion	Invest in the expansion of community based re-settlement programs and family support services (such as counselling, parenting support, playgroups, and personal development and youth programs). Such investment could enhance overall community capacity and resilience.	Possibly – Positive
Increased demand for services to support non-English speaking people (workers and their families), including language interpretation and cultural awareness to assist service providers. (Direct/Cumulative impact)	X	• Cultural diversity • Demand for social infrastructure	Invest in the development of local human service provider capacity to support people with culturally diverse needs (including linguistic and cross cultural awareness).	Possibly – Positive
Potential for imbalance in single male population to erode perceptions of safety, dominate local facilities and provide poor role modelling for young people. (Direct/Cumulative impact)	X	• Cultural diversity • Demand for social infrastructure • Community cohesion	Undertake community development initiatives targeting behaviour awareness and management for workers and local young men and women, and assertiveness training for local young men and women.	Possibly – Minor Negative
Lifestyle and Community Values Impacts				

78 Defined by the Australian Primary Health Care Research Institute as: socially appropriate, universally accessible, scientifically sound first level care provided by a suitably trained workforce supported by integrated referral systems and in a way that gives priority to those in most need, maximises community and individual self-reliance and participation and involves collaboration with other sectors. It includes the following: health promotion, illness prevention, care of the sick, advocacy and community development. Such services as GP services, physiotherapy, and occupational therapy are included.

Accessed at:http://apa.advsol.com.au/independent/documents/position_statements/public/PHC%20and%20Physiotherapy%202008

Likely Significance				
Exclusion and social fragmentation due to introduction of other ethnicities, highly paid industry workforce and predominant single male population	X	• Community cohesion	• Maximise local employment where possible • Remote location of workers camps where possible • Project will support community services which are critical to managing such impacts.	No
Increased demand on human services due to increase in population and particularly increase in single male population.	X	• Demand for social infrastructure	Undertake community development initiatives targeting behavior awareness and management for workers and local young men and women, and assertiveness training for local young men and women. QGC's Social Performance Plan and Social Investment Strategy will contribute to local community capacity and social infrastructure upgrades.	No
Loss of access or long-term restriction to access land and spaces Loss of access paths and connectivity disruptions between properties	X X	• Community cohesion	• Land access and community relations procedures in place, with contractors required to perform to BG Group standards. • Land access and compensation negotiations under way with each property owner directly affected by the project. • Temporary impacts will be negotiated and suitable arrangements will be made with landholders. • Public grievance procedures in place	Yes
Loss of privacy due to construction and operations work on private property	X	• Lifestyle values	• Temporary impacts will be negotiated and suitable arrangements will be made with landholders. • Grievance procedures in place	No
Increased traffic and related safety issues	X	• Community safety	Project driving standards and traffic management measures will be implemented.	No

Likely Significance				
Effects on lifestyle due to noise, vibrations, dust, air emissions and artificial light	X	• Amenity	• The Project will comply with Queensland regulations in the mitigation of noise at the compressor stations and noise monitoring results will be available. • Community grievance procedures in place	Likely
Potential for impacts on quiet enjoyment of rural life, visual character and agricultural uses	X	• Amenity	Locations for CPPS, FCS and water facilities will have regard to social constraints, sensitive receptors, land holder privacy and interfaces with other uses	Likely
Health and Safety				
Expected population changes due to the Project has the potential of impacting access to health infrastructure and services	X	• Social infrastructure access	• Project will have its own medical services available for its workers and their families in the local area. • Partnerships with rural health stakeholders to increase the capacity of health service delivery in Western Downs LGA	No
Safety issues related to workers' behavior	X	• Community safety	Workers camp management procedures in place. Community Relations plan will be developed by QCLNG.	No
Traffic safety issues related to increased traffic for construction in gas fields	X	• Community safety	• Detailed traffic management plan will be developed by the Project to reduce impact on sensitive receptors. • To reduce risks of accident, mitigation will focus on project driving standards and health and safety awareness in communities.	No
The field well drilling, compressor stations, the processing plants and flares will generate significant noise during operations	X	• Amenity	• Project infrastructure will be located to reduce and mitigate impacts on dwellings, towns and sensitive receptors. • Mitigation strategies relevant to	No

Likely Significance				
			each receptor will be developed on a site by site basis, including mitigation at source and at receptor. • Transparent approach in monitoring noise.	
Land Use and Property Impacts				
Potential fragmentation of agricultural land and loss of connectivity between different areas of an allotment	X	• Amenity • Economic resources	• Avoid and minimise Project activity on GQAL • Land access negotiations and compensation will be used to mitigate these impacts.	Possible
Loss of production forestry land due to the requirement for clearing of all vegetation to install the Project infrastructure	X	• Amenity • Economic resources	• Avoidance of forests of environmental significance where possible • Rehabilitation of land where possible • Likely development of forestry using associated water	Possible
People's perception on salinity of land caused by water ponds	X		Mitigation of possible or perceptive contamination and salinity of land caused by the water ponds is discussed in Volume 3, Chapter 11.	Possible
Grazing patterns of livestock and stock crossings may be impacted	X		• Stock crossing points will be installed. • Consultations with landholders will be undertaken to discuss management of irrigation systems	No
Weeds and seeds transfer and transfer of cattle ticks and infections	X		• Weed and seed transfer related mitigation impacts discussed in *Volume 3, Chapter 7* • Project staff will follow correct land access procedures of closing fence gates to avoid cattle from going across their designated land.	No

4.6 CONCLUSIONS

Positive and negative social impacts associated with the Gas Field component of the Project will be felt both during construction and operation phases of the Project. The key impacts relate to:

- Increased labour force impacts;
- Demographic changes;
- Demand on housing and accommodation;
- Demand on social infrastructure;
- Impacts on lifestyle and community values; and
- Impacts on land use and property

Significance rating of the impacts shows that most impacts vary between minor positive to minor negative and there are no extreme impacts caused by the Project in the Western Downs region. In the case of negative impacts the Project has proposed a mitigation strategy to minimise their effects, key mitigation are discussed in *Volume 8, Chapter 8*.