22. SOCIAL

This chapter provides a summary of the social values within and surrounding the project development area and an assessment of the potential for these values to be affected, both in adverse and positive ways, by direct and indirect impacts associated with the construction, operations and decommissioning phases of the project. The chapter also describes the measures that Arrow proposes to implement to manage adverse impacts and enhance opportunities that affect the social values. The residual impact assessment assumes the effective implementation of such measures.

The chapter is based on the Social Impact Assessment (Appendix P) prepared by URS Australia Pty Ltd.

22.1 Study Area

The social and cultural area of influence (the study area) for the social impact assessment is located wholly within the Darling Downs Statistical Division (herein referred to as the Darling Downs), which includes the regional council areas of Toowoomba, Goondiwindi and Western Downs. The study area includes eight towns that are referred to as 'communities of interest':

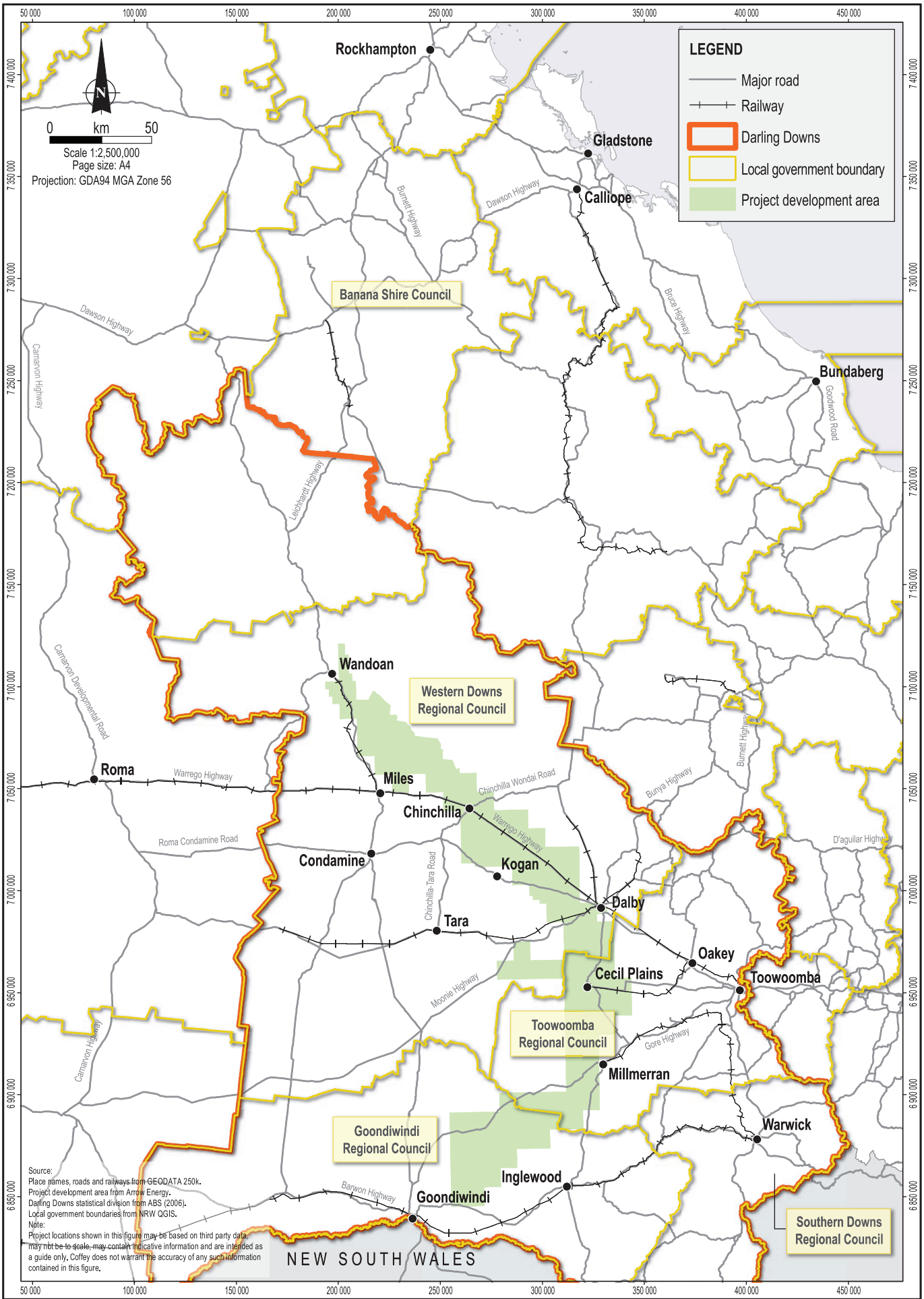
- Chinchilla.
- Dalby.
- Goondiwindi.
- Miles.
- Wandoan.
- Toowoomba city, Cecil Plains and Millmerran (and surrounding towns or localities within Toowoomba Regional Council).

Table 22.1 shows the communities of interest, grouped by the local government area to which they belong.

Table 22.1 Geographic breakdown of the social impact assessment study area

Statistical Division	Regional Council	Town or Locality
Darling Downs	Toowoomba	Toowoomba city
		Cecil Plains
		Millmerran
	Western Downs	Dalby
		Miles
		Chinchilla
		Wandoan
	Goondiwindi	Goondiwindi

Figure 22.1 shows the location of the study area, including the project development area, the Darling Downs and the communities of interest.



coffey environments	Date: 13.12.2011 MXD: 7040AC_04_GIS156_v1_2 File Name: 7040_04_F22.01_GIS_FT	Arrow Energy Surat Gas Project	arrow energy go further	Location of study area	Figure No: 22.1

22.2 Legislative Context and Standards

The following legislation, guidelines and policies are relevant to managing social impacts through all project phases.

22.2.1 Queensland Government

The state government legislation, policy, guidelines and codes relevant to the identification of social values within Queensland communities and the management of potential adverse impacts and the enhancement of opportunities are outlined below.

***Sustainable Planning Act 2009*.** This act identifies activities that require development approval. To be granted approval, development must be consistent with the planning intent, including desired community outcomes. Petroleum activities are exempt from planning approval. However, some activities associated with the project, such as the establishment of depots within towns, will require such approval.

***Local Government Act 2009*.** This act is the principal legislation for local government throughout Queensland. The act and its regulations require every council in Queensland to develop a long-term Community Plan. Plans are 10-year (minimum), high-level documents that identify community needs and articulate council and community long-term visions, aspirations and priorities.

Sustainable Resources Communities Policy 2008. This Queensland Government policy was adopted in 2008 and places a strong emphasis on the assessment of social and cumulative impacts associated with major resource projects. In particular, a social impact assessment developed under the policy must forecast changes to communities in terms of local and cumulative impacts, as well as identify agreed strategies for mitigating these changes.

Blueprint for Queensland's LNG Industry (DEEDI, 2009b). The blueprint has been developed to outline how the Queensland Government will further work with the LNG industry and local communities to ensure that any development of an LNG industry is progressed in a way that will benefit all Queenslanders.

Surat Basin Future Directions Statement (DEEDI, 2010a). The statement identifies the major issues facing the Surat Basin region, provides an integrated approach to address those issues to 2030, and establishes clear mechanisms to coordinate the work of the Queensland Government and Surat Basin stakeholders.

Surat Basin Regional Planning Framework (P&E Law, 2010). The framework identifies the strategies required for sustainable future growth and provides a preferred pattern of settlement as a guide for the location of future residential, service and industrial growth.

Land Access Code (DEEDI, 2010b). New laws governing land access set best-practice guidance related to communications between landowners and resource companies and outline mandatory conditions that must be complied with by resource companies undertaking activities on private land.

Social Impact Assessment: Guideline to Preparing a Social Impact Management Plan (DIP, 2010). Proponents of new or expanded major resource development projects need to develop a social impact management plan in consultation with government and key stakeholders. The guideline aims to help proponents develop that plan, in collaboration with stakeholders, after having conducted a social impact assessment.

22.2.2 Local Government Policies and Strategies

Each of the three regional councils that exist within the study area have developed corporate plans as follows.

Toowoomba Regional Council Corporate Plan 2009-2014 (TRC, 2009). The plan provides a clear framework for the newly amalgamated Toowoomba Regional Council's activities, short- and long-term planning, day-to-day operations and service delivery.

Goondiwindi Regional Council's Corporate Plan 2009-2014 (GRC, 2009). The plan identifies the emerging priorities and key strategies that it believes will direct future growth across the newly amalgamated region.

Western Downs Regional Council Corporate Plan 2009-2014 (WDRC, 2009). The plan has adopted a range of principles to guide development and growth in the area.

22.3 Study Method

This section describes the study method employed to conduct the social impact assessment.

22.3.1 Scoping

The scoping phase involved a review of relevant literature along with the Surat Gas Project Final Terms of Reference set by the Queensland Department of Environment and Resource Management (DERM) so as to determine the appropriate study area, frame the scope of the assessment, and determine the key assessment criteria (e.g., population and demography, housing and accommodation and employment and training).

The scoping phase also included identification of key stakeholders and development of a strategy for stakeholder engagement.

22.3.2 Existing Environment

A description of the existing social environment of the study area was developed through the collection and analysis of data produced by the Australian Bureau of Statistics and other commonwealth agencies; state government agencies; the Toowoomba, Western Downs and Goondiwindi regional councils; Arrow; and other relevant and publicly available sources. A review of policies, programs, strategies and regional studies relevant to the Surat Basin was conducted to define the regional context in which the project will be operating and to gain an understanding of community strengths and vulnerabilities.

22.3.3 Impact Identification and Assessment

Potential social impacts associated with the project activities during construction and operations were identified in two phases:

- **Phase One**. An initial assessment was undertaken to identify potential positive and negative impacts that could result from project activities. Existing resource developments within the region were considered, with evident and perceived impacts identified following review of baseline data and a desktop analysis of likely impacts.
- **Phase Two.** Following phase one, a more detailed assessment of project activities was conducted; and the likely nature, magnitude, timing and duration of potential impacts associated with these project activities were determined. Stakeholder consultation was conducted, the feedback was reviewed, and targeted consultation with key stakeholders relevant to the social impact assessment was undertaken to understand the community's perception of likely impacts.

Limited analysis of the decommissioning phase has been undertaken as the lengthy project life span militates against the accuracy of such an assessment.

Criteria used to assess the potential consequences of social impacts identified included:

- Timing of the impact.
- Frequency and duration of the impact.
- Magnitude of the impact.
- Geographic extent of the communities affected by the impact.
- Resilience of those affected to change.
- Reversibility or ability to minimise the impact.

The significance of potential social impacts was based on the probability and consequence of their occurrence with impacts determined as being of low, medium, high, or very high significance.

22.3.4 Avoidance, Mitigation and Enhancement

Avoidance, mitigation, management and enhancement measures were designed to avoid or minimise adverse impacts and to enhance positive impacts and opportunities arising from the project throughout the construction and operational phases. Implementation details are provided in the draft social impact management plan (see Attachment 6, Social Impact Management Plan), which contains action plans outlining the specific activities to be undertaken.

22.3.5 Assessment of Residual Impacts

A residual impact remains once management or mitigation measures (the mitigations) have been implemented. To identify the potential residual impacts for this project, each impact was reassessed with the assumption that the mitigations had been implemented. The residual impact assessment provides an indication of the effectiveness of proposed mitigation and management measures. The social impact management plan is considered a living document, which can be updated and adjusted through ongoing review, to ensure the residual impacts will be managed appropriately into the future.

22.3.6 Community Consultation and Stakeholder Engagement

All stages of the social impact assessment have been informed and enhanced through community consultation and stakeholder engagement. These processes served to further inform the social baseline, build an understanding of potential impacts and identify ways in which impacts may be mitigated. Primary data collection activities sought to ground-truth secondary data, which was then triangulated to confirm or provide alternative data. Community consultation and stakeholder engagement that informed development of the social impact assessment comprised two primary components:

- The EIS community consultation program for the project.
- Consultation with key stakeholders undertaken specifically for the social impact assessment by Coffey Environments and URS Australia Pty Ltd.

EIS Community Consultation Program

Community consultation and stakeholder engagement for the purposes of the project began in 2009 and will continue throughout the life of the project, as detailed in Chapter 6, Public and Stakeholder Consultation. Led by JTA Australia, consultation and engagement activities undertaken to inform the EIS were conducted from September 2009 to June 2011, including four EIS consultation sessions undertaken for various lengths of time between September 2009 and

June 2011. These sessions not only informed the community but also helped identify the issues to be studied in the EIS.

Arrow's community consultation program seeks to gain feedback from communities in and around the project area and encourages those who are influenced by or who have an interest in the study area to become involved in the consultation process. Arrow uses newsletters, information sheets, print advertisements, posters and information displays to communicate project details to the public. Further information is available via a project-dedicated website that provides contact details (a project-dedicated email address and the toll-free project hotline). Arrow intends to use the feedback it receives to build and maintain positive community relationships throughout the life of the project.

Key stakeholders involved throughout the EIS study include local communities; local, state and federal elected representatives and officers from regulatory bodies; local councils and peak industry groups; Indigenous Australians; and environmental, business and community groups. Feedback received was used to inform project design and assessment.

Stakeholder engagement and community consultation will continue when the EIS is released for public comment.

Social Impact Assessment Consultation

Stakeholder engagement for the social impact assessment has assisted in identifying and assessing social impacts and enabled the development of appropriate and effective mitigation strategies.

Stakeholder engagement informing all elements of the social impact assessment included:

- A series of focus groups held in Toowoomba, Dalby (with some representation from Miles), Chinchilla, Millmerran and Goondiwindi, attended by a total of 80 people who identified issues of concern and expectations relating to the project.
- A statistically valid quantitative telephone survey of 403 residents of the study area (159 from the Toowoomba region, 113 from the Western Downs region and 107 from the Goondiwindi region along with 24 'interested and affected parties' from the study area) to quantify the weight, or level of importance, placed on identified issues or opportunities. The survey also sought to identify perceptions about coal seam gas producers' ability to manage these impacts.
- Meetings and interviews with key stakeholders to ground truth secondary data. Some 90 stakeholder groups were engaged in the course of the consultation program.

Key social and cultural organisations that have informed the social impact assessment included:

- State government agencies (including the Department of Employment, Economic Development and Innovation, the Department of Communities, Queensland Health, Education Queensland and Emergency Services Queensland).
- Representatives from the Western Downs, Goondiwindi and Toowoomba regional councils.
- Local industry and businesses (including Regional Development Australia and chambers of commerce in Toowoomba, Dalby, Millmerran, Border Rivers and Goondiwindi).
- Community service providers (including Surat Basin Homes, Skills Centres Queensland (Dalby and Toowoomba), Goondir Health Services and St Vincent de Paul).
- Agricultural representative bodies, such as AgForce Queensland.

- Indigenous groups (including the Barunggam, Bigambul, Iman, Wulli Wulli and Western Wakka Wakka peoples).
- Community interest groups (such as the Country Women's Association and relevant sporting groups).
- Local schools.
- Environmental groups.

Review and interpretation of other independent stakeholder analysis programs, such as the Surat Basin Regional Forum (DEEDI, 2008), Surat Basin Scoping Study (CSIRO, 2008), Surat Basin Future Directions Statement (DEEDI, 2010a), and of consultation from the Queensland Curtis LNG EIS (ERM, 2009) and the Australia Pacific LNG Project EIS (Worley Parsons, 2010) were also undertaken.

22.4 Existing Environment

The Darling Downs has a history of European settlement, agriculture and farming that dates back to the mid-nineteenth century. Towns such as Dalby, Chinchilla, Millmerran and Goondiwindi serve as community hubs for the rural catchment area, as well as centres for administration and commerce. The area contains numerous significant non-Indigenous historical sites, including some on the National Heritage List.

Stone artefacts excavated at Mount Moffat Station provide evidence of Indigenous activity in the Darling Downs region dating back 22,000 years. Native title parties who have lodged claims across the study area include the Mandandanji People, Wulli Wulli People #2, Iman People #2 and Bigambul People.

This section describes the existing social environment of the study area. Due to the size and diversity of the study area, key descriptors of the social environment have been defined at the following levels:

- Regional: the Darling Downs.
- Subregional: Western Downs, Goondiwindi and Toowoomba regional council areas.
- Local: townships of Cecil Plains, Chinchilla, Dalby, Goondiwindi, Miles, Millmerran, Wandoan and Toowoomba.

22.4.1 Population and Demographic Profile

The communities of interest have experienced varied population movements over the recent past, with larger, more established communities experiencing population stabilisation or moderate growth and smaller communities generally experiencing population decline. This trend is common throughout western Queensland and is evidence of the population drift to larger regional centres, capital cities and the coast. Areas subject to economic diversification (like power stations, coal projects and gas projects) have experienced moderate population growth, which has offset a generalised trend of population decline.

A summary of key population, demographic and household characteristics at the state, regional and local level is presented in Table 22.2.

Table 22.2 Selected population, demographic and household characteristics

Selected Characteristics	Cecil Plains	Chinchilla	Dalby	Goondiwindi	Miles	Millmerran	Toowoomba	Wandoan	Darling Downs (SD)	Queensland
2010 population[a]	241	4,445	11,097	6,593	1,259	1,348	106,743	420	241,537	4,513,850
Annual population change 2001 to 2010	1.6%	3.5%	1.6%	2.2%	0.6%	0.9%	2.2%	0.7%	2.1%	2.6%
Median age of persons	39	39	34	34	41	39	35	40	37	36
Indigenous % of population	3%	3.5%	6.1%	4.4%	7.5%	3.8%	2.9%	1%	3.1%	3.3%
Average household size (persons)	2.4	2.4	2.6	2.6	2.3	2.3	2.5	2.2	2.6	2.6
% of families that are couples with no children	39%	46%	38%	40%	43%	47%	44%	46%	41%	39%
% of families that are single parents with children aged 15 or below	19%	7%	11%	8%	11%	10%	1%	10%	9%	10%

Sources: OESR (2011); ABS (2006).

a. Preliminary OESR (2010) population estimates.

Population and Demographic Profile

As at June 2010, Darling Downs had an estimated population of 241,537 persons, which represents approximately 5% of the Queensland population. At this time, the Toowoomba, Western Downs and Goondiwindi regional councils accounted for 85% of the Darling Downs population (with estimated populations of 162,057, 32,071 and 11,413 persons, respectively). Toowoomba is the principal township of the study area with a 2010 population of 106,743 persons.

Although the population of the Darling Downs has been increasing, the growth rate of 2.1% has been slower than the Queensland average of 2.6% over the past five years. Small rural centres, such as Millmerran, Wandoan and Miles, have experienced relatively small changes in population, while the population of Cecil Plains has declined.

In the period from 2001 to 2010, Toowoomba Regional Council experienced the highest growth rate (17.8%), followed by Western Downs and Goondiwindi both at 9.5%. Concurrently, Chinchilla experienced the highest degree of population change over 10 years (+31.7%), followed by Goondiwindi (+20.1%) and Toowoomba (+19.5%).

Gender, Age and Household Characteristics

Key gender, age and household characteristics are summarised below:

- As at 2006, the gender ratio at the regional level was balanced, with males and females each constituting approximately half of the population across all age brackets with the exception of 55 and over where females were over-represented.

- Under-representation of females was evident in Chinchilla and Dalby in the 0 to 19 age group, Wandoan in the 20 to 54 age group and Cecil Plains in the 55 and over age group.
- Within the study area, the population's age distribution generally reflects that of Queensland, with younger families (overrepresentation in the 0 to 14 and 35 to 44 age brackets) accounting for a large proportion of the regional population.
- The median age of the region (37 years) was marginally higher than that of Queensland (36 years); however, Miles (41 years) and Wandoan (40 years) recorded particularly high median ages. Dalby, Goondiwindi and Toowoomba recorded lower median ages than the state.
- In the Darling Downs region, married or de facto couples accounted for approximately four out of every five persons aged over 15 years. Couples with no children under 15 years were the most common family composition.

Ethnic Characteristics

With respect to ethnic characteristics:

- The regional population has a relatively low degree of ethnic diversity, with a high proportion of residents born in Australia.
- In the smaller communities of interest, generally in excess of 90% of the population was born in Australia and speaks only English, compared to the Queensland average of 86%.

Indigenous Population

Primary characteristics of the Indigenous population of the study area are:

- In 2006, there were 6,531 persons in Darling Downs who identified as being Indigenous, which represented 3.1% of the regional population. Miles (7.5%) and Dalby (6.1%) had proportionally significantly higher Indigenous populations than that of Queensland (3.3% of the total Queensland population).
- The 0 to 14 age group was highly represented, with the overall Indigenous population being comparatively younger than the non-Indigenous population.
- The gender ratio for the Indigenous population within the regional councils is 49% male and 51% female, which is comparable to the Australian average.

22.4.2 Employment, Skills and Business

In 2006, Year 12 graduates in the Darling Downs were more likely to enter employment-based training and employment with no further education and training (and were less likely to enter university) than the population of Queensland as a whole. At the same time, 34.3% of persons aged 15 years and over within the Darling Downs had completed Year 12 schooling (which is below the state average of 41.3%).

The predominant sectors of employment in the Darling Downs were agriculture (12%), manufacturing (11%), retail trade (12%) and health care and social assistance (11%).

Agriculture, forestry and fishing were the predominant industries in Goondiwindi and Western Downs regional council areas (consistent with Darling Downs more broadly), while in Toowoomba the predominant industries included healthcare and social assistance, manufacturing and retail trade.

While the energy and mining industries are expanding in the study area, 2006 data indicated that these sectors were yet to be significant employers. Skill shortages in resource-orientated professions (e.g., geosciences), engineering professions and construction trades are becoming more apparent in the region.

Labour Force, Unemployment and Income

Key aspects of the study area relating to the size of the labour force, unemployment and income include the following:

- In 2006, the labour force recorded for Darling Downs was 101,290 persons, of which 44% (45,020) were residents of Toowoomba city. As at June 2008, the Western Downs Regional Council comprised 1,208 non-resident workers, a number likely to have increased since this count was taken due to increased development activity.
- As at March 2011, the region recorded an unemployment rate of 4.1%, which is substantially lower than the Queensland rate of 5.6%.
- Median household weekly incomes recorded for the region in 2006 were lower than that of the Queensland median.

Indigenous Population Employment

Within the study area, the most common occupations of the Indigenous population include labouring (28.6%), community and personal service workers (13.4%), and technicians and trades workers (13.2%). Across the three regional council areas, there is a high level of unemployment among the Indigenous population (recorded in 2006 as being 17.9% in Toowoomba, 19.6% in Western Downs and 24.2% in Goondiwindi).

Business Enterprises

Historically, the focus of local business and enterprise has been to support agricultural activities within the region. The total value of agricultural production in Darling Downs in 2005/06 was $1.95 billion, 22.4% of the total value of agricultural production in Queensland, with crops and livestock accounting for 48% and 47%, respectively, of the region's total value of agricultural production.

In 2008/09, there were 24,303 businesses in the Darling Downs, comprising 5.8% of all Queensland businesses. Businesses in the study area were mainly small businesses (96%), of which 32.6% were concerned with the agriculture industry.

22.4.3 Land Use and Property

Predominant land uses within the study area are cropping and grazing. The communities have displayed a high level of resilience through prolonged periods of drought, substantial floods and fluctuations in agricultural commodity prices. Detailed information regarding the types of agricultural production that exist is described in Appendix F, Agricultural Report.

22.4.4 Community Values and Lifestyles

Core values held by residents of communities of the study area emerged in the course of consultation and stakeholder engagement undertaken for the EIS and specifically for the social impact assessment. Residents have indicated an appreciation of the rural character of the area, the cohesive communities and an affordable rural lifestyle.

Rural Character

A fundamental quality, which was evident throughout consultation and stakeholder engagement, is the strong community spirit that exists among residents of the local communities within the study

area. The community has been founded on agricultural production. The pioneers who came and opened up the lands and those who have since come to the region to earn a livelihood have worked hard to establish a thriving community. Residents of the study area, many of whose families have lived in the region for generations, identify with being part of a rural community and value the hard work and determination that has gone into its creation.

Cohesive Communities

Residents of the study area value living in cohesive, stable communities, which offer a high standard of living. A number of key qualities were consistently raised as being factors that contributed to a cohesive community. First, residents highly valued that their community was safe and offered a healthy environment to raise a family. There was a strong public perception of community safety, which is reflected in relatively low rates of crime across the study area. Living in a quiet, non-polluted environment with clean air and access to natural landscapes was considered by residents as a preferred environment in which to raise a family.

Residents also appreciated the availability of social services and facilities, which support a good standard of living, particularly the provision of services in the larger key service centres of Toowoomba, Dalby and Goondiwindi. Accessibility of health, education and recreational services was considered a valuable attribute of communities.

Affordable Rural Lifestyle

Residents celebrate and enjoy lifestyle aspects associated with living in a rural area that provides wide open spaces and diverse recreational opportunities. A less hectic and slower-paced lifestyle, as compared to perceptions of life in major cities, was seen as a beneficial aspect of living in the study area. This includes a lack of traffic and ease of commuting to employment and recreational destinations.

The pace of life, combined with relatively small, stable, close-knit communities, fosters a sense of rural friendliness, which is highly valued by residents. An insight into the prevalence of such ‘friendliness’ and the values of community ownership and assistance is found in the number of volunteers. In all communities of interest, higher rates of voluntary activity were recorded (as at the 2006 census) than the state average, in particular for the smaller rural communities, such as Wandoan, Cecil Plains and Miles.

Residents also valued the relative affordability that the study area offered. Key elements of affordability are comparatively low housing prices and a high degree of home ownership combined with a variety of employment opportunities, even if such employment does not pay wages as high as those in the larger cities.

22.4.5 Community Infrastructure and Services

A summary of key points relating to the provision of community infrastructure and services in the region is provided below.

Health Infrastructure and Services

Health infrastructure and services range from major facilities, such as hospitals, to minor clinics providing medical, dentistry and allied health services. Key aspects of health services in the study area are as follows:

- The provision of health services and facilities across such a large and in some places relatively remote area is challenging, and there are varying standards of health services across the region.

- Toowoomba provides the primary health services hub for the region and offers a wide range of services, including a large and well-resourced hospital.
- Dalby and Miles hospitals have been recently renovated and are considered well equipped.
- Each of the communities of interest is serviced by a dedicated Queensland Health service; however, in smaller communities the scope of services is limited.
- During consultation, it was highlighted that, in many parts of the region, there is a lack of doctors, medical specialists and dentists. Mental health and health promotion were also considered to be lacking.

Education Services and Levels

Education infrastructure and services range from childcare, primary schools and high schools through to technical colleges and universities. Key aspects of the study area are as follows:

- Education facilities available in the study area include child care centres, schools (offering prep to Year 12 in some communities), university (Toowoomba only) and TAFE, as well as private training facilities.
- Education infrastructure currently required in the Western Downs Regional Council area includes additional and upgraded childcare facilities in Dalby, Miles and Chinchilla and additional primary school capacity in Chinchilla.
- Toowoomba and Dalby offer the greatest variety of schools, colleges, special, adult and vocational education facilities.
- Schools in Chinchilla, Dalby, Goondiwindi and Toowoomba reportedly have spare existing capacity from Year 8 to Year 12.
- Students from the towns without senior classes who wish to continue their senior education must relocate to larger towns.

Emergency Services

Emergency services refer to police, fire and ambulance services along with voluntary fire and state emergency service officers. Emergency services, including Queensland Police Service, Queensland Fire Service, Queensland Ambulance Service and State Emergency Services, provide relatively high standards of service and coverage across the region.

The Royal Flying Doctor Service is able to land in each community in the study area.

Community and Social Services

Community and social services include crisis care; counselling services; and specific services for special needs groups, such as youth, aged and other vulnerable sectors of the community. Across the study area, with the exception of Toowoomba, there is a general deficiency of social services and facilities for youth and children and a lack of specialist counselling services and aged care.

Sporting and Recreational Facilities

Sporting and recreational facilities range from major sporting stadiums to informal recreation facilities, such as walking tracks.

Generally, the residents of the communities of interest are able to access a range of recreation facilities and leisure and sporting groups. Across the Darling Downs, there are a range of regular

events, such as regional agricultural shows, community race days, fairs, competitions and other events, which provide residents with opportunities for socialisation and recreation.

Municipal Infrastructure

Municipal infrastructure refers to all those services that support residential areas, such as water, sewerage, roads and waste disposal services. Key aspects of the study area are:

- Reticulated water is connected within certain towns of each regional council: Toowoomba and Millmerran (Toowoomba Regional Council), Goondiwindi and Inglewood (Goondiwindi Regional Council), and Dalby and Chinchilla (Western Downs Regional Council).
- Sewerage systems operated by council exist in Toowoomba and the larger towns in the Darling Downs. Smaller towns and settlements are not connected to sewage systems, and individual property owners are responsible for the installation and maintenance of onsite sewerage treatment facilities.
- Each regional council operates solid waste management facilities in a range of locations. These vary from sophisticated collection and disposal systems in Toowoomba to basic self-serviced general refuse tips in less populated areas. A greatly improved waste transfer station is presently being developed in Dalby.

Transport and Connectivity

Key features of the study area regarding transport are summarised as follows:

- The availability of public transport is limited across much of the study and is concentrated in Toowoomba. A very high proportion of residents are dependent on private motor vehicles for transportation requirements.
- Greyhound operates bus services via a network of routes that traverse the region, and Queensland Rail's Westlander service operates twice a week in each direction between Brisbane and Charleville, stopping in Toowoomba, Dalby, Chinchilla and Miles.
- The quality and standard (i.e., sealed and unsealed) of the regional road network varies. The low density of population and development means that councils have a high proportion of unsealed roads, and these are often adversely affected by heavy traffic and wet weather.
- Qantas provides regular air services between Brisbane and Toowoomba. Other communities have small airstrips for aviation health services, recreation, and private or charter flights.

Communication Technology

With respect to communication technology, access is via print media, static and mobile telephone networks and the Internet, with an average of 45% of households in the region having Internet access. This statistic is significantly lower than Queensland's average rate of household Internet access of 65.8%. Wireless Internet is currently only available in Toowoomba.

22.4.6 Housing and Accommodation

The defining aspects of housing and accommodation within the study area are described within this section.

Residential Profile

The study area exhibits a prevailing settlement pattern of predominantly low-density, rural areas supporting agricultural operations, interspersed by small to mid-sized townships that act as service

centres for the surrounding rural areas. Primary characteristics defining the residential profile of the study area include:

- Having one large city in the region, namely, Toowoomba. Toowoomba differs from the other communities of interest, with higher density residential areas and a higher proportion of attached and semi-detached dwellings.
- A high proportion of fully owned separate homes, reflecting a generally long length of occupancy, particularly farm households and those in more rural areas.
- A regional average household size equal to the average size recorded for Queensland (2.6).
- A high percentage of family-orientated households, ranging from 59.6% in Miles to 67.6% in Dalby.

Housing Availability and Affordability

Housing availability within the study area is becoming constrained, particularly in higher growth areas, such as Toowoomba and Chinchilla. While Dalby has a current housing surplus due to recent large speculative investments, these surplus houses are expected to sell as resource developments expand. Wandoan, Miles, Millmerran and Cecil Plains have limited houses for sale and rent.

There is an active residential development industry in the region; and in the 12 months ending 31 December 2009, 195 dwelling units of new residential buildings were approved collectively in Chinchilla, Dalby, Goondiwindi and Millmerran. These approvals were valued at $46.6 million and accounted for 0.7% of the total value of Queensland's new residential approvals.

Regarding the supply of residential land, Toowoomba Regional Council appears to have sufficient supply, while planning scheme amendments are being undertaken by the Western Downs Regional Council to cope with demand, particularly in Chinchilla.

Housing costs in most communities of the study area (both purchase and rental costs) were generally well below the Queensland average in 2006. The most affordable housing was recorded in Wandoan, Cecil Plains and Miles, while housing in Toowoomba, Goondiwindi, Dalby and Chinchilla was more expensive.

Toowoomba and Goondiwindi regional councils recorded substantial increases in median house prices in 2010, as shown in Table 22.3.

Table 22.3 Median housing prices in 2010

Regional Council	Median Prices December Quarter 2010 ($)	Change Over the Year (%)*
Toowoomba	319,000	4.6
Western Downs	286,000	2.1
Goondiwindi	285,000	8.8
Queensland	425,000	(1.6)

Source: DCHHS (2011).

*Values shown in brackets indicate a decrease.

While rental costs at the regional level remain well below the state average, there is substantial variation across the region. Recent resource sector developments have resulted in a large increase in demand for housing in such localities as Dalby and Chinchilla where it has been reported that, in 2011, rental prices have increased by more than 100%. The decrease in rental prices recorded for

the Western Downs in December 2010 as displayed in Table 22.4 are due to the large amount of new housing that was brought to market in Dalby throughout 2010, following a sharp increase in rental prices from the previously very low base.

Table 22.4 Median weekly rents in December 2010

Regional Councils	3 Bedroom		2 Bedroom	
	Median Weekly Rent ($)	Change Over the Year (%)*	Median Weekly Rent ($)	Change Over the Year (%)*
Toowoomba	260	4	200	8.1
Western Downs	270	(3.6)	190	(13.6)
Goondiwindi	240	4.3	160	0
Queensland	330	0	300	0

Source: DoC (2011).

*Values shown in brackets indicate a decrease.

Short-term and Temporary Accommodation

Key aspects of the study area concerning short-term and temporary accommodation are:

- With the exception of Toowoomba, hotel and motel accommodation is in short supply.
- Escalating demand created by expanding resource industries in the study area is creating an acute shortage of short-term accommodation, with hotels and motels in many of the communities of interest frequently full from Monday to Wednesday (with non-resident workers).
- There are numerous temporary workers accommodation facilities (TWAFs) in operation in the region. In 2008, it was estimated that, in the vicinity of the Western Downs communities of Dalby, Chinchilla and Miles, there were 1,208 non-resident workers, 60% of which were accommodated in TWAFs.

Social and Community Housing

Primary features relating to the supply of low-cost social and community housing in the study area include:

- As at June 2008, there were 34 community and 12 local government housing providers in the South West Queensland Area Office (which incorporates the project study area) managing a total of 611 units of accommodation, including long-term community housing and crisis accommodation.
- Currently, reported waiting times for public housing for selected dwelling types (one- and four-bedroom dwellings) in Toowoomba and other areas in the study area are on par with the average waiting times for public housing across Queensland.
- Recent escalations in housing costs are affecting vulnerable sectors of the community, including Indigenous residents, with anecdotal evidence that a scarcity of affordable rental housing is resulting in out-migration from such towns as Dalby and Chinchilla to more affordable locations, including Jandowie, Toowoomba and Oakey.
- Social housing providers have indicated that homelessness is emerging as a key issue, with a consequent need for additional houses for crisis accommodation in Dalby.

22.4.7 Health, Safety and Environment

A number of factors contribute to the overall communities' health and wellbeing. Such factors are considered in this section to gain an appreciation of the current level of health and wellbeing.

General Health

A wide range of key self-reported population health indicators for adults of the Darling Downs–West Moreton Health Service District were collected in 2010 (Qld Health, 2010). The results showed that the population of the study area did not exhibit any significant differences to the Queensland average, with the exception of:

- The prevalence of overweight or obesity was 12% higher in the Darling Downs–West Moreton Health Service District than in Queensland overall.
- The prevalence of adults within the healthy weight range was 14% lower in Darling Downs–West Health Service District than in Queensland overall.

Vulnerable Groups

It is generally accepted that a strong linkage exists between health and socioeconomic disadvantage. An indication of socioeconomic disadvantage is provided by the Australian Bureau of Statistics–produced Socio-economic Indexes for Areas (SEIFA). The SEIFA Disadvantage measure for the study area recorded that, in 2006, the Darling Downs population was experiencing a greater relative degree of disadvantage when compared to Queensland as a whole, with 26.4% of the Darling Downs population being in the most disadvantaged quintile (compared with 20% for the state).

In terms of the proportion of the Darling Downs population with a disability, 4.4% of the population was identified as requiring assistance in 2006, which is higher than the Queensland average of 3.8%.

Consistent with Indigenous communities across Queensland, Indigenous residents within the region have higher rates of diabetes, kidney disease, sexually transmitted diseases, and drug and alcohol abuse compared to the non-Indigenous population. Accessibility to and knowledge of available health services were reported as key issues affecting the health of the Indigenous population of the Oakey community.

Environmental Conditions

Environmental conditions, including air and water quality and ambient noise, can affect the health and wellbeing of a community. While these factors are addressed in detail in their respective dedicated chapters in the EIS, some key attributes of the study area's environmental conditions include:

- Generally, air quality across the region is high and conducive to human health and wellbeing, despite the presence of numerous point source pollutants, including coal-fired power stations, coal mines and industrial manufacturing plants.
- Watercourses in the project development area exhibit a range of conditions from near pristine to highly disturbed; and accordingly, water quality varies.
- A generally low-noise environment persists throughout the project development area, even where there is influence from existing industrial activity.

Crime Rates

The incidence of criminal activity is a commonly accepted measure of community wellbeing. Key features of the study area with respect to rates of crime are:

- Lower rates of criminal activity were recorded in the study area during 2008/09 compared to those of Queensland overall. While the rate of assault (including sexual) was slightly higher than the overall Queensland rate, the incidence of theft and crimes against property was lower.
- The most common offences relate to traffic, including drink driving, followed by drugs, assault, fraud, unlawful use of a motor vehicle and sexual offences.
- The incidence of drug offences in the study area for the 2008/09 year was 1,024 per 100,000 persons, which is slightly lower than the state average of 1,026 per 100,000 persons.

Cost of Living

In terms of relative affordability, the study area exhibited the following features relative to Brisbane:

- Low housing costs in the Toowoomba, Western Downs and Goondiwindi regional council areas (i.e., 16%, 15% and 23% cheaper than Brisbane City Council area, respectively).
- Cheaper goods and services in Chinchilla, Dalby and Toowoomba.
- Considerably higher food costs in Chinchilla, Dalby and Toowoomba (respectively 8%, 6% and 7% higher than in Brisbane).

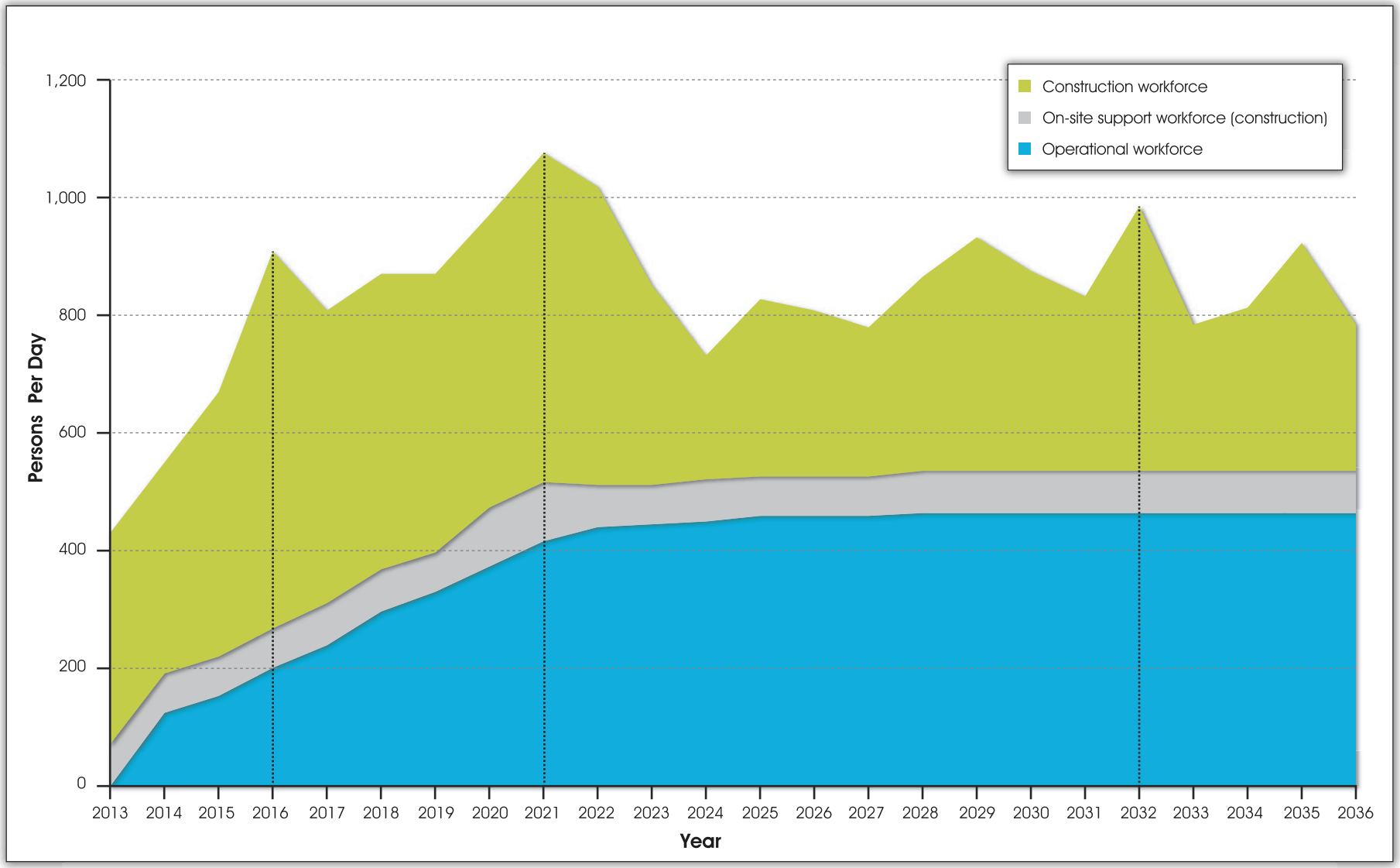
Further information describing economic characteristics of the study area is provided in Chapter 21, Economics.

22.5 Workforce Profile

The following section outlines the project workforce that will be employed during the construction, operations and decommissioning phases.

22.5.1 Construction Workforce

Construction will commence in 2014, with all production facilities expected to be in operation by 2036. Figure 22.2 shows the workforce spread over the development period 2013 to 2036 (excluding Brisbane-based personnel).



	coffey environments	Job No: 7040	Arrow Energy	arrow energy go further	Forecast project workforce	Figure No: 22.2
		File Name: 7040_04_F22.02_GL	Surat Gas Project			

The construction workforce groupings and their roles are as follows:

- Production facilities construction workforce: required to construct production facilities, associated local power generation facilities and water treatment facilities.
- Well and gathering line installation and commissioning team: planning and installation of well sites and gathering systems.
- Earthworks crew: assumed to consist of a single earthmoving and site preparation team that is deployed to clear, grade, fence and excavate all roads, pads, facilities and dams (excluding wells and pipelines).
- Camp operations staff: responsible for running the construction camps.

From 2014 to 2021, the construction workforce will range from 250 to 500 workers before tailing off to between 220 and 400 workers. Key aspects of the construction workforce include:

- Multiple peaks associated with the construction of production facilities.
- Production facilities construction management personnel have been calculated as a percentage (15%) of the production facilities construction workforce. The peak production facilities construction management personnel workforce of 45 persons occurs in 2016.
- Well installation and commissioning team workforce numbers ramp up from 2014, peaking at around 370 workers per day in 2020. Workforce numbers vary with the schedule of production well development. The average is 250 workers across the entire construction period for this team.
- The well installation and commissioning team includes support staff. On average, 70 support staff will be based onsite (and will live locally). The support staff requirement peaks in 2020 with an estimated 100 onsite personnel.
- An additional 30- to 45-person team based in Brisbane will support the well installation and commissioning team.
- The earthworks crew is involved in upfront preparation works for facilities and infrastructure. A small crew of around 10 workers per day is required up until 2021.
- Camp operations staff will be required from 2014, increasing in number as camps become operational up to a peak of approximately 50 workers per day.

Arrow is aiming to source at least 20% of its construction labour force locally, which is defined as people based within or near to the study area. Of the 20% local-sourced workforce, 15% will be existing residents and 5% will be new residents. The majority of the construction workforce (80%) will be sourced from outside the study area. The non-local workforce will be accommodated in TWAFs. The onsite support construction workforce is expected to reside in the study area and travel to work on a daily basis. Table 22.5 provides a breakdown of the workforce and likely sources. It has been assumed that the proportion of existing residents vs. new residents vs. non-residents does not change during the development period.

Table 22.5 Number of field-based workers and housing requirements for the Surat Gas Project

Workforce Type and Likely Source[1]	Level	Year				
		2016	2021	2029	2032	2035
Construction Workforce[2, 3]						
Main construction workforce.		640	560	400	450	390
• Existing resident (existing accommodation in the area).	15%	96	84	60	68	59
• New resident (seeking accommodation in the area).	5%	32	28	20	23	20
• Non-resident (camp based).	80%	512	448	320	360	312
Onsite Support Workforce (Construction).		70	100	70	70	70
• Existing resident (existing accommodation in the area).	20%	14	20	14	14	14
• New resident (seeking accommodation In the area).	80%	56	80	56	56	56
Operations Workforce						
Operations Support Staff at Depots.		125	200	200	200	200
• Existing resident (existing accommodation in the area).	50%	63	100	100	100	100
• New resident (seeking accommodation In the area).	50%	63	100	100	100	100
Field and Facility Operations Workforce.		74	215	264	264	264
• Existing resident (existing accommodation in the area).	50%	37	108	132	132	132
• New resident (seeking accommodation In the area).	50%	37	108	132	132	132
Total Workforce		**909**	**1,075**	**934**	**984**	**924**
New resident workers.		188	315	308	311	308
Net additional housing requirements.		188	128	0	0	0

[1] This table includes field-based workers; there are additional workers, such as Brisbane-based support staff.

[2] It has been assumed that 20% of construction workers will be sourced from the local area as defined in the project description and that 80% of construction workers will be sourced from outside the local area.

[3] For assessment of new housing requirements, it has been assumed that existing residents do not require housing. New resident workers each will require one unit of housing.

It is anticipated that the construction workforce will work 10- to 12-hour shifts on a 21-day-on, 7-day-off roster. In periods of peak construction activity, shifts may extend to 12-hour shifts or 24-hour operations conducted in two or more shifts.

Construction Workforce Accommodation

The majority of the construction workforce will be accommodated in temporary workforce accommodation facilities (TWAFs). A small subset of the onsite support workforce for construction and operations is expected to reside in the study area. Arrow may acquire some housing in the area

to accommodate Brisbane-based support staff visiting the project. Alternatively, they may stay at construction camps or in hotel accommodation.

To accommodate the construction workforce, management personnel and associated contractors, five TWAFs will be established at the sites where integrated processing facilities are required to be built. These are in the vicinity of Wandoan, Chinchilla, Millmerran, Dalby, and Goondiwindi. The location of integrated processing facilities and the co-located TWAFs will be progressively determined through Arrow's site selection process, which will consider:

- Regional council requirements.
- Arrow-owned land.
- Proximity to worksites (typical maximum travel distance of approximately 40 km to worksites).
- Local road infrastructure.
- Measures to minimise disturbance to local residences.
- Measures to minimise impacts on the environment.
- Proximity to local infrastructure (water, power, sewerage and communications).

Occupancy rates of the TWAFs will fluctuate according to the development schedule in each development region. Estimated TWAF sizes (maximum number of beds) and the expected timeframes when each TWAF will be operating at peak capacity are shown in Table 22.6.

Table 22.6 Estimated temporary workforce accommodation facility sizes and years of peak capacity for each development region

Camp Location	Maximum Number of Beds Expected to be Required	Period When Maximum Number of Beds Are Expected to be Required
Dalby	300	2015 to 2019
Wandoan	320	2016 to 2018
Millmerran	275	2019 to 2020
Chinchilla	310	2020 to 2022
Goondiwindi	290	2030 to 2031

Source: Arrow (2011).

Peak TWAF occupation occurs during construction of the production facilities. Once the production facilities have been completed, TWAFs will be downsized to accommodate the smaller well installation crew. TWAFs will be decommissioned and removed and the site will be reinstated when they are no longer required. If construction works (e.g., well development) are carried out in areas where the TWAFs have already been decommissioned, workers may stay in local town accommodation.

22.5.2 Operations Workforce

In February 2011, Arrow had an operations workforce of approximately 100 staff supporting current field development and operating facilities in the Dalby region. The majority of these personnel reside in Dalby. The operations workforce will incrementally grow as wells and processing facilities are established. From 2014 to 2028, the operations workforce is predicted to gradually increase from 144 to a peak of 464 personnel.

Operations roles will be in three areas:

- Support staff: general administration, land access, supervision and management roles.
- Field staff for commissioned production wells: development and maintenance of production wells.

- Facility operations workforce: staff to operate and maintain production facilities, including water treatment and power operation.

The operations workforce support staff will typically perform 8- to 10-hour shifts during daylight hours, five days per week. Staff at central gas processing and integrated processing facilities will typically work 10-hour shifts during daylight hours, five days per week. Well operations staff will typically work 8- to 10-hour shifts during daylight hours, five days per week. Staff will also be on call to respond to emergency situations.

Operations Workforce Accommodation

Arrow has estimated that 50% of the operations workforce will be sourced locally and 50% from outside the local area. The hierarchy of preference for sourcing of non-local employees is first from within the region, then from within Australia. Only if specific skills cannot be sourced from within Australia will there be any attempt to source employees internationally. Workers sourced from outside the local area are expected to move to and rent or purchase housing in the study area. Based on these assumptions, approximately 232 workers would be moving into the area and seeking accommodation by 2029 (Table 22.7). Arrow has no plans to establish fly-in, fly-out or drive-in, drive-out operations.

Table 22.7 Decommissioning workforce requirements

Activity Type	Size of Workforce	Source of Workforce	Accommodation
Well decommissioning	Years 2030 to 2048: Two eight-person crews.	100% local area.	100% local area.
Field compression facility decommissioning	Up to 25 persons for a period of 4 months.	90% local area. 10% specialist skills from outside area.	90% local area. 10% motels or similar.
Central gas processing facility decommissioning	Up to 50 persons for a period of 8 months.	90% local area. 10% specialist skills from outside area.	90% local area. 10% motels or similar.
Integrated processing facility decommissioning	Up to 80 persons for a period of 8 months.	90% local area. 10% specialist skills from outside area.	90% local area. 10% motels or similar.

Source: Arrow (2011).

22.5.3 Decommissioning Workforce

The anticipated characteristics of the decommissioning workforce, including size, source and accommodation requirements, are provided in Table 22.7.

22.6 Issues and Potential Impacts

This section describes potential direct and indirect adverse social impacts, as well as opportunities, arising from the project. Impacts have been identified and a risk assessment conducted as described in Chapter 7, Impact Assessment Method.

22.6.1 Key Issues Raised Through Consultation

Throughout consultation and engagement, a number of key issues were commonly raised by the communities of interest, as described below.

Water

Availability of water is an issue in local communities and the region, following the many years of drought that have been endured. Useable water is limited, and competition for the resource is high.

Rural debt is high due to both drought and the impact of significant flooding in 2011. Rural debt causes increased stress for farmers, their families, and their community and consequent increased demand for mental, emotional and physical health and education services.

Moratoria prohibiting the capture and use of overland flows while awaiting the initiation of water resource plans have created additional resentment and anxiety among rural communities and have added to the stress of managing properties. Landowners have expressed concern about the potential interconnection between coal seams and groundwater aquifers and drawdown.

(The potential impacts to groundwater systems are detailed in Chapter 14, Groundwater.)

Housing and Living Costs

Another key issue for local communities and stakeholders is the potential increased cost of living and reduction in housing affordability. Also, high living costs may result in lower income groups moving out of the area, with the social and economic implications associated with such a move. Queensland Health, Queensland Police and Education Queensland asserted that higher living costs, including higher housing costs, were an impediment to attracting and retaining staff in rural areas.

Relationships with Landowners and Communication

Local communities identified the importance of maintaining good relationships with local landowners. The need for suitable protocols to negotiate access to land and for Arrow to form long-term relationships with landowners was a clear message. There is also an expectation that local agricultural activities will be protected.

The communities' need for strong, ongoing, long-term relationships is linked to their desire for open and honest communication, regular interaction between proponents and communities, and ongoing provision and dissemination of information.

Community Services, Infrastructure and Amenities

Regional councils and Queensland state government service providers raised the issue of cumulative growth of the resident and non-resident populations resulting from numerous simultaneous projects. This is believed to have the potential to impact on the effective provision of community services and facilities. Key areas believed to be susceptible to impacts from project activities included health service providers, ambulance and police services, increased landfill generated by temporary accommodation facilities, additional maintenance for recreational facilities, and the need for the additional development of council utilities.

Traffic

Communities located in the Surat Basin have experienced a significant increase in exploration and the development of resource projects. The activities associated with exploration and resource development have prompted awareness about increasing traffic congestion and the attendant impact on the quality and safety of roads in the region. Community members were specifically interested with how general traffic and heavy-vehicle movements would be managed and how routes would be identified.

Social Cohesion

The potential for the communities' social cohesion to be affected, along with a desire to incorporate the project workforce into communities (so that the economic and social benefits of workers locating to the area could be realised most effectively), was raised. The loss of rural friendliness by the

introduction of a potentially more diverse population into the region and how integration with the existing rural community would be managed were also raised as an issues.

Local Employment and Business

Stakeholders identified the fostering of local employment and business opportunities as crucial and strongly encouraged Arrow to employ local people and contract out to local businesses. Stakeholders raised as issues competition for labour, loss of workers from established businesses to the coal seam gas industry, and corresponding increases in costs for businesses as they seek to employ and retain staff.

During subsequent stages of consultation, stakeholders and communities were asked to contribute their knowledge about the management of potential impacts. Their responses are presented in Table 22.8.

Table 22.8 Stakeholder contributions on managing project impacts

Management of Adverse Impacts	Opportunities
• Put things in place to manage water use, quality, reuse and discharge (38%). • Look after agricultural and farm lands (including weed management) (31%). • Provide greater communication and consultation before and during the project (29%). • Carry out traffic management and road infrastructure (20%). • Provide compensation for farmers' and landowners' rights and cooperation (15%). • Assist local employment and support local business (13%).	• Assist local economic growth and job creation and use local businesses (52%). • Communicate, get involved and interact with the local community (23%). • Provide more facilities and infrastructure (14%). • Provide additional sources of water and reduce water wastage (12%). • Upgrade or maintain roads and railway (8%).

The percentages in brackets indicate the portion of respondents who supported each view. The respondents were able to support more than one view resulting in total numbers not equalling 100%.

For the purposes of the impact assessment, the potential impacts identified were discussed as part of one or more of seven social impact categories:

- Population and demographic profile.
- Employment, skills and business.
- Land use and property.
- Community values and lifestyles.
- Community infrastructure and services.
- Housing and accommodation availability and affordability.
- Health, safety and environment.

These are each discussed below.

22.6.2 Population and Demographic Profile

Population Growth

Arrow estimates that approximately 909 construction and operation and maintenance personnel will be working in the project development area by 2016, and approximately 1,075 personnel will be working there by 2021. By 2021, 316 workers and 442 family members, partners or other relations will have moved into or in close proximity to the study area, for a total of 759 new residents as shown in Figure 22.3.

Toowoomba, Chinchilla and Dalby appear to be desirable residential locations due to their proximity to the project worksites and the availability of services in these established communities. The estimated numbers of workers and families moving to each respective community of interest are shown in Table 22.9 below, where it has been assumed that one dwelling is required for each worker plus his or her family or partner. As can be seen, the population increase is likely to be dispersed spatially and temporally, with actual increases to the resident population of individual towns being fairly low on a year-by-year basis. Arrow expects that population growth stimulated by the project will offset the population decline that has been occurring in many of the smaller communities in the study area.

Table 22.9 Possible locations for new resident workforce and families

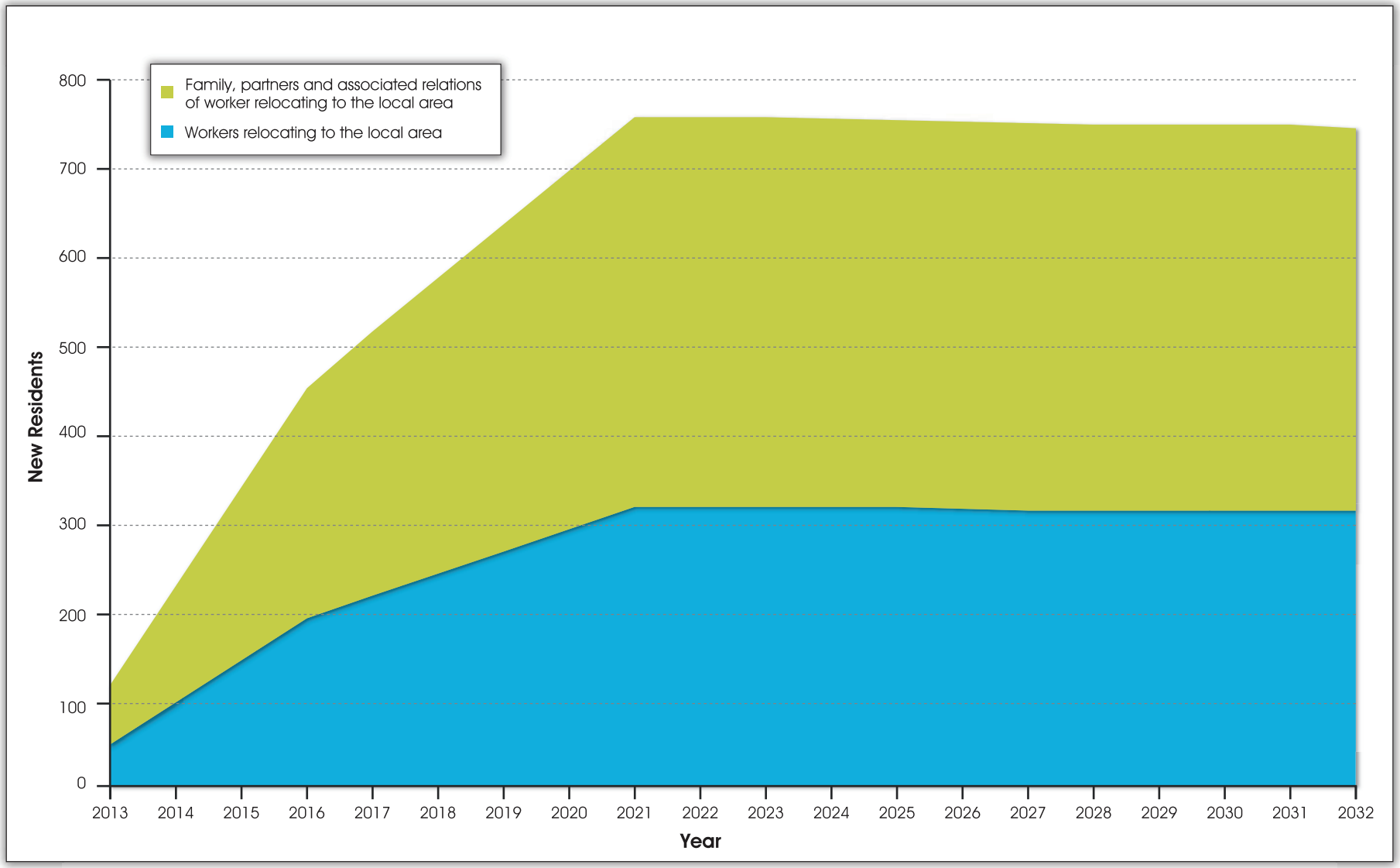
Destination	Estimated New Residents by 2021		Growth per Annum: 2013 to 2021	Estimated Number of Dwellings Required by 2021
	(%)	(Number)		
Chinchilla	20%	152	19	63
Dalby	20%	152	19	63
Goondiwindi	5%	38	5	16
Miles	20%	152	19	63
Millmerran	10%	76	9	32
Toowoomba	15%	114	14	47
Toowoomba local*	5%	38	5	16
Jandowae, Tara and small localities around Dalby and Chinchilla	5%	37	5	15
Total	**100%**	**759**	**95**	**315**

*Estimate includes locations within a 40-km radius of Toowoomba city.

Demographic Change

Arrow is aiming to source approximately 50% of the new operations positions from towns in or around the study area. The remaining 50% of staff (around 230 workers) are expected to be recruited from further afield and to relocate to towns in and around the project area. The majority of jobs will be in occupations requiring technical skills, such as drilling, production facility operation and maintenance and diesel fitting.

The construction workforce is likely to be younger than the average age of 37 of the existing population of the Darling Downs and to be a significantly higher proportion of males. Construction employment opportunities generated by the project are likely to be skewed towards males. Ethnic diversity within the workforce compared to the existing profile of the communities of interest may increase, particularly if a portion of the construction workforce is sourced from overseas.



	coffey environments	Job No: 7040	Arrow Energy	arrow energy go further	Number of relocating workers and family, partners or other relations	Figure No: 22.3
		File Name: 7040_04_F22.03_GL	Surat Gas Project			

Anticipated population growth associated with the influx of the operations workforce (primarily being people of working age, accompanied by partners or young families) may provide greater balance to the existing demographic profile, which is currently skewed towards older age groups. Businesses in the development area that may lose workers to the project and other developments may source workers from outside the local area (if they are unable to find local workers) via the Australian Government's 457 (skilled visa) scheme. The operations workforce may help to sustain services and lifestyle businesses, and training and long-term employment prospects may mean that younger local residents will stay in the area.

22.6.3 Employment, Skills and Business

The project will directly generate a large number of employment opportunities with the creation of up to 1,075 jobs across the construction and operations phases. In recognition of the existing low levels of unemployment and the high demand for skills created by other projects in the study area, it is anticipated that it will be possible to source just 15% of the construction workforce (a total of 142 positions) from the existing local population (with a further 5% of the construction workforce expected to relocate to become local residents). It is anticipated that local residents will be attracted to the long-term career opportunities offered by operations positions; and 50% of the approximately 460 operations jobs created by the project will be filled by people from the local area.

In addition to direct job creation, the project will stimulate local business opportunities through both direct procurement of goods and services, particularly during the construction phase, and through expanding and diversifying economic activity in the region. This will result in an injection of wealth into the local economy. The creation of direct and indirect employment will impact upon the local labour market, increasing the demand for skills and continuing the low unemployment in the region.

It is likely that increased demand for certain skills will lead to higher incomes in those occupations. Existing businesses that have similar skill requirements may struggle to retain staff in the short term as higher wages are offered. The loss of skilled workers to the project and other resource projects in the region may affect service provision, which may both affect the cost of services and the ability of businesses to meet demand. Conversely, higher wages will stimulate local spending and thereby create other business opportunities, further diversifying the economy and improving resilience to externalities, such as drought and market fluctuations. In addition, a diverse range of skills and abilities will be brought to the study area by new residents, including the partners and spouses of direct project employees relocating to the region.

The heightened demand for skills is likely to promote the expansion of education and training opportunities in the region. Providers of education and training, particularly in those fields required for the emerging resource-based industries, are likely to expand and improve on existing education and training services, particularly apprenticeships, vocational training, support for work readiness programs and pretrade training. The availability of such education and training initiatives is likely to enhance the employment prospects of local residents, including Indigenous people, youth, and the unemployed and disadvantaged sectors of the community.

Development of the Surat Gas Project will see the main construction activities (well installation) and operations ongoing throughout most of the project life (see Figure 22.2). Thus, there are no specific project milestones when significant employment lay-offs will be required, other than at the end of the project life.

22.6.4 Land Use and Property

Social impacts may occur through changes to existing land uses. For example, a typical production well and its associated gas and water gathering infrastructure is estimated to disturb 2% to 3% of

land associated with a typical 160-acre (approximately 65-ha) production spacing. While well sites, access tracks and other infrastructure have the potential to alienate agricultural land, the effects on farm operations will vary depending on the particular property circumstances and Arrow's ability to work with landowners to site project facilities and infrastructure to have minimal disturbance to current land use.

The factors that Arrow will need to consider and the strategy that Arrow has proposed to minimise disruption to agricultural activities and other current land uses are further described in Chapter 8, Environmental Framework, and Chapter 13, Agriculture.

Social impacts identified in relation to land use and property include disruption to farming activities, voluntary property acquisition (particularly where the siting of large production facilities is required), and stress to landowners from project activities occurring on their property. The impact on property values will depend on the type of agricultural enterprise, the farm practices and the extent to which project activities affect the business, particularly the viability of the enterprise.

Members of the farming community often have a strong connection with the land that they have worked, sometimes for generations; and a break to that connection, even if made voluntarily, can be difficult for individuals, families and communities to manage. Heightened landowner anxiety is considered a key impact, further exacerbated due to the time that will elapse between when there is an indication that the property may be subject to gas well development and when it actually occurs during project life. It is recognised that there will be wide variation in the manner in which individuals will experience stress and anxiety.

Availability of regular land rental payments from coal seam gas wells is an opportunity that can provide a regular supplementary income source to farmers. The additional income source may assist with improving farm viability through cushioning the effects of fluctuating prices for agricultural commodities and non-productive periods resulting from flood and drought. The regular income source could improve the livelihoods of landowners or reduce anxiety caused by unreliable markets and adverse weather conditions.

22.6.5 Community Values and Lifestyles

This section discusses the potential of project activities to impact on the community values identified.

Rural Character

The rapid growth of a new industry that is not agricultural in nature has the potential to be feared by sections of the community as threatening the existing rural character of communities. Employment creation and the influx of new residents who may not be from a rural background and may not employed in rural occupations may be perceived as diluting the rural heritage of the community, leading to a change in the character and values of the community. Potentially exacerbating such a perception is the likelihood of income disparity between coal seam gas employees and contractors and those employed in agriculture and agriculture-related activities. This has the potential to divide communities, as local people who take up higher paying employment with the coal seam gas industry are perceived as 'selling out' and disregarding the rural heritage of the community.

Cohesive Communities

Residents of the study area value the cohesive nature of the communities in which they live, offering a safe and healthy living environment supported by the availability of social facilities and services. As populations grow and increase in diversity, feelings of cohesion and trust can

dissipate. In particular, the introduction of an external workforce can lead to increases in the rate of crime and the perception that community safety is being diminished.

As discussed in the chapters on air quality, noise and vibration, landscape and visual amenity, and roads and transport, the project is not expected to negatively impact on the environmental amenity in any of the communities of interest. Also, as outlined in Section 26.6.6, Community Infrastructure and Services, the project is unlikely to significantly impact on access to community services and facilities and may lead to an improvement in the availability of services in some communities due to population and economic growth.

Affordable Rural Lifestyle

Residents celebrate and enjoy lifestyle aspects associated with living in a rural area, including a less hectic pace of life, relative affordability and a sense of rural friendliness.

The project is likely to lead to increased activity, more people and more traffic in many of the communities of interest, which may not be appreciated by some residents. It is expected that, over time, this will diminish as activity associated with construction subsides, traffic mitigation measures are implemented and residents become accustom to marginally higher levels of activity in townships.

Communities voiced concern regarding the potential for localised inflation, resulting from the availability of higher wages and higher demand for housing and accommodation and other goods and services. Erosion to affordability created by the coal seam gas industry is balanced against potential benefits associated with stimulation of a greater range and diversity of goods and services and increased competition in the supply of goods and services, thereby limiting localised inflation. Housing and accommodation costs are discussed in Section 22.6.7, Housing and Accommodation Availability and Affordability; however, local residents may benefit from escalating prices due to existing high rates of home ownership. Overall, increased living costs are considered a medium level risk.

The influx of an external workforce may result in a rise in unsociable behaviour. The likelihood of such an effect is assessed as being low as there will be limited interaction between community members and the construction workforce. New residents associated with the operations workforce will be looking to become a part of the community and highly appreciative of a welcoming and friendly community. If embraced by the community, the project has the potential to positively impact on rural friendliness as existing residents volunteer to assist new residents to assimilate into the community.

22.6.6 Community Infrastructure and Services

This section details the likely impact to both social and community infrastructure through an increase in demand due to population growth associated with the project.

Workers living within the study area are likely to place additional demand on medical and associated services. While reliance upon existing medical services by the construction workforce will be reduced through the supply of emergency health care at TWAFs, other health-related services, such as physiotherapy or sexual and mental health services, may be accessed at the closest available service centre (community of interest) by the construction workforce. Additionally, those construction and operations employees who will permanently reside in the study area will require health and social services for themselves and their families.

By continuing to place pressure on housing stock and the cost of living, the project may also contribute to a continued shortage of entry-level police, council officers, teachers and other workers providing social services, translating into a loss of the level of services available locally.

It is likely that the project will contribute to the demand for social support services, including family support, counselling and relationship services, multicultural services, and housing and accommodation services.

Conversely, population and economic growth throughout the region may also lead to an increase in the overall range of health and health-related services provided in the study area.

Educational Services

Arrow has estimated that 316 workers will have relocated to the study area by 2021, with many of these workers bringing their families. This will result in an estimated 758 people (workers and families) entering the study area, potentially increasing demand for child care, kindergartens, primary schools and secondary school, as well as TAFE or university.

Educational services in smaller communities in the study area are limited, with no Year 11 and 12 schooling available. While the public school system in some communities in the study area currently has capacity for additional students, the cumulative demand created by this and other resource-sector projects in the region could result in existing services struggling to meet demand.

The project will contribute to the cumulative demand for childcare services; however, such services should be able to be met by the proliferation of private service providers that take advantage of increased demand.

Training providers that specialise in developing those skill sets required to meet employment opportunities created by the project are likely to expand the range and coverage of training available in the region.

Emergency Services

The project is expected to create additional demand for emergency services. Demand for services will include police escorts for the transport of wide loads, ambulance and medical treatment in the event of an accident onsite, and fire services in the event of a fire. There may be an increased incidence of road accidents associated with additional vehicle movements, potentially increasing demand across all emergency providers.

As part of Arrow's Brighter Futures program, Arrow has partnered with other companies working in the region to provide a medivac service to respond to project-related and community emergencies. A helicopter with a supporting doctor and medics is based at Toowoomba (and also at Roma).

Sporting and Recreational Facilities

Due to the provision of TWAFs and the nature of shift cycles, the majority of the construction workforce will not use existing recreational facilities. However, members of the workforce and their families who come to reside in each of the communities of interest will utilise existing formal and informal recreational facilities, such as parks, sporting ovals and swimming pools; and this has the potential to diminish access or enjoyment for existing users.

Conversely, the presence of an additional continuing population will potentially support the creation of additional recreational facilities.

Municipal Infrastructure

As the project will result in only limited population growth, which will be spread across numerous communities, additional demands on municipal infrastructure and services will be minimal. The project is likely to have a positive effect on municipal infrastructure through stimulating local economies and increasing the funding local councils have to expend on such infrastructure and services.

Transport Infrastructure

The increase in traffic associated with the project, along with the cumulative impacts of other projects, is an impact that residents of affected communities have identified. Due to the tendency for the highway to pass through the centre of smaller communities, increased truck and private traffic movements may increase the risk profile of existing roads in some localities. A more detailed assessment of potential impacts and associated management measures is presented in Chapter 19, Roads and Transport.

A positive effect associated with this and other related resource projects is that they are likely to stimulate investment in transport infrastructure, such as upgrades to highways.

22.6.7 Housing and Accommodation Availability and Affordability

Accommodation for the non-local construction workforce (80% of the total construction workforce) will be provided in each development region through the establishment of TWAFs at the proposed localities for construction of the integrated processing facilities. The majority of the construction workforce will be housed in the TWAFs during their roster days, returning to homes outside of the study area when not on shift, thereby having negligible impact on local housing and accommodation.

A proportion of the construction and operations workforces are expected to relocate to the area and will require housing. This includes:

- Construction workforce (5%).
- Onsite support workforce (construction) (80%).
- Field and facility operations workforce (50%).

Based on these estimates, 316 workers will be seeking to relocate to the study area by 2021, thereby generating demand for 316 units of accommodation.

The initial development period from 2013 to 2016 will see a significant ramp-up in workers and will require an estimated 47 units of accommodation on average each year to meet project needs, as outlined in Table 22.10. In the period 2017 to 2021, 26 units will be required on average each year to accommodate workers relocating to the area.

Table 22.10 Average rate of additional housing required per annum

Development Period	Average Number of Accommodation Units Required Per Annum
2013 to 2016	47
2017 to 2021	26
2021 to 2036	0

Housing demand will be distributed across the study area and surrounding towns, with key growth expected in and around Chinchilla, Dalby, Miles and Toowoomba. Toowoomba has a large property market and ample supply to meet expected demand. Recent development in Dalby has resulted in

a reasonable supply of housing and is expected to be sufficient to meet demand induced by the project. In Chinchilla and Miles, there is currently limited housing available, particularly in Chinchilla.

Housing types that will likely be in demand from the project workforce are one- or two-bedroom units, preferred by singles, and three- and four-bedroom houses for families. With the exception of Toowoomba, there is a scarcity of one- and two-bedroom units in the study area.

Increased prices would reduce housing affordability, particularly in those areas already experiencing significant price increases, such as Chinchilla. Low income earners, disadvantaged groups (such as pensioners, those with disabilities and Indigenous people), renters, young people and others who are attempting to enter the housing market would be particularly affected by increased housing prices. Given that there is more affordable housing supply and a higher degree of rental availability in some areas (such as Toowoomba), a further impact may be increased movements of people to areas of more affordable housing within the region. It could also lead to an increase in requests for social housing assistance. Housing affordability has also been asserted by state government agencies as an impediment to attracting and retaining staff in the region.

In addition, there will be increased demand for hotel and motel accommodation. During the very early stages of construction prior to the availability of TWAFs, some construction personnel (e.g., earthworks, TWAF erecting crews) will be accommodated in hotel and motel accommodation across the region. Visiting staff will also stay in hotel accommodation from time to time. Demand for accommodation from the project will further restrict hotel and motel availability, which could increase the price of hotel and motel stays. Conversely, increased hotel and motel accommodation requirements provide business for existing operators and present new income-generating opportunities.

22.6.8 Health, Safety and Environment

The good health of communities includes both physical and mental elements and can be measured against various indicators, including physical health, socioeconomic disadvantage, environmental conditions, and crime and safety.

In terms of the reported physical health status of the study area, the project may have a marginally negative impact due to nature of the project workforce. The majority of both the construction and operations workforces are likely to be male rather than female. Males have a tendency to suffer higher rates of obesity and to engage in more risk-taking behaviour, including the consumption of alcohol and tobacco, which may slightly deteriorate the reported health status of the region's population.

With regard to socioeconomic disadvantage, the project is likely to have a positive effect through the creation of employment opportunities and the stimulation of local economic activity. Training and recruitment strategies that target the more disadvantaged sectors of the community, including Indigenous residents, would serve to maximise the positive influence the project will have upon reducing socioeconomic disadvantage.

With respect to environmental factors affecting community health, the air quality and the noise and vibration impact assessment reports have assessed potential impacts from the construction, operations and decommissioning activities associated with the project and have confirmed that the project can be developed to meet all relevant statutory guidelines.

The presence of the project workforce in the community has the potential to promote a perception that community safety is diminished. Due to the prevalent demographic characteristics of the workforce (male-dominated with a younger average age than the regional demographic), there is

the potential for a resultant increase in some criminal behaviour, such as assault and drug- and alcohol-related crimes. Increased traffic in communities also presents heightened road safety risk.

In addition, shift work is perceived to be a cause of domestic violence as it can cause long absences from home and result in workers being too tired to fully participate in family life. Furthermore, if there was to be a rise in the cost of living (primarily housing prices), this may lead to a marginal escalation in domestic violence and other criminal activity.

22.7 Social Protection Objectives

The protection objectives for the social environment are to:

- Maximise the positive benefits of the project from employment and training opportunities and opportunities for local businesses.
- Minimise the effects of escalating housing and accommodation costs.
- Minimise impacts on existing services and social infrastructure.
- Maintain or enhance the wellbeing of the community, including health, safety and amenity values.

22.8 Avoidance, Mitigation and Management Measures

Avoidance, mitigation and management measures and enhancement strategies have been proposed to achieve the identified social protection objectives. Detailed commitments and the associated monitoring and verification measures for each are provided in the social impact management plan (Attachment 6, Social Impact Management Plan). This section provides an overview of the identified mitigation and management measures. There are many instances where a particular mitigation measure will address multiple impacts. In such instances, the mitigation measure is only presented once in this section to avoid repetition.

22.8.1 Population and Demographic Profile

In response to potential impacts associated with population and demographic change, measures will be implemented that will:

- Continue to provide state and local government departments responsible for educational, health and other social infrastructure with forecasts of workforce numbers and projected families to assist in their future service planning. Provide this information in an agreed format that will allow these departments to plan for cumulative population change. [C333]
- Encourage local population growth where it is desired and planned for, enforcing the expectation that non-local operations employees will relocate to the project development area as there are no plans to establish fly-in, fly-out or drive-in, drive-out operations. [C334]
- Provide information and Australian cultural awareness briefing for overseas workers and their families on how to undertake day-to-day activities; for example, provide advice on banking and shopping. [C335]
- Consider flexible shift hours and rosters to encourage participation of under-employed sectors (e.g., family-friendly shift arrangements for locally-based operations workforce). [C347]
- Provide opportunities for qualified females and people from other underrepresented groups. [C336]

- Implement an Operations Workforce Policy preferring local residence for operations staff. [C337]
- Continue with training and employment programs for local school leavers. [C338]

22.8.2 Employment, Skills and Business

Arrow has in place a number of training and skills development programs for its workers and the community through apprenticeships, scholarships, vocational training, support for work readiness programs and pretrade training. These include but are not limited to the following:

- Provide vocational and trade training to offer the opportunity to gain nationally recognised qualifications. [C339]
- Provide specialist training for each employee in their area of expertise, to ensure employees' skills are up to date. [C340]
- Provide a graduate development program offering a planned development path for newly degree-qualified employees that allows them to become professionals in their chosen disciplines. [C341]
- Offer scholarships to first-year university students who want to pursue a career in the coal seam gas industry. [C342]
- Design vacation employment for undergraduates in their penultimate year of study, that provides 12 weeks' paid employment within the company. [C343]
- Provide school-based training for year 11 and 12 students in Dalby and Moranbah who want to gain vocational qualifications at the Certificate II level. [C344]

Arrow will continue to increase labour force participation, reduce unemployment and increase skill training and development opportunities for the local communities through implementation of mitigation measures which shall:

- Provide medium- and long-term contract position opportunities. [C345]
- Facilitate opportunities for workers to transition to other project phases (e.g., facility construction to facility operation). [C346]
- Consider flexible shift hours and rosters to encourage participation of under-employed sectors (e.g., family-friendly shift arrangements for locally-based operations workforce). [C347]
- Continue to ensure that equal opportunity policies are in place addressing ethnicity, gender or disability. [C348]
- Implement a hierarchy of preferred employment for employees and contractors based on home or source location, with the highest preference for those living within the study area. [C349]
- Liaise with local employment and education or training institutions (e.g., Southern Queensland Institute of TAFE) on training and skills development programs, to identify workers within the region who have the ability to obtain qualifications based on recognition of prior learning. [C350]
- Identify the range of skills required for the labour force and undertake a gap analysis against skills availability. Where gaps exist, in consultation with Energy Skills Queensland, Manufacturing Skills Queensland and Construction Skills Queensland, identify the method or strategy through which these skills gaps will be filled (e.g., drive-in, drive-out options; training). [C351]

- Undertake regular review of labour requirements and current skills sets to ensure that training strategies meet these needs. [C352]
- Continue to build on existing training and skills development programs, including apprenticeships, scholarships, vocational training, support for work readiness programs and pretrade training. [C353]
- Participate in existing state and federal government employment and training programs (e.g., Critical Skills Investment Fund, Productivity Places Program, Indigenous Cadetship Support, Indigenous Employment Program, Skilling Queenslanders for Work Initiative). [C354]
- Work with Skills Queensland to deliver work readiness and skills development training programs for vulnerable local people, such as the long-term unemployed or underskilled, to assist them to gain employment. [C355]
- Notify local people of employment opportunities through recruitment websites, local advertising, local recruitment agencies and information sessions. [C356]

To increase employment and enterprise opportunities for Indigenous people, an Indigenous participation policy and implementation plan that identifies strategies relating to Indigenous employment and enterprise opportunities, will be developed. [C357]

To increase local expenditure on goods and services through project activities, a local industry participation plan will be developed in consultation with the Department of Employment, Economic Development and Innovation (DEEDI) and consistent with the Australian Industry Participation Plan. [C358]

Mitigation measures that will be implemented to realise opportunities for local businesses and minimise the potential impacts businesses may face when operating in altered market conditions shall:

- Continue to use Industry Capability Network database for potential suppliers in the area. [C359]
- Develop and maintain a business vendor register. [C360]
- Organise local supplier information sessions to inform business of Arrow's development plans, tender opportunities for local business and how to complete tender requirements. [C361]
- Provide industry support organisations with the information that they require to assist local businesses improve their skills base and respond to project needs. [C362]
- Collaborate with the existing job referral services set up by other proponents to make available information on positions vacant in local businesses with similar trade or skills requirements. This will allow applicants to choose between industry and non-industry jobs. [C363]

22.8.3 Land Use and Property

Potential impacts to land use, and in particular agricultural enterprises, will be primarily minimised through strategic siting of project infrastructure and facilities and working with landowners to develop strategies for minimising disturbance to the existing land uses. Arrow’s commitments to such measures are detailed in Chapter 8, Environmental Framework, which explains Arrow’s proposed siting strategy, and Chapter 13, Agriculture. The vehicle for implementation of the associated mitigation measures will be the environmental management plan, Attachment 5, Environmental Management Plan.

Additional mitigations aimed at minimising the potential impacts to land use and property will be to:

- Continue regular consultation with landowners through such mechanisms as the Intensively Farmed Land Committee, which provides a forum for Arrow and landowners to identify and discuss issues and potential solutions relating to the construction and operation of coal seam gas infrastructure. [C364]
- Access land only in accordance with DEEDI's (2010b) Land Access Code and in accordance with Section 24A of the *Petroleum and Gas (Production and Safety) Act 2004*. [C365]
- Engage closely with landowners to minimise impacts on land and existing agricultural activities. [C369]
- Communicate with landowners at least three months before any activities take place on private property. [C370]
- Continue to provide Community Officers, Land Liaison Officers and the 1800 free-call number for people to ask questions or raise concerns about Arrow's activities. [C371]
- Develop and implement a compensation framework to 'add value' rather than just compensating for impacts. [C081]
- Adhere to Arrow Energy's land access rules and protocols as published on the Arrow website. [C501]

22.8.4 Community Values and Lifestyles

In response to potential impacts on community values, mitigations measures will be implemented to:

- Consult with councils and the regional community consultative committee for their views on which social, community or recreational infrastructure in Western Downs region is being directly impacted by the project and the extent of this. Liaise with the relevant body to coordinate efforts across all proponents and identify opportunities that may potentially ease or mitigate impacts. [C366]
- Expand the opportunities available for the region under the Brighter Futures program and the Social Investment Plan. [C367]
- Encourage resident employees and contractors to integrate and become involved in their local communities (e.g., volunteer work, participation in clubs and organisations). [C366]
- Enforce a workforce Code of Conduct including disciplinary procedures, and a policy on appropriate worker behaviour and interaction with the public. [C395]
- Ensure all project personnel adhere to land access rules. [C499]

22.8.5 Community Infrastructure and Services

In response to potential impacts on community infrastructure and services, mitigation measures will be implemented that will:

- Provide medical assistance with opportunities to extend to wider communities, where possible. [C372]
- Continue to provide a medivac service to respond to various community or project-related emergency situations. [C373]
- Develop traffic management plans that include:

  - Preferred routes for travel and measures to reduce risk of accidents.
  - Road safety awareness initiatives for project personnel and local residents.
  - Procedure for notifying council and road authorities prior to any traffic disruptions or road closures.
  - Road management strategy to manage any increased road maintenance requirements imposed by the project. [C374]

- Liaise with all levels of the Queensland Police Service regarding vehicle movement. [C387]
- Maintain an emergency management plan that will cover joint emergency response planning in collaboration with emergency service providers. [C389]
- Consult with councils and the regional community consultative committee for their views on which social, community or recreational infrastructure in Western Downs region is being directly impacted by the project and the extent of this. Liaise with the relevant body to coordinate efforts across all proponents and identify opportunities that may potentially ease or mitigate impacts. [C366]
- Continue to develop and implement Arrow's site-selection process for project facilities (such as integrated processing facilities and TWAFs) that considers the availability and capacity of existing utilities. Consult with councils and other utility providers during the project facility design process to understand existing capacity, and consider installing stand-alone utilities as required, to reduce demand on community utilities. [C376]
- Provide developer contribution and head works charges for infrastructure. [C377]

22.8.6 Housing and Accommodation Availability and Affordability

In response to potential impacts relating to the availability and affordability of housing and accommodation within the study area, the following mitigations will be implemented and shall:

- Provide TWAF accommodation for non-resident construction workforce. [C378]
- Prior to decommissioning the TWAFs, consider their use during the operations phase to ease housing demand in towns. [C379]
- Continue to collaborate with other proponents in the region and identify opportunities to share temporary accommodation where possible for the construction and operations workforces. [C380]
- Develop an integrated housing strategy that considers:
  - Continued participation in initiatives set out in the Major Resource Projects Housing Policy, Draft Resource Town Housing Affordability Strategy, and the proposed Western Downs Regional Council housing affordability strategy, as well as implementation of the Surat Basin Future Directions Statement (DEEDI, 2010a).
  - Support the intent of the Surat Basin Regional Planning Framework and work with key stakeholders (i.e., state government, councils, Urban Land Development Authority, building industry, realtors and other project proponents) to identify cumulative housing impacts and to ensure that developable land is brought to market to meet demand.
  - Providing incentives to private investors and developers of accommodation, such as through head leasing agreements or rental guarantees.

  - Contributing to a government-sponsored community and affordable housing initiative.
  - Housing 'rent to buy scheme' option for workers. [C381]
- Encourage workers relocating to the area to move to towns better suited to growth by:
  - Providing accommodation advice services for workers and their families.
  - Providing work shuttle buses between work site and towns with an employment pool (e.g., Toowoomba, Dalby, Cherbourg). [C382]
- Support government reviews on housing availability and affordability and on impacts on low-income groups. [C383]
- Have visiting workers stay in TWAFs rather than in hotel or motel accommodation, where possible. [C384]
- Avoid reserving hotel and motel accommodation for long blocks of time without a demonstrable need. [C385]
- Inform the tourist body and other peak business bodies of anticipated time frames for peak temporary accommodation demand. [C386]

22.8.7 Health, Safety and Environment

In response to potential impacts on community health and wellbeing, Arrow will:

- Maintain an emergency management plan that will cover joint emergency response planning in collaboration with emergency service providers. [C389]
- Maintain the grievance process (complaint management system) for the community to register complaints, issues, comments and suggestions. [C077]
- Proceed with implementation of the community engagement program and other measures to notify the community of project activities and to identify and address community issues. [C390]
- Publicly release information on how environmental impacts are being offset by the project. [C391]
- Ensure progress of workplace health and safety is communicated to the public and the regional community consultative committee as part of Arrow’s annual sustainability reporting. [C392]
- Have Land Liaison Officers and Community Officers available to discuss landowner and residents’ concerns. [C393]
- Develop and implement mitigation measures that address the potential impacts relating to air and noise emissions through environmental management plans. [C394]
- Enforce a workforce Code of Conduct including disciplinary procedures, and a policy on appropriate worker behaviour and interaction with the public. [C395]

22.9 Significance of Residual Impacts

The social impact management plan details the mitigation measures that will be implemented by Arrow through the life of the project. [C323] The social impact management plan is a living document and addresses both positive and negative social impacts. A summary of the residual positive and negative impacts of the project, assuming all mitigation measures in the social impact

management plan are effectively implemented, is provided in Table 22.11. Highly significant residual social impacts are positive and include the creation of employment, training and business opportunities. No highly significant residual negative impacts remain after implementation of the measures outlined in the social impact management plan.

22.10 Inspection and Monitoring

The social impact management plan (Attachment 6, Social Impact Management Plan) has been developed in accordance with the Queensland Sustainable Resources Communities Policy 2008 and sets out action plans addressing each of the following key impact areas:

- Population and demographic profile.
- Employment, skills and business.
- Land use and property.
- Community values and lifestyles.
- Community infrastructure and services.
- Housing and accommodation availability and affordability.
- Health, safety and environment.

The social impact management plan (Attachment 6, Social Impact Management Plan) provides details on the monitoring, reporting and review processes for each of these action plans. These processes aim to determine whether the specific actions contained in the action plans are meeting identified targets.

Table 22.11 Summary of social impact assessment

Potential Causes of Impacts (+/-)	Existing Environment	Premitigated Impact			Summary of Avoidance, Mitigation and Management Measures*	Residual Impact		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Population and Demographic Profile								
Increase in resident population (+)	A regional population that has been growing at a slower rate than the state average with population decline in some smaller townships.	Almost certain	Insignificant	Low	• Work with government agencies, industry and service providers to contribute information for the management of population growth. • Encourage local population growth where it is desired and planned for. • Provide information and Australian cultural awareness briefing for overseas workers and their families on how to undertake day-to-day activities. • Consider flexible shift hours and rosters. • Provide opportunities for people from under-represented groups. • Implement an Operations Workforce Policy preferring local residence for operations staff. • Continue with training and employment programs for local school leavers.	Almost certain	Insignificant	Low
Offset population decline in smaller rural communities (+)		Possible	Moderate	Medium		Possible	Moderate	Medium
Higher skilled resident workforce (+)		Possible	Moderate	Medium		Possible	Moderate	Medium
Retention of younger population (+)		Possible	Moderate	Medium		Possible	Moderate	Medium
Influx of young, male-dominated construction workforce (-)		Likely	Insignificant	Low		Likely	Insignificant	Low
Increase in families associated with operations workforce (+)		Possible	Minor	Low		Possible	Minor	Low

Table 22.11 Summary of social impact assessment (cont'd)

Potential Causes of Impacts (+/-)	Existing Environment	Premitigated Impact			Summary of Avoidance, Mitigation and Management Measures*	Residual Impact		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Employment, Skills and Business								
Increased local employment opportunities (+)	The region is characterised by very low unemployment; however, Indigenous unemployment is relatively high. Completed level of education is generally lower than the state average and educational opportunities are constrained in smaller townships. The workforce is geared towards servicing the agricultural sector which is the dominant industry. The region is relatively affordable principally due to housing costs being comparatively low.	Likely	Moderate	High	• Continue to provide training and skills development programs for Arrow workers and the community. • Provide medium- and long-term contract position opportunities. • Facilitate opportunities for workers to transition to other project phases. • Consider flexible shift hours and rosters. • Continue to ensure that equal opportunity policies are in place. • Implement a hierarchy of preferred employment, with the highest preference for those living within the study area. • Liaise with local employment and education or training institutions to identify workers within the region who have the ability to obtain qualifications based on recognition of prior learning. • Identify the range of skills required for the labour force and undertake a gap analysis against skills availability and identify the method or strategy through which these skills gaps will be filled.	Likely	Moderate	High
Increased labour force participation and reduction in unemployment (+)		Possible	Moderate	Medium		Possible	Moderate	Medium
Increased training and skills development opportunities for the local population (+)		Almost Certain	Moderate	High		Almost Certain	Moderate	High
Increased local expenditure on goods and services through project activities (+)		Likely	Moderate	Medium		Likely	Moderate	Medium
Increased local expenditure on goods and services by incoming workers and residents (+)		Possible	Moderate	Medium		Possible	Moderate	Medium

Table 22.11 Summary of social impact assessment (cont'd)

Potential Causes of Impacts (+/-)	Existing Environment	Premitigated Impact			Summary of Avoidance, Mitigation and Management Measures*	Residual Impact		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Employment, Skills and Business (cont'd)								
Increased potential for local business expansion or business establishment in local area (+)		Likely	Minor	Medium	• Undertake regular review of labour requirements and current skills sets to ensure that training strategies meet these needs. • Continue to build on existing training and skill development programs. • Participate in existing government employment and training programs. • Work with Skills Queensland to deliver work readiness and skills development training programs for vulnerable local people. • Notify local people of employment opportunities. • Develop and implement an Indigenous participation policy. • Develop a local industry participation plan in consultation with DEEDI and consistent with the Australian Industry Participation Plan. • Continue to use Industry Capability Network database for potential suppliers in the area. • Develop and maintain a business vendor register. • Organise local supplier information sessions.	Likely	Minor	Medium
Increased range, diversity, lower cost of goods (+)		Possible	Minor	Low		Possible	Minor	Low
Local business difficulties faced by operating in changed environment (increased costs, competition and labour)(-)		Possible	Major	High		Possible	Moderate	Medium

Table 22.11 Summary of social impact assessment (cont'd)

Potential Causes of Impacts (+/-)	Existing Environment	Premitigated Impact			Summary of Avoidance, Mitigation and Management Measures*	Residual Impact		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Employment, Skills and Business (cont'd)								
Local business difficulties faced by operating in changed environment (increased costs, competition and labour)(-) (cont'd)					• Provide industry support organisations with the information that they require to assist local businesses improve their skills base and respond to project needs. • Collaborate with the existing job referral services set up by other proponents to make available information on positions vacant in local businesses with similar trade or skills requirements.			
Land Use and Property								
Reduction or loss of farm income (-)	The prevailing land use is very low density rural areas supporting agricultural production, interspersed by small to mid-sized townships that act as service centres for rural communities. Good-quality agricultural land has maintained traditionally high productivity.	Possible	Minor	Low	• Continue regular consultation with landowners through such mechanisms as the Intensively Farmed Land Committee. • Access land only in accordance with DEEDI's Land Access Code November 2010. • Engage closely with landowners to minimise impacts on land and existing agricultural activities. • Communicate with landowners at least three months before any activities take place on private property.	Possible	Minor	Low
Disruption to farm operations (-)		Possible	Minor	Low		Possible	Minor	Low
Increased landowner and community uncertainty (-)		Likely	Moderate	High		Possible	Moderate	Medium
Loss of good-quality agricultural land affects food supply and security (-)		Rare	Insignificant	Low		Rare	Insignificant	Low

Table 22.11 Summary of social impact assessment (cont'd)

Potential Causes of Impacts (+/-)	Existing Environment	Premitigated Impact			Summary of Avoidance, Mitigation and Management Measures*	Residual Impact		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Land Use and Property (cont'd)								
Reduced vulnerability to impacts associated with agriculture (drought, etc.) (+)		Likely	Moderate	Medium	• Continue providing Community Officers, Land Liaison Officers and the 1800 free-call number, for people to ask questions or raise concerns about Arrow's activities. • Develop and implement a compensation framework to 'add value' rather than just compensating for impacts. • Adhere to the 'Arrow Energy land access rules' and protocols.	Likely	Moderate	Medium
Loss of social connection to landor of agricultural production (-)		Possible	Moderate	Medium		Possible	Moderate	Medium
Community Values and Lifestyles								
Increased potential for social division and social tension (-)	Residents value the rural character of the region Residents appreciate the cohesive nature of their communities which offer a safe, affordable, healthy and well serviced place to live.	Possible	Moderate	Medium	• Consult with councils and the regional community consultative committee for their views on which social, community or recreational infrastructure in Western Downs region is being directly impacted by the project and the extent of this. Liaise with the relevant body to coordinate efforts across all proponents and identify opportunities that may potentially ease or mitigate impacts. • Expand the opportunities available for the region under the Brighter Futures program and the Social Investment Plan.	Possible	Minor	Low
Change in character of towns and to rural amenity of area (-)		Possible	Minor	Low		Possible	Minor	Low
Increased criminal activity and anti-social behaviour (-)		Unlikely	Minor	Low		Unlikely	Minor	Low

Table 22.11 Summary of social impact assessment (cont'd)

Potential Causes of Impacts (+/-)	Existing Environment	Premitigated Impact			Summary of Avoidance, Mitigation and Management Measures*	Residual Impact		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Community Values and Lifestyles (cont'd)								
Increased participation and support in the community (e.g., volunteers, involvement in sport and social organisations, support for local events) (+)		Likely	Minor	Medium	• Encourage resident employees and contractors to integrate and become involved in their local communities. • Enforce a workforce Code of Conduct and a policy on appropriate worker behaviour and interaction with the public. • Ensure adherence to land access rules by all project personnel.	Likely	Minor	Medium
Potential for increased community conflict if overseas workers are employed by the project and move into the community (-)		Possible	Moderate	Medium		Unlikely	Minor	Low

Table 22.11 Summary of social impact assessment (cont'd)

Potential Causes of Impacts (+/-)	Existing Environment	Premitigated Impact			Summary of Avoidance, Mitigation and Management Measures*	Residual Impact		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Community Infrastructure and Services								
Increased demand on community support services (-)	The provision of health services across the region is generally adequate, although services in smaller communities are severely limited. Education infrastructure and services are concentrated in the larger communities of Toowoomba and Dalby, with limited education services in smaller communities. Emergency services provide a relatively high standard of service and coverage across the region. There is a general deficiency of social services and facilities for youth and children and a lack of specialist counselling and aged care services.	Possible	Minor	Low	• Provide medical assistance with opportunities to extend to wider communities where possible.	Possible	Minor	Low
Increased demand on emergency services (-)		Possible	Moderate	Medium	• Continue the provision of a medivac service to respond to community or project-related emergency situations. • Develop traffic management plans. • Liaise with all levels of the Queensland Police Service regarding vehicle movement. • Maintain an emergency management plan that will cover joint emergency response planning in collaboration with emergency service providers. • Consult with councils and the regional community consultative committee to identify which social, community or recreational infrastructure in the Western Downs region is being directly impacted by the project and the extent of this. Liaise with the relevant body to coordinate efforts across all proponents and identify projects that may provide an equivalent offset.	Possible	Minor	Low
Increased demand on recreational facilities (-)		Possible	Insignificant	Low		Possible	Minor	Low
Increased demand on medical and health facilities (-)		Likely	Moderate	High		Possible	Moderate	Medium
Increased demand on schools and childcare (-)		Possible	Insignificant	Low		Possible	Insignificant	Low
Increased demand on utilities (-)		Possible	Minor	Low		Possible	Minor	Low

Table 22.11 Summary of social impact assessment (cont'd)

Potential Causes of Impacts (+/-)	Existing Environment	Premitigated Impact			Summary of Avoidance, Mitigation and Management Measures*	Residual Impact		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Community Infrastructure and Services (cont'd)								
Heightened road safety risk (-)		Possible	Major	High	• Consult with councils and the regional community consultative committee for their views on which social, community or recreational infrastructure in Western Downs region is being directly impacted by the project and the extent of this. Liaise with the relevant body to coordinate efforts across all proponents and identify opportunities that may potentially ease or mitigate impacts.	Possible	Moderate	Medium
Unable to attract and retain service provider workers (e.g. police, teachers, doctors) due to increased living costs (-)		Possible	Minor	Low	• Continue to develop and implement Arrow's site selection process for project facilities that considers the availability and capacity of existing utilities. Consult with councils and other utility providers during the project facility design process to understand existing capacity and consider installing stand-alone utilities as required, to reduce demand on community utilities. • Provide developer contribution and head works charges for infrastructure.	Possible	Minor	Low
Housing and Accommodation Availability and Affordability								
Increased house, land purchase and rental prices resulting in diminished levels of housing affordability (-)	Settlements are characterised by a high proportion of fully owned separate homes.	Possible	Major	High	• Provide TWAF accommodation for non-resident construction workforce. • Prior to decommissioning the TWAFs, consider their use during the operations phase to ease housing demand in towns.	Possible	Moderate	Medium

Table 22.11 Summary of social impact assessment (cont'd)

Potential Causes of Impacts (+/-)	Existing Environment	Premitigated Impact			Summary of Avoidance, Mitigation and Management Measures*	Residual Impact		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Housing and Accommodation Availability and Affordability (cont'd)								
Increased returns to existing residents through higher house, land and rental prices (+)	High rates of residential growth are occurring in Toowoomba, Chinchilla and Dalby. Due to recent growth and development, housing availability is becoming constrained in some townships leading to escalating purchase and rental prices.	Possible	Moderate	Medium	• Continue to collaborate with other proponents in the region and identify opportunities to share temporary accommodation where possible. • Develop an integrated housing strategy. • Encourage workers relocating to the area to move to towns better suited to growth.	Possible	Moderate	Medium
Serviced land not available to meet demand (-)		Unlikely	Minor	Low		Unlikely	Minor	Low
High demand for hotel, motel, caravan park accommodation (-)	Availability of hotel and motel accommodation is limited.	Possible	Moderate	Medium	• Support government reviews on housing availability and affordability and on impacts on low-income groups. • Have visiting workers stay in TWAFs rather than hotel or motel accommodation, where possible. • Avoid reserving hotel or motel accommodation for long blocks of time without a demonstrable need. • Inform the tourist body and other peak business bodies of anticipated timeframes for peak temporary accommodation demand.	Possible	Minor	Low
Reduction in availability of accommodation for low income and vulnerable groups including Indigenous groups. (-)		Possible	Major	High		Possible	Moderate	Medium

Table 22.11 Summary of social impact assessment (cont'd)

Potential Causes of Impacts (+/-)	Existing Environment	Premitigated Impact			Summary of Avoidance, Mitigation and Management Measures*	Residual Impact		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Health, Safety and Environment								
Increased community anxiety on health, safety and environment effects of project (-)	The prevalence of obesity was higher in the region than the state average. Indigenous residents have a lower standard of health than the non- Indigenous population. The standard of environmental health of residential areas is high. The region exhibits a higher level of relative socioeconomic disadvantage than the state. Across all regional council areas, lower rates of crime were recorded than the state average.	Likely	Moderate	High	• Maintain an emergency management plan that will cover joint emergency response planning in collaboration with emergency service providers. • Maintain the grievance process for the community to register complaints, issues, comments and suggestions. • Proceed with implementation of the community engagement program and other measures to notify community of project activities and to identify and address community issues. • Publicly release information on how environmental impacts are being offset by the project. • Ensure progress of workplace health and safety is communicated to the public. • Have Land Liaison Officers and Community Officers available to discuss landowner and residents' concerns. • Develop and implement environmental management plans. • Enforce a workforce Code of Conduct and a policy on appropriate worker behaviour and interaction with the public.	Possible	Moderate	Medium
Heightened road safety risk (-)		Possible	Major	High		Possible	Moderate	Medium
Increased ambient noise impacting on amenity (-)		Possible	Minor	Low		Possible	Minor	Low
Reduced air quality (-)		Unlikely	Minor	Low		Unlikely	Minor	Low
Light pollution impacting on amenity (-)		Unlikely	Minor	Low		Unlikely	Minor	Low

*The avoidance, mitigation and management measures have been provided in this table as a summary and do not contain the exact wording and detail that has been provided in Section 22.8, Avoidance, Mitigation and Management Measures, or in the Social Impact Management Plan (Attachment 6).