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## **21 Social**

### **21.1 Introduction**

This section describes the social values, potential impacts and proposed management measures associated with the area in and surrounding the Santos GLNG GFD Project. The GFD Project's gas fields are located across four local government areas (LGAs) of Banana Shire Council, and the Central Highlands, Maranoa and Western Downs Regional Councils. Local towns include Taroom, Wandoan, Rolleston, Injune, Roma, Wallumbilla and Yuleba. These towns are connected by a road network, which includes State-controlled roads such as the Carnarvon, Dawson, Leichhardt and Warrego highways, local council roads, and rural access roads.

This region has historically had a strong rural industry base with grazing being the predominant land use. However, especially in the past decade, the region has experienced population and economic growth as a result of the development and expansion of the resources sector, particularly in relation to coal and gas production. The Central Highlands region has experienced considerable growth in the mining industry in the past decade. The resources industry has partly offset subdued economic activity in the agricultural sector during periods of drought and low commodity prices. Recent gas field development has built upon the long history of gas production in the region, particularly in the vicinity of Roma.

The GFD Project area is covered by a number of active Native Title claims, which are discussed in Section 9: Land use and tenure.

This section has been prepared in accordance with section 5 of the *Terms of reference for an environmental impact statement*, dated March 2013. The index to locate where each ToR requirement is met within this EIS is included in Appendix B: Terms of reference cross-reference.

A detailed social impact assessment (SIA) can be found within Appendix V: Social.

The traffic and transport assessment can be found within section 11: Traffic and transport and within Appendix M: Traffic and transport. .

### **21.1 Regulatory context**

This EIS has been prepared in accordance with the State and Commonwealth regulatory context described within Appendix C: Regulatory framework. The legislation, policies and guidelines that apply to the social values and potential impacts of the GFD Project are outlined in Table 21–1.

Table 21–1 Regulatory context of the GFD Project – social

Legislation, policy or guideline	Relevance to the GFD Project
<p><i>Sustainable Planning Act 2009</i> (Qld) (SP Act)</p> <p>The Act seeks to achieve ecologically sustainable development by managing the process and effects of planning and development in a coordinated and integrated manner. The SP Act provides the overarching framework for Queensland's planning and development assessment system.</p>	<p>Under this Act there are a number of subordinate instruments that regulate or guide the SIA process. The baseline values for this SIA and development of associated impact management strategies have regard to the following planning instruments developed under the Act:</p> <ul style="list-style-type: none"> <li>• <i>Surat Basin Regional Planning Framework</i></li> <li>• <i>Darling Downs Regional Plan (October 2013)</i></li> <li>• <i>Maranoa Community Plan 2020</i></li> <li>• <i>Western Downs Community Plan 2050</i></li> <li>• <i>Central Queensland Regional Plan (October 2013)</i></li> <li>• <i>Central Queensland Strategy for Sustainability</i></li> <li>• <i>Banana Shire Community Plan 2011-2021</i></li> <li>• <i>Taroom Place Based Plan (2011-2021)</i></li> <li>• <i>Central Highlands Community Plan 2012-2022</i></li> <li>• Local government planning schemes.</li> </ul>
<p><i>Regional and Resource Towns Action Plan</i> (Department of State Development, Infrastructure and Planning, 2013)</p> <p>The plan identifies short-term initiatives to respond to housing availability and affordability and the availability of land in regional and resource towns.</p>	<p>The baseline values for this SIA and development of associated impact management strategies have regard to the plan.</p>
<p><i>Land Access Code</i> (Department of Employment, Economic Development and Innovation, 2010)</p> <p>This code sets best-practice guidance related to communications between landholders and resource proponents. The code is authorised under section 24A of the <i>Petroleum and Gas (Production and Safety Act 2004)</i>, which provides for the establishment of a single code for land access that applies to all resource acts.</p>	<p>Santos GLNG is obliged to comply with this code. This code has been taken into account when assessing impacts on land holders.</p>
<p><i>Social impact assessment guideline</i> (SIA Guideline) (Department of State Development, Infrastructure and Planning, 2013)</p> <p>The SIA Guideline promotes a risk-based approach to social impact assessment that focuses on outcomes to capitalise on social opportunities and mitigate detrimental impacts that may arise from projects.</p>	<p>This SIA has focused on identifying and managing the direct impacts of the GFD Project in accordance with this guideline.</p>

This EIS seeks to obtain primary approvals for the project including the Queensland Government Coordinator-Generals Report and Commonwealth Government *Environment Protection and Biodiversity Conservation Act 1999* (Cth) approval.

Application for or amendments to existing environmental authorities will occur subsequent to this EIS process. Other subsequent approvals required after the EIS process has been completed, corresponding triggers and legislative frameworks applicable to the GFD Project are identified in Section 2: Project approvals.

Approval of this EIS will trigger a number of subsequent approvals required for the GFD Project to proceed. Approvals will be required on tenure and off-tenure. Section 2: Project approvals summarises the key approvals necessary for the planning, construction, operations and decommissioning of the GFD Project. The triggers for each approval, the relevant administering authority and application details are provided. Consultation on the subsequent approvals will be ongoing with the administering authorities.



## **21.2 Assessment methodology**

### **21.2.1 Risk assessment**

This assessment describes the social values and assesses the GFD Project's potential impacts on these values. Impacts were assessed using the risk assessment methodology, which considers the likelihood and consequence of a potential impact to assess its level of risk.

The risk assessment and social baseline presented in this EIS updates the investigation undertaken for the GLNG Project EIS in 2009. Additional investigations were undertaken to describe the social baseline of the communities within the GFD Project area, and to understand the current impacts being experienced by these communities in relation to existing resource development projects in their vicinity.

The full description of the risk methodology is described in section 5.6.3 of Section 5: Assessment framework and in Appendix V: Social. A summary of the impact assessment is included in section 21.7.

### **21.2.2 Social area of influence**

The potential for social impacts to occur has been assessed within each gas field individually (Arcadia, Fairview, Roma and Scotia), as although the GFD Project will undertake the same activities within each field, the impacts will differ depending on the existing social conditions present within the host communities. However, the Fairview and Roma gas fields have been assessed together, recognising that both these gas fields have considerable linkages between the same primary towns (Roma and Injune) which are located in the Maranoa Regional Council area.

The existing social conditions and potential social impacts on the Indigenous communities have been assessed separately due to the considerable socio-economic and cultural differences between these communities and the wider non-indigenous communities in the GFD Project area.

This SIA has used a tiered geographic framework for the purpose of comparing social conditions and assessing the potential impacts within each of the GFD Project gas fields. The areas are:

- Gas field locality
- Social catchment area.

These areas are based on areas defined in the Australian Bureau of Statistics (ABS) Australian Standard Geographical Classification (ASGC) (ABS, 2012) and shown on Figure 21-1.

#### **21.2.2.1 Gas field locality**

Gas field localities are based on the smallest number of ABS Census standard statistical area 1 (SA1) areas that cover each GFD Project gas field. It is the area most likely to be subject to direct impact by the GFD Project from activities such as well and facility construction, transport activity, and establishment of support centres such as accommodation and logistics facilities. Such impacts are likely as the SA1 areas are:

- Co-located with GFD Project tenure
- Incorporate key transport links to, within and between tenure
- Contain key population centres that have the potential to support GFD Project activities.

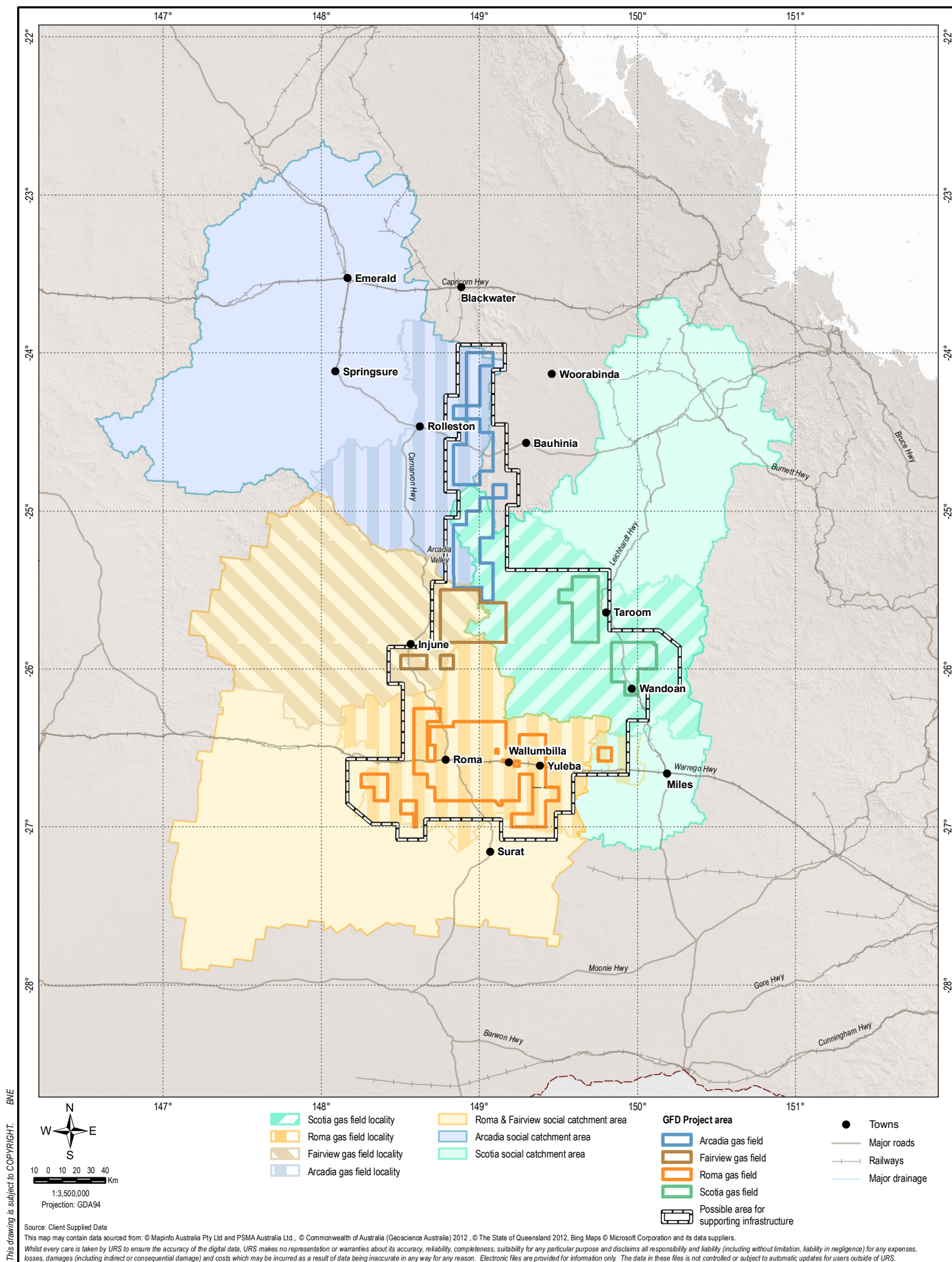
#### **21.2.2.2 Social catchment area**

Social catchment areas are the next level in the hierarchy and provide an optimal area to illustrate and compare the key variances between the baselines of the gas field localities and their wider supporting areas of influence, without the inclusion of much larger regional centres such as Dalby and Toowoomba which will have markedly different social and economic functions that may distort a valid comparison.

Definition of the social catchment area involves the qualitative consideration of:

- Administrative (local government) boundaries (capturing governance and associated funding responsibilities, etc.)
- The hierarchy of communities to which the local area is oriented, influenced by dominant transport corridors, communication, commerce and social links to the gas field locality.

Social catchment areas are formed by the combination of areas from the ABS Census standard statistical area 2 (SA2) and LGA for each gas field, considering the criteria outlined above. This enables the analysis of certain statistical indicators (such as male to female ratios) not possible using gas field SA1 areas that are too small a sample size to allow for quantitative analysis.





## 21.3 Social values

### 21.3.1 Non-indigenous

The social values and related indicators that have been considered in this EIS are outlined in Table 21–2. These values were identified based on the information contained in the social baseline profile and derived from consultation with stakeholders.

**Table 21–2 Social values and indicators**

Social value	Key stakeholder	Indicators
Liveable community	<ul style="list-style-type: none"> <li>Local government</li> <li>Service providers (e.g. health, education, police and emergency services)</li> <li>Community members.</li> </ul>	<ul style="list-style-type: none"> <li>Access to, and proximity of, quality services (health, education, aged care, childcare, retail)</li> <li>Balanced demographic profile</li> <li>Harmonious relationships, lack of conflict</li> <li>Respect for law by community members</li> <li>Adequate infrastructure that is well maintained (roads, airport, power, water &amp; sewerage, telephone, internet)</li> <li>Effective local governance</li> <li>Opportunity for recreational, cultural and sporting pursuits</li> <li>Safe social and physical environment.</li> </ul>
Affordable lifestyle	<ul style="list-style-type: none"> <li>Local government</li> <li>Business sector</li> <li>Community members.</li> </ul>	<ul style="list-style-type: none"> <li>Cost of land and housing</li> <li>Local government rates and service charges</li> <li>Cost of food and other essential items.</li> </ul>
Community identity and spirit	<ul style="list-style-type: none"> <li>Local government</li> <li>Community organisations (including churches).</li> </ul>	<ul style="list-style-type: none"> <li>Level of volunteering and availability of assistance</li> <li>Local celebrations</li> <li>Recognition, preservation and promotion of heritage</li> <li>Capacity to accommodate visitors</li> <li>Perceptions of being able to influence community destiny</li> <li>Employment share by industry.</li> </ul>
Capacity for sustainable economic activity	<ul style="list-style-type: none"> <li>Retail businesses</li> <li>Service businesses</li> <li>Agricultural producers</li> <li>Recreational and tourism businesses (including accommodation providers)</li> <li>Producer organisations (e.g. Agforce)</li> <li>Regional development organisations (e.g. Central Highlands Development Corporation).</li> </ul>	<ul style="list-style-type: none"> <li>Viability, vitality and diversity of local industry</li> <li>Workforce participation and employment</li> <li>Job creation and the retention of young people</li> <li>Supportive business environment (e.g. availability of serviced industrial land, adequate zoning, provision of information on opportunities)</li> <li>On-going environmental integrity (e.g. surface and groundwater, land degradation)</li> <li>Willingness of businesses to invest.</li> </ul>

Baseline profiles prepared for the population in and surrounding each gas field provide social data referenced throughout this section. These profiles are included in Appendix V: Social. They include a detailed social baseline of each community, the implications of which are discussed in the following sections.

### 21.3.1.1 Arcadia gas field locality social values

Key demographic features of the Arcadia gas field and social catchment area, and the towns within these, are provided in Table 21–3. The complete demographic baseline of the Arcadia gas field is provided in appendix B of Appendix V: Social.

**Table 21–3 Arcadia gas field localities key demographic features**

Key towns	Rolleston (SSC)	Springsure (UCL)	Blackwater (UCL)
Estimated resident population <sup>1</sup>	129	855	5,050
Non-resident workers (2012) <sup>1</sup>	NA	45	1,885
% Non-resident workers	NA	5.3	37
<b>Median house sale prices (\$) <sup>2</sup></b>			
2009	205,000	240,000	283,500
2013	150,000	330,000	312,500
% change	-26.8	37.5	10.2
<b>Median rental (\$/week) <sup>3</sup></b>			
March 2011	300	NA	700
March 2013	350	NA	400
% change	16.7	NA	-42.9

<sup>1</sup> OESR, 2013a. <sup>2</sup> Property Data Solutions, 2013. <sup>3</sup> Rental Tenancy Authority, 2013.  
UCL: urban centre locality. SSC: State suburb.

Demographic characteristics	Arcadia gas field locality	Social catchment area
Aged 65years+ (% of total population) <sup>1</sup>	7.0	6.8
Gender ratio (M:F) 20-64 year olds <sup>1</sup>	119	114
Unemployment rate (June 2013) <sup>2</sup>	2.3 <sup>a</sup>	NA
<b>Population projections</b>		
2011 <sup>3</sup>	NA	24,543
2031 <sup>3</sup>	NA	39,932
2011-2031 growth rate per annum <sup>3</sup>	NA	3.0

<sup>a</sup> Bauhinia Shire. Small area labour data is delivered according to pre-amalgamated shires.

<sup>1</sup> ABS, 2013. <sup>2</sup> DEEWR, 2013. <sup>3</sup> OESR, 2013

### Liveable community

The communities in the Arcadia social catchment area are characterised by reasonable access to primary education services, with secondary education available up to Year 10. Springsure is a regional centre and former administrative centre for the Bauhinia Shire. Emerald has higher levels of services while retaining the small rural town pace of life.

The area's demographic profile is characterised by an above average number of people in the working age group and lower than average in the teenage and 65 year+ cohorts. Males outnumber females in the working age range, particularly after 40+ years.

While infrastructure in Springsure is adequate, the more remote parts of the region express a high degree of concern for the state of infrastructure services, particularly roads. The region has an active sporting and cultural environment.

The region appears to have a high level of liveability, though with a modest level of vulnerability due to the perceived impacts of development activity. This vulnerability is largely a product of development projects placing additional demand on local infrastructure, which local government maintenance and upgrade services may struggle to address (Morris, 2012).

### ***Affordable lifestyle***

While the cost of food and other essential items is manageable, housing costs in Springsure have undergone significant increases over the last four years (Table 21–3). The cost of housing in Rolleston fluctuates, but appears to have undergone only minor increases in concert with coal mine development activity. Although the median house price has reduced between 2009 and 2013, this is reflective of the small number of transactions, rather than an overall trend. There is apparent dissatisfaction with local government charges, which are not perceived to address poor roads infrastructure in the area, particularly in the Arcadia Valley. Generally, the area is characterised by a lower level of socioeconomic disadvantage than the State average.

In summary, the area remains affordable though with a modest level of vulnerability to population influx associated with gas field development.

### ***Community identity and spirit***

The Arcadia social catchment area has a high level of regional identity and community spirit, based on its proximity to the Carnarvon National Park, its development history, and its status as a location of high productivity agricultural enterprises. Agricultural employment remains dominant, though its share of total employment continues to decline.

There are a range of active community, social and cultural organisations and local events. The Rolleston Coal Mine appears to have been incorporated into the fabric of the economy and community, though there is a strong desire from Arcadia Valley residents to exclude this form of development from the area known as the Golden Triangle. Gas field development activity appears to be gaining acceptance in the Arcadia gas field locality, on the basis of its potential to draw funding support for public infrastructure and its contribution to economic diversification.

Residents continue to assert a strong agricultural identity and independent spirit in the more remote areas, with some vulnerability to marginalisation in the development process if community engagement is not effective.

### ***Capacity for sustainable economic activity***

The Arcadia social catchment area has traditionally had a dependence on agriculture and has been complemented by more recent diversification into resource extraction. While overall unemployment is low, youth and young adult unemployment remains of concern as it is across much of regional Queensland. The region has an active business development infrastructure through the Central Highlands Development Corporation and a vibrant commercial centre in Emerald. The presence of resource extraction is driving investment in visitor accommodation facilities in Springsure, with a reasonable likelihood that private investment in the Rolleston locality will eventuate in the lead up to gas field development.

Despite the growth of extractive and resources industry, agriculture continues to be seen as the foundation of the region.

While residents value highly the economy built on the availability of good quality agricultural land, there is recognition of the contribution to regional sustainability that the diversification into energy development will bring.

### 21.3.1.2 Fairview and Roma gas field localities social values

Key demographic features of the Roma and Fairview gas fields and social catchment area, and the towns within these, are provided in Table 21–4. The complete demographic baseline of the Roma and Fairview gas fields is provided in appendix C of Appendix V: Social.

**Table 21–4 Roma and Fairview gas fields key demographic features**

Key towns	Roma (UCL)	Wallumbilla (UCL)	Injune (UCL)
Estimated resident population <sup>1</sup>	7,270	270	410
Non-resident workers (2012) <sup>1</sup>	290	25	180
% non-resident workers <sup>1</sup>	4	9.3	43.9
<b>Median house sale prices (\$) <sup>2</sup></b>			
2009	260,000	347,500	135,000
2013	339,750	257,500	201,000
% change	30.67	-25.90	48.89
<b>Median rental (\$/week) <sup>3</sup></b>			
March 2011	305	280	305
March 2013	450	330	450
% change	47.54	17.86	47.54

<sup>1</sup> OESR, 2013a. <sup>2</sup> Property Data Solutions, 2013. <sup>3</sup> Rental Tenancy Authority, 2013. UCL: Urban centre locality

Demographic characteristics	Roma gas field locality	Fairview gas field locality	Social catchment area
Aged 65years+ (% of total population) <sup>1</sup>	11.7	12.2	12.4
Gender ratio (M:F) 20 to 64 years+ <sup>1</sup>	101	138	104
Unemployment rate (June 2013) <sup>2</sup>	2.3 <sup>a</sup>	1.9 <sup>b</sup>	NA
<b>Population projections</b>			
2011 <sup>3</sup>	7,153	NA	13,295
2031 <sup>3</sup>	10,005	NA	17,172
2011-2031 growth rate per annum <sup>3</sup>	1.7	NA	1.3

<sup>a</sup> (Roma (Town)). <sup>b</sup> Bungil Shire. Small area labour data is delivered according to pre-amalgamated shires.

<sup>1</sup> ABS, 2013. <sup>2</sup> DEEWR, 2013. <sup>3</sup> OESR, 2013

### Liveable community

The Fairview and Roma gas field locality communities are supported by the infrastructure and services provided through Roma, which is a significant regional hub. It is moderately well provided with education and health facilities and its role as a government service centre has provided some defence to population decline seen in other rural communities affected by drought and low commodity prices.

The Injune area is characterised by an under-representation of youth in the population compared to both Roma and the wider region, and a slight over-representation of persons in the upper age cohorts of the working age group. The region, and in particular Roma, is expected to grow moderately (from 7,153 in 2011 to 10,005 in 2031) over the next 20 years as a result of gas development projects, with the median age expected to remain steady while the broader regional area ages (OESR, 2013b).

Consultation elicited concerns in relation to support and protection for people on the margins of society (e.g. persons with mental health issues, single mothers, youth, low-income workers). In general, relationships within society are harmonious and there is respect for the law.

Infrastructure, while adequate in the past, has been placed under some strain with recent development from the resources sector. While initially concerned that the burden of improving infrastructure would mainly fall on ratepayers, the provision of support from resource development companies and the recent implementation of the Royalties for the Regions initiative and *Resource Towns Action Plan* is providing significant funding for regional roads and other infrastructure upgrades. However, local residents are still facing significant council rate increases as property values rise. Smaller towns are beginning to experience some impact on telecommunications infrastructure since the advent of gas field development by the major gas to LNG projects in the last five years.

The region provides adequate opportunity for sporting, recreational and cultural activity, with recent support from resource companies and major contractors supporting this provision. Early childhood education may be an area where there are fewer opportunities in smaller towns than urban areas.

Overall, the region has a high level of liveability, though with a modest level of vulnerability due to the perceived effects of development activity on infrastructure which in rural communities has not been constructed to a standard where it can cope with additional demands.

### ***Affordable lifestyle***

Overall costs of living are slightly higher than Brisbane, though higher costs for consumables have traditionally been offset by significantly lower housing costs. This is likely to have been altered by the considerable growth in housing costs over the last four years. Action already taken to address land availability and housing affordability in both Roma and Injune should act to maintain or increase affordability over time. Median household income levels have risen in line with inflation over the last ten years in the Roma area; however in some rural communities, income increases have been at around half the rate of inflation, indicating the higher vulnerability of those who are reliant on farm incomes. This vulnerability in the regional area, combined with council rate increases, is having a direct impact on incomes and lifestyle affordability.

In summary, the area remains affordable though with a modest level of vulnerability to population influx associated with gas field development, and ongoing moderate vulnerability to infrastructure impacts, housing and cost of living increases in regional areas.

### ***Community identity and spirit***

The Fairview and Roma gas field localities have a high level of community identity derived from agricultural production (in particular cattle production) and support for resource development. The oil and gas industry has a long history in the Roma area, which has been incorporated into community heritage promotion together with the history of early European settlers. Injune promotes its early settler and development heritage, as well as its proximity to significant natural landscape features such as the Carnarvon Range. There is a substantial range of community cultural and sporting organisations, and community celebrations, such as Roma's Easter in the Country Festival and Injune's Where Country Is, are used in marketing the values of the region. Tourist and specialised accommodation facilities have been established in response to increased demand on short-term accommodation facilities has ensured an on-going capacity to accommodate visitors to the region.

Over the last ten years there has been a decline in employment in the agricultural industry concurrent with increases in the resource extraction and construction sectors. While this has resulted in some concern in regard to community identity, it is balanced by a recognised need for economic diversification to counter being overly dependent on one industry. Effective engagement by the regional council and community reference groups with resource developers and the State Government appear to be countering an initial perception of the gas industry development as being an imposition on the community, to one where it is increasingly seen as an opportunity for a new phase of community growth and development.



Residents continue to assert a strong agricultural identity and independent spirit, with new industry development contributing to the 'pioneering' theme in community identity. This is expected to develop further with on-going strong community engagement by gas industry proponents.

### ***Capacity for sustainable economic activity***

Gas industry development in the Roma and Fairview gas field is making a significant contribution to sustainable economic activity at a time when there is increasing uncertainty around agricultural production. Gas industry development has also driven investment in visitor accommodation facilities in Roma, and provided additional pathways to training and employment for school leavers wishing to pursue trade training. While unemployment in general has remained low (8.9%) in comparison to the State level (13.2%), high levels of youth unemployment continues to be a persistent issue.

Agriculture will likely continue to be seen as the foundation of the region, though without the ability to generate the employment needed to stimulate the local service economy, which continues to be a persistent issue across Australia. This will drive ongoing interest in engagement on the environmental integrity of gas field development, and in particular the impacts on groundwater. The increasing level of Statewide support over the last two years (by agencies such as the Gas Fields Commission) for engagement between agricultural producers and the gas industry is assisting to create an environment conducive to industry coexistence.

As noted in Section 22: Economics, the region's industrial composition suggests there is a strong and enduring business and skills base to support the GFD Project across its field development, construction and operations phases, which is likely to reinforce local industrial specialisation patterns — promoting regional economic growth and longer term economic sustainability.

While residents value highly the economy built on the availability of good quality agricultural land, there is recognition of the contribution to regional sustainability that further development of the gas industry will bring.

### **21.3.1.3 Scotia gas field locality social values**

Key demographic features of the Scotia gas field locality and social catchment area, and the towns within these, are provided in Table 21–5. The complete demographic baseline of the Roma and Fairview gas fields is provided in appendix D of Appendix V: Social.

**Table 21–5 Scotia gas fields key demographic features**

Key towns	Miles (UCL)	Wandoan (UCL)	Taroom (UCL)
Estimated resident population <sup>1</sup>	1,230	350	694
Non-resident workers (2012) <sup>1</sup>	195	170	NA
% non-resident workers <sup>1</sup>	15.9	48.6	NA
<b>Median house sale prices (\$) <sup>2</sup></b>			
2009	232,000	230,000	172,500
2013	370,000	382,500	325,000
% change	59.5	66.3	88.4
<b>Median rental (\$/week) <sup>3</sup></b>			
March 2011	300	NA	NA
March 2013	400	650	NA
% change	33.33	NA	NA

<sup>1</sup> OESR, 2013a. <sup>2</sup> Property Data Solutions, 2013. <sup>3</sup> Rental Tenancy Authority, 2013. UCL: Urban Centre Locality  
NA.: Data not available.

Demographic characteristics	Scotia gas field locality	Social catchment area
Aged 65years+ (% of total population) <sup>1</sup>	17.0	13.0
Gender ratio (M:F) 20 to 64+ <sup>1</sup>	112	109
Unemployment rate (June 2013) <sup>2</sup>	0.8 <sup>a</sup>	NA
<b>Population projections</b>		
2011 <sup>3</sup>	4,145	19,888
2031 <sup>3</sup>	5,627	23,905
2011-2031 growth rate per annum <sup>3</sup>	1.5	0.9

<sup>a</sup> Taroom shire. Small area labour data is delivered according to pre-amalgamated shires.

NA: Data not available

<sup>1</sup> ABS, 2013. <sup>2</sup> DEEWR, 2013. <sup>3</sup> OESR, 2013.

Data shown is for the Miles/Wandoan statistical area 2.

### **Liveable community**

Over the ten years to 2011, the population in the Scotia social catchment area has declined by approximately 0.5%, while the populations in Taroom and Wandoan have declined more rapidly (1.5% and 3.1% respectively). Population decline often places stress on community networks through the loss of community members who contributed to informal and formal community functions. Population growth in the area is forecast to be positive over the next 20 years, with stronger growth in the Miles/Wandoan area. As is typical in rural communities, there is an imbalance in the age profile with under-representation in the 15-40 age group with continued ageing of the population expected over the next 20 years. The working age population also has a higher proportion of males to females.

There is low population mobility, indicating well-established patterns of living and firm social bonds, notwithstanding the influx of non-residential workers into the Miles/Wandoan area over the last two years. It is likely that Taroom is experiencing some overflow effects from this development which may also be impacting on community liveability.

The gas field locality has good access to education up to year 10, and health services are generally adequate for the existing population level though with little capacity to manage a rapid expansion in demand for services. These services, combined with access to an extensive array of cultural, recreational and sporting opportunities, indicate a high level of liveability, particularly for families with primary and lower-secondary age children.

As with most smaller rural centres, there is ongoing concern in regards to the maintenance of assets and service standards (for aged assets), and securing capital to enhance (or replace) assets such as water and sewage treatment plants, aerodromes, roads, serviced land and minor infrastructure. While there has been some increase in reported crime, the area would still be considered safe and law abiding with generally harmonious relationships between residents and with a concern that future development not upset that character.

In summary, residents would consider that currently liveability is a moderately robust characteristic; with some potential for stress from future development. This is particularly so for the Wandoan area.

### **Affordable lifestyle**

The Scotia gas field locality has high levels of home ownership compared to the State average due to low cost of housing. However, housing costs and local government rates have been rising in recent times. Availability of land may also be an emerging issue in Taroom, as it currently is in Wandoan.

Food costs, inferred from the OESR 2010 *Survey of Retail Prices* for Biloela, are significantly cheaper than Brisbane, though this is offset by higher fuel costs than Brisbane.

Overall, the area remains affordable. However, affordability is falling due to rising land valuations and local government rates and service charges, as well as increasing house prices that may limit the ability to enter the market or upgrade within the market.

### ***Community identity and spirit***

The Scotia gas field locality is noted for the production of cattle and grain, and has an important heritage drawing on the Leichhardt Port Essington expedition of 1844. This heritage is promoted and reinforced by the community and acts as a tourist attraction. In the Taroom area, the Taroom District Development Association is promoting the development of the 'Leichhardt Centre' in the former shire council headquarters building as a focal community project. The area supports a wide range of voluntary cultural and service organisations, with volunteering rates approaching 40%.

Significant local celebrations include the Dawson River Festival (Taroom), the Juandah Heritage Day (Wandoan) and a number of race meetings, camp drafts and rodeos. While there was limited visitor accommodation in the past, resource development has stimulated the provision of additional accommodation in Wandoan over the last couple of years, and currently in Taroom with the re-development of the caravan park. The process for development of the *Taroom Place Based Plan* (2011-2021) indicates that the community has important input to decision-making surrounding the formation and implementation of a local development strategy. Importantly, while this strategy aims to retain the current identity and spirit, it recognises the future role of resource development and seeks to engage proactively with industry.

Residents exhibit strong attachment to the existing rural-based identity and spirit, and act to maintain, promote and share this identity through community-based events. There are indications that they are willing to embrace new economic activity and develop their community identity further while building on and sustaining their agricultural heritage.

### ***Capacity for sustainable economic activity***

Prior to the development of resources projects, the Scotia gas field locality showed signs of economic vulnerability, indicated by declining populations and an ageing workforce. Climate variability and lengthy periods of drought severely impacted the viability of agricultural enterprises restricting job creation and the retention, or inward migration, of young people to the area. Notwithstanding this situation, residents consider the on-going viability of the region to be dependent on agriculture. New commercial opportunities for local businesses in areas such as catering, accommodation, security, fuel and general supplies and broader support services are possible and are beginning to appear.

While there is an apparent acceptance of resources development, and an intention to capture and optimise local benefits, there is also likely to be an intense interest in the management of the environment, and in particular surface and groundwater resources. Ongoing assurance of environmental integrity will be essential to ensure that investment in agriculture is maintained.

### 21.3.2 Indigenous

While Indigenous people would identify in broad terms with the social values listed in the previous section, there are likely to be different indicators for their values reflecting their particular circumstances and experience as a distinct cultural group. The assessment of impact on the Indigenous community has been based on the social values and indicators listed in Table 21–6 below.

A baseline social profile has been prepared for the Indigenous communities in the GFD Project area and Woorabinda, which provides social data referenced throughout this section. These are included in appendix E of Appendix V: Social.

**Table 21–6 Indigenous social values and indicators**

Social value	Key stakeholder	Indicator set
Liveable community	<ul style="list-style-type: none"> <li>Community elders and members</li> <li>Indigenous organisations providing services</li> <li>Local government</li> <li>Mainstream service providers (e.g. health, education, police and emergency services).</li> </ul>	<ul style="list-style-type: none"> <li>Proximity and access to traditional country</li> <li>Degree of satisfaction with the management of traditional country</li> <li>Respectful and harmonious relationships with the non-indigenous community</li> <li>Access to service delivery (in particular health and education) that acknowledges and respects culture</li> <li>Harmonious intra-community relationships</li> <li>Ability for extended family residence</li> <li>Adequate infrastructure.</li> </ul>
Affordable lifestyle	<ul style="list-style-type: none"> <li>Community elders and members</li> <li>Indigenous organisations providing services</li> <li>State and Federal Government.</li> </ul>	<ul style="list-style-type: none"> <li>Availability of adequate housing</li> <li>Cost of housing</li> <li>Cost of transport.</li> </ul>
Community identity and spirit	<ul style="list-style-type: none"> <li>Community elders and members</li> <li>Indigenous organisations</li> <li>Local government</li> <li>Community organisations (including churches).</li> </ul>	<ul style="list-style-type: none"> <li>Historical recognition and protection of cultural heritage</li> <li>Number and strength of Indigenous organisations</li> <li>Status of reconciliation with non-indigenous community.</li> </ul>
Capacity for sustainable economic activity	<ul style="list-style-type: none"> <li>Community elders and members</li> <li>Indigenous organisations</li> <li>State and Federal Government</li> <li>Training providers.</li> </ul>	<ul style="list-style-type: none"> <li>Availability of employment opportunities</li> <li>Indigenous workforce participation</li> <li>Indigenous business start-ups and ownership</li> <li>Level of education achievement, including retention to year 12 and post-school destination.</li> </ul>

#### 21.3.2.1 Demography

Key demographic features of the Indigenous population of the gas fields and Woorabinda are provided in Table 21–5. The complete Indigenous demographic baseline of the gas fields is provided in appendix E of Appendix V: Social.

Table 21–7 Gas fields and Woorabinda key demographic features

Demographic characteristics	Woorabinda	Gas fields - Indigenous	Gas fields - Non-indigenous
Aged 65 years+ (% of total population)) <sup>1</sup>	4.7	3.3	10.6
Gender ratio (M:F) 20 to 64+ <sup>1</sup>	84	101	107
Unemployment rate (2011 Census) <sup>2</sup>	31.2	10.6	2.3
<b>Population projections</b>			
2011 <sup>3</sup>	1,357	NA	13,295
2031 <sup>3</sup>	2,011	NA	17,172
2011-2031 growth rate per annum <sup>3</sup>	1.95	NA	1.3
Overcrowding <sup>1</sup>	38.1	16.2	7.0

<sup>1</sup> OESR, 2013c. <sup>2</sup> ABS, 2013. <sup>3</sup> OESR, 2013b.

### 21.3.2.2 Liveable community

Indigenous people across the GFD Project area generally live in a mutually respectful relationship with the non-indigenous community. Within the Indigenous population, the people of Woorabinda experience more disadvantage when compared to Indigenous people living in other towns across the region. The Indigenous community in general has a concern with the lack of culturally appropriate service delivery (in particular for health) which is a significant issue given the poor health outcomes within the community.

### 21.3.2.3 Affordable lifestyle

Addressing housing issues for Indigenous people is acknowledged as a priority by communities and governments across Australia. There is a higher incidence of over-crowding and a lower level of home ownership compared to the non-indigenous population in other towns across the region. While there is no development-induced elevated housing market demand in Woorabinda, the inability to afford external accommodation options and the low level of mobility of residents (due to a lack of private vehicle ownership, including vehicle licences) are likely to constrain their ability to access employment opportunities elsewhere.

In summary, while there are a range of factors that influence an affordable lifestyle, it is likely that housing costs for Indigenous people remains a significant issue.

### 21.3.2.4 Community identity and spirit

The recognition of Indigenous community history and culture has been advanced through resource development companies negotiating Indigenous land use agreements and cultural heritage management plans over wide geographic areas. Prior to this, the management of cultural heritage across the land now within the GFD Project area provided a limited focus on Indigenous interest in land. For Woorabinda residents, it is probable that long-term exclusion from mainstream development has influenced the development of a community identity and spirit that makes contemporary engagement with mainstream society challenging.

Indigenous community identity and spirit has a modest recognition to those outside of the Indigenous community, with ongoing action by the Indigenous community aimed at strengthening both identity and spirit.



### 21.3.2.5 Capacity for sustainable economic activity

Indigenous capacity for sustainable economic activity is limited across the region, and severely constrained in Woorabinda. Woorabinda has a high level of unemployment (up to five times the level of non-indigenous persons), particularly for youth and young adults, and poorer educational outcomes compared with the non-indigenous community. Some indication of change is evident in the north of the GFD Project area with an increase in the number of Indigenous people working in the private sector (principally mining) over the last census period.

In Woorabinda, employment is centred on public administration and health care, while across the region the dominant occupational categories for Indigenous workers are labourers and machine operators. Information on Indigenous businesses is limited, but support through resource development projects is likely to be increasing their number, albeit from a low base.

In summary, capacity for economic sustainability for Indigenous communities is limited.

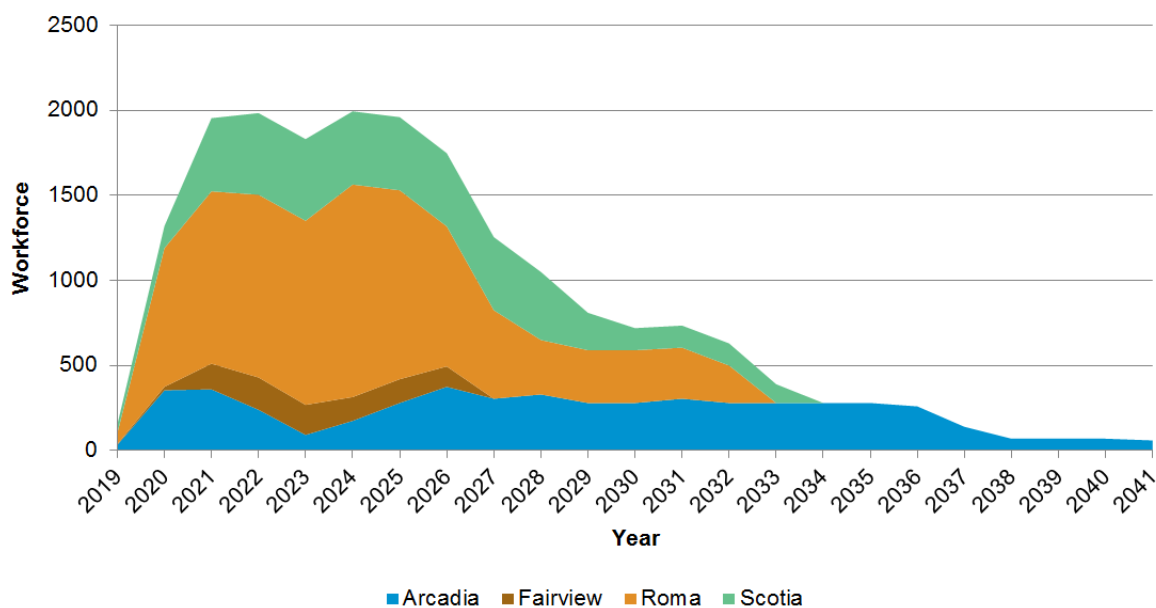
## 21.4 GFD Project workforce

The following sections detail the anticipated workforce numbers for the construction and operations phases of the GFD Project. For the purposes of the EIS a scenario based on the maximum development case was developed at the approval of the ToR. Santos GLNG will work with the Department of Education, Training and Employment during the EIS consultation period and during field planning to provide further detail on workforce requirements, including occupational breakdown.

### 21.4.1 Construction workforce

The GFD Project's construction is expected to occur progressively from 2016 over the next 30 years. The construction phase workforce is anticipated to be at its maximum in 2021 at around 1,980 full-time equivalent workers (FTEs). This will be generally maintained until 2025 when it will drop to an estimated 1,750 FTEs and continue to decline until 2038, when it will stabilise at around 70 until 2041. As can be seen in Figure 21-2 the majority of FTEs are expected to be employed on the Roma gas field, followed by Arcadia and Scotia gas fields.

Figure 21-2 Preliminary estimates of construction workforce (FTE)

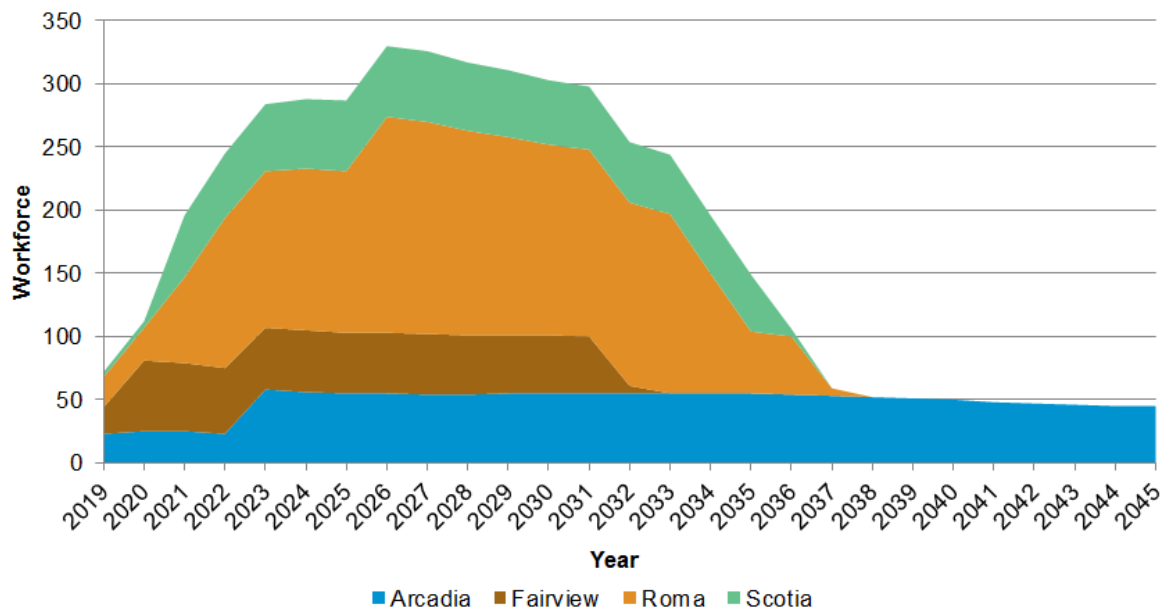


### 21.4.2 Operations, decommissioning and rehabilitation workforce

The expected operations workforce is depicted within Figure 21-3. The operational workforce also includes personnel engaged in decommissioning and rehabilitation activities which will occur throughout the life of the GFD Project.

The operations workforce is expected to reach its ceiling above 300 in 2026. As shown in Figure 21-3, the Roma gas field is expected to require the largest portion of the operations workforce across the busiest periods, while the Arcadia gas field is expected to require a smaller but consistent workforce across the life of the GFD Project.

Figure 21-3 Preliminary estimates of operations workforce (FTE)



### 21.4.3 Workforce scheduling and rosters

Local workers generally work on a normal weekly roster of five days on two days off. Non-resident workers are anticipated to operate on a rotating three weeks on, one week off, fly-in fly-out or drive-in drive-out roster. The assumed workforce source (i.e. local or non-residential) is provided in section 21.4.5 according to GFD Project phase.

### 21.4.4 Workforce transport

A majority of the workforce will be non-residential. Most non-resident workers arriving to the GFD Project area will fly in and out of an existing airport. From the airport, they will be transported to local accommodation camps in shuttle buses, with a smaller percentage having light vehicles (such as 4x4s) waiting at the airport. Some regionally based non-resident workers may DIDO. The remainder of the workforce will be locally sourced contractors or suppliers.

A detailed discussion of workforce transport is provided in Section 11: Traffic and transport.

### 21.4.5 Workforce sources

Table 21–8 summarises the assumed source of the construction workforce for each gas field. The total workforce estimate is based on the average of the maximum three year workforces in Table 21–2 and Table 21–3; in other years the total workforce numbers will be less. The assumed split in workforce source is based on:

- Experience from the GLNG Project
- Analysis of gas field locality and social catchment area labour markets, which are generally constrained by low levels of unemployment; as a result, it is unlikely that large portions of the workforce could be drawn from the local area or surrounding region. The labour market of each gas field is detailed in appendix A-D of Appendix V: Social.

In the case of the Fairview gas field, it is assumed that construction and operations will be supported from Roma, using construction workers transitioning from the Roma area.

**Table 21–8 Construction workforce source**

Workforce source	Estimated average three year maximum workforce		
	Arcadia gas field	Fairview/Roma gas field	Scotia gas field
Inter/intra state	270 (80%)	1050 (80%)	370 (80%)
Region <sup>1</sup>	50 (15%)	170 (13%)	70 (15%)
Local area <sup>2</sup>	15 (5%)	95 (7%)	25 (5%)
Total	335	1315	465

<sup>1</sup> Toowoomba-Emerald-Roma

<sup>2</sup> Relevant gas field locality

Table 21–9 summarises the assumed sources of the operations workforce for each gas field.

**Table 21–9 Operations workforce source**

Workforce source	Estimated average three year maximum workforce		
	Arcadia gas field	Fairview/Roma gas field	Scotia gas field
Inter/intra state	30 (50%)	110 (50%)	30 (50%)
Region <sup>1</sup>	15 (30%)	65 (30%)	15 (30%)
Local area <sup>2</sup>	10 (20%)	45 (20%)	10 (20%)
Total	55	220	55

<sup>1</sup> Toowoomba-Emerald-Roma

<sup>2</sup> Relevant gas field locality

### 21.4.6 Workforce accommodation

It is assumed that locally sourced workers employed on GFD Project will already have local housing in regional towns such as Roma, Wallumbilla, Taroom, Wandoan, Injune, Rolleston and Springsure. Non-resident workers will be housed in purpose-built accommodation facilities (known as camps) close to GFD Project locations.

Based on the projected maximum workforce generated during construction and operations phases, Santos GLNG will develop camps to supplement the existing accommodation, services and amenities that have already been developed for the approved GLNG Project workforce. The field development planning processes (described in Section 5: Assessment framework) will be used to establish the required size and appropriate locations for these camps.

A description of the accommodation facilities expected to be used for the GFD Project is provided in Section 4: Project description.

Consultation undertaken during the preparation of this EIS (detailed in Appendix D: Consultation report) identified a range of opinions on the desirable locations for construction and permanent accommodation camps. Some people felt that they should be out of town areas while others felt that a location closer to towns to facilitate business opportunities would be more appropriate. Camps will generally be located within 25 km of the primary work location in order to reduce fatigue and the health and safety risks associated with transportation.

The average maximum numbers of non-resident workers requiring accommodation are summarised in Table 21–10. These are based on the following assumptions:

- Non-resident workers are those sourced from inter/intra state and the region
- Workers from the local area will remain in their existing accommodation
- Drillers will be accommodated in drillers camps separate from the rest of the GFD Project workforce.

**Table 21–10 Accommodation requirements for non-resident workers**

	Construction			Operations		
	Arcadia	Fairview/Roma	Scotia	Arcadia	Fairview/Roma	Scotia
Non-resident	220	1220	440	45	175	45
Accommodation camps	180	1015	380	45	175	45
Drillers camps	40	205	60	NA	NA	NA

It is possible that a small number (1-2%) of the non-resident workers may choose to move with their families and live locally rather than in an accommodation camp. Assuming an average family size of 2.6, this could result in approximately 130 new residents moving into the local towns over the period leading up to the maximum workforce size, generally over ten years. This includes the GFD Project workforce and their dependents.

While detailed camp planning will occur during field development, the scenarios that were considered in this SIA for each gas field are outlined below. These scenarios were used for the purpose of impact assessment only.

#### **21.4.6.1 Arcadia**

Field development in the south of the Arcadia gas field locality would most likely be supported from the Fairview gas field facilities, due to its relative proximity. The base scenario for the north of the Arcadia gas field is that a camp will be established adjacent to the Dawson Highway, to the east of Rolleston, on land owned by Santos GLNG. A single camp would be able to accommodate around 180 persons during the busiest years (2020 to 2035). Subsequently it could be downsized to accommodate a smaller number until the completion of construction in 2040.

An alternative scenario could see the establishment of two smaller camps of between 80 and 100 beds each, one adjacent to the Dawson Highway and another in the north of the gas field.

#### **21.4.6.2 Fairview and Roma**

The base scenario for the Fairview and Roma gas fields is that a camp or camps will be established next to the Warrego Highway, outside of Roma, on land owned by Santos GLNG. Given that the distance between tenures to the west of Roma and south of Yuleba is around 150 km, more than one camp will be required. It has been assumed that over the busiest years (2020 to 2027) two new camps will be required, one west of Roma (approx. 500 person capacity) and one in the Yuleba area (approx. 200 person capacity). In addition, it is assumed that the existing camp northeast of Roma (315 person additional capacity) will also be used.

An alternative scenario could see the establishment of a number of smaller camps closer to construction areas.

#### **21.4.6.3 Scotia**

The base case scenario for the Scotia gas field is that a camp will be established adjacent to the Leichhardt Highway, between Taroom and Wandoan, on land owned by Santos GLNG. A single camp may accommodate around 380 persons during the busiest years (2020 to 2028), following which it could be downsized to accommodate around 130 persons until the completion of construction in 2033.

### **21.5 Potential impacts**

#### **21.5.1 Non-indigenous**

This section discusses potential social impacts of the GFD Project in general terms. The risk of these impacts, based on their likelihood and consequence to the communities in and surrounding the GFD Project gas fields, is assessed and presented in Appendix V: Social, which provides contextual detail.

##### **21.5.1.1 Liveable community**

##### ***Workforce demand on public health facilities and services***

An increase in population can be expected to increase demand on public health facilities and services. Demand on these services from GFD Project-related population increase can be expected to peak as the workforce reaches its maximum in each gas field. The magnitude of such a demand will be related to the existing demand and level of facilities in the area. In some cases, the increase in demand may support the retention of existing but underutilised public and private medical services.

##### ***Intra-community conflict***

The effects of the GFD Project may lead to community tension and a perceived reallocation of resources, and for intra-community conflict between those who oppose and those who support the development. The potential for intra-community conflict to occur can be influenced by such factors as:

- Level of dependence on gas field economic stimulus effects
- History of resource industry development
- Size, character and identities of urban centres
- Size, tenure and productivity of landholdings
- Local environmental values.



### ***Project traffic on local roads and in the town areas***

An increase in vehicles on roads throughout the GFD Project area has the potential to increase traffic accidents, which in turn may increase the work load of police and emergency services. Additionally, an increase in vehicles, particularly heavy vehicles associated with the construction of the GFD Project, has the potential to degrade road infrastructure. Low-capacity rural access roads that may historically have had minimal maintenance may also deteriorate under the passage of construction and maintenance vehicles with implications for agricultural production and local amenity.

Long-term residents of rural towns with set habits and lifestyle patterns and who are disrupted by the presence of higher traffic levels in town streets, may resent the impairment to their perceived level of community amenity. As with other impacts, the likelihood of this occurring is dependent on existing levels of road traffic and the standard of infrastructure in the GFD Project gas field.

### ***Presence of a younger, predominantly male workforce in social venues and general town areas***

The introduction of a younger and predominantly male workforce has, in some instances, been associated with increases in anti-social and alcohol-related offences. This can increase the work load on police and emergency services and reduces feelings of safety in the community. Regardless of whether or not there is an increase in violence or other offences, the introduction of young male workforces may increase community concerns. The potential for this impact to occur is heightened in communities where:

- The existing population has an existing gender ratio that is skewed towards males (i.e. where men outnumber women)
- The community has not had previous exposure to male-dominated industries, particularly resource extraction.

### ***Demand on public physical infrastructure***

An increase in population due to the GFD Project has the potential to increase demand on physical infrastructure such as water supply, sewage treatment, waste disposal facilities and telecommunications. The level of impact in each gas field is influenced by the existing capacity of physical infrastructure.

#### **21.5.1.2 Affordable lifestyle**

##### ***Increased demand for housing***

Small communities can experience decreased housing affordability as a result of the introduction or expansion of major resource projects. These small communities can experience a rapid expansion in population, and sometimes disposable income, without an appropriate associated expansion in housing supply, which acts to raise the costs of housing, both for purchasing and renting. This potential is influenced by existing housing conditions, including the availability and cost of established housing and the availability of serviced land.

### ***Increased wage pressures on local businesses***

The introduction of new industries offers the opportunity for economic diversification and increased wages for existing residents who secure employment in the new industries. However, these opportunities can have the effect of ‘draining’ human resources away from existing industries.

Vulnerability to this impact for the GFD Project has been assessed based on the following workforce characteristics in each area:

- Unemployment rate
- The proportion of technical and trade roles which are most likely to transfer to the GFD Project workforce.

These characteristics indicate that there is limited capacity for workforce transfer without impact to existing local businesses. The GFD Project will provide employment opportunities, such as camp operations and logistics, which may draw labour away from local businesses and service providers.

### **21.5.1.3 Community identity and spirit**

#### ***Local employees working extended shift hours and rosters***

The practice of extended shifts and rosters, which is common in the resources sector and will be used for the GFD Project, has been associated with worker fatigue, an increase in familial burden to their partners, and reduced participation of workers in community activities (Clifford, 2009; Hubinger et al., 2002). However, workers and their families can adapt to these changed conditions, and rural workers are generally accustomed to working extended or non-standard hours depending on seasonal conditions and individual enterprise need. Further, these private impacts of shift-based employment can be conceived as a reasonable market outcome given the strong incentives to participate (e.g. increased income level and job security).

#### ***Visible presence of gas industry workers in local community venues and the presence and scale of project facilities***

The introduction of largely transient workforces during construction, coupled with large-scale project facilities, has the potential to be perceived to reduce the rural character of communities. In the case of workforce presence in towns, there is sometimes a perception that these transient workforces ‘take over’ public spaces, with the conspicuousness of resource industry workers (particularly in public venues such as hotels) resulting in an “us and them” mentality.

A contrasting view is evident in the analysis of community consultation presented in the GLNG Project *Social Impact Management Plan Annual Report* (2013). This suggests that residents and landholders generally have:

*“A positive regard for Santos GLNG personnel ... this was reflected in activities they undertake such as talking to them and spending time with them. Since 2011, this positive response toward Santos GLNG personnel in the community has increased significantly.”*

Further, the presence of these workforces in public spaces is often coupled with increased economic revenue for local businesses. Concerns regarding the visibility and impact of non-residential workforces are largely subjective and related to the preferences of individuals.

***High occupancy of short-term accommodation by gas industry contractors, displacing visitors to communities when project workforce accommodation facilities are not available***

During the construction phase of resource projects, if purpose built workforce accommodation was not available, there is the potential for project workforces to place demand on short-term accommodation. This could displace other visitors to these communities such as tourists.

***Migration of long-term residents from high-impacted properties***

The construction of wells and associated infrastructure on landholder properties has the potential to result in the out-migration of residents from the area. This risk has a higher likelihood of occurring where wells and associated infrastructure have a direct effect on agricultural property operations and management. This is more likely:

- On small land parcels where agricultural productivity is reduced by gas infrastructure if land fragmentation reduces agricultural viability
- In areas of high well density
- Where existing land productivity is low.

However, this has not been an impact that has eventuated in regards to Santos GLNG activities in the GFD Project area to date. Compensation arrangements for any gas infrastructure can also sustain agricultural property operations and prevent migration that may otherwise have occurred.

**21.5.1.4 Capacity for sustainable economic activity**

***Disruption to agricultural production through field operations***

Agricultural productivity impacts will vary widely across GFD Project gas fields, according to field development characteristics and existing land use and agricultural land quality. A broad suite of potential landholder concerns includes:

- Perceived interference with and/or impact of water resources
- Land clearing, erosion (e.g. of exposed soil) and potential for soil degradation
- Spread of weeds or pest species
- Amenity impacts from reduced air quality as well as noise and vibration
- Potential loss, reduction or fragmentation of agricultural land
- Declining property values
- Time costs of becoming involved with ongoing engagement and negotiation activities.

The significance of this impact occurring is primarily a reflection of the existing land use characteristics such as size of land parcels, the productive potential of the land, and the intensity of the proposed GFD Project activities on the property.

***Construction activity deters local tourism and highway trade***

There is the potential for initial GFD Project workforces to place demands on short-term accommodation prior to accommodation camps being available. While some accommodation and hospitality providers will be able to service the gas industry, businesses dependent solely on tourism or recreational highway traffic could be detrimentally affected.

***Perception that gas extraction creates uncertainty around water availability for agriculture***

While the surface water and groundwater technical studies (Appendix N and O, respectively) suggest that physical water quality and supply impacts of the GFD Project are manageable, community consultation data indicate that there is concern about the impact of gas production on groundwater and surface water quality and supply, and the potential consequences for agricultural production. Ultimately, any emerging perception of adverse impact on water availability has the potential to create uncertainty around the sustainability of water supplies for agriculture, which may limit productivity enhancing investment in agricultural enterprises.

***Inward movement of larger enterprises to local area***

Some GFD Project supply opportunities may be forgone by local businesses due to factors such as supply chain constraints, prohibitive costs, incompatible business models or proximity to larger regional centres. Larger enterprises with wider supplier networks, greater economies of scale and business models dedicated to resource industry supply may enter the area from outside the region to take up these opportunities at the expense of existing smaller operations. This may have a range of consequences for local communities and economies as new entrants could compete for labour, and commercial and industrial space, possibly contributing to localised inflationary effects and skills shortages. However, beneficial impacts may also accrue, including in the provision of new employment opportunities and skills development pathways for local residents, greater diversity of economic capacity and services, and higher revenues for local governments.

**21.5.2 Indigenous**

**21.5.2.1 Liveable communities**

***Uncertainty with regard to environmental impact***

The Indigenous community has indicated that land use and the environment are important issues for them. With construction work occurring across an extensive area, there is a potential for environmental disturbance. This has the potential to induce anxiety in the absence of a sound understanding of the nature and extent of the impact, the areas in which it is occurring, and the measures being adopted to either avoid or manage the impact.

***Lack of cultural awareness of in-migrating construction and operations workforce***

When non-residential workforces do not have an appreciation of the cultural traits of a host community, whether Indigenous or non-indigenous, there is a potential for misunderstanding and conflict. The potential for conflict will also be dependent on the proximity of the workforce to the community and the level of day-to-day interaction.

***Tension between different segments of Indigenous populations over access to project benefits***

Should some segments of a local Indigenous population not benefit from GFD Project-induced opportunities to the same extent as others, intra-community tension may result. These tensions may affect the relationships within and the liveability of a community.

***Out-migration of elements of family groups due to inability to afford housing***

Living in proximity to relations is important for many people, and perhaps more so for persons who are members of minority groups including Indigenous people. The inability to afford housing due to rent increases may result in segments of extended families having to leave a community, thereby impairing the liveability of the community for those family members remaining.

**21.5.2.2 Affordable lifestyle**

***Increased housing costs***

Due to the socio-economic disadvantage evident in the Indigenous population when compared to the non-indigenous population, an increase in housing costs due to increased rental demand from in-migrating workers is likely to affect family budgets.

Where the affordability of housing is affected for low income groups it is likely to affect the Indigenous community to a greater extent due to the higher proportion of households in low income ranges compared to non-indigenous households. This would have an adverse effect on the cost of living in the community, and on Indigenous home ownership policy objectives of both Commonwealth and State Governments.

**21.5.2.3 Community identity and spirit**

***Inadvertent interference with cultural heritage***

While there are cultural heritage management plans in place to manage impacts on cultural heritage material (refer to Section 20: Cultural heritage), it remains possible that there may be unintended interference with cultural heritage during construction of the GFD Project. If this occurs, some members of the Indigenous community could feel that their cultural identity is being disregarded.

***Increased Indigenous employment presents staffing difficulties for Indigenous organisations***

The spirit of a community is generally fostered by organisations that work to advance community interests in priority areas such as a community health service. Should staffing for these organisations be difficult due to the recruitment of staff into higher paying jobs available through the GFD Project, it may impair the operation of the organisation in the short-term.

***General level of development marginalises Indigenous presence in community***

A rapid expansion of the non-indigenous population, who are generally in the higher end of the income scale, may take attention away from issues of concern to the Indigenous community. For example, the rapid development of new housing sub-divisions to cater for an expanding non-indigenous population may not do anything to address the over-crowding of Indigenous households.

Should this occur, there may be a diminution of community spirit as perceptions of being marginalised potentially arise. This is considered to be a sensitive issue for a segment of the community that has experience of being excluded in the past.



***Resentment at perceived landholder benefit from the occupation of traditional land***

While Native Title groups have entered into appropriate agreements and processes with Santos GLNG, (refer to section 20.6 of Section 20: Cultural heritage), it remains the case that these groups are descendants of the original traditional owners who were removed from the land. Publicity surrounding the income derived from hosting gas wells and infrastructure on agricultural holdings may foster a degree of resentment toward the current landholders, and possibly impede any community reconciliation process that may be in train, or make it harder to commence such a process.

**21.5.2.4 Capacity for sustainable economic activity**

***High-paying, short-term construction work draws higher-level students from schooling***

The availability of high-paying construction jobs can influence the retention of students, apprentices and trainees in educational institutions, as individuals opt to take up opportunities to earn large incomes in the short-term. This rational economic behaviour for the short-term may have negative long-term consequences for the ability of individuals to maintain a higher earning capability in the absence of formal trade or technical qualifications in a post-construction environment.

***Unsupportive workplace environment for local Indigenous employees***

The lack of a supportive work environment can have a negative influence on the retention of workers in general and Indigenous workers in particular if they lack a depth of workplace experience. This can lead to a high turnover and wasted training resources should the individual not secure another job that draws on the experience and skills acquired. Negative experiences may also deter an individual from actively seeking to participate further in the workforce.

**21.6 Mitigation measures**

Santos GLNG has developed an effective management framework, discussed in Section 6: Management framework, to be implemented for the GFD Project. The Social issues action plans (Appendix AC) contain the mitigation measures Santos GLNG will implement to manage the social impacts from the GFD Project. As agreed with the Coordinated Project Delivery Division of the Coordinator-General's office the action plans are linked to the existing GLNG Social Impact Management Plan framework. The action plans build on the extensive work already underway to manage the social impacts of the Santos GLNG Project. The latest version of the SIMP is available online at:

<http://www.santosglng.com/resource-library/community/social-impact-management-plan-community-handbook.aspx>

Santos GLNG reports progress against the commitments and initiatives contained within the SIMP annually to the Coordinator General. The latest annual report is available online at:

<http://www.santosglng.com/resource-library/community/social-impact-management-plan-community-handbook.aspx>

Santos GLNG is committed to implementing the mitigation measures in the action plans to manage potential social impacts and maximise opportunities associated with its ongoing presence in the project regions.

Santos GLNG is committed to implementing the mitigation measures in Table 21–11 to manage potential social impacts associated with the GFD Project. These measures are incorporated into Appendix AC: Social issues action plans.

**Table 21–11 Management framework relevant to social and community impacts**

Management framework	Description and mitigation measures
Social impact management plan (SIMP)	<p>The SIMP established for the GLNG Project will be implemented across the GFD Project. The plan outlines the roles, responsibilities and rights of Santos GLNG, the government, impacted communities and other stakeholders in relation to the GFD Project. In particular, it outlines the framework for community engagement, management strategies to avoid, mitigate or minimise potential impacts and to maximise opportunities and benefits arising throughout the life of the GFD Project, as well as a monitoring and reporting process.</p> <p>The GLNG Project SIMP will be supplemented by issue action plans relating to the GFD Project that focus on the following key areas as agreed with the Coordinated Project Delivery Division of the Coordinator-General's office:</p> <ul style="list-style-type: none"> <li>• Water and environment <ul style="list-style-type: none"> <li>— Maximise the beneficial reuse of coal seam water where practicable including construction, irrigation, dust suppression and other approved uses.</li> <li>— Monitor impacts associated with the management of coal seam water.</li> <li>— Minimise harmful effects on land environments.</li> <li>— Prevent the spread of weeds and pest animals.</li> <li>— Minimise impacts on air quality.</li> </ul> </li> <li>• Community safety <ul style="list-style-type: none"> <li>— Minimise road safety risks to the community</li> <li>— Minimise health and safety risks to Santos GLNG employees, contractors and the community</li> <li>— Minimise potential social dysfunction associated with our workforce</li> <li>— Social Infrastructure.</li> <li>— Minimise the impact on regional social infrastructure.</li> </ul> </li> <li>• Community wellbeing and liveability <ul style="list-style-type: none"> <li>— Minimise the impacts to landholders of gas field development activity.</li> <li>— Support and enhance the liveability and wellbeing of regional communities where Santos GLNG operates.</li> </ul> </li> <li>• Local industry participation and training <ul style="list-style-type: none"> <li>— Maximise the availability of skilled labour within regional communities.</li> <li>— Maximise opportunities for local business and industry to participate in the Santos GLNG projects.</li> </ul> </li> <li>• Aboriginal engagement and participation <ul style="list-style-type: none"> <li>— Minimise the impact of our activities on Aboriginal communities</li> <li>— Minimise the potential for damage to culturally significant sites</li> <li>— Strive to achieve enduring and mutually beneficial relationships.</li> </ul> </li> </ul>
Integrated Project Housing Strategy (IPHS)	<p>Santos GLNG will apply the IPHS framework, which is one of a number of strategies that form part of the approved SIMP. The framework will be used to assess and develop a range of strategies that could be applied, associated with impacts on residential land uses such as:</p> <ul style="list-style-type: none"> <li>• Actively monitor the housing market and engage with key stakeholders to ensure appropriate housing strategies are in place prior to field development</li> <li>• Use purpose built temporary and permanent workforce accommodation facilities, located outside major communities</li> </ul> <p>Assist members of the community vulnerable to housing affordability pressures. This may include rental assistance subsidies, capacity building programs, and strategies to release identify supply constraints.</p>

Management framework	Description and mitigation measures
Land access and landholder engagement	<p>Santos GLNG has adopted an early engagement strategy where landholders that may be affected by GFD Project activities are able to discuss the potential location, timing and impacts of infrastructure on their property or business, and how Santos GLNG can help to minimise those impacts. This early engagement strategy has been developed in accordance with the <i>Land Access Code</i> (Department of Employment, Economic Development and Innovation, 2010).</p> <p>Santos GLNG will negotiate a conduct and compensation agreement under the P&amp;G Act with landholders on whose land the petroleum activities will be carried out. The locations of wells, gathering lines, and access tracks will be finalised in consultation with the landholder as part of the negotiations.</p>
Aboriginal engagement policy	This policy focuses on the elements of Native Title, cultural heritage, employment and training, enterprise development, community capacity and corporate social responsibility.
Regional Rules	Santos GLNG developed the Regional Rules framework in order to provide a coordinate approach to risks associated with work in the Maranoa region. The framework focuses on land access, business communication, vehicle movements and Santos GLNG's response to regional natural events.
Community policy	Santos GLNG has adopted a corporate community policy, which provides overarching guidance on ensuring that Santos GLNG establishes and maintains enduring mutually beneficial relationships with the communities of which it is a part.
Cultural heritage management plans	Santos GLNG takes cultural heritage obligations very seriously and works closely with traditional owners to undertake cultural heritage surveys and implement agreed management measures for any potential or actual impacts to cultural heritage in accordance with cultural heritage management plans to ensure Indigenous cultural heritage is treated with appropriate respect.

## 21.7 Risk assessment

As discussed in section 21.2.1, impacts were assessed using the risk assessment methodology. As the GFD Project area covers a large geographical area, the general nature of potential impacts to environmental values associated with GFD Project activities are identified and assessed within this section.

Table 21–12 and Table 21–15 summarise the assessment undertaken for the potential impacts of the GFD Project on social values. For each identified potential impact, the assessment considered:

- The potential pre-mitigated risk, where the Constraints protocol has been applied and the potential impacts are uncontrolled
- The mitigation measures that will be used to manage the potential impacts on social values. These measures will reduce the likelihood/consequence of the potential impacts
- The residual risk of the potential impact after the implementation of mitigation measures. The residual risk takes into account the potential for impact that remains after the mitigation measures are applied.

Table 21–12 Risk assessment – social (non-indigenous) - Arcadia

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Workforce demand on public health facilities and services	Construction	Almost certain	Minor	Medium	<ul style="list-style-type: none"> <li>Continue to implement the Santos GLNG Environmental, Health and Safety Management System.</li> <li>Continue the medical field response, including paramedics, nurses, general practitioners and emergency evacuation arrangements, to support needs of non-resident workforce, during construction.</li> <li>Continue to consult with Queensland Health and other health service providers on emerging impacts to the local health system</li> <li>Continue to ensure the jointly funded (with other industry proponents) Aero Medical Helicopter Service based in Roma and Toowoomba is available to the broader community to 2019.</li> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework.</li> </ul>	Possible	Negligible	Low
	Operations	Almost certain	Minor	Medium		Possible	Negligible	Low
	Decommissioning	Likely	Minor	Medium		Unlikely	Negligible	Very low
Intra-community conflict	Construction	Unlikely	Minor	Low	<ul style="list-style-type: none"> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Continue to implement the Santos GLNG complaint management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.</li> <li>Continue to implement the Maranoa Regional Rules including monitoring compliance Land access and landholder engagement</li> <li>Apply the land access and landholder engagement strategy to the GFD Project, including compensation framework, early landholder engagement activities and use of the Ready Reckoner and property mapping.</li> </ul>	Unlikely	Negligible	Very low
	Operations	Unlikely	Minor	Low		Unlikely	Negligible	Very low
	Decommissioning	Remote	Minor	Very low		Remote	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Project traffic on local roads and in the town areas	Construction	Almost certain	Moderate	High	<ul style="list-style-type: none"> <li>Continue to implement the Santos GLNG Environmental, Health and Safety Management System.</li> <li>Engage with Department of Transport and Main Roads and local councils to extend existing road use management plans and road infrastructure agreements for the Santos GLNG Project to incorporate GFD Project activities. In new areas, engage with local councils to develop and implement these documents.</li> <li>Partner with local Councils to apply for Royalties for Regions funding for road upgrades, where appropriate.</li> <li>Continue to implement internal policies and regional rules that relate to road use and driver behaviour including: <ul style="list-style-type: none"> <li>Ensure that all Santos GLNG vehicles have signage and in-vehicle-monitoring systems to monitor driver behaviour (including use of approved routes) and remain accountable for it through a demerit point system</li> <li>Engage with local schools regarding schools zone safety</li> <li>Continue shuttle bus services transporting workers from airports to work sites and camps.</li> <li>Internal driver education campaigns to raise awareness about driving behaviours and safety.</li> </ul> </li> <li>Communicate heavy and light vehicle movements and road works through regular updates in local media, when required</li> </ul>	Likely	Minor	Medium
	Operations	Almost Certain	Minor	Medium		Likely	Minor	Medium
	Decommissioning	Likely	Minor	Medium		Possible	Minor	Low
Presence of a male-dominated workforce	Construction	Possible	Minor	Low	<ul style="list-style-type: none"> <li>Continue to implement Maranoa Regional Rules, to guide the behaviour of Santos GLNG workers and contractors when in the field. This includes protocols such as not wearing uniforms after hours in the community</li> <li>Continue to implement Employee Relations Management Plans including Worker Code of Conduct,</li> </ul>	Unlikely	Negligible	Very low
	Operations	Possible	Minor	Low		Unlikely	Negligible	Very low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					Site Work Rules and Employee Induction Program <ul style="list-style-type: none"> <li>Promote Santos GLNG employee volunteering in the local community</li> <li>Support local communities with employment and training opportunities, where possible</li> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Continue to implement the Santos GLNG complaint management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.</li> <li>Engage with Queensland Police Service to respond to issues associated with anti-social behaviour where identified.</li> </ul>			
Demand on public physical infrastructure	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> <li>When field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planning</li> <li>Partner with local Councils to apply for Royalties for Regions funding applications, where appropriate.</li> <li>Ensure temporary and permanent accommodation facilities have telecommunications equipment to absorb the workforce requirements, where a potential direct impact to the telecommunications services in local communities can be readily identified</li> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Continue to implement the Santos GLNG complaint management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.</li> <li>Continue the medical field response, including paramedics, nurses, general practitioners and emergency evacuation arrangements, to support needs</li> </ul>	Remote	Negligible	Very low
	Operations	Likely	Moderate	Medium		Remote	Negligible	Very low
	Decommissioning	Likely	Moderate	Medium		Remote	Negligible	Very low



Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					of non-resident workforce, during construction. <ul style="list-style-type: none"> <li>Continue to consult with Queensland Health and other health service providers on emerging impacts to the local health system</li> <li>Continue to ensure the jointly funded (with other industry proponents) Aero Medical Helicopter Service based in Roma and Toowoomba is available to the broader community to 2019.</li> <li>Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework.</li> </ul>			
<b>Affordable lifestyle</b>								
Increased demand for housing	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> <li>Apply the IPHS framework including:               <ul style="list-style-type: none"> <li>Actively monitor the housing market and engage key stakeholders to ensure appropriate housing strategies are in place prior to field development</li> <li>Use purpose built temporary and permanent workforce accommodation facilities, located outside major communities and where appropriate assess options to utilise third party existing facilities located within local townships</li> <li>Consider supporting programs that relieve vulnerability to housing affordability pressures</li> </ul> </li> <li>When field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planning</li> <li>Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework.</li> </ul>	Possible	Minor	Low
	Operations	Likely	Moderate	Medium		Possible	Minor	Low
	Decommissioning	Likely	Minor	Medium		Possible	Negligible	Very low
Increased wage pressures on local businesses	Construction	Possible	Minor	Low	<ul style="list-style-type: none"> <li>Support local business to attract staff through the Careers in Gas website</li> <li>Continue to participate in local career days and employment expos highlighting the range of employment opportunities available in GFD Project communities</li> </ul>	Possible	Negligible	Low
	Operations	Possible	Minor	Low		Possible	Negligible	Low
	Decommissioning	Unlikely	Minor	Low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					<ul style="list-style-type: none"> <li>Continue to support initiatives, such as the Roma Shop Local, Invest Local campaign which promote main street businesses within the community</li> </ul>			
<b>Community identity and spirit</b>								
Local employees working extended shift hours and rosters	Construction	Unlikely	Minor	Low	<ul style="list-style-type: none"> <li>Continue to implement existing management plans and procedures related to workforce management including Employee Assistance Program</li> <li>Support local communities with employment and training opportunities</li> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Promote Santos GLNG employee volunteering in the local community</li> <li>Continue to implement the Santos GLNG community investment program including annual sponsorship and donations program, supporting local events and initiatives that enhance community wellbeing</li> </ul>	Unlikely	Negligible	Very low
	Operations	Unlikely	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Unlikely	Negligible	Very low		Unlikely	Negligible	Very low
Visible presence of gas industry workers in local community venues, and the presence and scale of project facilities, including camps	Construction	Possible	Minor	Low	<ul style="list-style-type: none"> <li>Continue to implement existing management plans and procedures related to workforce management including: <ul style="list-style-type: none"> <li>Employee Relations Management Plans including Worker Code of Conduct, Site Work Rules and Employee Induction Program</li> <li>Employee Assistance Program</li> <li>Maranoa Regional Rules – to guide the behaviour of Santos GLNG workers and contractors when working in the field. This includes protocols such as not wearing uniforms after hours in the community</li> </ul> </li> <li>Promote Santos GLNG employee volunteering in the local community</li> <li>Continue to implement the Santos GLNG community investment program including annual sponsorship and donations program, supporting local events and initiatives that enhance community wellbeing</li> <li>Continue to implement the Santos GLNG community</li> </ul>	Possible	Negligible	Low
	Operations	Possible	Minor	Low		Possible	Negligible	Low
	Decommissioning	Possible	Negligible	Low		Possible	Negligible	Low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					engagement plan			
High occupancy of short-term accommodation by gas industry contractors, displacing visitors to communities when project workforce accommodation facilities are not available	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"> <li>Continue to implement Maranoa Regional Rules, related to travel in project regions</li> <li>When field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planning</li> <li>Apply the IPHS framework to monitor and respond to housing impacts directly associated with the GFD Project</li> <li>Continue to implement the Santos GLNG community engagement plan</li> </ul>	Unlikely	Minor	Low
	Operations	Possible	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Moderate	Medium		Unlikely	Negligible	Very Low
Migration of long-term residents from high-impacted properties	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"> <li>Apply the Land access and landholder engagement strategy to the GFD Project, including compensation framework, early landholder engagement activities and use of the Ready Reckoner and property mapping</li> </ul>	Possible	Minor	Low
	Operations	Unlikely	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Remote	Negligible	Very low		Remote	Negligible	Very Low

**Capacity for sustainable economic activity**

Disruption to agricultural production through field operations	Construction	Likely	Minor	Medium	<ul style="list-style-type: none"> <li>Apply the land access and landholder engagement strategy to the GFD Project, including compensation framework, early landholder engagement activities and use of the Ready Reckoner and property mapping.</li> <li>Comply with the Pest and Weed Management Plan, which includes procedures for vehicle wash downs and conduct training and awareness sessions with Santos GLNG field staff and contractors</li> <li>Continue to maintain and update the Weed and Pest Management Zones on the GIS layer 'Pest Central' to communicate declared weed information to staff and contractors working in the field</li> <li>Continue to implement the Maranoa Regional Rules including monitoring compliance with the Land Access Code</li> <li>Comply with regulatory approvals relating to the</li> </ul>	Possible	Minor	Low
	Operations	Unlikely	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Possible	Negligible	Low		Unlikely	Negligible	Very Low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					<p>management of water within the Roma, Fairview, Arcadia and Scotia gas fields. The management strategies aim to maximise beneficial use opportunities (where practicable) for communities and the environment such as the provision of water to third parties, irrigation, releases to surface water and dust suppression.</p> <ul style="list-style-type: none"> <li>Continue to engage with communities such as through water specific engagement forums</li> <li>Continue to implement the Santos GLNG complaint management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.</li> </ul>			
Construction activity deters local tourism and highway trade	Construction	Unlikely	Minor	Low	<ul style="list-style-type: none"> <li>When field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planning</li> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Continue to implement Maranoa Regional Rules, related to travel in project regions</li> <li>Engage with Department of Transport and Main Roads and local councils to extend existing road use management plans and road infrastructure agreements for the Santos GLNG Project to incorporate GFD Project activities. In new areas, engage with local councils to develop and implement these documents.</li> <li>Apply the IPHS framework to monitor and respond to housing impacts directly associated with the GFD Project.</li> </ul>	Unlikely	Negligible	Very low
	Operations	Unlikely	Minor	Low		Unlikely	Negligible	Very low
	Decommissioning	Unlikely	Negligible	Very Low		Unlikely	Negligible	Very low
Perception that gas extraction creates uncertainty around water availability for agriculture	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> <li>Apply the land access and landholder engagement strategy to the GFD Project, including compensation framework, early landholder engagement activities and use of the Ready Reckoner and property mapping</li> <li>Continue to engage with communities such as through</li> </ul>	Possible	Minor	Low
	Operations	Likely	Moderate	Medium		Possible	Minor	Low
	Decommissioning	Remote	Negligible	Very Low		Remote	Negligible	Very Low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					<p>water specific engagement forums</p> <ul style="list-style-type: none"> <li>Comply with regulatory approvals relating to the management of water within the Roma, Fairview, Arcadia and Scotia gas fields. The management strategies aim to maximise beneficial use opportunities (where practicable) for communities and the environment such as the provision of water to third parties, irrigation, releases to surface water and dust suppression.</li> <li>Continue to promote and update the Santos GLNG water portal.</li> <li>Continue analysis of water level data from monitoring bores with Santos GLNG installed telemetry water pressure monitoring systems and make information available to landholders.</li> <li>Continue to implement the Santos GLNG community engagement plan</li> </ul>			
Inward movement of larger enterprises to local area	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> <li>Continue to adopt the voluntary <i>Queensland Resources and Energy Sector Code of Practice for Local Content (2013)</i> providing full, fair and reasonable opportunity for capable local businesses</li> <li>Continue to engage with local business', holding procurement sessions to assist understanding of supply chain opportunities</li> <li>Continue to support initiatives, such as the Roma Shop Local, Invest Local campaign which promote main street businesses within the community</li> <li>Continue to report local procurement performance to key stakeholders and communities</li> <li>Provide GFD Project details to State government to assist in the development of capacity building programs.</li> </ul>	Unlikely	Minor	Low
	Operations	Likely	Minor	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very Low

Table 21–13 Risk assessment – social (non-indigenous) – Roma and Fairview

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Workforce demand on public health facilities and services	Construction	Almost certain	Minor	Medium	<ul style="list-style-type: none"> <li>Continue to implement the Santos GLNG Environmental, Health and Safety Management System.</li> <li>Continue the medical field response, including paramedics, nurses, general practitioners and emergency evacuation arrangements, to support needs of non-resident workforce, during construction.</li> <li>Continue to consult with Queensland Health and other health service providers on emerging impacts to the local health system</li> <li>Continue to ensure the jointly funded (with other industry proponents) Aero Medical Helicopter Service based in Roma and Toowoomba is available to the broader community to 2019.</li> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework.</li> </ul>	Unlikely	Minor	Low
	Operations	Almost certain	Minor	Medium		Unlikely	Minor	Low
	Decommissioning	Likely	Minor	Medium		Unlikely	Negligible	Very low
Intra-community conflict	Construction	Unlikely	Minor	Low	<ul style="list-style-type: none"> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Continue to implement the Santos GLNG complaint management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.</li> <li>Continue to implement the Maranoa Regional Rules including monitoring compliance Land access and landholder engagement</li> <li>Apply the land access and landholder engagement strategy to the GFD Project, including compensation framework, early landholder engagement activities and use of the Ready Reckoner and property mapping.</li> </ul>	Unlikely	Negligible	Very low
	Operations	Unlikely	Minor	Low		Unlikely	Negligible	Very low
	Decommissioning	Remote	Minor	Very low		Remote	Negligible	Very low



Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Project traffic on local roads and in the town areas	Construction	Almost certain	Moderate	High	<ul style="list-style-type: none"> <li>Continue to implement the Santos GLNG Environmental, Health and Safety Management System.</li> <li>Engage with Department of Transport and Main Roads and local councils to extend existing road use management plans and road infrastructure agreements for the Santos GLNG Project to incorporate GFD Project activities. In new areas, engage with local councils to develop and implement these documents.</li> <li>Partner with local Councils to apply for Royalties for Regions funding for road upgrades, where appropriate.</li> <li>Continue to implement internal policies and regional rules that relate to road use and driver behaviour including: <ul style="list-style-type: none"> <li>Ensure that all Santos GLNG vehicles have signage and in-vehicle-monitoring systems to monitor driver behaviour (including use of approved routes) and remain accountable for it through a demerit point system</li> <li>Engage with local schools regarding schools zone safety</li> <li>Continue shuttle bus services transporting workers from airports to work sites and camps.</li> <li>Internal driver education campaigns to raise awareness about driving behaviours and safety.</li> </ul> </li> <li>Communicate heavy and light vehicle movements and road works through regular updates in local media, when required</li> </ul>	Likely	Minor	Medium
	Operations	Almost certain	Minor	Medium		Likely	Minor	Medium
	Decommissioning	Likely	Minor	Medium		Possible	Minor	Low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Presence of a male-dominated workforce	Construction	Possible	Negligible	Low	<ul style="list-style-type: none"> <li>Continue to implement Maranoa Regional Rules, to guide the behaviour of Santos GLNG workers and contractors when in the field. This includes protocols such as not wearing uniforms after hours in the community</li> <li>Continue to implement Employee Relations Management Plans including Worker Code of Conduct, Site Work Rules and Employee Induction Program</li> <li>Promote Santos GLNG employee volunteering in the local community</li> <li>Support local communities with employment and training opportunities, where possible</li> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Continue to implement the Santos GLNG complaint management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.</li> <li>Engage with Queensland Police Service to respond to issues associated with anti-social behaviour where identified.</li> </ul>	Unlikely	Negligible	Very low
	Operations	Possible	Negligible	Low		Unlikely	Negligible	Very low
	Decommissioning	Possible	Negligible	Low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Demand on public physical infrastructure	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> <li>When field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planning</li> <li>Partner with local Councils to apply for Royalties for Regions funding applications, where appropriate.</li> <li>Ensure temporary and permanent accommodation facilities have telecommunications equipment to absorb the workforce requirements, where a potential direct impact to the telecommunications services in local communities can be readily identified</li> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Continue to implement the Santos GLNG complaint management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.</li> <li>Continue the medical field response, including paramedics, nurses, general practitioners and emergency evacuation arrangements, to support needs of non-resident workforce, during construction.</li> <li>Continue to consult with Queensland Health and other health service providers on emerging impacts to the local health system</li> <li>Continue to ensure the jointly funded (with other industry proponents) Aero Medical Helicopter Service based in Roma and Toowoomba is available to the broader community to 2019.</li> <li>Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework.</li> </ul>	Unlikely	Minor	Low
	Operations	Likely	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Affordable lifestyle								
Increased demand for housing	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"><li>• Apply the IPHS framework including:<ul style="list-style-type: none"><li>— Actively monitor the housing market and engage key stakeholders to ensure appropriate housing strategies are in place prior to field development</li><li>— Use purpose built temporary and permanent workforce accommodation facilities, located outside major communities and where appropriate assess options to utilise third party existing facilities located within local townships</li><li>— Consider supporting programs that relieve vulnerability to housing affordability pressures</li></ul></li><li>• When field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planning</li><li>• Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework.</li></ul>	Possible	Minor	Low
	Operations	Likely	Moderate	Medium		Possible	Minor	Low
	Decommissioning	Likely	Minor	Medium		Possible	Negligible	Very low
Increased wage pressures on local businesses	Construction	Possible	Minor	Low	<ul style="list-style-type: none"><li>• Support local business to attract staff through the Careers in Gas website</li><li>• Continue to participate in local career days and employment expos highlighting the range of employment opportunities available in GFD Project communities</li><li>• Continue to support initiatives, such as the Roma Shop Local, Invest Local campaign which promote main street businesses within the community</li></ul>	Possible	Negligible	Low
	Operations	Possible	Minor	Low		Possible	Negligible	Low
	Decommissioning	Unlikely	Minor	Low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Community identity and spirit								
Local employees working extended shift hours and rosters	Construction	Unlikely	Minor	Low	<ul style="list-style-type: none"><li>Continue to implement existing management plans and procedures related to workforce management including Employee Assistance Program</li><li>Support local communities with employment and training opportunities</li><li>Continue to implement the Santos GLNG community engagement plan</li><li>Promote Santos GLNG employee volunteering in the local community</li><li>Continue to implement the Santos GLNG community investment program including annual sponsorship and donations program, supporting local events and initiatives that enhance community wellbeing</li></ul>	Unlikely	Negligible	Very low
	Operations	Unlikely	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Unlikely	Negligible	Very low		Unlikely	Negligible	Very low
Visible presence of gas industry workers in local community venues, and the presence and scale of project facilities, including camps	Construction	Possible	Minor	Low	<ul style="list-style-type: none"><li>Continue to implement existing management plans and procedures related to workforce management including:<ul style="list-style-type: none"><li>Employee Relations Management Plans including Worker Code of Conduct, Site Work Rules and Employee Induction Program</li><li>Employee Assistance Program</li><li>Maranoa Regional Rules – to guide the behaviour of Santos GLNG workers and contractors when working in the field. This includes protocols such as not wearing uniforms after hours in the community</li></ul></li><li>Promote Santos GLNG employee volunteering in the local community</li><li>Continue to implement the Santos GLNG community investment program including annual sponsorship and donations program, supporting local events and initiatives that enhance community wellbeing</li><li>Continue to implement the Santos GLNG community engagement plan</li></ul>	Possible	Negligible	Low
	Operations	Possible	Minor	Low		Possible	Negligible	Low
	Decommissioning	Possible	Negligible	Low		Possible	Negligible	Low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
High occupancy of short-term accommodation by gas industry contractors, displacing visitors to communities when project workforce accommodation facilities are not available	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"><li>Continue to implement Maranoa Regional Rules, related to travel in project regions</li><li>When field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planning</li><li>Apply the IPHS framework to monitor and respond to housing impacts directly associated with the GFD Project</li><li>Continue to implement the Santos GLNG community engagement plan</li></ul>	Unlikely	Minor	Low
	Operations	Possible	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Moderate	Medium		Unlikely	Negligible	Very low
Migration of long-term residents from high-impacted properties	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"><li>Apply the Land access and landholder engagement strategy to the GFD Project, including compensation framework, early landholder engagement activities and use of the Ready Reckoner and property mapping</li></ul>	Possible	Minor	Low
	Operations	Unlikely	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Remote	Negligible	Very Low		Remote	Negligible	Very low
Capacity for sustainable economic activity								
Disruption to agricultural production through field operations	Construction	Likely	Minor	Medium	<ul style="list-style-type: none"><li>Apply the land access and landholder engagement strategy to the GFD Project, including compensation framework, early landholder engagement activities and use of the Ready Reckoner and property mapping.</li><li>Comply with the Pest and Weed Management Plan, which includes procedures for vehicle wash downs and conduct training and awareness sessions with Santos GLNG field staff and contractors</li><li>Continue to maintain and update the Weed and Pest Management Zones on the GIS layer ‘Pest Central’ to communicate declared weed information to staff and contractors working in the field</li><li>Continue to implement the Maranoa Regional Rules including monitoring compliance with the Land Access Code</li><li>Comply with regulatory approvals relating to the</li></ul>	Possible	Minor	Low
	Operations	Unlikely	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Possible	Negligible	Low		Unlikely	Negligible	Very Low



Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					<p>management of water within the Roma, Fairview, Arcadia and Scotia gas fields. The management strategies aim to maximise beneficial use opportunities (where practicable) for communities and the environment such as the provision of water to third parties, irrigation, releases to surface water and dust suppression.</p> <ul style="list-style-type: none"> <li>Continue to engage with communities such as through water specific engagement forums</li> <li>Continue to implement the Santos GLNG complaint management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.</li> </ul>			
Construction activity deters local tourism and highway trade	Construction	Unlikely	Minor	Low	<ul style="list-style-type: none"> <li>When field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planning</li> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Continue to implement Maranoa Regional Rules, related to travel in project regions</li> <li>Engage with Department of Transport and Main Roads and local councils to extend existing road use management plans and road infrastructure agreements for the Santos GLNG Project to incorporate GFD Project activities. In new areas, engage with local councils to develop and implement these documents.</li> <li>Apply the IPHS framework to monitor and respond to housing impacts directly associated with the GFD Project.</li> </ul>	Unlikely	Negligible	Very low
	Operations	Unlikely	Minor	Low		Unlikely	Negligible	Very low
	Decommissioning	Unlikely	Negligible	Very low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Perception that gas extraction creates uncertainty around water availability for agriculture	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> <li>Apply the land access and landholder engagement strategy to the GFD Project, including compensation framework, early landholder engagement activities and use of the Ready Reckoner and property mapping</li> <li>Continue to engage with communities such as through water specific engagement forums</li> <li>Comply with regulatory approvals relating to the management of water within the Roma, Fairview, Arcadia and Scotia gas fields. The management strategies aim to maximise beneficial use opportunities (where practicable) for communities and the environment such as the provision of water to third parties, irrigation, releases to surface water and dust suppression.</li> <li>Continue to promote and update the Santos GLNG water portal.</li> <li>Continue analysis of water level data from monitoring bores with Santos GLNG installed telemetry water pressure monitoring systems and make information available to landholders.</li> <li>Continue to implement the Santos GLNG community engagement plan</li> </ul>	Possible	Minor	Low
	Operations	Likely	Moderate	Medium		Possible	Minor	Low
	Decommissioning	Remote	Negligible	Very low		Remote	Negligible	Very low
In-ward movement of larger enterprises to local area	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> <li>Continue to adopt the voluntary <i>Queensland Resources and Energy Sector Code of Practice for Local Content (2013)</i> providing full, fair and reasonable opportunity for capable local businesses</li> <li>Continue to engage with local business', holding procurement sessions to assist understanding of supply chain opportunities</li> <li>Continue to support initiatives, such as the Roma Shop Local, Invest Local campaign which promote main street businesses within the community</li> <li>Continue to report local procurement performance to</li> </ul>	Unlikely	Minor	Low
	Operations	Likely	Minor	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					key stakeholders and communities <ul style="list-style-type: none"> <li>Provide GFD Project details to State government to assist in the development of capacity building programs.</li> </ul>			

**Table 21–14 Risk assessment – social (non-indigenous) – Scotia**

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Workforce demand on public health facilities and services	Construction	Almost certain	Moderate	High	<ul style="list-style-type: none"> <li>Continue to implement the Santos GLNG Environmental, Health and Safety Management System.</li> <li>Continue the medical field response, including paramedics, nurses, general practitioners and emergency evacuation arrangements, to support needs of non-resident workforce, during construction.</li> <li>Continue to consult with Queensland Health and other health service providers on emerging impacts to the local health system</li> <li>Continue to ensure the jointly funded (with other industry proponents) Aero Medical Helicopter Service based in Roma and Toowoomba is available to the broader community to 2019.</li> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework.</li> </ul>	Possible	Minor	Low
	Operations	Almost certain	Moderate	High		Possible	Minor	Low
	Decommissioning	Likely	Minor	Medium		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Intra-community conflict	Construction	Unlikely	Minor	Low	<ul style="list-style-type: none"> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Continue to implement the Santos GLNG complaint management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.</li> <li>Continue to implement the Maranoa Regional Rules including monitoring compliance Land access and landholder engagement</li> <li>Apply the land access and landholder engagement strategy to the GFD Project, including compensation framework, early landholder engagement activities and use of the Ready Reckoner and property mapping.</li> </ul>	Unlikely	Negligible	Very low
	Operations	Unlikely	Minor	Low		Unlikely	Negligible	Very low
	Decommissioning	Remote	Minor	Very Low		Remote	Negligible	Very low
Project traffic on local roads and in the town areas	Construction	Almost certain	Moderate	High	<ul style="list-style-type: none"> <li>Continue to implement the Santos GLNG Environmental, Health and Safety Management System.</li> <li>Engage with Department of Transport and Main Roads and local councils to extend existing road use management plans and road infrastructure agreements for the Santos GLNG Project to incorporate GFD Project activities. In new areas, engage with local councils to develop and implement these documents.</li> <li>Partner with local Councils to apply for Royalties for Regions funding for road upgrades, where appropriate.</li> <li>Continue to implement internal policies and regional rules that relate to road use and driver behaviour including: <ul style="list-style-type: none"> <li>Ensure that all Santos GLNG vehicles have signage and in-vehicle-monitoring systems to monitor driver behaviour (including use of approved routes) and remain accountable for it through a demerit point system</li> </ul> </li> </ul>	Likely	Minor	Medium
	Operations	Almost Certain	Minor	Medium		Likely	Minor	Medium
	Decommissioning	Likely	Minor	Medium		Possible	Minor	Low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					<ul style="list-style-type: none"> <li>Engage with local schools regarding schools zone safety</li> <li>Continue shuttle bus services transporting workers from airports to work sites and camps.</li> <li>Internal driver education campaigns to raise awareness about driving behaviours and safety.</li> <li>Communicate heavy and light vehicle movements and road works through regular updates in local media, when required</li> </ul>			
Presence of a male-dominated workforce	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"> <li>Continue to implement Maranoa Regional Rules, to guide the behaviour of Santos GLNG workers and contractors when in the field. This includes protocols such as not wearing uniforms after hours in the community</li> <li>Continue to implement Employee Relations Management Plans including Worker Code of Conduct, Site Work Rules and Employee Induction Program</li> <li>Promote Santos GLNG employee volunteering in the local community</li> <li>Support local communities with employment and training opportunities, where possible</li> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Continue to implement the Santos GLNG complaint management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.</li> <li>Engage with Queensland Police Service to respond to issues associated with anti-social behaviour where identified.</li> </ul>	Unlikely	Minor	Low
	Operations	Possible	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very low
Demand on public physical	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> <li>When field development planning is sufficiently advanced to determine workforce numbers, provide</li> </ul>	Unlikely	Minor	Low
	Operations	Likely	Moderate	Medium		Unlikely	Minor	Low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
infrastructure	Decommissioning	Likely	Moderate	Medium	<p>this information to State and local governments to assist with regional service planning</p> <ul style="list-style-type: none"> <li>• Partner with local Councils to apply for Royalties for Regions funding applications, where appropriate.</li> <li>• Ensure temporary and permanent accommodation facilities have telecommunications equipment to absorb the workforce requirements, where a potential direct impact to the telecommunications services in local communities can be readily identified</li> <li>• Continue to implement the Santos GLNG community engagement plan</li> <li>• Continue to implement the Santos GLNG complaint management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.</li> <li>• Continue the medical field response, including paramedics, nurses, general practitioners and emergency evacuation arrangements, to support needs of non-resident workforce, during construction.</li> <li>• Continue to consult with Queensland Health and other health service providers on emerging impacts to the local health system</li> <li>• Continue to ensure the jointly funded (with other industry proponents) Aero Medical Helicopter Service based in Roma and Toowoomba is available to the broader community to 2019.</li> <li>• Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework.</li> </ul>	Remote	Negligible	Very low



Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Affordable lifestyle								
Increased demand for housing	Construction	Almost certain	Moderate	High	<ul style="list-style-type: none"><li>• Apply the IPHS framework including:<ul style="list-style-type: none"><li>— Actively monitor the housing market and engage key stakeholders to ensure appropriate housing strategies are in place prior to field development</li><li>— Use purpose built temporary and permanent workforce accommodation facilities, located outside major communities and where appropriate assess options to utilise third party existing facilities located within local townships</li><li>— Consider supporting programs that relieve vulnerability to housing affordability pressures</li></ul></li><li>• When field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planning</li><li>• Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework.</li></ul>	Unlikely	Minor	Low
	Operations	Almost certain	Moderate	High		Unlikely	Minor	Low
	Decommissioning	Likely	Minor	Medium		Unlikely	Negligible	Very low
Increased wage pressures on local businesses	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"><li>• Support local business to attract staff through the Careers in Gas website</li><li>• Continue to participate in local career days and employment expos highlighting the range of employment opportunities available in GFD Project communities</li><li>• Continue to support initiatives, such as the Roma Shop Local, Invest Local campaign which promote main street businesses within the community</li></ul>	Possible	Minor	Low
	Operations	Possible	Moderate	Medium		Possible	Minor	Low
	Decommissioning	Unlikely	Minor	Low		Unlikely	Negligible	Very Low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Community identity and spirit								
Local employees working extended shift hours and rosters	Construction	Possible	Minor	Low	<ul style="list-style-type: none"><li>Continue to implement existing management plans and procedures related to workforce management including Employee Assistance Program</li><li>Support local communities with employment and training opportunities</li><li>Continue to implement the Santos GLNG community engagement plan</li><li>Promote Santos GLNG employee volunteering in the local community</li><li>Continue to implement the Santos GLNG community investment program including annual sponsorship and donations program, supporting local events and initiatives that enhance community wellbeing</li></ul>	Unlikely	Negligible	Very low
	Operations	Possible	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Unlikely	Negligible	Very low		Unlikely	Negligible	Very low
Visible presence of gas industry workers in local community venues, and the presence and scale of project facilities, including camps	Construction	Likely	Minor	Medium	<ul style="list-style-type: none"><li>Continue to implement existing management plans and procedures related to workforce management including:<ul style="list-style-type: none"><li>Employee Relations Management Plans including Worker Code of Conduct, Site Work Rules and Employee Induction Program</li><li>Employee Assistance Program</li><li>Maranoa Regional Rules – to guide the behaviour of Santos GLNG workers and contractors when working in the field. This includes protocols such as not wearing uniforms after hours in the community</li></ul></li><li>Promote Santos GLNG employee volunteering in the local community</li><li>Continue to implement the Santos GLNG community investment program including annual sponsorship and donations program, supporting local events and initiatives that enhance community wellbeing</li><li>Continue to implement the Santos GLNG community engagement plan</li></ul>	Unlikely	Minor	Low
	Operations	Likely	Minor	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Negligible	Low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
High occupancy of short-term accommodation by gas industry contractors, displacing visitors to communities when project workforce accommodation facilities are not available	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"><li>Continue to implement Maranoa Regional Rules, related to travel in project regions</li><li>When field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planning</li><li>Apply the IPHS framework to monitor and respond to housing impacts directly associated with the GFD Project</li><li>Continue to implement the Santos GLNG community engagement plan</li></ul>	Unlikely	Minor	Low
	Operations	Possible	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Moderate	Medium		Unlikely	Negligible	Very low
Migration of long-term residents from high-impacted properties	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"><li>Apply the Land access and landholder engagement strategy to the GFD Project, including compensation framework, early landholder engagement activities and use of the Ready Reckoner and property mapping</li></ul>	Unlikely	Minor	Low
	Operations	Unlikely	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Remote	Negligible	Very Low		Remote	Negligible	Very Low
Capacity for sustainable economic activity								
Disruption to agricultural production through field operations	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"><li>Apply the land access and landholder engagement strategy to the GFD Project, including compensation framework, early landholder engagement activities and use of the Ready Reckoner and property mapping.</li><li>Comply with the Pest and Weed Management Plan, which includes procedures for vehicle wash downs and conduct training and awareness sessions with Santos GLNG field staff and contractors</li><li>Continue to maintain and update the Weed and Pest Management Zones on the GIS layer ‘Pest Central’ to communicate declared weed information to staff and contractors working in the field</li><li>Continue to implement the Maranoa Regional Rules including monitoring compliance with the Land Access Code</li></ul>	Possible	Minor	Low
	Operations	Unlikely	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					<ul style="list-style-type: none"> <li>Comply with regulatory approvals relating to the management of water within the Roma, Fairview, Arcadia and Scotia gas fields. The management strategies aim to maximise beneficial use opportunities (where practicable) for communities and the environment such as the provision of water to third parties, irrigation, releases to surface water and dust suppression.</li> <li>Continue to engage with communities such as through water specific engagement forums</li> <li>Continue to implement the Santos GLNG complaint management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.</li> </ul>			
Construction activity deters local tourism and highway trade	Construction	Possible	Minor	Low	<ul style="list-style-type: none"> <li>When field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planning</li> <li>Continue to implement the Santos GLNG community engagement plan</li> <li>Continue to implement Maranoa Regional Rules, related to travel in project regions</li> <li>Engage with Department of Transport and Main Roads and local councils to extend existing road use management plans and road infrastructure agreements for the Santos GLNG Project to incorporate GFD Project activities. In new areas, engage with local councils to develop and implement these documents.</li> <li>Apply the IPHS framework to monitor and respond to housing impacts directly associated with the GFD Project.</li> </ul>	Unlikely	Negligible	Very low
	Operations	Possible	Minor	Low		Unlikely	Negligible	Very low
	Decommissioning	Unlikely	Negligible	Very low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Perception that gas extraction creates uncertainty around water availability for agriculture	Construction	Possible	Major	High	<ul style="list-style-type: none"> <li>Apply the land access and landholder engagement strategy to the GFD Project, including compensation framework, early landholder engagement activities and use of the Ready Reckoner and property mapping</li> <li>Continue to engage with communities such as through water specific engagement forums</li> <li>Comply with regulatory approvals relating to the management of water within the Roma, Fairview, Arcadia and Scotia gas fields. The management strategies aim to maximise beneficial use opportunities (where practicable) for communities and the environment such as the provision of water to third parties, irrigation, releases to surface water and dust suppression.</li> <li>Continue to promote and update the Santos GLNG water portal.</li> <li>Continue analysis of water level data from monitoring bores with Santos GLNG installed telemetry water pressure monitoring systems and make information available to landholders.</li> <li>Continue to implement the Santos GLNG community engagement plan</li> </ul>	Unlikely	Moderate	Medium
	Operations	Likely	Major	High		Unlikely	Moderate	Medium
	Decommissioning	Remote	Negligible	Very low		Remote	Negligible	Very low
In-ward movement of larger enterprises to local area	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> <li>Continue to adopt the voluntary <i>Queensland Resources and Energy Sector Code of Practice for Local Content (2013)</i> providing full, fair and reasonable opportunity for capable local businesses</li> <li>Continue to engage with local business', holding procurement sessions to assist understanding of supply chain opportunities</li> <li>Continue to support initiatives, such as the Roma Shop Local, Invest Local campaign which promote main street businesses within the community</li> </ul>	Unlikely	Minor	Low
	Operations	Possible	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					<ul style="list-style-type: none"> <li>Continue to report local procurement performance to key stakeholders and communities</li> <li>Provide GFD Project details to State government to assist in the development of capacity building programs.</li> </ul>			

**Table 21–15 Risk assessment – social (Indigenous)**

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual risk		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Liveable community								
Uncertainty with regard to environmental impact of project	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"><li>Apply Cultural Heritage Management Plans and follow Native Title process with relevant parties to provide agreed management of Aboriginal cultural heritage within claim area</li><li>Apply targeted measures developed for the GLNG Project to engage Aboriginal individuals and communities including:<ul style="list-style-type: none"><li>Aboriginal engagement policy</li><li>Integration of Aboriginal and cultural heritage awareness into employee induction programs</li><li>Working with relevant Aboriginal groups on native title process and implementing Cultural Heritage Management Plans</li><li>Employee Induction Programs and Employee Relations Management Plans.</li></ul></li></ul>	Possible	Minor	Low
	Operations	Possible	Moderate	Medium		Possible	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Minor	Low
Lack of cultural awareness of in-migrating construction and operations workforce	Construction	Possible	Moderate	Medium		Unlikely	Minor	Low
	Operations	Possible	Minor	Low	<ul style="list-style-type: none"><li>Comply with Environmental Management Plans</li><li>Continue to implement the Environmental Protocol for Constraints Planning and Field Development</li><li>Continue to implement the Santos GLNG complaint</li></ul>	Unlikely	Negligible	Very Low



Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual risk		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
	Decommissioning	Possible	Moderate	Medium	<p>management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.</p> <ul style="list-style-type: none"> <li>Monitor the effectiveness of the social issues action plans through the annual SIMP monitoring framework.</li> </ul>	Unlikely	Minor	Low
Tension between native title and historical segments of Indigenous population over access to project benefits	Construction	Unlikely	Minor	Low		Remote	Minor	Very low
	Operations	Unlikely	Minor	Low		Remote	Minor	Very low
	Decommissioning	Remote	Negligible	Very low		Remote	Negligible	Very low
Out-migration of elements of family groups due to inability to afford housing	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"> <li>Create contract and supply opportunities for Aboriginal businesses and support Indigenous employment expos where required</li> <li>Update the Santos GLNG Aboriginal employment programs to include the GFD Project; this may include initiatives such as school based traineeships and full time traineeships/ apprenticeships</li> <li>Apply the IPHS framework including: <ul style="list-style-type: none"> <li>Actively monitor the housing market and engage key stakeholders to ensure appropriate housing strategies are in place prior to field development</li> <li>Use purpose built temporary and permanent workforce accommodation facilities located outside major communities and where appropriate assess options to utilise third party existing facilities located within local townships.</li> <li>Consider supporting programs that relieve vulnerability to housing affordability pressures.</li> </ul> </li> <li>Monitor the effectiveness of the social issues action plans through the annual SIMP monitoring framework.</li> </ul>	Unlikely	Moderate	Medium
	Operations	Possible	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Unlikely	Minor	Low		Remote	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual risk		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Affordable lifestyle								
Increased housing costs	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"><li>• Apply the IPHS framework including:<ul style="list-style-type: none"><li>— Actively monitor the housing market and engage key stakeholders to ensure appropriate housing strategies are in place prior to field development</li><li>— Use purpose built temporary and permanent workforce accommodation facilities located outside major communities and where appropriate assess options to utilise third party existing facilities located within local townships.</li><li>— Consider supporting programs that relieve vulnerability to housing affordability pressures.</li></ul></li><li>• Monitor the effectiveness of the social issues action plans through the annual SIMP monitoring framework.</li></ul>	Unlikely	Moderate	Medium
	Operations	Possible	Moderate	Medium		Unlikely	Moderate	Medium
	Decommissioning	Unlikely	Minor	Low		Unlikely	Minor	Low
Community identity and spirit								
Inadvertent interference with cultural heritage during well and facilities development	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"><li>• Apply Cultural Heritage Management Plans and follow Native Title process with relevant parties to provide agreed management of Aboriginal cultural heritage within claim area</li><li>• Apply targeted measures developed for the GLNG Project to engage Aboriginal individuals and communities including:<ul style="list-style-type: none"><li>— Aboriginal engagement policy</li><li>— Integration of Aboriginal and cultural heritage awareness into employee induction programs</li><li>— Working with relevant Aboriginal groups on native title process and implementing Cultural Heritage Management Plans</li><li>— Employee Induction Programs and Employee Relations Management Plans.</li></ul></li><li>• Comply with the Draft EM Plan</li><li>• Continue to implement the Constraints protocol</li><li>• Continue to implement the Santos GLNG complaint</li></ul>	Unlikely	Minor	Low
	Operations	Remote	Moderate	Low		Remote	Minor	Very low
	Decommissioning	Unlikely	Minor	Low		Unlikely	Minor	Low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual risk		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					management process including dedicated contact points to handle and address complaints and enquiries such as the 1800 number and project email.			
Increased Indigenous employment presents staffing difficulties for Indigenous organisations	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"><li>Implement community development initiatives to support Aboriginal communities such as Indigenous school based programs</li><li>Apply targeted measures developed for the GLNG Project to engage Aboriginal individuals and communities including:<ul style="list-style-type: none"><li>Aboriginal engagement policy</li><li>Integration of Aboriginal and cultural heritage awareness into employee induction programs</li><li>Working with relevant Aboriginal groups on native title process and implementing Cultural Heritage Management Plans</li><li>Employee Induction Programs and Employee Relations Management Plans.</li></ul></li><li>Monitor the effectiveness of the social issues action plans through the annual SIMP monitoring framework.</li></ul>	Possible	Minor	Low
	Operations	Possible	Moderate	Medium		Possible	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Minor	Low
General level of development marginalises Indigenous presence in community	Construction	Possible	Moderate	Medium		Possible	Minor	Low
	Operations	Possible	Moderate	Medium		Possible	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very low
Resentment at perceived landholder benefit from the occupation of traditional land	Construction	Possible	Minor	Low		Possible	Minor	Low
	Operations	Possible	Minor	Low		Possible	Minor	Low
	Decommissioning	Remote	Negligible	Very low		Remote	Negligible	Very low
Capacity for sustainable economic activity								
High-paying, short-term construction work draws higher-level students from schooling or training	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"><li>Implement community development initiatives to support Aboriginal communities such as Indigenous school based programs</li><li>Apply targeted measures developed for the GLNG Project to engage Aboriginal individuals and communities including:<ul style="list-style-type: none"><li>Aboriginal engagement policy</li></ul></li></ul>	Unlikely	Minor	Low
	Operations	Possible	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Moderate	Medium		Unlikely	Minor	Low

Potential impact	Phase	Pre-mitigated significance			Management and mitigation measures	Residual risk		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Unsupportive workplace environment for local Indigenous employees	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"> <li>Integration of Aboriginal and cultural heritage awareness into employee induction programs</li> <li>Working with relevant Aboriginal groups on native title process and implementing Cultural Heritage Management Plans</li> <li>Employee Induction Programs and Employee Relations Management Plans.</li> <li>Monitor the effectiveness of the social issues action plans through the annual SIMP monitoring framework.</li> </ul>	Unlikely	Minor	Low
	Operations	Possible	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Moderate	Medium		Unlikely	Minor	Low

## 21.8 Conclusions

This section has summarised the social values, potential impacts and mitigation measures associated with GFD Project. The potential residual risks that remain after implementing the mitigation measures addressed above are outlined within Table 21–16 and Table 21–17.

**Table 21–16 Residual risks – social (non-indigenous)**

Social value	Potential impact	Phase	Residual risk – gas field		
			Arcadia	Roma and Fairview	Scotia
Liveable community	Workforce demand on public health facilities and services	Construction	Low	Low	Low
		Operations	Low	Low	Low
		Decommissioning	Very low	Very low	Very low
	Intra-community conflict	Construction	Very low	Very low	Very low
		Operations	Very low	Very low	Very low
		Decommissioning	Very low	Very low	Very low
	Project traffic on local roads and in the town areas	Construction	Medium	Medium	Medium
		Operations	Medium	Medium	Medium
		Decommissioning	Low	Low	Low
	Presence of a younger, predominantly male workforce in social venues and general town area	Construction	Very low	Very low	Low
		Operations	Very low	Very low	Low
		Decommissioning	Very low	Very low	Very low
	Demand on public physical infrastructure	Construction	Very low	Low	Low
		Operations	Very low	Low	Low
		Decommissioning	Very low	Very low	Very low
Affordable lifestyle	Increased demand for housing	Construction	Low	Low	Low
		Operations	Low	Low	Low
		Decommissioning	Very low	Very low	Very low
	Increased wage pressures on local businesses	Construction	Low	Low	Low
		Operations	Low	Low	Low
		Decommissioning	Very low	Very low	Very low
Community identity and spirit	Local employees working extended shift hours and rosters	Construction	Very low	Very low	Very low
		Operations	Low	Low	Low
		Decommissioning	Very low	Very low	Very low
	Visible presence of gas industry workers in local community venues, and the presence and scale of project facilities, including camps	Construction	Low	Low	Low
		Operations	Low	Low	Low
		Decommissioning	Low	Low	Very Low
	High occupancy of short-term accommodation by gas industry contractors, displacing visitors to communities when project workforce accommodation facilities are not available	Construction	Low	Low	Low
		Operations	Low	Low	Low
		Decommissioning	Very low	Very low	Very low
	Out-migration of primary producers from high-impacted properties	Construction	Low	Low	Low
		Operations	Low	Low	Low
		Decommissioning	Very low	Very low	Very low

Social value	Potential impact	Phase	Residual risk – gas field		
			Arcadia	Roma and Fairview	Scotia
Capacity for sustainable economic activity	Disruption to agricultural production through field operations	Construction	Low	Low	Low
		Operations	Low	Low	Low
		Decommissioning	Very low	Very low	Very low
	Construction activity deters local tourism and highway trade	Construction	Very low	Very low	Very low
		Operations	Very low	Very low	Very low
		Decommissioning	Very low	Very low	Very low
	Perception that gas extraction creates uncertainty around water availability for agriculture	Construction	Low	Low	Medium
		Operations	Low	Low	Medium
		Decommissioning	Very low	Very low	Very low
	Inward movement of larger enterprises to local area	Construction	Low	Low	Low
		Operations	Low	Low	Low
		Decommissioning	Very low	Very low	Very low

**Table 21–17 Residual risks – social (Indigenous)**

Social value	Potential impact	Phase	Residual risk
Liveable community	Uncertainty with regard to environmental impact of GFD Project	Construction	Low
		Operations	Low
		Decommissioning	Low
	Lack of cultural awareness of in-migrating construction and operations workforce	Construction	Low
		Operations	Very low
		Decommissioning	Low
	Tension between different segments of Indigenous populations over access to project benefits	Construction	Very low
		Operations	Very low
		Decommissioning	Very low
	Out-migration of elements of family groups due to inability to afford housing	Construction	Medium
		Operations	Low
		Decommissioning	Very low
Affordable lifestyle	Increased housing costs	Construction	Medium
		Operations	Medium
		Decommissioning	Low



Social value	Potential impact	Phase	Residual risk
Community identity and spirit	Inadvertent interference with cultural heritage during well and facilities development	Construction	Low
		Operations	Very low
		Decommissioning	Low
	Increased Indigenous employment presents staffing difficulties for Indigenous organisations	Construction	Low
		Operations	Low
		Decommissioning	Low
	General level of development marginalises Indigenous presence in community	Construction	Low
		Operations	Low
		Decommissioning	Very low
	Resentment at perceived landholder benefit from the occupation of traditional land	Construction	Low
		Operations	Low
		Decommissioning	Very low
Capacity for sustainable economic activity	High-paying, short-term construction work draws higher-level students from schooling or training	Construction	Low
		Operations	Low
		Decommissioning	Low
	Unsupportive workplace environment for local Indigenous employees	Construction	Low
		Operations	Low
		Decommissioning	Low