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Social impact assessment report

Santos GLNG Gas Field Development Project

AUGUST 2014

Prepared for
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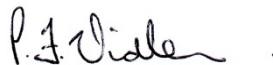
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Abbreviations

Abbreviation	Description
ABS	Australian Bureau of Statistics
APPEA	Australian Petroleum Production and Exploration Association
ASGC	ABS Australian Standard Geographical Classification
ATSI	Aboriginal and Torres Strait Islanders
CHDC	Central Highlands Development Corporation
CHMP	Cultural Heritage Management Plan
CHRC	Central Highlands Regional Council
DSDIP	Department of State Development, Infrastructure and Planning
EDQ	Economic Development Queensland
EIS	Environmental impact statement
GFD Project	Santos GLNG Gas Field Development Project
GFL	Gas field locality
GHG	Greenhouse gas
GLNG Project	Gladstone Liquefied Natural Gas Project
GP	General practitioner
HRA	Host regional area
ILUA	Indigenous Land Use Agreements
Km	Kilometre
LAIP	Local Area Infrastructure Programs
LGA	Local government area
LIPP	Local Industry Participation Plan
LNG	Liquefied natural gas
MRC	Maranoa Regional Council
MRPHP	Major Resource Projects Housing Policy
MRR	Maranoa Regional Rules
Mtpa	Million tonnes per annum
OESR	Office of Economic and Statistical Research
PAA	Priority Agricultural Areas
PALU	Priority Agricultural Land Uses
QRC	Queensland Resources Council
SA1	Census standard statistical area 1
SA2	Census standard statistical area 2
SBFDS	Surat Basin Future Directions Statement
SCA	Social catchment area
SIA	Social impact assessment
SIMP	Social impact management plan
SLA	Statistical local area
SPA	<i>Sustainable Planning Act 2009</i> (Qld)
ToR	Terms of reference
URS	URS Australia Pty Ltd
UST	Underground storage tank
WDRC	Western Downs Regional Council

Introduction

1.1 Outline

URS Australia Pty Ltd (URS) was commissioned on behalf of Santos GLNG to conduct a social impact assessment (SIA) in response to requirements set out in Section 5 of the Santos GLNG Gas Field Development Project (the GFD Project) *Terms of reference (ToR) for an environmental impact statement* (EIS) dated March 2013. This assessment presents the social and cultural area of influence and potential for social and cultural impacts to occur as described by baseline studies and supplemented by local and regional community engagement strategies. For identified social impacts, social impact mitigation strategies and measures are discussed, as well as ongoing community engagement processes.

1.2 Project overview

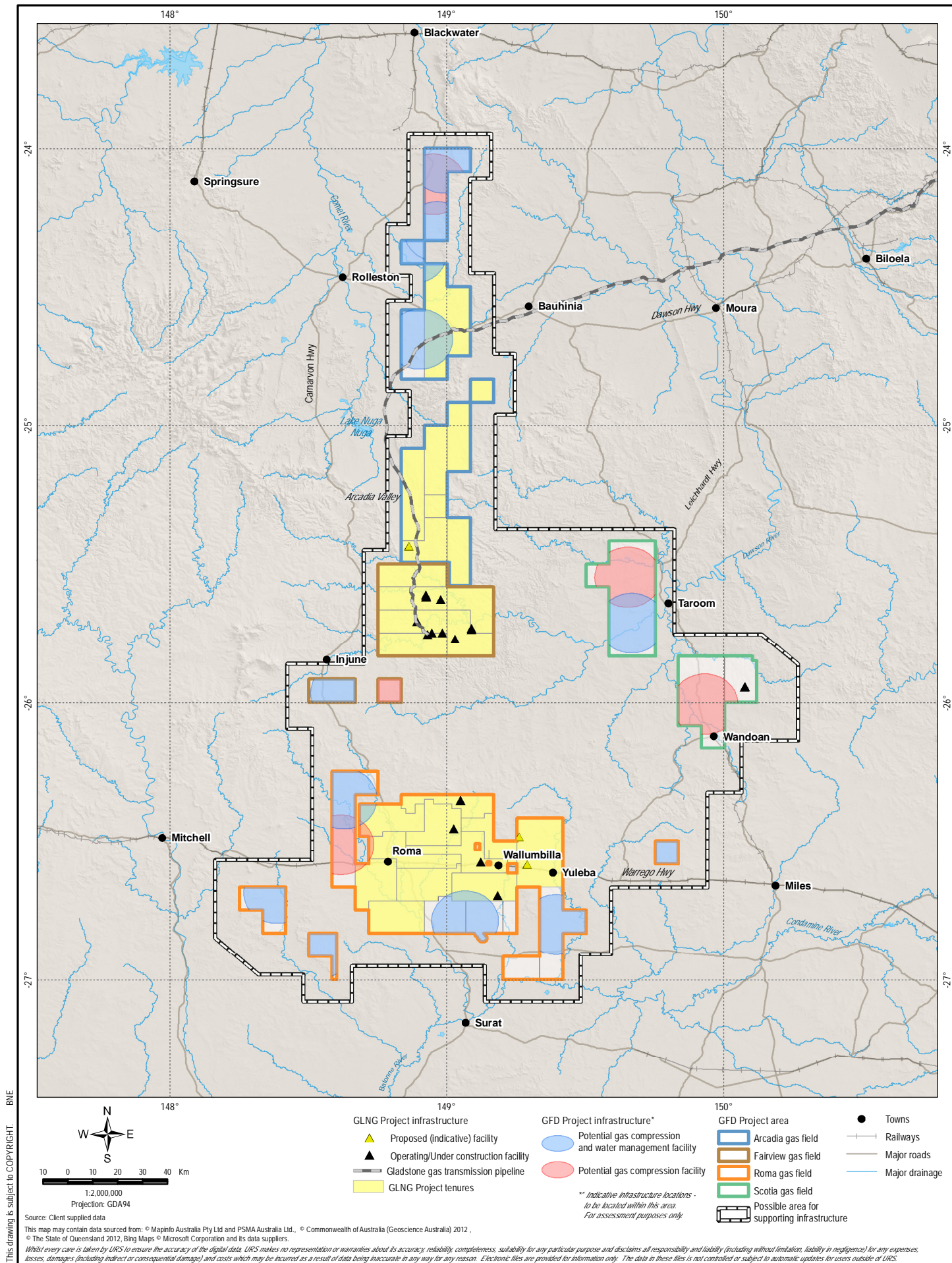
Santos GLNG intends to further develop its Queensland gas resources to augment supply of natural gas to its existing and previously approved Gladstone Liquefied Natural Gas (GLNG) Project.

The GFD Project is an extension of the existing approved gas field development and will involve the construction, operation, decommissioning and rehabilitation of production wells and the associated supporting infrastructure needed to provide additional gas over a project life exceeding 30 years.

Specifically, the GFD Project seeks approval to expand the GLNG Project's gas fields tenure from 6,887 km² to 10,676 km² to develop up to 6,100 production wells beyond the currently authorised 2,650 wells; resulting in a maximum of up to 8,750 production wells. The GFD Project will continue to progressively develop the Arcadia, Fairview, Roma and Scotia gas fields across 35 Santos GLNG petroleum tenures in the Surat and Bowen basins, and associated supporting infrastructure in these tenures and adjacent areas. The location of the GFD Project area and primary infrastructure is shown on Figure 1-1.

This GFD Project will include the following components:

- Production wells
- Fluid injection wells, monitoring bores and potentially underground gas storage wells
- Gas and water gathering lines
- Gas and water transmission pipelines
- Gas compression and treatment facilities
- Water storage and management facilities
- Access roads and tracks
- Accommodation facilities and associated services (e.g. sewage treatment)
- Maintenance facilities, workshops, construction support, warehousing and administration buildings
- Utilities such as water and power generation and supply (overhead and/or underground)
- Laydown, stockpile and storage areas
- Borrow pits and quarries
- Communications.



1 Introduction

The final number, size and location of the components will be determined progressively over the GFD Project life and will be influenced by the location, size and quality of the gas resources identified through ongoing field development planning processes, which include consideration of land access agreements negotiated with landholders, and environmental and cultural heritage values.

Where practicable, the GFD Project will utilise existing or already approved infrastructure (e.g. accommodation camps, gas compression and water management facilities) from the GLNG Project or other separately approved developments. The GFD Project may also involve sourcing gas from third-party suppliers, as well as the sharing or co-location of gas field and associated facilities with third parties.

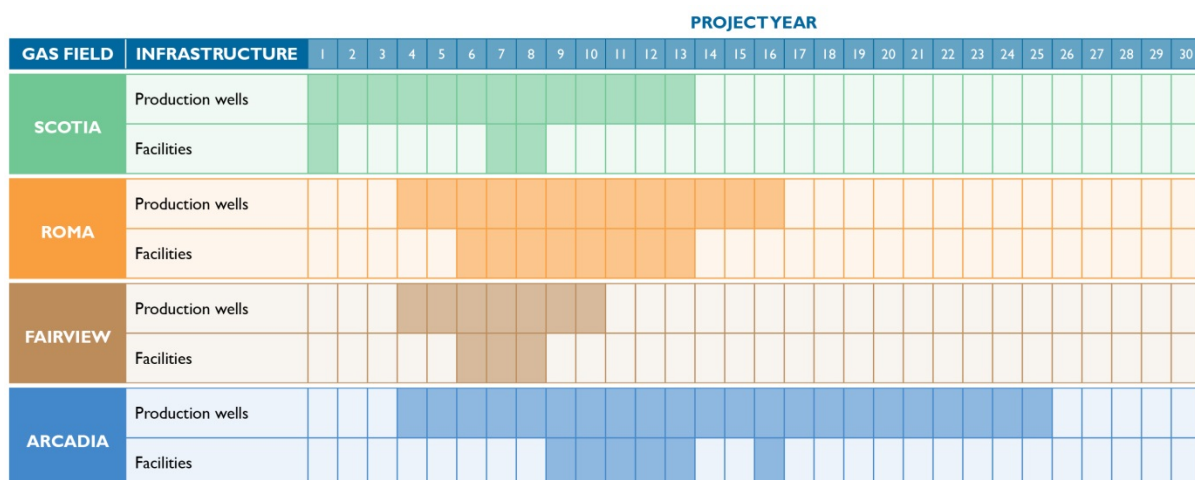
For the purposes of transparency this EIS shows an area off-tenure that may be used for infrastructure such as pipelines and temporary camps (supporting infrastructure area). While not assessed specifically in this EIS, any infrastructure that may be located within this area would be subject to further approval processes separate to this EIS.

Approved exploration and appraisal activities are currently underway across the GFD Project's petroleum tenures to improve understanding of the available gas resources. As the understanding of gas resources increases, investment decisions will be made about the scale, location and timing of the next stages of field development.

For the purposes of this EIS, a scenario based on the maximum development case was developed at the approval of the Terms of Reference. This scenario assumed that production from the wells and upgrading of the gas compression facilities in the Scotia gas field would commence in 2016, followed by the GFD Project wells in the Roma, Arcadia and Fairview gas fields in mid-2019. This schedule is indicative only and was used for the purpose of the impact assessment in this EIS.

The potential GFD Project schedule is outlined in Figure 1-2. This schedule provides an overall field development scenario for the purposes of assessment in this EIS.

Figure 1-2 Proposed GFD Project development schedule



Decommissioning and rehabilitation will occur progressively throughout the life of the GFD Project as construction activities cease and exhausted gas wells are decommissioned. Final decommissioning and rehabilitation will occur at the end of gas production in accordance with relevant approvals and regulatory requirements.

1 Introduction

1.3 Project context

1.3.1 Project location

The GFD Project's gas fields are located across four local government areas (LGAs), including Banana Shire Council (from herein Banana), and the Central Highlands, Maranoa and Western Downs Regional Councils, in the vicinity of the townships of Taroom, Wandoan, Rolleston, Injune, Roma, Wallumbilla and Yuleba (refer to Figure 1-1). These LGAs were formed in 2008 following State government reforms amalgamating LGAs.

This GFD Project area has historically had a strong rural industry base, with grazing being the predominant land use. However, in recent years – particularly the past decade, the GFD Project area 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 (Department of State Development, Infrastructure and Planning [DSDIP], 2012). The Central Highlands region in particular has experienced considerable growth in the mining industry in the past decade. These land use changes have 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 land on which the GFD Project tenure is located includes a mix of freehold, leasehold and crown land, primarily zoned for rural land uses. Areas of other designated land uses are also scattered within or adjacent to the GFD Project tenure, including forestry, conservation and recreation, mining, petroleum or extractive industries, and residential and urban (around local townships). The GFD Project area is also covered by a number of active Native Title claims.

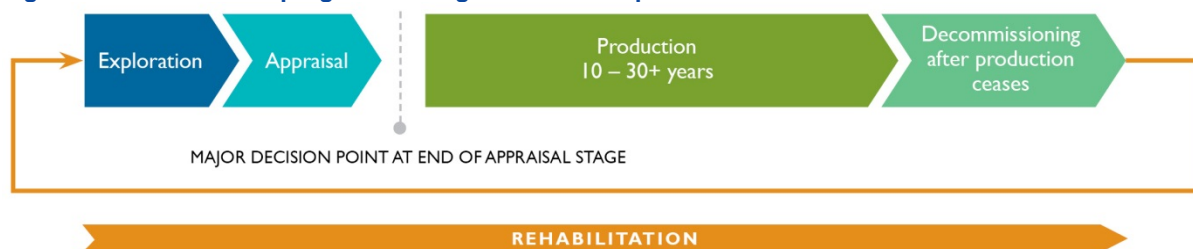
1.3.2 Project objective and phases

The development of gas fields goes through a number of stages, including assessment of the resource (exploration and appraisal), construction (including drilling and completion), operations, then decommissioning, and rehabilitation of disturbances. While this program of work in many cases is initially conducted sequentially, once a field is operational, many of these activities may be conducted concurrently. For example, new areas can be appraised and developed while decommissioning activities are occurring elsewhere in the GFD Project's gas fields.

This SIA does not assess the impacts of exploration and appraisal as those have been already approved as part of existing (authority to prospect) ATP and petroleum licence (PL) approvals. Figure 1-3 provides an overview of the key field development stages, approval requirements and general timeframes. Each of these phases will also have particular construction and operations workforce requirements. Details of anticipated workforce requirements for the gas field development areas follow in sections 3.2, 4.2 and 5.2.

1 Introduction

Figure 1-3 Schematic progression of gas field development



1.4 Scope of work

This SIA forms part of the EIS undertaken for the GFD Project. A SIA is a requisite component for resource development projects that require an EIS under the Queensland legislative instruments such as the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWO Act). In particular, this SIA addresses Section 5 (social values) of the *Terms of reference for an environmental impact statement*, dated March 2013, issued by the Coordinator-General. This SIA also aligns with and informs the social impact management plan (SIMP) prepared as part of the GLNG Project EIS (2009 EIS) and continues to be implemented for the GLNG Project.

The 2009 EIS was approved with conditions by the Coordinator-General in May 2010 and the Commonwealth Government on 22 October 2010. The SIMP was approved by the Coordinator-General in May 2012 with a number of key aspects that have since been implemented:

- Establishment of:
 - Combined Regional Community Consultative Committee in partnership with Origin Energy
 - Water working groups with landholders
 - Shop front in the main street of Roma.
- Development of:
 - Comprehensive engagement strategy with stakeholders including newsletters, project updates, information sessions and attendance at regional gatherings
 - A range of engagement mechanisms for the community to provide feedback, lodge complaints and seek information
 - Numerous commitments and strategies to minimise, mitigate and enhance the impacts of the GLNG Project that address housing, local content and workforce management. These are primarily incorporated into the SIMP.

As the GFD Project builds on the existing Santos GLNG Project, the Office of the Coordinator-General (Coordinated Project Delivery Division) decided that a separate or standalone SIMP was not appropriate for the GFD Project as its potential impact area is very similar to that of the GLNG Project and therefore already encompassed by the existing and approved SIMP. Five Issues Action Plans are therefore required to be developed to align with and to ensure linkage with the existing and approved GLNG Project SIMP and shape its annual amendment.

1 Introduction

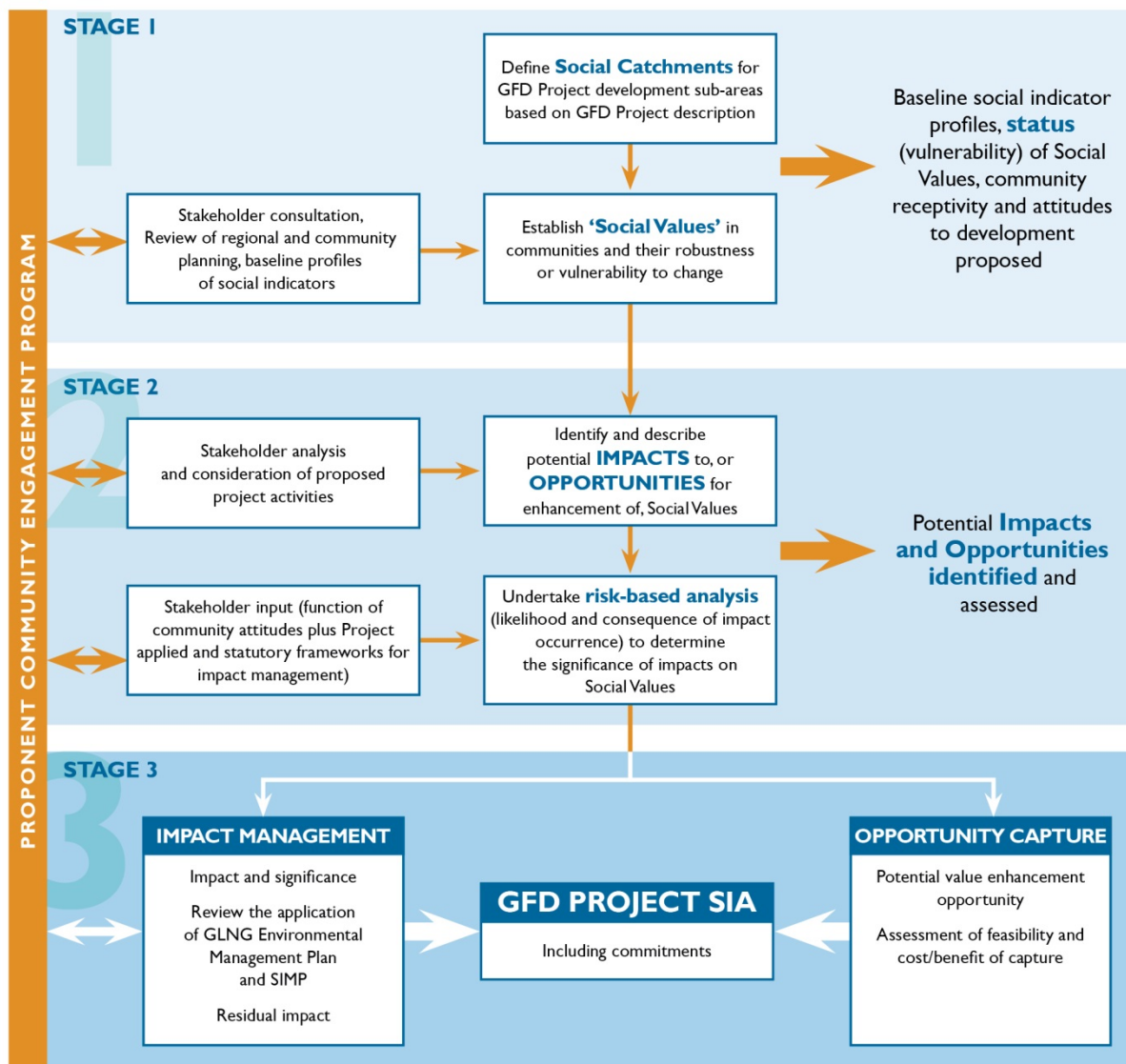
This SIA has been developed based upon the framework established within the GLNG Project SIA and SIMP. It identifies and assesses the baseline conditions existing within the gas field areas and wider region (where applicable), as well as the likely impacts, both positive and negative, of the GFD Project on relevant communities. Appropriate management strategies have subsequently been developed, or existing strategies within the GLNG Project SIMP will be applied.. These management strategies firstly seek to avoid, and then minimise and manage potential adverse impacts of the GFD Project on local communities, while maximising opportunities for benefits. Lastly, and where applicable, the SIA for the GFD Project has made use of the engagement mechanisms used for the GLNG Project, and will continue to do so over the life of the GFD Project.

Approach to impact assessment

2.1 Overall approach

The assessment of social impact for the GFD Project has been based on a three-stage process as shown in Figure 2-1 below. The following sections describe elements of this process in more detail.

Figure 2-1 GFD Project social impact assessment process



2 Approach to impact assessment

2.2 Stage 1 Baseline profiling

The primary task of Stage 1 is to gather existing quantitative and qualitative information to characterise the social environment in the GFD Project impact area. This requires the establishment of an impact area hierarchy, assembling publicly available quantitative data on social indicators for the areas within the hierarchy, undertaking reviews of relevant regional and local planning reports and guidelines, and seeking information from government and community stakeholders, in regard to key social values and priority issues associated with local and regional social and economic development. In the case of the GFD Project, this stage also involved the review of GLNG Project performance reporting (e.g. from the SIMP, the complaints register and the minutes of the relevant Community Consultative Committees) to inform the understanding of priority social values and management issues evident following three years of GLNG Project construction.

As indicated earlier, the GFD Project will be implemented over a large geographical area and long timeframe (over 30 years). Therefore, baseline conditions have been assessed for the individual gas field areas (as shown in Figure 1-1) to enable a more regionally-focussed impact assessment to be undertaken. The purpose of this is to enable the local communities to gain a better appreciation of the timing and scope of GFD Project activity planned for their area and of the potential for impact and opportunity associated with this activity.

The baseline profile for the Indigenous community in the GFD Project area has been assessed separately to better highlight disparities between the non-Indigenous profile, and the disparities between Indigenous residents of Woorabinda and the wider GFD Project area.

2.2.1 Impact area hierarchy

A meaningful framework incorporating the areas potentially affected by GFD Project activity (termed the social and cultural area of influence in section 6.1.1 of the ToR) is required in order to make an assessment of social impact that is relevant to stakeholders. This framework must also facilitate the compilation of a baseline social profile for the affected populations derived from the available quantitative social data (principally from the Australian Bureau of Statistics (ABS) Census data and other government and publically available data sets) and complemented by qualitative information derived from the public consultation program.

This impact assessment uses a three-tiered geographic framework for the purposes of comparing social conditions and assessing project impact. The three levels are:

- Gas field locality (GFL)
- Social catchment area (SCA)
- Host regional area (HRA).

These areas are developed from areas defined in the ABS Australian Standard Geographical Classification (ASGC) published in July 2011.

Gas field locality

This geography, constructed by combining the smallest number of Census standard statistical area 1 (SA1) areas that cover each GFD Project gas field, is the area that is most likely to be subject to direct impact by the GFD Project from activities such as well drilling, facilities construction, pipeline construction, road use by heavy transport vehicles, support centres such as accommodation and logistics facilities.

2 Approach to impact assessment

These impacts are likely as the SA1 areas:

- Are co-located with GFD Project tenure
- Are incorporate key transport links to, within and between tenure
- Contain key population centres that have the potential to support activity within the project's tenure (i.e. a gas field).

The key population areas that are contained within each GFL are detailed in Table 2-1.

Table 2-1 Key population centres – GFL

Gas field	Key population centre
Arcadia	<ul style="list-style-type: none"> • Rolleston • Springsure
Fairview	<ul style="list-style-type: none"> • Injune
Roma	<ul style="list-style-type: none"> • Roma, Wallumbilla
Scotia	<ul style="list-style-type: none"> • Taroom • Wandoan

The SA1 areas that have been used to create the GFL geography for each gas field are shown within Table 2-2.

Social catchment area

The next level is the SCA, which provides an optimal area to illustrate and compare the key variances between the baseline of the GFL and their wider supporting geographies, 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 SCA 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 GFL.

The geography is formed by the appropriate combination of areas from the standard statistical area 2 (SA2) and LGA for each gas field, considering the criteria outlined above. It also permits the analysis of certain statistical indicators (such as male to female ratios) not possible using gas field SA1 areas, which are too small a sample size to allow for quantitative analysis.

The Census statistical areas that have been used to create the statistical geography for gas field SCAs are shown within Table 2-2. In cases where statistical information for some social profile indicators is not available for the designated SA2 or LGA, the study has used statistical information from the statistical local areas (SLAs), which are accepted to correspond to the SA2s used by the Australian Bureau of Statistics (ABS, 2012).

2 Approach to impact assessment

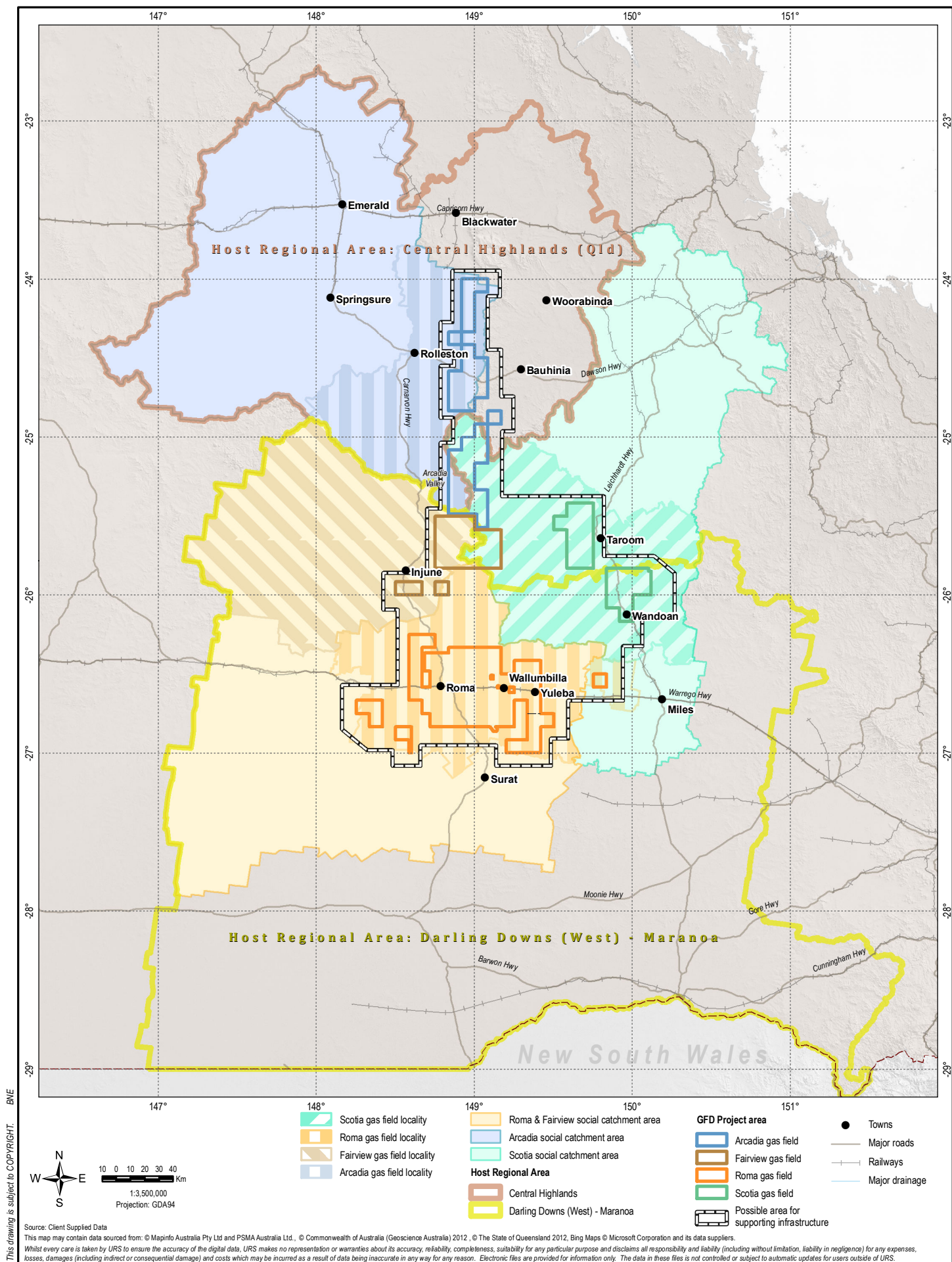
Host regional areas

The broader regional statistical area used in this impact assessment has been defined as the HRA, and is based on Census Statistical Area 3 (SA3) areas. These larger areas are used to illustrate the demographic profile surrounding the gas fields and their SCAs, allowing for a greater depth of comparison and analysis. The standard SA4 areas (used as the basis for State regional planning exercises) were not used as they include major regional centres (such as Toowoomba and Rockhampton) that differ considerably to the areas that will be impacted by the GFD Project. The remoteness of the GFD Project gas fields from these major regional centres also indicates that there would be a high level of uncertainty in the attribution of any specific impact to these centres.

The statistical areas used for the impact assessment are listed for each gas field in Table 2-2 and illustrated in Figure 2-2.

Table 2-2 Social impact assessment geographic framework (derived from ASGC, 2011)

GFL	SCA	HRA
Scotia		
SA1 Codes	Miles-Wandoan SA2 Code	Darling Downs (West)-Maranoa SA3 Code 30701
3119409 (Northwest of Taroom)	307011175	
3119410 (East of Taroom)	Banana SA2 Code 308021194	
3119408 (Taroom Town North)	Biloela SA2 Code 308021195	
3119407 (Taroom Town South)		
3117509 (Southwest of Taroom)		
3117510 (Southeast of Taroom)		
3117508 (Wandoan)		
3117501 (Wandoan surrounds)		
Roma		
307011176 SA2 Roma*	Maranoa Regional Council Code	Darling Downs (West)-Maranoa SA3 Code 30701
SA1 Codes	LGA34860	
3117713 (Northwest of Roma)		
3117717 (Northeast of Roma)		
3117701 (Southwest of Roma)		
3117711 (South of Roma)		
3117707 (Southeast of Roma)		
3117706 (East of Roma)		
3117702 (Yuleba)		
3117705 (Wallumbilla)		
3117502 (Jackson)		
Fairview		
SA1 Codes	Maranoa Regional Council Code	Darling Downs (West)-Maranoa SA3 Code 30701c
3117716 (Injune)	LGA34860	
3117718 (Injune surrounds)		Office of Economic and Statistical Research (OESR) Regional Profiles
Arcadia		
SA1 Codes	Central Highlands-West SA2	Central Highlands SA3 Code 30801
3119113 (Rolleston Surrounds)	Code 308011191	
3119101 (Rolleston)	Emerald SA2 Code 308011192	



2 Approach to impact assessment

2.2.2 Policy, regulatory and regional planning framework

The following sections summarise the policy, regulatory and planning frameworks that have an influence on the potential to experience, and the capacity to manage, social impact from the GFD Project.

Gas Fields Commission

The *Gasfields Commission Bill 2012* (Qld) establishes the commission as an independent statutory body. The purpose of the commission is 'to manage and improve sustainable co-existence between landholders, regional communities and the onshore gas industry in Queensland', recognising the importance of both agriculture and the onshore gas industry to Queensland's economy. The commission's role, powers, and functions pursuant to the *Gasfields Commission Act 2013* (Qld) include:

- Reviewing legislation and regulation
- Obtaining and publishing factual information
- Identifying and advising on coexistence issues
- Facilitating better relationships and resolving issues
- Promoting scientific research to address knowledge gaps
- Making recommendations to government and industry.

The commission has developed six priority portfolio areas to guide its efforts in managing and improving coexistence among stakeholders. These aligned with the experience and expertise of the six commissioners, are:

- Community and business
- Gas industry development
- Land access
- Local government and infrastructure
- Science and research
- Water and salt management.

A Portfolio Plan has been developed detailing commissioner responsibilities and key actions for 2013-14 (GasFields Commission Queensland, 2013). Key actions with respect to the management of potential social impact of the GFD Project include:

- Establish and support the operation of the Gas Fields Commission Community Leaders Councils (South and North) as a formal mechanism for regional engagement
- Engage and invite input from major regional community and social groups introducing the commission and inviting them to contact it about any relevant issues
- Provide oversight and guidance to the government in its implementation of the six point action plan for land access improvement
- Establish ongoing program of engagement with local government contacts to identify trends and broker contacts or escalate issues to help achieve solutions
- Facilitate the development and delivery of region specific information packages on coal seam water management and underground water information.

In general, the commission has had a positive influence on the level of information shared with stakeholders, and in promoting dialogue around key sustainability issues.

2 Approach to impact assessment

Royalties for the Regions

The Queensland Government has established a Royalties for the Regions initiative to support priority development projects in communities subject to the impacts of resource development projects. Over a four-year period that commenced in 2012, the program will invest \$495 million (M) in new and improved community infrastructure, roads and floodplain security projects in resource regions. In future years there will be an ongoing commitment of \$200 M each year. Santos GLNG and other resource proponents have provided considerable contributions to the Royalties for Regions initiative.

Within the local governments of the GFD Project area, projects receiving funding include:

Table 2-3 Projects under the Royalties for the Regions initiative

Local government	Project	Total cost	R4R Funding	Santos GLNG contribution
Central Highlands Regional Council (CHRC)	Arcadia Valley Road Upgrade	\$11.8M	\$8.0M	\$3.0M-
	Nogoa River Rail Bridge Upgrade	\$6.25M	\$5.0M	-
Banana Shire Council	Theodore Sewage Treatment Plant	\$3.0M	\$2.0M	-
Maranoa Regional Council (MRC)	Maranoa Water Augmentation Project – Injune	\$0.86M	\$0.16M	-
	Roma Sewerage Augmentation Project	\$4.99M	\$2.18M	\$1.0M
	Roma Flood Mitigation – Levee Construction	\$15.69M	\$5.0M	-
	Wallumbilla North Road Bitumen Seal	\$5.64M	\$5.04M	-
	Injune-Taroom Road Upgrade	\$23.2M	\$7.0M	\$16.0M
Western Downs Regional Council	Fairview Road Upgrade	\$27.9M	\$5.0M	\$22.0M
	Miles Waste and Recycling Centre	\$2.5M	\$1.45M	-

Source: DSDIP, 2013

Applications for Round 2 of the initiative, focussing on *supporting infrastructure projects that respond to critical community needs that have resulted from resource sector activity*, closed in August 2013.

Regulatory guidelines

In July 2013 the State Government, through the DSDIP, released a suite of regulatory guidelines in relation to the assessment and management of the impacts of major resource projects. These included:

- Managing the impacts of major projects in resource communities
- Preparing an initial advice statement: Guideline for proponents
- Preparing an environmental impact statement: Guideline for proponents
- Social impact assessment guideline.

2 Approach to impact assessment

In addition and complementary to these guidelines, in March 2013 the Queensland Resources Council (QRC), with support from the Australian Petroleum Production and Exploration Association (APPEA) released the *Queensland Resources and Energy Sector Code of Practice for Local Content* (Australian Petroleum Production and Exploration Association and Queensland Resources Council, 2013).

The intent of these guidelines is to streamline the management of social impacts by clarifying the role of local government in the EIS process, and to respond to *'economic and infrastructure impacts and opportunities'* through greater coordination of agencies and the implementation of Local Area Infrastructure Programs (LAIPs) and the Royalties for the Regions program that focuses on managing cumulative impacts. The role of LAIPs is to prioritise core community and transport infrastructure, and to 'create the basis for aligning funding commitments whether from governments, industry or other sources'. They will also build on the engagement approach that underpins the Regional and Resource Towns Action Plans, with resource industry representatives invited to participate in their preparation. The DSDIP is currently engaging with local stakeholders and the resource industry to develop a pilot LAIP for the CHRC.

The Royalty for the Regions program, while helping communities to better manage the cumulative impacts of resource sector projects, does not absolve proponents of the responsibility to address the direct impacts of projects, though it does allow resource proponents to make financial contributions directly to the program.

The Initial Advice Statement Guideline mandates that a project's predicted impacts be categorised as either 'critical' or 'routine', with routine impacts requiring less study effort than critical matters. The SIA Guideline advises that *'proponents should commit to mitigation measures that address impacts that are directly related to their projects', and that these mitigation measures should 'focus on outcomes to encourage innovative solutions to capitalise on social opportunities and mitigate detrimental impacts that may arise from the project.'*

SIAs are also not to assess project impacts on hard infrastructure such as roads and transport facilities and utilities.

The *Queensland Resources and Energy Sector Code of Practice for Local Content* is a voluntary self-regulatory regime to 'provide full, fair and reasonable opportunity for capable local industry to compete for the supply of goods and services for significant projects' (Australian Petroleum Production and Exploration Association and Queensland Resources Council, 2013). Effective from 1 March 2013, the State government will seek commitments from project proponents as part of EIS approval that they will adhere to the code. Santos GLNG has adopted the code.

Regional and local planning instruments

The draft Central Queensland and Darling Downs regional plans were released for consultation at the end of June 2013, with both plans being approved by the Deputy Premier and DSDIP Minister on 14 October 2013. They form part of the State government's new statutory regional planning agenda.

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The plans *'seek to provide a policy response to resolve the competing state interests affecting the agricultural and resources sectors'* and provide certainty for the future of towns in the region through the implementation of the following regional planning policies:

- Protect Priority Agricultural Land Uses (PALUs) within Priority Agricultural Areas (PAAs)
- Maximise opportunities for co-existence of resources and agricultural land uses within PAAs
- Safeguard the areas required for the growth of towns through the establishment of Priority Living Areas (PLAs)
- Provide for resource activities to locate within a PLA where it meets the communities' expectations as determined by the relevant local government.

A complementary *Central Queensland Economic and Infrastructure Framework* and *Darling Downs Economic and Infrastructure Framework* were also released to promote growth for the regions by highlighting *'the economic potential of each region and a range of economic development opportunities aimed at encouraging private sector investment and participation in local business, industry and infrastructure projects'*.

In March 2013, the State government released its *Regional and Resource Towns Action Plan* based on consultation with local governments and other stakeholders in areas impacted by resource development. The plan identified key issues including housing affordability and land supply, both for residential and industrial purposes. There are actions within the plan with relevance to the potential impacts of the GFD Project, including:

- The resolution of a water allocation request for Wandoan during 2013
- Progress the resolution of Native Title issues on developable land within Wandoan township and investigate future long term development options for underutilised State land and potential joint venture development projects with Economic Development Queensland (EDQ)
- Upgrading of sewerage and stormwater capacity in Roma
- Investigating options for underutilised State land in Injune.

The *Sustainable Planning Act 2009* (Qld) (SPA) provides the overarching framework for planning, land use and development in Queensland. Under the SPA, there are a number of subordinate statutory and non-statutory strategic planning instruments that regulate or guide the SIA process, in addition to informing the socio-cultural and environmental baseline values of an area and/or the subsequent development of impact management strategies. Policy instruments that will also inform the baseline values of this SIA, assessment of potential social impact and the development of associated impact management strategies include:

- *Surat Basin Regional Planning Framework*
- *Darling Downs Regional Plan (October 2013)*
- *Maranoa Community Plan 2020*
- *Western Downs Community Plan 2050*
- *Central Queensland Regional Plan (October 2013)*
- *Central Queensland Strategy for Sustainability*
- *Banana Shire Community Plan 2011-2021*
- *Taroom Place Based Plan (2011-2021)*
- *Central Highlands Community Plan 2012-2022*
- Local government planning schemes.

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These complementary planning instruments outline aligning socio-cultural, environmental and economic values identified to encapsulate the GFD Project area and its communities, important drivers shaping these values and associated challenges, and the region's long-term strategic vision. They describe the GFD Project area as part of a prosperous region featuring healthy and liveable communities supported by a rich and diverse environment and abundant natural resources. It should also be recognised however, that at various times some communities in the region have been subject to socio-economic stress due to drought and low commodity prices, and have to some extent been subject to long-term rural decline and population loss. While Central Queensland has traditionally been known for its agricultural production, the rapid development and expansion of mining and gas industries in recent years has generated particular challenges for the region. These challenges are associated with ensuring adequate service delivery and infrastructure provision to rapidly growing and changing communities, and balancing the development and economic benefits of the resource industry with the sustainable use and/or protection of ecological and socio-cultural assets. Based on these factors and considerations, these planning instruments detail desired regional outcomes together with principles, strategies and actions to support the achievement of the outcomes.

Land Access Code

The *Land Access Code* (Department of Employment, Economic Development and Innovation, 2010) mandates communications between landholders and resource proponents. It sets best practice guidelines for resource proponents when undertaking activities on private land, such as when and how landholders must be notified; conditions for using landholders' roads, making new roads; minimising disturbance to people, livestock and property; preventing the spread of pests; and protocols for using gates and grids. Santos GLNG are legally obliged to comply with this Code when undertaking the GFD Project.

2.2.3 Community and stakeholder consultation

Santos GLNG embeds four principles into its approach to the community consultation. These are:

- Information and communication
- Community engagement and participation
- Alignment of actions with values
- Management of impacts.

These four principles have underpinned the community consultation program undertaken for the GFD Project EIS. Santos GLNG engaged a diverse range of stakeholders to ensure that Santos GLNG understands how the project will impact stakeholders and address their concerns.

At a high level, Santos GLNG consulted with:

- Local government
- Regional communities and landholders
- Community service providers
- Government agencies (central and regional offices)
- Indigenous groups
- Community and interest groups
- Industry and business representatives
- Regional Community Consultative Committees.

2 Approach to impact assessment

These stakeholders were consulted through a variety of engagement techniques, which were selected based on their appropriateness for the stakeholder being consulted, purpose of the consultation, and stage in the EIS and SIA process. Over the course of the EIS period engagement methods included:

- Community information sessions
- Targeted stakeholder meetings
- Issue specific workshops
- Community consultative committees
- Roma shopfront
- Site tours
- Community events
- 1800 free call service
- Website and Santos GLNG email
- Community newsletters
- Community factsheets
- Publications
- Videos
- Indigenous consultation.

As the GFD Project is an extension of the GLNG Project, Santos GLNG often used or expanded the consultation strategy and techniques used for the GLNG Project EIS and on-going development activities.

Consultation was undertaken in the following communities:

- Arcadia Valley
- Surat
- Mitchell
- Roma
- Yuleba
- Wallumbilla
- Wandoan
- Taroom
- Rolleston
- Springsure
- Injune.

2.2.4 Consultation outcomes and the SIA

The general themes that emerged during consultation are discussed below. The findings from community consultation have been used throughout this impact assessment in understanding the baseline conditions of the communities in the GFD Project area and the potential impacts of the GFD Project.

2 Approach to impact assessment

Attitudes to development

- Stakeholders, particularly those in towns, generally view gas development positively. However, there are some ongoing concerns around the impact of these projects on housing affordability, the need for new or upgraded infrastructure and social support services
- The majority of stakeholders have not experienced major problems with non-resident workers, in contrast to concerns expressed during the consultation undertaken for the GLNG Project and other gas developments in the region. This has led to a desire by some for greater integration of non-resident workforces with towns in order to capitalise on the opportunity for economic stimulus that these populations offer
- Stakeholders have welcomed the sponsorship and financial support provided by gas companies. The Royalties for Regions initiative in particular has considerable support; stakeholders believe that many projects would not be possible without this initiative or gas development in the region
- The general feeling around Roma is that the community/council is now better prepared for the next phase of gas field development and expect few problems to occur.

Infrastructure/services

- There has been a limited impact on health services. This is largely attributed to the use of infield medical services by gas companies
- Telecommunications in small communities often have limited capacities that cannot support increased populations. Generally, Santos GLNG develops its own telecommunications infrastructure to mitigate these impacts
- The current road assessment and management practices and infrastructure investment of gas companies has been received well by stakeholders; however, in order to be effective, road impact assessment and investment must be undertaken early in project development
- Some stakeholders have expressed the desire for accommodation camps to be located closer to towns in order to justify gas company support of infrastructure upgrades. URS notes that not all stakeholders wish to have accommodation camps located within towns.

Environment

- The management of weeds and coal seam water remains a key stakeholder concern across the GFD Project area
- The desire for reuse of coal seam water is common and seen as a key opportunity arising from gas field developments
- Stakeholders perceive the greatest environmental impacts that require mitigation are related to water and weeds.

Housing

- Housing affordability, particularly in the rental market is an ongoing concern for many towns across the GFD Project area. Stakeholders noted that one of the primary issues in housing affordability is real estate investment and speculation, which cannot be controlled by councils or gas proponents.

Indigenous

- Stakeholders noted that Indigenous housing is an issue within the MRC area. Many Indigenous persons may face barriers to realising the benefits associated with gas projects, such as employment opportunities, due to underlying issues such as housing, health, drugs/alcohol. These issues are viewed to be long-term problems with no quick solutions.

2 Approach to impact assessment

2.2.5 Social values and baseline profiles

Cognisant of the definition of 'environmental value' in the *Environmental Protection Act 1994* (Qld), a social value for this study is regarded as a quality of the GFD Project area that is conducive to individual well-being now and into the future. Section 6.1.1 of the ToR infers that social values may include the 'integrity of social conditions, liveability, social harmony and wellbeing, and sense of community'. Social values therefore are characteristics of an area for which community stakeholders have a high regard. They are not amenable to a single measure or indicator, although a survey of community members may rank or nominate values based on an individual's reasoning process that integrates a range of indicators relevant to the individual.

A review of the GFL of the GFD Project clearly identified that each GFL has observable differences in characteristics, though with residents holding broadly similar values with respect to the social environment. Following the compilation and assessment of baseline social indicator profiles for each area, examination of local and regional planning documents wherein formal statements of values are expressed, and having regard to the sentiments expressed during community consultation undertaken by Santos GLNG, the SIA has been based on four distinct social values together with a corresponding set of social indicators, as shown in the Table 2-4 below. Key stakeholders with an interest in the social value are also listed beneath the social value.

Table 2-4 Social values and indicators adopted for SIA

Social value Key stakeholder	Indicator set
Liveable community <ul style="list-style-type: none"> Local government Service providers (e.g. health, education, police and emergency services) Community members. 	<ul style="list-style-type: none"> Access to, and proximity of quality services (health, education, aged care, childcare, retail) Balanced demographic profile Harmonious relationships, lack of conflict Respect for law by community members Adequate infrastructure that is well maintained (roads, airport, power, water & sewerage, telephone, internet) Effective local governance Opportunity for recreational, cultural and sporting pursuits Safe social and physical environment.
Affordable lifestyle <ul style="list-style-type: none"> Local government Business sector Community members. 	<ul style="list-style-type: none"> Cost of land and housing Local government rates and service charges Cost of food and other essential items.
Recognisable community identity and spirit <ul style="list-style-type: none"> Local government Community organisations (including churches) Indigenous organisations Community members. 	<ul style="list-style-type: none"> Level of volunteering and availability of assistance Local celebrations Recognition, preservation and promotion of heritage Capacity to accommodate visitors Perceptions of being able to influence community destiny Employment share by industry.

2 Approach to impact assessment

Social value Key stakeholder	Indicator set
Capacity for sustainable economic activity <ul style="list-style-type: none"> Retail businesses Service businesses Agricultural producers Recreational and tourism businesses (including accommodation providers) Producer organisations (e.g. Agforce) Regional development organisations (e.g. Central Highlands Development Corporation [CHDC]). 	<ul style="list-style-type: none"> Viability, vitality and diversity of local industry Workforce participation and employment Job creation and the retention of young people Supportive business environment (e.g. availability of serviced industrial land, adequate zoning, provision of information on opportunities etc.) On-going environmental integrity (e.g. surface and groundwater, land degradation) Willingness of businesses to invest.

While Indigenous people would identify in broad terms with the social values listed above, as a community there are likely to be different indicators of the value reflecting their particular circumstances and historical experience as a distinct cultural group. The Santos GLNG SIMP 2012 Annual Report indicates that the Aboriginal community holds the following key issues (not in priority order):

- Creation of jobs and training that leads to new employment opportunities
- Ensuring that cultural heritage is protected
- Housing and accommodation
- Community health, safety and wellbeing
- Economic development
- Land use and environment
- Education.

Following the compilation and assessment of baseline social indicator profiles for Indigenous people living in the towns of the gas field area, and for Woorabinda, and having regard to the results of consultation with the Indigenous community, the assessment of impact on the Indigenous community has been based on the social values and indicators listed in Table 2-5 below.

2 Approach to impact assessment

Table 2-5 Indigenous social values and indicators

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

2 Approach to impact assessment

2.3 Stage 2 Impact assessment

Stage 2 impact assessment involves three steps:

- Scoping the possible impacts, based on identifying and describing the potential risks to, and opportunities for the enhancement of, social values
- Consideration of the application of formal impact management controls that result from Santos GLNG policy and environmental practice
- Undertaking a risk-based assessment to determine impact significance.

The following sections describe these steps in more detail.

2.3.1 Impact scoping

Impacts for the enhancement of social values are derived from a knowledge of GFD Project activities and characteristics (such as workforce levels and accommodation arrangements), together with an analysis of stakeholder and community receptivity and attitudes to project development.

Following two and a half years of construction of the GLNG Project, there is a well-developed understanding of the nature and characteristics of potential impacts likely to be associated with the GFD Project. Santos GLNG has relevant experience with the application of environmental and social management measures contained in the GLNG Project's management framework and the SIMP, together with ongoing community engagement through day-to-day activities of Santos GLNG community relations officers and the regular meetings of the regional community consultative committees. These are shown in Table 2-6 for the community in general, and in Table 2-7 for the Indigenous community. A more comprehensive description of the nature and description of the potential impacts is presented in Appendix A.

In general, the possible GFD Project-induced impacts to social values will be similar for each gas field as the activities are similar across each gas field. Whether they eventuate or are seen as an impact or opportunity will also depend on the attitudes and stance of the various stakeholder groups.

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Table 2-6 General community social values - potential GFD Project impacts

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

2 Approach to impact assessment

Table 2-7 Indigenous community social values - potential GFD Project risks and opportunities

Indigenous social value	Possible GFD Project-induced risks	Possible GFD Project-induced opportunities
Liveable community	<ul style="list-style-type: none"> • Uncertainty with regard to environmental impact of project • Lack of cultural awareness of in-migrating construction and operations workforce • Tension between native title and historical segments of Indigenous population over access to project benefits • Out-migration of elements of family groups due to inability to afford housing. 	<ul style="list-style-type: none"> • Private and government investment in ATSI community facilities (e.g. sporting, medical, cultural), particularly in Woorabinda • Support for local ATSI employment and training programs • ATSI engagement and communication programs (e.g. cultural awareness, environmental management, education support) • Private investment in affordable housing.
Affordable lifestyle	<ul style="list-style-type: none"> • Increased rental demand from in-migrating workers • Increased cost of housing due to un-met demand and speculation. 	<ul style="list-style-type: none"> • Support for affordable housing.
Recognisable community identity and spirit	<ul style="list-style-type: none"> • Inadvertent interference with cultural heritage during well and facilities development • Increased Indigenous employment presents staffing difficulties for Indigenous organisations • General level of development marginalises Indigenous presence in community • Resentment at perceived landholder benefit from the occupation of traditional land. 	<ul style="list-style-type: none"> • Support for activities that highlight and celebrate local Indigenous culture and history • Support for Indigenous organisation capacity building • Support for programs that strengthen local cross-cultural relationships.
Capacity for sustainable economic activity	<ul style="list-style-type: none"> • High-paying, short-term construction work draws higher-level students from schooling • Low acceptance of Indigenous people by the mainstream construction workforce. 	<ul style="list-style-type: none"> • Support for local ATSI employment and training programs • Support for ATSI business development • Support for ATSI mainstream and vocational education programs • Increased mainstream indirect and direct job opportunities.

Due to the incremental nature of development with the GFD Project, it is not possible to assess the impacts on individual land holders, traditional owners, and others who may be directly impacted by the GFD Project at this stage in field planning. Rather, the potential for such direct impacts discussed within this impact assessment are generally without specific reference to individual land holders or traditional owners.

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2.3.2 Existing management framework

Santos GLNG has adopted an environmental and social management framework established to avoid, minimise or mitigate potential impacts on environmental and social value from its infrastructure and activities. This management framework consists of policies, procedures and Environment, Health and Safety Management System that describes the requirements for effective environmental and safety practices.

The application of the Environment, Health and Safety Management System enables Santos GLNG to achieve the objectives of the following corporate policies:

- *Health and safety policy*
- *Environmental policy*
- *Community policy*
- *Aboriginal engagement policy.*

Environmental, Health and Safety Management System

The Environment, Health and Safety Management System provides a suite of management and hazard standards. *EHSMS 07: Consultation and communication*, is most relevant to the social impact assessment process. This standard provides for consultation and communication processes to enable employees, contractors and external stakeholders to understand and contribute to Environment, Health and Safety Management System requirements and decisions. However, a number of other standards also assist in managing potential social impacts. These standards are detailed in Table 2-8.

Table 2-8 Relevant management and hazard standards

Relevant standard	Purpose
Management standards	
EHSMS01: Environment, health and safety policies	The policies outline overall EHS direction and objectives and demonstrate Santos' commitment to improving overall EHS performance.
EHSMS07: Consultation and communication	Appropriate consultation and communication processes enable employees, contractors and external stakeholders to understand and contribute to EHSMS requirements and decisions.
EHSMS09: Managing environmental health and safety risks	Processes are necessary to systematically identify hazards, assess their risk and adopt control strategies to reduce risk to as low as reasonably practicable.
EHSMS09.5: Environmental impact assessment and approvals	To ensure that processes are in place to systematically identify and manage potential environmental and social impacts associated with development activities and to obtain all relevant statutory approvals.
EHSMS11: Operations integrity	Process safety management deals with the prevention of major hazards or catastrophic events that could lead to fatalities, serious injury, significant property damage or significant environmental harm. Systems and tools are required to manage process safety risks, as a subset of EHS management. The emphasis is on maintaining effective lines of defence to prevent the occurrence of and mitigate the consequences of major unwanted events. Process safety is addressed across the full lifecycle of assets, from development to operational integrity through to diligence in abandonment.
EHSMS11.10: Fire risk management	Processes need to be developed and maintained to ensure that fire and fire related risks in facilities and buildings are managed.

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Relevant standard	Purpose
EHSMS11.11: Decommissioning and abandonment	To ensure that EHS risks associated with the decommissioning and abandonment of plant, equipment and facilities are effectively managed.
EHSMS13: Emergency preparedness	To ensure that relevant equipment and resources are available and personnel are able to effectively respond to any foreseeable emergencies so as to minimise any adverse impact on the safety or health of people or the environment.
EHSMS14: Monitoring, management and reporting	Collection, analysis and reporting of EHS performance data is necessary to establish whether risks associated with Santos GLNG's operation are being managed, minimised and where reasonably practicable, eliminated.
Hazard standards	
EHS01: Biodiversity and land disturbance	To detail the requirements for planning and conducting operations in a way which avoids or minimises disturbance to land and allows affected areas to be restored within reasonable timeframes.
EHS02: Underground storage tanks and bunds	To define the requirements for underground storage tanks (USTs) and secondary containment of substances handled and stored. To minimise the potential for spillage or leakage of chemicals, hydrocarbons or wastewater that could cause significant environmental harm.
EHS03: Produced (coal seam) water management	To define the requirement for minimising environmental impacts associated with produced water produced during the extraction, production or processing of oil and gas.
EHS04: Waste management	To define the minimum acceptable standards for waste management activities.
EHS05: Air emissions	To achieve compliance with applicable air quality guidelines thereby minimising adverse impacts on the communities in which we operate and on the environment.
EHS07: Energy efficiency	To define the requirements for managing energy use at Santos GLNG operated facilities.
EHS08: Contaminated sites	To define the requirements for the protection of health and the environment, where contamination has or may have occurred at Santos GLNG operated sites.
EHS09: Pest plants and animals	To detail the requirements for avoiding weed and pest animal spread through Santos GLNG activities and how suitable control mechanisms can be identified and implemented.
EHS10: Water resource management	To ensure the protection from degradation and the sustainable use of watercourse, lakes, springs, overland flows, underground water, and other natural ecosystems associated with these water resources.
EHS11: Cultural heritage	To ensure that processes are developed, implemented, and assessed to prevent impact to indigenous cultural heritage from Santos GLNG operations within Australia and to ensure that all relevant statutory cultural heritage requirements are complied with.
EHS12: Noise emissions	To define the requirements for managing noise emissions from Santos GLNG operations that may result in adverse impacts on the surrounding environment.

Source: Santos GLNG. EHS: Environmental hazard standards. HSHS: Health and safety hazard standards. EHSMS: Environment, health and safety management standards

Social impact management plan

Statutory instruments for the management of impacts (e.g. Land Access Code, Groundwater 'make good obligations') have also been further developed since the 2009 EIS was approved. These controls have been applied when determining the residual significance of impacts prior to the consideration of the requirement for further management controls.

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The GLNG Project SIMP is the guiding document for the management of social impacts, serving as an umbrella for a range of plans and programs that have been developed and deployed to directly or indirectly manage potential impacts. The following sections detail the strategies and management plans relevant to social impact management.

Santos GLNG initially prepared the GLNG Project SIMP as part of the 2009 EIS. This SIMP, approved in May 2012, outlines the roles and responsibilities of Santos GLNG, the Government, impacted communities and other relevant stakeholders in relation to the GLNG Project. In particular, it outlines the framework for community engagement, management strategies to avoid, manage or mitigate potential impacts and to maximise opportunities and benefits arising throughout the life of the GLNG Project, and a reporting process to the Coordinator-General, local communities and State and Local Government regulatory authorities.

Santos GLNG made ten key commitments to the communities in which it operates in the GLNG Project SIMP. These are:

1. We will operate in a way that is safe for the community and our employees, never compromising safety to meet any other business objectives.
2. We will engage in an honest and open dialogue with the people of Queensland, and respond quickly and fully to community concerns.
3. We will provide information about our activities every step of the way, and provide a range of communication channels.
4. We will negotiate land access in good faith and in a timely manner. We will ensure landholders have all the information they need, and help them access support services when required.
5. We will respect the wellbeing of landholders, minimising disruption to their lives by ensuring the professional conduct of our employees when entering their properties. This includes providing advance notification, convenient consultation times, minimising dust and noise and leaving gates as they are found.
6. We will investigate and resolve any issues experienced by landholders or community members in relation to our activities as quickly as possible.
7. We will strive to minimise our environmental footprint, acting in accordance with the conditions placed on our project. We are committed protecting water resources and to the beneficial reuse of coal seam water. We will monitor our performance; comply with our reporting obligations and work to rectify any problems.
8. We recognise and respect the Traditional Aboriginal owners of the land on which we work. We will negotiate native title and cultural heritage agreements in good faith. We will work with Aboriginal communities to develop effective employment, training and enterprise outcomes.
9. We will provide full, fair and reasonable opportunity for local industry to compete for work, giving them the maximum opportunity to bid for and win contracts. We will work with government, industry representative bodies and communities to improve local industry participation, capability and competitiveness
10. We will strive to leave a positive legacy for the communities where we operate, by investing in social and economic development opportunities. We will maximise opportunities for local employment, local industry development, and training and apprenticeships.

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The SIMP focuses on management measures within six key theme areas, with associated objectives as follows:

- Water and environment
 - Maximise the beneficial reuse of coal seam water where practicable including construction, irrigation, dust suppression and other approved uses.
 - Monitor impacts associated with the management of coal seam water.
 - Minimise harmful effects on land environments.
 - Prevent the spread of weeds and pest animals.
 - Minimise impacts on air quality.
- Community safety
 - Minimise road safety risks to the community
 - Minimise health and safety risks to Santos GLNG employees, contractors and the community
 - Minimise potential social dysfunction associated with our workforce.
- Social infrastructure
 - Minimise the impact on regional social infrastructure.
- Community wellbeing and liveability
 - Minimise the impacts to landholders of gas field development activity.
 - Support and enhance the liveability and wellbeing of regional communities where Santos GLNG operates.
- Local industry participation and training
 - Maximise the availability of skilled labour within regional communities.
 - Maximise opportunities for local business and industry to participate in the Santos GLNG projects.
- Aboriginal engagement and participation
 - Minimise the impact of our activities on Aboriginal communities
 - Minimise the potential for damage to culturally significant sites
 - Strive to achieve enduring and mutually beneficial relationships.

The GLNG Project SIMP also relies on a number of other management plans and procedures, developed as part of the Santos GLNG management framework to ensure that environmental and social impacts have minimal effect on the community. These are shown in Table 2-9.

2 Approach to impact assessment

Table 2-9 Other management plans and procedures relevant to the social impact assessment

SIMP focus area	Overview
Water and environment	<ul style="list-style-type: none"> • GFD Project Environmental protocol for constraints planning and field development • Contingency plan for emergency environmental incidents • Chemical and fuel management plan • Draft environmental management plan (Draft EM Plan) • EPBC Spring Hydrogeological Conceptual Models • Evaluation of Prevention or Mitigation Options for Fairview Springs • Erosion and sediment control management plan • Ground deformation monitoring and management plan. • Land release management plan • Hydraulic fracturing risk assessment: Compendium of assessed fluid systems • Joint Industry Plan for an Early Warning System for the Monitoring and Protection of EPBC Springs • Pest and weed management plan • Receiving Environmental Monitoring Program Fairview Project Area • Rehabilitation management plan • Water resource management plan.
Community safety	<ul style="list-style-type: none"> • Bushfire Mmanagement Plan • Queensland incident management plan • Emergency response plan • Road-use management plan • Journey management plan • Road impact assessment • Maranoa regional rules • Infrastructure agreements with DTMR and relevant local councils • Santos GLNG's corporate Health and Safety Policy • Reliability and Maintenance Management System Standard, RAMMS 09 Reliability Exposures, Risk Assessment & Control • GLNG Bushfire management plans • Employee relations management plans • Employee assistance program • Worker code of conduct • Site work rules • Santos GLNG Employee induction program.
Social infrastructure	<ul style="list-style-type: none"> • GLNG Integrated Project Housing Strategy • GLNG Community investment program • GLNG Road use management plan • GLNG Upstream Fairview and Roma Project Area, Waste management Ppan • Site-based management plan for camp disposal area and reserve disposal area.
Local industry participation and training	<ul style="list-style-type: none"> • Employee relations management plans • Queensland Resources and Energy Sector Code of Practice for Local Content • Engagement with industry capability network • Local business development program.

2 Approach to impact assessment

SIMP focus area	Overview
Community wellbeing and liveability	<ul style="list-style-type: none"> • Land access and landholder engagement • GFD Project Environmental protocol for constraints planning and field development • Noise management plan • Erosion and sediment control management plan • External affairs plan • Community investment program • Sponsorship and events program • Community engagement plan • Wellbeing studies.
Aboriginal engagement and participation	<ul style="list-style-type: none"> • Cultural heritage management plans • Indigenous land use agreements • Aboriginal engagement policy • Queensland Resources and Energy Sector Code of Practice for Local Content Aboriginal Training and Employment Plan • Aboriginal and Cultural Heritage awareness element to Santos GLNG Employee Induction Program • GLNG Roma Indigenous school-based traineeship program • Employee relations management plans.

Health Services Investment

Santos GLNG and its contractors provide comprehensive medical services to meet the needs of the non-resident workforce and ensure that minimal increased demand is placed on existing public medical services. In mid-2013, the GLNG Project camp capacity comprised:

- Five permanent camps (685)
- Three temporary pipeline camps (1,700 beds)
- Eleven temporary gas field construction camps (3,470 beds).

Medical support personnel included two general practitioners, two nurses and three paramedics. Details of the medical facilities and services provided to residents in these camps that will be extended as appropriate to development of gas fields in new areas, are shown in Table 2-10.

Table 2-10 GLNG Project upstream in-field medical support services

Facility location and service area	Staffing	Services available
Roma 02		
Medical Centre Ostwald camp	Doctor, occupational health nurse, paramedics	<ul style="list-style-type: none"> • General practice services • Injury and illness management • Health and wellness programs such as <ul style="list-style-type: none"> — Blood pressure checks — Weight management — Mental health support — Diabetes management • Minor surgery • Emergency stabilisation and transport • Referrals to off-site specialists and allied health services.

2 Approach to impact assessment

Facility location and service area	Staffing	Services available
Satellite First Aid Clinic Fluor Roma 02 camp, The Bend Road	Paramedic	<ul style="list-style-type: none"> • First aid paramedic services • Injury and illness management • Emergency stabilisation and transport.
Satellite First Aid Clinic McConnel Dowell Roma 02Camp, Jon Bond Drive	Paramedic	<ul style="list-style-type: none"> • First aid paramedic services • Injury and illness management • Emergency stabilisation and transport.
Fairview 04		
Medical Clinic Flour Camp, Burnt Gully Road	Doctor, occupational health nurse, paramedics	<ul style="list-style-type: none"> • General practice services • Injury and illness management • Health and wellness programs such as <ul style="list-style-type: none"> — Blood pressure checks — Weight management — Mental health support — Diabetes management • Emergency stabilisation and transport.
CDJV04 Clinic Dawson Bend Road	Occupational health nurse, paramedics, doctor visiting daily	<ul style="list-style-type: none"> • General practice services • Injury and illness management • Health and wellness programs such as <ul style="list-style-type: none"> — Blood pressure checks — Weight management — Mental health support — Diabetes management • Emergency stabilisation and transport.
Satellite First Aid Clinic FKG Camp, Dawson Road	Paramedic	<ul style="list-style-type: none"> • First aid paramedic services • Injury and illness management • Emergency stabilisation and transport.
Satellite First Aid Clinic Springwater Camp, Bonnie Doon Road	Paramedic	<ul style="list-style-type: none"> • First aid paramedic services • Injury and illness management • Emergency stabilisation and transport.
Fairview 05		
Medical Clinic CDJV05 Camp, Fairview Road	Occupational Health Nurse, Doctor visiting daily	<ul style="list-style-type: none"> • General practice services • Injury and illness management • Health and wellness programs such as <ul style="list-style-type: none"> — Blood pressure checks — Weight management — Mental health support — Diabetes management • Emergency stabilisation and transport.
Satellite First Aid Clinic 05 Hub	Paramedic	<ul style="list-style-type: none"> • First aid paramedic services • Emergency stabilisation and transport.
Satellite First Aid Clinic Fairview 05 Camp, Fairview Road	Paramedic	<ul style="list-style-type: none"> • First aid paramedic services • Emergency stabilisation and transport.

Source: Santos GLNG, 2014

2 Approach to impact assessment

2.3.3 Risk-based assessment approach

This assessment used a qualitative risk assessment based on *AS/NZS 31000:2009 Risk management – Principles and guidelines* and the Santos GLNG standard for hazard identification, risk assessment and control to determine the level of impact on social values and how each particular aspect would be managed.

Criteria used to rank the likelihood and consequences of potential impacts are set out in Table 2-11 and Table 2-12 respectively.

Table 2-11 Likelihood criteria

Likelihood category	Description
Almost certain Common	Will occur, or is of a continuous nature, or the likelihood is unknown. There is likely to be an event at least once a year or greater (up to ten times per year). It often occurs in similar environments. The event is expected to occur in most circumstances.
Likely Has occurred in recent history	There is likely to be an event on average every one to five years. Likely to have been a similar incident occurring in similar environments. The event will probably occur in most circumstances.
Possible Could happen, has occurred in the past, but not common	The event could occur. There is likely to be an event on average every five to twenty years.
Unlikely Not likely or uncommon	The event could occur but is not expected. A rare occurrence (once per one hundred years).
Remote Rare or practically impossible	The event may occur only in exceptional circumstances. Very rare occurrence (once per one thousand years). Unlikely that it has occurred elsewhere; and, if it has occurred, it is regarded as extremely unique.

Table 2-12 Consequence criteria

Consequence category	Description
Critical Severe, widespread long-term effect	Irreversible changes to social characteristics and values of the communities of interest or community has no capacity to adapt and cope with change.
Major Wider spread, moderate to long-term effect	Long-term recoverable changes to social characteristics and values of the communities of interest or community has limited capacity to adapt and cope with change. Long-term opportunities emanating from the project.
Moderate Localised, short-term to moderate effect	Medium-term recoverable changes to social characteristics and values of the communities of interest or community has some capacity to adapt and cope with change. Medium-term opportunities emanating from the project.
Minor Localised short-term effect	Short-term recoverable changes to social characteristics and values of the communities of interest or community has substantial capacity to adapt and cope with change. Short-term opportunities emanating from the project.
Negligible Minimal impact or no lasting effect	Local, small-scale, easily reversible change on social characteristics or values of the communities of interest or communities can easily adapt or cope with change. Local small-scale opportunities emanating from the project that the community can readily pursue and capitalise on.

2 Approach to impact assessment

The level of risk of each environmental impact was assessed by combining the likelihood and consequence criteria in a risk assessment process as shown in Table 2-13.

Table 2-13 Risk matrix

Consequence	Likelihood				
	Almost certain	Likely	Possible	Unlikely	Remote
Critical	Very High	Very High	High	High	Medium
Major	Very High	High	High	Medium	Medium
Moderate	High	Medium	Medium	Medium	Low
Minor	Medium	Medium	Low	Low	Very Low
Negligible	Medium	Low	Low	Very Low	Very Low

The assessment of pre-mitigated risk takes into consideration the existing management framework and community services outlined above, as they are corporate commitments that will apply to the GFD Project. Residual impact is assessed following the application of additional mitigation measures to the GFD Project development (documented in the GFD Project Social Action Plans) should they be required.

2.4 Stage 3 Impact and opportunity management

Stage 3 of the SIA process focussed on the adequacy of existing, and the need for additional, measures to manage the identified impacts in the GFD Project development areas.

During development of the ToR for the GFD Project, an agreement was established between the Coordinator-General and Santos GLNG that a separate SIMP would not be required for the GFD Project as it is associated with the wider GLNG Project, and its potential impact area is very similar to that of the GLNG Project. As the intention of Santos GLNG is to extend the measures included in the existing SIMP to the GFD Project gas field areas, infrastructure and activities, it was agreed that Santos GLNG would be required to develop five Issues Action Plans, which would link the SIA to the existing GLNG SIMP and shape its annual review. These action plans are required to incorporate the impacts and management strategies that apply specifically to the GFD Project areas.

The SIMP will be supplemented by action plans that focus on the following key areas:

- Water and environment
- Community safety
- Social infrastructure
- Community wellbeing and liveability
- Local industry participation and training
- Aboriginal engagement and participation.

Santos GLNG will undertake targeted consultation on the proposed strategies and actions prior to finalisation of the plans and their inclusion in the SIMP, should the GFD Project be approved.

Table 2-14 and Table 2-15 present a consolidated overview of social values with indicators, and potential project-induced risks for impairment, and opportunities for enhancement, of the social values for the general community and Indigenous community respectively.

2 Approach to impact assessment

Table 2-14 General community social values, indicators and potential impacts

Social value	Indicators	Possible GFD Project-induced impact	Possible GFD Project-induced opportunities
Liveable Community	<ul style="list-style-type: none"> Access to, and proximity of quality services (health, education, aged care, childcare, retail) Balanced demographic profile Harmonious relationships, lack of conflict Respect for law by community members Adequate infrastructure that is well maintained (roads, airport, power, water & sewerage, telephone, internet) Effective local governance Opportunity for recreational, cultural and sporting pursuits Safe social and physical environment. 	<ul style="list-style-type: none"> Access to, and proximity of, quality services (health, education, aged care, childcare, retail) Balanced demographic profile Harmonious relationships, lack of conflict Respect for law by community members Adequate infrastructure that is well maintained (roads, airport, power, water & sewerage, telephone, internet) Effective local governance Opportunity for recreational, cultural and sporting pursuits Safe social and physical environment. 	<ul style="list-style-type: none"> Private and government investment in community facilities (e.g. sporting, emergency service, medical etc.) Co-investment in economic infrastructure (e.g. airport upgrades, road upgrades etc.) Support for local employment and training programs ATSI engagement programs Sharing services (e.g. medical) where cost-effective.
Affordable lifestyle	<ul style="list-style-type: none"> Cost of land and housing Local government rates and service charges Cost of food and other essential items. 	<ul style="list-style-type: none"> Cost of land and housing Local government rates and service charges Cost of food and other essential items. 	<ul style="list-style-type: none"> Support for affordable housing.
Recognisable community identity and spirit	<ul style="list-style-type: none"> Level of volunteering and availability of assistance Local celebrations Recognition, preservation and promotion of heritage Capacity to accommodate visitors Perceptions of being able to influence community destiny Employment share by industry. 	<ul style="list-style-type: none"> Level of volunteering and availability of assistance Local celebrations Recognition, preservation and promotion of heritage Capacity to accommodate visitors Perceptions of being able to influence community destiny Employment share by industry. 	<ul style="list-style-type: none"> Support for activities that highlight and celebrate agricultural production (beef) Support for the dissemination of information on the project (e.g. installing an interpretive display at an appropriate location) Development of mutually-beneficial accommodation alternatives (to support private investment in accommodation).

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Social value	Indicators	Possible GFD Project-induced impact	Possible GFD Project-induced opportunities
Capacity for sustainable economic activity	<ul style="list-style-type: none"> • Viability, vitality and diversity of local industry • Workforce participation and employment • Job creation and the retention of young people • Supportive business environment (e.g. availability of serviced industrial land, adequate zoning, provision of information on opportunities etc.) • On-going environmental integrity (e.g. surface and groundwater, land degradation) • Willingness of businesses to invest. 	<ul style="list-style-type: none"> • Viability, vitality and diversity of local industry • Workforce participation and employment • Job creation and the retention of young people • Supportive business environment (e.g. availability of serviced industrial land, adequate zoning, provision of information on opportunities) • On-going environmental integrity (e.g. surface and groundwater, land degradation) • Willingness of businesses to invest. 	<ul style="list-style-type: none"> • Pro-active local procurement policy (e.g. for maintenance contractors) • Support for the dissemination of information on the project (e.g. installing an interactive educational tool at an appropriate location) • Availability of alternative employment for regional residents.

Table 2-15 Indigenous community social values, indicators and potential impacts

Social value	Indicators	Possible GFD Project-induced impact	Possible GFD Project-induced opportunities
Liveable Community	<ul style="list-style-type: none"> • Proximity and access to traditional country • Degree of satisfaction with the environmental management of traditional country • Respectful and harmonious relationships with the non-Indigenous community • Access to service delivery (in particular health and education) that acknowledges and respects culture • Harmonious intra-community relationships • Ability for extended family residence • Adequate infrastructure, including housing. 	<ul style="list-style-type: none"> • Uncertainty with regard to environmental impact of project • Lack of racial awareness of in-migrating construction and operations workforce • Tension between native title and historical segments of Indigenous population over access to project benefits • Out-migration of elements of family groups due to inability to afford housing. 	<ul style="list-style-type: none"> • Support for local ATSI employment and training programs • ATSI engagement and communication programs (e.g. cultural awareness, environmental management, education support) • Private investment in ATSI housing.
Affordable lifestyle	<ul style="list-style-type: none"> • Cost of housing • Cost of transport. 	<ul style="list-style-type: none"> • Increased rental demand from in-migrating workers • Increased cost of housing due to unmet demand and speculation. 	<ul style="list-style-type: none"> • Support for affordable housing.

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Social value	Indicators	Possible GFD Project-induced impact	Possible GFD Project-induced opportunities
Recognisable community identity and spirit	<ul style="list-style-type: none"> Historical recognition and protection of cultural heritage Number and strength of Indigenous organisations Status of reconciliation with non-Indigenous community. 	<ul style="list-style-type: none"> Inadvertent interference with cultural heritage during well and facilities development Increased Indigenous employment presents staffing difficulties for Indigenous organisations General level of development marginalises. Indigenous presence in community Resentment at perceived landholder benefit from the occupation of traditional land. 	<ul style="list-style-type: none"> Support for activities that highlight and celebrate local Indigenous culture and history Support for Indigenous organisation capacity building Support for programs that strengthen local cross-cultural relationships.
Capacity for sustainable economic activity	<ul style="list-style-type: none"> Availability of employment opportunities Indigenous workforce participation Indigenous business start-ups and ownership Level of education achievement, including retention to year 12 and post-school destination. 	<ul style="list-style-type: none"> High-paying, short-term construction work draws higher-level students from schooling Low acceptance of Indigenous people by the mainstream construction workforce. 	<ul style="list-style-type: none"> Support for local ATSI employment and training programs Support for ATSI business development Support for ATSI mainstream and vocational education programs.

Arcadia gas field assessment

3.1 Social values

Table 3-1 presents a description of the social values of the Arcadia gas field population, derived from the social baseline profile and consultation with stakeholders undertaken for the GFD Project EIS. The impact assessment considers the impacts (described generally in Appendix A: Social values and impact description) to these values from project activities to develop the Arcadia gas field tenure.

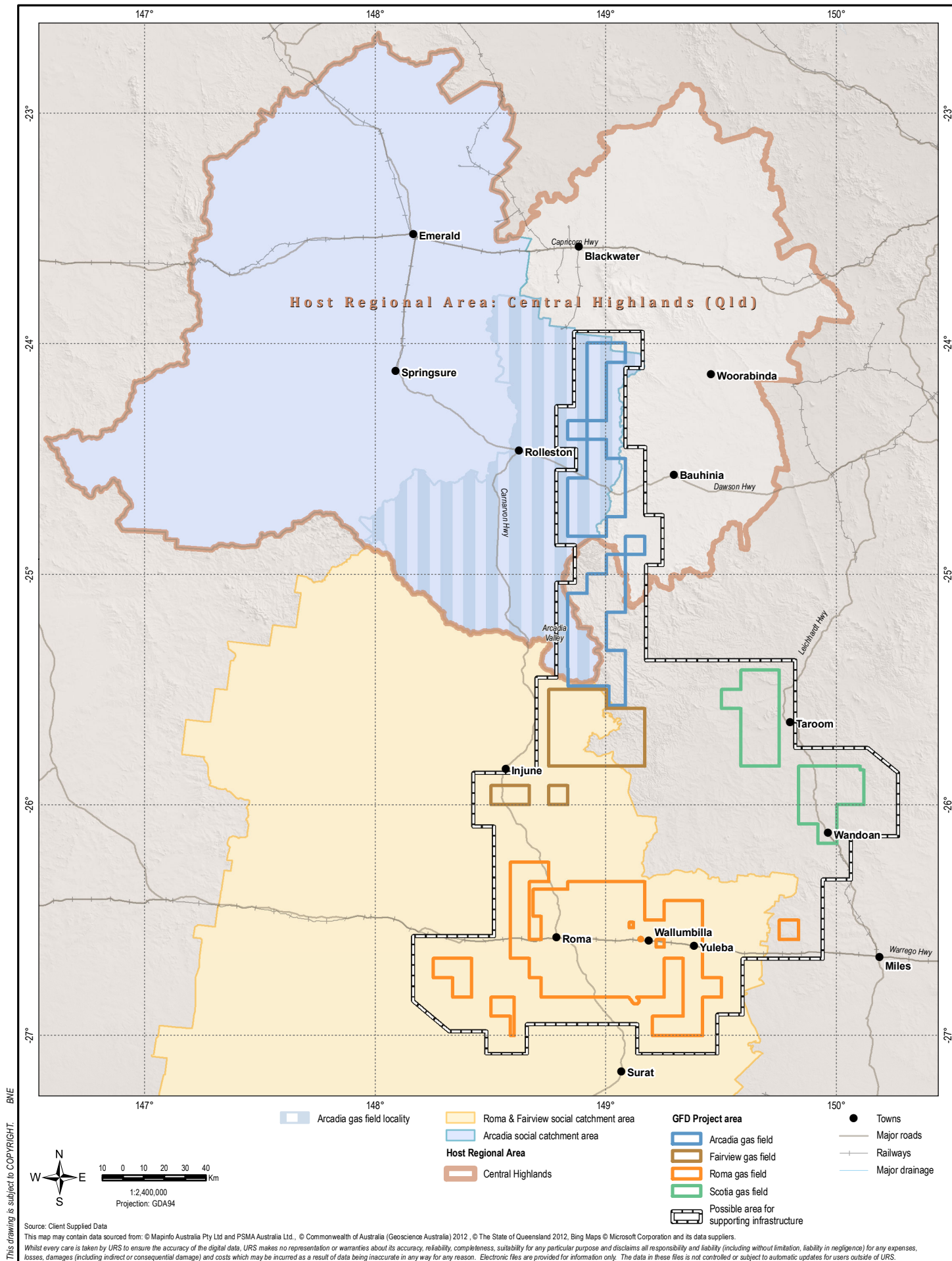
A complete demographic profile, which the following discussion draws upon, is provided in Appendix B: Arcadia social baseline.

Table 3-1 Arcadia gas field social values

Social value	Indicator set	Social value baseline summary
Liveable community Key stakeholder: <ul style="list-style-type: none"> Local Government Service providers (e.g. health, education, police and emergency services) Community members. 	<ul style="list-style-type: none"> Access, current service levels and proximity of quality services (health, education, aged care, childcare, retail) Balanced demographic profile Harmonious relationships, lack of conflict Respect for law by community members Adequate infrastructure that is well maintained (roads, airport, power, water and sewerage, telephone, internet) Effective local governance Opportunity for recreational, cultural and sporting pursuits Safe social and physical environment. 	<p>The communities in the Arcadia Gas Field are characterised by reasonable access to primary education services, with secondary services only available up to Year 10. Springsure is the regional centre and former administrative centre for the Bauhinia Shire. Its proximity to Emerald affords access to a higher level of services while retaining the small rural town pace of life. The area 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+ age ranges. Males outnumber females in the working age range, particularly in the older age cohorts. While infrastructure in Springsure is felt to be adequate, the more remote parts of the region express a high degree of concern for the state of infrastructure services, particularly roads. Feedback from recent surveys points to a growing concern around rising rate charges. The region has an active sporting and cultural environment. In summary, there is a high level of liveability, though with a modest level of vulnerability due to the perceived effects of development activity.</p>
Affordable lifestyle Key stakeholder: <ul style="list-style-type: none"> Local Government Business sector Community members. 	<ul style="list-style-type: none"> Cost of land and housing Existence of regional plans to meet current and planned development Local government rates and service charges Cost of food and other essential items. 	<p>While the cost of food and other essential items is manageable, housing costs in Springsure have undergone significant increases over the last four years while the costs of housing in Rolleston fluctuate but appear to have undergone only modest increases in concert with coal mine development activity. There is some concern around the quality and sustainability of road infrastructure in the area, with some residents expressing the need for an improved level of service delivery.</p> <p>. Generally the area is characterised by a lower level of socioeconomic disadvantage, though housing affordability pressure is evident in Springsure. In summary, the area remains affordable though with a modest level of vulnerability to population influx associated with gas field development.</p>

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Social value	Indicator set	Social value baseline summary
Recognisable community identity and spirit Key stakeholder: <ul style="list-style-type: none"> Local Government Community organisations (including churches) Indigenous organisations Community members. 	<ul style="list-style-type: none"> Level of volunteering and availability of assistance Proportion of young persons in the region Local celebrations Recognition, preservation and promotion of heritage Capacity to accommodate visitors Perceptions of being able to influence community destiny Employment share by industry. 	<p>The Arcadia Gas Field area has a high level of regional identity and community spirit, based on its proximity to the Carnarvon National Park, its development history, its status as a support centre for high productivity agricultural enterprises, and the noted quality of the Arcadia Valley as a beef production area. 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 presence of 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 that area. Gas field development activity appears to be gaining acceptance in the Arcadia area, on the basis of its potential to draw funding support for public infrastructure and its contribution to economic diversification. In summary, 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.</p>
Capacity for sustainable economic activity Key stakeholder: <ul style="list-style-type: none"> Retail businesses Service businesses Agricultural producers Recreational and tourism businesses (including accommodation providers) Producer organisations (e.g. Agforce) Regional development organisations (e.g. CHDC). 	<ul style="list-style-type: none"> Viability, vitality and diversity of local industry Workforce participation and employment Job creation and the retention of young people Planning frameworks to support current and planned development Supportive business environment (e.g. availability of serviced industrial land, adequate zoning, provision of information on opportunities etc) On-going environmental integrity (e.g. surface water and groundwater, land degradation) Willingness of businesses to invest. 	<p>The Arcadia gas field area has traditionally had a dependence on agriculture with more recent diversification into mining, largely supported out of Emerald and Blackwater, but with engineering works and suppliers in Springsure also benefitting. While unemployment is low, youth and young adult unemployment remains of concern.</p> <p>The region has an active business development infrastructure through the CHDC and a vibrant commercial centre in Emerald. The presence of mining and gas development is driving investment in visitor accommodation facilities in Springsure.</p> <p>Agriculture will 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. It will drive an intense interest in engagement on the environmental integrity of gas field development. In summary, while residents value highly the economy built on the agricultural industry, there is recognition of the contribution to regional sustainability that the diversification in to energy development will bring.</p>



3 Arcadia gas field assessment

3.2 Proposed development activity and workforce profile

Under the maximum development scenario that was developed for the purposes of impact assessment, development in the Arcadia gas field would commence in the south of the gas field in 2019 and continue until 2023. These areas are assumed to be serviced and supported out of construction and camp facilities in the Fairview area.

Development in the northern of the gas field (to the east and north of Rolleston) will commence in 2024 and continue until 2040. Facility development in the northern leases will commence in 2024 and continue to 2028 (5 years), followed by a further year of construction in 2031. This may consist of seven gas and water treatment facilities to the northeast of Rolleston, and one gas hub and water treatment facility each to the southeast of Rolleston. Construction in these areas is assumed to be supported out of new camps to be constructed in proximity to the facilities to be built.

Table 3-2 shows the expected workforce numbers by years and project activity, with the exception of the trunk pipeline workforce, which will number approximately 217 for twelve months from 2025 to 2026.

Table 3-2 Arcadia gas field workforce and development phasing

Year	Drilling workforce	Construction workforce	Operations workforce
2016	0	0	6
2017	0	0	11
2018	0	0	21
2019	32	0	23
2020	45	310	25
2021	50	250	25
2022	30	150	23
2023	20	70	58
2024	40	150	56
2025	40	240	55
2026	90	290	55
2027	40	290	54
2028	40	290	54
2029	40	240	55
2030	40	240	55
2031	40	260	55
2032	40	240	55
2033	40	240	55
2034	40	240	55
2035	40	240	55
2036	20	240	54
2037	10	130	53
2038	10	60	52
2039	10	60	51
2040	10	60	50
2041	0	0	48

3 Arcadia gas field assessment

Year	Drilling workforce	Construction workforce	Operations workforce
2042	0	0	47
2043	0	0	46
2044	0	0	45
2045	0	0	45

Source: Santos GLNG

Workforce source

It is assumed that construction and operations in the Arcadia gas field will be supported by the Roma Centre. The drilling workforce will be accommodated in drill camps co-located with the drilling rigs, which will operate across the tenure areas in accordance with field planning.

It has been assumed that 80% of the construction workforce operates on a fly-in/fly-out basis to Roma Airport. However, it is also assumed that the facilities construction workforce will transition to Arcadia from the Fairview and Scotia area and will require accommodation at Arcadia. There may be a small number of construction workers recruited locally in the Arcadia GFL and SCA (principally from Rolleston, Springsure and Emerald), but to be conservative it is assumed that they will also require camp accommodation.

In summary, it is assumed that 15% of the construction workforce is local (Roma to Emerald) and 5% are local to the Arcadia GFL. Of that 5%, it is assumed that half may move from outside to reside in the Arcadia GFL. Hence, based on the maximum construction workforce level of approximately 300, it could be expected that approximately 20 persons ($300 \times 5\% \times 0.5 \times 2.6$) may move into the Arcadia GFL towns (either Rolleston or Springsure), assuming that each person has an average family size of 2.6 (1.6 dependents per worker).

In relation to the operations workforce, in recognition of the Santos GLNG policy of recruiting locally, it is assumed that 25% (or 15 workers) are local to the Springsure-Rolleston with a further 15 operations workers local to the Toowoomba-Roma-Emerald area. These workers will drive-in and drive-out of the work area within the gas field at the beginning and end of their shift. Assuming that 50% (say 8) of the Springsure-Rolleston workers move to the area, the increase in the population (at 1.6 dependents per worker) would amount to 21 persons.

Camp size and location

Detailed planning of the size and location of the construction camps will occur as field development planning progresses. For the purposes of impact assessment, one large camp adjacent to the Dawson Highway to the east of Rolleston was assumed, however with the recommendation that Santos GLNG consults closely with both the CHRC and the Rolleston community to decide on optimal configuration and locations of camps to minimise impact and maximise opportunities for Arcadia GFL communities.

3 Arcadia gas field assessment

Table 3-3 Arcadia local accommodation need estimate

Arcadia workforce summary		
Arcadia construction workforce (300 max)		
80% (240) non-resident (intra/inter-state)	15% Local Toowoomba (45)	5% Local Springsure-Rolleston (15)
Fly-in/fly-out of Roma	Fly-in/fly-out of Roma	Of these, 50% move to the area (say 8)
		Assuming 1.6 dependents per worker, 20 persons move to Springsure over the period leading up to the maximum gas field workforce generally 10 years)
Arcadia operations workforce (approximately 60)		
50% (30) non-resident (intra/inter-state)	25% Local Toowoomba (15)	25% Local Springsure-Rolleston (15)
Fly-in/fly-out of Roma	Fly-in/fly-out of Roma	Of these, 50% move to the area (say 8)
		Assuming 1.6 dependents per worker, 21 persons move to Springsure over the period leading up to the maximum gas field workforce generally 10 years)

Each fly-in/fly-out construction related worker is assumed to fly into Roma, travel to the worker accommodation by bus and work in the gas fields for 21 days before flying out for seven days off

Transport activity

The most visible GFD Project activity for the majority of the community will be the transport of personnel and material to and from the work areas.

Santos GLNG's commitment to managing its impact on communities is provided in the provision of the 'Regional Rules', which govern the behaviour of Santos GLNG employees and contractors when working in regional areas. The foundation of the rules is a respect for landholders and other stakeholders and the communities in which Santos GLNG operates.

Rule 5 relates to vehicle movements and requires that vehicle movements be planned, monitored and consolidated. Vehicle branding is undertaken across the region with a toll-free 1800 number for the community to comment on driver's conduct. This branding appears on Santos GLNG and contractor vehicles and a real-time in-vehicle monitoring system is being used in all Santos GLNG vehicles. This is a key tool in monitoring driver behaviour and location. The Regional Rules will be adopted and applied to the GFD Project.

3 Arcadia gas field assessment

3.3 Potential impacts, assessment and mitigation

3.3.1 Liveable communities

Workforce demand for public health facilities and services

Increased demand on public health facilities in the Arcadia area is expected to be minimal. The construction workforce will be at its maximum at around 300 persons in the period from 2026 to 2028, but will be housed in construction camps with adequate clinic facilities and staff. There will be a drilling workforce in the area for the life of the GFD Project, averaging about 40 persons per year, but with a maximum of around 100 in 2026. Based on workforce sourcing assumptions, there may be a slight rise in the local population in the Springsure/Rolleston area of 20 persons over the life of the GFD Project, which would be expected to only impose a minor increase in demand on local facilities, able to be accommodated with normal organic growth. During the operations phase of the GFD Project, it is estimated that worker in-migration could result in an increase of population to the CHRC of 13 to 20 persons, which is within regional development population projections. However, feedback from the local community raised concerns about the potential impacts to local health services from the construction workforce. Specific local impacts and health system needs for the local community will be addressed through ongoing GFD Project community engagement activities.

Ambulance services are provided to the Arcadia gas field from Emerald and Springsure. GFD Project reliance on this public service will be on the basis of a negotiated service contract to ensure any impact on public use is minimised.

The likelihood that this impact may occur is rated as almost certain with a minor consequence, resulting in a risk rating of medium. Implementation of effective mitigation measures are seen to reduce the likelihood to possible and the consequence of any impact to negligible; overall, the residual risk is considered to be low.

Intra-community conflict

The Arcadia gas field locality is characterised by disparate populations focused on agricultural and resource production. With an absence of established urban communities and “lifestyle” development (i.e. rural residential development or small-scale hobby farming), it is not highly vulnerable to conflict centred on amenity impacts and collective action. Resource industry development has supported local economies in the Arcadia Valley and Central Highlands to a large degree, and continued development is therefore not likely to be challenged given that attitudes to development are largely either neutral or positive.

Experience shows that despite their existing history of resource industry development, these areas have not generated a high degree of local opposition or conflict, provided local impacts and concerns are addressed in a timely manner with the provision of reliable information, and that opportunities for leveraging upgrades to infrastructure and services are captured. Consequently, the likelihood of this impact occurring is unlikely, with a minor consequence and overall risk rating of low. After implementing effective mitigation measures, the residual risk is low.

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Construction and operations traffic on local roads and in the town areas

Traffic impacted roads include the Dawson Highway, the Carnarvon Highway, the Rolleston-Blackwater Road, the Arcadia Valley Road and the connecting road between the Dawson Highway east of Rolleston and the Blackwater Road north of Rolleston. As indicated in the study, rural roads will have a shortened life and be subject to additional maintenance requirements, but the amenity of rural residents is not likely to be significantly affected. However, the amenity for residents within Rolleston, at the intersection of the Carnarvon and Dawson Highways and the Blackwater Road, where the Dawson Highway passes through the centre of town, is likely to be moderately affected depending on the levels of GFD Project-induced traffic on these roads. This will be highly dependent on the location of the construction and operations camps. During the operations period the level of GFD Project-induced traffic will be low, particularly when the influence of remote well control monitoring is factored in. There is significant community concern surrounding road safety and any potential for an increase in the number of traffic accidents. Consequently, the likelihood of this impact occurring is almost certain, with a moderate consequence and overall risk rating of medium. After implementing effective mitigation measures, the residual risk remains medium, as it is likely that impacts with a minor consequence will still occur.

Presence of a younger, predominantly male workforce in social venues and general town area

This impact is raised consistently in the media, though is not generally emphasised during consultation with community members in resource development areas. As indicated by the Western Downs Regional Council, the experience of hosting a workforce during the construction of the Kogan Creek power station pointed to good behaviour. The Arcadia gas field locality is characterised by disparate working communities with high previous exposure to mining and agricultural workforces, with an existing gender ratio in the area skewed towards males. As such, the area is not particularly vulnerable to the gender and behavioural impacts of new male workforces. Rolleston police indicated that violence and alcohol-related behaviour has been minimal amongst resource industry workers to date, and that workers are known to moderate the behaviour of their peers at times when necessary. Workers camps around Rolleston and Emerald are seen as successful in reducing the exposure of local communities to mining workforces. The GFD Project construction work force will be in the order of 300, which is relatively small for construction. Resource industry workforce management practices (such as those applied throughout the GLNG Project) have established high expectations and standards around worker behaviour and these codes of practice, when enforced, generally result in acceptable behaviour regardless of the proximity of accommodation camps to town areas.

Consequently, the likelihood of this impact occurring is possible, with a minor consequence and overall risk rating of low. After implementing effective mitigation measures, the residual risk is low.

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Demand on public physical infrastructure

Apart from roads, where impact is not avoidable, GLNG Project construction operations have demonstrated an effective approach to avoiding impacts on local physical infrastructure networks through the use of self-contained worker accommodation camps. In the Arcadia gas field locality, while it is proposed that the construction camp is located to the east of Rolleston, there is potential for the community, local government and Santos GLNG to consider whether it would be beneficial to the community, and no detriment to construction efficiency, to locate accommodation camps in town areas. Should this be the case, further assessment of existing infrastructure capacity would be required.

The expected population increase due to operations workforce settling in the area is 21 and would not be expected to impose any significant spike in demand on the existing infrastructure, in either Rolleston or Springsure, which would require any future planned investment to be brought forward.

Consequently, the likelihood of this impact occurring is unlikely, with a minor consequence and overall risk rating of low. After implementing effective mitigation measures, the residual risk is low.

3.3.2 Affordable lifestyle

Increased demand for housing

The workforce scenario for the GFD Project (based on the development of worker accommodation camps in the Rolleston area) forecasts a possible demand for housing in the Springsure and Rolleston area in the five years to 2024. Capacity of the housing market to accommodate this level of demand is considered satisfactory, given that currently there were approximately 14 residential homes for sale in Springsure at the time of writing (October 2013) (REA Group Ltd, 2013).

In relation to the supply of land, the Government Statistician identified 13 residential lots in Rolleston and more than 30 residential lots in Springsure as developable through the period to 2023 (OESR, 2013a). The CHRC intends to tender for the development of a new sub-division in Springsure early in 2014.

While any significant level of residential development in Rolleston could create issues around infrastructure provision, it is thought that any residential expansion associated with the GFD Project would likely occur in Springsure. Notwithstanding the expected minimal effect on the housing market, it is acknowledged that housing market conditions may change quickly, particularly in resource towns, and the GFD Project will extend a watching brief to the Central Highlands-West area under the SIMP to monitor housing impacts during the first five years of construction. Consequently, the likelihood of this impact occurring is likely, with a minor consequence and overall risk rating of medium. After implementing effective mitigation measures, the residual risk is low.

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Increased wage pressures on local businesses

The labour force in the vicinity of the Arcadia gas field has been adapting gradually to the encroachment of the resource industry since the late 1990s when the Minerva mine was developed, and significantly from 2006 with the commissioning of the Rolleston Coal Mine. The GFD Project is possibly more likely to compete with other resource projects for skilled labour than with local businesses, and it is estimated that up to 15 construction workers will be recruited locally. This is equivalent to around one percent of the labour force in the Bauhinia statistical local area (SLA) in September 2013.

Skill requirements make it likely that these persons would come from the local government or small contractor workforces rather than the retail or services sector, limiting the pressure placed on wages through competition for labour. Any impact that does occur is likely to persist for an extended period, and stimulate responses such as higher take-up of training and education opportunities (particularly from persons seeking to supplement income through off-farm labour) and increased workforce participation rates. These secondary impacts are likely to be small but beneficial to the Arcadia gas field economy in the long run. There will be a modest demand for local skills and labour from 2025 to 2036, coinciding with the most intense period of facility and field construction.

Consequently, the likelihood of this impact occurring is possible, with a minor consequence and overall risk rating of low. After implementing effective mitigation measures, the residual risk is very low.

3.3.3 Community identity and spirit

Local employees working extended shift hours and rosters

Roster-based resource sector working patterns are assumed to be a significant departure from those upon which regional and rural communities are traditionally built. However, lifestyles in the Arcadia gas field locality, while traditionally centred on agricultural production and associated service industries, have undergone changes in recent years with the introduction of mining to the area. It is also probable that workers were travelling from this area to mines in the region prior to this to supplement farm-derived income, so lifestyles and community involvement may already have adapted to the changed conditions. The proportion of workers in the mining industry in Arcadia GFL has increased from 14% to 23% (Appendix B: Arcadia gas field social baseline) in the 10 years to 2011, suggesting that 12-hour shifts and extended roster conditions have become increasingly familiar to local residents. The direct impacts of shift-work upon Arcadia gas field residents will be limited to local residents moving into the mining industry to take up GFD Project operations jobs (projected to be 21 persons over 15 years to 2031) and their families. Indirect impacts will accrue at the community level if community participation (in community networks, organisations and clubs) is affected.

Given the community conditions cited above, the likelihood of this impact occurring is unlikely, with a minor consequence and overall risk rating of low. After implementing effective mitigation measures, the residual risk is very low.

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Visible presence of gas industry workers in local community venues, and the presence and scale of project facilities, including camps

Some anecdotal feedback from community consultation indicated that mining industry workers are highly visible and contribute to an “us and them” mentality in local venues, and that residents have expressed displeasure at the loss of local community atmosphere. While this is a view that is often picked up and strongly asserted by opponents of resource development to emphasise a loss of community spirit, it was not raised during consultation in the Arcadia gas field locality. The community consultation undertaken as part of the *Santos GLNG SIMP Annual Report*, suggested that residents and landholders in the GLNG Project area generally have ‘a positive regard for Santos GLNG personnel’. Notwithstanding that some residents might express a preference to minimise the visibility and presence of resource industry workers in public venues, the evidence suggests that mining workforces can be assimilated into rural community identities successfully.

The vulnerability of Arcadia gas field communities to this impact is largely related to the continuity of traditional rural and agricultural identities and degree to which resource sector and other industrial development will be an influence on public spaces. Rolleston is a small town that may be somewhat vulnerable to large-scale changes to work patterns, while Emerald is less vulnerable as a larger urban centre which has both deeper existing social networks and community identities and a longer history of adaptation to mining industry activity. The rural areas of Arcadia Valley are not considered vulnerable due to the workforce profile and low density of economic centres and social venues that might be impacted.

Consequently, the likelihood of this impact occurring is possible, with a minor consequence and overall risk rating of low. After implementing effective mitigation measures, the residual risk remains

High occupancy of short-term accommodation by gas industry contractors, displacing visitors to communities

Any monopolising of short-term accommodation by industry contractors may hinder a community's ability to host visitors and stage events that showcase their identity. While there has been limited accommodation in Rolleston, it is evident that there is ongoing investment in short-term accommodation in Springsure in response to demand from contractors, and the expectation of ongoing demand from resource projects planned for the region. While there may be potential for impact, it is amenable to management through close community engagement and programming of site work.

It will also be limited by the availability of temporary camp accommodation either provided by projects or the private sector. As there are a number of large accommodation facilities in the Arcadia gas field locality awaiting approval, and viewing the response of private sector accommodation providers across the Surat and Bowen Basins, it is possible that this impact will be of moderate consequence. After implementing effective mitigation measures, it is likely that this impact would occur and if it did, the consequence would be reduced to minor, resulting in a residual risk of low.

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Migration of long-term residents from high-impacted properties

The Arcadia gas field locality is characterised by large land holdings, predominantly devoted to beef production in the Arcadia Valley and beef and broadacre cropping in the area to the north of Rolleston. The productivity (and rural amenity) of these areas is unlikely to be altered fundamentally by the placement of natural gas wells in accordance with the adopted constraints criteria. Santos GLNG community consultation in the Arcadia Valley suggests that though landholders are not universally comfortable about the impacts of gas wells on their properties, some are anticipating the supplemental incomes they will provide, and in general landholders have not expressed significant concerns regarding the sustainability of their properties under conditions of gas industry development. Across the GLNG Project area, complaints from landholders have included moderate impacts to visual amenity and lifestyle (*Santos GLNG SIMP Annual Report*). This impact will be offset to some degree by the countervailing effect of payments under compensation agreements.

Consequently, the likelihood of this impact occurring is possible, with a moderate consequence and overall risk rating of medium. After implementing effective mitigation measures, the residual risk is low.

3.3.4 Capacity for sustainable economic activity

Disruption to agricultural production through field operations

As identified in the previous impact, the Arcadia gas field locality is characterised by large land holdings, predominantly devoted to beef production in the Arcadia Valley and beef and broadacre cropping in the area to the north of Rolleston. A risk assessment, and the evidence of the impacts of the GLNG Project on agricultural production to date, suggests that the Arcadia gas field locality is not highly vulnerable to agricultural production impacts. Santos GLNG community consultation also suggests that any impacts that do occur will be adequately offset by compensation payments. The increase in automation in well operations should also serve to reduce the operations phase need for frequent property access, thereby further reducing impacts on agricultural production.

Consequently, the likelihood of this impact occurring is likely, with a minor consequence and overall risk rating of medium. After implementing effective mitigation measures, the residual remains low.

Construction activity deters local tourism and highway trade

In the Arcadia gas field locality, most construction will be occurring to the east of the Carnarvon Highway, with a small amount occurring in the vicinity of the Dawson Highway to the east of Rolleston. The increases in traffic as a result of the GFD Project, as detailed in the GFD Project Traffic and transport assessment (Cardno, 2014) are not considered to be of an order that would deter long-distance travellers from using either highway, or from availing themselves of the services available in either Rolleston or Springsure.

Consequently, the likelihood of this impact occurring is unlikely, with a minor consequence and overall risk rating of low. After implementing effective mitigation measures, the residual risk remains low.

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Perception that gas extraction creates uncertainty around water availability for agriculture

Water availability and quality is a priority issue for virtually all rural communities. The GLNG Project has acknowledged the sensitivity of this issue by including water and the environment as a key area for action plans in the GLNG SIMP.

The GFD Project will continue to communicate closely with landholders and communities to ensure any concerns are addressed early and effectively with relevant information, and that management strategies including compliance with Queensland Government 'make good' regulations, are well-understood by landholders.

Santos GLNG will also support the information and communication activities of the Queensland Gasfields Commission to engage with the community around water issues. These actions will reduce uncertainty and any potential for adverse impacts on agricultural enterprises in the area, and are reflected in the GLNG SIMP action plans.

Consequently, the likelihood of this impact occurring is unlikely, with a minor consequence and overall risk rating of low. After implementing effective mitigation measures, the residual risk remains low.

In-ward movement of larger enterprises to local area

This impact will most likely materialise where there is a market demand for the service or good that the enterprise supplies. In the Arcadia GFL there is a very limited market for gas industry support (based on the Rolleston gas fields which supply natural gas to the Rolleston Gas Plant), though this may increase with the development of the GFD Project. Even with some years of resource industry investment in the area, medium and large businesses (as defined by OESR) are relatively scarce in the Arcadia gas field economy (around 3.5% of the total in the social catchment area). Even so, around 23.5% of businesses generate more than \$500,000 in annual revenue (by comparison with 18.7% across Queensland) (Appendix B: Arcadia social baseline).

However, while support from Roma is challenged by significant distance, there has been production of gas from coal seams in the Moura area (Dawson gas fields) to the east of Rolleston since the late 1990s, and businesses servicing this area will likely expand their operations to service the Arcadia area. The establishment of a northern operating base to complement the Roma base would likely make it more attractive for service industries to seek to enter the area with a permanent base, though Springsure may be a more attractive locality. On balance, this impact is not expected to materialise to an extent likely to displace existing local businesses, and hence is rated as a low risk. After implementing effective mitigation measures, the residual risk is considered to be very low.

3.4 Impact summary

As discussed in Section 2.3.3, the impacts were assessed using the risk assessment methodology, which considers the likelihood and consequence of a potential impact to assess its risk. The potential risks to the Arcadia gas field locality and social catchment area, both prior to mitigation (pre-mitigated) and after the application of mitigation measures (residual) are shown in Table 3-4.

Further details on the proposed strategies and programs for different population groups, labour groups and training schemes are detailed in the SIMP and the Social Issues Action Plans (Appendix AC).

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Table 3-4 Arcadia gas field impact assessment summary

Potential impact	Phase	Pre-mitigated significance			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"> Continue to implement the Santos GLNG Environmental, Health and Safety Management System. Continue the medical field response, including paramedics, nurses, general practitioners and emergency evacuation arrangements, to support needs of non-resident workforce, during construction. Continue to consult with Queensland Health and other health service providers on emerging impacts to the local health system 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. Continue to implement the Santos GLNG community engagement plan Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework. 	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"> Continue to implement the Santos GLNG community engagement plan 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. Continue to implement the Maranoa Regional Rules including monitoring compliance Land access and landholder engagement Apply the land access and landholder 	Unlikely	Negligible	Very low
	Operations	Unlikely	Minor	Low		Unlikely	Negligible	Very Low
	Decommissioning	Remote	Minor	Very Low		Remote	Negligible	Very Low

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Potential impact	Phase	Pre-mitigated significance			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	engagement strategy to the GFD Project, including compensation framework, early landholder engagement activities and use of the Ready Reckoner and property mapping.	Likely	Minor	Medium
	Operations	Almost Certain	Minor	Medium	<ul style="list-style-type: none"> Continue to implement the Santos GLNG Environmental, Health and Safety Management System. 	Likely	Minor	Medium
	Decommissioning	Likely	Minor	Medium	<ul style="list-style-type: none"> 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. Partner with local Councils to apply for Royalties for Regions funding for road upgrades, where appropriate. Continue to implement internal policies and regional rules that relate to road use and driver behaviour including: <ul style="list-style-type: none"> 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 Engage with local schools regarding schools zone safety Continue shuttle bus services transporting workers from airports to work sites and camps. Internal driver education campaigns to raise awareness about driving behaviours and safety. 	Possible	Minor	Low

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Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Presence of a male-dominated workforce	Construction	Possible	Minor	Low	<ul style="list-style-type: none"> Communicate heavy and light vehicle movements and road works through regular updates in local media, when required 	Unlikely	Negligible	Very Low
	Operations	Possible	Minor	Low	<ul style="list-style-type: none"> 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 	Unlikely	Negligible	Very Low
	Decommissioning	Possible	Minor	Low	<ul style="list-style-type: none"> Continue to implement Employee Relations Management Plans including Worker Code of Conduct, Site Work Rules and Employee Induction Program Promote Santos GLNG employee volunteering in the local community Support local communities with employment and training opportunities, where possible Continue to implement the Santos GLNG community engagement plan 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. Engage with Queensland Police Service to respond to issues associated with anti-social behaviour where identified. 	Unlikely	Negligible	Very Low
Demand on public physical infrastructure	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> 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 Partner with local Councils to apply for Royalties 	Remote	Negligible	Very low
	Operations	Likely	Moderate	Medium		Remote	Negligible	Very Low
	Decommissioning	Likely	Moderate	Medium		Remote	Negligible	Very Low

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Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					<p>for Regions funding applications, where appropriate.</p> <ul style="list-style-type: none"> • 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 • Continue to implement the Santos GLNG community engagement plan • 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. • Continue the medical field response, including paramedics, nurses, general practitioners and emergency evacuation arrangements, to support needs of non-resident workforce, during construction. • Continue to consult with Queensland Health and other health service providers on emerging impacts to the local health system • 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. • Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework. 			

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Potential impact	Phase	Pre-mitigated significance			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">• Apply the IPHS framework including:<ul style="list-style-type: none">— Actively monitor the housing market and engage key stakeholders to ensure appropriate housing strategies are in place prior to field development— 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— Consider supporting programs that relieve vulnerability to housing affordability pressures• 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• Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework.	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">• Support local business to attract staff through the Careers in Gas website• Continue to participate in local career days and employment expos highlighting the range of employment opportunities available in GFD Project communities• Continue to support initiatives, such as the Roma Shop Local, Invest Local campaign which promote main street businesses within the community	Possible	Negligible	Low
	Operations	Possible	Minor	Low		Possible	Negligible	Low
	Decommissioning	Unlikely	Minor	Low		Unlikely	Negligible	Very Low

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Potential impact	Phase	Pre-mitigated significance			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">Continue to implement existing management plans and procedures related to workforce management including Employee Assistance ProgramSupport local communities with employment and training opportunitiesContinue to implement the Santos GLNG community engagement planPromote Santos GLNG employee volunteering in the local communityContinue to implement the Santos GLNG community investment program including annual sponsorship and donations program, supporting local events and initiatives that enhance community wellbeing	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">Continue to implement existing management plans and procedures related to workforce management including:<ul style="list-style-type: none">Employee Relations Management Plans including Worker Code of Conduct, Site Work Rules and Employee Induction ProgramEmployee Assistance ProgramMaranoa 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 communityPromote Santos GLNG employee volunteering in the local communityContinue to implement the Santos GLNG community investment program including annual	Possible	Negligible	Low
	Operations	Possible	Minor	Low		Possible	Negligible	Low
	Decommissioning	Possible	Negligible	Low		Possible	Negligible	Low

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Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					sponsorship and donations program, supporting local events and initiatives that enhance community wellbeing <ul style="list-style-type: none">Continue to implement the Santos GLNG community 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">Continue to implement Maranoa Regional Rules, related to travel in project regionsWhen field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planningApply the IPHS framework to monitor and respond to housing impacts directly associated with the GFD ProjectContinue to implement the Santos GLNG community engagement plan	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">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	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">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.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	Possible	Minor	Low
	Operations	Unlikely	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Possible	Negligible	Low		Unlikely	Negligible	Very Low

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Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					contractors <ul style="list-style-type: none"> 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 Continue to implement the Maranoa Regional Rules including monitoring compliance with the Land Access Code 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. Continue to engage with communities such as through water specific engagement forums 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. 			
Construction activity deters local tourism and highway trade	Construction	Unlikely	Minor	Low	<ul style="list-style-type: none"> 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 Continue to implement the Santos GLNG community engagement plan Continue to implement Maranoa Regional Rules, related to travel in project regions 	Unlikely	Negligible	Very low
	Operations	Unlikely	Minor	Low		Unlikely	Negligible	Very low
	Decommissioning	Unlikely	Negligible	Very Low		Unlikely	Negligible	Very low

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Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Perception that gas extraction creates uncertainty around water availability for agriculture					<ul style="list-style-type: none"> 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. Apply the IPHS framework to monitor and respond to housing impacts directly associated with the GFD Project. 			
	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> 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 Continue to engage with communities such as through water specific engagement forums 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. Continue to promote and update the Santos GLNG water portal. Continue analysis of water level data from monitoring bores with Santos GLNG installed telemetry water pressure monitoring systems and make information available to landholders. Continue to implement the Santos GLNG community engagement plan 	Possible	Minor	Low
	Operations	Likely	Moderate	Medium		Possible	Minor	Low
	Decommissioning	Remote	Negligible	Very Low		Remote	Negligible	Very Low

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Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Inward movement of larger enterprises to local area	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> 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 Continue to engage with local business', holding procurement sessions to assist understanding of supply chain opportunities Continue to support initiatives, such as the Roma Shop Local, Invest Local campaign which promote main street businesses within the community Continue to report local procurement performance to key stakeholders and communities Provide GFD Project details to State government to assist in the development of capacity building programs. 	Unlikely	Minor	Low
	Operations	Likely	Minor	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very Low

Roma and Fairview gas fields assessment

4.1 Social values

Table 4-1 presents a description of the social values of the Roma and Fairview gas fields' population, derived from the social baseline profile and consultation with stakeholders undertaken for the GFD Project EIS. The impact assessment considers the impacts (described generally in Appendix A: Social values and impact description) to these values from project activities to develop the Roma and Fairview gas fields tenure.

A complete demographic profile, which the following discussion draws upon, is provided in Appendix C: Roma and Fairview social baseline.

Table 4-1 Roma and Fairview gas fields social values

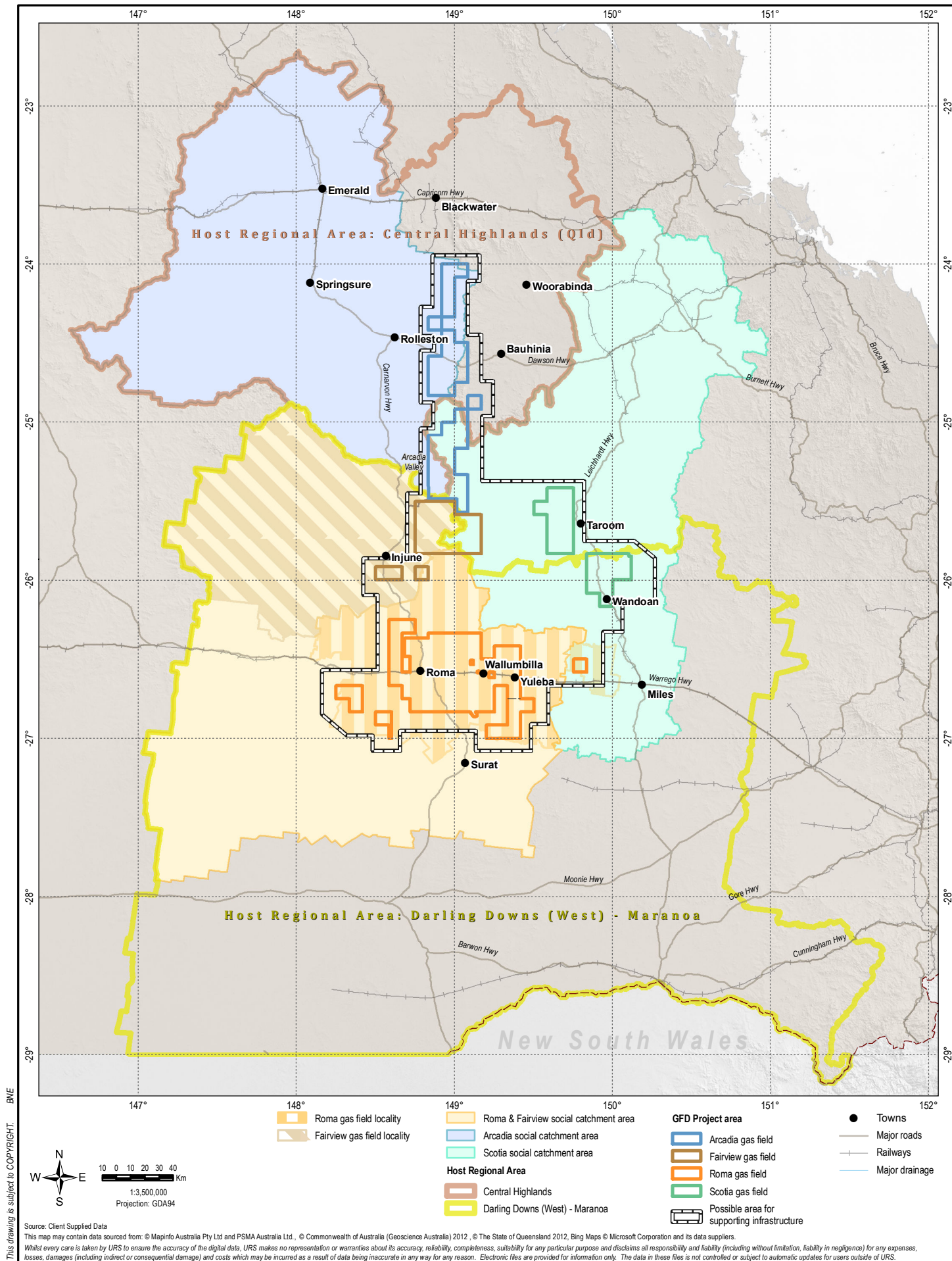
Social value	Indicator set	Social value summary
Liveable community Key stakeholders: <ul style="list-style-type: none"> Local government Service providers (e.g. health, education, police and emergency services) Community members. 	<ul style="list-style-type: none"> Access, current service levels and proximity of quality services (health, education, aged care, childcare, retail) Balanced demographic profile Harmonious relationships, lack of conflict Respect for law by community members Adequate infrastructure that is well maintained (roads, airport, power, water & sewerage, telephone, internet) Effective local governance Opportunity for recreational, cultural and sporting pursuits Safe social and physical environment. 	<p>The Roma and Fairview gas fields localities 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.</p> <p>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. Consultation elicits some 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), however these are universal concerns expressed in many communities, and in that sense these issues are not out of the ordinary. In general, relationships within society are harmonious and there is respect for law.</p> <p>The region, and in particular Roma, is expected to grow moderately 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.</p> <p>Infrastructure, while adequate in the past, has been placed under some strain with the growth of gas developments in the region. While initially concerned that the burden of improving infrastructure would mainly fall on ratepayers, the negotiation of support from gas development companies and the recent implementation of the Royalties for Regions and Resource Towns Action Plan is providing funding for regional roads and other infrastructure upgrades. Smaller towns are beginning to experience some impact on telecommunications and internet infrastructure.</p> <p>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 requiring some strengthening, particularly in satellite towns of Roma.</p> <p>In summary, the area retains a high level of liveability, though with a modest level of vulnerability due to the perceived effects of development activity.</p>

4 Roma and Fairview gas fields assessment

Social value	Indicator set	Social value summary
Affordable lifestyle Key stakeholders: <ul style="list-style-type: none"> Local Government Business sector Community members. 	<ul style="list-style-type: none"> Cost of land and housing Existence of regional plans to meet current and planned development Local government rates and service charges Cost of food and other essential items. 	<p>Costs of living are slightly higher than Brisbane. Higher costs for food, clothing and footwear have traditionally been offset by lower housing costs. However, housing costs have grown over the last four years. Action to address land availability and housing affordability in both Roma and Injune should increase affordability over time. Median household income levels have risen in line with inflation over the last 10 years in the Roma area, however in the regional area income increases have been at around half the rate of inflation, indicating the higher vulnerability of those who are totally reliant on farm incomes. This vulnerability in the regional area, combined with council rate increases and additional production costs due to impacts on road infrastructure from gas development activity, is having a direct effect on incomes and lifestyle affordability.</p> <p>In summary, the area remains affordable though with a modest level of vulnerability to population influx associated with gas field development in urban areas, and on-going moderate vulnerability to cost of living increases in regional areas.</p>
Recognisable community identity and spirit Key stakeholders: <ul style="list-style-type: none"> Local Government Community organisations (including Churches) Indigenous organisations. 	<ul style="list-style-type: none"> Level of volunteering and availability of assistance Proportion of young persons in the region Local celebrations Recognition, preservation and promotion of heritage Capacity to accommodate visitors Perceptions of being able to influence community destiny Employment share by industry. 	<p>The Roma and Fairview gas field areas have a high level of community identity derived from agricultural production (in particular cattle production) alongside support for resource development. The oil and gas industry has a long history in the Roma area which has been actively 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 ranges.</p> <p>There is a substantial range of active community cultural and sporting organisations, and community celebrations, such as Roma's Easter in the Country festival, are used in marketing the values of the region. Supply response to increased demand on short-term accommodation facilities has ensured an on-going capacity to accommodate visitors to the region.</p> <p>Over the last 10 years there has been a decline in employment in the agricultural industry, offset by increases in the mining and construction sectors. While this has resulted in some concern in regard to changing economic identity, it is balanced by a recognised need for economic diversification to counter being overly dependent on one industry.</p> <p>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 development.</p> <p>In summary, residents continue to assert a strong agricultural identity and independent spirit, with new industry development forming an increasingly important part of community identity. This is expected to develop further with on-going strong community engagement by gas industry proponents.</p>

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Social value	Indicator set	Social value summary
Capacity for sustainable economic activity Key stakeholders: <ul style="list-style-type: none"> • Retail businesses • Service businesses • Agricultural producers • Recreational and tourism businesses (inc. accommodation providers) • Producer organisations (e.g. Agforce) • Regional development organisations (e.g. CHDC). 	<ul style="list-style-type: none"> • Viability, vitality and diversity of local industry • Workforce participation and employment • Job creation and the retention of young people • Planning frameworks to support current and planned development • Supportive business environment (e.g. availability of serviced industrial land, adequate zoning, provision of information on opportunities etc) • On-going environmental integrity (e.g. surface and groundwater, land degradation) • Willingness of businesses to invest. 	<p>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 in the ability to rely on government support services to reinforce agricultural production. Gas industry development has 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 in comparison to the state level, high levels of youth unemployment continues to be a persistent issue. As for other gas field areas within the GFD footprint, 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. It will drive an intense interest in engagement on the environmental integrity of gas field development, and in particular the impacts on groundwater. The increasing level of support over the last two years (by agencies such as AgForce and the Gas Fields Commission) for engagement between agricultural producers and the gas industry is assisting to create an environment conducive to industry coexistence.</p> <p>As noted in the economic assessment, the region's industrial composition suggests there is a strong and enduring business and skills base to support the GFD Project across its construction and operations phases, which is likely to reinforce local industrial specialisation patterns — promoting regional economic growth and longer term economic sustainability.</p> <p>In summary, while residents value highly the economy built on grazing and other agricultural activities, there is recognition of the contribution to regional sustainability that further development of energy production through the on-shore gas industry will bring.</p>



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4.2 Proposed development activity and workforce profile

4.2.1 Roma

Under the maximum development scenario that was developed for the purposes of impact assessment, development in the existing GLNG Project tenure from Roma to Yuleba would begin in 2019 and continue until 2025. Drilling will commence in 2021 for the remainder of the gas field and extend until 2031. Gas treatment and water management facilities would commence development at the same time.

The operations workforce required will increase steadily from 11 in 2016 to 68 in 2021, when it will then undergo a steep increase to 119 in 2022 and then increase steadily to a maximum of 171 in 2025, from whence numbers will decrease steadily to 46 in 2035. Table 4-2 shows the expected workforce numbers by years and project activity, with the exception of the trunk pipeline workforce, which will number approximately 217 for each of the pipelines for the duration of their respective construction periods.

Construction and operations in the Roma gas field will be supported by the Roma Centre. The drilling workforce will be accommodated in drill camps co-located with the drilling rigs, which will operate across the tenure areas in accordance with field planning.

Table 4-2 Roma gas field workforce and development phasing

Year	Drilling workforce	Construction workforce	Operations workforce
2016	0	0	11
2017	0	0	14
2018	0	0	24
2019	65	0	24
2020	100	360	26
2021	145	860	68
2022	210	1,170	119
2023	180	920	124
2024	180	1,070	128
2025	130	1,020	128
2026	60	750	171
2027	60	460	168
2028	60	250	162
2029	60	250	157
2030	60	250	151
2031	50	250	148
2032	0	220	145
2033	0	0	142
2034	0	0	95
2035	0	0	49
2036	0	0	46
2037	0	0	6

Source: Santos GLNG

4 Roma and Fairview gas fields assessment

Workforce source

In accordance with the Santos GLNG policy for local recruitment, it has been assumed that 80% of the construction workforce operates on a fly-in/fly-out basis to Roma Airport, with 20% being local (Roma to Toowoomba). It is further assumed that those local workers from Roma will be already resident at the commencement of construction, and that no further in-migration of construction workers will occur. For the operations workforce, it is assumed that 40 persons will be employed from the local Roma-Fairview area, and that 50% (or 20) of these persons will relocate to reside in the area. These estimates are summarised in Table 4-3.

Table 4-3 Roma local accommodation summary need estimate

Roma workforce summary		
Roma construction workforce (1,100 max)		
80% non-resident (intra/inter-state) (880)	20% Local Toowoomba-Roma (220)	
Fly-in/fly-out of Roma	Fly-in/fly-out of Roma	
	No re-location of construction workers to Roma-Fairview area	
Roma operations workforce (approximately 200)		
50% (100) non-resident (intra/inter-state)	30% Local Toowoomba-Roma (60)	20% Local Roma-Fairview (40)
Fly-in/fly-out of Roma	Of these, 50% move to the area (20)	
	Assuming 1.6 dependents per worker, 52 persons move to Roma over the period leading up to the maximum workforce (generally 10 years).	

Each fly-in/fly-out construction related worker is assumed to fly into Roma, travel to the worker accommodation by bus and work in the gas fields for 21 days before flying out for seven days off.

Camp size and location

Detailed planning of the size and location of the construction camps will occur as field development planning progresses. The development scenario used in this impact assessment is that a camp or camps will be established adjacent to the Warrego Highway, outside of Roma, on land owned by Santos GLNG.

Consultation in the Roma GFL communities elicited a range of opinions on the desirable location of construction camps. Some felt that they should be out of town areas; some felt that a location closer to towns to facilitate business opportunities would be better.

For the purposes of impact assessment, two large camps (approx. 400 person capacity) adjacent to the Warrego Highway east and west of Roma will be assumed, together with the existing camp north east of Roma; however, with the recommendation that Santos GLNG consults closely with both the MRC to decide on optimal configurations and locations, or use of existing town facilities, to minimise impact and maximise opportunities for Roma GFL communities.

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Transport activity

The most visible GFD Project activity for the majority of the community will be the transport of personnel and material to and from the project work sites. A detailed assessment of trip generation and associated road and transport impacts is presented in the GFD Project Traffic and transport assessment (Cardno, 2014).

Santos GLNG's 'Regional Rules', govern the behaviour of Santos GLNG employees and contractors when working in regional areas. The foundation of the rules is a respect for landholders and other stakeholders and the communities in which Santos GLNG operates.

Rule 5 relates to vehicle movements and requires that vehicle movements be planned, monitored and consolidated. A vehicle branding pilot is currently being conducted in the region with a toll-free 1800 number for the community to comment on driver's conduct. This branding appears on Santos GLNG and contractor vehicles and a real-time in-vehicle monitoring system is being used in all Santos GLNG vehicles. This is a key tool in monitoring driver behaviour and location. The Regional Rules will be adopted and applied to the GFD Project.

4.2.2 Fairview

Under the maximum development scenario that was development for the purposes of impact assessment, gas field development would commence in 2019 and extend through to 2026. A gas and water treatment facility would be construction after 2021.

Table 4-4 shows the expected workforce numbers by years and GFD Project activity, with the exception of the trunk pipeline workforce which will number approximately 217 who will be present in the area during the last quarter of 2023.

Table 4-4 Fairview gas field workforce and development phasing

Year	Drilling workforce	Construction workforce	Operations workforce	Total
2016	0	0	12	12
2017	0	0	13	13
2018	0	0	21	21
2019	5	0	21	26
2020	0	20	56	76
2021	20	140	54	214
2022	20	170	52	242
2023	20	140	49	209
2024	20	120	49	189
2025	20	120	48	188
2026		120	48	168
2027	0	0	48	48
2028	0	0	47	47
2029	0	0	46	46
2030	0	0	46	46
2031	0	0	45	45
2032	0	0	6	6

Source: Santos GLNG

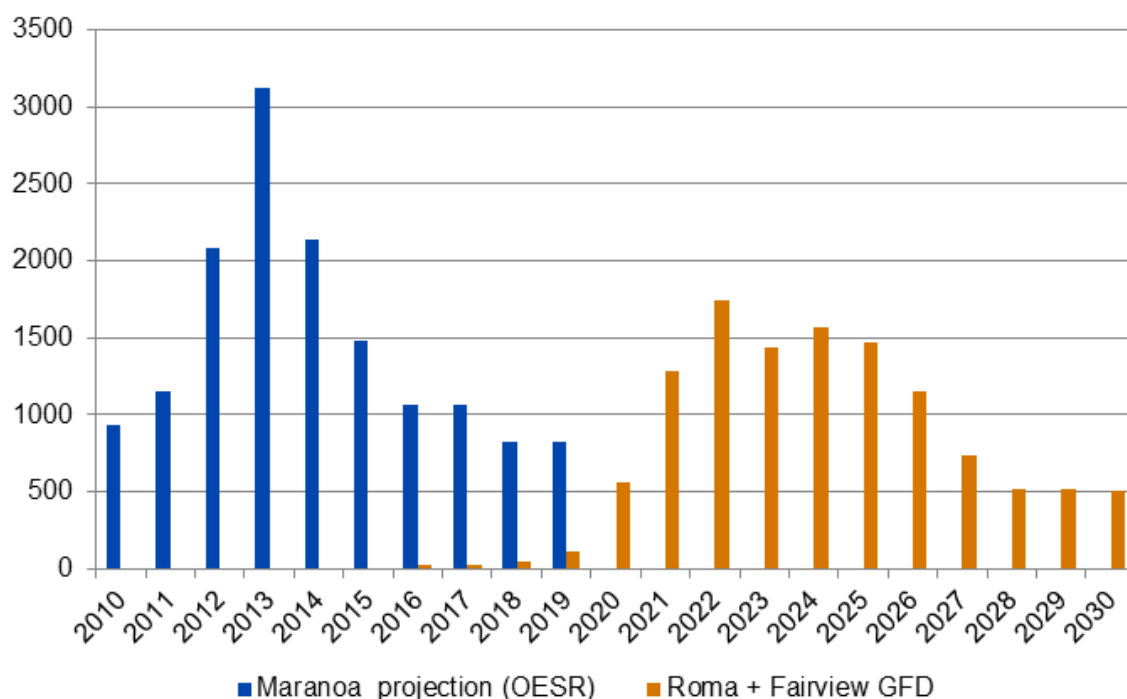
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Workforce source

It is assumed that construction and operations in the Fairview gas field will be supported by the Roma Centre. Construction of facilities will occur simultaneously with the construction of facilities in the Scotia area, utilising construction workers transitioning from the Roma area. Due to the long period of existing operations in the Injune area, and the proximity to Roma, it has been assumed that there will be no additional local recruitment or in-migration of workers to the Fairview GFL.

The non-residential workforce projections by the Government Statistician and the non-residential workforce profile for the GFD Project in the MRC area is shown in Figure 4-2. It is apparent that there will be a decline from the maximum construction workforce from 2013 to around 2020, after which employment numbers will then rise to around 2022 to 2025 at around half the level of 2013.

Figure 4-2 Non-residential workforce - OESR projection and GFD Project estimate - MRC



Source: OESR, 2013b

Camp size and location

Detailed planning of the size and location of the construction camps will occur as field development planning progresses. The drilling workforce will be accommodated in drill camps co-located with the drilling rigs which will operate across the tenure areas in accordance with field planning.

Transport activity

The most visible project activity for the majority of the community will be the transport of personnel and material to and from the project work sites. A detailed assessment of trip generation and associated road and transport impacts is presented in the GFD Project Traffic and transport assessment (Cardno, 2014).

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4.3 Potential impacts, assessment and mitigation

4.3.1 Liveable communities

Increased demand for public health facilities and services

The resident population in Roma and the surrounding region is expected to grow at around 1.3% per annum for the next 20 years. This is in line with the expected growth rate of Queensland, and accordingly it could be assumed that the provision of public health services will keep pace with this growth. Currently, the non-resident workforce within townships is modest in Roma (approximately 4% in 2012) though significantly higher in Wallumbilla and Injune (where it comprises around 50% of the resident population). Consultation with health service providers to the public has indicated that project-induced demand is not reducing the level of service available to the general public. In some cases, the additional demand has acted to support the retention of the current level of publically-funded service.

Outside of the townships, non-resident workers in GLNG Project camps are serviced by Santos GLNG in-field medical teams as detailed in section 2.2.2. The GFD Project construction and operations workforces, shown in Table 4-4 will continue to be serviced by in-field medical services and would not be expected to affect the level of service experienced by the public through existing public and private medical service providers, particularly when considering the differences between health needs of the two population groups. Hence, while the use of public health services is always possible, the provision of a high-level of in-field medical services for the non-resident workforce will act to divert demand and limit consequences to minor with a resulting rating for significance of low. Santos GLNG has already supported the improvement in health services at the Roma Hospital through a grant of \$1.0 M to establish the Nuriyn Wellness Centre, and will continue to monitor GFD Project-induced population growth in Roma and the surrounding area to ensure that any induced impact on health services is mitigated appropriately.

Consequently, the likelihood of this impact occurring is almost certain, with a minor consequence and overall risk rating of medium. After implementing effective mitigation measures, the residual risk is low.

Intra-community conflict

The Roma and Fairview localities have been producing gas on a commercial basis for the past 40 years with supportive urban and rural communities. The increase in gas field development in the Roma area has not been accompanied by significant opposition from the agricultural sector, or elements of the community sector, as has been observed from time to time in the more intensively-farmed Darling Downs area. Grain production is largely based on dryland contour farming, and cattle production is based on grazing. As well, there is a limited amount of lifestyle rural residential development or small-scale hobby farming around town areas. Hence, the business sector and local government are generally supportive of the industry development with the proviso that infrastructure impacts are managed, and the community service sector is supportive providing resident's access to services is not unduly impaired.

The likelihood of community conflict is rated as unlikely with a minor consequence, resulting in a risk rating of low. Implementation of effective community engagement programs will not eliminate the potential for conflict, but the consequence will reduce to negligible, as observed through the GLNG Project construction period to date in the Maranoa area. This results in a residual risk of very low.

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Project traffic on local roads and in the town areas

The transport assessment report (Cardno, 2014) provides a detailed assessment of the physical impact of project traffic on both local and State-controlled roads. Generally in the Roma and Fairview areas the impacted roads will be similar to the roads impacted by the GLNG Project, and which have been subjected to upgrades or management measures in accordance with the road impact assessment for that project. In addition, some major links in the local government owned road network have received funding for upgrades under the royalties for Regions Program as detailed in Table 2-3. The Maranoa Community Plan 2020 (Maranoa Regional Council, 2011) identifies an existing need for a “significant upgrade of the Warrego Highway to eliminate hazard areas and cater for the increased traffic movement and heavy vehicle usage, particularly to facilitate type 2 road train access to Roma”.

The *Santos GLNG SIMP Annual Report* highlights road safety as one of two primary community concerns reported through the GLNG complaints mechanism. The pre-mitigated road and traffic impact is rated as medium due to the high importance of road safety to the community. Mitigation is not likely to reduce the consequence, indicating the on-going need to address both infrastructure upgrades and maintenance, as well as ensuring that road safety education and traffic management measures are actively pursued over the life of the GFD Project. The residual risk remains medium.

Presence of a younger, predominantly male workforce in social venues and general town area

This type of impact continues to be raised in the media and in some academic writings, though it does not appear to be as frequently mentioned over the recent past. It is not generally emphasised during consultation with community members within Santos GLNG’s existing field development areas, and consultation for this SIA elicited generally favourable comments in regard to non-residential workforce interaction with the community. This may have been influenced by the contribution of non-residential workforce to flood clean-up activity in the Roma area, and continuing socialisation towards non-residential workforce in the Wandoan area. The *Santos GLNG SIMP 2012 Annual Report* indicated that there were a total of four Code of Conduct (Community Safety) complaints across the project in the 2012 year, or approximately five percent.

The non-residential workforce estimates shown in Table 4-2 and Table 4-4 indicate that average and maximum levels in the future will be lower than experienced to date. This, combined with further development in community acceptance of the industry, indicates that while the likelihood of this impact materialising is possible, the consequence is minor, resulting in a risk rating of low. Contemporary resource industry workforce management practices (such as those applied throughout the GLNG Project) have established high expectations and standards around worker behaviour and these codes of practice, when enforced, generally result in acceptable behaviour regardless of the proximity of accommodation camps to town areas. Consequently, the residual risk is very low.

Demand on public physical infrastructure

Apart from roads, where impact is not avoidable, GLNG Project construction activities have demonstrated an effective approach to avoiding impacts on local physical infrastructure networks through the use of self-contained worker accommodation camps. As indicated in section 2.3.2, in August 2013 there were 16 accommodation camps in the Roma-Fairview area, comprising:

- Five permanent camps (685)
- Three temporary pipeline camps (1,700 beds)

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- Eleven temporary gas field construction camps (3,470 beds).

It is the intention of the GFD Project to use existing permanent and temporary facilities where possible, and relocating temporary facilities where warranted by logistical constraints such as daily travel distances. The increase in population due to operations workforce relocation to Roma is considered minimal (estimated at 50 to 60 persons) and in line with normal population growth and water and sewerage infrastructure upgrade planning parameters.

Consultation in smaller communities to the east of Roma indicated that the most significant effect felt to date was the inability of the telecommunications system to service the additional load generated from the workers camps, an issue that has been recognised by Santos GLNG as requiring further investigation and mitigation. It is not possible to quarantine public infrastructure from GFD Project-induced demand; therefore, the consequence of the impact pre-mitigation is medium. However, after implementing effective mitigation measures, the residual risk is low.

4.3.2 Affordable lifestyle

Increased demand for housing

The Santos GLNG Project is implementing the Integrated Project Housing Strategy, which is a core component of the SIMP, to manage the effects of the project upon local housing markets. The status of this program is reported regularly to the Joint Maranoa Regional Community Consultative Committee, and annually to the Coordinator-General. Critical to the management of the impact of construction has been the establishment of accommodation camps for workers remote from the townships and in proximity to the construction sites. In August 2013 the Santos GLNG Project had a capacity to accommodate 3,470 persons in temporary construction camps, and 685 persons in permanent camps. It is the intention of Santos GLNG to maintain this strategy for the construction phase of the GFD Project, thereby avoiding the placement of upward pressure on housing costs during the construction phase. As accommodation camps are available to house the workforce required to establish new camps for the GFD Project, housing pressure experienced during the early works phase of the Santos GLNG Project should also be avoided. As indicated in section 4.2, during the operations phase of the GFD Project it is expected that there could be an influx of around 50 to 60 persons to Roma over the life of the GFD Project.

While local property markets have experienced price increases over the last four years for three bedroom houses (31% for Roma, 49% for Injune and 43% for Wallumbilla), the rate of growth has appeared to plateau over the last twelve months. Median rents for new bonds in Roma have increased for three bedroom houses by 24% per year for the past two years to March 2013, and vacancy rates are still extremely low at around 1.5%. This pattern is not exclusive to the GFD Project area, with rising property and rental costs seen across the State.

The social housing waiting list in September 2013 for the MRC stood at 29 applicants (compared to a list of 30 applicants in October 2010) with a waiting period of 10 weeks. The list comprised 17 single persons, 6 single parents, 2 couples with children and 4 couples over 55. Clearly, the availability of affordable rental accommodation, particularly for single persons, remains an issue in the MRC area.

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However, it is expected that pressure on the housing market will subside with the development of land and housing already occurring in Roma. Santos GLNG is cognisant of the pipeline of land and housing development that, albeit lagging, has been stimulated by the resource development projects in the area, and is conscious of avoiding the creation of a housing glut in Roma. It is expected that the normal operations of the market will be sufficient to service the needs for additional households during operations.

Consequently, the likelihood of upward pressure on housing demand in excess of what the market can supply is considered as likely, with consequences rated as moderate resulting in a medium risk. Ongoing implementation of the SIMP would have the capability of reducing the overall impact significance to low. Of particular relevance to the management of impact is the implementation of continual monitoring and responsive adaptive management under Objective 5 (see 2.3.2). After implementing effective mitigation measures, the residual risk is low.

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Table 4-5 Summary of updated housing strategies, MRC

Strategy	Deliverables	Timeframe	Investment proposal	Status
Objective 1: Minimise impacts to the availability and affordability of housing in regional communities				
1. Use to the greatest extent possible, purpose built temporary and permanent worker accommodation facilities located outside major communities	Construct worker accommodation facilities to house 100% of Santos GLNG's construction and operations workforce	Q1 2013	Commercial	Commitment achieved
2. Facilitate the provision of new affordable housing dwellings in communities affected by the GLNG Project	Provide funding to MRC to deliver a range of community and affordable housing solutions for the region	Committed. Funding Agreement in place by Q1 2014	\$4M	Negotiation nearing completion
Objective 2: Mitigate short-term impacts relating to project start-up activities				
1. Assist members of the community who are most vulnerable to suffer from homelessness as a result of rapid economic growth	Provide funding to MRC's Horizon Housing Rent Supplement Program	Q1 2012	\$400,000	Commitment achieved
	Extend program for another year	2014	\$180,000	
2. Build the capacity of regional housing support organisations to deliver expanded programs and assist more clients	Provide funding to MRC for resourcing to support the delivery of the Rent Supplement Program	Q1 2012- Q4 2014	\$200,000	
	Provide funding to MRC for the expansion of the Mitchell Multipurpose Health Service	Q4 2011	\$100,000	
Objective 3: Improve the availability of housing diversity that sustains low income households within the community				
1. Facilitate the provision of housing diversity targeted at low income households, particularly key workers, students and the ageing	Facilitate the construction of a 'key worker' complex targeted at retaining and attracting local apprentices and trainees. Tenancy management will be administered by a not-for-profit housing provider	Q4 2013	\$1M	Commitment achieved
Objective 4: Assist in releasing constraints which inhibit housing growth.				
1. Improve the resourcing capacity of the local council to expedite development applications	Provide the MRC with funding for more planning and approvals resources	Q4 2014	\$200,000	Commitment achieved
Objective 5: Monitor housing market activity to determine the effectiveness of strategies in stabilising the property market.				
2. Actively monitor the housing market over the life of the GLNG Project to ensure housing strategies are delivering the intended benefits	Provide quarterly reports to regional consultative committees, six monthly annual reports to Coordinator-General and other key reporting mechanisms	Q4 2014	Commercial	Commitment achieved
Total			\$6.1M	

Source: Santos GLNG Integrated Project Housing Strategy, Update No. 1 (2012)

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Increased wage pressures on local businesses

The economics assessment undertaken for the GFD Project EIS indicates that a large proportion of GFD Project capital expenditure is expected to occur in Maranoa and Western Downs regions. Similarly, a greater share of ongoing operation expenditure is also centred in these two LGAs, with purpose-built construction camps and workforce accommodation to be installed around the neighbouring townships of Roma, Wallumbilla, and Wandoan. Taroom, which is in the Banana Shire is also expected to be impacted.

The GFD Project economic assessment (Deloitte, 2014) also commented that projects such as the proposed GFD Project indirectly drive employment in related industries, in particular the local construction sector, which is benefiting from the current phase of capital investment occurring across resource projects in the region. With labour markets currently typified by high participation rates and low unemployment rates, there are clear signs of localised labour market constraints for new resource projects. Competition for labour could be expected to add upward pressure on local wage rates that would be passed on through higher prices thereby increasing the cost of living for long-term residents in the Roma-Fairview area who are neither engaged in the resources industry, nor impacted indirectly. Higher costs of living, in the absence of higher wages, will impact negatively on lifestyle affordability, and could lead to a higher level of economic leakage as consumers opt to purchase elsewhere in order to reduce costs.

However, while the exact dynamics of the regional labour market at the time of GFD Project investment and subsequent production cannot be predicted, it is reasonable to imagine that the regional employment impacts associated with the GFD Project will be appreciable. A further point emphasised in the GFD Project economics assessment is that while price increases, especially for essential housing services, will certainly impact the cost of living, the welfare implications for a region are determined by other variables such as economic growth, employment and investment. In this regard, the emergence of cost of living pressures in the development areas has (and will continue to) been a result of strong investment, rising incomes and low unemployment — each of which are crucial factors underpinning community living standards. Indeed, the analysis of the economic contribution of the GFD Project has highlighted that much of the generated economic activity is retained in the region and that a considerable amount of spill-over gains are also generated within non-resource sectors in the economy. These impacts can be contrasted with the economic performance in many other parts of regional Australia where high unemployment rates, declining primary industries and low levels of private sector activity and investment create their own community welfare problems.

The GFD Project is possibly more likely to compete with other resource projects in the region (e.g. other gas development projects) for skilled labour than with local businesses, and it is estimated that up to 20 construction workers will be recruited locally. This is equivalent to around 0.5% of the labour force in the Bungil and Roma Town SLAs at June 2013. Skill requirements make it likely that these persons would come from the local government or small contractor workforces rather than the retail or services sector, limiting the pressure placed on wages through competition for labour.

Consequently, the likelihood of this impact occurring is possible, with a minor consequence and overall risk rating of medium. After implementing effective mitigation measures, the residual risk is low.

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4.3.3 Community identity and spirit

Local employees working extended shift hours and rosters

The potential for disruption to community dynamics due to working arrangements is described in Appendix A, and is a key issue in towns where employment is dominated by a key industry, such as a mining town. The potential impact is often generally attributed to all resource development projects, irrespective of the share of employment constituted by the project, or the industry profile in the region where the project is being implemented.

In the Fairview area employment in agriculture is dominant, while in the Roma area dominant employment sectors are agriculture, health care, retail and construction. As indicated in the baseline profiles, both areas have also been subject to significant oil and gas industry development in the past. Agricultural employment is also highly seasonal and subject to extended working hours, particularly in cropping regions. The key factor in understanding the long-term potential for this impact in the Roma-Fairview region is the share of GFD Project operations employment sourced from the local area. The assumption is that around 220 persons will be employed from the local Toowoomba to Roma area during operations. Should 50% (or 110) of those reside in Roma, which would be a highly conservative estimate, they would constitute approximately 1.5% of the Roma-Fairview June 2013 labour force. This is a small portion which, when combined with the non-standard working hours mentioned earlier, and the increase in mining employment over the last two census periods (approximately 5%) would indicate that the potential for impact was unlikely. Following three years of construction on the GLNG Project the issue has not been raised in community consultation, and there has likely been a substantial degree of community adaptation that would further reduce the likelihood of impact during the GFD Project. The *Santos GLNG SIMP 2012 Annual Report* recorded a very low level of complaints for workforce impact issues.

The level of volunteering reported in the Census has remained steady over the last Census period, and it is plausible that new residents to the area may also lead to a degree of renewal in existing community cultural and recreational groups through an infusion of new people and ideas. The consequences are therefore considered minor, with the overall significance of the impact rated as low. Following the implementation of community support measures the impact would be expected to fall to very low.

Visible presence of gas industry workers in local community venues, and the presence and scale of project facilities, including camps

Media commentary often indicates that mining industry workers are highly visible and contribute to an “us and them” mentality in local community venues, and that residents are dissatisfied with a loss of local community atmosphere. While this may occur from time to time, the indications are that it is not a pervasive sentiment. The community perceptions survey undertaken as part of the *GLNG SIMP Annual Report 2012*, suggested that residents and landholders in the GLNG Project area generally have ‘a positive regard for Santos GLNG personnel’.

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Notwithstanding that some residents might express a preference to minimise the visibility and presence of resource industry workers in public venues, the evidence suggests that mining workforces can be assimilated into rural community identities successfully. Consultation in the Roma-Fairview area did not encounter this issue; with Fairview residents commenting that 'Project workers demonstrate good behaviour in towns' and welcoming the use of community facilities. In Roma, consultation noted the benefits of interaction with non-residential workers, with particular recognition given to the direct community support given by GLNG Project employees following the recent flooding of the town. During the construction phase, accommodation in larger camps remote from town areas, and lengthy shift times means that it is unlikely that large numbers of workers will frequent community venues after work hours. The daytime presence in towns is likely to be connected with local supplier engagement and retail outlets which would be viewed favourably.

Most production facilities and larger accommodation camps are located away from population centres and would be unlikely to interfere with the community identity perceived by either residents or visitors to the area. Within Roma town, there has been an increase in the number of industrial premises to support the gas projects in the area which has altered the visual aspect of the eastern and western approaches to the town, and the airport expansion on the northern approaches is characterised by the view of a large depot for gas industry vehicles. The nature of the industrial premises, however, is not dissimilar to the pre-existing development which has supported oil and gas development in the area for a long period, and there is no strong evidence of any significant detracting from the existing rural identity. Pre-mitigation the impact is considered likely with minor consequences resulting in a medium risk. Community support measures would likely reduce the impact significance post-mitigation to very low.

High occupancy of short-term accommodation by gas industry contractors, displacing visitors to communities

The rationale for this impact affecting community identity is based upon the potential displacement of visitors caused by the monopolising of short term accommodation by industry workers. This is seen as having an adverse effect on the ability of the community to promote itself through tourist visitation and local events such as festivals and local race meetings. This relies on an assumption made that tourists seek out motel accommodation, however visitor surveys in Roma by Tourism Queensland in 2002 and Tourism Australia in 2005 indicated that the almost two thirds of overnight visitors stayed in a caravan park or camping ground rather than motel accommodation.

There has also been an evident supply response in the private short-term accommodation market in Roma since a year or two prior to the commencement of the GLNG Project construction, with additional motels being built to service industry need for accommodation. The Tourist Accommodation Data Sheet for the year ended June 2013, published by Tourism Queensland, indicates that for the Darling Downs Region (which includes the Roma area) there was a 6% increase in the number of establishments and room nights available (for motels, private hotels and guest houses) and an 8% increase in the average room rate. It notes that the average rate increases 'originated in the resource regions during a period of increasing industry demand that appears to have peaked and may now be falling in many areas'. It also noted that the increase in room rate in the Darling Downs area generated a 20% increase in revenue and that growth was expected through to the end of 2014.

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It is also arguable that increased industry occupancy has created conditions favourable to investment in the refurbishment of older establishments, thereby making them more attractive to visitors to the area. Accommodation camps for non-resident workers have now largely been established, with between 3,000 to 4,000 beds available in permanent and temporary camps in the Roma and Fairview area. This indicates that the demand experienced in the early stages of construction prior to the establishment of camps should largely be avoided in the GFD Project.

The *Santos GLNG SIMP 2012 Annual Report* reported that a survey of residents in the GFD Project area indicated that approximately 64% were satisfied to very satisfied with living in their communities, with no indication to date that this figure is decreasing. Further surveys by Santos GLNG will track this sentiment on a longitudinal basis. Consultations with residents in the Maranoa area undertaken as part of the EIS did not indicate problems with the availability of accommodation, with some community stakeholders in Surat advocating the GFD Project use town accommodation to support the operations of local businesses. Pre-mitigation the impact is considered possible with moderate consequences resulting in a medium risk. Community support measures would likely reduce the impact significance post-mitigation to low.

Migration of long-term residents from high-impacted properties

Out-migration is based on the premise that a high level of physical impact on smaller properties will render ongoing agricultural operations difficult to the point where the landholder opts to sell to the developer and relocate. Should this occur in significant numbers in proximity to smaller rural communities it may impact negatively on community fabric and spirit as relationships and character of the community are altered due to an intervention beyond the community's control. The land-use in the Fairview area is predominantly grazing, while the Roma-Wallumbilla area supports a mixture of grazing and cropping activity. South of Yuleba, forestry is also added to grazing and cropping. Surrounding the towns of Roma and Wallumbilla the property areas tend to be smaller, however the well density per hectare at full development is comparable to the density across other gas field tenure.

The percentage of employment in agriculture in the Roma-Fairview area has fallen by about 10% over the last two Census periods, indicating industry change that is likely to be having a subtle effect on the character and identity of the GFD Project area communities. This is possibly also associated with changes experienced in the cypress pine forestry sector. The historical presence and development of oil and gas production facilities around Injune and Roma has not led to significant widespread property impairment and out-migration in the past, though there may have been some instances of landholders selling up. This is more likely to occur in cases where a smaller landholding is required to host a major facility such as a gas compression plant or a water treatment facility. In these cases the balance of the property not required for the facility is often maintained as a grazing or cropping enterprise, either company operated or under lease arrangements with neighbouring landholders. In some instances, income received from gas facilities enables agricultural enterprises on smaller land holdings to improve their viability and remain operational, while in other cases the subdivision and sale of the balance of the land not required for project purposes to neighbouring properties can improve the viability of those properties.

4 Roma and Fairview gas fields assessment

While the likelihood of this impact is possible, the consequences pre-mitigation are rated as moderate due to limited area and circumstances where it may occur, resulting in a medium impact. Santos GLNG has commitments to minimise its environmental footprint (and hence, impacts to landholders) and negotiating in good faith with landholders. This, in combination with constraints planning for field development, should act to reduce the significance to minor.

4.3.4 Capacity for sustainable economic activity

Disruption to agricultural production through field operations

As identified in the previous impact, the Roma-Fairview GFLs are characterised by a range of land holding sizes, predominantly devoted to beef production in the Fairview area and beef and cropping in the area to the south west and east of Roma.

While there is invariably some disruption to property operations during construction, this is subject to land access negotiations and compensation. The increase in automation in well operations should also serve to reduce the operations phase need for frequent property access; thereby further reducing impacts on agricultural production. Agricultural operations are possibly more likely to be influenced by rainfall and commodity prices than GFD Project activities during the operations phase. In addition, the potential re-use of produced water may alter the mix and intensity of activities for some properties in proximity to water treatment and storage facilities.

A risk assessment, and the evidence of the impacts of the GLNG Project on agricultural production to date, suggests that the Roma-Fairview GFLs are not highly vulnerable to agricultural production impacts. GLNG community consultation also suggests that any impacts that do occur will be adequately offset by compensation payments. This indicates that the impact pre-mitigation is likely, with moderate consequences resulting in a medium risk. After implementing effective mitigation measures, the residual risk is low.

Construction activity deters local tourism and highway trade

As with many rural and regional areas, tourism is a modest but growing sector of the local economy with integrated marketing links to the broader region. The MRC belongs to the Toowoomba Golden West and South Burnett Tourism, which is a regional tourism organisation which acts as the peak tourism body for Toowoomba and the Darling Downs, the Western Downs and South Burnett. Tourism surveys in Roma indicate that some of the most appealing aspects of Roma were the friendly and hospitable people and the cleanliness of the town. A high proportion of the visitors also arrive by car and use caravan parks and camp grounds. The presence of a high level of construction activity in the region has the potential to detract from the tourism experience and deter future visitors should negative perceptions develop through publicity concerning negative experiences, such as reduced access to facilities or sharing the road with higher numbers heavy vehicles and construction traffic.

Consultation in Injune indicated that there appeared to be an increase in littering in the town associated with the ramp up in construction, detracting from its street appeal, and road safety has been reported in the *Santos GLNG SIMP 2012 Annual Report* as the issue receiving the highest level of complaints. The Tourism Queensland Southern Queensland Country Regional Snapshot for the year ended March 2013 reports a decline in overall domestic visitors for the year which it partly attributes to 'the influence that rapid resource development is having on the industry'. It also notes that business visitors to the region increased by 11%.

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While the risk to the tourism experience is real, it may be particularly significant in areas where there is a concentration of construction projects, such as at Gladstone, or where construction activity impinges on a smaller town, such as Taroom. In the Roma-Fairview region the GFD Project construction activity is not highly visible being remote from towns in areas generally not visited by tourists. Hence the likelihood of the GFD Project further deterring tourist visitation to the area is considered possible with minor consequences, resulting in a low significance rating. Effective mitigation through support for promoting the area is likely to reduce the significance to very low.

Perception that gas extraction creates uncertainty around water availability for agriculture

Water availability and quality is a priority issue for virtually all rural communities. The November 2013 GasFields Commission e-news update profiles the engagement of landholders in the Wallumbilla South area with the Coal Seam Gas Compliance Unit to increase understanding on groundwater issues and to find solutions to problems such as gassy bores. The landholders also discussed the concept of a community groundwater monitoring network and agreed to participate in a pilot project to install online data loggers on two bores – one artesian and one sub-artesian bore – in the region to provide continuous and real-time data on groundwater levels, indicating the intense interest in impacts on water. The link with farm investment is highlighted by the initiative on the GasFields Commission, reported in the November update, to engage with rural bankers who raised the issues of:

- Gas industry impacts on the sustainability and productivity of the underlying rural land use
- Impacts on property cash flows such as potential income from gas wells
- The likely impact on re-sale values of the rural property.

The GasFields Commission emphasised the need for 'better communication on the science, monitoring and regulations for protecting groundwater which is of utmost importance for rural businesses and property values'.

The GLNG Project has acknowledged the sensitivity of this issue by including Water and the Environment as a key area for action plans in the GLNG SIMP. The GFD Project will continue to communicate closely with affected landholders and communities to ensure any concerns are addressed early and effectively with relevant information, and that management strategies including compliance with Queensland Government 'make good' regulations, are well-understood by landholders. Santos GLNG will also continue to support the information and communication activities of the Queensland Gas Fields Commission to engage with the community around water issues. These actions aim to reduce uncertainty and any potential for adverse impacts on agricultural enterprises in the area.

While the potential for this impact to materialise is rated as possible, the consequences are rated as moderate due to the importance of the issue to agricultural producers and town residents in the area. Any reduced investment in agricultural development has a flow-on effect to town-based businesses servicing the rural sector. Community acceptance of gas production from the Fairview area since 1996; and the Roma area since the late 1960s supports a consequence rating of moderate, and an impact significance rating of medium.

The residual significance continues to be rated as medium, reflecting the importance of this issue to rural community stakeholders.

4 Roma and Fairview gas fields assessment

In-ward movement of larger enterprises to local area

As reported in the Economic Impact Assessment, 'Santos GLNG predicts that approximately 85% of intermediary goods used for the GFD Project will be sourced domestically, with around 45% sourced from regional Queensland. As a result, much of the flow-on economic activity generated by the GFD Project (as indicated by the modelling) is estimated to be captured within the immediate development region' implying that 'there will be opportunities for local service industries to secure key elements of GFD Project work and ultimately gain from the technology transfer, skills development and commercial engagement processes'.

While specialised gas industry supply chain participants were established in Roma prior to the Santos GLNG Project, additional participants have been establishing in the area since the commence of construction. This is evidenced by the development occurring in the Roma East Industrial Estate and the development of the Roma One Business Park further east on the Warrego Highway approximately 4 km from the Roma town centre. The Roma One Business Park is a master planned industrial estate of 28 lots over 50 ha which will cater for a wide range of potential users, with planning approval for the inclusion of an 850 person accommodation village and an 80-room motel aimed at servicing the resource sector.

These developments, designed to attract new specialist businesses to the Maranoa area, are likely to induce competition for labour as well as making it more challenging for locally-based non-specialist suppliers to expand to service the gas industry. However the population growth accompanying the establishment of new businesses will create opportunities for local wholesale and retail service businesses (e.g. in camp provisioning and servicing) that may be well-placed to grow to meet the demand rather than being out-competed by larger and more specialised providers from outside the region.

Santos GLNG has an active program engaging with local businesses to assist them to attract and retain employees, and has established a free job-vacancy web-site with Commerce Roma and other gas industry developers for use by local businesses. It also supports the Commerce Roma 'Shop Local, Invest Local' campaign to stimulate local businesses. While the likelihood of existing businesses being out-competed by larger firms is always possible, the consequences are considered minor due to the increased opportunities stemming from population growth and policies to support local procurement. The impact significance is therefore rated as low. Following mitigation the consequences should be negligible resulting in residual impact significance also rated as low. Overall, as noted earlier, industry diversification will improve the Maranoa region's capacity for sustainable economic activity, though accompanied by some inevitable adjustment in the existing business environment in terms of business ownership and primary locational base. .

4.4 Impact summary

As discussed in Section 2.3.3, the impacts were assessed using the risk assessment methodology, which considers the likelihood and consequence of a potential impact to assess its risk. The potential risks to the Arcadia gas field locality and social catchment area, both prior to mitigation (pre-mitigated) and after the application of mitigation measures (residual) are shown in Table 4-6.

Further details on the proposed strategies and programs for different population groups, labour groups and training schemes are detailed in the SIMP and the Social Issues Action Plans (Appendix AC).

4 Roma and Fairview gas fields assessment

Table 4-6 Roma-Fairview gas fields impact assessment summary

Potential impact	Phase	Pre-mitigated significance			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"> Continue to implement the Santos GLNG Environmental, Health and Safety Management System. Continue the medical field response, including paramedics, nurses, general practitioners and emergency evacuation arrangements, to support needs of non-resident workforce, during construction. Continue to consult with Queensland Health and other health service providers on emerging impacts to the local health system 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. Continue to implement the Santos GLNG community engagement plan Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework. 	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"> Continue to implement the Santos GLNG community engagement plan 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. Continue to implement the Maranoa Regional Rules including monitoring compliance Land access and landholder engagement 	Unlikely	Negligible	Very low
	Operations	Unlikely	Minor	Low		Unlikely	Negligible	Very low
	Decommissioning	Remote	Minor	Very low		Remote	Negligible	Very low

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Potential impact	Phase	Pre-mitigated significance			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"> 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. 	Likely	Minor	Medium
	Operations	Almost certain	Minor	Medium	<ul style="list-style-type: none"> Continue to implement the Santos GLNG Environmental, Health and Safety Management System. 	Likely	Minor	Medium
	Decommissioning	Likely	Minor	Medium	<ul style="list-style-type: none"> 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. Partner with local Councils to apply for Royalties for Regions funding for road upgrades, where appropriate. Continue to implement internal policies and regional rules that relate to road use and driver behaviour including: <ul style="list-style-type: none"> 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 Engage with local schools regarding schools zone safety Continue shuttle bus services transporting workers from airports to work sites and camps. Internal driver education campaigns to raise awareness about driving behaviours and 	Possible	Minor	Low

4 Roma and Fairview gas fields assessment

Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					safety.			
					<ul style="list-style-type: none"> Communicate heavy and light vehicle movements and road works through regular updates in local media, when required 			
Presence of a male-dominated workforce	Construction	Possible	Negligible	Low	<ul style="list-style-type: none"> 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 Continue to implement Employee Relations Management Plans including Worker Code of Conduct, Site Work Rules and Employee Induction Program Promote Santos GLNG employee volunteering in the local community Support local communities with employment and training opportunities, where possible Continue to implement the Santos GLNG community engagement plan 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. Engage with Queensland Police Service to respond to issues associated with anti-social behaviour where identified. 	Unlikely	Negligible	Very low
	Operations	Possible	Negligible	Low		Unlikely	Negligible	Very low
	Decommissioning	Possible	Negligible	Low		Unlikely	Negligible	Very low
Demand on public physical infrastructure	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> 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 	Unlikely	Minor	Low
	Operations	Likely	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very low

4 Roma and Fairview gas fields assessment

Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					<ul style="list-style-type: none"> Partner with local Councils to apply for Royalties for Regions funding applications, where appropriate. 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 Continue to implement the Santos GLNG community engagement plan 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. Continue the medical field response, including paramedics, nurses, general practitioners and emergency evacuation arrangements, to support needs of non-resident workforce, during construction. Continue to consult with Queensland Health and other health service providers on emerging impacts to the local health system 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. Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework. 			

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Potential impact	Phase	Pre-mitigated significance			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">• Apply the IPHS framework including:<ul style="list-style-type: none">— Actively monitor the housing market and engage key stakeholders to ensure appropriate housing strategies are in place prior to field development— 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— Consider supporting programs that relieve vulnerability to housing affordability pressures• 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• Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework.	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">• Support local business to attract staff through the Careers in Gas website• Continue to participate in local career days and employment expos highlighting the range of employment opportunities available in GFD Project communities• Continue to support initiatives, such as the Roma Shop Local, Invest Local campaign which promote main street businesses within the community	Possible	Negligible	Low
	Operations	Possible	Minor	Low		Possible	Negligible	Low
	Decommissioning	Unlikely	Minor	Low		Unlikely	Negligible	Very Low

4 Roma and Fairview gas fields assessment

Potential impact	Phase	Pre-mitigated significance			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">Continue to implement existing management plans and procedures related to workforce management including Employee Assistance ProgramSupport local communities with employment and training opportunitiesContinue to implement the Santos GLNG community engagement planPromote Santos GLNG employee volunteering in the local communityContinue to implement the Santos GLNG community investment program including annual sponsorship and donations program, supporting local events and initiatives that enhance community wellbeing	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">Continue to implement existing management plans and procedures related to workforce management including:<ul style="list-style-type: none">Employee Relations Management Plans including Worker Code of Conduct, Site Work Rules and Employee Induction ProgramEmployee Assistance ProgramMaranoa 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 communityPromote Santos GLNG employee volunteering in the local communityContinue to implement the Santos GLNG community investment program including annual	Possible	Negligible	Low
	Operations	Possible	Minor	Low		Possible	Negligible	Low
	Decommissioning	Possible	Negligible	Low		Possible	Negligible	Low

4 Roma and Fairview gas fields assessment

Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					sponsorship and donations program, supporting local events and initiatives that enhance community wellbeing <ul style="list-style-type: none">Continue to implement the Santos GLNG community 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">Continue to implement Maranoa Regional Rules, related to travel in project regionsWhen field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planningApply the IPHS framework to monitor and respond to housing impacts directly associated with the GFD ProjectContinue to implement the Santos GLNG community engagement plan	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">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	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">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.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	Possible	Minor	Low
	Operations	Unlikely	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Possible	Negligible	Low		Unlikely	Negligible	Very Low

4 Roma and Fairview gas fields assessment

Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					contractors <ul style="list-style-type: none"> 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 Continue to implement the Maranoa Regional Rules including monitoring compliance with the Land Access Code 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. Continue to engage with communities such as through water specific engagement forums 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. 			
Construction activity deters local tourism and highway trade	Construction	Unlikely	Minor	Low	<ul style="list-style-type: none"> 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 Continue to implement the Santos GLNG community engagement plan Continue to implement Maranoa Regional Rules, related to travel in project regions 	Unlikely	Negligible	Very low
	Operations	Unlikely	Minor	Low		Unlikely	Negligible	Very low
	Decommissioning	Unlikely	Negligible	Very low		Unlikely	Negligible	Very low

4 Roma and Fairview gas fields assessment

Potential impact	Phase	Pre-mitigated significance			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"> 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. Apply the IPHS framework to monitor and respond to housing impacts directly associated with the GFD Project. 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 Continue to engage with communities such as through water specific engagement forums 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. Continue to promote and update the Santos GLNG water portal. Continue analysis of water level data from monitoring bores with Santos GLNG installed telemetry water pressure monitoring systems and make information available to landholders. Continue to implement the Santos GLNG community engagement plan 	Possible	Minor	Low
	Operations	Likely	Moderate	Medium		Possible	Minor	Low
	Decommissioning	Remote	Negligible	Very low		Remote	Negligible	Very low

4 Roma and Fairview gas fields assessment

Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
In-ward movement of larger enterprises to local area	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> 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 Continue to engage with local business', holding procurement sessions to assist understanding of supply chain opportunities Continue to support initiatives, such as the Roma Shop Local, Invest Local campaign which promote main street businesses within the community Continue to report local procurement performance to key stakeholders and communities Provide GFD Project details to State government to assist in the development of capacity building programs. 	Unlikely	Minor	Low
	Operations	Likely	Minor	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very low

Scotia gas field assessment

5.1 Social values

Table 5-1 presents a description of the social values of the Scotia gas field population, derived from the social baseline profile and consultation with stakeholders undertaken for the GFD Project EIS. The impact assessment considers the impacts (described generally in Appendix A: Social values and impact description) to these values from GFD Project activities to develop the Scotia gas field tenure.

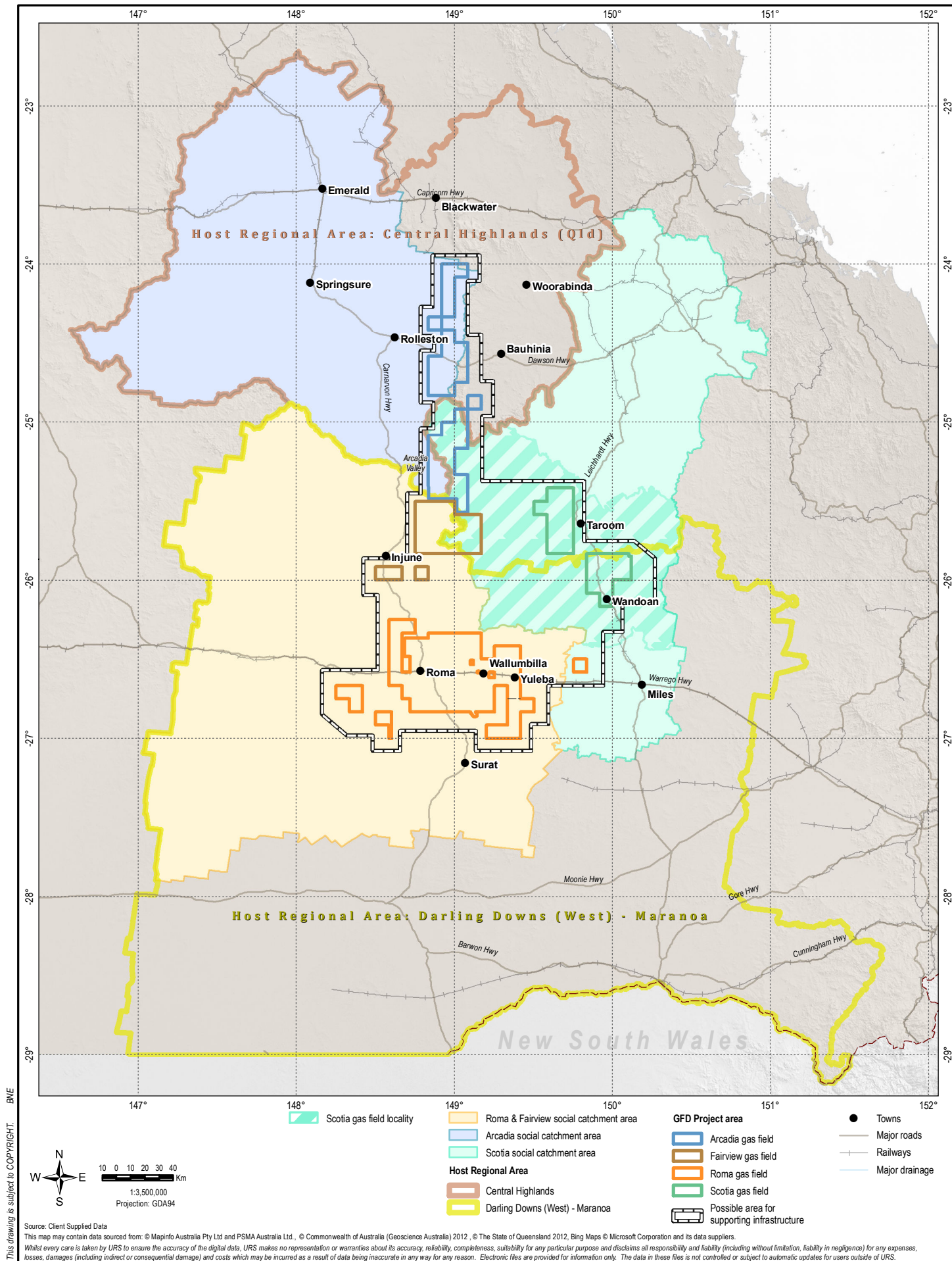
A complete demographic profile, which the following discussion draws upon, is provided in Appendix D: Roma and Fairview social baseline.

Table 5-1 Social values - Scotia gas field

Social value	Indicator set	Social value summary
<p>Liveable Community</p> <p>Key stakeholders:</p> <ul style="list-style-type: none"> Local government Service providers (e.g. health, education, police and emergency services) Community members. 	<ul style="list-style-type: none"> Access, current service levels and proximity of quality services (health, education, aged care, childcare, retail) Balanced demographic profile Harmonious relationships, lack of conflict Respect for law by community members Adequate infrastructure that is well maintained (roads, airport, power, water & sewerage, telephone, internet) Effective local governance Opportunity for recreational, cultural and sporting pursuits Safe social and physical environment. 	<p>Over the ten years to 2011, the population in the SCA for the Scotia gas fields has declined by approximately 0.5%, while the population in the townships of Taroom and Wandoan have declined more rapidly (1.5% and 3.1% respectively). This has undoubtedly placed some stress on the fabric of the community, more so in Wandoan. 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 cohort 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 (with a sex ratio of 110 to 120). There is low population mobility indicating well-established patterns of living and firm social bonds, notwithstanding the significant 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.</p> <p>The Scotia GFL 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 any 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.</p> <p>Local governance is sound in the Scotia GFL, particularly in the Taroom area which was the administrative centre of the former shire. As with most smaller rural centres, there is on-going concern in regards to the maintenance of assets and service standards (for aged assets), and securing capital to enhance (or replace if required) assets such as water and sewage treatment plants, aerodromes, roads, serviced land and minor infrastructure such as footpaths within townships. While there has been some increase in reported crime, the area would still be considered as safe and law abiding with generally harmonious relationships between residents and with a concern that future development not upset that character.</p> <p>In summary, the Scotia GFL community would consider that currently liveability is a moderately</p>

Social value	Indicator set	Social value summary
		robust characteristic; with some potential for stress from future development should potential impacts to liveability not be managed effectively. This is particularly so for the Wandoan area.
<p>Affordable lifestyle</p> <p>Key stakeholders:</p> <ul style="list-style-type: none"> Local government Business sector Community members. 	<ul style="list-style-type: none"> Cost of land and housing Existence of regional plans to meet current and planned development Local government rates and service charges Cost of food and other essential items. 	<p>Within the Scotia GFL there are higher levels of home ownership than the State and lower levels of rental housing. The Census indicates lower levels of mortgage and rental costs than the State average and a dominance of detached houses with high rates of unoccupied dwellings, perhaps indicative of a more aged housing stock, or a higher proportion of the stock located on rural properties. Social housing stock is limited to 17 dwellings in Wandoan and Taroom. While housing costs are lower than the State level, recent data indicates that there are developing potential housing purchase and rental affordability pressures in Taroom and Wandoan, with local government rate charges also rising by around 20% in the last year. 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, a significantly cheaper than Brisbane, though this is offset by higher transport costs.</p> <p>In summary, the Scotia GFL community would consider their current lifestyle affordable but potential risks include the rise of land valuations and local government rates and service charges, as well as increased house prices, thus limiting their ability to enter the market or upgrade within the market.</p>
<p>Recognisable community identity and spirit</p> <p>Key stakeholders:</p> <ul style="list-style-type: none"> Local Government Community organisations (including churches) Indigenous organisations. 	<ul style="list-style-type: none"> Level of volunteering and availability of assistance Proportion of young persons in the region Local celebrations Recognition, preservation and promotion of heritage Capacity to accommodate visitors Perceptions of being able to influence community destiny Employment share by industry. 	<p>The Scotia GFL is noted for the production of cattle and grain, and has an important heritage (drawing on the Leichardt Port Essington expedition of 1844) of which the community is extremely proud, and which they promote to reinforce their identity and to attract tourists and visitors to the area. In the Taroom area, the Taroom District Development Association is promoting the development of the 'Leichardt 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 acquired by the Bluenergy Group in May 2013. 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.</p> <p>In summary, the Scotia GFL community 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.</p>

Social value	Indicator set	Social value summary
<p>Capacity for sustainable economic activity</p> <p>Key stakeholders:</p> <ul style="list-style-type: none"> • Retail businesses • Service businesses • Agricultural producers • Recreational and tourism businesses (including accommodation providers) • Producer organisations (e.g. Agforce) • Regional development organisations (e.g. CHDC). 	<ul style="list-style-type: none"> • Viability, vitality and diversity of local industry • Workforce participation and employment • Job creation and the retention of young people • Planning frameworks to support current and planned development • Supportive business environment (e.g. availability of serviced industrial land, adequate zoning, provision of information on opportunities etc) • On-going environmental integrity (e.g. surface and groundwater, land degradation) • Willingness of businesses to invest. 	<p>Unlike Roma, which has a significant role as a regional administration centre for government, prior to the development of resources projects the Scotia GFL could generally be seen to be in a vulnerable position with respect to the sustainability of economic activity, a position which is indicated by declining populations and an ageing workforce. Climate variability and lengthy periods of drought severely affect the viability of agricultural enterprises restricting job creation and the retention, or inward migration, of young people to the area.</p> <p>Notwithstanding this situation, residents consider the on-going viability of the region to be dependent of agriculture, demonstrating a view that if the environment is cared for appropriately, sustainability across generations will be assured in contrast to the exploitation of non-renewable gas resources where projects have a (relatively) short life of around 40 years. Local sustainability frameworks are fundamentally different to those of the resource sector. The attraction of engineering service businesses to the Scotia area is possible, though will have to compete with larger regional service centres generally located along the Warrego Highway. 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.</p> <p>In summary, while there is an apparent pragmatic acceptance of gas 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. On-going assurance of environmental integrity will be essential to ensure that investment in agriculture is maintained.</p>



5.2 Proposed development activity and workforce profile

Under the maximum development scenario that was developed for the purposes of impact assessment, gas field development is scheduled to commence in 2016 and continue until 2033. New gas and water treatment facilities are likely to be required.

The operations workforce required will be less than five persons from 2016 to 2020, when it will then increase to 49 in 2021 and remain in the range of 50-60 until 2031, from whence numbers will decrease dramatically. Table 5-2 shows the expected workforce numbers by years and project activity, with the exception of the trunk pipeline workforce, which will number approximately 217 for nine months from 2022 to 2023, and then rise to approximately 430 for the last quarter of 2023.

Table 5-2 Scotia gas field workforce and development phasing

Year	Drilling workforce	Construction workforce	Operations workforce
2016	20	70	2
2017	20	30	2
2018	20	30	2
2019	20	30	4
2020	40	30	5
2021	60	370	49
2022	60	430	51
2023	60	370	53
2024	60	370	55
2025	60	370	56
2026	60	370	56
2027	60	370	56
2028	40	370	54
2029	20	110	53
2030	20	60	52
2031	20	110	50
2032	20	110	48
2033	0	110	47
2034	0	0	46
2035	0	0	45
2036	0	0	6

Source: Santos GLNG

Workforce source

It is assumed that construction and operations in the Scotia gas field will be supported by the Roma Centre. The drilling workforce will be accommodated in drill camps co-located with the drilling rigs which will operate across the tenure areas in accordance with field planning.

In accordance with the Santos GLNG policy for local recruitment, it has been assumed that 80% of the construction workforce operates on a fly-in/fly-out basis from outside the region to Roma Airport.

In summary, it is assumed that 15% of the construction workforce is local (that is, from communities in the Roma to Dalby area, and commuting by drive-in drive-out [DIDO] and 5% are local to the Scotia GFL. Of that 5%, it is assumed that half may move from outside to reside in the GFL area. Hence, based on a maximum construction workforce level of 370, a conservative estimate could be that approximately 25 persons ($370 \times 5\% \times 0.5 \times 2.6$) may move to into the GFL towns, assuming that each person has an average of 1.6 dependents. This would result in a requirement for approximately 10 houses across the townships of Taroom and Wandoan between 2016 and 2021.

For the operations workforce, based on the Santos GLNG policy of employing locally where possible, it is assumed that 50% of workers are fly-in/fly-out (i.e. 25 persons) and 50% are from the regional area. Of the 25 from the regional area, it is assumed that 15 are from communities in the Roma-Dalby

area, and 10 are from the local Scotia area. Of these 10, it is assumed that 5 will in-migrate to the area, increasing the population slightly.

Table 5-3 Scotia local population growth estimate

Scotia workforce summary		
Scotia construction workforce (370 max)		
80% (296) non-resident (intra/inter-state)	15% Local Toowoomba-Roma (56)	5% Local Taroom-Wandoan (20)
Fly-in/fly-out of Roma	Fly-in/fly-out of Roma	Of these, 50% move to the area (10)
		Assuming 1.6 dependents per worker, 26 persons move to Taroom over the life of the GFD Project.
Scotia operations workforce (approximately 50)		
50% (25) non-resident (intra/inter-state)	30% Local Toowoomba-Roma (15)	20% Local Taroom-Wandoan (10)
Fly-in/fly-out of Roma	Fly-in/fly-out of Roma	Of these, 50% move to the area (5)
		Assuming 1.6 dependents per worker, 13 persons move to Taroom over the period leading up to the maximum workforce (generally 10 years)

Camp size and location

Detailed planning of the size and location of the construction camps will occur as field development planning progresses. There are, however, a number of considerations evident at this preliminary stage that warrant mention. The base scenario is that a camp will be established adjacent to the Leichardt Highway, between Taroom and Wandoan, on land owned by Santos. Depending on this location, some work-sites across the gas fields may be beyond the desired 25 km distance from the camp. A single camp would probably have to be expanded to accommodate around 400 persons from 2021 until 2028, from whence it could be downsized to accommodate around 150 persons until the completion of construction in 2033, a period of approximately 18 years.

An alternative scenario could see the establishment of two camps, one in the Scotia area to support both construction and operations workforces over 20 years (with a maximum occupancy of 250 between 2021 and 2028), and one in the Scotia west area to support facility and field development between 2021 and 2028 with provision for around 200 beds over this period. Consultation in the Scotia GFL communities elicited a range of opinions on the desirable location of construction camps. Some felt that they should be out of town areas; some felt that a location closer to towns to facilitate business opportunities would be better; and the Banana Shire Council nominated a number of sites within Taroom town for consideration. For the purposes of impact assessment, one large camp adjacent to the Leichardt Highway between Taroom and Wandoan will be assumed, however with the recommendation that Santos GLNG consults closely with both the Banana Shire Council and the Western Downs Regional Council to decide on optimal configurations and locations to minimise impact and maximise opportunities for Scotia GFL communities.

Transport activity

The most visible GFD Project activity for the majority of the community will be the transport of personnel and material to and from the work sites. A detailed assessment of trip generation and associated road and transport impacts is presented in the GFD Project Traffic and transport assessment (Cardno, 2014).

Santos GLNG's 'Regional Rules', govern the behaviour of Santos GLNG employees and contractors when working in regional areas. The foundation of the rules is respect for landholders and other stakeholders and the communities in which Santos GLNG operates.

Rules relate to vehicle movements and require that vehicle movements be planned, monitored and consolidated. Vehicles are also only allowed to drive on approved roads that have been negotiated with State and local governments. A vehicle branding pilot is currently being conducted in the region with a toll-free 1800 number for the community to comment on driver's conduct. This branding appears on Santos GLNG and contractor vehicles and a real-time in-vehicle monitoring system is being used in Santos GLNG vehicles. This is a key tool in monitoring driver behaviour and location and drivers are held accountable for breaches of the rules. The Regional Rules will be adopted and applied to the GFD Project.

5.3 Potential impacts, assessment and mitigation

5.3.1 Liveable communities

Increased demand for public health facilities and services

Demand for health services will correlate with Scotia gas field workforce numbers (including construction, drilling and operations staff). Peak demand will be generated through 2021–2028 (averaging around 490 GFD Project workers in the area). The workforce will be significantly smaller outside this period and demand on health services will be commensurately lower. Demand for primary health services is likely to be confined to the nearby Miles Hospital and outpatients centres (and other private providers) in Taroom and Wandoan. Demand for retrieval (ambulance) services is likely to be generated across the area in proportion to workforce movements and concentrations.

Community consultation suggests that non-residential resource sector workforces may have already generated extra demand on ambulance services in Scotia GFL. Trips to worker accommodation camps are recognised as an impost on service capacity due to the long driving distances involved (similar to other rural ambulance services). QAS staff indicated the existence of problems in communicating with staff attending accidents due to poor mobile phone reception in remote areas.

The *Santos GLNG SIMP 2012 Annual Report* found that stakeholders' experiences of impacts on health services (and other social infrastructure) have been slightly more negative than initial expectations, and moderate over all. However, given the low current degree of sustainability in some general practitioner (GP) services in Taroom, it is possible that the GFD Project could also have a positive effect of supporting GP retention. If this eventuated, it would constitute a significant benefit to local communities and offset public health system impacts to some degree. Otherwise, remaining GP capacity in responding to GFD Project workforce demand will be limited. Specific local impacts and health system needs of local communities will vary by area and project phase and should be addressed through ongoing GFD Project community engagement activities.

To minimise impacts to health services in the Scotia gas field area the GFD Project will provide in-field medical support services in line with what the Santos GLNG Project is providing in the Roma and Fairview areas (see Section 2.3.2, Table 2-10). Hence the consequences are expected to be minor following mitigation with residual impact significance of low. Further consultation and planning with health service providers in the Scotia gas field locality to assess and develop measures to mitigate potential impacts will be required in the twelve months prior to construction mobilisation (see Action Plan 5).

Intra-community conflict

Activity aimed at realising the potential for significant resource industry development in the Taroom-Wandoan area has been underway for a significant period of time. Major EIS studies have been completed for the Wandoan Coal Mine, the Range Coal Project, the Nathan Dam and associated water pipeline/s and the Surat Basin Rail Project. Gas fields have been developed at the Scotia and Peat gas fields to the north-east of Wandoan and have been in production since 1996. While there have been challenges to the development of the Wandoan Coal Mine, and public expressions of dissatisfaction by some land holders, residents in these areas have not displayed a high degree of local opposition or conflict surrounding resource development projects. Consultation undertaken with local stakeholders elicited general support for the development of the gas fields (with a concurrent desire to maintain a strong rural identity based on beef production) and a desire to capture business opportunities (particularly in Wandoan). While the potential impact on townships of large scale temporary accommodation camps was of concern, stakeholders generally see that there is significant scope to manage these impacts effectively. There is no strong evidence of opposition to development by rural producers, though this would be contingent upon the on-going provision of information on groundwater impacts gained through monitoring and research.

Assessing the likelihood and consequence of community opposition or conflict in Scotia gas field is based on observed stance toward resource industry development to date and the views expressed during consultation. While conflict is always possible, it is highly likely that vulnerability to community conflict would differ across local communities, moderated 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.

Given the absence of overt community opposition or conflict to date in the area, the consequences pre-mitigation are assessed as minor and the risk of this impact is rated as low.

Construction and operations traffic on local roads and in the town areas

GFD Project Traffic and transport assessment (Cardno, 2014) reports that heavy vehicle and other traffic will be present across the Scotia gas field throughout construction phases (2019–2025) while lighter vehicle traffic related to operations and maintenance crews and workforce commuting will remain constant throughout the operations phase. Construction of hubs, workforce accommodation camps and concentrations of gas wells will be the predominant traffic generators. Traffic patterns will centre heavily on supply routes through the Darling Downs and Roma, and the transfer of workers to accommodation camps through Roma to work areas across the gas field. It is expected that continuing developments in remote operation and monitoring of gas wells will act to lessen the traffic impacts on local roads.

The *Santos GLNG SIMP Annual Report* highlights road safety as one of two primary community concerns reported through the GLNG complaints management process. Wandoan police also report some complaints from the local community about traffic. Generally these complaints are associated with project developers but contractors are also implicated. The police indicate the importance of effective Emergency Response Plans and Traffic Management Plans to manage gas field traffic.

Queensland Police also report an increase in traffic accidents involving resource industry workers and vehicles, which are reported in the GFD Project Traffic and transport assessment (Cardno, 2014). Fatigue related to end-of-shift traffic and long commutes from southeast Queensland may be important issues, as is the surface condition of some highway sections. The pre-mitigated traffic impact significance is rated as high due to the almost certain occurrence, and the potentially moderate consequences of highway traffic accidents. Following mitigation, the impact risk is reduced to medium, with a likely occurrence and minor consequences.

Presence of a younger, predominantly male workforce in social venues and general town area

During consultation in late 2012, there was some sentiment that anti-social behaviour had risen with the influx of resource industry workers to the Wandoan area, and that this effect was associated with the dominance of males in the workforce. While wet camps (i.e. those where alcohol is available to off-shift workers) successfully reduced the behavioural impact in towns, they require firm management and strict compliance with behaviour codes. Any GFD Project impacts will be at its maximum between 2021 and 2028 (averaging around 400 GFD Project workers in the area) and centre on the workforce accommodation camps and the nearby centres of Taroom and Wandoan.

As the existing gender ratio in Scotia gas field population is currently skewed significantly towards males in almost all age groups, any influx of male-dominated non-residential workforces to Scotia gas field may reinforce the perception of local communities that they are living in an environment dominated by males. The consequences of this situation are expected to be moderate, as the incidences of anti-social behaviour are generally given a prominence over the reporting of general good behaviour overall, while the risk is medium. Existing fly-in/fly-out work practices related to various resource developments in the area mean the impact of the GFD Project is largely cumulative in nature across the Scotia GFL.

The accommodation of workers in camps away from towns and close to work sites assists in avoiding and mitigating the potential impacts of a male-dominated workforce on the local community. Behaviour in camps is also strictly regulated in accordance with established camp behaviour codes. Community consultation respondents acknowledge that this is an effective measure, and engagement with Police and ongoing monitoring will enhance the effect. The *Santos GLNG SIMP 2012 Annual Report* to the Coordinator-General indicates that community safety complaints across the whole of the GLNG Project area for 2012 constituted around four per cent of total complaints.

Demand on public physical infrastructure

Taroom and Wandoan are the rural townships in close proximity to the Scotia Gas Field tenure. Banana Shire Council maintains that water and sewerage infrastructure in Taroom currently has spare capacity for around 1,000 people, compared with the existing population of approximately 600. A population influx of this magnitude is unlikely as operations workforce assumptions indicate that Taroom may experience project-related growth of approximately 40 persons over the ten years from 2016 to 2026.

The average non-residential construction and operations workforce onsite over the life of the GFD Project of approximately 400 people represents approximately 20% of the projected gas field area population through that period. Santos GLNG operations has demonstrated an effective approach to avoiding impacts on local physical infrastructure through the use of self-contained worker accommodation camps. As the GFD Project will establish a workforce accommodation camp/s in the vicinity of Taroom and Wandoan, the firm location being subject to negotiation with both the Banana Shire Council and the Western Downs Regional Council, the likelihood for the impact materialising pre-mitigation is rated as likely with consequence rated as moderate should there be any reliance on town infrastructure due to capital costs generally incurred with infrastructure upgrades. The risk of this impact is therefore assessed as medium. Implementation of mitigation measures reduce the impact risk to low.

However, should Santos GLNG and local governments agree that it would be beneficial to locate accommodation camps in town areas, further assessment of infrastructure demands would be required.

5.3.2 Affordable lifestyle

Increased demand for housing

Housing in the Scotia GFL is characterised by a high level of separate housing (approximately 90%) as well as a high level of home ownership (approximately 78%, compared with the State level of 60%). There is very limited social housing, and an atypical rental market characterised by a low level of rental through real estate agents (less than 10%) and relatively high levels of rental through private persons and employers (approximately 37% and 21% respectively). A feature of interest in the 2011 Census is the high level of unoccupied housing in the Scotia GFL (27%) compared with the SCA at 17% and the State level of 9.7%. It may be that these low rates of occupancy are a result of the GFL covering agricultural holdings, where processes of agricultural change have resulted lower levels of employment for farm labourers who were formerly housed on properties. Despite the low rates of occupancy during the 2011 Census, the availability of housing was cited as an ongoing issue for residents at the time of consultation for the EIS, particularly in Wandoan.

The Scotia Baseline (Appendix B, Section 4) indicates that the cost of housing in the Scotia GFL while still low in comparison to the State average, has been steadily increasing over time, particularly in Wandoan which has been subject to a higher level of investigation into potential mining development, as well as being in proximity to the construction of other major gas projects. Since 2009 the median price of a three-bedroom house has risen by 28% in Taroom, and by 54% in Wandoan. Median rents have also increased over the last two years. Rental Tenancies Authority data indicates a 30% increase in Miles, and while no data is available for Wandoan, it could be expected that rental increases there would be of a similar or larger order, though this may be influenced by the affordable housing being established by the Western Downs Housing Trust.

The increases in housing costs, considered together with household income, indicate the presence of housing affordability pressure on the GFL. While there are a number of different measures for understanding housing affordability dynamics, and all suffer from input data limitations, nonetheless they act as an indicator to changes occurring in the market. The former Urban Land Development Authority identified that housing is affordable if rental costs were no more than 30% of gross household income, or that mortgage costs were no more than 35% of gross household income.

Based on the figures above, between 50% to 60% of households in Taroom are susceptible to affordability pressures in terms of purchase of a median valued house, and around 60% of households are susceptible to affordability pressures in terms of rental of a median-rental house.

Based on the figures above, between 65% to 70% of households (in mid-2013) in Wandoan are susceptible to affordability pressures in terms of purchase of a median valued house, and around 75% of households are susceptible to affordability pressures in terms of rental of a median-rental house. In September 2011 the *Western Downs Regional Council (WDRC) Housing Affordability Strategy* estimated that more than 70% of Wandoan households were susceptible to purchase affordability pressures while more than 90% of households were susceptible to rental affordability pressures. Hence there would appear to be a slight improvement, though affordability pressures are still significant at the present time.

A further indicator of housing affordability is the house price to income ratio, which is the ratio of median house prices to median gross household income in a given geographic area. While there has been a modest increase in the ratio in Taroom, there has been a significant increase in Wandoan over the three year period, indicating a growing barrier to home ownership in those towns.

The availability of housing continues to be seen as a significant issue expressed by stakeholders during community consultation sessions. Local government representatives indicated that in both Taroom and Wandoan there was a shortage of serviced land that was constraining a supply response and hence contributing to higher housing prices. The Scotia development scenario conservatively assumes that resident workers will increase demand in Taroom by up to 15 houses over the period from 2016 to 2026, with some short-term rental demand from contractors possibly adding to total demand for new stock should accommodation in workforce camps not be available early in the construction period.

Through GLNG community consultations, WDRC has reported that recent resource industry housing demand in Wandoan has increased property values and rents to the point that some local families and individuals who work in non-resource industries (such as saw mill workers) have been displaced to smaller communities. A caravan park has been leased in its entirety to meet the shortfall for worker accommodation.

The likelihood of the impact materialising pre-mitigation is almost certain as Santos GLNG has no control over either individuals or businesses acting unilaterally and moving into the area to capture opportunities associated with the GFD Project or other developments in the area. The consequences of this are minor, as if there is sufficient land for housing in the townships there will be a market response, either for detached housing or for the development of short-term accommodation such as motels or commercially run transient workforce accommodation camps.

Accommodating workers in camps, outside of the towns, is the primary control measure that will be employed to avoid the potential for significant adverse housing market impacts of the GFD Project. An attempt to eliminate all elevated housing demand is not warranted, as increased demand is required to stimulate a market response on the provision that an adequate supply of serviced land for housing (outside of Santos GLNG's control) is available.

Santos GLNG has delivered direct housing infrastructure and financial support in Gladstone and the Surat Basin to mitigate housing market impacts to date (*Santos GLNG SIMP 2012 Annual Report*), and the extension of this program (the *Integrated Project Housing Strategy*) to the Scotia GFL may be an option depending on the results of on-going monitoring of housing market impacts.

Increased wage pressures on local businesses

Data from the 2011 Census indicates that the Scotia GFL as a whole has shown sustained low unemployment rates which are consistently below State averages for the last four to five years. The Scotia SCA has the lowest unemployment rate of all gas fields for the GFD Project, having maintained an unemployment rate of either one per cent or lower since 2008. In addition, a relatively small proportion of the existing Scotia GFL workforce is employed in technical and trade roles. These labour market conditions indicate a vulnerability to workforce demand impacts, particularly in trade qualified occupations, and suggest that qualified entrants to resource sector employment will be drawn directly from other industries and geographies. However, there are likely to be significant non-technical support roles, such as in camp operations and logistics, which may draw labour away from local businesses and service providers due to the higher wages available in the resource sector (Strategy Unit, Uniting Care Queensland, 2013). Demand for local skills and labour in Scotia GFL will be at its maximum between 2021 and 2028 when the GFD Project workforce is projected to average 400 positions, or approximately 5% of the Scotia SCA labour force at 2011 (ABS, 2013).

The experience of construction to date and the views expressed by business stakeholders during consultation indicate that the impact could possibly occur. The consequences prior to mitigation are considered to be moderate as the loss of experienced staff, and the inability to replace them easily, can have a severe impact on the productivity of businesses and service providers. Hence the impact risk is considered to be medium, notwithstanding that the long-term outcomes may be positive with higher individual incomes for residents in the Scotia GFL, and higher labour force participation rates.

5.3.3 Community identity and spirit

Local employees working extended shift hours and rosters

Scotia GFL lifestyles have traditionally centred on agricultural production and associated service industries. While this suggests non-standard working conditions (particularly the 24/7 responsibility of managing farms and cattle properties), 12-hour rostered lifestyles are relatively new to the area. Since 2001, the proportion of workers in the mining industry in Scotia GFL has increased from 8% to 17% (Appendix D: Scotia gas field social baseline), suggesting that 12-hour roster conditions may have become increasingly familiar to local residents in that period. It may also indicate that mining industry workers may be commuting from the Scotia GFL to work in mining areas to counter under-employment in the agriculture sector.

The GFD Project may draw a small proportion of workers from other industries (such as local government) who are likely to be new to 12-hour roster lifestyles, but familiar with non-standard working conditions due to the flexibility associated with working within and supporting the viability of a small community. While the likelihood of some level of impact pre-mitigation is possible, it is also apparent that the direct impacts of 12-hour shifts and block rosters upon Scotia gas fields residents will be limited to those taking up GFD Project operations jobs (projected to be in the order of 15 persons over 15 years to 2031) and their families. To some degree, these private impacts of shift-based employment (i.e. those that accrue to individual workers and their families) can be conceived as a reasonable market outcome given the strong incentives (income level and security) to participate. From this perspective the salaries paid to GFD Project workers are the primary mitigation measure. In practice, Santos GLNG supports its employees to remain healthy and engaged with their community through *Employee Relations Management Plans* and incentives to foster and support community participation.

Indirect impacts may accrue at the community level if participation in community activities is markedly curtailed; however the consequences are expected to be minor given the limited numbers involved, resulting in a risk rating of low.

Visible presence of gas industry workers in local community venues, and the presence and scale of project facilities, including camps

Some sentiment expressed during GFD Project community consultation indicates that the conspicuousness of resource industry workers (particularly in public venues such as hotels) has resulted in an “us and them” mentality to some degree, and a loss of local rural character to a perceived “mining town” culture. Key stakeholders in Western Downs Region report instances of resentment and disharmony in the community. Comments include such sentiments as “the community feels the pubs have been taken away from them” and “there are a lot of old people here not used to city dwellers coming in and taking over the town”. While this effect is highly consistent with anecdotal evidence, and submissions made to public inquiries into resource communities across Australia, a contrasting view is evident in the analysis of community consultation presented in the *Santos GLNG SIMP Annual Report*. 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.”

Some community consultation respondents indicated that they would prefer that more resource industry workers settled in the area rather than working on fly-in/fly-out / drive-in/drive-out arrangements. This suggests that local communities are receptive to positive contributions from resource industry workers, and would welcome their further integration into local social networks. The siting of larger accommodation camps, and project facilities, has generally been away from settlement areas with consequent minimal impact on rural visual amenity and informal community engagement.

The likelihood of this risk occurring is rated as likely. The vulnerability of Scotia GFL communities to subsequent impact from the risk is largely related to the continuity of traditional rural and agricultural identities, and degree to which resource sector and other industrial development have been an influence. Wandoan has experienced a large influx of resource industry workers related to gas and coal projects, and residents are likely to have become used to the phenomenon suggesting that GFD Project workforces will have no more than a low level of risk. Residents of Taroom, where resource development activity has been more recent and of a smaller scale may be more susceptible to experiencing some impact on community identity.

Concerns regarding the visibility and impact of non-residential workforces are largely subjective and related to the preferences of individuals. Regardless, Santos GLNG successfully minimises GLNG workforce impacts by containing non-resident workforces to accommodation camps away from townships, and this strategy will be extended to GFD Project workforces in the Scotia GFL. The community impacts of visible workforces will be further managed under Santos GLNG’s *Employee Relations Management Plans* (including codes of conduct and behavioural management) and *Community Engagement Plan*. Santos’ community engagement programs are also tailored to respond to community concerns and will remain sensitive to reports of workforce impacts that might emerge.

High occupancy of short-term accommodation by gas industry contractors, displacing visitors to communities

While there is limited short-term accommodation in Taroom, the Banana Shire Council reports that the economic benefits of further resource industry development would be welcome, and has a desire to encourage the establishment of gas industry support businesses in the town. The local community typically expresses a desire to retain the cattle-country identity of the area and avoid excessive urban, commercial and industrial encroachment. The construction phase demand on accommodation in Wandoan to date from other projects has already induced a market response and the provision of an increased level of commercial accommodation. There are strong indications that the short-term accommodation market is making a pre-emptory response in Taroom in the expectation of a future increased level of activity in that area. This may protect Taroom from impacts to short-term accommodation that have been experienced in the early stages of gas project development. As well, Santos GLNG has successfully managed the GLNG Project workforce impacts by ensuring the presence of workers and equipment in townships is minimised (i.e. through workers accommodation camps, workforce management strategies and remote/concealed operations areas), and this strategy will be extended to GFD Project workforces in the Scotia gas field.

Pre-mitigation the likelihood of this impact materialising, particularly in the Taroom area, is possible the consequences will be largely subjective and heavily offset by the economic benefits of development. Hence, the risk of this impact is rated as medium.

Migration of long-term residents from high-impacted properties

This risk has a higher likelihood of materialising where gas wells and associated infrastructure construction have a significant direct adverse and unavoidable effect on agricultural property operations and management. This is more likely to occur:

- On small farms where productivity is reduced by natural gas infrastructure or where land fragmentation will reduce farm viability
- In areas of high well density (wells per hectare)
- Where existing land productivity is low.

These are not common characteristics across GFD Project tenure. In addition, field development planning recognises constraints (such as the proximity to residential dwellings and amenity issues such as noise, vibration and traffic) ensuring that an adequate separation distance from sensitive receptors is maintained.

Across the GLNG Project area to date, complaints from landholders have included moderate impacts to visual amenity and lifestyle (*Santos GLNG SIMP Annual Report*). This impact will be offset to some degree by a countervailing effect of landholders having agricultural livelihoods enhanced and sustained by payments under compensation agreements. Community consultation in Wandoan suggests that after initial doubts, some landholders have come to accept natural gas industry activity on account of the consistent financial return it offers. There are also instances where the existence of gas wells on properties is being used to market the sale of the property.

Given the absence of small-scale niche and hobby farming in the Scotia Gas field, and productivity of agricultural enterprises, the likelihood of this impact materialising pre-mitigation is considered as possible. The consequences would be rated as moderate in the Wandoan area due to the existing impacts on landholders stemming from mining development and minor in the Taroom area due to the relatively low numbers of landholders that would be affected. Overall, the risk is rated as medium.

5.3.4 Capacity for sustainable economic activity

Disruption to agricultural production through field operations

Agricultural productivity impacts will vary widely across Scotia GFL according to field development characteristics and existing land use and agricultural land quality. According to the *Santos GLNG SIMP 2012 Annual Report*, land and landholder issues rate as one of the most common sources of complaints regarding the GLNG Project to date and beyond lifestyle impacts, landholders are most likely to be concerned about potential impacts on water, agricultural land values and site disturbances. Media reports and community consultation have identified a broad suite of landholder concerns including:

- Perceived interference and/or contamination of water resources
- Land clearing, erosion (e.g. of exposed soil) and potential for contamination
- Contamination of land resources as a result of accidents
- Spread of weeds or pest species
- Impacts from reduced air quality as well as noise and vibration
- Potential loss, reduction or fragmentation of agricultural land
- Conflicts between existing land uses and project activities
- Declining property values (e.g. due to resource degradation or the general presence of gas activities on properties)
- Access to project gains (i.e. beneficial water reuse)
- Time costs of becoming involved with the often numerous and ongoing engagement and negotiation activities associated with resource activities.

Pre-mitigation the likelihood of some level of disruption to agricultural production is rated as likely, particularly during well and gathering line construction; however, this impairment is generally of a short duration. The consequences of this disruption is rated as moderate due to the limited area of land disturbed per well and the productive potential of the land, particularly for beef production. Hence, at the broad scale of development proposed through the GFD Project, the impact risk is rated as medium. Higher impacts may occur for some individual agricultural producers where land parcels are small or subject to more intensive well spacing. As with the existing GLNG Project, GFD Project construction and operation activities will remain compliant with the Queensland Government's *Land Access Code* (2010).

Construction activity deters local tourism and highway trade

Taroom's historical connections to Leichardt's expedition to Port Essington and proximity to the Nathan Dam site on the Dawson River and national park areas are fostering the development of a growing tourism trade. The impact would be distributed unevenly across Scotia GFL businesses, and may be more prominent in Taroom. While accommodation and hospitality providers will be able to service a new market in the gas industry workforce to offset potential negative effects on tourism trade, any businesses dependent solely on tourism or recreational highway traffic could be affected disproportionately.

Pre-mitigation the likelihood of the impact materialising is rated as low, as there is a significant lead time prior to GFD Project commencement, and combined with other gas project development activity in the area there is a high probability of a commercial provider of camp accommodation establishing a facility in the area (the Taroom caravan park is already subject to redevelopment). This would cater for the early construction workforce establishing GFD Project camp accommodation. The consequences are rated as minor due to the limited tourism market and the ability of accommodation providers being able to access the construction accommodation market. Hence impact risk is rated as low.

Perception that gas extraction creates uncertainty around water availability for agriculture

While the surface water (URS, 2014) and groundwater impact assessments (Parsons Brickerhoff, 2014) conducted for the GFD Project EIS suggest that physical water quality and supply impacts of the GFD Project in Scotia gas field are manageable, community disquiet may emerge where landholders remain unconvinced due to a lack of on-going performance information on groundwater or surface water impacts. GLNG Project community consultation data indicates that there is existing concern in Scotia gas field about the impact of natural gas production on ground and surface water quality and supply, and the consequences for agricultural production. Specific concerns centre on the potential for natural gas wells to impact on bores, affecting town and stock water supplies in terms of quality and quantity. There is also a high degree of interest in ensuring that there are no adverse impacts to the Dawson River which is a highly-valued natural asset in the Taroom area. Given the predominance of agricultural livelihoods to the Scotia GFL, it is likely that any emerging perception of adverse impact on water supply in the Scotia gas field area will create uncertainty around the sustainability of water supplies for agriculture, which may affect productivity enhancing investment in agricultural enterprises.

While the potential for this impact to materialise pre-mitigation is rated as likely, the consequences are rated as major due to the importance of the issue to agricultural producers and town residents in the area. Any reduced investment in agricultural development would have a flow-on effect to town-based businesses servicing the rural sector. Community acceptance of gas production from the Scotia and Peat fields to the east of Taroom and Wandoan since 1996 supports a consequence rating of major, and an overall impact significance rating of high.

The GLNG Project has acknowledged the sensitivity of this issue by including water and the environment as a key action plans in the GLNG Project SIMP. The GFD Project will continue to communicate closely with affected landholders and communities to ensure any concerns are addressed early and effectively with relevant information, and that management strategies including compliance with Queensland Government 'make good' regulations, are well-understood by landholders. Santos GLNG will also support the information and communication activities of the Queensland GasFields Commission to engage with landholders and the community around water issues. The residual risk is reduced to medium.

In-ward 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 simply proximity to larger regional centres. Larger enterprises with wider supply networks, greater economies of scale and business models dedicated to resource industry supply may be awarded tenders from the GFD Project which could have a range of consequences for local communities and economies. New entrants could compete for labour, and commercial and industrial space, possibly contributing to inflationary effects and skills shortages. Conversely these tier 1 and 2 contractors could sub-contract their services locally as per their local procurement plans. However it is likely that these businesses would establish in a more central regional location in order to have more efficient distribution channels servicing the maximum number of buyers or projects. This could possibly preclude the establishment of a base in either Wandoan or Taroom. Bringing greater economies of scale and wider services, larger enterprises may also be likely to out-compete local businesses for a range of local services outside the resource industry.

However beneficial impacts will also accrue, including in the provision of employment opportunities and skills development pathways for local residents, greater diversity of economic capacity and services, and higher rates revenues for local governments. Large, specialised industry suppliers are unlikely to remain in the area once natural gas opportunities are exhausted suggesting that this impact will be temporary and tied to the life of the gas industry in the region. Even with some years of resource industry investment in the area, medium and large businesses (as defined by OESR) are virtually absent from the economy surrounding the Scotia gas field locality (less than 2% of the total in the SCA). Less than 14% of businesses generate more than \$500,000 in annual revenue.. Pre-mitigation the risk of this impact is assessed as low. While the entry of outside businesses might have some negative consequences for existing local businesses, they will be offset by the broader benefits of employment and economic development.

5.4 Impact summary

As discussed in Section 2.3.3, the impacts were assessed using the risk assessment methodology, which considers the likelihood and consequence of a potential impact to assess its risk. The potential risks to the Arcadia gas field locality and social catchment area, both prior to mitigation (pre-mitigated) and after the application of mitigation measures (residual) are shown in Table 5-4.

Further details on the proposed strategies and programs for different population groups, labour groups and training schemes are detailed in the SIMP and the Social Issues Action Plans (Appendix AC).

Table 5-4 Scotia gas field impact assessment summary

Potential impact	Phase	Pre-mitigated significance			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"> Continue to implement the Santos GLNG Environmental, Health and Safety Management System. Continue the medical field response, including paramedics, nurses, general practitioners and emergency evacuation arrangements, to support needs of non-resident workforce, during construction. Continue to consult with Queensland Health and other health service providers on emerging impacts to the local health system 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. Continue to implement the Santos GLNG community engagement plan Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework. 	Possible	Minor	Low
	Operations	Almost certain	Moderate	High		Possible	Minor	Low
	Decommissioning	Likely	Minor	Medium		Unlikely	Negligible	Very low
Intra-community conflict	Construction	Unlikely	Minor	Low	<ul style="list-style-type: none"> Continue to implement the Santos GLNG community engagement plan 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. Continue to implement the Maranoa Regional Rules including monitoring compliance Land access and landholder engagement 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. 	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			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"> Continue to implement the Santos GLNG Environmental, Health and Safety Management System. 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. Partner with local Councils to apply for Royalties for Regions funding for road upgrades, where appropriate. Continue to implement internal policies and regional rules that relate to road use and driver behaviour including: <ul style="list-style-type: none"> 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 Engage with local schools regarding schools zone safety Continue shuttle bus services transporting workers from airports to work sites and camps. Internal driver education campaigns to raise awareness about driving behaviours and safety. Communicate heavy and light vehicle movements and road works through regular updates in local media, when required 	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	Moderate	Medium	<ul style="list-style-type: none"> 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 Continue to implement Employee Relations 	Unlikely	Minor	Low
	Operations	Possible	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					Management Plans including Worker Code of Conduct, Site Work Rules and Employee Induction Program <ul style="list-style-type: none"> Promote Santos GLNG employee volunteering in the local community Support local communities with employment and training opportunities, where possible Continue to implement the Santos GLNG community engagement plan 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. Engage with Queensland Police Service to respond to issues associated with anti-social behaviour where identified. 			
Demand on public physical infrastructure	Construction	Likely	Moderate	Medium	<ul style="list-style-type: none"> 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 Partner with local Councils to apply for Royalties for Regions funding applications, where appropriate. 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 Continue to implement the Santos GLNG community engagement plan 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. 	Unlikely	Minor	Low
	Operations	Likely	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Likely	Moderate	Medium		Remote	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					<ul style="list-style-type: none"> Continue the medical field response, including paramedics, nurses, general practitioners and emergency evacuation arrangements, to support needs of non-resident workforce, during construction. Continue to consult with Queensland Health and other health service providers on emerging impacts to the local health system 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. Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework. 			
Affordable lifestyle								
Increased demand for housing	Construction	Almost certain	Moderate	High	<ul style="list-style-type: none"> Apply the IPHS framework including: <ul style="list-style-type: none"> Actively monitor the housing market and engage key stakeholders to ensure appropriate housing strategies are in place prior to field development 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 Consider supporting programs that relieve vulnerability to housing affordability pressures 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 Monitor the effectiveness of the social issue action plans through the annual SIMP monitoring framework. 	Unlikely	Minor	Low
	Operations	Almost certain	Moderate	High		Unlikely	Minor	Low
	Decommissioning	Likely	Minor	Medium		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Increased wage pressures on local businesses	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none">Support local business to attract staff through the Careers in Gas websiteContinue to participate in local career days and employment expos highlighting the range of employment opportunities available in GFD Project communitiesContinue to support initiatives, such as the Roma Shop Local, Invest Local campaign which promote main street businesses within the community.	Possible	Minor	Low
	Operations	Possible	Moderate	Medium		Possible	Minor	Low
	Decommissioning	Unlikely	Minor	Low		Unlikely	Negligible	Very Low
Community identity and spirit								
Local employees working extended shift hours and rosters	Construction	Possible	Minor	Low	<ul style="list-style-type: none">Continue to implement existing management plans and procedures related to workforce management including Employee Assistance ProgramSupport local communities with employment and training opportunitiesContinue to implement the Santos GLNG community engagement planPromote Santos GLNG employee volunteering in the local communityContinue to implement the Santos GLNG community investment program including annual sponsorship and donations program, supporting local events and initiatives that enhance community wellbeing.	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">Continue to implement existing management plans and procedures related to workforce management including:<ul style="list-style-type: none">Employee Relations Management Plans including Worker Code of Conduct, Site Work Rules and Employee Induction ProgramEmployee Assistance ProgramMaranoa Regional Rules – to guide the behaviour of Santos GLNG workers and contractors when working in the field. This includes protocols such as not wearing	Unlikely	Minor	Low
	Operations	Likely	Minor	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Negligible	Low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					<div>uniforms after hours in the community</div> <ul style="list-style-type: none">Promote Santos GLNG employee volunteering in the local communityContinue to implement the Santos GLNG community investment program including annual sponsorship and donations program, supporting local events and initiatives that enhance community wellbeingContinue to implement the Santos GLNG community 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">Continue to implement Maranoa Regional Rules, related to travel in project regionsWhen field development planning is sufficiently advanced to determine workforce numbers, provide this information to State and local governments to assist with regional service planningApply the IPHS framework to monitor and respond to housing impacts directly associated with the GFD ProjectContinue to implement the Santos GLNG community engagement plan	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">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	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">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.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	Possible	Minor	Low
	Operations	Unlikely	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					contractors <ul style="list-style-type: none"> 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 Continue to implement the Maranoa Regional Rules including monitoring compliance with the Land Access Code 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. Continue to engage with communities such as through water specific engagement forums 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. 			
Construction activity deters local tourism and highway trade	Construction	Possible	Minor	Low	<ul style="list-style-type: none"> 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 Continue to implement the Santos GLNG community engagement plan Continue to implement Maranoa Regional Rules, related to travel in project regions 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, 	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			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					engage with local councils to develop and implement these documents.			
					<ul style="list-style-type: none"> Apply the IPHS framework to monitor and respond to housing impacts directly associated with the GFD Project. 			
Perception that gas extraction creates uncertainty around water availability for agriculture	Construction	Possible	Major	High	<ul style="list-style-type: none"> 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 Continue to engage with communities such as through water specific engagement forums 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. Continue to promote and update the Santos GLNG water portal. Continue analysis of water level data from monitoring bores with Santos GLNG installed telemetry water pressure monitoring systems and make information available to landholders. Continue to implement the Santos GLNG community engagement plan. 	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"> 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 Continue to engage with local business', holding procurement sessions to assist understanding of supply chain opportunities Continue to support initiatives, such as the Roma 	Unlikely	Minor	Low
	Operations	Possible	Minor	Low		Unlikely	Minor	Low
	Decommissioning	Possible	Minor	Low		Unlikely	Negligible	Very low

Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual significance		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
					<p>Shop Local, Invest Local campaign which promote main street businesses within the community</p> <ul style="list-style-type: none"> Continue to report local procurement performance to key stakeholders and communities Provide GFD Project details to State government to assist in the development of capacity building programs. 			

Regional Indigenous community assessment

6.1 Social values

Table 6-1 presents a description of the social values of the regional Indigenous population, derived from the social baseline profile and consultation with stakeholders undertaken for the EIS. The impact assessment considers the risks (described generally in Appendix A: Social values and impact description) to these values from GFD Project activities to develop the GFD Project tenure.

The detailed nature of GFD Project development activity is described in Sections 4.2, 5.2, and 6.2.

A complete demographic profile, which the following discussion draws upon, is provided in Appendix E: Indigenous social baseline.

Table 6-1 Indigenous social values

Social value	Indicator set	Social value summary
<p>Liveable Community</p> <p>Key stakeholders:</p> <ul style="list-style-type: none"> Community elders and members Indigenous organisations providing services Local government Mainstream service providers (e.g. health, education, police and emergency services). 	<ul style="list-style-type: none"> Proximity and access to traditional country Degree of satisfaction with the management of traditional country Respectful and harmonious relationships with the non-Indigenous community Access to service delivery (in particular health and education) that acknowledges and respects culture Harmonious intra-community relationships Ability for extended family residence Adequate infrastructure, including housing. 	<p>ATSI people across the GFD Project area generally live in a mutually respectful relationship with the non-indigenous community, despite evident serious social disadvantage compared with that community. Within the Indigenous population, Woorabinda experiences significantly more disadvantage when compared to Indigenous people living in the 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 considering the health issues and poor health outcomes within the community. While Indigenous people in the towns of the region have a moderate degree of social and economic integration with the wider community, the residents of Woorabinda suffer a high degree of exclusion from mainstream society with attendant issues, such as high unemployment, poor housing and educational outcomes, and higher rates of family dysfunction. The ability of Native Title groups to participate in cultural heritage surveys on country from which they may have been excluded previous to the Santos GLNG Project, has possibly enhanced the value of living in a regional location for some members of the community.</p> <p>In summary, while there is strong attachment to local communities, liveability could be enhanced significantly with improved access to services and housing, particularly for Woorabinda.</p>

6 Regional Indigenous community assessment

Social value	Indicator set	Social value summary
<p>Affordable lifestyle</p> <p>Key stakeholders:</p> <ul style="list-style-type: none"> Community elders and members Indigenous organisations providing services State and Federal Government. 	<ul style="list-style-type: none"> Cost of housing Cost of transport. 	<p>Addressing the inadequate state of housing for Indigenous people is acknowledged as a priority by communities and governments. While there is a higher incidence of over-crowding and a low level of home ownership in towns across the region, the Santos GLNG Integrated Project Housing Strategy does not have any specific provision for addressing impacts on Indigenous housing in towns other than including Indigenous people as a specific sub- category, along with students/trainees/apprentices, within the broad category of 'low-income households', despite obvious differences in the needs of families compared to apprentices and trainees.</p> <p>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 licenses) are likely to constrain their ability to access employment opportunities elsewhere.</p> <p>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.</p>
<p>Recognisable community identity and spirit</p> <p>Key stakeholders:</p> <ul style="list-style-type: none"> Community elders and members Indigenous organisations Local Government Community organisations (including Churches). 	<ul style="list-style-type: none"> Historical recognition and protection of cultural heritage Number and strength of Indigenous organisations Status of reconciliation with non-Indigenous community. 	<p>The recognition of Indigenous community history and culture has been advanced through the relatively recent actions of resource development companies negotiating Indigenous land use agreements (ILUAs) and cultural heritage management plans (CHMPs) over wide geographic areas. Prior to this development, the management of cultural heritage in road reserves from the late 1990s provided a limited focus on Indigenous interests in land.</p> <p>While there has been significant activity in the MRC in the development of local planning strategies, and at a high level the Maranoa Regional Plan mentions the provision of support for Indigenous groups, the Placemaking Strategies for regional townships make no formal provision for any recognition of Indigenous historical presence in the landscape.</p> <p>For Woorabinda, 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.</p> <p>In summary, Indigenous community identity and spirit has a modest recognition to those outside of the Indigenous community, with on-going action by the Indigenous community aimed at strengthening both identity and spirit.</p>

6 Regional Indigenous community assessment

Social value	Indicator set	Social value summary
<p>Capacity for sustainable economic activity</p> <p>Key stakeholders:</p> <ul style="list-style-type: none"> Community elders and members Indigenous organisations State and Federal Government Training providers. 	<ul style="list-style-type: none"> Availability of employment opportunities Indigenous workforce participation Indigenous business start-ups and ownership Level of education achievement, including retention to year 12 and post-school destination. 	<p>Indigenous capacity for sustainable economic activity is limited across the region, and severely constrained in Woorabinda.</p> <p>High levels of unemployment (up to five times the level for non-Indigenous persons), particularly for youth and young adults, and poorer educational outcomes compared with the non-Indigenous community, lead to a dependence on the welfare system that is not welcomed by the community in general. 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.</p> <p>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 extremely limited, but support through resource development projects is likely to be increasing their number, albeit from a low base.</p> <p>In summary, capacity for sustainability would be regarded as limited at this stage.</p>

7 Regional Indigenous community assessment

6.2 Potential impacts, assessment and mitigation

6.2.1 Liveable communities

Uncertainty with regard to environmental impact of GFD Project

The Aboriginal community has indicated to Santos GLNG that an important issue for them is land use and the environment. With construction work occurring across an extensive area, some of which was only subject to extensive grazing with low stocking rates in the past, there is a potential for environmental disturbance, the nature of which is uncertain to Indigenous people. 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.

In the absence of any targeted reporting to the Indigenous community the likelihood of this impact materialising is regarded as possible with moderate consequences, resulting in a medium level of risk. However, with the implementation of Santos GLNG's Cultural heritage management plans and environmental management plans, it is considered that the consequence of the impact can be reduced to minor, with a residual risk of low.

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 higher potential for misunderstanding and conflict. Depending on circumstances, this may have an adverse effect on harmonious relationships both within the community and between the community and the non-residential workforce. 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. In the GFD Project, due to the pre-existing or the planned establishment of accommodation facilities remote from the towns in the area, the likelihood of tension in relationships is regarded as unlikely with a minor consequence, resulting in a low level of significance. Following the implementation of cultural awareness programs for the workforce the likelihood of tension is regarded as unlikely with minor consequence, resulting in a residual risk of very low.

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Tension between Native Title and historical segments of Indigenous population 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. This is sometimes due to the exclusion of what are often termed 'historical people' from benefit agreements negotiated with Native Title groups, or where Native Title is contested between different segments of a Native Title claim group. These tensions may affect the relationships within and the liveability of a community. Santos GLNG negotiated ILUAs covering the future development of the GFD Project areas, and implementation to date has not revealed any significant discord in relation to participants in the agreements or between parties to the ILUAs and the Indigenous community in general. Hence materialisation of the impact is regarded as unlikely with minor attendant consequences, resulting in a risk assessment of low. Measures to deal with any emergent intra-community tension are based on close engagement and consultation with the Indigenous community on an on-going basis, resulting in a residual likelihood of remote with minor consequences and a resulting residual risk of very low.

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. Low socio-economic status often means that there is a greater reliance on extended family members in day to day living. The inability to afford housing due to rent escalation may result in segments of extended families having to leave a community, thereby impairing the liveability of the community for those family members remaining. While the existence of this impact has not been emphasised in community consultation to date, it is nevertheless still regarded as a possibility with moderate consequences should it occur, with a resultant risk of medium. The existence of a stock of dwellings dedicated to housing ATSI people will act to minimise this impact as those dwellings should be immune to rent escalation occurring in the private market; however, there appears to be an equal dependence on the State and the private market by Indigenous renters. Access to rental subsidy by Indigenous renters in the private market under stress should reduce the likelihood to unlikely with the consequences remaining moderate and the risk rating remaining as medium.

6.2.2 Affordable lifestyle

Increased housing costs

For those members of the Indigenous community who rent in the private market, any increase in housing costs due to the escalation of rental pressure is likely to seriously affect their family budgets and affordability of their lifestyle, imposing choices that they may otherwise not have had to make. This could include choices such as between private and public education for children and whether to run one or more vehicles for a family. Materialisation of the impact is regarded as a possibility with moderate consequences should it occur, with a resultant significance of medium.

As indicated in the discussion of the previous impact, the existence of a stock of dwellings dedicated to housing ATSI people will act to minimise this impact as those dwellings should be immune to rent escalation occurring in the private market, and access to rental subsidy by Indigenous renters in the private market under stress should reduce the likelihood to unlikely with the consequences remaining moderate and the risk rating remaining as medium.

7 Regional Indigenous community assessment

Where the affordability of housing is affected for low income groups it could 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. Increased costs for either purchasing or building a house by State or Indigenous housing organisations will also translate into higher rental charges for Indigenous tenants, with flow on consequences for lifestyle affordability. As discussed previously, it is difficult to identify this impact through consultation or an examination of Integrated Public Housing Strategy monitoring as no information is available to establish how many of the 57 persons assisted in 2012 through the MRC Rent Supplement Program were Indigenous. It would be reasonable to assume that this impact is likely to occur and have moderate consequences with a resultant significance of medium. Access to rental subsidy could reduce the consequence to minor with the risk remaining at a medium level.

6.2.3 Community identity and spirit

Inadvertent interference with cultural heritage during construction

While there is a CHMP in place to manage impacts on cultural heritage material in the field, it remains possible that there may be unintended interference with cultural heritage during construction. If this occurs frequently, or the CHMP is perceived as ineffective in controlling unintended interference, there may be an adverse consequence for some members of the Indigenous community who may feel that their cultural identity is being disregarded. The likelihood of this occurring is regarded as possible, as chance finds can never be eliminated totally, and depending on the nature of the find, the consequence could be at a moderate level, resulting in a medium significance. However with experienced survey teams the likelihood of not identifying and inadvertently interfering with a cultural heritage site should reduce to unlikely, with the consequences being minor as a result of the effective and sensitive implementation of chance find procedures. In this case the resultant risk will be low.

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 the preservation and custodianship of heritage or the operations of a community health service. Should staffing for these organisations be difficult, either due to the success of recruitment in to higher paying jobs available through the GFD Project, or a decrease in volunteer labour to support the operations of an organisation, it may impair the viability of the organisation, particularly in the short-term. This could occur across the GFD Project development area, but is more likely to be an issue in the Roma area where there are a higher number of Indigenous organisations located. The likelihood is possible, while the consequences are considered to be moderate, particularly if the organisation delivers essential community services in an area such as health. The risk rating in this case would be medium. As Santos GLNG has committed to 'work with the Aboriginal communities to develop effective employment, training and enterprise outcomes', any unintended consequences of success in this area would also be addressed through complementary community investment. This would reduce the consequences to minor with a resultant risk of low.

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General level of development marginalises Indigenous presence in community

A rapid expansion in the non-Indigenous population, who are generally in the high end of the income scale, may act to take attention away from issues of concern to the Indigenous community and increase the Gini coefficient or relative inequality between Indigenous and non-indigenous peoples. For example, the rapid development of new housing sub-divisions to cater for this expansion may not do anything to address the chronic over-crowding of Indigenous households that has been in existence for many years. The scale of development demanding the attention of local officials may relegate issues of particular concern to the Indigenous community to a lower order of priority, despite these issues having been on the agenda for a long period of time prior to the advent of resource development pressures. Should this occur, there may be a diminution of community spirit as perceptions of being marginalised potentially arise. While the likelihood of a situation developing as described is rated as possible, consequences are rated as moderate as it is a sensitive issue for a segment of the community that has experience of being excluded over many years in the past, resulting in an impact risk rating of medium. The deployment of effective community engagement and support programs should reduce the consequences to minor and the risk rating to low.

Resentment at perceived landholder benefit from the occupation of traditional land

While Native Title groups have entered into ILUAs with Santos GLNG, it remains the case that these groups are descendants of the original traditional owners who were forcibly removed from the land, often in violent circumstances. Historical accounts of these circumstances are being published continually, contributing to a more accurate understanding of the past and an evolving community identity (Bottoms, 2013). Publicity surrounding the income derived from hosting gas wells and infrastructure on agricultural holdings may foster a degree of resentment toward those landholders, and possibly impede any community reconciliation process that may be in train, or make it harder to commence such a process. It may also have an influence on the conduct of cultural heritage clearance work on properties.

The likelihood of the impact materialising is rated as possible, with consequences being minor and a resultant significance of low. Managing the issue should it arise would require a dialogue with the aggrieved person, however it may be possible to minimise the impact of occurrence by sensitive publication of stories highlighting the potential financial benefits of hosting project infrastructure. While this should this be done, the risk of the potential impact will likely remain unchanged.

6.2.4 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 often influence the retention of students, apprentices and trainees in educational institutions, as individuals opt to take up opportunities to earn larger 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. The likelihood of the impact materialising is rated as possible (as overall apprentice completion rates would seem to infer) and the consequences are rated as moderate in the longer term, resulting in a medium significance rating. Measures being deployed by Santos GLNG that are able to address this impact, such as ATSI employment strategies and plans, will influence both the likelihood and consequences, reducing them to unlikely and minor respectively.

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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. Highly negative experiences may also deter an individual from actively seeking to participate further in the workforce. This is more likely to be an issue with new entrants to the workforce (both from towns across the region and particularly from Woorabinda), including those who are new to the oil and gas industry environment. In an unmitigated state, this impact is considered to be possible with moderate consequences, resulting in a medium impact significance level. However, the impact is considered to be highly manageable with a significant body of resource industry practice available to draw upon when developing specific measures aimed at Indigenous worker support and retention. Effective mitigation measures will reduce the likelihood to unlikely and consequences to minor, with an overall impact risk rating of low.

6.3 Impact summary

As discussed in Section 2.3.3, the impacts were assessed using the risk assessment methodology, which considers the likelihood and consequence of a potential impact to assess its risk. The potential risks to the Arcadia gas field locality and social catchment area, both prior to mitigation (pre-mitigated) and after the application of mitigation measures (residual) are shown in Table 6-2.

Further details on the proposed strategies and programs for different population groups, labour groups and training schemes are detailed in the SIMP and the Social Issues Action Plans (Appendix AC).

7 Regional Indigenous community assessment

Table 6-2 Indigenous community impact assessment summary

Potential impact	Phase	Pre-mitigated significance		Risk	Mitigation measures	Residual risk		
		Likelihood	Consequence			Likelihood	Consequence	Risk
Liveable community								
Uncertainty with regard to environmental impact of project	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none">• Apply Cultural Heritage Management Plans and follow Native Title process with relevant parties to provide agreed management of Aboriginal cultural heritage within claim area• Apply targeted measures developed for the GLNG Project to engage Aboriginal individuals and communities including:<ul style="list-style-type: none">— Aboriginal engagement policy— Integration of Aboriginal and cultural heritage awareness into employee induction programs— Working with relevant Aboriginal groups on native title process and implementing Cultural Heritage Management Plans— Employee Induction Programs and Employee Relations Management Plans.	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	Unlikely	Moderate	Medium	<ul style="list-style-type: none">— Employee Induction Programs and Employee Relations Management Plans.• Comply with Environmental Management Plans• Continue to implement the Environmental Protocol for Constraints Planning and Field Development• 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.	Unlikely	Minor	Low
	Operations	Unlikely	Minor	Low		Unlikely	Negligible	Very Low
	Decommissioning	Unlikely	Moderate	Medium		Unlikely	Minor	Low
Tension between native	Construction	Unlikely	Minor	Low	<ul style="list-style-type: none">• Monitor the effectiveness of the social issues action plans through the annual SIMP	Remote	Minor	Very low

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Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual risk		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
title and historical segments of Indigenous population over access to project benefits	Operations	Unlikely	Minor	Low	monitoring framework.	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"> Create contract and supply opportunities for Aboriginal businesses and support Indigenous employment expos where required 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 Apply the IPHS framework including: <ul style="list-style-type: none"> Actively monitor the housing market and engage key stakeholders to ensure appropriate housing strategies are in place prior to field development 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. Consider supporting programs that relieve vulnerability to housing affordability pressures. Monitor the effectiveness of the social issues action plans through the annual SIMP monitoring framework. 	Unlikely	Moderate	Medium
	Operations	Possible	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Unlikely	Minor	Low		Remote	Negligible	Very low

7 Regional Indigenous community assessment

Potential impact	Phase	Pre-mitigated significance		Risk	Mitigation measures	Residual risk		
		Likelihood	Consequence			Likelihood	Consequence	Risk
Affordable lifestyle								
Increased housing costs	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none">• Apply the IPHS framework including:<ul style="list-style-type: none">— Actively monitor the housing market and engage key stakeholders to ensure appropriate housing strategies are in place prior to field development— 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.— Consider supporting programs that relieve vulnerability to housing affordability pressures.• Monitor the effectiveness of the social issues action plans through the annual SIMP monitoring framework.	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">• Apply Cultural Heritage Management Plans and follow Native Title process with relevant parties to provide agreed management of Aboriginal cultural heritage within claim area• Apply targeted measures developed for the GLNG Project to engage Aboriginal individuals and communities including:<ul style="list-style-type: none">— Aboriginal engagement policy— Integration of Aboriginal and cultural heritage awareness into employee induction programs	Unlikely	Minor	Low
	Operations	Remote	Moderate	Low		Remote	Minor	Very low

7 Regional Indigenous community assessment

Potential impact	Phase	Pre-mitigated significance			Mitigation measures	Residual risk		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
	Decommissioning	Unlikely	Minor	Low	<ul style="list-style-type: none"> Working with relevant Aboriginal groups on native title process and implementing Cultural Heritage Management Plans Employee Induction Programs and Employee Relations Management Plans. Comply with the Draft EM Plan Continue to implement the Constraints protocol 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. 	Unlikely	Minor	Low
Increased Indigenous employment presents staffing difficulties for Indigenous organisations	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none"> Implement community development initiatives to support Aboriginal communities such as Indigenous school based programs Apply targeted measures developed for the GLNG Project to engage Aboriginal individuals and communities including: <ul style="list-style-type: none"> Aboriginal engagement policy Integration of Aboriginal and cultural heritage awareness into employee induction programs Working with relevant Aboriginal groups on native title process and implementing Cultural Heritage Management Plans Employee Induction Programs and Employee Relations Management Plans. Monitor the effectiveness of the social issues action plans through the annual SIMP monitoring framework. 	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	<ul style="list-style-type: none"> Working with relevant Aboriginal groups on native title process and implementing Cultural Heritage Management Plans Employee Induction Programs and Employee Relations Management Plans. 	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	<ul style="list-style-type: none"> Monitor the effectiveness of the social issues action plans through the annual SIMP monitoring framework. 	Possible	Minor	Low
	Operations	Possible	Minor	Low		Possible	Minor	Low
	Decommissioning	Remote	Negligible	Very low		Remote	Negligible	Very low

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Potential impact	Phase	Pre-mitigated significance		Risk	Mitigation measures	Residual risk		
		Likelihood	Consequence			Likelihood	Consequence	Risk
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">Implement community development initiatives to support Aboriginal communities such as Indigenous school based programsApply targeted measures developed for the GLNG Project to engage Aboriginal individuals and communities including:<ul style="list-style-type: none">Aboriginal engagement policyIntegration of Aboriginal and cultural heritage awareness into employee induction programsWorking with relevant Aboriginal groups on native title process and implementing Cultural Heritage Management PlansEmployee Induction Programs and Employee Relations Management Plans.Monitor the effectiveness of the social issues action plans through the annual SIMP monitoring framework.	Unlikely	Minor	Low
	Operations	Possible	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Moderate	Medium		Unlikely	Minor	Low
Unsupportive workplace environment for local Indigenous employees	Construction	Possible	Moderate	Medium	<ul style="list-style-type: none">Integration of Aboriginal and cultural heritage awareness into employee induction programsWorking with relevant Aboriginal groups on native title process and implementing Cultural Heritage Management PlansEmployee Induction Programs and Employee Relations Management Plans.Monitor the effectiveness of the social issues action plans through the annual SIMP monitoring framework.	Unlikely	Minor	Low
	Operations	Possible	Moderate	Medium		Unlikely	Minor	Low
	Decommissioning	Possible	Moderate	Medium		Unlikely	Minor	Low

Cumulative impacts

The methodology used to assess the cumulative impacts of the GFD Project consisted of the following tasks:

- Identify the impacts of the stand-alone GFD Project using existing baseline conditions, which incorporate the impacts from all existing projects and activities in the GFD Project's sphere of influence. These impacts have been described in detail in the relevant sections of the EIS
- Identify relevant projects within the sphere of influence of the GFD Project that are either proposed or approved but not yet operational which could generate impacts that could potentially interact with similar impacts from the GFD Project
- Identify appropriate spatial boundaries for the analysis of cumulative impacts. Where potentially interacting projects are not located close enough for the relevant impacts to overlap, cumulative impacts are less likely. If any of the project elements are adjacent the cumulative impacts could be significant. The extent of the temporal boundary will vary according to the nature of the impact being assessed
- Determine the significance of the cumulative impacts with respect to beneficial or detrimental effects
- Develop suitable mitigation measures for the significant negative cumulative impacts.

In assessing the significance of potential cumulative impacts the probability, duration, and magnitude / intensity of the impacts were considered as well as the sensitivity and value of the receiving environmental conditions (Table 7-1).

Table 7-1 Relevance factors for assessing cumulative impact

Aspect	Relevance factors		
	Low	Medium	High
Probability of Impact	1	2	3
Duration of Impact	1	2	3
Magnitude/Intensity of Impact	1	2	3
Sensitivity of Receiving Environment	1	2	3

The resultant significance of the impact was determined by using professional judgement to select the most appropriate relevance factor for each aspect and summing the relevance factors. The significance and consequence of the impact was then determined using the assessment matrix given in Table 7-2.

Table 7-2 Impact significance for assessing cumulative impact

Significance	Sum of factors	Consequence
Low	1-5	Negative impacts need to be managed by standard environmental management practices. Special approval conditions unlikely to be necessary. Monitoring to be part of general project monitoring program.
Medium	6-9	Mitigation measures likely to be necessary and specific management practices to be applied. Specific approval conditions are likely. Targeted monitoring program required.
High	10-12	Alternative actions should be considered and/or mitigation measures applied to demonstrate improvement. Specific approval conditions required. Targeted monitoring program necessary.

7 Cumulative impacts

7.1 Projects considered in the cumulative impact assessment

The region within which cumulative impacts are considered is illustrated in Figure 7-1. This figure includes projects within a 50 km buffer of the GFD Project area, which are listed in Table 7-3. A review of these projects was undertaken to identify and remove those that would be unlikely to contribute to cumulative social impact in the GFD Project area. These, together with the rationale for their omission from the assessment, are listed in Table 7-4.

Projects were then allocated against the GFD Project gas fields where there was potential for impact prior to assessing the overall cumulative impact potential for each gas field which is described in the following sections.

7 Cumulative impacts

Table 7-3 Cumulative impact assessment project parameters

Project	Proponent	Proposed construction dates	Estimated construction jobs	Estimated operations jobs
Australia Pacific Liquefied Natural Gas (APLNG) Project	Origin Energy and Conoco Phillips	Gas fields: 2010 to 2027 Pipeline: mid-2012 to late-2013. LNG facility: 2011 to 2014	Gas fields: 2,100 Pipeline: 800 LNG facility: 2,100	Gas fields: 700 Pipeline: 20 LNG facility: 100 for 1 train and 75 for each additional train.
Arcturus Coal Mine Project	Springsure Creek Coal	Unknown	300	150
Blackwater to Emerald Powerline Replacement Project	Ergon Energy	2014	Unknown	Unknown
Blythedale, Fairview and Fairview South Substations Project	Powerlink	2014	Unknown	Unknown
Bowen Gas Project	Arrow Energy	Commence construction of facilities 2015, initial well drilling commencing 2016, and commence production 2017.	1,540	597
Bundi Coal Project	Metro Coal	Commence construction 2013, with operations to commence 2015.	300	150
Dingo West Coal Mine Project	Dingo West Coal	Unknown	220	120
Elimatta Project	Taroom Coal	Commence construction mid-2013 to mid-2015	500	300
Eurombah to Fairview Transmission Line Project	Powerlink	2014	Unknown	Unknown
Gladstone LNG Project	Santos GLNG	Commence construction 2010 to 2022	Gas fields: 960 Pipeline: 1,000	Gas fields: 820 Pipeline: 20
Minyango Coal Project	Blackwater Coal	Information not available	Information not available	Information not available
Nathan Dam and Pipelines	Sunwater	Commence construction July 2013 to June 2016.	425	5
Norwood Coal Project	Metro Coal	Commence construction 2015, with operations commencing 2017	300	150

7 Cumulative impacts

Project	Proponent	Proposed construction dates	Estimated construction jobs	Estimated operations jobs
North Surat - Collingwood Coal Project	Cockatoo Coal	Commence construction Q2 2014 to Q4 2015	1,000	400
North Surat Taroom Coal Project	Cockatoo Coal Limited	Commence construction Q4 2013 to Q2 2015	1,000	550
Queensland Curtis LNG (QCLNG)	Queensland Gas Company	Commence construction Q2 2010 to Q3 2013.	4,000	1,000
Rolleston Coal Expansion Project	Rolleston Coal Joint Venture	Information not available	Information not available	Information not available
Spring Gully Power Station	Origin Energy Power Limited	Unknown	400	17
Springsure Creek Coal Project	Springsure Creek Coal	Unknown	350	585
Surat Gas Project	Arrow Energy	Commence construction 2013 to 2035	1,000	400
Surat Basin Railway Project	Surat Basin Rail	Unknown	1,000	-
Surat to Gladstone Pipeline Project	Arrow Energy	Unknown	300	10
'The Range' Project	Stanmore Coal	Unknown	300	500
Wandoan Coal Project	Wandoan Joint Venture	Unknown	1,375	50
Wandoan South to Eurombah Transmission Network Project	Powerlink	2014	Unknown	Unknown
Yuleba North to Blythedale Transmission Line Project	Powerlink	2015	Unknown	Unknown

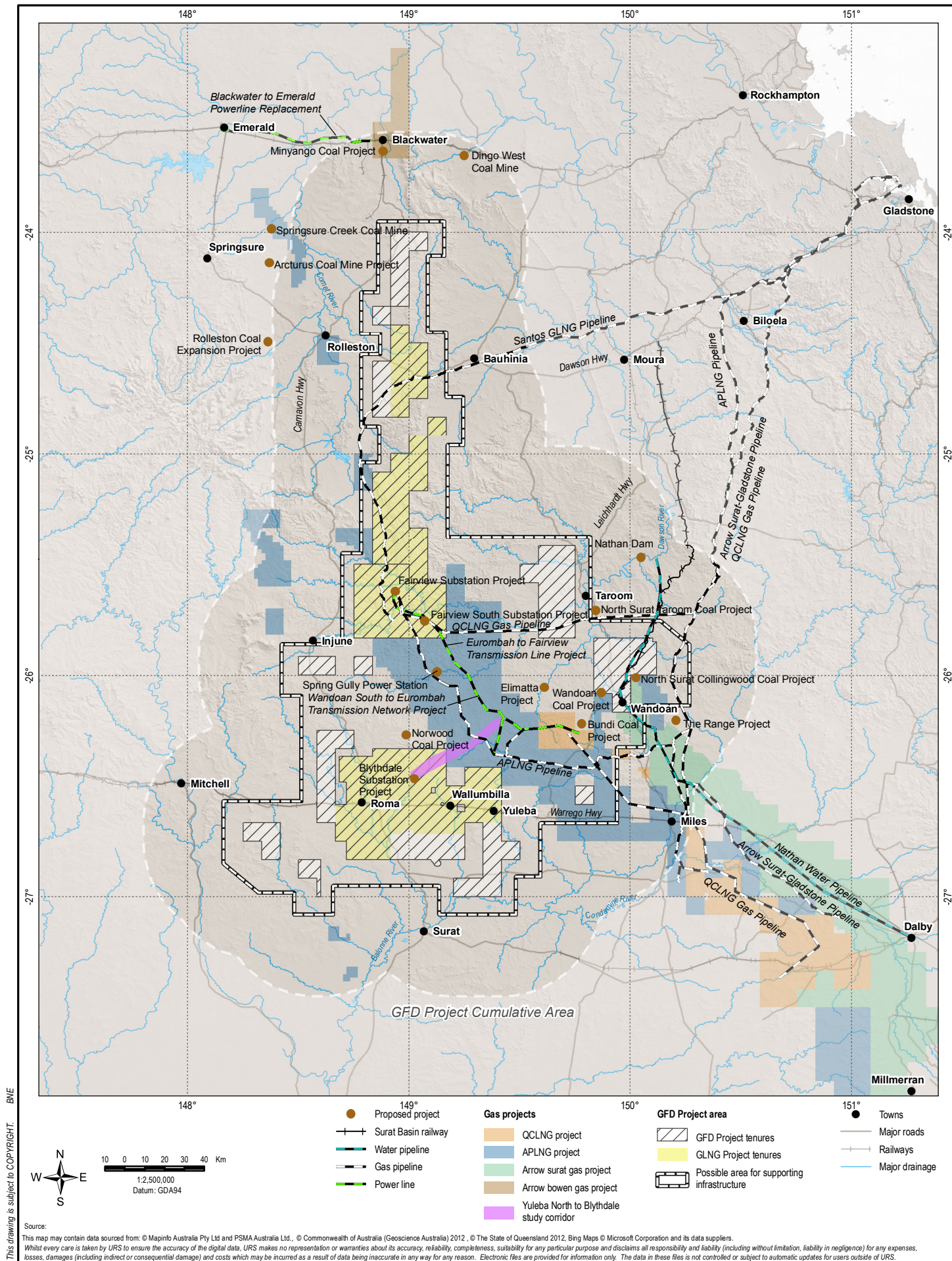
7 Cumulative impacts

Table 7-4 Projects not considered for cumulative assessment

Projects not considered relevant to cumulative social impact	Rationale
Blackwater to Emerald Powerline Replacement Project	Project is being undertaken in 2014, prior to commencement of the GFD Project. Specialist construction crews will likely live in temporary construction camps on a moving front, and there will be minimal operations personnel.
Blythedale, Fairview and Fairview South Substations Project	Project is being undertaken in 2014, prior to commencement of the GFD Project and there will be minimal operations personnel.
Bowen Gas Project	Construction in the Blackwater area is not expected until 2028 at the earliest, making estimates of cumulative impacts highly speculative at this time.
Dingo West Coal Mine Project	The project is small scale and not located close to major road links likely to be used by the GFD Project.
Eurombah to Fairview Transmission Line Project	Project is being undertaken in 2014, prior to commencement of the GFD Project. Specialist construction crews will likely live in temporary construction camps on a moving front, and there will be minimal operations personnel.
Minyango Coal Project	The project is located close to Blackwater which is not expected to be a support base for the GFD Project. Commercial camp accommodation is available in Blackwater.
Nathan Dam and Pipelines	The project is considered to be on hold for the foreseeable future.
Surat Basin Railway	The project is considered to be on hold for the foreseeable future making estimates of cumulative impacts highly speculative at this time.
Wandoan South to Eurombah Transmission Network Project	Project is being undertaken in 2014, prior to commencement of the GFD Project and there will be minimal operations personnel.
Yuleba North to Blythedale Transmission Line Project	Project is being undertaken in 2015, prior to commencement of the GFD Project and there will be minimal operations personnel.

Table 7-5 Project considered in cumulative assessment by gas field

GFD Project gas field	Projects relevant for cumulative social impact assessment
Scotia gas field	Bundi Coal Project Elimatta Project Queensland Curtis LNG Project Collingwood Coal Project Taroom Coal Project Spring Gully Power Station Surat Gas Project Surat to Gladstone Pipeline Project 'The Range' Project Wandoan Coal Project
Arcadia gas field	Arcturus Coal Project Rolleston Coal Expansion Project Springsure Creek Coal Project
Roma-Fairview gas fields	APLNG Project Norwood Coal Project Spring Gully Power Station Project



Santos
GLNG Project

GFD PROJECT EIS

**PROJECTS WITHIN 50KM
OF THE GFD PROJECT**

URS

SOCIAL IMPACT ASSESSMENT

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Drawn: XL

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Date: 21-08-2014

Figure: **7-1**

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7 Cumulative impacts

7.2 Scotia gas field cumulative assessment

The major construction activity in the area is for the APLNG and QCLNG projects and they will be completed prior to the commencement of the GFD Project. APLNG and QCLNG activities include facilities construction in the Scotia GFL, with well drilling and completions ongoing but dispersed over a large area (around 5,000 km²) to the west and south of the Scotia gas field. Each of these gas development projects could be expected to have similar types of impacts to the GFD Project during construction and operations.

The development of the coal projects in the vicinity of the Scotia gas fields (over the period 2013 to 2017) has a high level of uncertainty. Many of these projects were being developed on the assumption that the Surat Basin Rail Project would proceed with the Wandoan Coal Project as a foundation customer, thereby allowing the group of smaller mines to utilise a rail transport option that would otherwise not be in place. Without the rail option, it remains possible that some of the projects may commence with a transport option that involves trucking product coal to a rail load-out facility in the vicinity of Miles, similar to that utilised by the Cameby Downs coal mine. The likelihood of this option is uncertain at this stage. Coal mine projects, particularly when developed at a modest scale initially, are likely to have a non-resident construction workforce living in a temporary camp, while the operations workforce would likely draw on residents from regional communities. Those workers from communities beyond a daily commute distance would stay in a camp on site or in proximity to the nearest regional town, such as Wandoan or Taroom. It is also likely that a portion of the operations workforce would relocate to the nearest town should housing and a reasonable level of services be available. Should coal transport by road be implemented, even for a limited period, the Leichardt Highway south or north of Taroom, depending on the coal export port, would be subjected to an increase in heavy vehicle traffic with attendant social impacts such as an increase in noise, dust and risks to motorists.

It is unlikely that the construction of the Spring Gully Power Station would have a cumulative impact with the GFD Project due to the site being remote from Scotia gas field townships and the construction workforce would be accommodated in a dedicated camp in proximity to the site. Operations workforce numbers would be low and would more likely be based around Roma due to the infrastructure and other support facilities that are available there.

Considering the relevance factors in the light of the project characteristics described above, the impact significance assessed for each social value in the Scotia gas field is shown in Table 7-6.

Table 7-6 Scotia gas field cumulative impact significance

Social value	Cumulative impact significance
Liveable community	Low
Affordable lifestyle	Medium
Recognisable community identity and spirit	Low
Capacity for sustainable economic activity	Medium

7 Cumulative impacts

7.3 Arcadia gas field cumulative assessment

The Springsure Creek Project and the Arcturus Project are being developed by Bandanna Energy. On its website Bandanna advises that as a consequence of the Strategic Cropping Land (SCL) Legislation, further work on the Arcturus Project has been put on hold with the company focusing on development of the Springsure Creek Project, and in particular the demonstration of the company's strategy for coexistence of mining and agriculture.

The Springsure Creek Project EIS indicates that the population of Springsure is expected to grow by 8% as a result of the project, with 15 workers residing there during construction and 30 workers during operations, requiring around 28 houses over a 10 year period. The EIS also forecast an increase in business activity and personal income, and the development of improved infrastructure and services, partly as a result of support from the mine developer. Negative impacts were expected to include increased traffic on the Carnarvon and Capricorn Highways, as well as some upward pressure on housing costs in Springsure. Assuming that the mine commences construction sometime in the next five years, it is likely that any construction-related impacts will have occurred prior to the commencement of construction of the Arcadia gas field facilities, and that the operation impacts due to population growth will be in development.

The Rolleston Coal Mine Expansion Project environmental impact assessment studies began in 2010. The project aims to extend the life of the current mine by approximately 30 years to 2045 and increase production to approximately 19 million tonnes per annum (Mtpa). As part of the expansion project, an additional 100 rooms have been added to the existing accommodation village to enable the accommodation of the required workforce during construction and operations phases. The mine may from time to time seek local accommodation and also provide incentives for the workforce to move to the local area if they wish.

Considering the relevance factors in the light of the project characteristics described above, the impact significance assessed for each social value in the Arcadia gas field is shown in Table 7-7.

Table 7-7 Arcadia gas field cumulative impact significance

Social value	Cumulative impact significance
Liveable community	Low
Affordable lifestyle	Medium
Recognisable community identity and spirit	Low
Capacity for sustainable economic activity	Low

7.4 Roma-Fairview gas fields cumulative assessment

The major facility construction for the APLNG project will be completed prior to the commencement of the GFD Project facilities construction in the Roma-Fairview GFLs, with well drilling and completions on-going but dispersed over a large area (around 5,000 km²) to the east and north-east of the Scotia gas field.

Construction of the Spring Gully Power Station possibly overlaps with the major construction period for the GFD Project, however the construction workforce would be accommodated in a dedicated camp in proximity to the site and operations workforce numbers are likely to be low. Impacts are likely to include elevated traffic and heavy vehicles during the construction period, though the significance of this is expected to be low given the existing traffic on the Warrego and Carnarvon Highways.

7 Cumulative impacts

The Norwood Coal Project is located adjacent and to the west of the Bundi Coal Project. Both projects are components of MetroCoal's Surat Basin coal tenure. As the project development proposes the shared utilisation of infrastructure aligned toward Wandoan and the proposed Surat Basin Rail link to the Moura system to the north, the direct impacts, if any, on the Roma-Fairview gas fields is likely to be minimal.

Considering the relevance factors in the light of the project characteristics described above, the impact significance assessed for each social value in the Arcadia gas field is shown in Table 7-8.

Table 7-8 Roma-Fairview gas field cumulative impact significance

Social value	Cumulative impact significance
Liveable community	Low
Affordable lifestyle	Low
Recognisable community identity and spirit	Low
Capacity for sustainable economic activity	Low

7.5 Mitigation strategies

Santos GLNG will explore opportunities for collaboration in cumulative impact management in consultation with State and local governments, industry and communities. Through its existing and on-going engagement with key stakeholders, Santos GLNG can supply relevant information on workforce projections and housing requirements which can inform better planning for infrastructure and services in the communities in proximity to the GFD Project. The GLNG Project SIMP and GFD Project Action Plans of the EIS include a number of planning and consultation mechanisms which Santos GLNG will consider in mitigating potential cumulative impacts of the GFD Project.

Based on the current GFD Project design and implementation strategy, social cumulative impacts are more likely to occur as a result of road use and traffic. All other social categories are influenced by the accommodation of the GFD Project workforce in temporary accommodation facilities and the limited number of employees expected to relocate to reside in project area towns.

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Appendix A Social values and impact description

Appendix A - Social values and impact description

Table-A-1 Social values and potential impact description – general community

Possible project-induced impact	Impact description
Liveable community	
<ul style="list-style-type: none"> Workforce demand on public health facilities and services 	Both construction and operations workforces will have a demand for some level of medical services, as would any additional population of people. Without mitigation, this could result in resourcing and capacity constraints in service provision for local communities. Conversely, a small sustainable increase in demand could present an opportunity to stimulate the market for the private supply of these services or make smaller rural public health services more viable.
<ul style="list-style-type: none"> Intra-community conflict 	<p>Media attention on local environmental and social impacts of natural gas developments in eastern Australia has recently generated focus on issues such as:</p> <ul style="list-style-type: none"> Perceived winners (such as businesses, low-impacted property owners, FIFO workforces, etc.) versus perceived losers (highly-impacted local landholders, and low-income residents of local towns, etc.) Tension between supporters of resource development versus opponents (who may not be residents of the immediate area) of developing gas from coal seams Protecting or favouring agriculture over alternative land uses, such as for mining or gas development. <p>While communities within the Surat and Bowen basins are familiar with resource industry development and are not considered highly vulnerable to this type of conflict, there is a possibility that with ongoing gas industry development these issues may be raised within communities in the region. Where industry developments have potential to alter local visual amenity and character (through visible infrastructure, equipment, traffic and workforces), opposition to development, and in particular latent differences in community attitudes, may result in some intra-community conflict between supporters and opponents of gas industry development.</p>
<ul style="list-style-type: none"> Construction and operations traffic on local roads and in the town areas 	Gas industry development will contribute to traffic on local and district roads and within urban areas, through the transportation of materials, equipment and personnel to and from worksites. Low-capacity rural access roads that may historically have had minimal maintenance, including private farm roads, may also deteriorate under the passage of construction and maintenance vehicles to well sites. Long-term residents of rural towns, with set habits and lifestyle patterns may be disrupted by the presence of higher traffic levels in town streets and result in a reduction to their perceived level of community amenity.
<ul style="list-style-type: none"> Presence of a younger, predominantly male workforce in social venues (e.g. hotel, sporting facilities) and general town area 	<p>Though not generally emphasised during consultation with community members in the existing gas field regions within Queensland the presence of a predominately male workforce in small rural communities can result in concerns regarding public behaviour and law and order. Even where impacts do not eventuate, community concerns about predominantly male workforces (“perceived” impacts) may be significant in themselves.</p> <p>Some regional areas with a history of agricultural industry and resource development, such as the Surat and Bowen Basins can have existing gender ratios skewed towards males and as such are not unfamiliar with the gender and behavioural impacts of a new workforce. In addition, current resource industry workforce management practices have established high expectations and standards around workforce behaviours and generally result in acceptable behaviour regardless of the proximity of accommodation camps to town areas.</p>
<ul style="list-style-type: none"> Demand on public infrastructure (such as water & sewerage facilities) 	Any increase in population, beyond anticipated natural growth rates can affect the capacity of local governments and other infrastructure providers to meet new demand. Where local physical infrastructure planning has been based on historically low population growth combined with minimal investment in upgrades, and capital works financing is based on population-benchmarked funding systems, the need to service non-residential workers can be problematic in instances where demand for water, waste and sewerage services are not privately met in workforce accommodation developments.

Appendix A - Social values and impact description

Possible project-induced impact	Impact description
Affordable lifestyle	
<ul style="list-style-type: none"> Increased un-met demand for housing 	<p>Impacts associated with resource industry development on local housing markets are well established and documented. Particularly during the initial construction phase, there is a potential for communities to experience housing affordability issues as workers and contractors seek accommodation in the townships near work sites, prior to purpose built workforce accommodation being established.</p> <p>Housing supply is dependent on the ability of private and local and State government to plan and respond to demand through initiatives such as Urban Development Areas (as adopted in Roma); Housing Trusts (as established in the Western Downs region); and favourable conditions for developers to obtain and finance housing developments. Where the demand is un-met it can be expected to drive an increase in rental and house purchase costs. The Queensland government (2011) further comments that housing market impacts of resource industry development are closely related to such factors as:</p> <ul style="list-style-type: none"> proximity of project activity residential land supply local government planning policies and capacity. <p>Positive benefits can be accumulated during growth periods by way of increased property values for private property owners and investors.</p>
<ul style="list-style-type: none"> Upward wage pressures on local businesses 	<p>Anecdotal feedback suggests that resource industry jobs are sought after due to the opportunities for higher incomes in the local area. While direct employment is highly beneficial to workers and their families, any movement of workers away from local businesses may result in skills shortages and competition for labour. Local businesses (in particular those who rely on technical and trades-qualified staff and unskilled labour) and potentially local governments may find it more difficult to attract and retain staff, and associated wage pressures could increase prices for local trades and other services. This could have cost-of-living and business viability implications for local community members who do not benefit from resource industry salaries but who rely on local services and trades.</p> <p>This impact is typical of regional resource industry development. The Queensland Government (2011b) highlights potential for skills shortages in key occupations associated with gas industry development such as:</p> <ul style="list-style-type: none"> welders mechanical and electrical trades workers diesel mechanics mechanical fitters pipe fitters specialist machinery operators (such as side boom and trenching machines).
Recognisable community spirit	
<ul style="list-style-type: none"> Local employees working extended shift hours and rosters 	<p>Roster-based resource sector working patterns represent a departure from work patterns which regional and rural communities have experienced and to which community activity has adapted. Where local residents take up new GFD Project employment opportunities, the programmed twelve-hour shifts and fourteen-day on and off rosters may reduce the ability of some to participate as fully in their community as they previously have, and present management challenges to their personal and family lives. Murray and Peetz (2008) provide a comprehensive analysis of Queensland resource industry shift- and rostering arrangements and their related impacts on workforces, based on interviews with Bowen Basin residents. They identify benefits for both employers (cost savings and increased productivity) and workers (longer breaks and more overtime opportunities). While the overriding utility of resource sector employment is evidenced in the take-up of employment opportunities (community consultation data supporting this point is cited at Section 3.3.2.2), Murray and Peetz identified the following potential disadvantages associated with resource sector shift and roster arrangements:</p> <ul style="list-style-type: none"> Fatigue Safety risks Health problems

Appendix A - Social values and impact description

Possible project-induced impact	Impact description
	<ul style="list-style-type: none"> Family stress Relationship breakdown Transitory communities Reduced social and community participation <p>These impacts could have adverse implications for small regional communities such as those in the GFD Project area, which are characterised by strong social bonds and shared identities.</p>
<ul style="list-style-type: none"> Visible presence of gas industry workers in local community venues, and the presence and scale of project facilities, including camps 	<p>The presence of non-resident resource industry workers in public places (in particular hotels and other social venues) is now normal in Queensland's resource communities. Local residents sometimes report negative reactions to this. Orange and yellow high visibility ("fluro" or "high-vis") uniforms have to some extent become symbolic of the social impacts (both positive and negative) of the resource industry. In rural and regional areas, this can represent a shift in local character and identity even though in some instances (especially in the MRC and CHRC) locals are employed directly or indirectly by the industry and consequently are wearing personal protective equipment. The identities of rural communities may also be affected by the visible presence of project facilities, particularly accommodation camps or significant project infrastructure, in proximity to towns which could detract from the existing rural character.</p>
<ul style="list-style-type: none"> High occupancy of short-term accommodation by gas industry contractors, displacing visitors to communities 	<p>Resource industry construction workforces and contractor demand for accommodation may have an effect of displacing other existing social and economic functions within communities traditionally dependent on the availability of visitor accommodation. For example, business generated by highway traffic could be impacted where caravan park and motel capacity is utilised by resource industry workers, as would regular commercial activity dependent on accommodating visitors, such as a regular cattle sale. If a lack of accommodation resulted in reduced visitor numbers at local events and tourism opportunities this may dilute the "sense of place" they generate. Conversely, increased demand for short-term accommodation may stimulate the provision of additional, accommodation that may be beneficial to the capacity to accommodate visitors within a locality.</p>
<ul style="list-style-type: none"> Out-migration of primary producers from high-impacted properties 	<p>Depending on the intensity of development, the construction of gas field wells and facilities may create physical conditions under which a landholder would prefer to sell their property and relocate either within, or out of, the local area. The loss of residents from small rural communities, particularly if they have been participants in local community activities, may have an adverse effect on the morale and community spirit of remaining members. This impact could be offset to some degree by the converse effect of landholders having their livelihoods sustained or enhanced by the additional income generated from gas field activity compensation.</p>
Capacity for sustainable economic activity	
<ul style="list-style-type: none"> Disruption to agricultural production through field operations 	<p>The introduction of alternative non-agricultural land uses by an external party to properties has the potential to disrupt any existing agricultural operations. In the case of gas field development, the initial drilling and equipping of wells, followed by the installation of gas and water gathering pipelines, has the potential to disrupt both grazing and cropping activities. The extent of disruption depends on the type and intensity of the existing land use (e.g. extensive cattle operations, compared to intensive irrigated cropping), the location (in relation to existing farming activities), intensity and duration of the alternative activity. While the construction phase may be relatively short, the operations phase can occur over an extended period and necessitate permanent adjustment to the existing agricultural activity. Hence there may be both short and long term impacts on agricultural production activity. The potential spread of weeds and pests also pose a risk to agricultural production if not managed effectively.</p>

Appendix A - Social values and impact description

Possible project-induced impact	Impact description
<ul style="list-style-type: none"> Construction activity deters local tourism 	Resource project construction activity in proximity to smaller towns in rural areas, particularly in the early stages where support infrastructure (such as accommodation camps) is being established, may increase demand on community facilities, particularly short-term accommodation (such as motels and caravan parks) that traditionally support other economic activity such as tourism. Should this demand persist for an extended period it may have the effect of deterring travellers from stopping and visiting local attractions, as well as making purchases from local businesses. Increased vehicles on local roads, due to construction traffic may also deter self-drive tourists from either visiting or passing through the area, thereby depriving local businesses of some level of trade.
<ul style="list-style-type: none"> Gas extraction creates uncertainty around water availability for agriculture 	The availability of water to sustain both communities and their associated economic activity is a concern in rural Queensland. As the production of natural gas from coal seams requires the removal of water (typically saline) from the seam, it is not surprising that there is local concern about water supply and quality issues. Landholder uncertainty surrounding the future availability or quality of water, should it persist, may have the effect of deterring investment in agricultural production activity, with negative implications for the value of agricultural properties.
<ul style="list-style-type: none"> In-ward movement of larger enterprises to local area 	Some resource industry supply opportunities may not be captured by local businesses due to factors such as supply chain constraints, prohibitive costs and incompatible business models. Larger enterprises with wider supply channels, greater economies of scale and business models dedicated to resource industry supply may enter the market from outside the region to take up these opportunities. This may have a range of consequences for local communities and economies. New entrants could compete for labour, and commercial and industrial space, possibly contributing to inflationary effects and skills shortages. Bringing greater economies of scale and wider services, they could also be likely to out-compete local businesses for a range of local services outside the resource industry. However beneficial impacts may also accrue, including in the provision of enhanced employment opportunities and skills development pathways, greater diversity of economic capacity and services, and higher rates revenues for local governments..

Table-A-2 Social values and risk description - indigenous community

Possible project-induced risks	Risk description
Liveable community	
<ul style="list-style-type: none"> Uncertainty with regard to environmental impact of project 	The Aboriginal community has indicated that an important issue for them is land use and the environment. With construction work occurring across an extensive area, some of which was only subject to grazing with low stocking rates in the past, there is a potential for environmental impact, the nature of which is uncertain to Aboriginal people. 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.
<ul style="list-style-type: none"> 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 Aboriginal or non-Aboriginal, there is a higher potential for misunderstanding and conflict. Depending on circumstances, this may have an adverse effect on harmonious relationships both within the community and between the community and the non-residential workforce.
<ul style="list-style-type: none"> Tension between native title and historical segments of Indigenous population over access to project benefits 	Should some segments of a local population not benefit from project-induced opportunities to the same extent as others intra-community tension may result. This is sometimes due to the exclusion of what are often termed 'historical people' from benefit agreements negotiated with native title groups, or where native title is contested between different segments of a native title claim group. These tensions may affect the relationships within and the liveability of a community.

Appendix A - Social values and impact description

Possible project-induced risks	Risk description
<ul style="list-style-type: none"> Out-migration of elements of family groups due to inability to afford housing 	Living in proximity to relatives is important for many people, and perhaps more so for persons who are members of minority groups including Aboriginal people. Low socio-economic status often means that there is a greater reliance on extended family members in day to day living. The inability to afford rental accommodation due to rent escalation may result in segments of extended families having to leave a community, thereby impairing the liveability of the community for those family members remaining.
Affordable lifestyle	
<ul style="list-style-type: none"> Increased rental demand from in-migrating workers 	For those members of the Aboriginal community who rent in the private market, any increase in housing costs due to the escalation of rental pressure is likely to seriously affect their family budgets and affordability of their lifestyle, imposing choices that they may otherwise not have had to make.
<ul style="list-style-type: none"> Increased cost of housing due to un-met demand and speculation 	Where the affordability of housing is affected for low income groups it is likely to affect the Aboriginal community to a greater extent due to the higher proportion of households in low income ranges compared to non-Aboriginal households. This would have an adverse effect on the cost of living in the community, and on Aboriginal home ownership policy objectives of both Commonwealth and State governments.
Recognisable community spirit	
<ul style="list-style-type: none"> Inadvertent interference with cultural heritage during well and facilities development 	While there is a CHMP in place to manage impacts on cultural heritage material in the field, it remains possible that there may be unintended interference with cultural heritage during construction operations. If this occurs frequently, or the CHMP is perceived as ineffective, there may be an adverse consequence for some members of the Aboriginal community.
<ul style="list-style-type: none"> 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 the preservation and custodianship of heritage or the operations of a community health service. Should staffing for these organisations be difficult, either due to the success of recruitment in to higher paying jobs available through the project, or a decrease in volunteer labour to support the operations of an organisation, it may impair the viability of the organisation, particularly in the short-term.
<ul style="list-style-type: none"> General level of development marginalises Indigenous presence in community 	Any increase in the non-Indigenous population, may act to take attention away from issues of concern to the Aboriginal community. The scale of development demanding the attention of local officials may relegate issues of particular concern to the Aboriginal community to a lower order of priority, despite these issues being on the agenda for a long period of time prior to the advent of resource development pressures.
<ul style="list-style-type: none"> Resentment at perceived landholder benefit from the occupation of traditional land 	While native title groups have entered into ILUAs, it remains the case that these groups are descendants of the original traditional owners who were forcibly removed from the land, often in violent circumstances. Publicity surrounding the income derived from hosting gas wells and infrastructure on agricultural holdings may foster a degree of resentment toward those landholders, and possibly impede any community reconciliation process that may be in train, or make it harder to commence such a process.
Capacity for sustainable economic activity	
<ul style="list-style-type: none"> High-paying, short-term construction work draws higher-level students from schooling or training 	The availability of high-paying construction jobs can often influence the retention of students, apprentices and trainees in courses as individuals opt to take up opportunities to earn larger 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.

Appendix A - Social values and impact description

Possible project-induced risks	Risk description
<ul style="list-style-type: none">Unsupportive workplace environment for local Indigenous employees	The lack of a supportive workforce environment can have a negative influence on the retention of workers in general and Aboriginal 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. Highly negative experiences may also deter an individual from actively seeking to participate further in the workforce.

Appendix B Arcadia gas field social baseline



Report

Arcadia gas field social baseline

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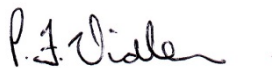
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Abbreviations

Abbreviation	Description
ABS	Australian Bureau of Statistics
AEDI	Australian Early Development Index
BSC	Banana Shire Council
CHRC	Central Highlands Regional Council
ERP	Estimated resident population
GFD Project	Gas Field Development Project
GFL	Gas field locality
ha	Hectare
HRA	Host regional area
LGA	Local government area
km	kilometre
km ²	Square kilometres
MRC	Maranoa Regional Council
NGO	Non-government organisation
NRW	Non-resident workers
OESR	Office of Economics and Statistics (Qld)
PHDU	Public Health Information Development Unit
QPS	Queensland Police Service
SA1	Statistical area 1
SA2	Statistical area 2
SA3	Statistical area 3
SCA	Social catchment area
SEIDA	Socio-economic Indexes for Disadvantage
SES	State emergency service
UCL	Urban centre locality

Introduction

For the purpose of this social impact assessment, URS has established a baseline social profile on three nested geographies linked to the gas field tenure. These are:

- **Gas field locality (GFL)**, constructed by combining the smallest number of Census standard statistical area 1 (SA1) that cover each gas field. The GFL is the area that is most likely to be subject to direct impact by the GFD Project as these SA1 areas may be co-located with GFD Project tenure, incorporate key transport links to and between tenure and contain key population centres that have the potential to support GFD Project activities.
- **Social catchment area (SCA)**, constructed by combining statistical area 2 (SA2) and local government areas. This geography provides an optimal area to illustrate and compare key variances between the GFL and the wider supporting geography, without the inclusion of much larger regional centres, which may distort comparisons due to their different social and economic functions. SCAs were defined based on a qualitative consideration of local government boundaries (capturing governance and associated funding responsibilities) and dominant transport, communication, commerce and social links.
- **Host regional area (HRA)**, is the statistical area 3 that the gas field is located within. These larger areas are used to illustrate the demographic profile surrounding the gas fields and their SCAs, allowing for a greater depth of comparison and analysis.

The statistical areas used to construct the geographies for the Arcadia gas field are shown in Table 1-1.

Table 1-1 Arcadia gas field geographic framework

GFL	SCA	HRA
3119113 (Rolleston Surrounds)	Central Highlands-West SA2 Code	Central Highlands SA3 Code 30801
3119101 (Rolleston)	308011191	
	Emerald SA2 Code 308011192	

Derived from ASGC 2011 (ABS, 2012).

The Arcadia gas field tenure, and the surrounding gas field locality (GFL), social catchment area (SCA) and host regional area (HRA) are shown in Figure 1-1. The Arcadia GFL incorporates the town of Rolleston, and is defined in geographical terms by the smallest number of statistical area 1 (SA1) areas (as used by the Australian Bureau of Statistics (ABS)) covering the major portion of the gas field tenure. It is the area most likely to be subject to direct impact from development of the gas field. The Arcadia gas field tenure is also located about mid-way between Rolleston and Bauhinia, a small rural service centre established in 1967 on the Dawson Highway about 80 kilometres (km) east of Rolleston.

As shown in Figure 1-1, a small portion of the gas field tenure in the south is part of the Banana Shire Council (BSC), while the majority of the field lies within the Central Highlands Regional Council (CHRC) area. Prior to the local government council amalgamations in 2008, the GFL comprised a substantial portion of the Bauhinia Shire Council.

The dominant transport corridors in the GFL are the Carnarvon Highway (north-south, linking Rolleston to Injune and Roma), and the Dawson Highway (east-west, linking Rolleston to Springsure and Emerald in the west and Moura and Biloela in the east).

1 Introduction

The administrative focus for the Rolleston area is to the north-west to Springsure (the administrative centre for the former Bauhinia Shire) and Emerald, the regional service centre and administration centre for the CHRC.

The Carnarvon Highway is an element of a significant inland transport route between Melbourne and north Queensland (via Emerald and Clermont); carrying a significant amount of commercial traffic. These factors have influenced the definition of the SCA as shown Figure 1-1, which is comprised of the Central Highlands West and Emerald SA2 areas. Comparison of the social profile of the Arcadia GFL to this area will enable any significant local variations in social conditions, generally of concern to local governments, to be identified.

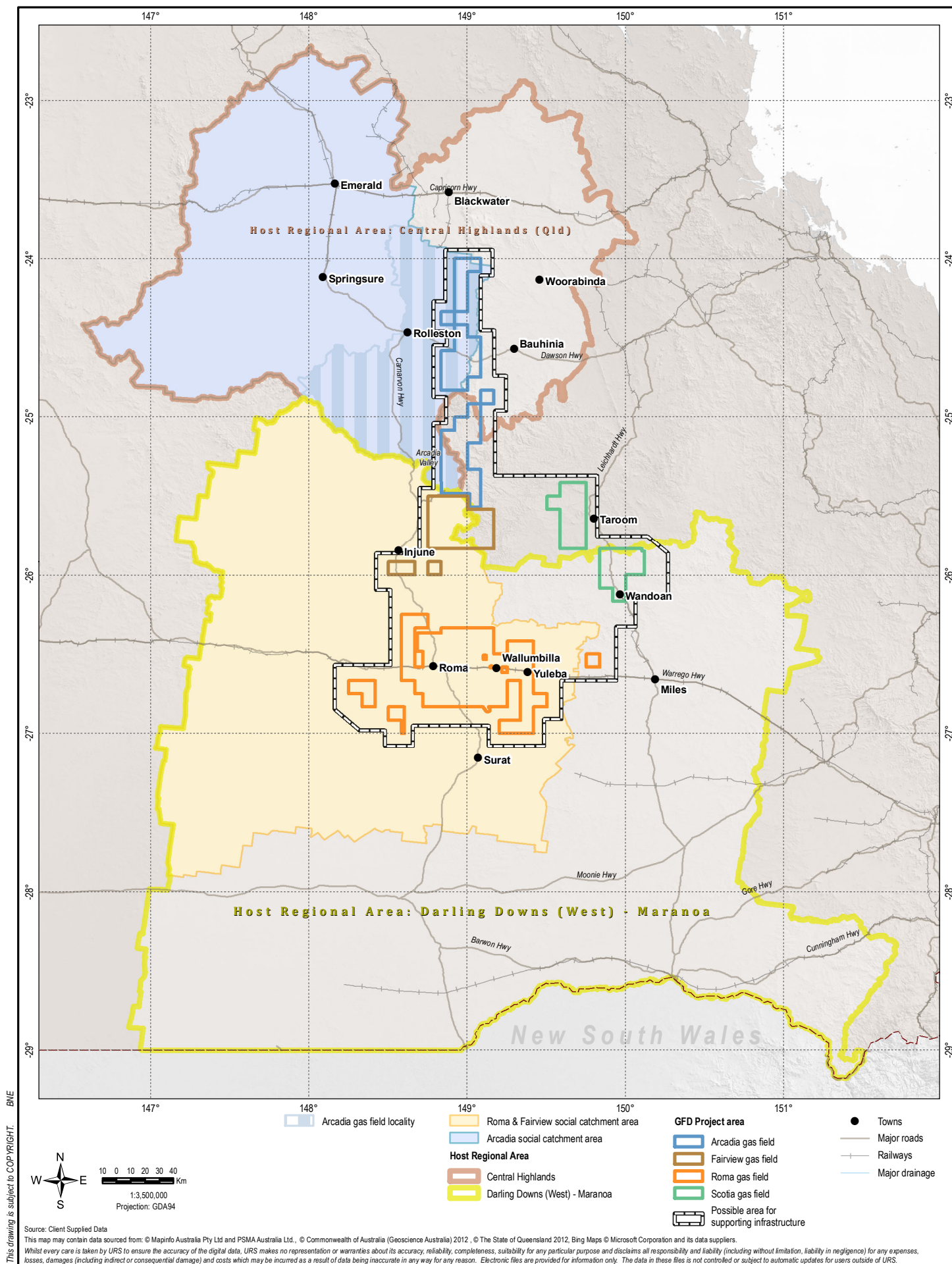
The Arcadia GFL also sits within the Central Highlands SA3 area, which has been used for the purposes of this social impact assessment (SIA) as the HRA.

GFL overview

The Rolleston area developed from around the 1860s based on cattle, and later, grain production. Recent years have also seen cotton develop as an important crop. While Rolleston is an important rural service centre, strategically located at the junction of the Dawson and Carnarvon Highways, Springsure, 70 km west of the town, developed as the primary regional service centre following construction of the railway line from Emerald in 1887.

Coal mining is now an important industry in the vicinity of the Arcadia GFL, commencing at Blackwater to the north in the late 1960s. The Rolleston open-cut coal mine, 20 km west of Rolleston, was developed by Xstrata and commenced production in 2006. Tourism, based on National Park visitation is also growing in importance with entrance to the Carnarvon Gorge National Park located on the Carnarvon Highway around 40 km south of Rolleston.

The development of gas transport infrastructure in the Arcadia GFL commenced in 1989 with the construction of the Queensland Gas Pipeline, now owned and operated by Jemena. This pipeline, which commences at Wallumbilla, east of Roma, transports gas from the Surat Basin, Fairview and Moura areas to Gladstone, traversing the Arcadia Valley before turning east about 40 km east of Rolleston. Since 2010, the Santos GLNG Project has commenced the development of well-fields in the Arcadia Valley as well as the construction of another trunk gas transmission pipeline linking the Roma, Fairview and Arcadia gas fields to the liquefied natural gas (LNG) Plant in Gladstone. This has resulted in a higher level of construction-related traffic passing through Rolleston and utilising regional roads.



Population

Population and demographic indicators sourced from the ABS Census 2011 are available for the Arcadia GFL, and these are generally used throughout this section. Some age and sex indicators are shown at the SCA level due to the unreliability of small area data in this case.

2.1 Historical trends and projections

The SCA has shown reasonable growth over the last decade, equal to that of the State (2.1). However, this growth has been uneven across the SCA, with the growth centred on the urban centre of Emerald at 2.6, (above that of the State). In contrast, Springsure, which is the closest centre with data available to the GFL, retained its population over this period. The broader HRA also sustained population growth over the period, although it was less significant at 1.6.

Table 2-1 Historical population trends, 2001 to 2011

Area	2001	2011*	Growth (%)
Emerald UC.	10,220	13,243	2.6
Springsure UCL	850	852	0.0
SCA	18,444	22,644	2.1
HRA	26,095	30,515	1.6
Queensland	3,628,946	4,474,098	2.1

* Preliminary estimate. Source: OESR, 2013, 2012a. UC: Urban centre. UCL: Urban centre locality

Table 2-2 shows that the population growth estimates for the SCA are positive. The population of the SA2 regions within the SCA is estimated to grow by 2.5%, which is noticeably stronger than that of the State. As with past population trends, the growth is centred around the Emerald SA2, which is expected to increase by around 3.0%, a rate much higher than the Central Highlands West SA2, which has a much more modest growth rate of 1.5%. Again, the HRA is also expected to sustain population growth over this period, at a higher rate than the State. Going further afield, the regional host area is predicted to experience a considerable growth in population, as detailed in the table below. This growth is largely attributed to extractive industry generated population migration; however, the projected growth does not account for the GFD Project.

Table 2-2 Estimated population projections

	2011	2016	2021	2026	2031	2011-2031 Growth (%)
Central Highlands West (SA2)	10,191	10,898	11,601	12,704	13,815	1.5
Emerald (SA2)	14,352	17,319	20,466	23,268	26,117	3.0
SCA	24,543	28,217	32,067	35,972	39,932	2.5
HRA	32,837	47,178	50,010	52,405	54,803	2.3
Queensland	4,611,491	5,092,858	5,588,617	6,090,548	6,592,857	1.8

Source: OESR, 2012b

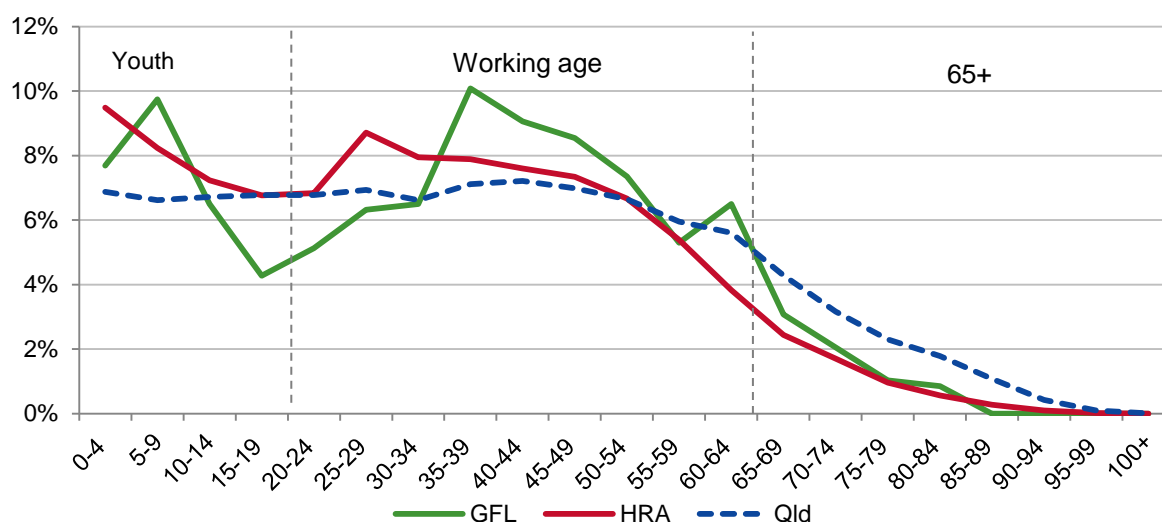
2 Population

2.2 Age

As shown in Figure 2-1, the age profiles of the Arcadia GFL and the HRA area do not follow a similar demographic profile, while they both differ from the State. The Arcadia GFL has an over-representation of people aged 35 to 45 years and a severe under-representation of young people (aged 15 to 19 years). This is generally illustrative of the outmigration of youth from rural areas, in search of both educational and employment opportunities. On the other hand, the higher representation of children in the 0 to 14 cohort in both the Arcadia GFL is most likely representative of higher than average fertility rates, which is considered typical in regional Australia.

The HRA has a relatively young population, with a large proportion of the population aged between 25 to 50 years, compared to the State. The proportion of the population for the various age cohorts above 50 is consistently below the State.

Figure 2-1 Age profile, 2011



Source: ABS, 2012

The population of the HRA, consistent with State and national trends, is projected to age over the next twenty years as a result of increased life expectancy and lower fertility rates, as shown in Table 2-3. Despite the fact that this is evident across Australia, Table 2-3 shows that the HRA is expected to age at a much slower rate than the State, resulting the region exhibiting in a lower median age by 2031 and a much lower dependency ratio, which is the number of people aged 0–19 and 65+ per 100 people aged 20–64.

Table 2-3 Aging populations – key data projected points

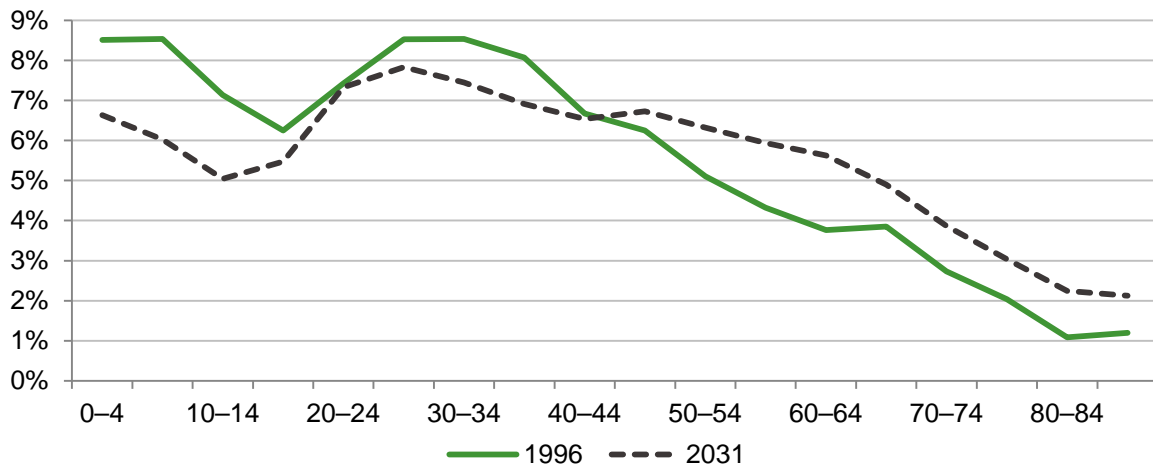
	HRA		Change (%)	Queensland		Change (%)
	2011	2031		2011	2031	
Dependency ratio*	65	65	0	66	78	12
0-19	25.2	23.2	-2.0	26.6	24.4	-2.2
65+	14.0	16.2	2.2	13.1	19.6	6.5
Median age	37.3	38.1	0.8	36.6	40.2	3.6

Source: Source: OESR, 2011

*Dependency ratio is the number of people aged 0–19 and 65+ per 100 people aged 20–64.

2 Population

Figure 2-2 Current and projected age profile, 2011 and 2031 – HRA

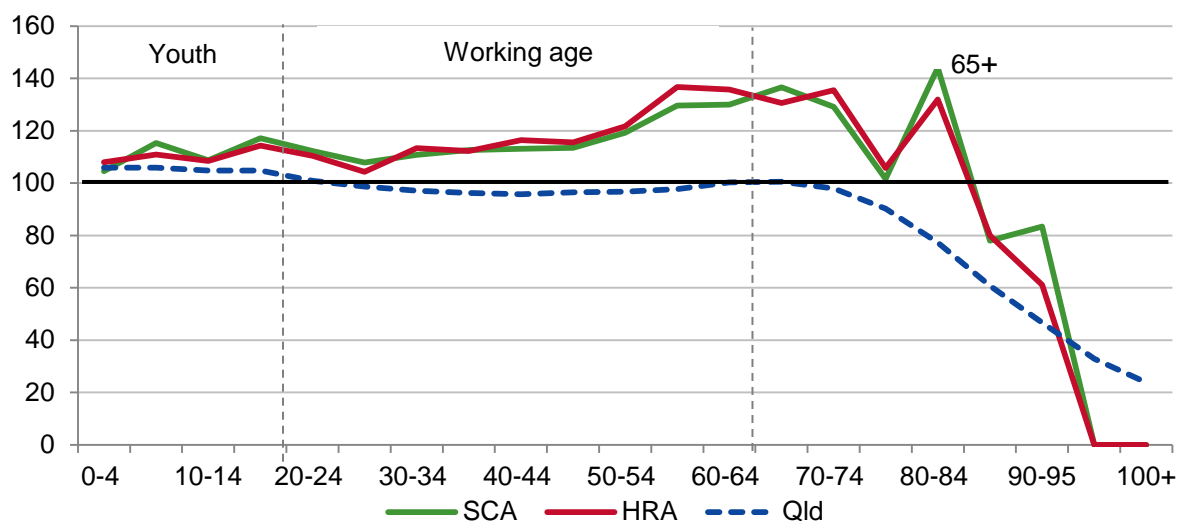


Source: OESR, 2013b. Note: Data only available for the HRA – Central Highlands SA3

2.3 Gender

Figure 2-3 shows the sex ratio by age cohort for the SCA and HRA as at the 2011 Census. The sex ratio represents the number of males per 100 females in a population. In general, the sex ratio reduces markedly by about 65, due to the impact of higher male mortality in this population group. However, both the SCA and the HRA retain high sex ratios up until 74 years, which then spikes markedly in the 80 to 84 years category and then sharply decreases thereafter. In regional areas, there is generally a sex ratio greater than 100, due to the presence of industries such as mining and agriculture, which are generally male dominated. Figure 2-3 indicates that within the SCA and HRA, there are more males than females, a trend which is even more pronounced between the ages of 40 and 70. One would expect from this that the Arcadia GFL and HRA would have a higher number of lone male households.

Figure 2-3 Sex ratio, 2011



Source: ABS, 2012

2 Population

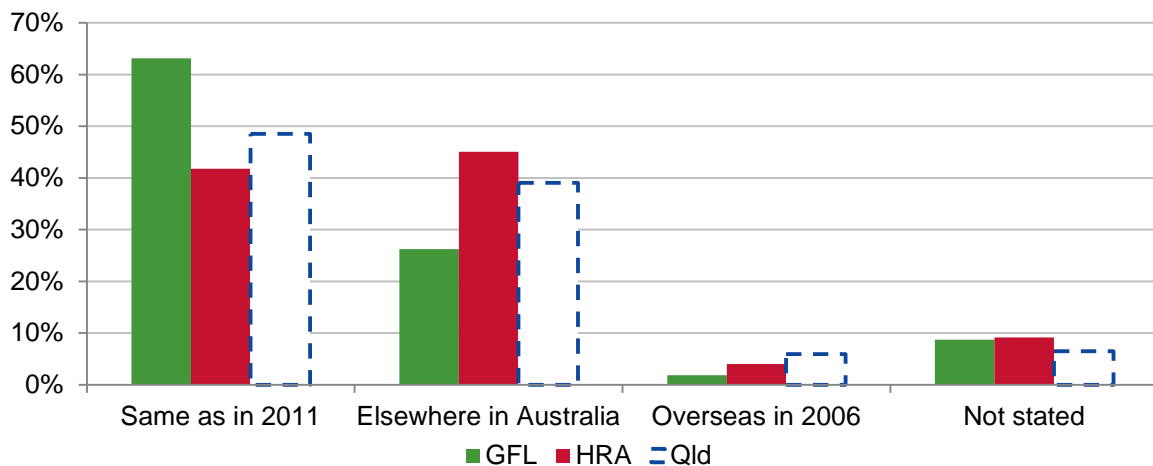
2.4 Population mobility

The mobility of a population can indicate a range of factors: areas with high reported levels of population mobility will often offer high employment and educational opportunities, given that mobility is largely a youth driven phenomena. On the other hand, population with low levels of mobility can indicate higher levels of social capital, meaning that people have established ties to the place and community where they live.

Figure 2-4 provides the population mobility of the Arcadia GFL, HRA and the State. The Arcadia GFL has significantly lower population mobility levels than the Queensland average; the majority of census respondents answered that they lived in the same address in 2011 as five years ago. The very low levels of population mobility in the Arcadia GFL is most likely reflective of the fact that the area covered is primarily rural agricultural land, resulting in minimal opportunities for youth migration into the area. Additionally, the low levels of population mobility and low representation of youth aged cohorts indicate historical youth out-migration, when compared to the State average.

In contrast, the HRA has higher levels of population mobility, when compared to both the Arcadia GFL and the State. This is likely a result of the mining development experienced in the area over the last 10 years, which would have necessitated in-migration of workers and their families.

Figure 2-4 Population mobility, 2011 – address five years ago



Source: ABS, 2012

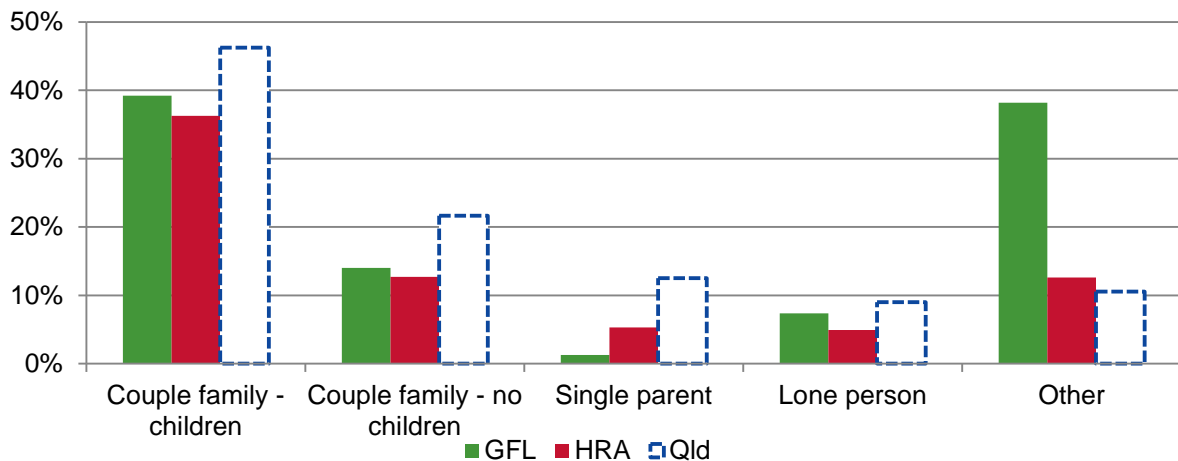
2.5 Household composition

Household composition demonstrates the typical living arrangements for families within the study area. As shown within Figure 2-5, the households within the Arcadia GFL have a higher proportion of couples with children and couples without children than the HRA, though both these areas are below the level of the State. Both the Arcadia GFL and HRA have a lower proportion of single parent households than the State, with this feature more pronounced in the Arcadia GFL. This characteristic is considered to be typical of regional areas that do not contain regional centres, and is often a consequence of single parent out-migration to centres with greater access to support services (Birrell et al., 2002). The Arcadia GFL has a higher proportion of lone person households than the HRA. As discussed in Section 2.4, it is likely that a significant proportion of the lone person households listed below are men, given that they outnumber women in these age cohorts.

2 Population

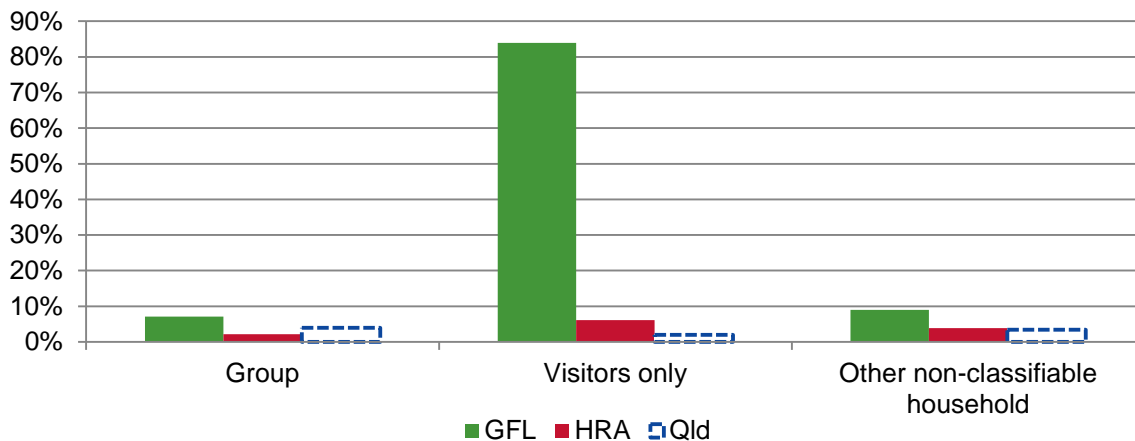
Both the Arcadia GFL and HRA have a higher than the state representation of 'Other' households, although the HRA only differs slightly from the State norm. These have been further broken down in Figure 2-6.

Figure 2-5 Household composition, 2011



Source: ABS, 2012

Figure 2-6 'Other' households, 2011



Source: ABS, 2012

2.6 Non-residential workers and full-time equivalent population

Non-residential workers (NRW) on-shift, are workers who commute (either fly-in-fly-out/drive-in-drive-out/bus-in-bus-out) to an area where they reside in employer-constructed camps or commercial accommodation for a rostered period, before returning to their place of permanent residence. As NRW are not included in the annual ABS estimated resident population (ERP) figures for local government areas, local governments generally feel that they are not funded to provide certain services to NRW, and that the costs incurred to do this are an imposition on rate payers.

2 Population

To better understand the scale of the issue, the Queensland OESR conducts a regular survey of accommodation providers in the Surat Basin, the most recent being June 2012. The survey records NRW on-shift, either living in towns or rural areas, the latter of which captures employer-constructed camps that are more than five kilometres from towns.

Table 2-4 shows the number of NRW in the towns closest to the Arcadia GFL during the last week of June 2012. The figures show that NRW represent a minority of the populations within the urban centres considered proximal to the Arcadia GFL (Springsure) or within the larger SCA (Emerald). However, NRW represent a considerable portion of the population within the CHRC, which administers both the Arcadia GFL and the SCA.

Table 2-4 Full-time equivalent population – residential and non-residential populations

	2011				2012			
	ERP	NRW	FTE	NRW (%)	ERP	NRW	FTE	NRW (%)
Emerald (UCL)	13,245	870	14,115	6.6	13,470	920	14,390	6.8
Springsure (UCL)	850	50	900	5.9	855	45	900	5.3
CHRC	29,535	4,835	34,370	16.4	30,125	5,585	35,710	18.5

Source: OESR, 2012c. ERP: Estimated resident population. NRW: Non-resident workers. FTE: Full-time equivalent

2.1 Cultural and ethnic diversity

2.1.1 Country of birth and language spoken at home

Table 2-5 and Table 2-6 show the country of birth and language spoken at home within the Arcadia GFL, HRA and Queensland. As shown in these tables, the Arcadia GFL and HRA are generally ethnically and culturally uniform. The vast majority of the population during the 2011 Census were born in Australia, with a minority well below the state average who were born in north-western Europe, followed by immigrants from south-east Asia. According to the 2011 Census, the majority of south-east Asian immigrants throughout the study area are Filipino (with approximately 60% being female).

The level of cultural homogeneity in the studied areas indicates that it has not been a significant destination for immigrants over the last twenty years of high immigration in Australia. While this homogeneity presents a shared cultural and ethnic background for the majority of the population, it may also mean that non-English speaking background migrants to the area may experience some level of social isolation.

2 Population

Table 2-5 Country of birth, 2011 (%)

	GFL	HRA	Qld
Oceania	95.6	93.3	83.9
North-West Europe	2.0	2.6	6.9
South-East Asia	1.0	1.2	2.1
Americas	0.6	0.5	1.0
Sub-Saharan Africa	0.0	1.3	1.4
Other	0.8	1.0	4.7

Source: ABS, 2012

Table 2-6 Language spoken at home, 2011 (%)

Language	GFL	HRA	Qld
English	84.0	82.0	80.5
Other	8.4	10.9	14.4
Not stated	7.6	7.1	5.1

Source: ABS, 2012

2.1.2 Religion

The Arcadia GFL and HRA were generally shown to be both more religious and less religiously diverse than the State as a whole, with a higher proportion of the population stating that they were religious (rather than answering 'no religion' during the 2011 Census (Table 2-7).

Table 2-7 Religious affiliation, 2011 (%)

Religion	GFL	HRA	Qld
Christianity	76.5	67.3	64.8
Buddhism	0.5	0.5	1.5
Hinduism	0.5	0.3	0.7
No religion	11.7	19.7	22.2
Other religions	0.0	0.5	1.5
Not stated	10.7	11.7	9.2

Source: ABS, 2012

Employment, income, industry and occupation

The indicators discussed in this section relate to the economic characteristics of well-being of the Arcadia GFL, its SCA and the HRA at large. They focus on individual's participation and ultimately social well-being.

3.1 Employment

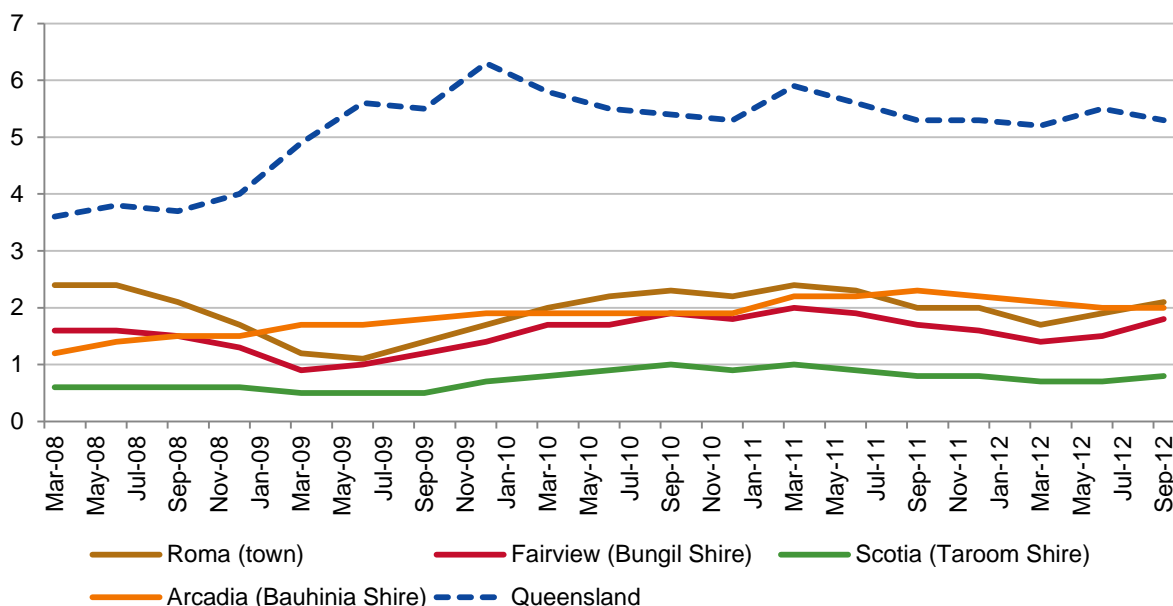
The Arcadia GFL as a whole has shown sustained low unemployment rates that are consistently well below state averages for the last four to five years, as shown in Figure 3-1. As no data is available on unemployment at the SA1 or SA2 level, data has been provided at the pre-2008 amalgamation shire level. The Arcadia (Bauhinia Shire) area has maintained an unemployment rate of around two percent or lower since 2008.

However, these low levels of official unemployment may not reflect a number of local characteristics, such as:

- High levels of under-employment amongst those that are self-employed within the agricultural sector
- The out-migration of youth from rural areas to regional centres and cities in search of employment.

The higher levels of unemployment within Roma Town and the Bauhinia Shire (including Springsure) may be a reflection of the above characteristics. These features are pertinent to the policies of resource companies to employ locally, particularly if the company is a late mover in developing in a locality that has been subject to previous ongoing development by another company.

Figure 3-1 Unemployment rate (%)



Source: DEEWR, 2013

3 Employment, income, industry and occupation

More recent information at the SLA level (subregions of local government areas) (Table 3-1) indicates that the unemployment rate continues to increase slowly in the Bauhinia area.

Table 3-1 Small area labour market data, June 2012-June 2013

Statistical Local Areas (SLAs)	Unemployment rate (%) June 2012	Unemployment June 2012	Unemployment rate (%) June 2013	Unemployment June 2013	Labour force June 2013
Bendemere (LGA)	2.3	15	1.6	10	640
Booringa (LGA)	3.4	38	3.8	43	1,123
Bungil (LGA)	1.5	25	1.9	31	1,641
Roma (Town)	1.8	85	2.3	104	4,572
Taroom (LGA)	0.7	13	0.8	15	1,775
Bauhinia (LGA)	2.0	35	2.3	41	1,771
Woorabinda (LGA)	68.8	245	80.3	293	365

Source: Department of Employment, 2013

Table 3-2 indicates that youth unemployment is steady, though about three to four times the overall rate of unemployment, with a low participation rate, while the rate of unemployment --+-- our force participation.

Table 3-2 Unemployment and participation rates: 15-19 and 20-24

Central Highlands - West	Unemployment %	Participation rate %	Unemployment %	Participation rate %
	15-19		20-24	
2001	13	47	7	74
2006	9	57	3	75
2011	9	60	2	72

Source: OESR, 2013c

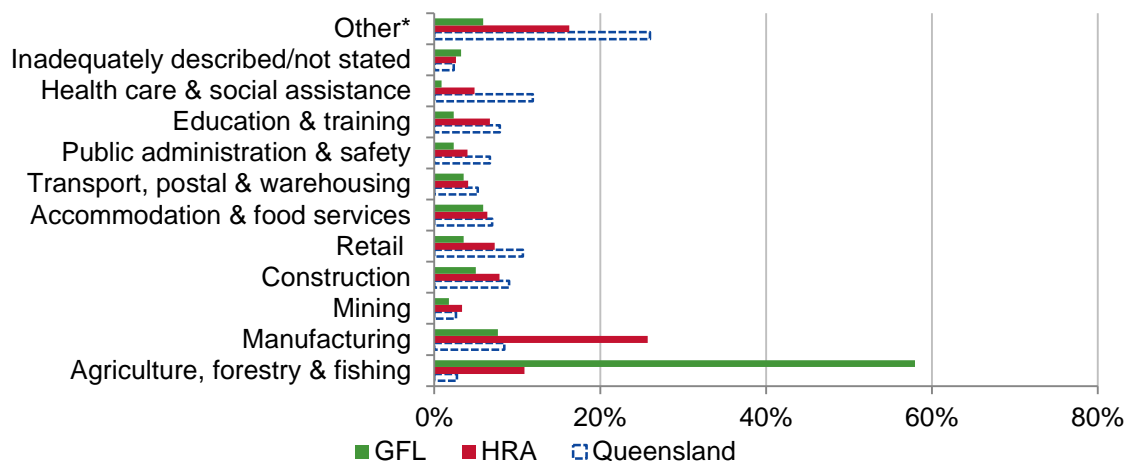
3.2 Industry of employment

Figure 3-2 shows that employment within the Arcadia GFL is predominately within the agricultural industry, followed by manufacturing. The dependence on agriculture within the Arcadia GFL increases vulnerability to adverse commodity prices and droughts. Across the HRA, manufacturing is the principal industry of employment, reflecting the role of Emerald businesses supporting the mining and agricultural sector.

Figure 3-3 shows the industry of employment time series for people living within the larger SCA, (no data are available for the Arcadia GFL area prior to 2011). Mining as an employer has grown dramatically during the last ten years, from 14% in 2001 to 23% in 2011. Construction also saw a major increase between the 2001 and 2006 census periods, moving from 7% to 10%. Simultaneously, the region experienced a considerable decline in agriculture as an employer, falling from 19% in 2001 to 10% in 2011.

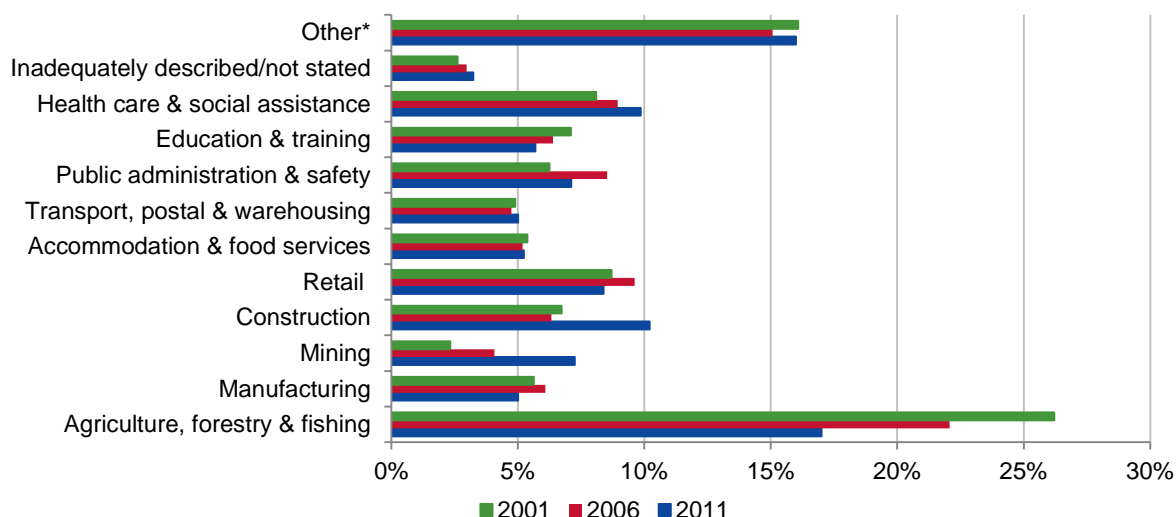
3 Employment, income, industry and occupation

Figure 3-2 Industry of employment, 2011



Source: ABS, 2012

Figure 3-3 Industry of employment, Arcadia SCA (SA2), 2001–2011



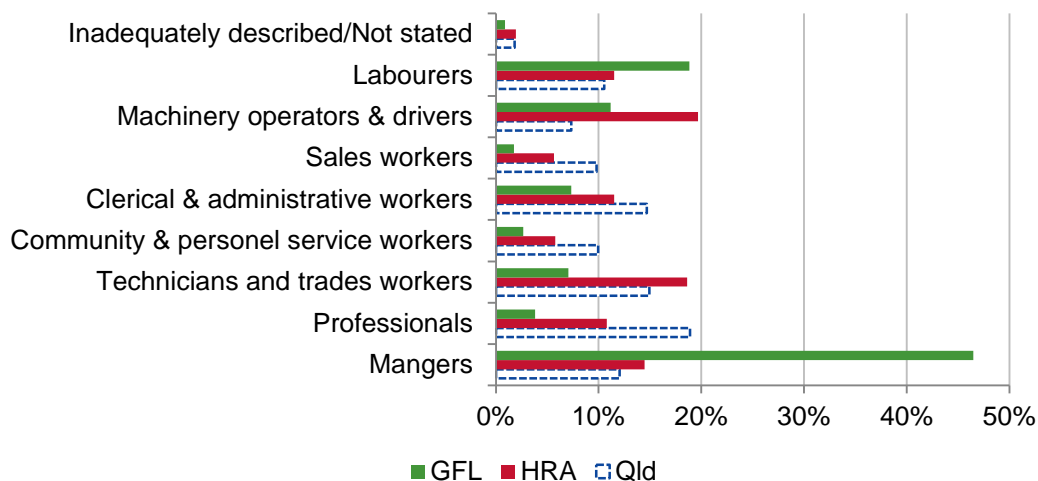
Source: ABS, 2012

3.3 Occupation

At the time of the 2011 Census, the largest occupational category in the Arcadia GFL was 'manager' (Figure 3-4). Of this 46% of the workforce, 90% of these are farm managers (ABS, 2013a). Similarly, the next largest occupational category is labourer's (19%), where 70% of these are classified as farm, forestry or garden labourers (ABS, 2013a). Within the HRA, machinery operators and drivers (19%) and technicians and trade workers (19%) are the predominant occupations, followed by managers (15%) labourers (12%) and professionals (11%).

3 Employment, income, industry and occupation

Figure 3-4 Occupation, 2011

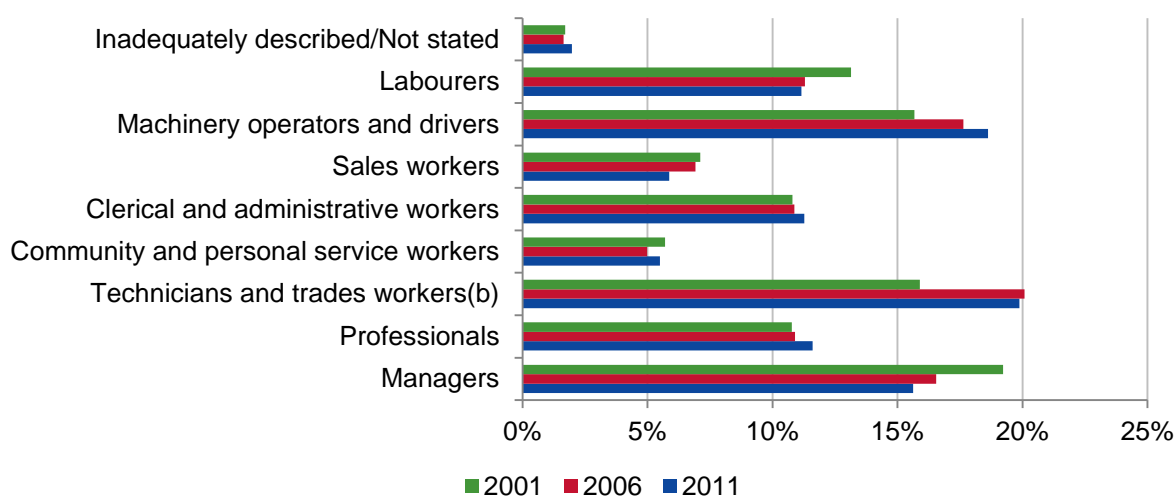


Source: ABS, 2012

The occupational categories of workers within the SCA over the last two Census periods are shown in Figure 3-5. The vast majority of people within the SCA are managers, followed by labourers and technicians/trades workers. A smaller proportion of the SCA than the Arcadia GFL workforce is occupied in agricultural occupations: 48% of managers are listed as farm managers, while only 26% of labourers are farm, forestry or garden workers (ABS, 2013a).

The most obvious change in the last two Census periods is the decline in people employed as managers from 19% in 2001 to 16% in 2011. Concurrently, technicians and trades workers saw an increase between 2001 and 2006 from 16% to 20% and remained stable between 2006 and 2011, while machinery operators and drivers increased from 16% to 19% from 2001 to 2011. These increases are likely associated with the growth of mining as an employment industry in the region.

Figure 3-5 Occupation, Arcadia SCA (SA2), 2011



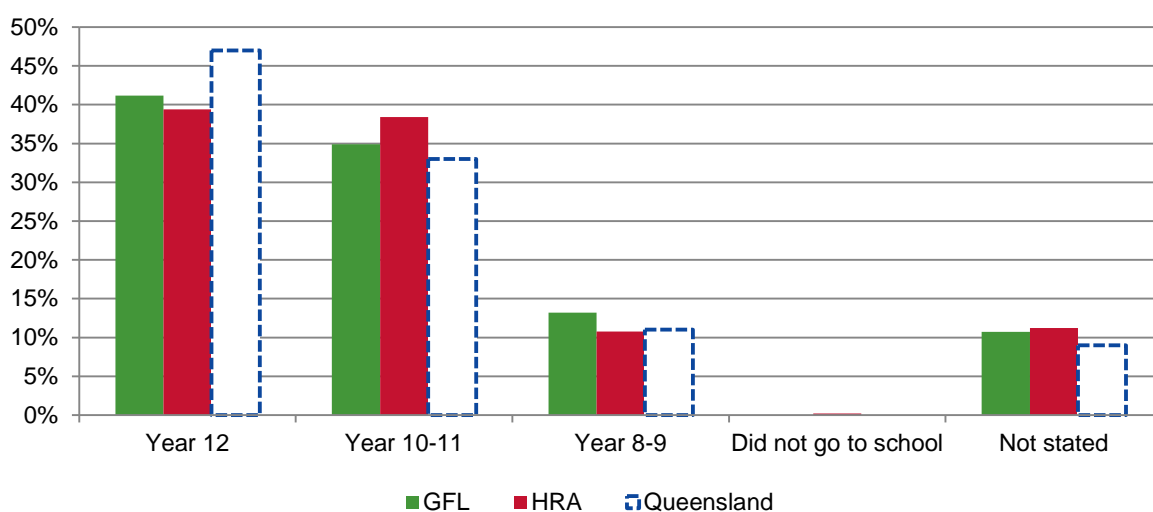
Source: ABS, 2012

3 Employment, income, industry and occupation

3.4 Educational attainment

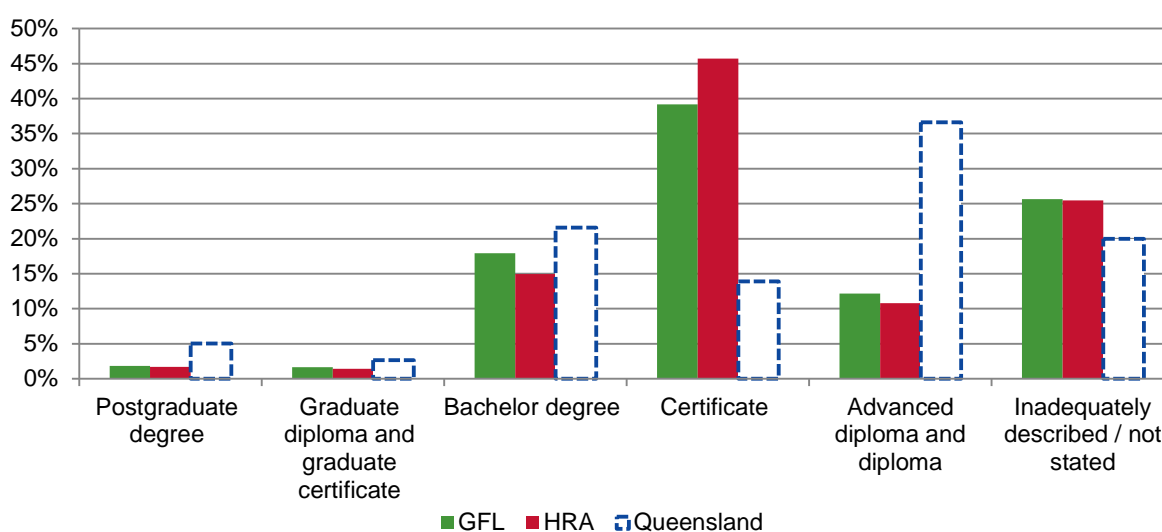
Both the Arcadia GFL and the HRA exhibit lower levels of high school education attainment than the state average, as shown in Figure 3-6. Similarly, both areas have lower levels of university level educational attainment than the State; however, these areas have considerably higher levels of TAFE acquired qualifications, displayed as 'certificate' level qualifications within Figure 3-7. This is consistent with the dominance of the agricultural, manufacturing and construction industries within these areas. The fact that the Arcadia GFL has a higher proportion of bachelor degree level achievement than the HRA is likely to be a reflection of the lower population and the presence of qualified teachers and health professionals within urban centres in the area.

Figure 3-6 High school education achievement, 2011



Source: ABS, 2012.

Figure 3-7 Post-school qualifications, 2011



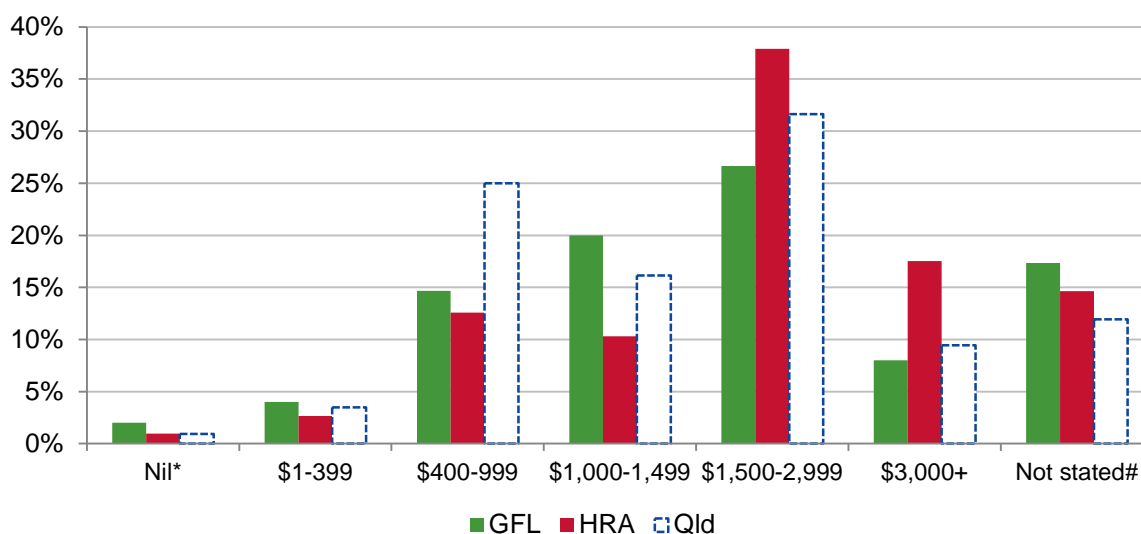
Source: ABS, 2012.

3 Employment, income, industry and occupation

3.5 Income

As can be seen in Figure 3-8, the distribution of weekly family incomes in the Arcadia GFL and HRA are markedly different to that of Queensland. Only 34% of the Arcadia GFL families report earning over \$1,500 a week, compared to 55% for the HRA and 41% for the State. This distribution in the Arcadia GFL may be influenced some degree by the predominance of agricultural enterprises in the area, where reported incomes may not reflect income in-kind.

Figure 3-8 Weekly family income, 2011



Source: ABS, 2012.

3.6 Cost of living

Ascertaining the cost of living quantitatively is difficult in rural and regional areas as data is often lacking or is not current. While there is no data available for the Arcadia GFL at the direct SA1 area, the May 2010 survey of retail prices (OESR, 2011) included Emerald, which is in the SCA. This survey indexes the price per basket of goods to Brisbane, which is represented as a base of 100.

As shown in Table 3-3, during May 2010, the cost of living in Emerald was higher than in Brisbane in most categories of spending (with the exception of transportation). The cost of housing was particularly inflated; the high cost of housing in Emerald and throughout the SCA has been a marked feature of this area for a number of years and is discussed further in Section 4.

Table 3-3 Cost of living – retail prices index when compared to Brisbane, May 2010

Centre	Food	Clothing and footwear	Housing	Transportation	All items	All items less housing
Emerald	106.4	101.2	111.9	97.1	104.2	102.2

Source: OESR, 2011

3 Employment, income, industry and occupation

3.7 Business counts and trends

Business count and turnover statistics are available from OESR for SCA and HRA.

The majority of businesses within both the SCA and the HRA are small businesses with annual turnovers of under \$500,000. Medium size businesses represent a very small minority, while large businesses are not represented (Table 3-4). Significantly, both the SCA and the HRA have fewer employees per business when compared to the state, indicating a higher number of sole operators. This is consistent with the farming profile in the area. The SCA and HRA have more persons per business than businesses in the other gas fields' study areas in the GFD Project,

Table 3-4 Business count by employee size, 2012

Area	Small		Medium		Large		Total	Persons per business
	No.	%	No.	%	No.	%	No.	No.
SCA	2,593	95.3	125	4.6	3	0.1	2,721	8.3
HRA	3,224	95.1	160	4.7	6	0.2	3,390	9.0
Qld		95.7		4.0		0.3		10.0

Source: OESR, 2013e. Businesses are defined as small (employing less than 20 people, including non-employing businesses), medium (employing 20 or more people but less than 200 people) and large (employing 200 or more persons).

Table 3-5 Business count by turnover range, 2012

Area	\$0 to less than \$100k		\$100k to less than \$500k		\$500k to less than \$2m		\$2m or more		Total
	No.	%	No.	%	No.	%	No.	%	No.
SCA	1,087	41.4	927	35.3	454	17.3	160	6.1	2,628
HRA	1,357	41.9	1,151	35.5	531	16.4	200	6.2	3,239
Queensland		46.6		34.7		13.3		5.4	

Source: OESR, 2013e

3.8 Socio-economic indexes of disadvantage

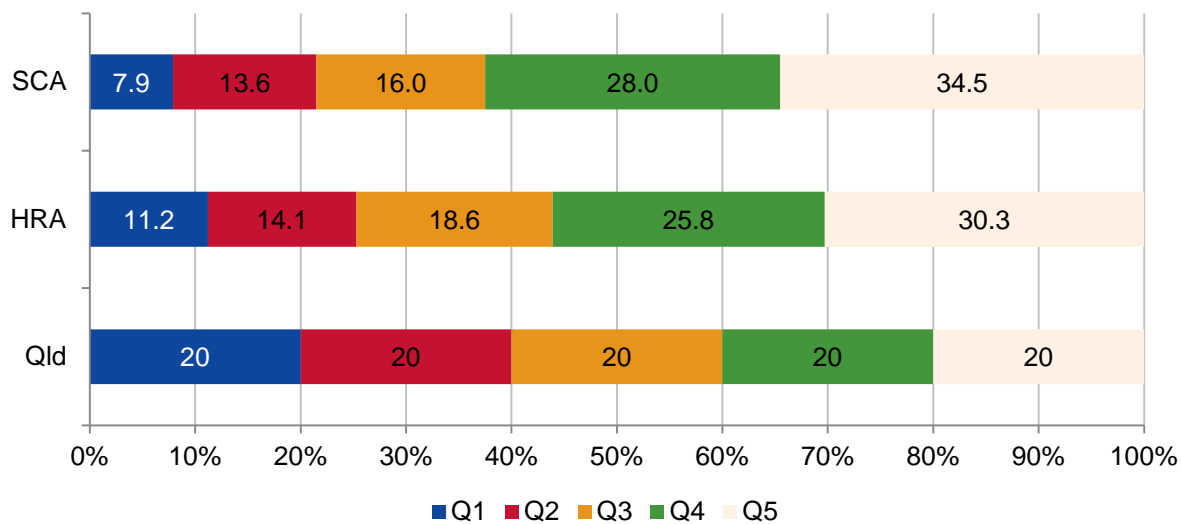
The *Socio-economic Indexes for Disadvantage* (SEIDA) is a summary measure of the social and economic conditions of a region. SEIDA is generated by the ABS and compiles a range of indicators within Census data, which is designed to reflect disadvantage of social and economic conditions. The index focuses on low-income, relatively lower education attainment, high unemployment and dwellings without motor vehicles. Low index values represent areas of most disadvantage and high values represent areas of least disadvantage. SEIDA quintiles for the Arcadia GFL are not available.

Figure 3-9 shows the percentage of the population of the SCA, HRA and Queensland in each quintile of the SEIDA, where 'Quintile 1' represents the most disadvantaged group, while 'Quintile 5' represents the least disadvantaged group of persons.

By definition, 20% of the Queensland population is within each quintile. As shown in Figure 3-9, the SCA and HRA have lower levels of disadvantage than is standard across the State's population. Only 21.4% of SCA and 25.3% of the HRA were in the most disadvantaged quintiles (Quintile 1 and 2). Rather, 62.5% and 56.1% of the SCA and HRA respectively fall within the highest two quintiles, indicating that these populations are comparatively socio-economically advantaged.

3 Employment, income, industry and occupation

Figure 3-9 Socio-economic Index for Disadvantage – SCA and HRA



Source: OESR, 2013c

Housing

4.1 Residential housing

4.1.1 Dwelling type and structure

The dominant form of housing within the Arcadia GFL and the HRA is separate houses (Table 4-1). The next most prominent form of dwelling in both areas is that of 'caravan, cabin or houseboat', followed by flats, which are represented well below the State average. This is likely a result of the small area the gas field locality covers, which would be largely influenced by the presence of caravan parks. Similarly, the Arcadia GFL also contains a high proportion of 'improvised dwellings', which indicates sheds used by seasonal labourers on agricultural holdings.

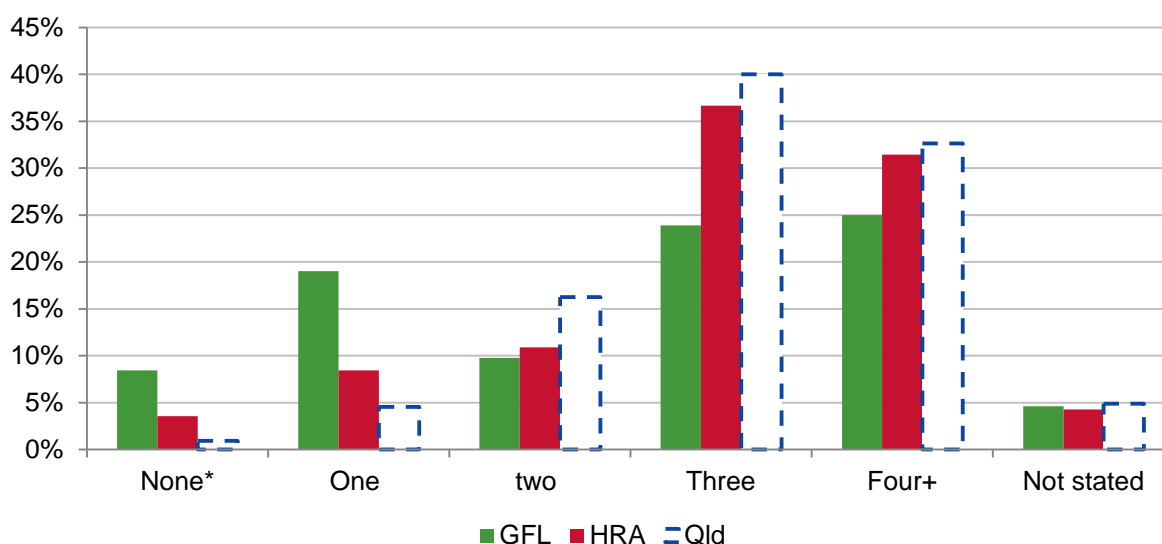
Dwellings in both the Arcadia GFL and the HRA are relatively small (by number of bedrooms) as shown in Figure 4-1; reflecting the high percentage of caravans in the area. Nevertheless, three and four bedroom dwellings predominate across the areas examined.

Table 4-1 Dwelling structure – private dwellings (%), 2011

	GFL (%)	HRA (%)	Qld (%)
Separate house	62.9	74.3	78.4
Townhouse	0.0	3.4	3.0
Flat	2.1	8.6	7.2
Caravan, cabin, houseboat	28.2	11.2	9.3
Improvised dwelling	6.7	2.1	1.7
Attached residence	0.0	0.4	0.4

Source: ABS, 2012.

Figure 4-1 Number of beds per dwelling, (%) 2011



Source: ABS, 2012. *Includes bedsitters

4.1.2 Dwelling occupancy

At the 2011 census, the Arcadia GFL, SCA and HRA had rates of unoccupied private dwellings considerably higher than the State average. In the case of the Arcadia GFL, the proportion of

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unoccupied dwellings was almost double that of the State. It may be that these low rates of occupancy are a result of the Arcadia GFL covering agricultural holdings, where processes of agricultural change have resulted lower levels of employment for farm labourers who were formerly housed on properties.

The low rate of occupancy seen in the HRA possibly represents the effects of agricultural holdings and a high level of employer-owned housing. Low rates of occupancy in resource towns (such as Moranbah and Blackwater) may be the result of a significant number of dwellings being either leased or owned by resource companies and being temporarily unoccupied at the time of the Census. Lower levels of occupancy could also be the result of landlords setting very high rents in the hope of securing corporate tenants from the resources sector. Should the anticipated tenant not eventuate, the house may remain unoccupied for a longer period if potential tenants were forced to relocate. It may also be the case that some rural towns display lower occupation rates due to poor dwelling condition.

Table 4-2 Dwellings – occupied and unoccupied, 2011

Area	GFL	%	HRA	%	Qld	%
Occupied	372	84.3	11,224	82.5	1,547,303	90.3
Unoccupied	106	15.7	2,386	17.5	177,911	9.7
Total	478		13,610		1,725,214	

Source: ABS, 2012.

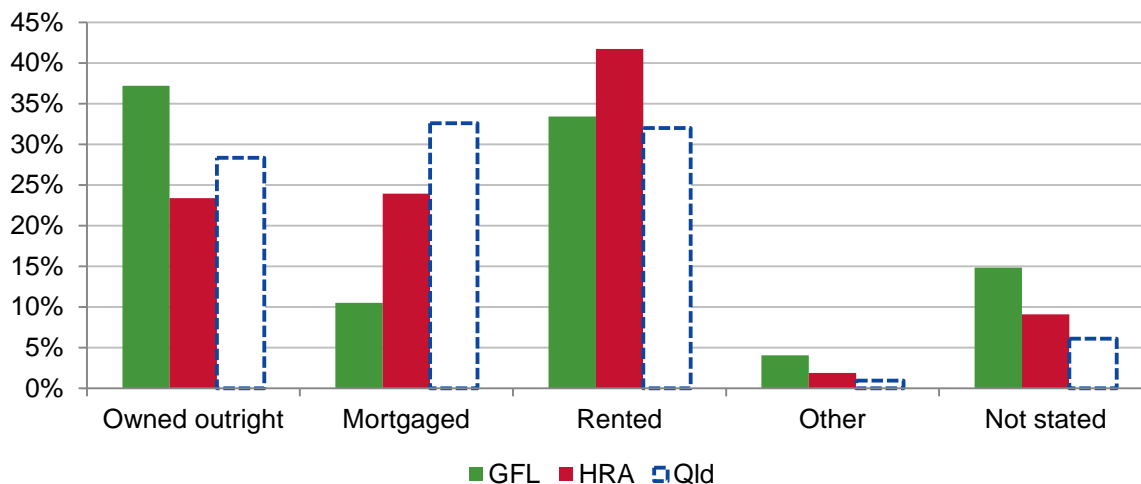
4.1.3 Ownership

The level of home ownership in the Arcadia GFL at the time of the 2011 Census was higher than both the HRA and the State (Figure 4-2); however, the proportion of households with a mortgage (10%) is much lower than the state average (32%). This is likely due to high levels of housing affordability in rural areas and regional towns, low levels of unemployment, low levels of population mobility, and a high proportion of farming and grazing properties. The declining population of rural towns has meant that selling houses has often been difficult, with sale proceeds not sufficient to purchase a replacement property in a regional centre, such as Emerald or elsewhere.

The HRA has lower levels of “owned outright” and “mortgaged” homes than the State average; reflecting the area’s high levels of population mobility and employer-owned housing in urban centres. The corollary to this is a higher proportion of rented properties.

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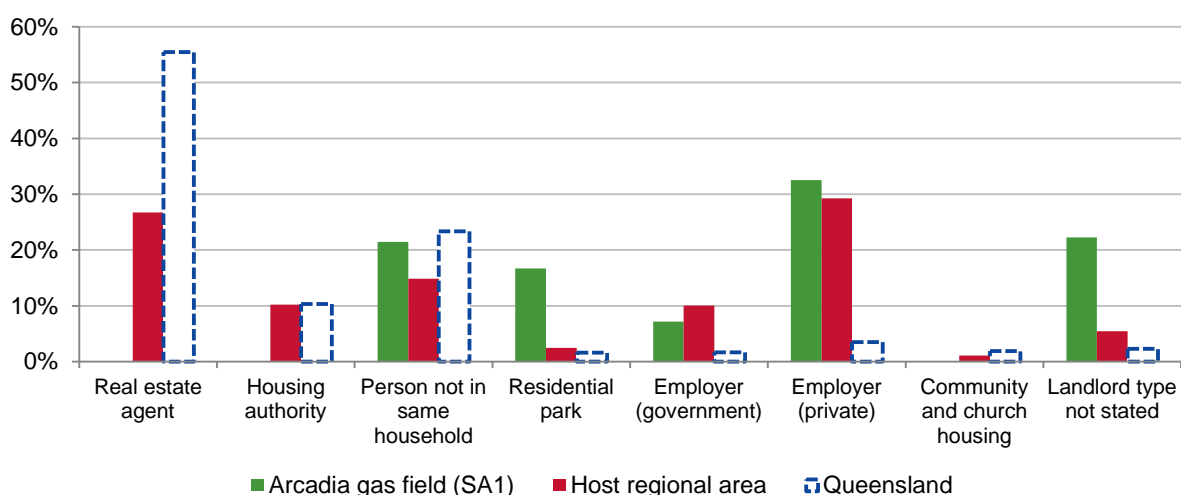
Figure 4-2 Home tenure, 2011



Source: ABS, 2012.

The profile of rental landlord types in the Arcadia GFL and HRA is substantially different from that of Queensland (Figure 4-3). Relatively few dwellings in the HRA (26% compared to 56% for Queensland) are rented through a real estate agent, and in the Arcadia GFL there are none. The most common landlord type in these areas is “private employer”, which indicates persons living in housing on rural properties where they are employed (particularly in the agricultural areas of the Arcadia GFL or residing in resource company owned or leased dwellings). Finally, both the Arcadia GFL and the HRA have a considerable portion of government employer-provided housing, reflecting accommodation arrangements for health, education and public administration sector workers.

Figure 4-3 Rental landlord type, 2011



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4.1.4 Social housing

There is a reasonable provision of social housing in the SCA as shown in Table 4-3. However, discussions with service providers in the region during 2012 indicated that there was considerable pressure on social housing in the primary regional centres due to the increase in housing prices throughout the SCA (URS, 2012). However, the effects of this must be considered in the context of the fact that residents of the SCA are generally socio-economically advantaged with high family incomes and less likely to be vulnerable to housing price fluctuations.

Table 4-3 Social housing, SCA

Postcode	Area	Government-managed	Non-government-managed	Total
4720	Emerald	122	52	181
4722	Springsure	13	19	32

Source: Department of Housing and Public Works, 2013

4.1.5 Housing costs

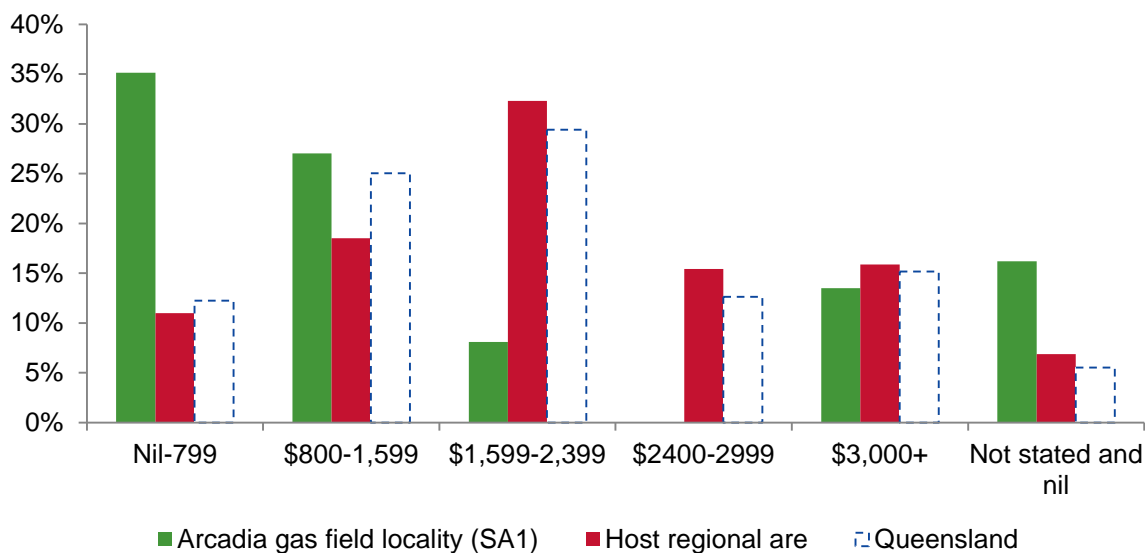
As shown in Figure 4-4 and Figure 4-5, the Arcadia GFL reported considerably lower housing costs than both the state and the HRA during the 2011 Census. As discussed above, this is likely a result of low housing prices and higher outright home ownership in rural towns. This effect is also reflected in rental costs, with most households reporting very low costs when compared to the State, especially within the gas field. No accurate market data is available for Rolleston, which is the sole township located within the Arcadia GFL.

In contrast, the HRA reported slightly higher costs of housing, both in terms of monthly mortgage payments and in weekly rental costs, reflecting housing affordability issues present in the regional market. For example, the cost of buying a house has increased considerably across the HRA and the SCA (Springsure), as shown in Table 4-4 (median house price data is not available for the Arcadia GFL). While data from market sources should be treated with caution, especially considering the small number of transactions used to calculate a median in small towns such as Springsure, the cost of houses for new home owners appears to have increased considerably in the last four years.

Similarly, the weekly rental costs reported in the 2011 Census (Figure 4-5) differ dramatically from those reported to the Rental Tenancy Authority, as shown in Table 4-5. Compared to the Census data (where most households report weekly rental costs under \$175), most towns within the SCA report much higher median rental costs.

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Figure 4-4 Monthly mortgage costs, 2011



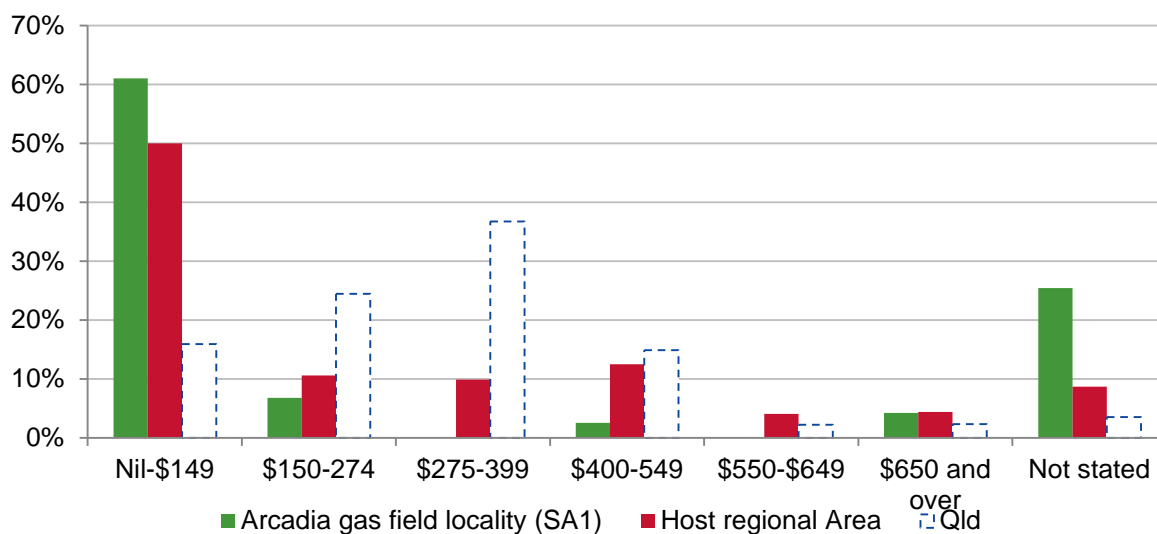
Source: ABS, 2012.

Table 4-4 Median house sale prices across the SCA

	Rolleston (\$)	Springsure (\$)	Emerald (\$)
2009	205,000	240,000	383,534
2010	155,000	240,000	380,000
2011	135,000	235,500	425,000
2012	165,000	262,500	462,000
2013	150,000	330,000	440,000

Source: Property Data Solutions, 2013

Figure 4-5 Weekly rental costs, 2011



Source: ABS, 2012.

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Table 4-5 Median weekly rental prices, three bedroom home, SCA

Town/area	Mar-10		Mar-11		Mar-12		Mar-13	
	Rent (\$)	New Bonds	Rent (\$)	New Bonds	Rent (\$)	New Bonds	Rent (\$)	New Bonds
Springsure	280	6	8	260	450	7	NA	2
Emerald	380	74	395	60	500	66	450	70

Source: Rental Tenancy Authority, 2013

4.1.6 Housing affordability

The cost of housing in the Arcadia GFL has been steadily increasing over time, particularly in Springsure which has been subject to a higher level of investigation into potential mining development, as well as being in proximity to the Rolleston Coal Mine. Since 2009 the median price of a three bedroom house has risen by 15% in Emerald and 38% in Springsure, and decreased by 27% in Rolleston. The proximity of Rolleston to Springsure may act to suppress the housing market there as demand is placed on Springsure due to the higher level of facilities and services available. Median rents have also increased over the last two years. Rental Tenancies Authority data indicates a 61 per cent increase in Springsure in the two years to March 2012, and by 18% in the three years to March 2013 in Emerald.

The increases in housing costs, considered together with household income, indicate the presence of housing affordability pressure on the Arcadia GFL. While there are a number of different measures for understanding housing affordability dynamics, and the measures suffer from input data limitations, nonetheless they act as an indicator to changes occurring in the market. The former Urban Land Development Authority identified that housing is affordable if rental costs were no more than 30% of gross household income, or that mortgage costs were no more than 35% of gross household income. Table 4-6 and Table 4-7 following show affordable price and rental benchmarks for each income quintile together with income distribution, price and rental data for Springsure and Emerald. Rolleston has not been analysed due to its limited market size.

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Table 4-6 Springsure housing affordability

Max. affordable rental Per week	Income distribution Springsure	Affordable house purchase price
More than \$750/week	\$2,500+/week(\$130,000+/year) 21.8% of total households	\$585,000+
\$750/week	\$1,500-\$2,499/week (\$78,000-\$130,000/year) 21.8% of total households	\$585,000
\$450/week	\$1,000-\$1,499/week (\$52,000-\$78,000/year) 12.4% of total households	\$351,000
\$300/week	\$600-\$999/week (\$31,200-\$52,000/year) 11.7% of total households	\$234,000
\$180/week	\$0-599/week (\$0-31,200/year) 18.5% of total households	\$140,000

Mar 2012
Median
Rental
Cost
\$450/week

2013 Median
House Price
\$330,000

Median Rental Cost = \$450 (RTA, March 2013)

Median House Price-2013 = \$330,000 (PriceFinder 2013)

Affordable House Purchase Price (sourced from Santos GLNG Integrated Project Housing Strategy, Update No. 1 (2012))

Based on the figures above, between 40 to 45% of households in Springsure are susceptible to affordability pressures in terms of purchase of a median valued house, and a similar proportion of households are susceptible to affordability pressures in terms of rental of a median-rental house.

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Table 4-7 Emerald housing affordability

Max. affordable rental Per week	Income distribution Emerald	Affordable house purchase price
More than \$750/ week	\$2,500+/week(\$130,000+/year) 39.5% of total households	\$585,000+
\$750/week	\$1,500-\$2,499/week (\$78,000-\$130,000/year) 21.8% of total households	\$585,000
\$450/week	\$1,000-\$1,499/week (\$52,000-\$78,000/year) 10.4% of total households	\$351,000
\$300/week	\$600-\$999/week (\$31,200-\$52,000/year) 7.1% of total households	\$234,000
\$180/week	\$0-599/week (\$0-31,200/year) 8.0% of total households	\$140,000

Mar 2013
Median
Rental
Cost
\$450/
week

2013 Median
House Price
\$440,000

Median Rental Cost = \$450 (RTA, March 2013)

Median House Price-2013 = \$440,000 (PriceFinder 2013)

Affordable House Purchase Price (sourced from Santos GLNG Integrated Project Housing Strategy, Update No. 1 (2012))

Based on the figures above, between 35 to 40% of households (in mid-2013) in Emerald are susceptible to affordability pressures in terms of purchase of a median valued house, and around 25% of households are susceptible to affordability pressures in terms of rental of a median-rental house.

A further indicator of housing affordability is the house price to income ratio, which is the ratio of median house prices to median gross household income in a given geographic area. The ratio is used as a measure of trends in housing affordability over time. Table 4-8 provides an estimate of the Price to Income Ratio for Springsure and Emerald between 2009 and 2013 (based on estimates of Median house prices from PriceFinder, and using household income estimates from the 2011 Census). While there has been a 30% increase in the ratio in Springsure, there has been a more modest 16% increase in Emerald over the four year period, indicating a limited barrier to home ownership in those towns.

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Table 4-8 House price to income ratio – Springsure and Emerald

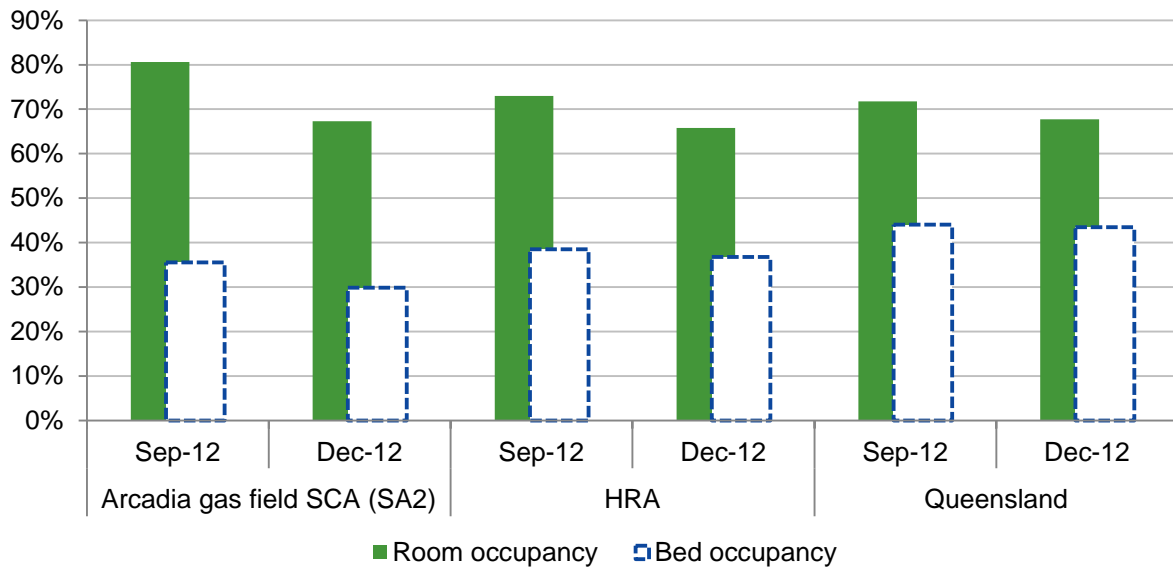
	Median house price (three-bedroom)	Median household income (2011)	Price to Income Ratio
Springsure			
2009	240,000	78,700	3.0
2010	240,000	78,700	3.0
2011	235,500	78,700	3.0
2012	262,500	78,700	3.3
2013	330,000	78,700	4.2
Emerald			
2009	383,534	119,300	3.2
2010	380,000	119,300	3.2
2011	425,000	119,300	3.6
2012	462,000	119,300	3.9
2013	440,000	119,300	3.7

4.2 Short-term accommodation supply

Short term accommodation (hotels/motels/cabins and caravan parks) is important in regional areas to provide accommodation for visitors and travelling public, and to support regional tourism activity. The development of resource projects that require large construction workforces can monopolise the available accommodation in small towns to the detriment of traditional service provision, particularly in early stages where pioneer workforces are establishing project-supplied temporary accommodation. ABS occupancy data for towns within the SCA and the HRA are detailed within Figure 4-6. As shown, both areas have room occupancy levels at or above the State standard, while concurrently having lower bed occupancy levels. This suggests that visitors are single or two persons, occupying multiple bed rooms. A review of accommodation establishments in the Springsure/Rolleston area indicates that there are at least five motels/hotels and three caravan parks with cabins or single persons units, with recent expansions (including a 68 room motel/tavern) to cater for higher demand from mining. Slightly further afield in Blackwater there is a private facility providing temporary accommodation with 234 rooms. The Rolleston Coal Mine has recently completed an expansion of its accommodation facilities to 700 rooms. The Central Highlands Development Register indicates that there are approved non-resident private workforce accommodation facilities at Blackwater (835+ rooms), and two facilities pending approval at Springsure designed to accommodate 715 persons. Planet Downs, between Rolleston and Bauhinia also has a 23 room accommodation facility servicing the resource industry.

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Figure 4-6 Short term accommodation occupancy



Source: (ABS, 2013b, 2013c)

4.3 Serviced land availability

Information on serviced land availability is available for the SCA and the CHRC area.

Due to the noted issues in housing affordability within the Central Highlands area, the CHRC has been actively purchasing land in Springsure and Rolleston and investing in residential development (Zamia Heights in Springsure to be put to tender on February 2014 as per the Central Highlands Development Register, June 2013) to accelerate housing supply (CHDC, 2012). As of December 2012, there was approximately 1,200 hectares of broadacre land suitable for residential development across the host regional area. According to analysis by the OESR, this is expected to yield some 4,000 dwellings (OESR, 2012d).

Community values and aspirations

5.1 Local governance and community planning

Central Highlands Regional Council

The CHRC was formed out of an amalgamation of four local government areas (LGAs), including the Shire of Bauhinia, the Shire of Daringa, the Shire of Emerald, and the Shire of Peak Downs.

It covers an area of 53,677 square kilometres (km²), with a population of 30,545 (OESR, 2013d). Although most towns across the region began with an agricultural economy, but much of the region has become dominated by mining and resources development, with a particular focus on exploitation of coal resources. Due to the prolonged resources boom, which saw population migration to the region as well as an increase in salaries for resource workers, the region is generally noted for its financial prosperity.

The goals for the region as a whole, as identified in the *Central Highlands Region 2022 Community Plan*, include planning for:

- Resourceful vibrant community
- Integrated quality infrastructure
- Diverse prosperous economy
- Healthy natural environment
- Proactive open governance (CHRC, 2011a).

As a region-wide plan, the *Central Highlands Region Community Plan 2022* was produced through an extensive community consultation process, and involved 'pulling together' 13 community place plans, including plans for areas within the Arcadia GFL (Rolleston) and the SCA (Springsure and Emerald).

Rolleston

Rolleston is located 140 km southeast of Emerald and 70 km from Springsure on the junction of the Dawson and Carnarvon Highways.

Rolleston was established around the 1860s by pastoralists for sheep and cattle grazing, with the town acting as a service centre. Agriculture remains a strong component of the local economy, which is now known for cattle production and crops such as sorghum, sunflowers and cotton.

As with many towns within the CHRC, mining provides additional employment opportunities and supports the local economy; the Xstrata Rolleston mine is located less than 20 km from the town.

The residents of Rolleston report valuing the strong community involvement, rich cultural heritage and the opportunity to live in a clean, healthy and picturesque natural environment.

Priorities for the future of Rolleston, identified in the *Central Highlands Region 2022 Community Plan*, include:

- Improving access to community services
- Enhancing community facilities and infrastructure
- Attracting investment to the community to promote growth
- Increase opportunities to determine the community's future through open governance.

Springsure

Springsure is located 66 km south of Emerald on the Gregory Highway.

Springsure was established in the late 1860s by pastoralists and was a prominent site of Aboriginal resistance to European settlement of the area. It has a long agricultural history, beginning with sheep production, which was later swapped for grain crops (sunflower, sorghum, wheat and chickpea) and cattle production.

Springsure is the service centre for several coal mines, including the Minerva and Rolleston Mine, and the planned Springsure Creek Mine.

According to the *Central Highlands Region 2022 Community Plan*, residents of Springsure value their community's spirit, enjoying a country lifestyle and a range of outdoor activities within a natural environment that is rich with cultural heritage.

Priorities for the future of Springsure, identified in the *Central Highlands Region 2022 Community Plan*, include:

- Increasing community services to encourage population growth (especially housing and medical)
- Maintaining and developing community infrastructure
- Balancing the impacts and opportunities of growth
- Increasing community involvement in planning.

5 Community values and aspirations

Emerald

Emerald is the business centre for the CHRC and is located approximately 300 km from the east coast and 240 km west of Rockhampton.

As with many other towns within the CHRC, Emerald was settled by pastoralists in the 1860s. However, the town became a transport hub for the region in the late 1870s with the construction of rail-lines from Emerald to Clermont and Springsure. A little over one hundred years later, Emerald once again became a regional hub, with a number of large coal mines using the town as a service hub. Emerald and the area surrounding it also greatly benefited from the construction of the Fairbairn Dam and Emerald Irrigation Scheme.

According to the *Central Highlands Region 2022 Community Plan*, residents of Emerald value that Emerald is a safe and positive place to raise a family, with a range of facilities. Emerald is valued for the range of sporting, cultural and recreational clubs and volunteering in addition to historic sites.

Priorities for Emerald, identified in the *Central Highlands Region 2022 Community Plan* include:

- Attracting and improving community services such as medical and aged care to meet growth demands
- Further diversifying our economy, building on our strengths, including tourism development and investment attraction
- Planning, developing and expanding facilities and infrastructure to meet current and future growth, especially transport systems and housing
- Continuing to engage and plan for our community's future.

Source: Central Highlands Regional Council, 2011

Table 5-1 shows the rate charges for towns across the GFD Project development area for 2011/12 and 2012/13, indicating a rise of approximately 14% in the Arcadia area (Springsure/Rolleston). In the 2012 Central Highlands Community Survey approximately 66% of the respondents expressed dissatisfaction with rate charges, while the rate of dissatisfaction was close to 80% in the Springsure/Rolleston area. In regard to the provision of infrastructure, Springsure/Rolleston area respondents expressed the lowest levels of satisfaction with the maintenance of rural sealed and gravel roads and rubbish transfer stations/landfills. Infrastructure areas where improvement was desirable included water supply and quality, drainage and flood mitigation, and road signs and markings, street lights, and bike paths and footpaths.

Table 5-1 Local government rate charges

Council name	Financial year	Largest (population) major urban centres	Average residential valuation - \$	Total average rates and charges per annum - \$	Average discount per annum - \$	Net average rates and charges per annum - \$	% increase, 2011/12-2012/13
BSC	2012/13	Taroom	45,124	2,249	225	2,024	17
	2011/12		48,246	1,930	193	1,737	
CHRC	2012/13	Springsure/Rolleston	94,037	3,278	400	2,878	14
	2011/12		61,000	2,519		2,519	
WDRC	2012/13	Miles	95,470	1,910	191	1,719	26
	2011/12		69,640	1,511	151	1,360	
MRC	2012/13	Roma	129,291	2,445	113	2,332	20
	2011/12		105,100	2,057	110	1,947	
MRC	2012/13	Injune	53,011	1,873	56	1,818	12
	2011/12		43,100	1,695	70	1,625	
MRC	2012/13	Wallumbilla, Yuleba	25,685	1,797	48	1,749	32
	2011/12		16,600	1,367	46	1,321	

5 Community values and aspirations

Source: Department of Local Government, Community Recovery and Resilience, 2013

The 2012 survey indicated that overall satisfaction with local government had fallen since the 2008 survey, with the level of dissatisfaction rising in the areas furthest from Emerald. Around 27% of respondents indicated that they felt they could influence local government decisions. However, satisfaction with living in the Central highlands has remained steady at around 94%.

5.2 Law and order

Table 5-2 shows the most recent statistics available for selected crimes within the towns that are either within or adjacent to the gas field locality. Caution in interpreting the data is required as:

- The occurrence per 100,000 does not include NRW or other non-residents (i.e. tourists), which may make it appear that there is a greater level of victimisation
- The resident populations of the towns considered are small, which results in dramatic increases and decreases in the calculated number of offences per 100,000
- The data below represents reported crime only, and the reporting rate for different offences can differ dramatically: "For example, approximately 95% of motor vehicle theft is reported to police whilst only 33% of sexual offences are reported." (QPS, 2012).

Taken at face value, the statistics in Table 5-2 demonstrate a decrease in reported crimes in the five years across each police district within the Arcadia GFL, except for Springsure. The Springsure police district recorded a considerable increase in overall offences, with a dramatic increase in assault recorded over the reported period. In comparison, both the Rolleston and Emerald police districts saw the number of offences per 100,000 persons reduce; however, in the case of Rolleston there was a considerable reduction from 2006/07 to 2008/09, but an increase over the following years to 2011/12.

Table 5-2 Offences per 100,000 people, 2006 to 2012

Springsure	06/07	07/08	08/09	09/10	10/11	11/12	Growth between 2006/07 and 11/12
Assault	59	-	-	233	115	170	19.3%
Sexual offences	-	-	-	-	-	-	NA
Drug offences	118	59	234	-	115	170	6.2%
Good order offences	118	235	117	116	115	170	6.2%
Traffic offences	651	235	527	407	632	511	-4.0%
Other Offences	2,131	3,406	1,931	1,395	2,412	2,385	1.9%
Total	4,322	5,578	3,686	4,826	6,031	6,360	8.0%
Rolleston	06/07	07/08	08/09	09/10	10/11	11/12	Growth between 2006/07 and 2011/12
Assault	-	144	-	-	153	-	NA
Sexual offences	131	-	-	-	306	-	NA
Drug offences	-	-	-	-	-	155	NA
Good order offences	-	-	-	-	-	-	NA
Traffic offences	262	289	291	-	153	1,087	26.8%
Other	2,752	1,154	1,599	1,056	613	2,795	0.3%
Total	5,786	3,857	2,770	3,009	2,907	5,540	-0.9%

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Emerald	06/07	07/08	08/09	09/10	10/11	11/12	Growth between 2006/07 and 2011/12
Assault	474	497	395	527	485	343	-6.3%
Sexual offences	122	140	116	87	66	69	-10.8%
Drug offences	977	693	776	580	714	662	-7.5%
Good order offences	970	1,217	1,565	961	924	805	-3.7%
Traffic offences	1,531	1,644	1,749	1,267	1,369	1,161	-5.4%
Other	4,255	4,421	6,165	3,515	3,590	3,314	-4.9%
Total	19,024	21,630	25,002	19,170	19,084	13,817	-6.2%

Source: QPS, 2013

5.3 Attitudes to resource development

Attitudes to, and support for, resource development projects has been inferred from the results of consultation for the GFD Project and other projects in the vicinity of Rolleston and Springsure, as well as from the results of the survey undertaken by the CHRC as part of its engagement process for developing the *Central Highlands 2020 Community Plan* (CHRC, 2011a). The following sentiments were discernible in the records of consultation:

- Managing the impacts of mining and gas exploration on farms, the community and economy is seen as an ongoing challenge, with a sense that although mining offers employment opportunities, these opportunities coupled with farm takeovers can result in communities feeling that they are 'losing key people to the mines' (CHRC, 2011b)
- Residents felt the need to preserve and promote Rolleston's heritage (pre-mining), in response to a sense that the area is losing its identity to mining.

Development of gas is not seen as intrusive as coal mining which residents of the Arcadia area would like to see prohibited from their area. However there is a high concern for the maintenance and improvement of infrastructure, in particular roads, in the area, and should this not occur in a timely manner support for gas field development is likely to be withheld. The development of resource industries in the area is also seen as an opportunity to leverage upgrades to the provision of services such as health care. As well, the ability to balance the opportunities of GFD Project with environmental concerns is central to the concern of residents throughout the Arcadia GFL, as noted during consultation. This is reflected by attitudes towards general resource development across the wider community in the HRA, where although there is often general support for resource development, there is a concurrent opposition to the use of agricultural land for mining and coal seam gas activities as the area's long-term sustainable future is seen to remain in agriculture with a concurrent focus on the protection of grazing and cropping land (Finlayson, 2013).

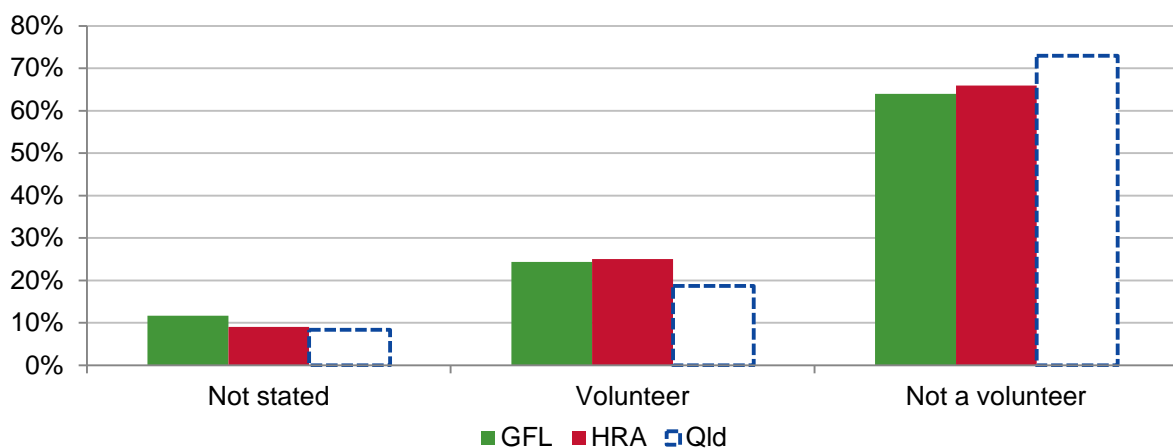
5.4 Social fabric

Assessing the social fabric of a community is not a precise science as it often relies on the interpretation of subjective and disparate indicators. For this SIA, the focus has been placed on those indicators that relate to the community's ability to act collaboratively, such as volunteering rates, length of residence in the community, home ownership and a qualitative assessment of the strength of a sense of place and distinct identity.

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As can be seen in Figure 5-1, both study areas have higher proportions of the population who state that they are a volunteer. In the case of the Arcadia GFL, this portion of the population is slightly lower than the HRA, yet at 23% it is marginally higher than the State average of 19%. Regardless of the motivations or causes for increased volunteering rates (such as low governmental provision of services), it remains clear that this higher rate is likely to increase the ties and relationships between community members and presumably increase the social fabric of communities. However, although both the Arcadia GFL and the HRA are above the State average the percentage of volunteers is not as high as one would expect in a rural community with lower levels of population mobility. An example of elevated levels of volunteering found in rural communities is shown in Longreach, where around 33% of the community stated they were volunteers during the 2011 Census (ABS, 2012).

Figure 5-1 Volunteering rates, 2011



Source: ABS, 2012.

Further, home ownership is strongly correlated with greater levels of community involvement and community longevity through reduced mobility (Putnam, 2000; Winkler, 2010). As discussed in Section 4.1.3, home ownership in the Arcadia GFL is well above that of the State, at 37% compared to state level of 28.

The 2012 Central Highlands Community Survey sought the opinion of residents on their satisfaction with living in the community. While satisfaction with living in the Central Highlands has remained steady at around 94%, falls in satisfaction since the 2008 survey were recorded in the areas of a Safe place to live (-5%); a Good mix of people (-6%); a stable community (-10%); high involvement with sport (-11%); and a rural life aspect (-7%). Overall, the impression is that there is possibly an increased amount of livelihood pressure influencing satisfaction levels. Residents in the Springsure/Rolleston area expressed the highest level of enjoyment with living in the region (98%) and the highest level of intention to reside permanently in the region at 68%, while being less satisfied with regional management in connection with economic development and employment.

Positive themes commonly expressed in connection with a question of what was best about living in the area included community spirit, job security and income levels, and a safe family orientation that combined mining employment with a rural lifestyle. Negative themes included a high level of transient workers, the lack of advanced medical services and a lack of entertainment and cultural activities, especially for teenagers and young adults. Overall, it appears as though the social fabric of the

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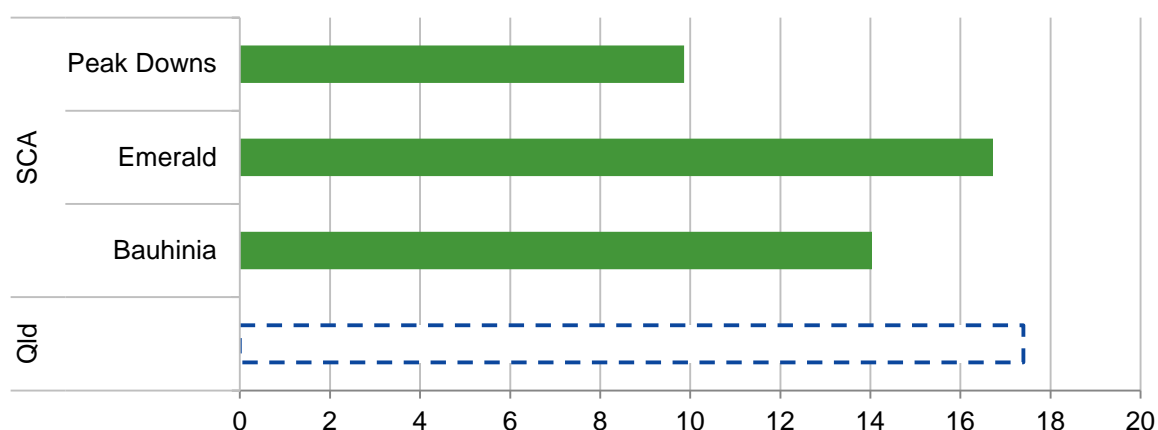
community is stronger in the rural areas centred on small townships where residents exhibit stronger bonds through family, friendship and participation in agricultural production activities.

5.5 Wellbeing (physical and mental health and child development)

The Public Health Information Development Unit (PHIDU) aggregates and publishes data on a range of health, wellbeing and socio-economic indicators annually. Data is presented either at the levels of statistical local area or at the expansive Medicare Local area, which is recognised to differ considerably from the gas field's SCA and HRA. As a result, data at the lower statistical local area, which were aligned with the SA2 areas using the ABS' standard correspondences, has been assessed (ABS, 2012).

Figure 5-2 indicates that residents of the SLA within the SCA generally assessed themselves as having a higher level of health than the overall State assessment. The generally positive health status of the SLAs within the SCA may be attributed to the generally high level of socio-economic advantage seen across these areas, coupled with the relatively young age profiles.

Figure 5-2 Self-assessed health status of fair/poor (modelled), per 100 people, 2011

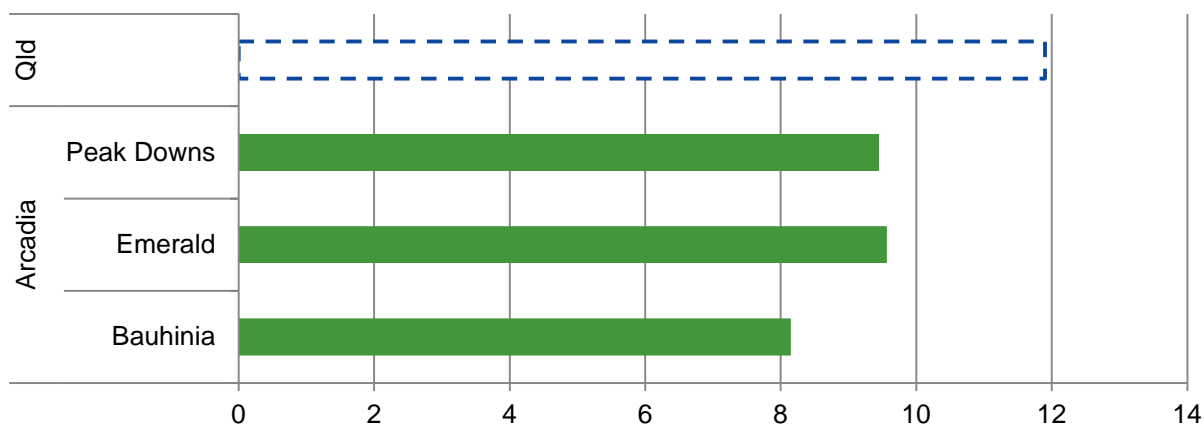


Source: PHIDU, 2013

Figure 5-3 displays the reported level of psychological distress within the SCA during 2007/2008. As shown, the SLAs within the SCA have lower levels of distress than that of the State as a whole.

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Figure 5-3 High or very high level of psychological distress (modelled), per 100 people, 2007-2008



Source: PHIDU, 2013

Table 5-3 shows the proportion of the population that stated they needed assistance with self-care, mobility or communication due to a long-term health condition or old age during the 2011 Census. A very small proportion of the Arcadia GFL's population reported that they required assistance (0.7%); similarly, the proportion of the population that requires assistance in the HRA is half that of the State (2.2% compared to 4.4%). These low levels of disability may be a result of:

- Young age profiles (i.e. the need for assistance is likely to increase with age)
- Out-migration of families and individuals who require assistance to be closer to services
- Self-selection in in-migrants (i.e. families and individuals who require assistance may not in-migrate due to the lack of services).

Table 5-3 Need for assistance (disability), 2011

	GFL	HRA	Queensland
Need for assistance	0.7	2.2	4.4
No need for assistance	91.8	89.4	89.6
Not stated	7.5	8.4	6.0

Source: ABS, 2013.

The Australian Early Development Index (AEDI) is a measure of how young children are developing in different communities. It involves teachers collecting information during the first year of formal full-time school to help create a snapshot of early childhood development in communities across Australia. It is a proxy that gives some insight into the wellbeing of children, often regarded as the most valuable resource of a community, and potentially the most vulnerable. The AEDI results allow communities to see how local children are doing relative to, or compared with other children in their state or territory and across Australia. In 2012 the AEDI was completed nationwide for the second time. Table 5-4 presents the results for the Bauhinia community (which includes Springsure and Rolleston). While there has been little change between 2009 and 2012, areas of potential concern include language, communication skills and social competence.

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Table 5-4 AEDI Results - Bauhinia community

Community	No of children surveyed	Physical health and wellbeing	Social competence	Proportion of children developmentally vulnerable %					Vulnerable on one or more domains of the AEDI	Vulnerable on two or more domains of the AEDI
				Emotional security	Language and cognitive skills (school-based)	Communication skills and general knowledge				
Australia	289,973	9.3	9.3	7.6	6.8	9.0			22.0	10.8
Queensland	61,593	11.6	11.5	9.3	9.1	10.7			26.2	13.8
Bauhinia community 2012	43	12.2	24.4	12.2	17.1	17.1			29.3	24.4
Bauhinia community 2009	35	16.1	25.8	16.1	22.6	9.7			41.9	19.4
Community difference 2009-2012		-3.9	-1.4	-3.9	-5.5	7.4			-12.6	5.0
Critical difference* (+/-)		10.3	7.0	8.2	7.6	9.1			12.1	8.7
Change in children's development		↑	↑	↑	↑	↓			↑	↑
Significant decrease in vulnerability	↑	Significant increase in vulnerability	↓	Decrease in vulnerability but not significant	↑	Increase in vulnerability but not significant	↓	No change in vulnerability	↔	

Source: Murdoch Childrens Research Institute and Royal Children's Hospital Melbourne, 2013

* One method of assessing whether change in a community is significant is to see whether it is greater than a 'critical difference'. The critical difference is the minimum level of change required between the 2009 and 2012 AEDI for the results to be significant. This score is designed to provide communities with some guidance about interpreting whether the observed change is significant, but it should not be thought of as a hard and fast rule.

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The 2012 *Central Highlands Community Survey* sought the opinion of residents on the provision of services. The services with the highest level of dissatisfaction included public/community transport (80%), child care (47%), health services (42%) and aged care (41%). In the Springsure/Rolleston area respondents were less satisfied with child care, transport and health, and had a higher level of satisfaction with education, disability care and aged care.

6.1 Educational facilities

6.1.1 Primary and secondary schools

The P-12 educational facilities across the SCA are shown in Table 6-1. Commensurate with its size, Emerald is the primary location for educational facilities across the SCA.

Table 6-1 P-12 Education – SCA

Location	School	Level	Non-government
Rolleston	Rolleston State School	Primary	
Springsure	Springsure State School	Combined (P-10)	
	Our Lady of the Sacred Heart	Primary	✓
	Orion State School	Primary	
Bauhinia	Bauhinia State School	Primary	
Emerald	Capricornia (Emerald Campus) School of Distance Education	Combined	
	Denison State School	Primary	
	Emerald North State School	Primary	
	Emerald State High School	Secondary	
	Emerald State School	Primary	
	Emerald Christian College	Combined	✓
	Marist College Emerald	Secondary	✓
	St Patrick's School	Primary	✓

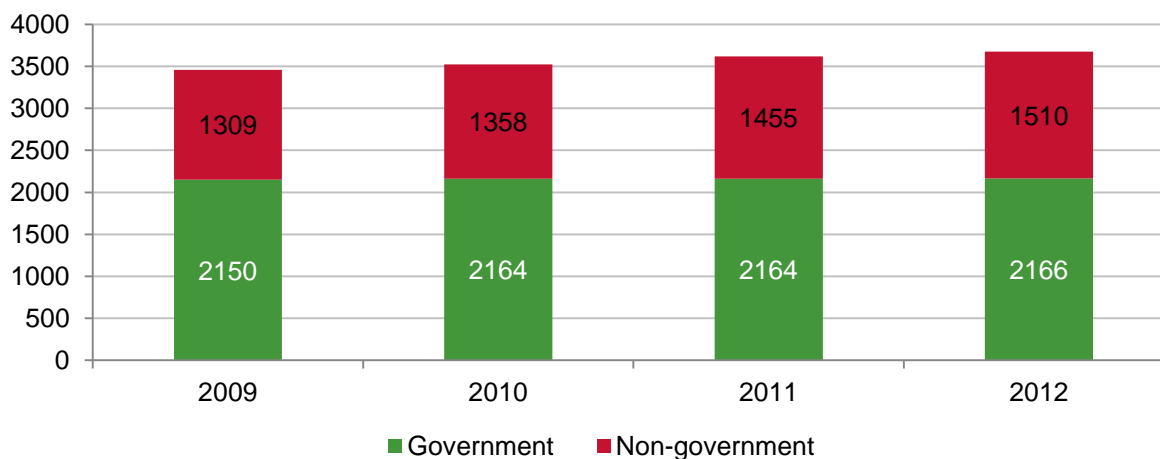
Figure 6-1 shows that school enrolment across the SCA between 2009 and 2012 has remained relatively stable. However, the small amount of growth present occurs within non-government schools.

Enrolment numbers for 2012 were Springsure State School (116), Springsure Our Lady of the Sacred Heart School (82), Orion State School (8, single teacher), and Rolleston State School (60). There is generally a low level of staff movement from schools that appear to be relatively well-resourced.

Consultation with education providers within the SCA during 2012 indicated that lack of higher-level education facilities outside of Emerald is driving migration towards Emerald or resulting in commuting from Springsure.

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Figure 6-1 School enrolment SCA



Source: Department of Education and Training, 2013

6.1.2 Tertiary and vocational education

A campus of the Central Queensland University is located in Emerald, which provides tertiary education in a number of disciplines including education, business, engineering and arts. Outside of the SCA, the closest university is the Central Queensland University in Rockhampton.

Emerald also features a campus of CQ TAFE, which caters heavily towards the mining industry including courses in diesel fitting, heavy auto, metal fabrication and auto electrics and has apprentices from throughout the Bowen Basin. Around half of the TAFE's apprentices in 2012 were involved in the mining industry (Finlayson, 2013).

6.2 Childcare facilities

Table 6-2 shows the spread of childcare facilities across the SCA. As shown in Table 6-3, the ratio of child care facilities per 100 children 0-4 years is lower than the State average. This was reflected as a particular concern for people in the SCA outside of Emerald, with stakeholders noting that early child care has been an ongoing issue for the area for quite some time.

Table 6-2 Childcare facilities across the SCA

Area	Family day care	Kinder-garten	Long day care	School aged care	Limited hours care	Child care & family support	Total
Central Highlands - West	0	2	1	0	2	0	5
Emerald	1	2	3	1	0	0	7
SCA	1	4	4	1	2	0	12

Source: OESR, 2013c

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Table 6-3 Ratio of child care facilities per 100 children aged 0-4 years

SCA	Qld
0.58	0.90

Source: OESR, 2013c

6.3 Health and community support

The Arcadia GFL is serviced by the newly established Rolleston health clinic, which provides outpatient services to those within the Arcadia Valley. Despite this, residents of the Arcadia GFL are required to travel to access specialist and emergency services as these are not available. The SCA provides a broader range of health services, with a health service located in Springsure and a hospital located in Emerald. The services provided within each facility are shown in Table 6-4.

Table 6-5 shows the annual admissions data for the Emerald Hospital and Springsure Multipurpose Health Service between 2008-09 and 2010-11. Over this period, there was a gradual rise in emergency admissions in Emerald, amounting to a total increase of 2.9%. Springsure Multipurpose Health Service saw a dramatic increase in emergency admissions (17.8%).

Table 6-4 Hospitals and health services

Hospital/health service	Services
Emerald Hospital	Accident and emergency, admissions, cancer, elective surgery, obstetrics and outpatient services
Springsure Multipurpose Health Service	Accident and emergency, admissions, outpatient services, aged care, palliative care, radiography
Rolleston Health Clinic	General practice and outpatient services, allied health services

Source: (Queensland Health, 2013)

Table 6-5 Hospital admissions

Facility	Admissions	2008-9	2009-10	2010-11	08/09-10/11 % change
Emerald Hospital	Emergency	2011	2095	2130	2.9
	Other	348	318	345	-0.4
Springsure Multipurpose Health Service	Emergency	261	278	362	17.8
	Other	64	66	60	-3.2

Source: National Health Performance Agency, 2013

6.4 Emergency services

Table 6-6 shows the number of police stations, ambulance stations and fire stations across the SCA. Aside from these public services, the SCA is also serviced by a number of voluntary and non-government organisations (NGO) that provide emergency services, as listed in Table 6-7.

Consultation revealed that the largest concern facing emergency services in the SCA is the ability of service personnel to cover vast areas, in essence 'the tyranny of distance'.

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Table 6-6 Emergency services

Police stations (a)	Ambulance stations	Fire stations (b)
6	7	4

(a) Does not include Police Beats.(b) Does not include Rural Fire Brigade.
Source: OESR, 2013.

Table 6-7 Volunteer and NGO emergency services

Emergency air services	State emergency service (SES)	Rural fire brigade
Two emergency air services operate in the SCA: the Royal Flying Doctor Service and Queensland CareFlight Group. The CareFlight Group has been contracted to provide a dedicated response for LNG industry incidents through a joint commitment by Arrow Energy, APLNG QGC and Santos GLNG.	The SES is a volunteer based organisation that encourages and trains community members to assist themselves and others in times of need, particularly search, rescue and emergency preparation, response and recovery operations. There are SES branches throughout the Arcadia GFL and SCA, including Emerald, Springsure and Rolleston.	Rural fire brigades support the Rural Fire Service Queensland in fire fighting and the planning and community education associated with rural fire management. The Arcadia GFL and SCA are covered by the rural fire brigades located in Springsure and Rolleston.

6.5 Aged care

Aged care services provide a range of assistance and support services for the elderly population (65 years and above) depending on their needs. There are 5 facilities located throughout the SCA, providing 102 places, as shown within Table 6-8. Looking further afield to the HRA, there are 8 facilities providing a total of 148 places.

As can be seen in Table 6-8 the SCA and HRA have fewer beds per persons 65+ than the State as a whole. The low ratio was confirmed to be experienced as a shortage during consultation by service providers across the region (consultation data).

Table 6-8 Aged care services, 2011

Aged care service providers		Number of places by care type			Total places	Population 65+	Beds per persons 65+
		Community care	Residential care	Transition care			
SCA	5	29	73	0	102	1,497	14.6
HRA	8	47	101	0	148	1,796	12.1
Queensland	1,048	10,906	33,362	588	44,856	577,785	12.8

Source: OESR, 2013.

6.6 Community services

A number of community support services operate throughout the SCA. By and large, these services are concentrated in Emerald and delivered to smaller towns throughout the CHRC by outreach services. That being said, Springsure has a number of local community service providers, who may deliver services to Rolleston within the Arcadia GFL more directly. Examples of these community services include:

- Springsure and district aged care committee/services
- Emerald Blue Care Respite Centre (meals on wheels)

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- Domestic Violence Service of Central Queensland (Emerald)
- Neighbourhood Centre (Emerald and District Social Development Association)
- War Veterans Support – Emerald and District
- Centacare (Emerald)
- Ozcare (Emerald)
- Lifeline – Rural Family Support Worker
- Anglicare Central Queensland
- The Central Highlands & Western Queensland family Support Association
- Home and Community Care (Springsure)
- St Vincent de Paul (Springsure).

6.7 Cultural and recreational facilities

Cultural and recreation facilities and activities are an often overlooked but integral part of communities. These facilities and the organised groups that use them are an important facilitator of social capital or community cohesion and can act to make a community liveable.

6.7.1 Cultural and arts facilities and groups

Table 6-9 shows the community and arts facilities within the Arcadia GFL. These facilities are supported by a base of local arts and community groups, including:

- Springsure Floral Group
- Springsure Academy of Dancing
- Springsure Arts Council
- Springsure Country Music Club
- Springsure Folk Art Group
- Springsure Progress & Tourism Association
- Rolleston Painting Group
- Rolleston Potters
- Rolleston Potters and Tourism Association.

There are also a number of events and festivals that occur within the Arcadia GFL, including the annual show and racing events. According to a survey undertaken by the CHRC during 2011, residents of the Arcadia GFL strongly value the range of local heritage present throughout the area, including the Chinese Gardens, Purbrook Hut and the Rewan Memorial.

Table 6-9 Cultural and arts facilities

Facility type	GFL
Library	2
Community hall	2
Art centre	1
Museum	0

Source: Central Highlands Regional Council, 2011

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6.7.2 Sports and recreational groups

There are a range of sporting groups within the Arcadia GFL and Springsure, reflecting the communities' value of outdoor activities and rural environment. This baseline includes facilities in Springsure, as it is likely that residents of the Arcadia GFL would also participate in activities that are based in Springsure. Sporting groups within the Arcadia GFL and Springsure include:

- Rolleston Campdraft Association Inc.
- Rolleston Pony Club
- Springsure Pony Club Inc.
- Springsure Working Horse Association Inc.
- Rolleston Cricket Club Inc.
- Springsure Country Golf Club
- Sporting Shooters Association (Springsure)
- Springsure Gun Club Inc.
- Springsure Bowls Club Inc.
- Lochington Recreational Club Inc.
- Springsure Junior Rugby League Inc.
- Springsure Mountain Men Senior Rugby League Inc.
- Rolleston Roos Rugby Union Club
- Springsure Amateur Swimming Club Inc.
- Rolleston Swimming Club Inc.
- Rolleston Tennis Club
- Springsure Tennis Club (CHRC, 2013).

Emerald also has a wide range of sports and recreation facilities.

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Appendix C Roma and Fairview gas field social baseline



Report

Roma and Fairview gas fields' social baselines

MAY 2014

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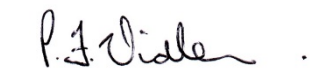
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Abbreviations

Abbreviation	Description
ABS	Australian Bureau of Statistics
CHRC	Central Highlands Regional Council
ERP	Estimated resident population
GFD Project	Gas Field Development Project
GFL	Gas field locality
GLNG Project	Gladstone Liquefied Natural Gas Project
ha	Hectare
HRA	Host regional area
km	kilometres
km ²	Square kilometres
LGA	Local government area
MRC	Maranoa Regional Council
MW	megawatts
NGO	Non-government organisation
NRW	Non-resident workers
OESR	Office of Economics and Statistics (Qld)
PHDU	Public Health Information Development Unit
QPS	Queensland Police Service
RTA	Residential Tenancies Authority
SA1	Statistical area 1
SA2	Statistical area 2
SA3	Statistical area 3
SCA	Social catchment area
SEIDA	Socio-economic Indexes for Disadvantage
SES	State emergency service
UCL	Urban centre locality

Introduction

The Roma and Fairview gas fields of the Gas Field Development Project (GFD Project) are located within the Maranoa Regional Council and cover approximately 6,344 square kilometres (km²). The gas fields are primarily situated over agricultural holdings, and have already been subject to extractive activities as part of the Gladstone Liquefied Natural Gas (GLNG) Project. The primary towns subject to impacts from Santos GLNG activities are Roma and Injune, and Wallumbilla.

A baseline social profile has been established on three nested geographies linked to the gas field tenure. These are:

- **Gas field locality (GFL)**, constructed by combining the smallest number of Census standard Statistical Area 1 (SA1) areas that cover each gas field. The GFL is the area that is most likely to be subject to direct impact by the GFD Project as these SA1 areas may be co-located with GFD Project tenure, incorporate key transport links to and between tenure and contain key population centres that have the potential to support GFD Project activities.
- **Social catchment area (SCA)**, constructed by combining Statistical Area 2 (SA2) and local government areas. This geography provides an optimal area to illustrate and compare key variances between the GFL and the wider supporting geography, without the inclusion of much larger regional centres, which may distort comparisons due to their different social and economic functions. SCAs were defined based on a qualitative consideration of local government boundaries (capturing governance and associated funding responsibilities) and dominant transport, communication, commerce and social links.
- **Host regional area (HRA)**, is the Statistical Area 3 (SA3) area that the gas field is located within. These larger areas are used to illustrate the demographic profile surrounding the gas fields and their SCAs, allowing for a greater depth of comparison and analysis.

The statistical areas used to construct the geographies for the Roma and Fairview gas fields are shown in Table 1-1.

Table 1-1 Roma and Fairview gas fields geographic framework

GFL	SCA	HRA
Roma		
SA1 Codes	Maranoa Regional Council Code	Darling Downs (West)-Maranoa
3117713 (Northwest of Roma)	LGA34860	Statistical Area 3 (SA3) Code 30701
3117717 (Northeast of Roma)		
3117701 (Southwest of Roma)		
3117711 (South of Roma)		
3117707 (Southeast of Roma)		
3117706 (East of Roma)		
3117702 (Yuleba)		
3117705 (Wallumbilla)		
3117502 (Jackson)		
Fairview		
SA1 Codes	Maranoa Regional Council Code	Darling Downs (West)-Maranoa SA3
3117716 (Injune)	LGA34860	Code 30701
3117718 (Injune surrounds)		

Derived from ASGC 2011 (Australian Bureau of Statistics (ABS), 2012).

1 Introduction

The Roma and Fairview gas field tenure, and the surrounding gas field localities (GFL), social catchment area (SCA) and host regional area (HRA) are shown in Figure 1-1. The Roma GFL incorporates the town of Roma and three rural settlements east of Roma on the Warrego Highway (Wallumbilla, Yuleba and Jackson). It is composed of the smallest number of SA1 areas covering the major portion of the gas field tenure and is the area most likely to be subject to direct impact from development of the gas field. The townships of Mitchell (80 kilometres (km) west of Roma), and Surat (80 km south of Roma) are satellite communities not subject to the direct impact of development of the gas field, though in a position to be subject to potential indirect effects, both positive and negative.

As shown in Figure 1-1, the gas field tenure substantially comprise the north-eastern part of the Maranoa Regional Council (MRC) area, while the small tenure to the north-east of Jackson lies within the Western Downs Regional Council area. Prior to the local government council amalgamations in 2008, the GFL comprised a substantial portion of the Bungil and Bendemere Shire Council areas.

The Fairview GFL incorporates the town of Injune, and is the area most likely to be subject to direct impact from development of the gas field. The Fairview gas field tenure are located around 10-20 km south of Injune extending to around 30 km east of the Carnarvon Highway. As shown in Figure 1-1, the gas field tenure is wholly within the north western portion of the Maranoa Regional Council (MRC) area, though prior to the local government council amalgamations in 2008, the GFL was within the Bungil Shire Council. The administrative and commercial focus for the Injune area is located in Roma, now the administration centre for the Maranoa Regional Council, and also previously the administration centre for the Bungil Shire Council.

There are two dominant transport corridors within the Roma and Fairview GFLs. The prime corridor is the Warrego Highway aligned east-west and bisecting the Roma gas fields, part of the National Highway linking Brisbane to Mount Isa and Darwin). The second is the Carnarvon Highway (linking Roma to Surat in the south and Injune in the north) which is an element of a significant inland transport route between Melbourne and north Queensland (via Emerald and Clermont); carrying a significant amount of commercial traffic. This corridor intersects the western portion of the Roma GFL and links the Fairview GFL to Roma and Injune. Within the Roma gas fields significant access corridors are defined by the Wallumbilla South Road and the Yuleba to Surat Road, while within the Fairview GFL, the Injune-Taroom road is developing in importance. The administrative focus for both GFLs is Roma, which is a significant regional service centre and administration centre for the Maranoa Regional Council.

These factors have influenced the definition of the SCA as shown in Figure 1-1, which comprises the Maranoa Regional Council area. Comparison of the social profile of the GFLs to this area will enable any significant local variations in social conditions, generally of concern to local governments, to be identified. Both the Roma and Fairview GFLs also sit within the Darling Downs (West)-Maranoa SA3 area which has been used for the purposes of this social impact assessment (SIA) as the HRA.

Roma GFL overview

The Roma district was first settled by European people in the mid-1800s. Prior to that, it was the traditional homeland of the Mandandanji People. Following an influx of settlers, Roma town was established as a government administrative centre in 1862, and gazetted as a municipality in 1867, quickly growing in importance following the arrival of the rail head in 1880. In 1900, the town achieved significance as the location of the first oil and gas discovery on the Australian mainland (albeit while drilling for artesian water). This brought a number of oil exploration companies to the district, operating

1 Introduction

mainly to the north of the town. While oil did not prove to be commercial, with further exploration commencing in the 1950s it became apparent that natural gas was abundant, with development in the area eventually resulting in the development of a trunk pipeline from Wallumbilla to Brisbane in 1969. Wallumbilla developed into an important gas hub when a branch line to Gladstone commenced construction in 1989, and further when a gas pipeline from Ballera in south-west Queensland was constructed in 1996. The Scotia and Peat gas fields, north-east of Wandoan were linked by pipeline to Wallumbilla in the early 2000s. Origin Energy established the Roma Power Station (a peaking power station with an operating capacity of 74 megawatts (MW), powered by natural gas from coal seams) in 1999. At the time this was one of the first privately owned, fully merchant (i.e. uncontracted) power stations in the National Electricity Market. Construction of the project took just 17 weeks from contract signing to commissioning.

Roma sees itself as the 'cradle of Australia's oil and gas industry', and celebrates this heritage at the Big Rig Interpretative Centre and museum on the eastern approaches to the town. While the Big Rig is a key tourism asset, Roma has also preserved significant heritage assets, such as the Court House and the bottle tree-lined Avenue of Heroes, that are marketed to support a growing tourism component of the local economy.

Roma is also noted as a centre for the provision of government services to southwest Queensland, as well as an important service centre for agricultural industries including cattle, sheep and grain production. Industries that have been established and operated in the past include: flour milling in the late 1800s; dairying from the early 1900s, including a butter factory that closed in 1960; an abattoir established in 1957 and operating until the mid-1990s; and a small oil refinery established in 1975. Today the Roma Saleyards are considered to be Australia's largest cattle saleyards selling store cattle, and GrainCorp operates a primary grain receival and storage site on the western outskirts of Roma. Timber production, based on the harvest and milling of cypress pine, has also been an important local industry.

The most significant economic development since 2008 has centred on gas production from coal seams underlying the district. The most immediate visual effect of this development has been the establishment of additional commercial accommodation facilities (motels as well as accommodation camps) and gas industry support facilities (such as industrial sheds housing workshops and equipment supply businesses) in the pre-existing industrial area to the west of town and increasingly in the commercial area adjacent to the Warrego Highway on the eastern boundary of the town.

Roma promotes itself as a family-oriented town with numerous sporting clubs and facilities as well as good educational and health infrastructure. It is particularly proud of the sporting identities and notable people born and raised in the area, displaying their names on an honour wall within the Civic Centre.

Fairview GFL overview

The Injune area developed from around the 1860s based on cattle production, and in later years the harvesting and milling of Cypress pine. During World War 1 land was resumed from large pastoral holdings and cut into smaller blocks for selection. A Soldier Settlement scheme was established in 1919 in the Bymount area, though growth was restricted by small farm blocks and the prickly pear infestation to the north and east of Roma.

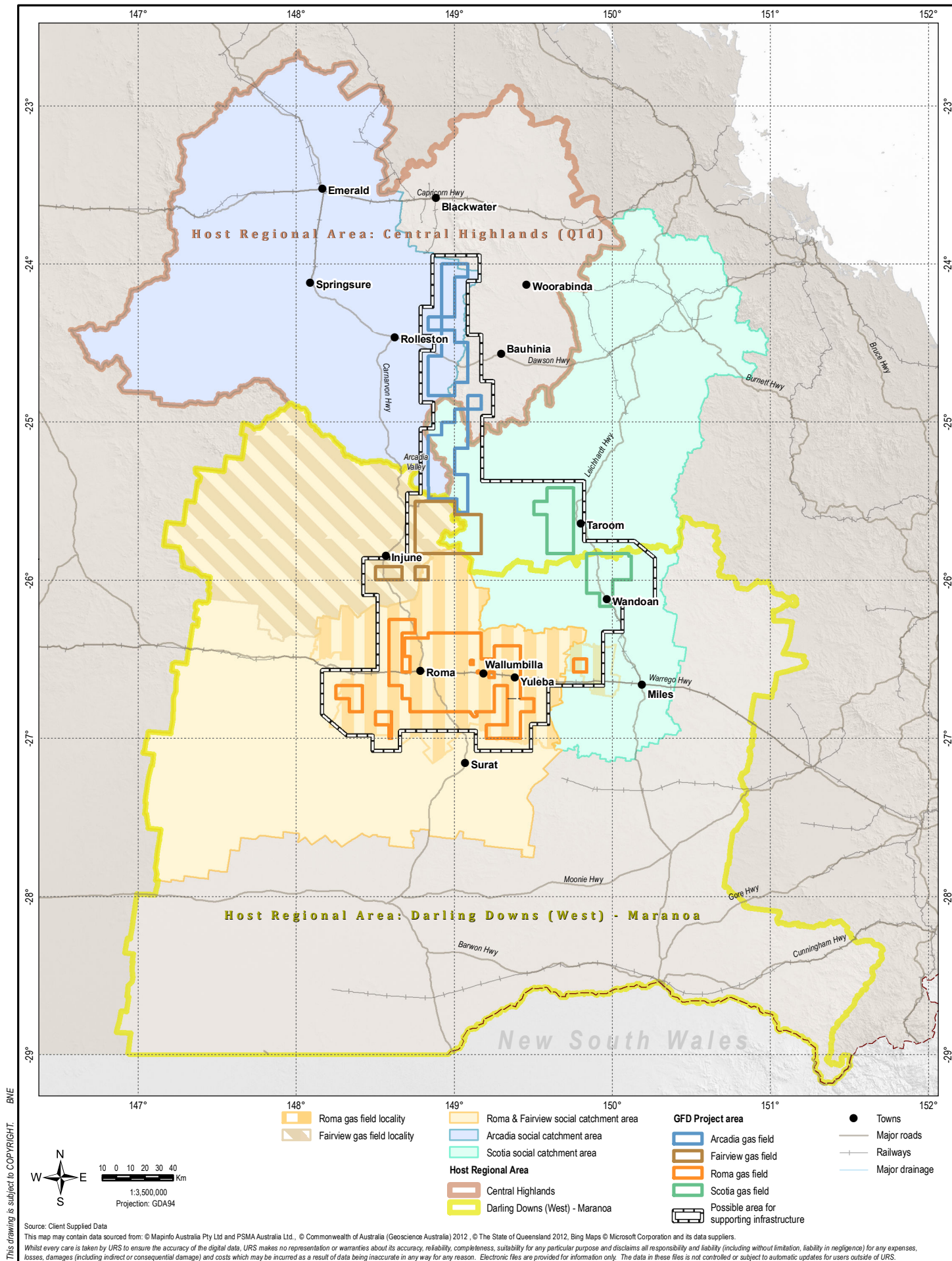
A railway line from Roma to Injune was completed in 1920 and operated until 1967. Injune was gazetted as a town in 1922 and the sealing of the road to Roma was completed in 1968. For 30 years

1 Introduction

(1933 to 1963) Injune hosted the Maranoa Colliery located in the Bymount area just to the south of the town. That area is currently subject to investigation for development as a major coal project (the 'Injune Thermal Coal Project' with an estimated resource of 830 Mt).

The potential for gas production in the vicinity of Injune was identified in 1989, with field development commencing in 1994 and first production in the Fairview area to the north-east of Injune in 1996. The development of gas transport infrastructure through the GFL commenced in 1989 with the construction of the Queensland Gas Pipeline, now owned and operated by Jemena. This pipeline, which commences at Wallumbilla, east of Roma, transports gas from the Surat Basin, Fairview and Moura areas to Gladstone, traversing the Arcadia Valley before turning east about 40 km east of Rolleston. Since 2010, the Santos GLNG Project has commenced the further development of well-fields in the Fairview area, as well as the construction of another trunk gas transmission pipeline linking the Roma, Fairview and Arcadia gas fields to the LNG Plant in Gladstone. This has resulted in a higher level of construction-related traffic passing through Injune and utilising regional roads.

Injune initiated a revitalisation strategy in 2002 to stem, and hopefully reverse, the rate of rural decline that has been a common experience for many similar towns. There is a focus on nature-based tourism with Injune marketing itself as the 'gateway' to the Carnarvon ranges and other nearby national Parks. An Information Centre constructed in the town is staffed by a Tourism Administration Officer and provides services to around 19,000 visitors annually. It also celebrates the early residents of the district and encourages visitors to visit the Aged Care Centre to engage with and hear the stories of these people.



Population

Population and demographic indicators sourced from the ABS Census 2011 are available for the GFL, and these are generally used throughout this section. Age and sex profile indicators are shown at the SCA level due to the unreliability of small area data.

2.1 Historical trends and projections

The SCA has shown general population growth (0.7%) over the past decade. This growth is relatively evenly spread across the SCA, with the exception of Injune, which has experienced a slightly higher level of growth (1.6%). The SCA and areas within it generated a slightly higher level of growth over this period than the HRA (0.5%). Despite this, the regional growth shown in Table 2-1 is approximately one quarter of the State population growth over the same period.

Table 2-1 Historical population trends, 2001 to 2011

Area	2001	2011*	% growth
Roma (SA2)	6,704	7,162	0.7
Roma region (SA2)	5,906	6,302	0.7
Injune (UCL)	345	405	1.6
Mitchell (UCL)	999	935	-0.7
Roma and Fairview SCA	12,610	13,464	0.7
HRA	42,514	44,530	0.5
Queensland	3,628,946	4,474,098	2.1

* Preliminary estimate. Source: OESR, 2013, 2012a. UCL: Urban Centre Locality

Table 2-2 shows that the population growth estimates for the SCA are positive. The significant growth area is the Roma SA2 (incorporating Roma Town), which is estimated to experience population growth of 1.7%, which is approaching the State growth estimate of 1.8% up to 2031. This growth can largely be attributed to Roma acting as a base for significant gas field developments, including the Santos GFD Project. While the areas outside of Roma within the SCA, inclusive of the Fairview GFL, are expected to increase their population over this period, growth is expected to be more moderate. As Injune is included in the Roma region SA2, the OESR does not expect the high level of growth demonstrated in this locality between 2001 and 2011 to continue.

Table 2-2 Population and estimate projections

	2011	2016	2021	2026	2031	2011-2031 % growth
Roma (SA2)	7,153	7,764	8,719	9,338	10,005	1.7
Roma region (SA2)	6,142	6,327	6,582	6,861	7,167	0.8
Roma and Fairview SCA	13,295	14,091	15,301	16,199	17,172	1.3
HRA	44,561	47,178	50,010	52,405	54,803	1.0
Queensland	4,611,491	5,092,858	5,588,617	6,090,548	6,592,857	1.8

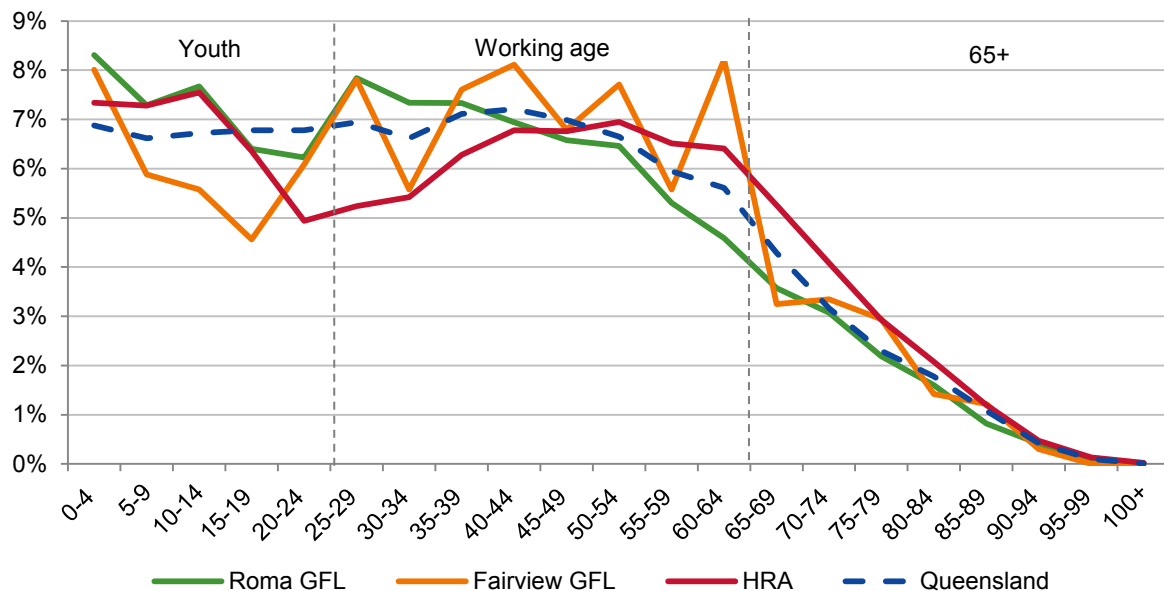
Source: OESR, 2012b

2 Population

2.2 Age

As shown in Figure 2-1, the age profiles of both the Roma and Fairview GFLs generally have an over-representation of the population within working age cohorts when compared to the State average. This corresponds to an under-representation of youth in the case of the Fairview GFL and over-representation in the age cohorts above 40. This is generally illustrative of an out-migration of youth from rural areas, in search of both educational and employment opportunities. In contrast, the Roma GFL is characterised by a slight over-representation within the 0-15 age cohort. The higher representation of children in both the Roma GFL and the HRA is most likely representative of higher than average fertility rates, which is considered typical in regional Australia.

Figure 2-1 Age profile, 2011



Source: ABS, 2012

The population of the HRA, in unison with State and national trends, is projected to age over the next twenty years as a result of increased life expectancy and lower fertility rates. Despite the fact that this is evident across Australia, Figure 2-2 and Table 2-3 show that the SCA is expected to be characterised by a younger population than the Queensland average. While the portion of the population that is aged 65+ is expected to grow, it is projected to remain smaller than the State average, resulting in a considerably lower median age by 2031. Conversely, the HRA has a larger percentage of the population aged 65+ than the State (15.2% compared to 13.1%), which is expected to increase to 21.6% by 2031.

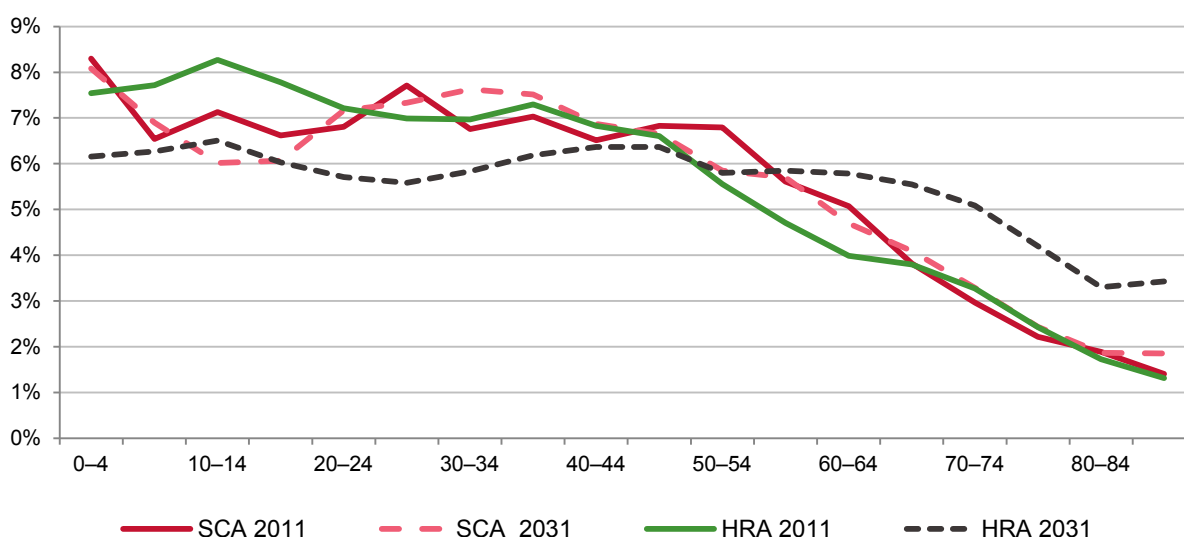
2 Population

Table 2-3 Aging populations – key data projected points

	SCA			HRA			Qld		
	2011	2031	Change (%)	2011	2031	Change (%)	2011	2031	Change (%)
Dependency ratio	69	68	-1	75	87	12	66	78	12
% 0-19	28.6	27.1	-1.5	27.7	25.0	-2	26.6	24.4	-2.2
% 65+	12.3	13.5	1.2	15.2	21.6	6.4	13.1	19.6	6.5
Median age	35.1	35.5	0.4	37.7	41.4	3.7	36.6	40.2	3.6

Source: OESR, 2011. *Dependency ratio is the number of people aged 0–19 and 65+ per 100 people aged 20–64.

Figure 2-2 Current and projected age profile, 2011 and 2031



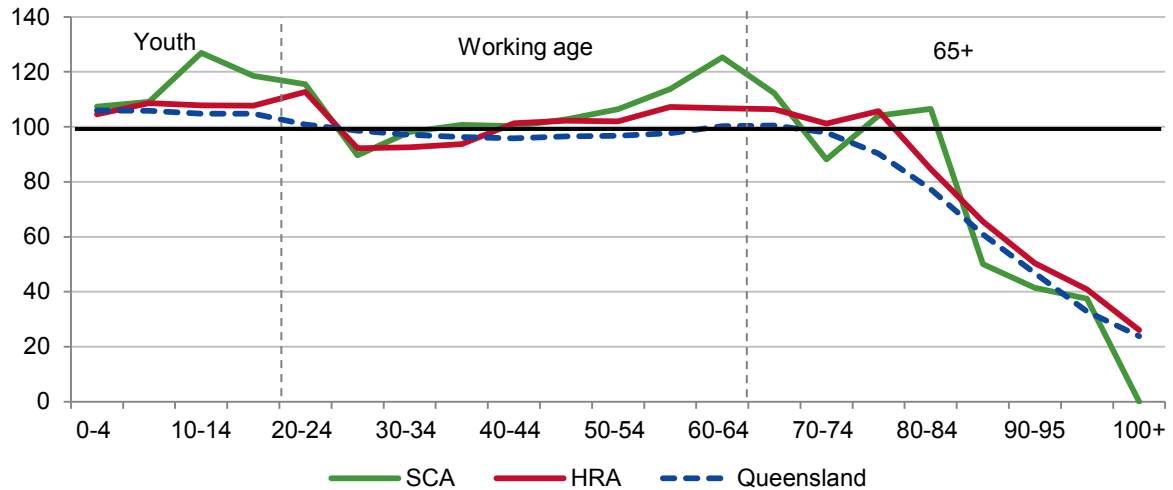
Source: OESR, 2011

2.3 Gender

Figure 2-3 shows the sex ratio by age cohort for the SCA and HRA as at the 2011 Census. The sex ratio represents the number of males per 100 females in a population. In general, the sex ratio reduces markedly past 65, due to the impact of higher male mortality in this age range. However, both the SCA and the HRA retain high gender ratios up until 74 years, which then spikes considerably in the 80 to 84 years category and sharply decreases thereafter. In regional areas, there is generally a sex ratio greater than 100, due to the presence of industries such as mining and agriculture that are generally male dominated. Figure 2-3 indicates that within the SCA and HRA, there are more males than females up to the 20 to 24 age cohort. From this cohort up to the 50 to 54 cohort, the sex ratio remains around 100. The later working age years (55 to 65) see the sex ratio rise once again prior to reducing markedly past 70 years of age. It could be expected from this that the Roma and Fairview GFLs and HRA would have a higher number of lone male households.

2 Population

Figure 2-3 Sex ratio, 2011



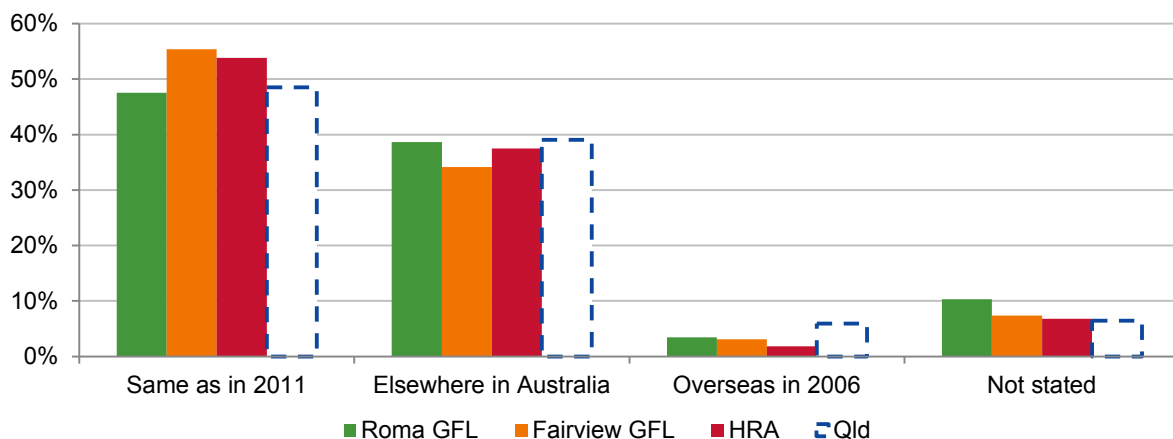
Source: ABS, 2012

2.4 Population mobility

The mobility of a population can indicate a range of factors: areas with high reported levels of population mobility will often offer high employment and educational opportunities, given that mobility is largely a youth driven phenomena. On the other hand, population with low levels of mobility can indicate higher levels of social capital, meaning that people have established ties to the place and community where they live.

The Roma GFL has similar population mobility levels to the State average (Figure 2-4); possibly reflective of the areas status as a regional administrative centre where public servants regularly rotate in and out. On the other hand, the Fairview GFL and the HRA generally have lower levels of population mobility. These lower levels of population mobility are most likely reflective of the fact that the area covered is primarily rural agricultural land, resulting in minimal opportunities for youth migration into the area. Additionally, the low levels of population mobility and low representation of youth aged cohorts indicate historical youth out-migration, when compared to the State average.

Figure 2-4 Population mobility, 2011 - address five years ago



Source: ABS, 2012

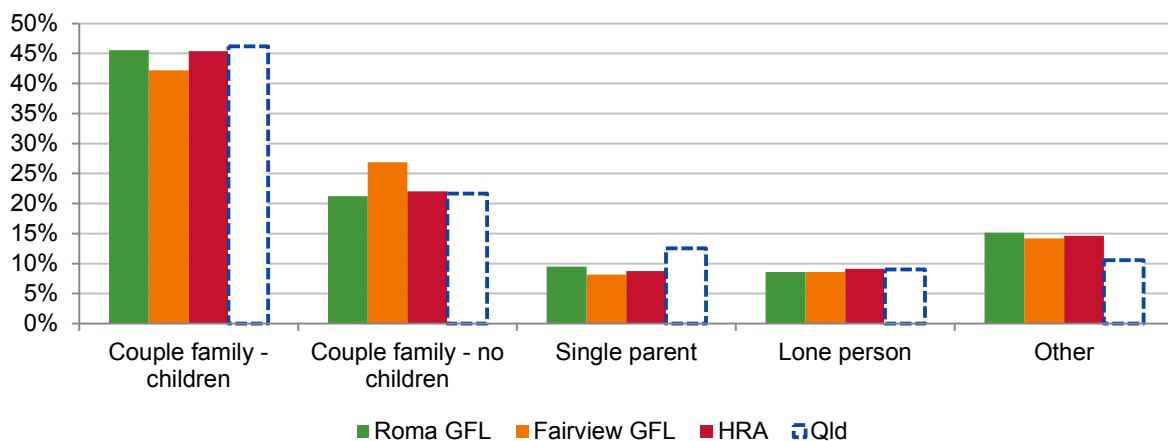
2 Population

2.5 Household composition

Household composition demonstrates the typical living arrangements for families within the study area. As shown within Figure 2-5, Roma and Fairview GFLs and HRA generally match the State indicators for household composition. The primary exception being that the Fairview GFL has a slightly higher proportion of family households with no children, reflective of the areas higher proportion of people aged 45+. Both GFLs and the HRA have a lower proportion of single parent households than the State, with this feature more pronounced in the Fairview GFL. This characteristic is considered to be typical of regional areas that do not contain regional centres, and is often a consequence of single parent out-migration to centres with greater access to support services (Birrell et al., 2002).

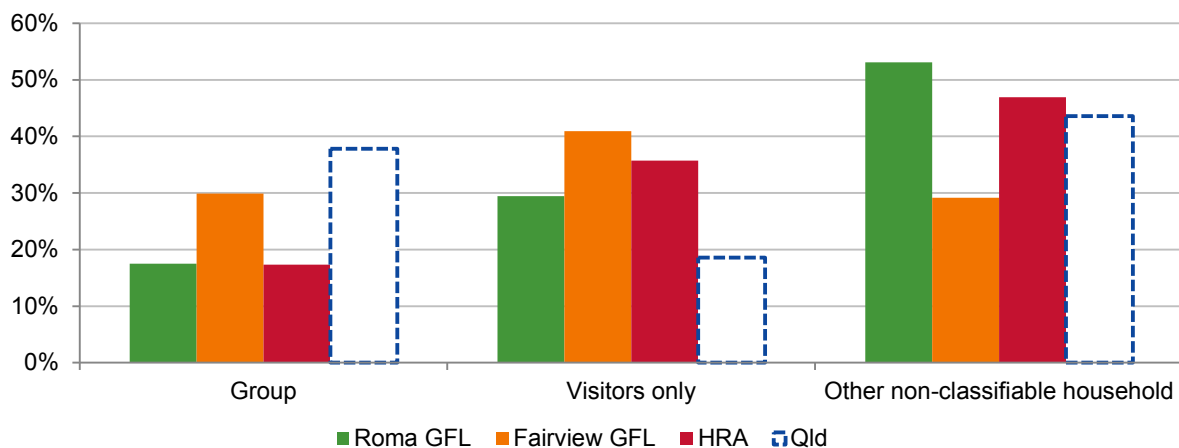
The Roma and Fairview GFLs and HRA have representation of 'Other' households at a higher level than the State. This indicator has been disaggregated in Figure 2-6. Of these 'Other' households, the majority in the Roma GFL are not classifiable, while those in the Fairview GFL are primarily 'group' and 'visitor's only' residences.

Figure 2-5 Family composition, 2011



Source: ABS, 2012

Figure 2-6 'Other' households, 2011



Source: ABS, 2012

2 Population

2.6 Non-residential workers and full-time equivalent population

Non-residential workers (NRW) on-shift, are workers who commute (either fly-in-fly-out/drive-in-drive-out/bus-in-bus-out) to an area where they reside in employer-constructed camps or commercial accommodation for a rostered period, before returning to their place of permanent residence. As NRW are not included in the annual ABS estimated resident population (ERP) figures for local government areas, local governments generally feel that they are not funded to provide certain services to NRW, and that the costs incurred to do this are an imposition on rate payers.

To better understand the scale of the issue, the Queensland OESR conducts a regular survey of accommodation providers in the Surat Basin, the most recent being June 2012. The survey records NRW on-shift, either living in towns or rural areas, the latter of which captures employer-constructed camps that are more than five kilometres from towns. The survey also details the NRW present across LGAs as a whole.

Table 2-4 shows the number of NRW in the towns closest to the Roma and Fairview GFLs during the last week of June 2012. The figures show that during 2011, NRW represented a minority of the population in Roma, while they would have been a noticeable minority within Wallumbilla and Injune. However, in 2012, the number of NRW across the SCA almost doubled, with a significant increase of NRW in Injune occurring, equating to approximately 44% of the total population in 2012. The increase derives from the ramp-up in construction activity for gas field development and the establishment of large accommodation facilities in proximity to construction sites.

Table 2-4 Full-time equivalent population – residential and non-residential populations

	2011				2012			
	ERP	NRW	FTE	NRW %	ERP	NRW	FTE	NRW %
Roma (UCL)	7,160	275	7,435	3.8	7,270	290	7,560	4
Wallumbilla (UCL)	265	30	295	11.3	270	25	295	9.3
Injune (UCL)	405	50	455	12.3	410	180	590	43.9
SCA	13,465	1,155	14,620	8.6	13,590	2,075	15,665	15.3

Source: OESR, 2012c. ERP: Estimated resident population. NRW: Non-resident workers. FTE: Full-time equivalent

2.7 Cultural and ethnic diversity

2.7.1 Country of birth and language spoken at home

Table 2-5 and Table 2-6 show the country of birth and language spoken at home within the Roma and Fairview GFLs, HRA and Queensland. As shown in these tables, the Roma and Fairview GFLs and HRA are generally ethnically and culturally homogenous. The overwhelming majority of the population at the time of the 2011 Census were born in Australia, with a small minority (well below the State average) who were born in north-western Europe, followed by immigrants from south-east Asia. According to the 2011 Census, the majority of south-east Asian immigrants throughout the study area are Filipino.

2 Population

The level of cultural homogeneity in the studied areas indicates that it has not been a significant destination for immigrants over the last twenty years of high immigration in Australia. While this homogeneity presents a shared cultural and ethnic background for the majority of the population, it may also mean that non-English speaking background migrants to the area may experience some level of social isolation.

Table 2-5 Country of birth, 2011 (%)

	Roma GFL	Fairview GFL	HRA	Qld
Oceania	94.1	95.6	95.2	83.9
North-West Europe	1.7	2.0	2.0	6.9
South-East Asia	2.2	1.0	1.0	2.1
Americas	0.3	0.6	0.3	1.0
Sub-Saharan Africa	0.6	0.0	0.7	1.4
Other	1.0	0.8	0.8	4.7

Source: ABS, 2012

Table 2-6 Language spoken at home, 2011 (%)

Language	Roma GFL	Fairview GFL	HRA	Qld
English	87.4	90.2	82.0	80.5
Other	3.4	1.9	10.9	14.4
Not stated	9.1	7.8	7.1	5.1

Source: ABS, 2012

2.7.2 Religion

Census results indicate generally that the population within the Roma and Fairview GFLs and HRA are both more religious, and less religiously diverse, than the State as a whole. A lower proportion of the population (than recorded in the State) stated that they were of 'no religion' during the 2011 Census (Table 2-7).

Table 2-7 Religious affiliation, 2011 (%)

Religion	Roma GFL	Fairview GFL	HRA	Qld
Christianity	73.3	69.5	76.1	64.8
Buddhism	0.3	0.7	0.3	1.5
Hinduism	0.2	0.0	0.1	0.7
No religion	13.6	16.3	13.4	22.2
Other religions	0.2	0.3	0.3	1.5
Not stated	12.4	13.2	9.9	9.2

Source: ABS, 2012

Employment, income, industry and occupation

The indicators discussed in this section relate to the economic characteristics of well-being of the GFL, its SCA and the HRA at large. They focus on individual's participation and ultimately social well-being..

3.1 Employment

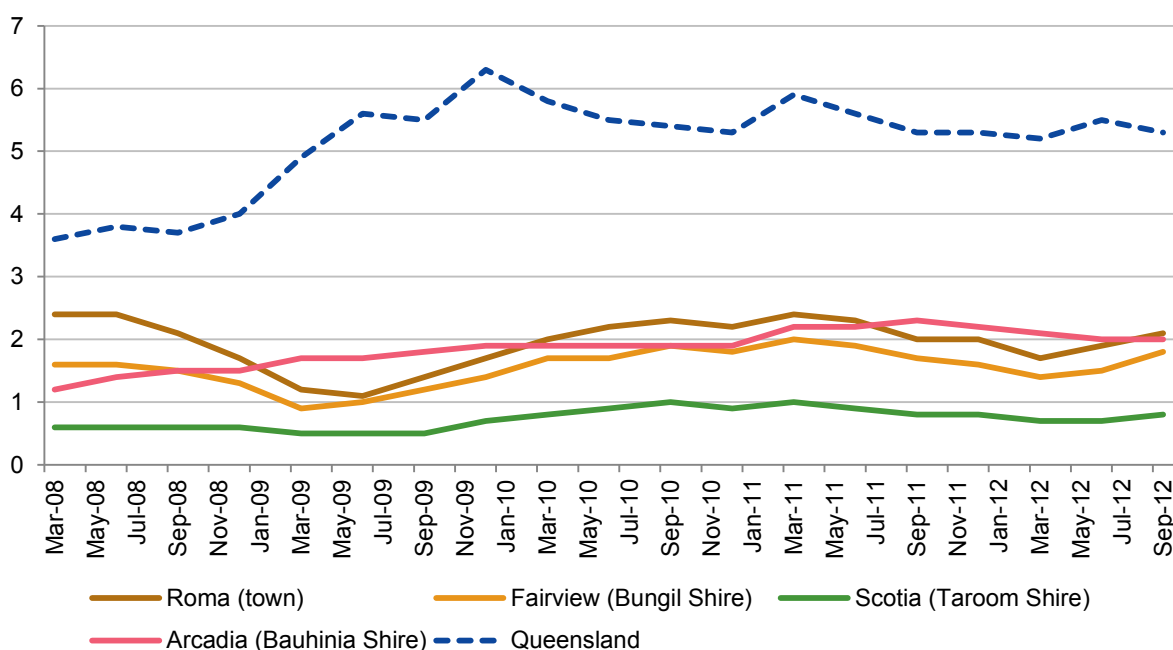
As no data on unemployment is available at the SA1 or SA2 areas, summary data is presented at the shire level, as shown in Figure 3-1. The shires that incorporate the Roma and Fairview areas have sustained low levels of unemployment over the last five years, maintaining a rate below three percent during this period.

However, these low levels of official unemployment may not reflect a number of local characteristics, such as:

- High levels of under-employment amongst those that are self-employed within the agricultural sector
- The out-migration of youth from rural areas to regional centres and cities in search of employment.

The higher levels of unemployment within Roma Town, when compared with the Fairview area (Bungil Shire), may be a reflection of the above characteristics.

Figure 3-1 Unemployment rate – all areas



Source: DEEWR, 2013

More recent information at the SLA level (subregions of local government areas) (Table 3-1) indicates that the unemployment rate continues to increase slowly in the Roma Town and Bungil areas.

3 Employment, income, industry and occupation

Table 3-1 Small area labour market data, June 2012-June 2013

Statistical local areas (SLAs)	Unemployment rate (%) June 2012	Unemployment June 2012	Unemployment rate (%) June 2013	Unemployment June 2013	Labour force June 2013
Bendemere (LGA)	2.3	15	1.6	10	640
Booringa (LGA)	3.4	38	3.8	43	1,123
Bungil (LGA)	1.5	25	1.9	31	1,641
Roma (town)	1.8	85	2.3	104	4,572
Taroom (LGA)	0.7	13	0.8	15	1,775
Bauhinia (LGA)	2.0	35	2.3	41	1,771
Woorabinda (LGA)	68.8	245	80.3	293	365

Source: Department of Employment, 2013

Table 3-2 indicates that there remains a persistent problem with youth unemployment in the area with, but that over the last two Census periods there has been a significant reduction in the rate of unemployment for young adults which has more than halved.

Table 3-2 Unemployment and participation rates: 15-19 and 20-24

SA2 area	Unemployment %	Participation rate %	Unemployment %	Participation rate %
		15-19		20-24
Roma -2011	12	72	10	84
2006	7	71	4	84
2011	10	59	4	83
Roma Region -2001	9	61	9	86
2006	4	66	6	83
2011	%	57	3	77

Source: ABS, 2011, Time Series Profile - T32.

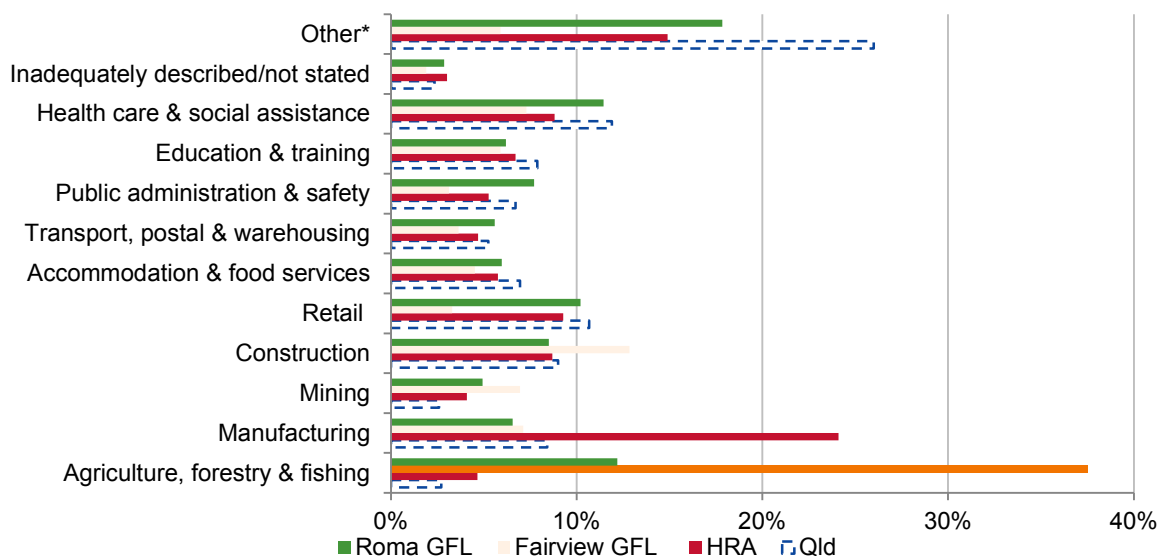
3.2 Industry of employment

The Roma GFL and Fairview GFL present slightly different industry of employment profiles (Figure 3-2), reflecting that the Roma GFL covers the major service centre of Roma itself, while the Fairview GFL primarily covers agricultural holdings. Specifically, agriculture is the primary industry of employment in the Fairview GFL (38%), followed by construction (13%). The Roma GFL industry presence is more diverse, although agriculture (12%), health care and social assistance (11%) and retail (10%) are the primary industries of employment. Further afield in the HRA, manufacturing is the predominant industry of employment.

Figure 3-3 shows the industry of employment for people living within the SCA (SA2) over the last three Census', as no data are available for the Roma and Fairview GFLs area prior to 2011. Between 2001 and 2011, the SCA experienced a considerable decline in the percentage of the workforce employed in agriculture, while there was a concurrent growth in the mining and construction industries as employers.

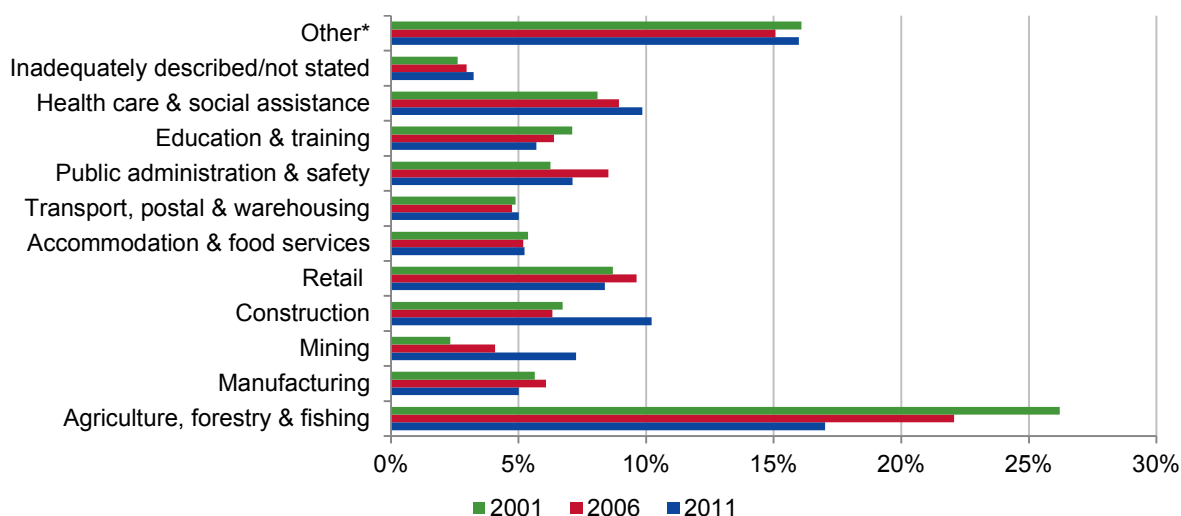
3 Employment, income, industry and occupation

Figure 3-2 Industry of employment, 2011



Source: ABS, 2012

Figure 3-3 Industry of employment, Roma SCA (LGA)



Source: ABS, 2012

3.3 Occupation

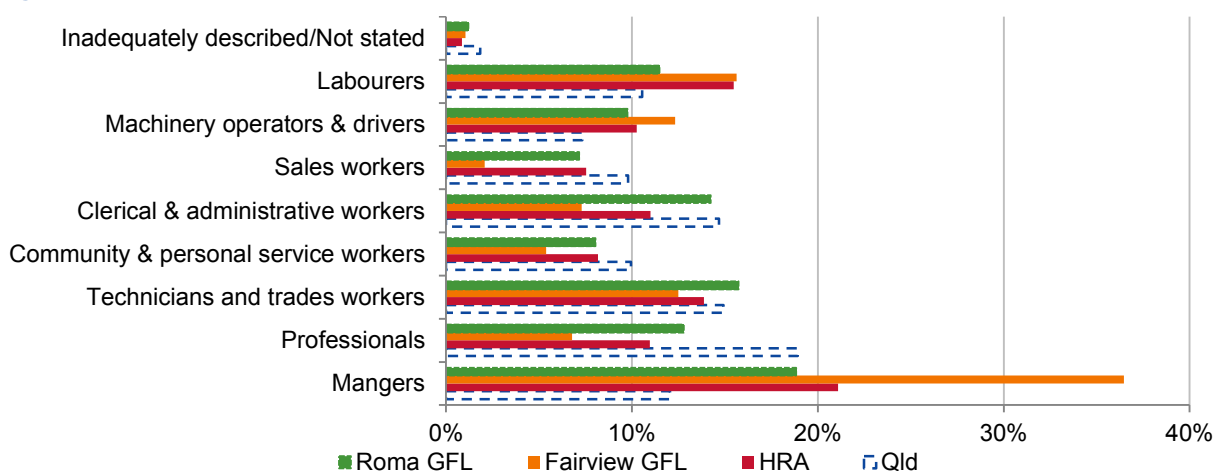
At the time of the 2011 Census, the largest occupational category in the both Roma and Fairview GFLs was 'manager' (Figure 3-4). In the case of the Fairview GFL in particular, the majority of these are listed as 'farm managers' (ABS, 2012). The two largest occupational categories were 'technicians and trades workers'. The next most prominent occupation in the Roma GFL was 'clerical and administration workers' followed by 'professionals', reflective of the areas status as a major government administration centre. A considerable portion of the working population in 2011 in the Fairview GFL were 'labourers' and 'machinery operators and drivers', most likely indicating that Injune operates as a local government service centre and a place of residence for workers and businesses servicing the agricultural and construction sectors. As these occupational categories are significant

3 Employment, income, industry and occupation

within construction workforces, it may indicate a potential for stress on local government workforce resourcing as construction of resource project infrastructure intensifies.

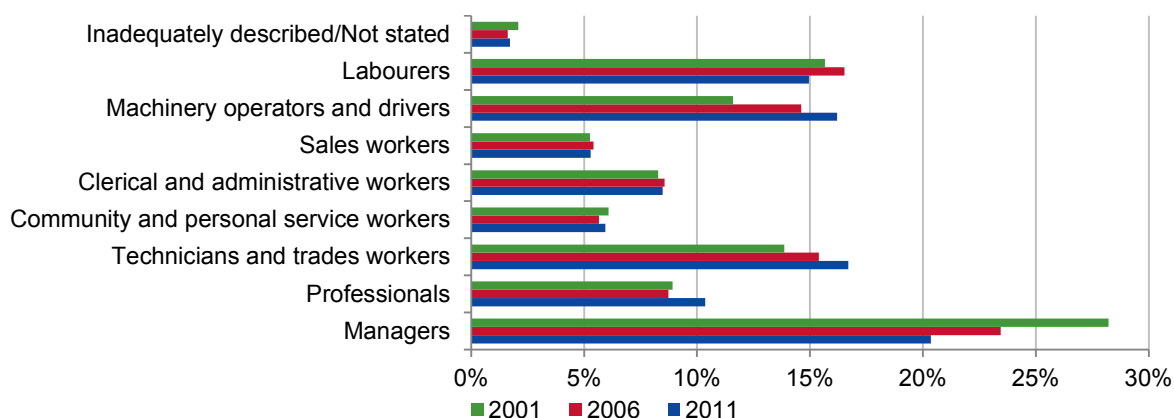
The occupational categories of workers within the SCA over the last two Census periods are shown in Figure 3-5 (no data being available for the GFL areas prior to 2011). Of note is the significant increase in 'machinery operators and drivers', a more modest increase in 'technicians and trade workers' and a significant decrease in 'managers'. This is most likely a reflection of the growth in construction occurring with gas development, and possibly the availability of off-farm employment for the 'managers' of marginally viable agricultural enterprises.

Figure 3-4 Occupation, 2011



Source: ABS, 2012

Figure 3-5 Occupation, SCA (SA2)



Source: ABS, 2012

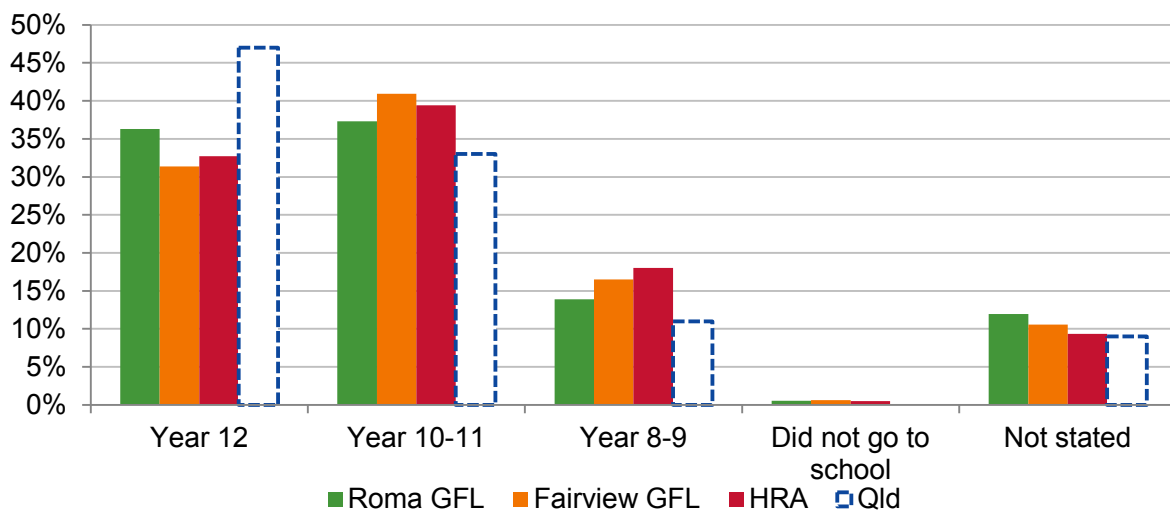
3.4 Educational attainment

Both the Roma and Fairview GFLs and the HRA exhibit lower levels of high school education attainment than the State average. This characteristic is more slightly more pronounced in the Fairview GFL than the HRA, as shown in Figure 3-6. Similarly, both areas have lower levels of university level educational attainment than the State; however, these areas have considerably higher levels of TAFE acquired qualifications, displayed as 'certificate' level qualifications within Figure 3-7.

3 Employment, income, industry and occupation

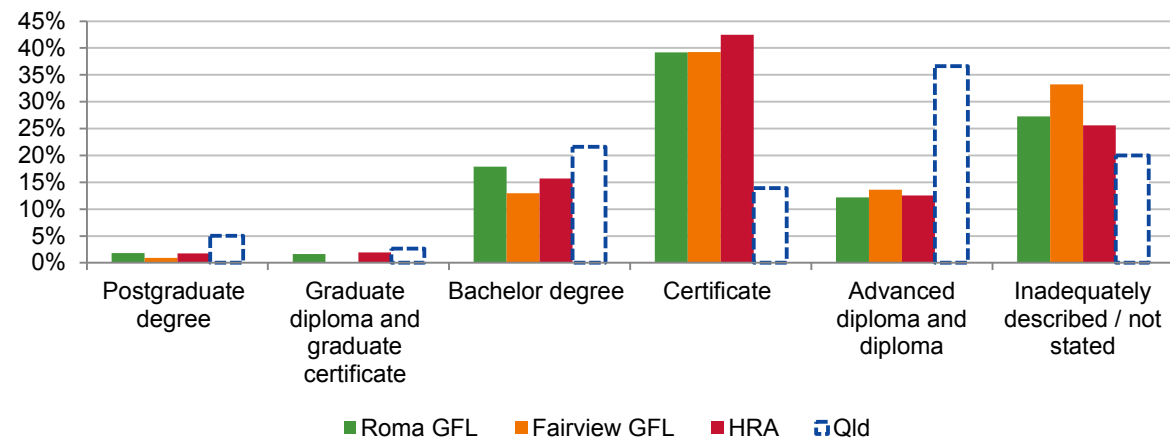
This is consistent with the dominance of the agricultural, manufacturing and construction industries within these areas. In both figures, the Roma GFL's profile is slightly more aligned to the State profile rather than the HRA. This is likely indicative of the fact that the Roma GFL is a regional government service centre, while the Fairview GFL and HRA are more agriculturally focused. For example, the higher proportion of bachelor degree level achievement within the Roma GFL compared to the HRA is likely to be a reflection of the presence of qualified teachers, health professionals and other government and private sector professionals in service industries.

Figure 3-6 High school education achievement, 2011



Source: ABS, 2012.

Figure 3-7 Post-school qualifications, 2011



Source: ABS, 2012.

3.5 Income

As can be seen in Figure 3-8, the Roma GFL has a family income distribution skewed toward the higher income levels when compared to the State. In contrast, the HRA has a family income distribution skewed toward the lower income levels than the State, illustrating a considerable difference between the Roma gas field incomes and its surrounding region's incomes. Highlighting

3 Employment, income, industry and occupation

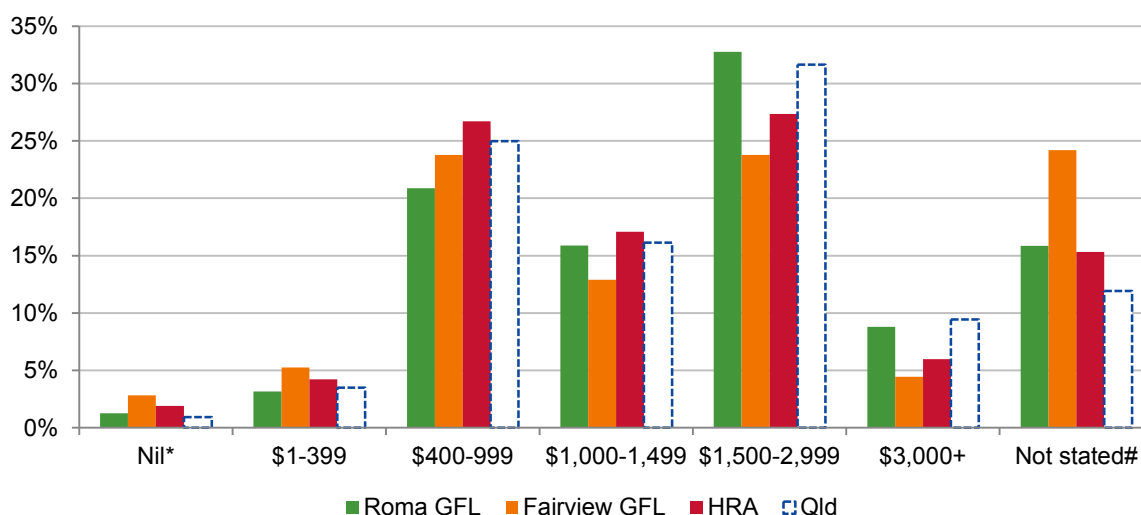
this, only 25% of the Roma GFL's families report earning under \$1,000 a week, compared to 33% for the HRA and 29% for the State, as detailed in Table 3-3. In contrast, the Fairview GFL has a higher percentage of families who earn below \$1,000 a week, and a corresponding lower percentage of families who earn above \$1,500 a week, compared to the Roma GFL.

Table 3-3 Family income distribution

	Roma GFL	Fairview GFL	HRA	Qld
Under 1,000	25%	31%	33%	29%
Above 1,500	42%	28%	33%	41%

Source: ABS, 2012.

Figure 3-8 Weekly family income, 2011



Source: ABS, 2012.

3.6 Cost of living

Determining the cost of living quantitatively is difficult in rural and regional areas as data is often lacking or is not current. While there is no data available for the Fairview GFL at the direct SA1 area, the May 2010 survey of retail prices (OESR, 2011) included Roma, which is in the SCA and the primary urban area in the Roma GFL. This survey indexes the price per basket of goods to Brisbane, which is represented as a base of 100.

As shown in Table 3-4, the cost of living in Roma was characterised by significantly more expensive food and clothing when compared with the costs in Brisbane. Housing costs, while lower in 2010, are known to have risen substantially since the 2010 survey, due to the increased demand for accommodation from major project construction workforces.

Table 3-4 Cost of living – retail prices index when compared to Brisbane, May 2010 (%)

Centre	Food	Clothing and footwear	Housing	Transportation	All items	All items less housing
Roma	110.0	113.1	82.8	98.4	98.2	102.3

Source: OESR, 2011

3 Employment, income, industry and occupation

3.7 Business counts and trends

Business counts and turnover statistics are available from OESR for the SCA area and HRA.

The majority of businesses within both the SCA and the HRA are businesses with annual turnovers less than \$500,000 (Table 3-5). As shown in Table 3-6, 97.6% of businesses in the SCA are classified as small businesses, with around half of these having an annual turnover of less than \$100,000. Significantly, both the SCA and the HRA have fewer employees per business when compared to the State, indicating a higher proportion of people who work for themselves.

Table 3-5 Business count by turnover range, 2012

Area	\$0 to less than \$100k		\$100k to less than \$500k		\$500k to less than \$2m		\$2m or more		Total
	No.	%	No.	%	No.	%	No.	%	No.
SCA	1,147	47.3	863	35.6	306	12.6	108	4.5	2,424
HRA	3,514	46.5	2,642	35.0	1,048	13.9	346	4.6	7,550
Queensland		46.6		34.7		13.3		5.4	

Source: OESR, 2013d

Table 3-6 Business count by employee size, 2012

Area	Small		Medium		Large		Total	Total population	Persons per business
	No.	%	No.	%	No.	%	No.	No.	No.
SCA	2,365	97.6	56	2.3	3	0.1	2,424	13,464	5.5
HRA	7,327	97.0	220	2.9	3	0.0	7,550	44,530	5.8
Queensland	-	95.7	-	4.0	-	0.3	430,406	4,332,737	10.0

Source: OESR, 2013d

The SCA has an established grazing industry, and is the location of Australia's largest cattle selling complex, in addition to a strong economic history based around agriculture, forestry and mining (Maranoa Regional Council, 2013a). Consultation and other sources indicate that the rapid expansion of multiple gas developments within the SCA has resulted in other industries, such as retail, struggling to attract and retain employees, due to cost of living issues primarily associated with housing and competition for workers in a market that is traditionally 'tight' (i.e. low levels of unemployment) (Maranoa Regional Council, 2013b).

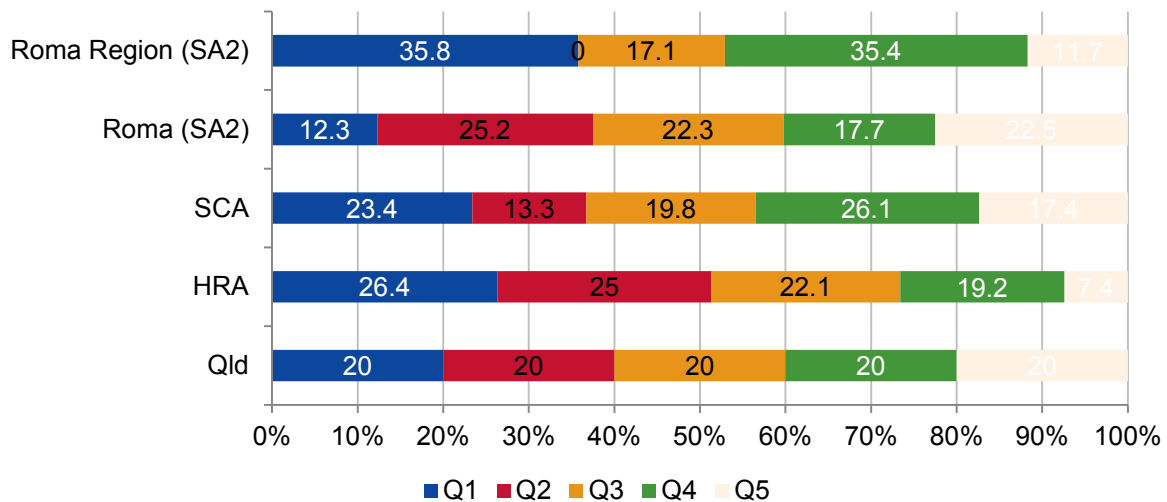
3.8 Socio-Economic Indexes of Disadvantage

The *Socio-economic Indexes for Disadvantage* (SEIDA) is a summary measure of the social and economic conditions of a region. SEIDA is generated by the ABS and aggregates a range of indicators within Census data to reflect the level of disadvantage in social and economic conditions. The index focuses on low-income, relatively lower education attainment, high unemployment and dwellings without motor vehicles. Low index values represent areas of most disadvantage and high values represent areas of least disadvantage. While SEIDA quintiles for the Roma and Fairview GFLs are not available Figure 3-9 shows the percentage of the population of the SCA, HRA and Queensland in each quintile of the SEIDA, where 'Quintile 1' represents the most disadvantaged group and 'Quintile 5' represents the least disadvantaged group of persons.

3 Employment, income, industry and occupation

By definition, 20% of the Queensland population is within each quintile. In comparison, 23.4% of the population of SCA were in the most disadvantaged quintile, with 13.3% of the population within Quintile 2; resulting in the SCA having 36.7% in the lowest two quintiles (compared to 40% for the State); and considerably less than the HRA (51.4%). Closer inspection of the two SA2s that constitute the SCA demonstrates that disadvantage is focused in the Roma Region area (which covers the Fairview GFL), with 35.8% of the population in the lowest quintile.

Figure 3-9 Socio-economic Index for Disadvantage – SCA and HRA



Source: OESR, 2013c

Housing

4.1 Residential housing

4.1.1 Dwelling type and structure

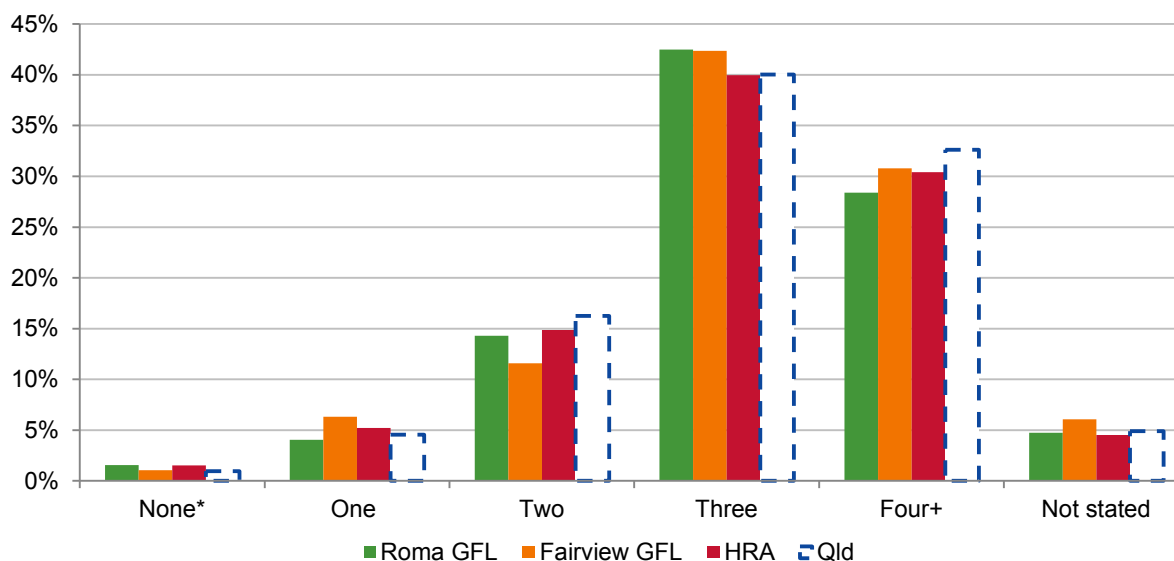
The dominant form of housing within the Roma and Fairview GFLs and HRA is separate houses (Table 4-1). However, the Fairview GFL has a lower proportion of separate houses (74%) and a larger proportion of townhouses (14%) than the Roma GFL and HRA. The number of beds per dwelling in both the Roma and Fairview GFLs and the HRA is similar to the State level, although the Fairview GFL has a slightly higher proportion of one bedroom dwellings, as shown in Figure 4-1.

Table 4-1 Dwelling structure (%), 2011

	Roma GFL (%)	Fairview GFL (%)	HRA (%)	Qld (%)
Separate house	88.4	74.4	87.8	75.8
Townhouse	2.6	13.9	2.0	8.4
Flat	4.7	2.7	4.9	13.3
Caravan, cabin, houseboat	3.6	4.1	4.5	2.0
Improvised dwelling*	0.5	0.0	0.5	0.3
Attached residence	0.2	0.6	0.4	0.2

Source: ABS, 2012.

Figure 4-1 Number of beds per dwelling, (%) 2011



Source: ABS, 2012.

*Includes bedsitters

Consultation during development of the Santos GLNG Integrated Project Housing Strategy indicated that the community were concerned with:

- Facilitating the development of alternative forms of housing
- Ensuring the availability of small, affordable dwellings for apprentices and builders, and
- Ensuring the availability of affordable housing for key workers such as teachers and police.

4 Housing

4.1.2 Dwelling occupancy

During the 2011 census, the Roma and Fairview GFLs, SCA and HRA had rates of unoccupied dwellings that are considerably higher than the State average. In the case of the Fairview GFL, the level of unoccupied housing is over double that of the State. It is likely that these low rates of occupancy are a result of the Roma and Fairview GFLs covering agricultural holdings, where processes of agricultural change may have resulted in lower levels of employment for farm labourers who were formerly housed on properties.

Despite the low rates of occupancy during the 2011 Census, the availability of housing was cited as an ongoing issue for residents at the time of consultation for this EIS. Low rates of occupancy in resource towns (such as Moranbah and Blackwater) may be the result of a significant number of dwellings being either leased or owned by resource companies and being temporarily unoccupied at the time of the Census. Lower levels of occupancy could also be the result of landlords setting very high rents in the hope of securing corporate tenants from the resources sector. Should the anticipated tenant not eventuate, the house may remain unoccupied for a longer period if potential tenants cannot afford the rental price set. It may also be the case that some rural towns display lower occupation rates due to poor dwelling condition.

Table 4-2 Dwellings – occupied and unoccupied, 2011

Area	Roma GFL	%	Fairview GFL	%	HRA	%	Qld	%
Occupied	3,529	85.4	380	73.6	17,129	83.9	1,547,303	90.3
Unoccupied	602	14.6	136	26.4	3,294	16.1	177,911	9.7
Total	4,131		516		20,423		1,725,214	

Source: ABS, 2012.

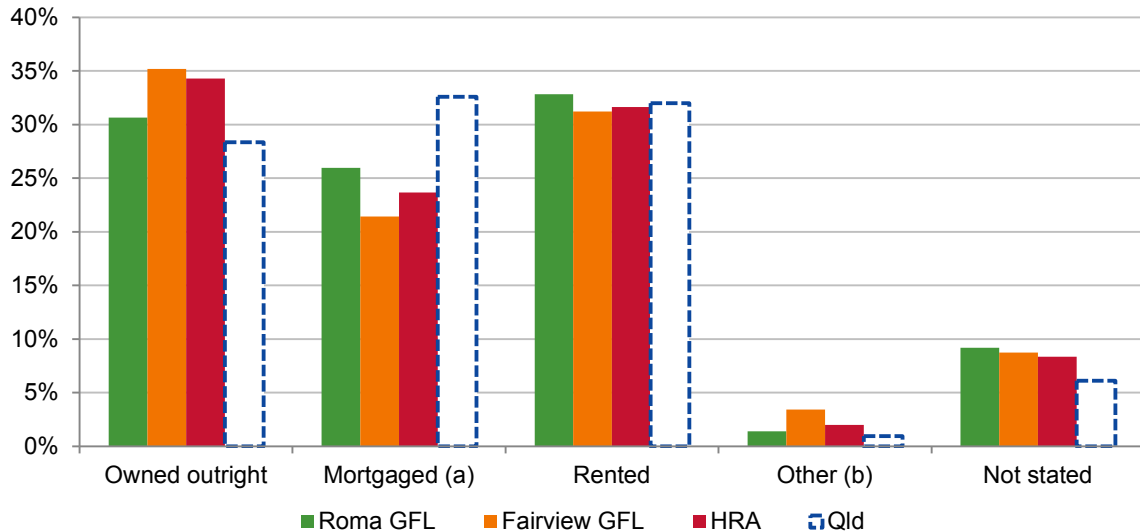
4.1.3 Ownership

The level of home ownership in the Roma and Fairview GFLs and HRA at the time of the 2011 Census, by outright ownership was considerably higher than that of the State, as shown in Figure 4-2. The adjunct to this is a lower rate of mortgaged households. This is likely due to historically high levels of housing affordability in rural areas and regional towns, low levels of unemployment, and low levels of population mobility. The Roma GFL also has a slightly higher level of renting than the State, indicative of recent in-migration and its status as a government service centre with a transient workforce.

An examination of landlord type (Figure 4-3) indicates that two very different markets within the Roma and Fairview GFLs. The Roma GFL has a higher than average share of rental accommodation within the commercial market (real estate agents) at around 40% compared to 30% in the HRA. This is coupled with higher proportions of government employee housing. The Fairview GFL has a very small commercial rental market (5%), whereas the informal market (or persons not in the same household) represents around 33% of rental accommodation. The next most common landlord in the GFL is that of employer (private), indicating the presence of resource and agricultural worker accommodation, provided as part of an employment package.

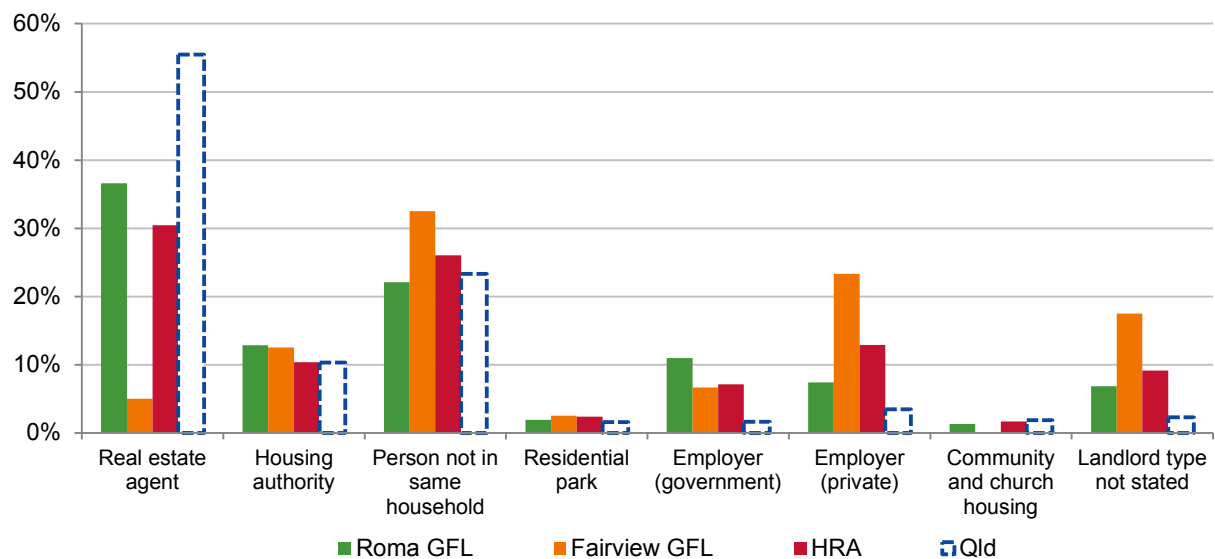
4 Housing

Figure 4-2 Home ownership, 2011



Source: ABS, 2012.

Figure 4-3 Rental landlord type, 2011



Source: ABS, 2012.

4.1.4 Social housing

Data provided by the Department of Housing and Public Works shows that social housing is concentrated in Roma, with a majority of dwellings managed by non-government organisations (Table 4-3).

Based on social housing applications, it appears as though there is fairly limited demand for social housing dwellings with 32 applicants on the housing register as at 30 September 2012 (Table 4-4); however, this may be indicative of the out-migration of families who are not able to afford to live in Roma having already occurred, and therefore no longer being on the waiting list. While the number of

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applicants on the waiting list for social housing has increased by two applicants, the social housing stock has increased by around 34 dwellings between 31 October 2010 and 30 September 2012.

Table 4-3 Social housing

Postcode	Area	Government-managed	Non-government-managed	Total
4420	Roma	33	144	177
4419	Injune	0	15	15

Source: Department of Housing and Public Works, 2013

Table 4-4 Number of applications on waiting list – SCA

Date of Data	Number of Applications	Average waiting period (weeks)
As at September 2012	32	10.2
As at October 2010	30	n/a

Source: Department of Housing and Public Works, 2013

4.1.5 Housing costs

Housing costs and availability are priority issues in resource communities, particularly those with multiple resource projects in their vicinity. Roma and Injune have reported ongoing impacts to housing affordability and availability as a result of multiple LNG projects being developed in the area, with a key community issue being the perceived lack of available housing for key workers (such as teachers, health workers) (Santos GLNG, 2013).

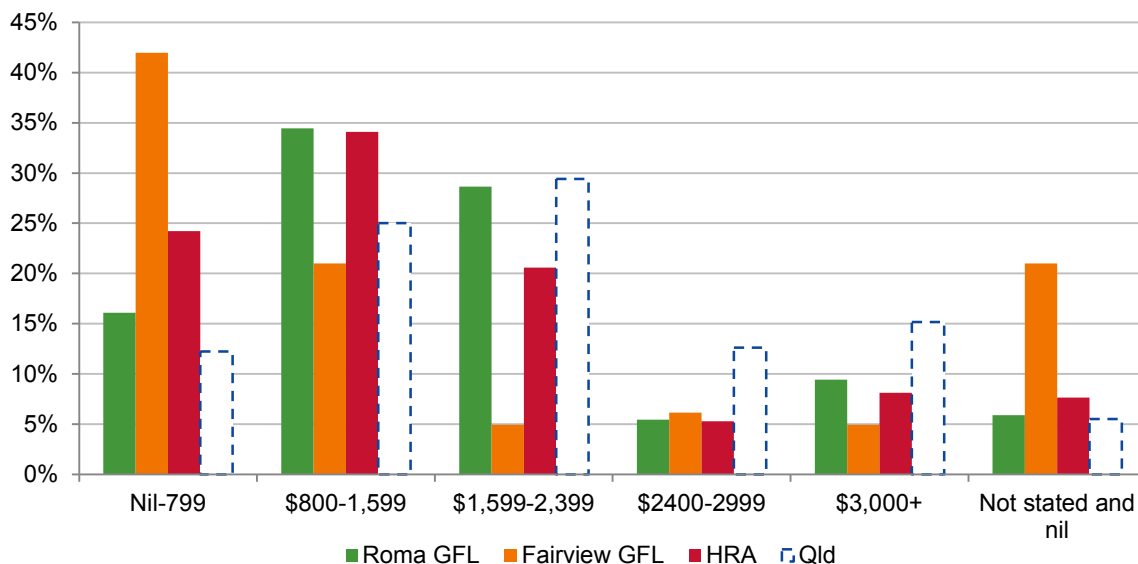
As at the 2011 Census, the Roma and Fairview GFLs and HRA generally had lower mortgage costs than that of the State, as shown in Figure 4-4. This can be related to historically low housing prices in these areas and the lower personal mobility rates. This is especially so in the Fairview GFL, where the majority of mortgages are below \$800 per month. On the other hand, the Roma GFL had slightly higher existing mortgage costs than the HRA, although it is still lower than that of the State.

The low cost of housing reported during the 2011 Census contrasts markedly with opinion voiced during community consultation and other publically available housing market data. For example, the cost of buying a house has increased considerably across the primary towns within the Roma and Fairview GFLs, as shown in Table 4-5. While data from market sources has to be treated with some caution, especially where a small number of transactions used to calculate a median, such as in small towns, results in significant price fluctuations it is apparent that the median price of houses has grown considerably in the last four years (Roma-31%, Injune-49% and Wallumbilla-43%).

The market data is supported by data from the OESR covering the SCA, where the median house price has increased by 13.2% to \$300,000 over the 12 months to 31 December 2012. In comparison, the median value of residential dwelling sales in Queensland decreased by 1.3% over the same period (OESR, 2013d). However, as shown in Figure 4-5, there was a reduction in sales price during the last quarter in 2012, indicating that the upward trend may be tapering off.

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Figure 4-4 Monthly mortgage costs, 2011



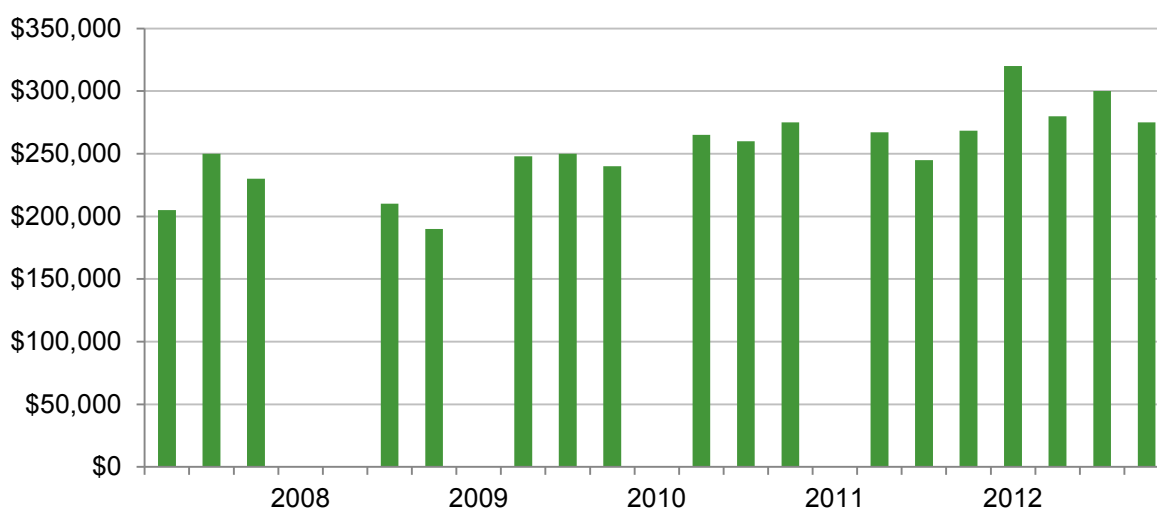
Source: ABS, 2012.

Table 4-5 Median house sale prices, SCA towns (three-bedroom home)

	Roma (\$)	Growth %	Wallumbilla (\$)	Growth %	Injune (\$)	Growth %
2009	260,000	1.8	347,500	82.9	135,000	8.0
2010	290,000	11.5	180,000	-48.2	155,000	14.8
2011	300,000	3.4	230,000	27.8	160,000	3.2
2012	340,100	13.4	225,000	-2.2	157,000	-1.9
2013	339,750	-0.1	257,500	14.4	201,000	28.0

Source: Property Data Solutions, 2013.

Figure 4-5 Median sales price, SCA

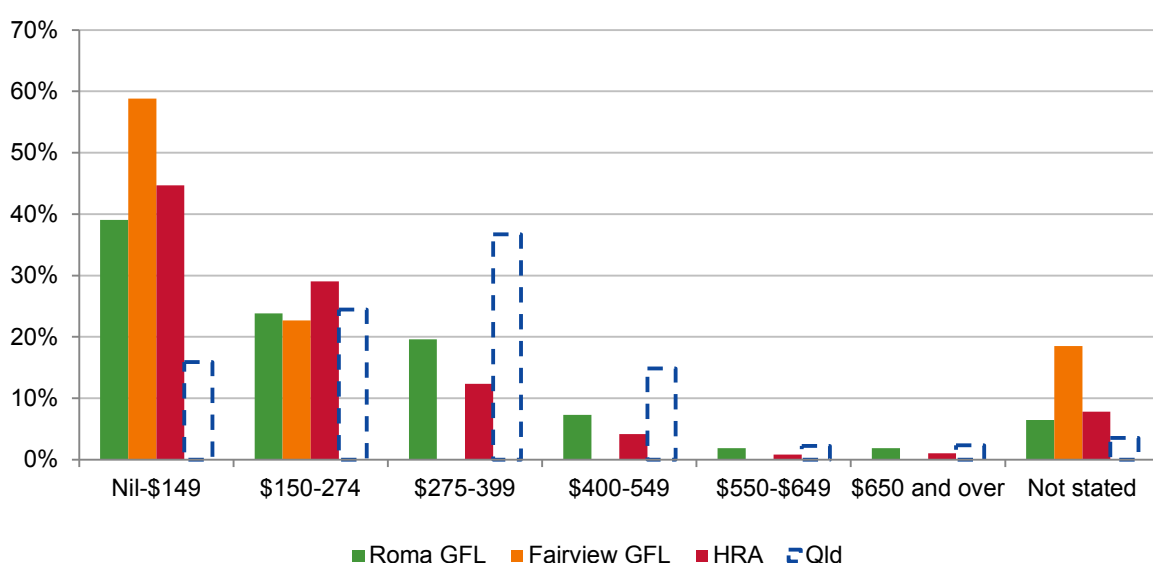


Source: OESR, 2012c. Note: blank spaces indicate no data

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Similarly, the weekly rental costs reported in the 2011 Census (Figure 4-6) differ substantially from those reported by the Residential Tenancies Authority (RTA), as shown in Table 4-6. As shown, compared to the Census data, where most households report weekly rental costs under \$175, most towns within the SCA report much higher median rental costs. Generally, this is because the RTA captures the private rental market transactions, while the Census also includes those whose rent is subsidised, either through employer or social housing. According to research undertaken to update the Santos GLNG Integrated Project Housing Strategy in early 2013, the median rent of a three bedroom house was only affordable for households earning more than \$85,000 per year (Santos GLNG, 2013).

Figure 4-6 Weekly rental costs, 2011



Source: ABS, 2012.

Table 4-6 Median weekly rental prices, three bedroom home

Town/area	Mar-11		Mar-12		Mar-13	
	Rent (\$)	New Bonds	Rent (\$)	New Bonds	Rent (\$)	New Bonds
Roma	305	64	340	47	450	46
Wallumbilla	280	23	300	31	330	30
Injune	305	64	340	47	450	46

Source: Residential Tenancies Authority, 2013

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4.1.6 Housing affordability

Housing affordability in the Maranoa region, incorporating the Roma and Fairview gas fields, has been assessed in the Santos GLNG Integrated Project Housing Strategy Update No. 1 (2012) (Santos GLNG, 2013). Key findings from that update report are that:

- Sale and rental prices
 - Over the past five years, the median sale price of vacant urban land increased by 100.0%. More recently, median sale prices have increased from \$75,000 in the 12 months to June 2010, to \$120,000 to June 2011 and \$145,000 to June 2012 (REIQ 2012).
 - The median cost of purchasing a house has been more variable. The median house price has declined in the most recent quarter for the region and remained steady over the past two years (OESR 2012d). Data for the Roma township shows the median house price increase by 13% in 2012 compared to 2011, though a small decrease of 0.1% in 2013 compared to 2012 (Price Finder 2013).
 - Median weekly rents for new bonds have increased over the past few years for all dwelling types.
- Rental and home purchase affordability (see Figure 4-7):
 - The median house price is affordable for households earning a median income in the SCA (by \$5,500); however, households in the bottom 40% of households by income would find the median house price unaffordable.
 - Home purchase affordability (using the median multiple measure) in 2011 was approximately 4.4, which was higher than the 'sustainable' median multiple (3.0)¹
 - The median rental cost for new rentals in the SCA has become unaffordable for households earning a median income (by \$135 per week), as well as households in the bottom 40% of the income distribution. The median rent of a three bedroom house at \$500 per week in the SCA is only affordable for households earning more than \$85,000 per year.
- Rental vacancy:
 - Rental vacancy rates have varied since 2004. A reliable recent vacancy rate was not available.

¹ The median gross household income for all households divided by median detached house sale price

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Figure 4-7 Housing affordability analysis - Maranoa Region

Max. affordable rental Per week	Income distribution Maranoa region	Affordable house purchase price
More than \$750/ week	\$2,500+/week(\$130,000+/year) 16.4% of total households	\$585,000+
\$750 per week	\$1,500-\$2,499/week (\$78,000-\$130,000/year) 23.6% of total households	\$585,000
\$450/week	\$1,000-\$1,499/week (\$52,000-\$78,000/year) 17.2% of total households	\$351,000
\$300/week	\$600-\$999/week (\$31,200-\$52,000/year) 18.8% of total households	\$234,000
\$180/week	\$0-599/week (\$0-31,200/year) 24.0% of total households	\$140,000

Median
Rental Cost
\$500/week

Median
House Price
\$277,000

Source: Santos GLNG Integrated Project Housing Strategy, Update No. 1 (2012)
Median income = \$62,900

A further indicator of housing affordability is the house price to income ratio, which is the ratio of median house prices to median gross household income in a given geographic area. The ratio is used as a measure of trends in housing affordability over time. Table 4-7 provides an estimate of the Price to Income Ratio for Roma Town between 2009 and 2013 (based on estimates of Median house prices from Price Finder, and using household income estimates from the 2011 Census). There has been a 30% increase in the ratio since 2009, indicating growing pressures on housing affordability, consistent with the situation in the Maranoa Region.

Table 4-7 House price to income ratio – Roma Town

	Median house price (three-bedroom)	Median household income (2011)	Price to income ratio
Roma town			
2009	260,000	72,800	3.6
2010	290,000	72,800	4.0
2011	300,000	72,800	4.1
2012	340,100	72,800	4.7
2013	339,750	72,800	4.7

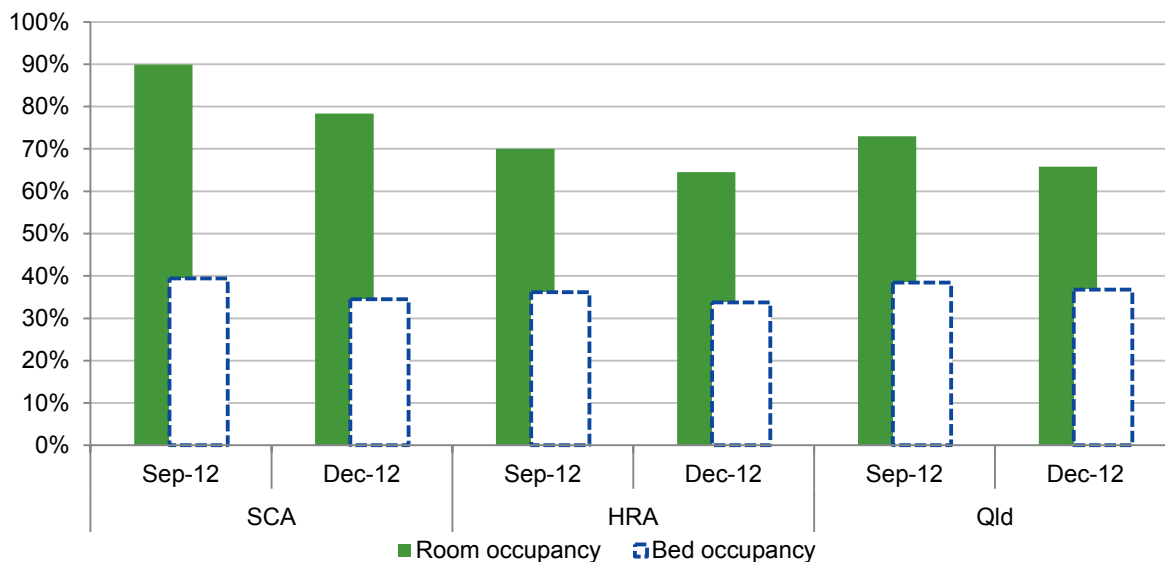
4.1.7 Short-term accommodation supply

Short term accommodation (hotels/motels) is important to regional areas due to the significant impact that extractive industry projects can have on its demand, particularly during the construction stage of a project. Data for the primary towns across the SCA are provided within Figure 4-8. This indicates that room occupancy rates are generally much higher than the State level in the SCA, while the bed

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occupancy rate is lower. This is expected due to the presence of resource development activity in the area, and suggests that visitors are likely to be single persons, occupying multiple bed units.

Figure 4-8 Short term accommodation supply



Source: ABS, 2013.

There has also been an evident supply response in the private short-term accommodation market in Roma since a year or two prior to the commencement of the GLNG Project construction, with additional motels being built to service industry need for accommodation. The Tourist Accommodation Data Sheet for the year ended June 2013, published by Tourism Queensland, indicates that for the Darling Downs Region (which includes the Roma area) there was a 6% increase in the number of establishments and room nights available (for motels, private hotels and guest houses) and an 8% increase in the average room rate. It notes that the average rate increases 'originated in the resource regions during a period of increasing industry demand that appears to have peaked and may now be falling in many areas'. It also noted that the increase in room rate in the Darling Downs area generated a 20% increase in revenue and that growth was expected through to the end of 2014.

It is also arguable that increased industry occupancy has created conditions favourable to investment in the refurbishment of older establishments, thereby making them more attractive to visitors to the area. Accommodation camps for non-resident workers have now largely been established, with over 9,000 beds available in permanent and temporary camps in the Roma and Fairview area. This indicates that the demand experienced in the early 'pioneer' stages of construction prior to the establishment of camps should largely be avoided in the GFD Project.

Consultations with residents in the Maranoa area undertaken as part of the EIS did not indicate problems with the availability of accommodation, with some community stakeholders in Surat advocating the Project use town accommodation to support the operations of local businesses.

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4.2 Serviced land availability

Land availability is a noted concern for Maranoa Regional Council, particularly in relation to the provision of sewage and water treatment head works, with an emphasis in this regard on Roma. According to research undertaken to update the Santos GLNG Integrated Project Housing Strategy in early 2013, the supply of broad hectare land has been revised from 15 years supply to approximately 9-10 years and the supply of residential land in the development pipeline has reduced down from 4-6 years to 2-3 years (Santos GLNG, 2013). However, estimates by the OESR, shown in Table 4-8, indicate that land is available within the SCA to support around 2,812 dwellings.

Table 4-8 Land availability

Population scenario	Dwellings required per annum	Broad hectare yield	Existing vacant land stock	Total potential dwellings
Low	49	2,423	389	2,812
Medium	97	2,423	389	2,812
High	128	2,423	389	2,812

Source: OESR, 2012

A recent paper to the Planning Institute of Australia 2012 National Congress (Wilson, 2012) asserted that for supply and demand of housing to remain balanced in Roma *'requires additional developable land within the urban precinct, to be established at a higher density than currently exists in the Roma housing market. In conjunction, the accurate and realistic predictions of housing demand must be incorporated into the regulatory and policy framework to ensure that the supply of land remains sufficient. As a minimum, an additional 60.39 hectares of suitably zoned and serviced land should be added to the urban precinct to achieve the Maranoa-Balonne Regional Plan policy outcome of 15 years of developable land, allowing potentially higher levels of dwelling density as a buffer towards current and future demand.'*

Community values

5.1 Local governance and community planning

The Roma and Fairview gas fields and SCA are located within the Maranoa Regional Council local government area (LGA). The two primary urban centres that feature within each gas field are Roma and Wallumbilla (Roma gas field), and Injune (Fairview gas field).

Maranoa Regional Council

The MRC was formed out of an amalgamation of five LGAs, including the Shire of Bendemere, the Shire of Booringa, the Shire of Bungil, Town of Roma and the Shire of Warroo.

It covers an area of 58,830 km², with a population of around 13,464. The region has a diverse economy, based on a strong and historically entrenched agricultural industry along with a booming energy resources sector.

According to the MRC's community plan, the residents of Maranoa value a "relaxed lifestyle in a clean, green and safe environment" (Maranoa Regional Council, 2011). The priorities for the next decade are broadly identified to include that of vital community, that is active and healthy, effective water and waste management which supports a naturally sustainable environment, strengthening community facilities and infrastructure, an efficient and safe transport network (Maranoa Regional Council, 2011).

The key towns relevant to the GFD Project are that of Roma, Wallumbilla and Injune

Roma	Injune
<p>Located 475 km from Brisbane, Roma is the economic centre of the Maranoa Region. As with much of central and south-western Queensland, Roma was first colonised by pastoralists in around the 1860s; it was also a site early and considerable Aboriginal resistance. During the late 19th century, Roma became known for wheat production and vineyards. Gas was first discovered in the early 20th century.</p> <p>The residents of the Roma community value the country lifestyle and natural beauty of the region, which has a rich cultural history demonstrated through a number of heritage listed buildings.</p>	<p>Injune is a small, rural township located 90 km north of Roma and is the southern entry point to the Carnarvon National Park.</p> <p>Injune is rich in Indigenous and colonial heritage, and retains a strong link to its pastoral beginnings, with strong timber, cattle and natural gas industries.</p> <p>The community value the quiet, rural feel of this area, which has a focus on the family and a strong sense of community. The area has retained its individual character and its residents are dedicated to maintaining the natural environment and are passionate about the range of sporting and recreational facilities available.</p>

Source: Maranoa Regional Council, 2011

Table 5-1 shows the rate charges for towns across the GFD Project development area for 2011/12 and 2012/13, indicating a significant rise in the three MRC towns.

Table 5-1 Local government rate charges

Council name	Financial year	Largest (population) major urban centres	Average residential valuation - \$	Total average rates and charges per annum - \$	Average discount per annum - \$	Net average rates and charges per annum - \$	% increase, 2011/12-2012/13
BSC	2012_13	Taroom	45,124	2,249	225	2,024	17%
	2011_12		48,246	1,930	193	1,737	
CHRC	2012_13	Springsure/Rolleston	94,037	3,278	400	2,878	14%
	2011_12		61,000	2,519		2,519	
WDRC	2012_13	Miles	95,470	1,910	191	1,719	26%
	2011_12		69,640	1,511	151	1,360	
MRC	2012_13	Roma	129,291	2,445	113	2,332	20%
	2011_12		105,100	2,057	110	1,947	
MRC	2012_13	Injune	53,011	1,873	56	1,818	12%
	2011_12		43,100	1,695	70	1,625	

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Council name	Financial year	Largest (population) major urban centres	Average residential valuation - \$	Total average rates and charges per annum - \$	Average discount per annum - \$	Net average rates and charges per annum - \$	% increase, 2011/12-2012/13
MRC	2012_13	Wallumbilla, Yuleba	25,685	1,797	48	1,749	32%
	2011_12		16,600	1,367	46	1,321	

Source: Department of Local Government, Community Recovery and Resilience, 2013

Note: CHRC: Central Highlands Regional Council

5.2 Law and order

Table 5-2 shows the most recent statistics available for selected crimes within the towns that are either within or adjacent to the gas field locality. Caution in interpreting the data is required as:

- The occurrence per 100,000 people does not include NRW or other non-residents (i.e. tourists), which may make it appear that there is a higher level of offences
- The resident populations of the towns considered are small, which results in dramatic increases and decreases in the calculated number of offences per 100,000 people
- The data below represents reported crime only, and the reporting rate for different offences can differ dramatically: "For example, approximately 95% of all motor vehicle theft is reported to police whilst only 33% of sexual offences are reported." (QPS, 2012).

Taken at face value, the statistics in Table 5-2 demonstrate a general increase in reported crimes in the five years across each police district within the GFL. The overall rate of offences has remained relatively stable in Wallumbilla over the reported period (1.4%), decreased in Injune (-6.4%), while increasing in Roma (11.3%). Drug offences have increased notably in Roma, particularly during 2011/2012, alongside traffic offences in Wallumbilla and Injune. This aligns well with opinions expressed during consultation, where local police stated that traffic offences are the primary issue for police across Roma and Fairview GFLs as a result of increases in traffic associated with construction activity. Law and order and drug concerns were also noted in Roma.

Table 5-2 Offences per 100,000 people, 2006 to 2012

Roma	06/07	07/08	08/09	09/10	10/11	11/12	Growth between 2006/07 and 2011/12
Assault	667	826	843	962	912	988	6.8%
Sexual offences	131	59	211	464	369	161	3.5%
Drug offences	1,358	1,936	1,498	1,681	1,558	4,377	21.5%
Good order offences	1,811	2,703	2,844	2,643	3,220	4,205	15.1%
Traffic offences	1,740	1,169	1,604	2,156	1,373	2,057	2.8%
Other	10,510	16,147	12,794	13,701	13,814	19,118	10.5%
Total	16,218	22,840	19,794	21,607	21,246	30,905	11.3%
Wallumbilla	06/07	07/08	08/09	09/10	10/11	11/12	Growth between 2006/07 and 2011/12
Assault	146	444	-	-	144	423	19.5%
Sexual offences	-	-	-	147	576	-	NA
Drug offences	291	-	-	-	576	141	-11.4%

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Roma	06/07	07/08	08/09	09/10	10/11	11/12	Growth between 2006/07 and 2011/12
Good order offences	146	-	295	147	288	423	19.5%
Traffic offences	291	296	442	293	1,583	705	15.9%
Other	2,766	1,923	2,507	1,466	4,317	2,257	-3.3%
Total	3,639	2,663	3,245	2,053	7,482	3,949	1.4%
Injune	06/07	07/08	08/09	09/10	10/11	11/12	Growth between 2006/07 and 11/12
Assault	327	319	205	199	97	-	NA
Sexual offences	654	106	102	-	-	-	NA
Drug offences	436	745	205	-	777	855	11.9%
Good order offences	1,091	319	102	100	292	95	-33.4%
Traffic offences	981	319	512	299	292	760	-4.2%
Other Offences	3,708	2,982	2,869	1,892	3,013	3,134	-2.8%
Total	7,197	4,792	3,996	2,490	4,470	4,843	-6.4%

Source: QPS, 2013

5.3 Attitudes to resource development

The communities in the Roma and Injune areas (Roma, Surat, Wallumbilla, Yuleba and Injune) have generally exhibited a positive attitude to hosting resource development projects, with the area hosting oil and gas exploration and development activity for a substantial period of time. Production of gas in the Roma area ramped up in the mid-1960s, and gas production in the Injune area commenced in the mid-1990s. Roma has hosted substantial support bases for this development, and also acted as a residential base for oil and gas industry employees who were and are working in other areas such as Papua New Guinea.

Consultation undertaken for the Project in the Roma area indicated a general view that the community and the Council were now better prepared for the next phase of well-field expansion which they expect to proceed without major issues. This can partly be attributed to positive engagement with industry workers (reinforced through volunteer contributions to the clean-up effort following flooding episodes early in the GLNG Project construction phase); proactive management and industry contribution to the management of impacts on housing costs; and industry support for local employment and training as well as contributions to the upgrade of public infrastructure such as local roads and health facilities. Positive landowner support is evident, though contingent on the on-going effective management of environmental impact, particularly to underground water supplies.

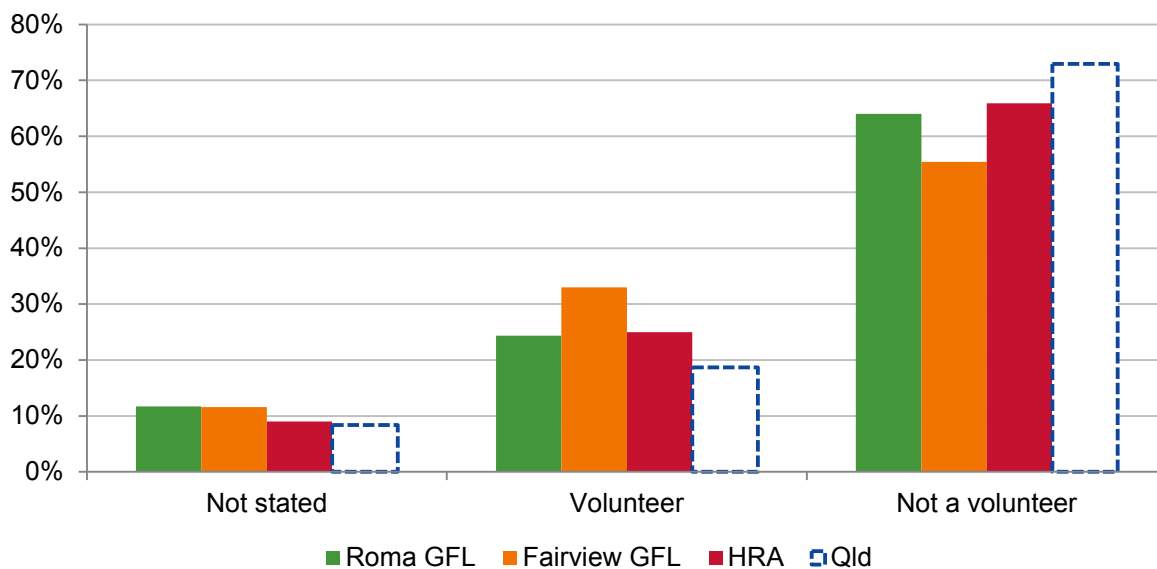
5.4 Social fabric

Assessing the social fabric of a community is not a precise science as it often relies on the interpretation of subjective and disparate indicators. For this SIA, the focus has been placed on those indicators that relate to the community's ability to act collaboratively, such as volunteering rates, length of residence in the community, home ownership and a qualitative assessment of the strength of a sense of place and distinct identity.

5 Community values

As can be seen in Figure 5-1, each study area has a higher level of volunteering than the State, with residents in the Fairview GFL having the highest level at approximately 33%. Regardless of the motivations or causes for increased volunteering rates (such as low governmental provision of services), it remains clear that this higher rate is likely to increase the ties and relationships between community members and presumably increase the social fabric of communities. However, although both the Roma and Fairview GFLs and the HRA are above the State average, the level of volunteering in the Roma GFL is not as high as one would expect in a rural community with lower levels of population mobility (for example, Longreach, where around 33% of the community stated they were volunteers during the 2011 Census (ABS, 2012)).

Figure 5-1 Volunteering rates, 2011



Source: ABS, 2013.

Similarly, home ownership is also strongly correlated with greater levels of community involvement and community longevity through reduced mobility (Putnam, 2000; Winkler, 2010). As discussed in Section 4 Housing, home ownership, either outright or by mortgage is slightly below that of the State in the Roma and Fairview GFLs, with 57% in the Roma GFL, 56% in the Fairview GFL and compared to 61% in Queensland.

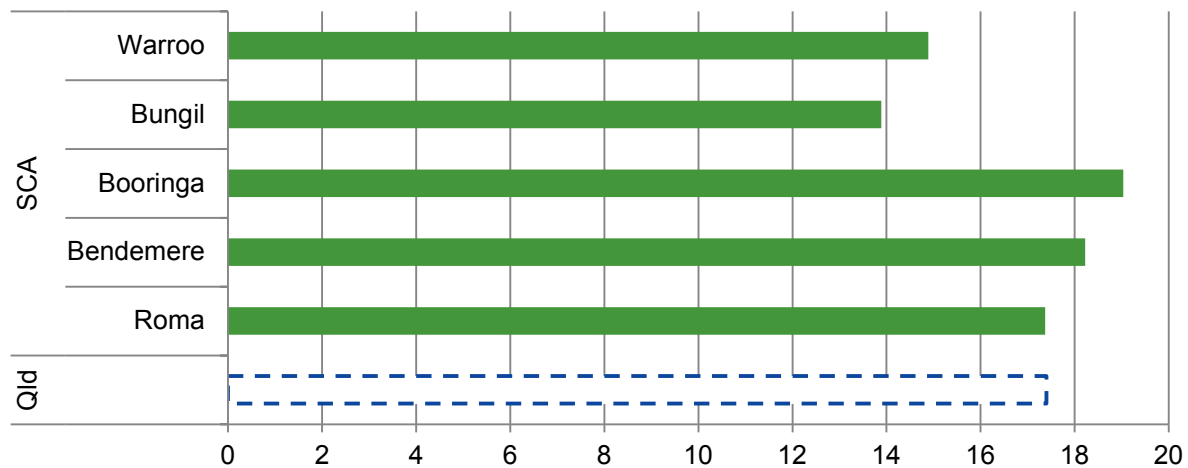
5.5 Wellbeing (physical and mental health)

The Public Health Information Development Unit (PHIDU) aggregates and publishes data on a range of health, wellbeing and socio-economic indicators annually. Data is presented either at the levels of statistical local area or at the expansive Medicare Local area, which is recognised to differ considerably from the gas field's SCA and HRA. As a result, data at the lower statistical local area, which were aligned with the SA2 areas using the ABS' standard correspondences, has been assessed (ABS, 2012b).

Figure 5-2 indicates that self-assessed health across the SCA varies; with a greater number of people per 100 stating that they have fair/poor health in Bendemere and Bungil than the State, Roma on par with State levels and the remainder of the SCA at lower levels.

5 Community values

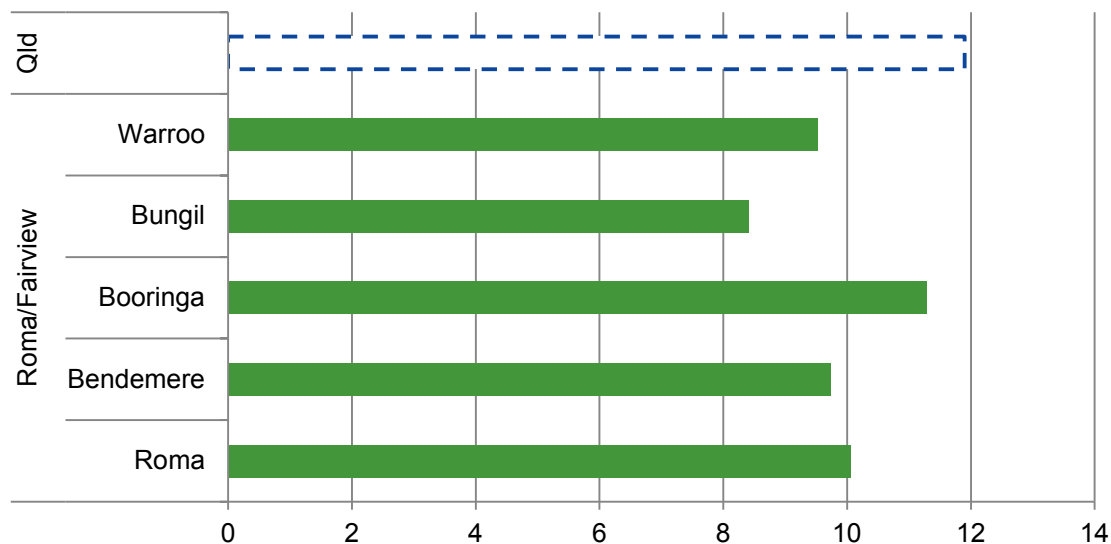
Figure 5-2 Self-assessed health status of fair/poor (modelled), per 100 people, 2011



Source: PHIDU, 2013

Figure 5-3 displays the reported level of psychological distress within the SCA during 2007/2008. As shown, the SLAs within the SCA have lower levels of distress than that of the State as a whole.

Figure 5-3 High or very high level of psychological distress (modelled), per 100 people, 2007-2008



Source: PHIDU, 2013

Table 5-3 shows the proportion of the population that stated they needed assistance with self-care, mobility or communication due to a long-term health condition or old age during the 2011 Census. The gas field localities have lower levels of need for assistance than the surrounding region and Queensland; the HRA generally aligns with the State level, despite its older age profile. The low presentation of people who need assistance in the Roma and Fairview GFLs may be based on:

- Out-migration of families and individuals who require assistance to be closer to services

5 Community values

- Self-selection in in-migrants (i.e. families and individuals who require assistance may not in-migrate due to the lack of services).

Table 5-3 Need for assistance (disability), 2011

	Roma GFL	Fairview GFL	HRA	Queensland
Need for assistance	3.9	2.8	4.4	4.4
No need for assistance	86.1	87.7	88.2	89.6
Not stated	10.0	9.4	7.4	6.0

Source: ABS, 2013.

The Australian Early Development Index (AEDI) is a measure of how young children are developing in different communities. It involves teachers collecting information during the first year of formal full-time school to help create a snapshot of early childhood development in communities across Australia. It is a proxy that gives some insight into the wellbeing of children, often regarded as the most valuable resource of a community, and potentially the most vulnerable. The AEDI results allow communities to see how local children are doing relative to, or compared with other children in their state or territory and across Australia. In 2012 the AEDI was completed nationwide for the second time. Table 5-4 presents the results for the Bungil community (which includes Roma and Injune). Areas of potential concern, based on changes between the 2009 and 2012 surveys, include language and communication skills.

5 Community values

Table 5-4 AEDI community results - Bungil community 2012

Community	No of children surveyed	Proportion of children developmentally vulnerable %							
		Physical health and wellbeing	Social Competence	Emotional security	Language and cognitive skills (school-based)	Communication skills and general knowledge	Vulnerable on one or more domains of the AEDI	Vulnerable on two or more domains of the AEDI	
Australia	289,973	9.3	9.3	7.6	6.8	9.0	22.0	10.8	
Queensland	61,593	11.6	11.5	9.3	9.1	10.7	26.2	13.8	
Bungil Community 2012	154	154	154	154	154	154	154	154	
Bungil Community 2009	143	143	143	143	143	143	143	143	
Community difference 2009-2012		11.4	3.6	-2.2	-12.4	-4.8	3.9	-0.6	
Critical Difference* (+/-)		4.9	3.3	3.8	3.6	4.3	5.7	4.1	
Change in children's development		↓	↓	↑	↑	↑	↓	↑	
Significant decrease in vulnerability	↑	Significant increase in vulnerability	↓	Decrease in vulnerability but not significant	↑	Increase in vulnerability but not significant	↓	No change in vulnerability	↔

Source: Murdoch Childrens Research Institute and Royal Children's Hospital Melbourne, 2013

* One method of assessing whether change in a community is significant is to see whether it is greater than a 'critical difference'. The critical difference is the minimum level of change required between the 2009 and 2012 AEDI for the results to be significant. This score is designed to provide communities with some guidance about interpreting whether the observed change is significant, but it should not be thought of as a hard and fast rule.

Social infrastructure

6.1 Educational facilities

6.1.1 Primary and secondary schools

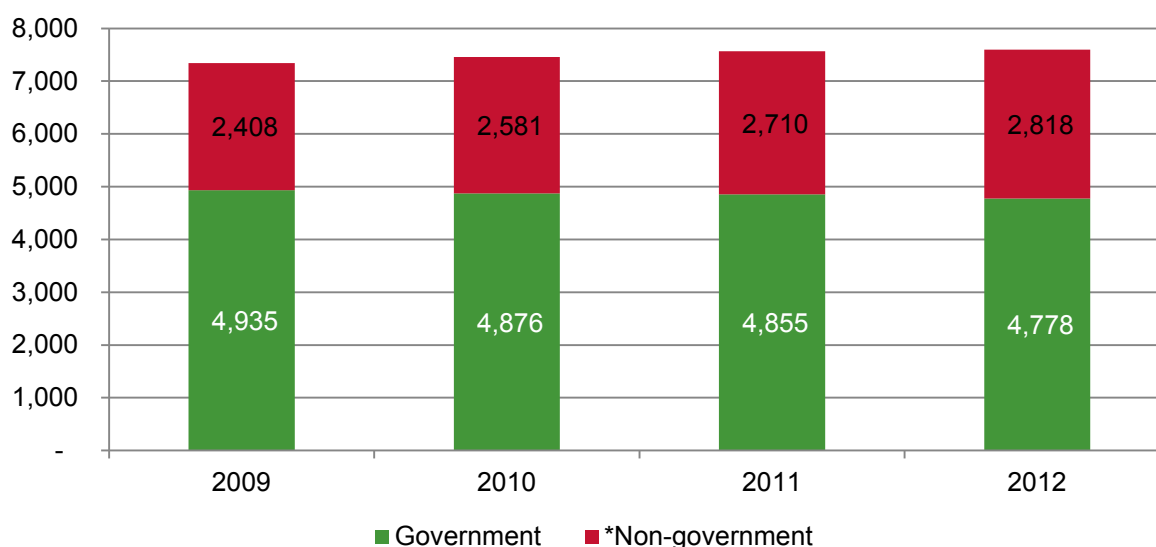
There are six schools located within the GFL, with Injune State School providing primary to year 10 education, and Roma State College and St John's College, both located in Roma, providing P-12 education. Five schools are administered by Education Queensland, while St John's is administered by the Catholic Diocese of Toowoomba.

Table 6-1 P-12 education – Roma SCA

Location	School	Level	Non-government
Roma	Roma State College	P-12	
	St John's School	P-12	✓
Wallumbilla	Wallumbilla State School	Primary	
Surat	Surat State School	Primary	
Injune	Injune State School	P-10	
Bymount	Bymount East State School	Primary	

Figure 6-1 shows that school enrolment across the Roma and Fairview GFLs between 2009 and 2012 has remained relatively stable, with a slight increase over the period. However, public schools have experienced a slight decline over the period, while private schools have experienced a small amount of growth. This trend has is reflected across all gas fields considered for this EIS, and indicates a regional trend towards private education, which may be related to the in-migration of families with high incomes. However, there are stakeholder concerns in the region that the loss of students from public or government schools is a reflection of families with lower means being forced to leave the area because of housing affordability issues.

Figure 6-1 School enrolment - GFLs



Source: Department of Education and Training, 2013

6 Social infrastructure

6.1.2 Tertiary and vocational education

There are no tertiary educational facilities located within either the Roma and Fairview GFLs or SCA. The closest university is the University of Southern Queensland in Toowoomba. The distance of tertiary educational facilities from the Roma and Fairview GFLs and SCA possibly contributes to the outmigration of youth discussed in Section 2.

However, the SCA has a number of vocational educational facilities, including the Learning Network Queensland and the Open Learning Centre. The Roma State College is a combined educational facility that features primary, secondary and vocational education.

6.2 Childcare facilities

Table 6-2 and Table 6-3 show the type, location and rate of provision of childcare facilities across the SCA and HRA. The rate of provision of facilities per 100 children aged 0 to 4 years is substantially lower than the level of provision in the State, with many of the facilities being located in Roma. Hence, it is likely that child care has limited accessibility for many within the Maranoa area. This is an issue often raised in community consultation.

Table 6-2 Childcare facilities across the SCA

Area	Family day care	Kinder-garten	Long day care	School aged care	Limited hours care	Child care & family support	Total
Roma (SA2)	1	1	3	0	0	0	5
Roma Region (SA2)	0	1	0	0	1	1	3
SCA	1	2	3	0	1	1	8
HRA	1	5	6	1	3	0	16

Source: OESR, 2013.

Table 6-3 Ratio of child care facilities per 100 children aged 0-4 years

Roma gas field	Fairview gas field	SCA	Southern HRA	Qld
0.75	0.75	0.75	1.13	0.90

Source: OESR, 2013.

6.3 Health and community support

The Roma and Fairview GFLs are serviced by an integrated network of hospitals, out-patient clinics and outreach service delivery. The Roma Hospital acts as the primary referral hospital for the entire SCA, while the other hospitals and clinics listed in Table 6-4 act as local service providers for the Roma and Fairview GFLs and their immediate surrounds. All hospitals listed are mainly primary care facilities, with major surgeries and other medical emergencies being transferred to Toowoomba or Brisbane.

Table 6-5 shows the annual admissions data for all hospitals across the Roma and Fairview GFLs between 2008-09 and 2010-11. The most notable change in admissions throughout the area is the dramatic increase seen at the Surat Hospital, followed by a smaller increase at the Injune Hospital. Health care stakeholders have stated that the increase in admissions at the Injune Hospital, which are

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attributed to resource workforces, have in conjunction with other factors placed considerable stress on local health services.

Table 6-4 Hospitals and health services

Hospital/health service	Services
Roma Hospital	Accident and emergency, admissions, obstetrics, outpatient services, paediatrics, self-service dialysis.
Injune Hospital	Accident and emergency, admissions, cancer treatment services, outpatient services.
Surat Hospital	Accident and emergency, admissions, outpatient services, self-service dialysis.
Wallumbilla Outpatients Clinic	Accident and emergency, outpatient services.

Source: Queensland Health, 2013

Table 6-5 Hospital admissions, 2008/08 to 2010/11

Roma	2008-9	2009-10	2010-11	08/09-10/11 % change
Roma				
Emergency	1296	1247	1317	0.8%
Other	547	476	502	-4.2%
Injune				
Emergency	132	157	171	13.8%
Other	10	10	0	NA
Surat				
Emergency	104	151	153	21.3%
Other	16	17	128	182.8%
Wallumbilla				
Emergency	290	281	228	-11.3%
Other	51	41	37	-14.8%

Source: National Health Performance Agency, 2013

6.4 Emergency services

Table 6-6 shows the number of police stations, ambulance stations and fire stations across the SCA. Aside from these public services, the SCA is also serviced by a number of voluntary and non-governmental organisations (NGO) that provide emergency services, as listed in Table 6-7.

Table 6-6 Emergency services

Police stations (a)	Ambulance stations	Fire stations (b)
7	4	5

(a) Does not include Police Beats. (b) Does not include Rural Fire Brigade.

Source: OESR, 2013.

Table 6-7 Volunteer and NGO emergency services

Emergency air services	State emergency service (SES)	Rural fire brigade
------------------------	-------------------------------	--------------------

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Emergency air services	State emergency service (SES)	Rural fire brigade
Two emergency air services operate in the SCA: the Royal Flying Doctor Service and Queensland CareFlight Group. The CareFlight Group has been contracted to provide a dedicated response for LNG industry incidents through a joint commitment by Arrow Energy, APLNG QGC and Santos GLNG.	The SES is a volunteer based organisation that encourages and trains community members to assist themselves and others in times of need, particularly search, rescue and emergency preparation, response and recovery operations. There are SES branches throughout the GFL and SCA, including Roma, Injune, Wallumbilla, and Surat.	Rural fire brigades support the Rural Fire Service Queensland in fire fighting and the planning and community education associated with rural fire management. The GFL and SCA are covered by the Queensland Fire and Rescue Services South Western Region's Area 5 (Roma).

6.5 Aged care

Aged care services provide a range of assistance and support services for the elderly population (65 years and above) depending on their needs. There are 13 facilities located throughout the SCA, providing 240 places, as shown within Table 6-8. Looking further afield to the HRA, there are 33 facilities providing a total of 598 places.

As can be seen in Table 6-8 the SCA and HRA have fewer beds per persons 65+ than the State as a whole. The shortage of aged care places was often expressed as an issue during consultation by service providers and other stakeholders across the region. During 2010, MRC commissioned a review of aged care in the area (Janetzki, 2010). Following the recommendations of this review, the Maranoa Regional Council then transferred licences from the Maranoa Retirement Village to Pinaroo Inc, which will expand the facility from 50 to 70 beds (Maranoa Regional Council, 2012).

Table 6-8 Aged care services, 2011

Aged care service providers		Number of places by care type				Population 65+	Beds per persons 65+
		Community care	Residential care	Transition care	Total places		
SCA	13	111	129	0	240	1,625	0.15
HRA	33	198	391	0	598	5969	0.10
Queensland	1,048	10,906	33,362	588	44,856	577,785	0.78

Source: OESR, 2013. Data available at the SA2 level only.

6.6 Community services

A number of community support services operate throughout the SCA. These services are often concentrated in larger service centres (e.g. Roma) and delivered to smaller towns, such as those within the GFL via outreach services. The Roma Neighbourhood Centre is the primary service provider for the Maranoa Regional Council, and provides a range of direct services or acts in coordinating access for the following support areas:

- Emergency relief including liaison with Centrelink
- Employment assistance
- Family support
- Home and community care
- Housing support
- Tenancy advice and advocacy services

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- Working against abuse services
- Mauma-li Mari outreach service (Indigenous family violence assistance).

As Roma acts as the primary service centre for the LGA, there is a standard range of community support services located there, including by providers such as:

- Lifeline
- Carer's Queensland Inc
- Salvation Army
- Anglicare
- Meals on Wheels (Roma and Injune)
- Blue Care (Roma and Injune)
- Spiritus Social Services Roma
- St Vincent de Paul
- Lions Club
- Australian Red Cross.

6.7 Cultural and recreational facilities

Cultural and recreation facilities and activities are an often overlooked but integral part of communities. These facilities and the organised groups that use them are an important facilitator of social capital or community cohesion and can act to make a community liveable.

6.7.1 Cultural and arts facilities and groups

Table 6-9 shows the community and arts facilities within the GFL. These facilities are supported by a base of local arts and community groups, including:

- Roma Show Society
- Roma and District Family History Society
- Advance Injune
- Roma Photography
- Injune Public Space Art Group
- Roma Bush Gardens Association
- Roma District Arts Council
- Roma Historical Motor Club
- Roma Patchwork and Quilters
- Roma Social Dance Club
- Injune Community Development Association
- Injune Cutting Cub
- Wallumbilla Show Society.

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Table 6-9 Cultural and arts facilities

Facility type	GFLs
Library	4
Youth Centre	1
Community Centre	2
Art centre	3
Museum	1

There are also a number of events and festivals that occur within the GFL, including:

Roma	Injune
<ul style="list-style-type: none"> • Oz Day Bash at the Bungil • Trap Nationals (Gun Club) • Easter in the Country • Roma and District Show • Santos Food and Fire Fest • Something out of the Box • Stock up for Hope Dinner • Roma Cup • Christmas Street Party. 	<ul style="list-style-type: none"> • Injune Art Exhibition • Injune Golden Bit Campdraft • Injune in June • Eumamurrin Campdraft • Injune Hospital Auxiliary Garden Competition and Fete • Ding Dong Dell's Team Relay for Life – fundraising for cancer • Resourceful women – naturally • Agforce Queensland Meeting • Santos Injune Cup Races • Injune Ballet Group Concert.

Source: URS, 2009

6.7.2 Sports and recreational facilities and groups

Sporting infrastructure across the SCA was generally regarded as sufficient to meet the needs of the population in 2009. However, many facilities across the area are reaching a stage where they are in need of considerable maintenance (Ross Planning, 2009).

During the 2009 survey by Ross Planning, a number of sporting clubs reported declining memberships in recent years. Some of the community issues raised are listed in Table 6-10.

Table 6-10 Results of community consultation – sports and recreation planning

Roma	Injune
<ul style="list-style-type: none"> • Difficulty in raising required funds and need financial assistance • Possibility of club amalgamations • The need for a heated pool • The popularity of open-space areas and pathways/bikeways. 	<ul style="list-style-type: none"> • Clubs recognised as community assets • Difficulties associated with increased red-tape • Difficulty in attracting members largely associated with shift-work.

Source: Ross Planning, 2009

The district has a wide number of sports and recreational clubs; which despite some obvious declines in membership, appear to be remaining active demonstrating a commitment to community considering the small populations.

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- Injune Bowling Club
- Injune Campdrafting Association
- Injune Community Development Injune Cricket
- Injune Cutting
- Injune Golf Injune Pony
- Injune Pro Rodeo Association
- Injune Race Club
- Injune Swimming Club
- Injune Tennis Club
- Maranoa Archers Association Inc
- Maranoa Diggers Race Club
- Maranoa Equestrian Club
- Maranoa Netball Association
- Maranoa Pony Club
- Maranoa Renbukan Karate Association Inc
- Roma & District Aeromodelling Club
- Roma & District Cricket Assn
- Roma & District Family Historical Society Inc
- Roma & District Junior Soccer Assn Inc
- Roma & District Little Athletics Assn
- Roma & District Motorcycle Club
- Roma & District Rugby League
- Roma & District School Boys Rugby League Assn
- Roma & District Tennis Club Inc
- Roma Aero Club
- Roma Amateur Basketball Club
- Roma Badminton Club
- Roma Bowls Club Inc
- Roma Boxing
- Roma Clay Target Club Inc
- Roma Darts Association Inc
- Roma Golf Club Inc
- Roma Health and Fitness
- Roma Highland Dancers
- Roma Ladies Bowling Club Inc
- Roma Motorcross
- Roma Netball Association
- Roma Picnic Race Club
- Roma Polocrosse Club Assn Inc
- Roma Pony Club Inc
- Roma Quarter Horse & Western Performance Club Inc
- Roma Rugby Union Club
- Roma Social Dance Group
- Roma Squash Club Inc
- Roma Swimming Club Inc
- Roma Touch Football Inc
- Roma Trail Riders
- Roma Triathlon Group
- Roma Turf Club
- Roma Volleyball Association

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Appendix D Scotia gas field social baseline



Report

Scotia Gas Field Social Baseline

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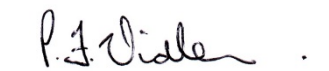
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Abbreviations

Abbreviation	Description
ABS	Australian Bureau of Statistics
AEDI	Australian Early Development Index
APLNG	Australia Pacific Liquefied Natural Gas
BSC	Banana Shire Council
ERP	Estimated resident population
GFL	Gas field locality
ha	Hectare
HACC	Home and Community Care
HRA	Host regional area
km ²	Square kilometres
LGA	Local government area
NGO	Non-government organisation
NRW	Non-residential workers
OESR	Office of Economics and Statistics (Qld)
PHDU	Public Health Information Development Unit
QCLNG	Queensland Curtis Liquefied Natural Gas
QPS	Queensland Police Service
SA1	Statistical area 1
SA2	Statistical area 2
SA3	Statistical area 3
SCA	Social catchment area
SEIDA	Socio-economic Indexes for Disadvantage
SES	State emergency service
SIA	Social impact assessment
TAFE	Technical and Further Education
UCL	Urban centre locality
WDRC	Western Downs Regional Council

Introduction

For the purpose of this social impact assessment, URS has established a baseline social profile on three nested geographies linked to the gas field tenure. These are:

- **Gas field locality (GFL)**, constructed by combining the smallest number of Census standard Statistical Area 1 (SA1) areas that cover each gas field. The GFL is the area that is most likely to be subject to direct impact by the GFD Project as these SA1 areas may be co-located with GFD Project tenure, incorporate key transport links to and between tenure and contain key population centres that have the potential to support GFD Project activities.
- **Social catchment area (SCA)**, constructed by combining Statistical Area 2 (SA2) and local government areas. This geography provides an optimal area to illustrate and compare key variances between the GFL and the wider supporting geography, without the inclusion of much larger regional centres, which may distort comparisons due to their different social and economic functions. SCAs were defined based on a qualitative consideration of local government boundaries (capturing governance and associated funding responsibilities) and dominant transport, communication, commerce and social links.
- **Host regional area (HRA)**, is the Statistical Area 3 (SA3) area that the gas field is located within. These larger areas are used to illustrate the demographic profile surrounding the gas fields and their SCAs, allowing for a greater depth of comparison and analysis.

The statistical areas used to construct the geographies for the Scotia gas field are shown in Table 1-1.

Table 1-1 Scotia gas field geographic framework

GFL	SCA	HRA
SA1 Codes	Miles-Wandoan SA2 Code	Darling Downs (West)-Maranoa
3119409 (Northwest of Taroom)	307011175	Statistical area 3 (SA3) Code 30701
3119410 (East of Taroom)	Banana SA2 Code 308021194	
3119408 (Taroom Town North)	Biloela SA2 Code 308021195	
3119407 (Taroom Town South)		
3117509 (Southwest of Taroom)		
3117510 (Southeast of Taroom)		
3117508 (Wandoan)		
3117501 (Wandoan surrounds)		

These areas and the tenure that comprise the Scotia gas field and the surrounding area are shown in Figure 1-1.

The Scotia GFL incorporates the towns of Taroom and Wandoan, and is defined in geographical terms by the smallest number of SA1 areas covering the gas field tenure. It is the area most likely to be subject to direct impact from development of the gas field. As shown in Figure 1-1, the southern portion of the Scotia GFL is part of the Western Downs Regional Council (WDRC), while the northern portion belongs to the Banana Shire Council (BSC). Prior to the local government council amalgamations in 2008, the Scotia GFL comprised a substantial portion of Taroom Shire Council.

The dominant transport corridor in the Scotia GFL is the Leichardt Highway, linking the Scotia GFL to Miles in the South and Biloela in the north. Miles, the former administrative centre for the Murilla Shire, has been subject to significant development through the Australia Pacific Liquefied Natural Gas (APLNG) and Queensland Curtis Liquefied Natural Gas (QCLNG) projects, and now acts as a commercial focal area for the WDRC, including Wandoan.

1 Introduction

The administrative focus for the Taroom area is to the north in Biloela. The Taroom area, being located on the Dawson River, has also traditionally had a northern focus on the Dawson River Valley, reinforced by the potential for development in that area based on the possible development of the Nathan Dam on the Dawson River, east of Taroom.

The Leichardt Highway is a significant inland transport route between Melbourne and Rockhampton; carrying large amounts of commercial traffic. These factors have influenced the definition of the SCA as shown in Figure 1-1, which is comprised of the BSC and the western portion of the WDRC, centred on Miles. Comparison of the social profile of the Scotia GFL to this area will enable significant local variations in social conditions, generally of concern to local governments, to be identified.

The Scotia GFL also sits within two defined regional areas: the northern portion within the Central Highlands Region; and the southern portion within the Darling Downs (West) – Maranoa SA3 region. As the Scotia GFL has transport links to the Maranoa area that are developing in importance (the Roma-Taroom road and the Jackson-Wandoan road), the Darling Darlings (West) Maranoa SA3 region has been used for the purposes of this social impact assessment (SIA) as the HRA.

GFL overview

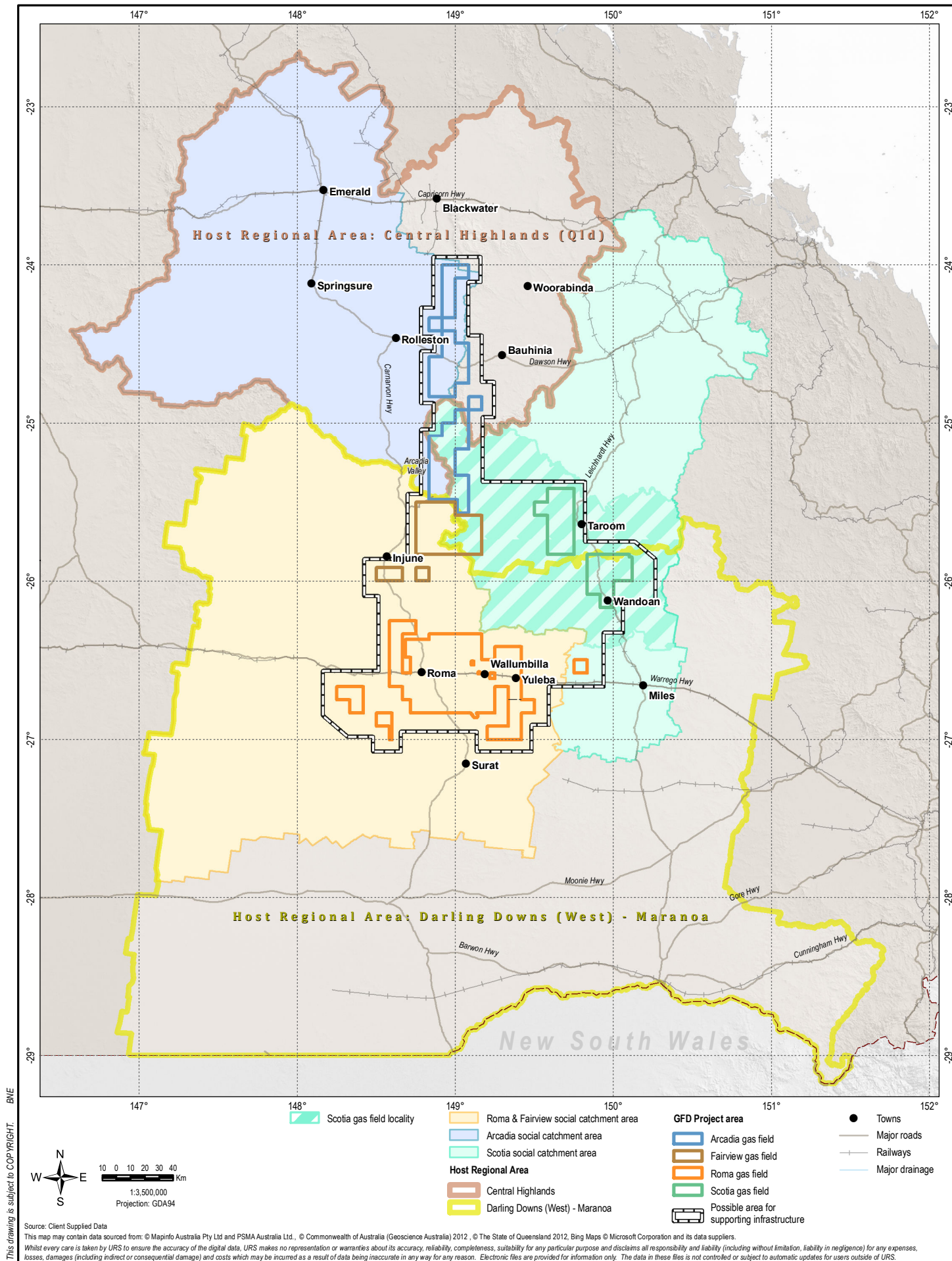
The Taroom-Wandoan area has traditionally had a strong agricultural economy, based on beef and grain production, the latter of which is more prominent in the southern area. While both of these activities remain important, the agricultural industry was adversely affected by prolonged drought conditions during the last decade. A significant feature of the area has been the potential for development, based on the proposed Nathan Dam, the Wandoan Coal Mine and the Surat Basin Rail, which would link Wandoan to Moura and Gladstone¹. While these projects remain a possibility, they have often served to create an atmosphere of uncertainty with respect to future development, which can have negative community effects. This is particularly evident in the case of Wandoan.

Natural gas extracted from coal seams has been a low-key feature of the Scotia GFL for the past decade, but has developed rapidly and significantly since 2010. Santos Ltd drilled its first exploration well in the Scotia gas field (PL 1756) in 1996 and has been producing gas since 2002, with the field comprising 25 wells connected to a central processing facility. The adjacent Peat Gas Field (operated by Origin Energy Pty Ltd) commenced delivery of natural gas to market in 2001.

The southern portion of the Scotia GFL is already subject to construction activity associated with the development of QCLNG and APLNG project tenuer to the south and southwest of Wandoan.

While the construction of major facilities for these projects is expected to be completed by 2016-17, there will be ongoing drilling in the vicinity of Wandoan, though estimating the workforce required is difficult because of the limited information available on the phasing of gas field development.

¹ Serving both the development of resources in the Surat Basin as well as the proposed inland rail linking Melbourne to Gladstone.



Population

Population and demographic indicators sourced from the ABS Census 2011 are available for the Scotia GFL, and these are generally used throughout this section. Age and sex profile indicators are shown at the SCA level due to the unreliability of small area data.

2.1 Historical trends and projections

The SCA has shown general population decline (-0.6%) over the past decade. However, this decline is uneven across the SCA, with negative growth in the Banana SA2 (-1.3%), Taroom Urban Centre Locality (UCL) (-1.5%), Miles-Wandoan SA2 (-0.3%) and Wandoan UCL (-3.1%). The important feature is the significant loss of population in Wandoan (twice the rate of Taroom) during a period when optimistic forecasts of future development in the area were being made.

This loss of population in the SCA contrasts with small positive population growth in Miles (0.2%), Biloela (0.5%), and the HRA (0.5%). Despite this, the regional growth presented within Table 2-1 is approximately one quarter of the State population growth over the same period.

Table 2-1 Historical population trends, 2001 to 2011

Area	2001	2011*	% growth
Banana (SA2)	10,059	8,794	-1.3
Biloela (SA2)	5,779	6,067	0.5
Miles (UCL)	1,174	1,194	0.2
Miles/Wandoan (SA2)	3,994	3,890	-0.3
Taroom (UCL)	694	599	-1.5
Wandoan (UCL)	465	338	-3.1
Scotia gas field SCA	19,832	18,751	-0.6
Regional host area	42,514	44,530	0.5
Queensland	3,628,946	4,474,098	2.1

* Preliminary estimate. Source: OESR, 2013, 2012a. UCL: Urban centre locality

Table 2-2 shows that the population growth estimates for the SCA are positive. The population of the SA2 regions within the SCA is estimated to grow by 0.9% (around half the rate of growth projected for the State, and slightly less than the HRA growth of 1.0%). The significant growth area is the Miles/Wandoan SA2, which is estimated to experience population growth of 1.5%, approaching the State growth estimate of 1.8%. This growth is expected to occur largely in the Miles area, and is a reflection of the proximal establishment of APLNG and QCLNG operations and supply bases. Actual growth may be less than estimated due to the renewed uncertainty surrounding the development of major coal deposits in the Wandoan area.

2 Population

Table 2-2 Estimated population projections

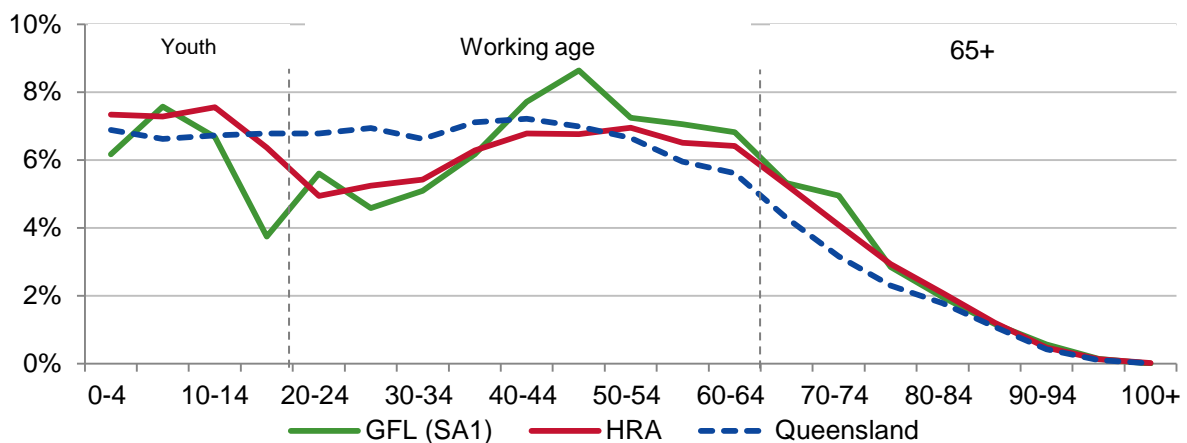
	2011	2016	2021	2026	2031	2011-2031 % growth
Banana (SA2)	9,748	10,351	10,532	10,756	11,015	0.6
Biloela (SA2)	5,995	6,598	6,779	7,004	7,263	1.0
Miles/Wandoan (SA2)	4,145	4,675	4,991	5,303	5,627	1.5
Scotia gas field SCA	19,888	21,624	22,302	23,063	23,905	0.9
Regional host area	44,561	47,178	50,010	52,405	54,803	1.0
Queensland	4,611,491	5,092,858	5,588,617	6,090,548	6,592,857	1.8

Source: OESR, 2012b

2.2 Age

As shown in Figure 2-1, the age profiles of both the Scotia GFL and the HRA show under-representation when compared to the State average within the 15 to 44 age cohorts, with corresponding over-representation of the 50+ cohort of the population. This is generally illustrative of both an aging population within regional Australia, and the outmigration of youth from regional areas, in search of both educational and employment opportunities. On the other hand, the higher representation of children in the 0 to 10 cohort in both the Scotia GFL and HRA is most likely representative of higher than average fertility rates, which is considered typical in regional Australia.

Figure 2-1 Age profile, 2011



Source: ABS, 2012

The population of the HRA, consistent with State and national trends, is projected to age over the next twenty years as a result of increased life expectancy and lower fertility rates, as shown in Figure 2-2. Despite the fact that this is a general trend across Australia, Table 2-3 shows that the HRA is likely to have a much higher proportion of aged dependents by 2031, with a dependency ratio of 87 compared to that of the State at 78. The dependency ratio indicates that the provision of aged care services is likely to be an issue of developing importance in the region, and the issue is often raised during community consultation.

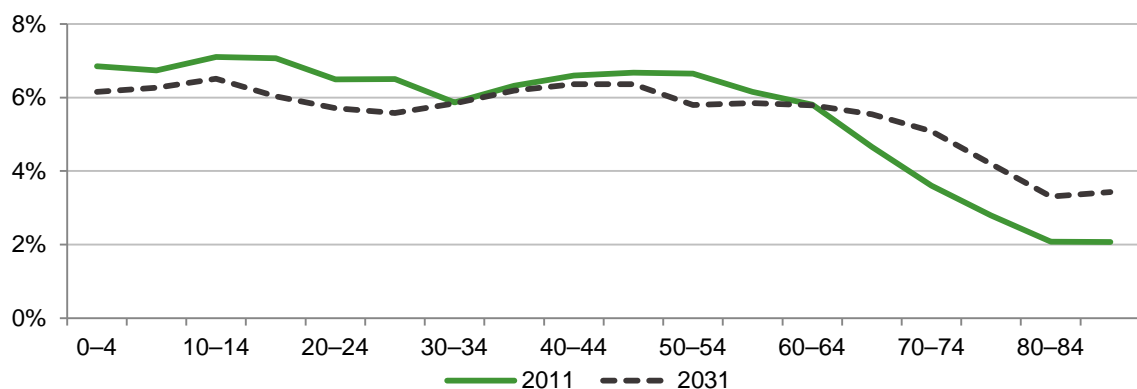
2 Population

Table 2-3 Aging populations – key data projected points

	Darling Downs		Change 2011-2031	Queensland		Change 2011-2031
	2011	2031	(%)	2011	2031	(%)
Dependency ratio*	75	87	12	66	78	12
% 0-19	27.7	25.0	-2.7	26.6	24.4	-2.2
% 65+	15.2	21.6	6.4	13.1	19.6	6.5
Median age	37.7	41.4	3.7	36.6	40.2	3.6

Source: OESR, 2013b. *Dependency ratio is the number of people aged 0–19 and 65+ per 100 people aged 20–64.

Figure 2-2 Current and projected age profile, 2011 and 2031 – HRA



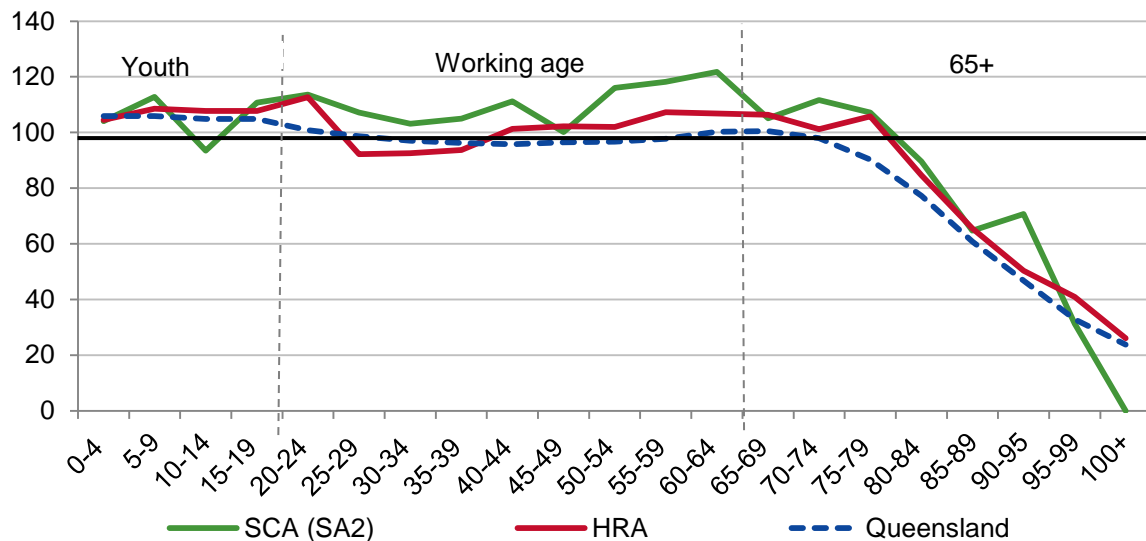
Source: OESR, 2013b. NB: Data only available for the Darling Downs statistical division.

2.3 Gender

Figure 2-3 shows the sex ratio by age cohort for the SCA and HRA as at the 2011 Census. The sex ratio relates to the number of males per 100 females in a population. In general, the sex ratio reduces markedly post age 65, due to the impact of higher male mortality on this population group. In regional areas, there is generally a sex ratio greater than 100, due to the presence of industries such as mining and agriculture, which are generally male dominated. Figure 2-3 indicates that within the SCA, there are more males than females, particularly in the working age group from 15 to 19 and 60 to 64. The SCA also has a higher sex ratio than the HRA up to about the 60 to 65 cohort. Beyond this age, the sex ratio for the SCA and HRA align more closely, and reduce markedly in line with the State's standard. One would expect from this that the Scotia GFL would have a higher number of lone male households.

2 Population

Figure 2-3 Sex ratio, 2011



Source: ABS, 2012

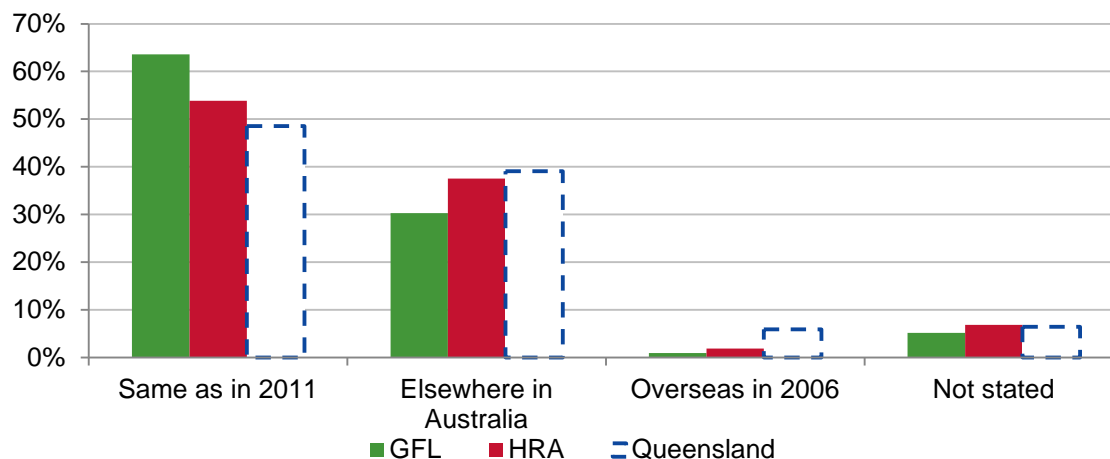
2.4 Population mobility

The mobility of a population can indicate a range of factors: areas with high reported levels of population mobility will often offer high employment and educational opportunities, given that mobility is largely a youth driven phenomena. On the other hand, population with low levels of mobility can indicate higher levels of social capital, meaning that people have established ties to the place and community where they live.

The Scotia GFL and the HRA have lower levels of population mobility than the Queensland average; the majority of census respondents answered that they lived in the same address in 2011 as five years ago. The very low levels of population mobility in the Scotia GFL is most likely reflective of the fact that the area covered is primarily rural agricultural land, resulting in minimal opportunities for youth migration into the area. Additionally, the low levels of population mobility, over-representation of older aged cohorts when compared to the State average and historical population decline as discussed in Section 2.1, likely indicate historical youth out-migration.

2 Population

Figure 2-4 Population mobility, 2011 – address five years ago

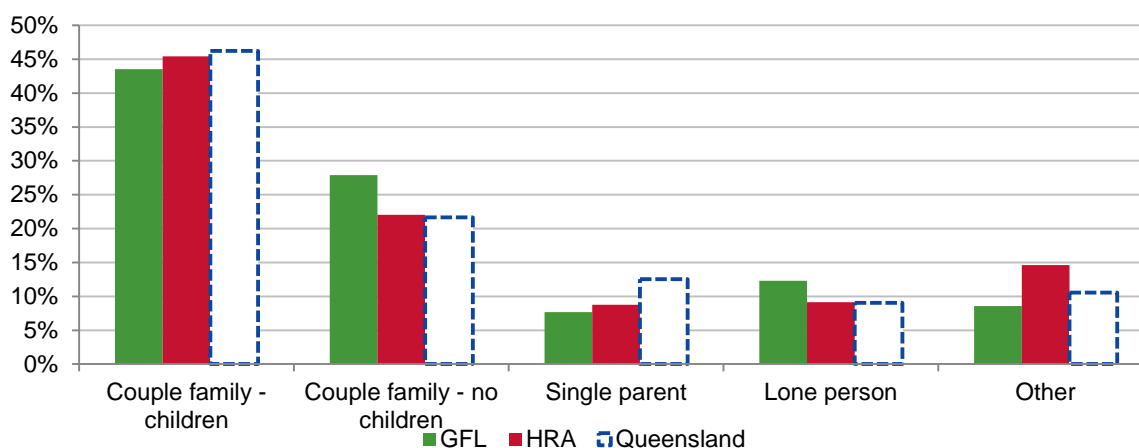


Source: ABS, 2012

2.5 Household composition

Household composition demonstrates the typical living arrangements within the study area. As shown within Figure 2-5, households within the HRA and the Scotia GFL generally follow demographic characteristics of Queensland with three exceptions. The first is that there is a slightly smaller portion of families with children, while having a larger portion of the population listed as families without children. This is likely a result of historical out-migration of youth. Secondly, both the Scotia GFL and the HRA have a lower portion of single parent households. This characteristic is considered to be typical of regional areas that do not contain regional centres, and is often a consequence of single parent out-migration to centres with greater access to support services (Birrell et al., 2002). Finally, the Scotia GFL has a higher proportion of lone households than the HRA and the State. As discussed in Section 2.4, it is likely that a significant proportion of the lone person households comprise men aged 50+, given that they outnumber women in these age cohorts.

Figure 2-5 Household composition, 2011



Source: ABS, 2012

2 Population

2.6 Non-residential workers and full-time equivalent population

Non-residential workers (NRW) on-shift, are workers who commute (either fly-in-fly-out/drive-in-drive-out/bus-in-bus-out) to an area where they reside in employer-constructed camps or commercial accommodation for a rostered period, before returning to their place of permanent residence. As NRW are not included in the annual ABS estimated resident population (ERP) figures for local government areas, local governments generally feel that they are not funded to provide certain services to NRW, and that the costs incurred to do this are an imposition on rate payers.

To better understand the scale of the issue, the Queensland OESR conducts a regular survey of accommodation providers in the Surat Basin, the most recent being June 2012. The survey records NRW on-shift, either living in towns or rural areas, the latter of which captures employer-constructed camps that are more than five kilometres from towns.

Table 2-4 shows the number of NRW in the towns closest to the Scotia GFL during the last week of June 2012. The figures show a significant growth in NRW in Miles and Wandoan between 2011 and 2012, which are likely to grow even further as the construction camps are completed for the QCLNG project in the Wolleebee Creek area, southwest of Wandoan.

While Taroom is not included in the OESR's Bowen Basin survey, it is likely that commercial accommodation in the towns (two hotel/motels) is also experiencing high levels of occupancy by resource sector workers.

Table 2-4 Full-time equivalent population – residential and non-residential populations

	2011				2012			
	ERP	NRW	% NRW	FTE	ERP	NRW	% NRW	FTE
Miles (UCL)	1,195	105	8.8	1,300	1,230	195	15.9	1,425
Wandoan (UCL)	340	75	22.1	415	350	170	48.6	520
Biloela (UCL)	5,985	250	4.2	6,235	6,065	360	5.9	6,425

Source: OESR, 2012c. ERP: Estimated resident population

2.7 Cultural and ethnic diversity

2.7.1 Country of birth and language spoken at home

Table 2-5 and Table 2-6 show the country of birth and language spoken at home within the Scotia GFL, HRA and Queensland. As shown in these tables, the Scotia GFL and HRA are generally ethnically and culturally uniform. The vast majority of the population during the 2011 Census were born in Australia, with a minority well below the State average who were born in northwestern Europe, followed by immigrants from south-east Asia. According to the 2011 Census, the majority of south-east Asian immigrants throughout the studied areas are Filipino (with around 60% being female).

The level of cultural homogeneity in the study area indicates that it has not been a significant destination for immigrants over the last twenty years of high immigration in Australia. While this homogeneity presents a shared cultural and ethnic background for the majority of the population, it may also mean that non-English speaking migrants to the area may experience some level of social isolation.

2 Population

Table 2-5 Country of birth, 2011 (%)

	GFL	HRA	Qld
Oceania	97.9	95.2	83.9
North-West Europe	1.4	2.0	6.9
South-East Asia	0.2	1.0	2.1
Americas	0.2	0.3	1.0
Sub-Saharan Africa	0.0	0.7	1.4
Other	0.1	0.8	4.7

Source: ABS, 2012

Table 2-6 Language spoken at home, 2011 (%)

Language	GFL	HRA	Qld
English	92.0	85.7	80.5
Other	4.2	8.3	14.4
Not stated	3.7	6.1	5.1

Source: ABS, 2012

2.7.2 Religion

The Scotia GFL and HRA were generally shown to be both more religious and less religiously diverse than the State as a whole, with a higher proportion of the population stating that they were religious (rather than answering 'no religion' than the State during the 2011 Census (Table 2-7).

Table 2-7 Religious affiliation, 2011 (%)

Religion	GFL	HRA	Qld
Christianity	83.7	73.3	64.8
Buddhism	0.1	0.3	1.5
Hinduism	0.0	0.2	0.7
No religion	9.7	13.6	22.2
Other religions	0.1	0.2	1.5
Not stated	6.3	12.4	9.2

Source: ABS, 2012

Employment, income, industry and occupation

The indicators discussed in this section relate to the economic characteristics of well-being of the Scotia GFL, its SCA and the HRA at large. They focus on individual's participation and ultimately social well-being.

3.1 Employment

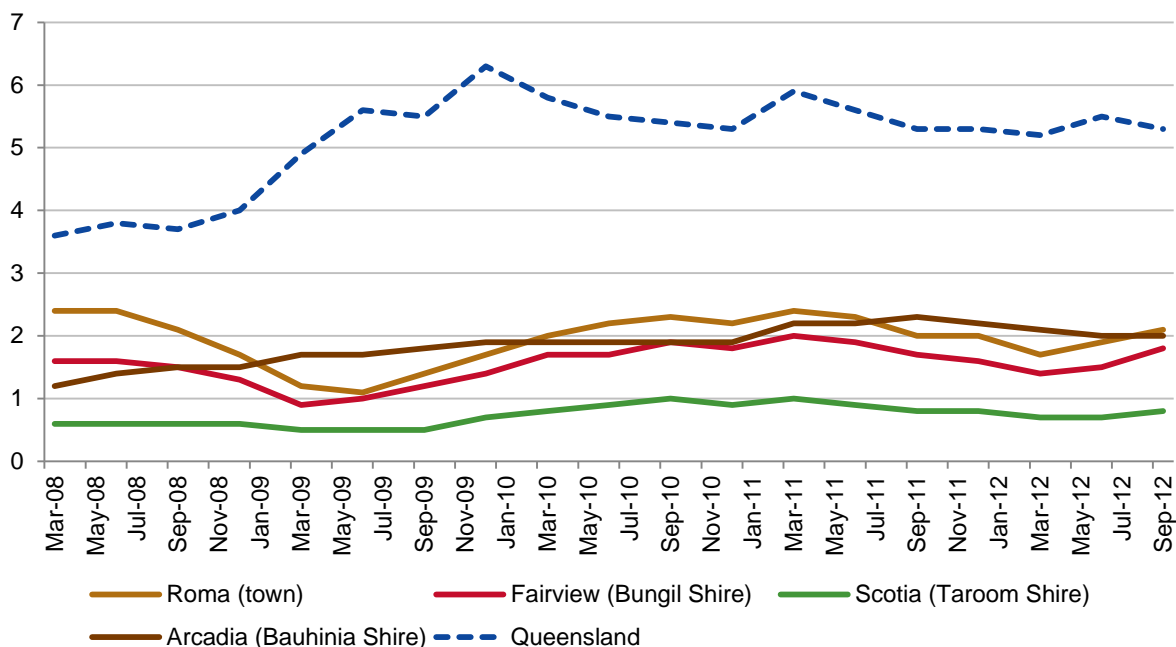
The Scotia GFL as a whole has shown sustained low unemployment rates that are consistently well below State averages for the last four to five years, as shown in Figure 3-1. As no data is available on unemployment at the SA1 or SA2 level, data has been provided at the pre-2008 amalgamation shire level. Scotia (Taroom Shire) has the lowest demonstrated unemployment rate of all gas fields for the project, having maintained an unemployment rate of around one percent or lower since 2008.

However, these low levels of official unemployment may not reflect a number of local characteristics, such as:

- High levels of under-employment amongst those that are self-employed within the agricultural sector
- The out-migration of youth from rural areas to regional centres and cities in search of employment.

The higher levels of unemployment within Roma Town and the Bauhinia Shire (including Springsure) may be a reflection of the above characteristics. These features are pertinent to the policies of resource companies to employ locally, particularly if the company is a late mover in developing in a locality that has been subject to previous ongoing development by another company.

Figure 3-1 Unemployment rate – all areas (%)



Source: DEEWR, 2013

More recent information at the SLA level (subregions of local government areas) (Table 3-1) indicates that the unemployment rate continues to increase slowly in the Roma Town and Bungil areas.

3 Employment, income, industry and occupation

Table 3-1 Small area labour market data, June 2012-June 2013

Statistical Local Areas (SLAs)	Unemployment Rate (%) June 2012	Unemployment June 2012	Unemployment Rate (%) June 2013	Unemployment June 2013	Labour Force June 2013
Bendemere (LGA)	2.3	15	1.6	10	640
Booringa (LGA)	3.4	38	3.8	43	1,123
Bungil (LGA)	1.5	25	1.9	31	1,641
Roma (Town)	1.8	85	2.3	104	4,572
Taroom (LGA)	0.7	13	0.8	15	1,775
Bauhinia (LGA)	2.0	35	2.3	41	1,771
Woorabinda (LGA)	68.8	245	80.3	293	365

Source: Department of Employment, 2013

Table 3-2 indicates that the unemployment rates for youth and young adults is around twice the overall rate of unemployment, but that over the last two Census periods there has been an improvement in youth unemployment in the Miles-Wandoan area, and an improvement in the unemployment rate for young adults in the banana area.

Table 3-2 Unemployment and participation rates: 15-19 and 20-24

SA2 area	Unemployment %	Participation %	Unemployment %	Participation %
	15-19		20-24	
Banana				
2001	8	63	9	78
2006	6	63	3	78
2011	7	60	6	80
Miles – Wandoan				
2001	11	51	5	84
2006	4	58	2	78
2011	6	63	5	81

Source: ABS, 2013a

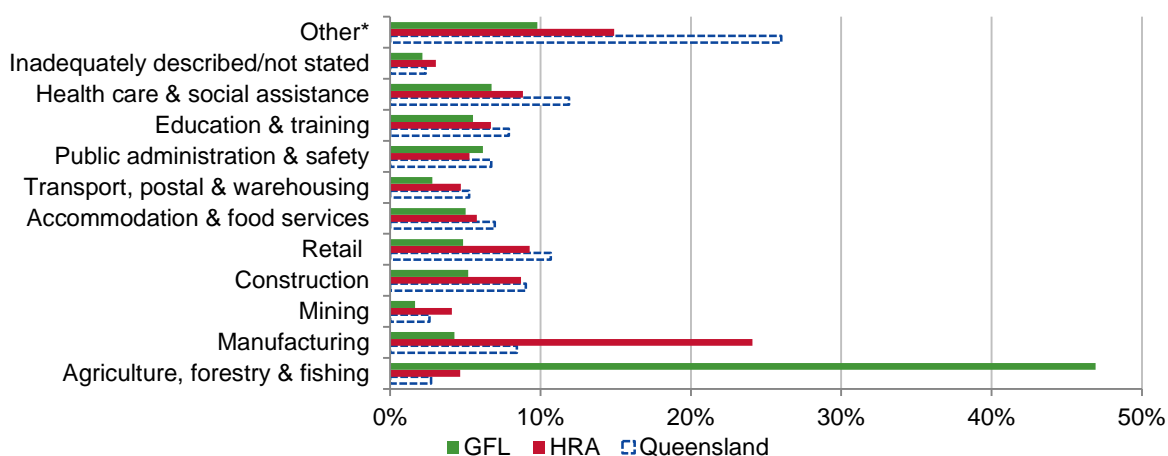
3.2 Industry of employment

Figure 3-2 shows that during the last Census, people within the Scotia GFL were predominately employed within the agricultural industry, in particular with activities associated with beef production. People within the HRA were also employed within agricultural industry, though manufacturing also featured strongly.

3 Employment, income, industry and occupation

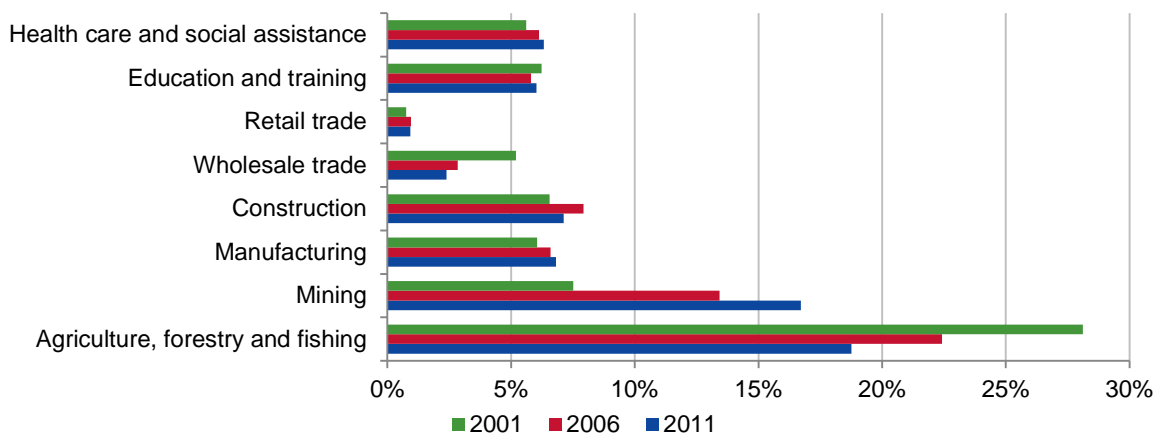
Figure 3-3 shows the industry of employment time series for people living within the larger SCA (SA2), (no data are available for the Scotia GFL area prior to 2011). Mining as an employer has grown dramatically over the last 10 years, although the growth has primarily occurred within the last Census period (2006 to 2011). Over the same period, the HRA experienced a considerable decline in the percentage of the workforce employed in agriculture. Over the periods shown, employment in construction and manufacturing also saw a slight increase, while wholesale trade experienced a noted decline from 5% in 2001 to 2% in 2011.

Figure 3-2 Industry of employment, 2011



Source: ABS, 2012

Figure 3-3 Industry of employment, Scotia SCA



Source: ABS, 2012

3.3 Occupation

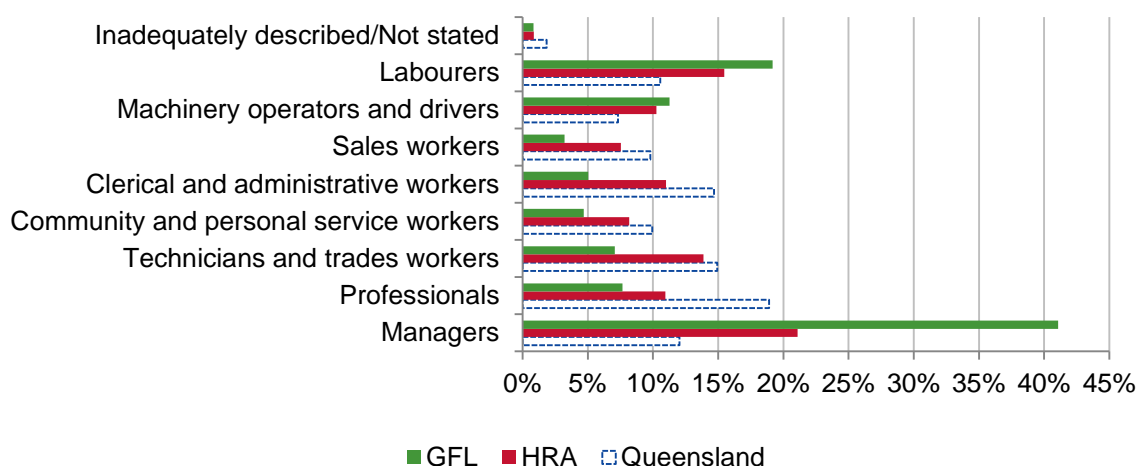
At the time of the 2011 Census, the largest occupational category in the Scotia GFL was 'manager' (Figure 3-4). Of this 41% of the workforce, 88% of these are listed as 'farm managers' (ABS, 2012). The two next largest occupational categories were 'labourers', followed by 'machinery operators and drivers'. These categories reflect the role of Taroom and Wandoan as local government service centres and places of residence for workers and businesses servicing the agricultural sector.

3 Employment, income, industry and occupation

Further, as these occupational categories are significant within construction workforces, it indicates a potential stressor on local government workforce resourcing, both during the construction period for gas projects and potentially beyond.

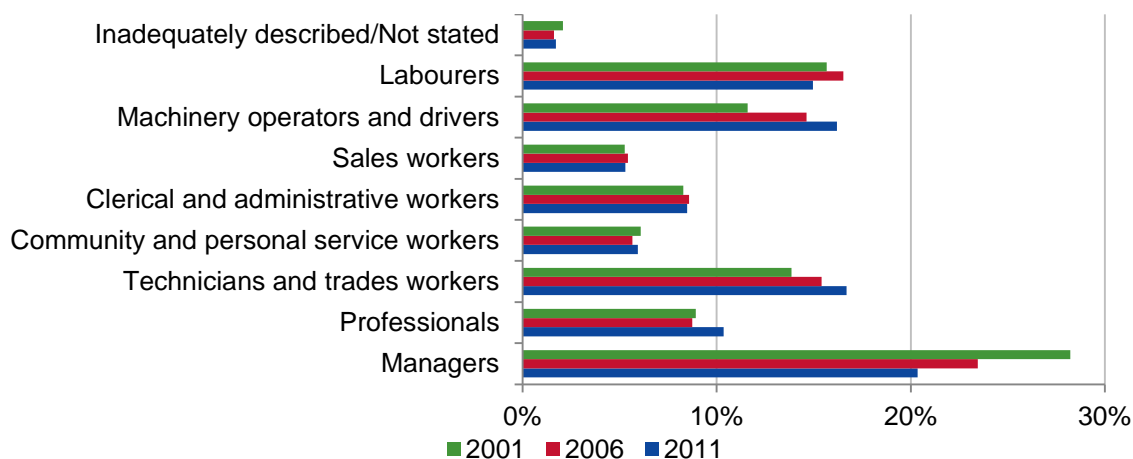
The occupational categories of workers within the SCA over the last two Census periods are shown in Figure 3-5. Of note is the significant increase in 'machinery operators and drivers', a more modest increase in 'technicians and trade workers' and a significant decrease in 'managers'. This is most likely a reflection of the growth in construction occurring with gas development, and hence the availability of off-farm employment for the 'managers' of marginally viable agricultural enterprises.

Figure 3-4 Occupation, 2011



Source: ABS, 2012

Figure 3-5 Occupation, SCA (SA2)



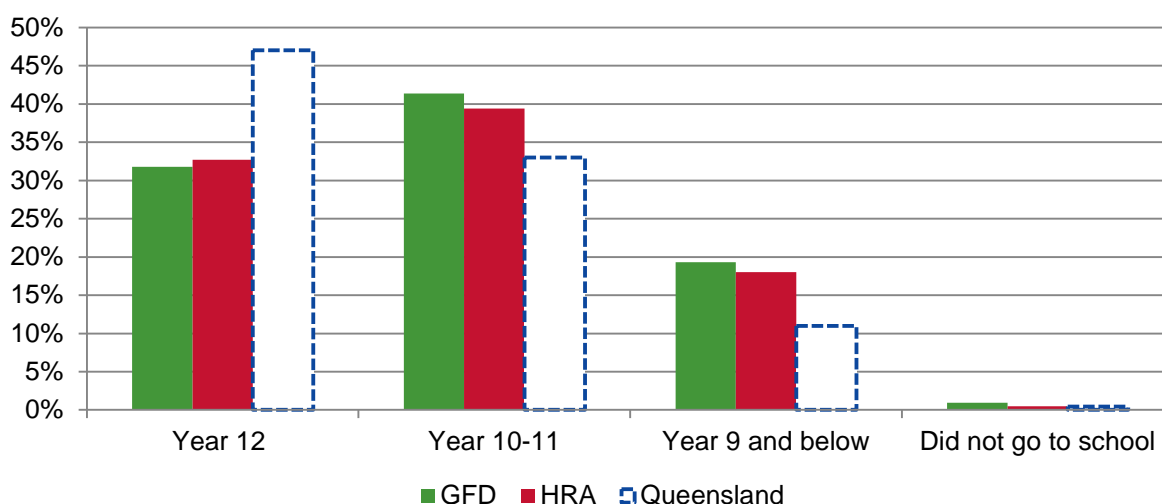
Source: ABS, 2012

3 Employment, income, industry and occupation

3.4 Educational attainment

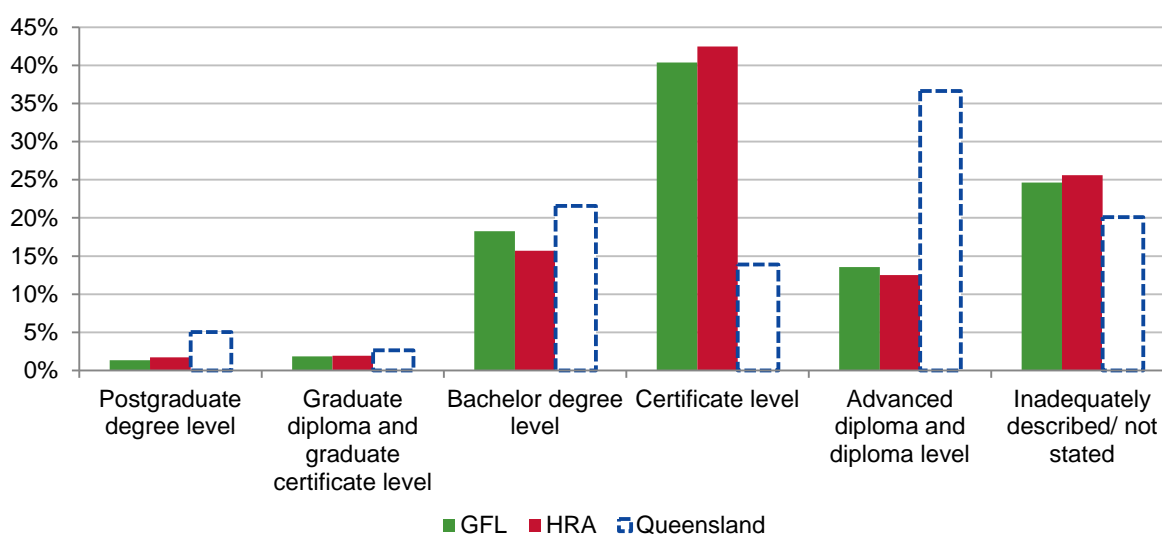
Both the Scotia GFL and the HRA exhibit lower levels of high school education attainment than the State average. This characteristic is more slightly more pronounced in the Scotia GFL than the HRA, as shown in Figure 3-6. Similarly, both areas have lower levels of university level educational attainment than the State; however, these areas have considerably higher levels of Technical and Further Education (TAFE) acquired qualifications, displayed as 'certificate' level qualifications within Figure 3-7. This is consistent with the dominance of the agricultural, manufacturing and construction industries within these areas. The fact that the Scotia GFL has a higher proportion of bachelor degree level achievement than the host regional area is likely to be a reflection of lower population and the presence of qualified teachers and health professionals within urban centres in the area.

Figure 3-6 High school education achievement, 2011



Source: ABS, 2012.

Figure 3-7 Post-school qualifications, 2011



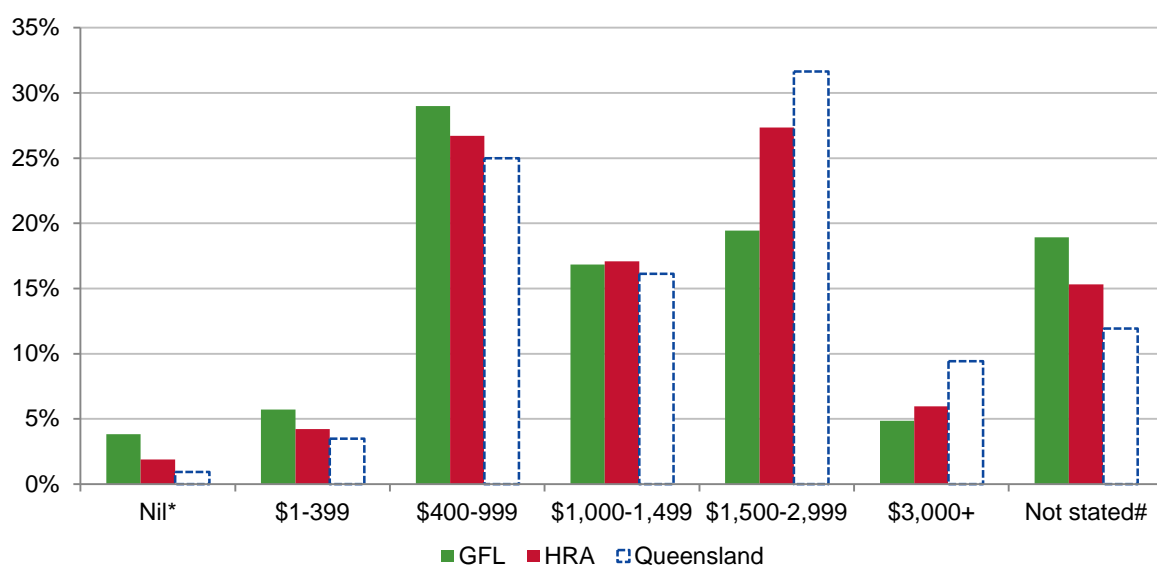
Source: ABS, 2012.

3 Employment, income, industry and occupation

3.5 Income

As can be seen in Figure 3-8, the distribution of weekly family incomes in the Scotia GFL and HRA are slightly lower than that of the State. These areas report a slightly higher proportion of families who report incomes of lower than \$1,000 a week, and a considerably smaller portion of the population who report earning between \$1,500 to \$2,999 a week in comparison with the State figures. This distribution in the Scotia GFL may be influenced some degree by the predominance of agricultural enterprises in the area, where reported incomes may not reflect income in-kind.

Figure 3-8 Weekly family income, 2011



Source: ABS, 2012

3.6 Cost of living

Ascertaining the cost of living quantitatively is difficult in rural and regional areas as data is often lacking or is not current. While there is no data available for the Scotia GFL at the direct SA1 area, the May 2010 survey of retail prices (OESR, 2011) included Biloela, which is in the SCA. This survey indexes the price per basket of goods to Brisbane, which is represented as a base of 100.

As shown in Table 3-3, the cost of living in Biloela was characterised by significantly more expensive transportation costs (influenced by the price of fuel) and significantly less expensive housing costs, when compared with the costs in Brisbane. Housing costs are likely to have risen substantially since the 2010 survey, due to the increased demand for accommodation from major project construction workforces, particularly in Wandoan and Biloela.

Table 3-3 Cost of living – retail prices index when compared to Brisbane, May 2010 (%)

Centre	Food	Clothing and footwear	Housing	Transportation	All items	All items less housing
Biloela	95.1	99.7	83.9	109	97.8	101.6

Source: OESR, 2011

3 Employment, income, industry and occupation

3.7 Business counts

Business count and turnover statistics are available from OESR for the SCA Area and HRA.

The majority of businesses within both the SCA and the HRA are small businesses with annual turnovers of under \$500,000. As shown in Table 3-4, 98% of businesses in the SCA are classified as small businesses, with over half of these having less than \$100,000 annual turnover. Significantly, both the SCA and the HRA have fewer employees per business when compared to the State, indicating a higher a higher number of sole operators, consistent with the dominance of agriculture.

Table 3-4 Business count by employee size (by number of employees), 2012

Area	Small		Medium		Large		Total	Total population	Employees per business
	No.	%	No.	%	No.	%	No.		
SCA	3,253	98.1	63	1.9	0	0	3,316	19,888	6.1
HRA	7,327	97	220	2.9	3	0	7,550	45,561	6.0
Queensland		95.7		4.0		0.3	430,406	4,332,737	10.0

Source: OESR, 2013. Businesses are defined as small (employing less than 20 people, including non-employing businesses), medium (employing 20 or more people but less than 200 people) and large (employing 200 or more persons).

Table 3-5 Business count by turnover range, 2012

Area	\$0 to less than \$100k		\$100k to less than \$500k		\$500k to less than \$2m		\$2m or more		Total
	No.	%	No.	%	No.	%	No.	%	No.
SCA	1,753	52.9	1,103	33.3	357	10.8	103	3.1	3,31
HRA	3,514	46.5	2,642	34.9	1,048	13.9	346	4.6	7,550
Queensland		46.6		34.7		13.3		5.4	

Source: OESR, 2013

3.8 Socio-Economic Indexes of Disadvantage

The *Socio-economic Indexes for Disadvantage* (SEIDA) is a summary measure of the social and economic conditions of a region. SEIDA is generated by the ABS and compiles a range of indicators within Census data, which is designed to reflect disadvantage of social and economic conditions. The index focuses on low-income, relatively lower education attainment, high unemployment and dwellings without motor vehicles. Low index values represent areas of most disadvantage and high values represent areas of least disadvantage. SEIDA quintiles for the Scotia GFL are not available.

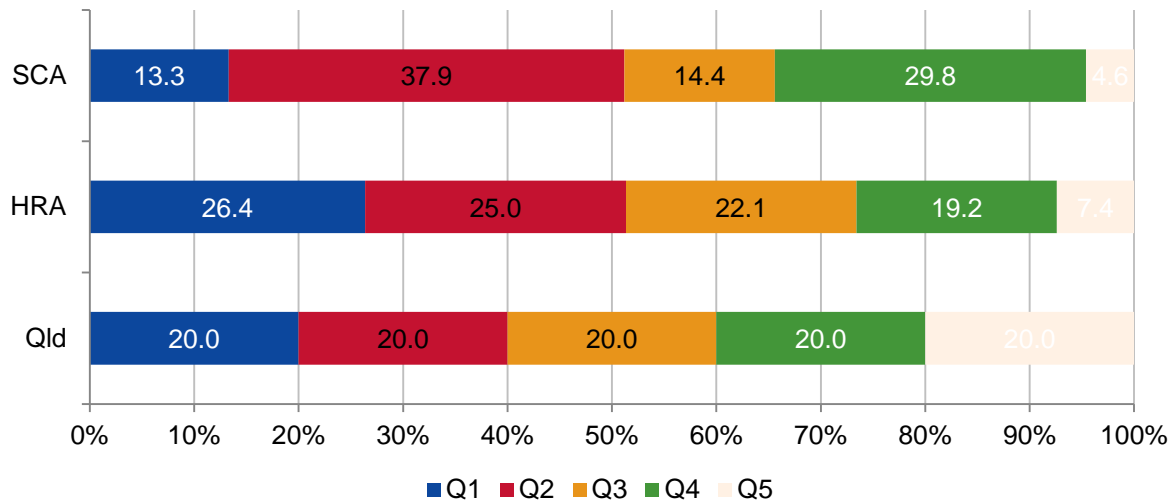
Figure 3-9 shows the percentage of the population of the SCA, HRA and Queensland in each quintile SEIDA, where 'Quintile 1' represents the most disadvantaged group, while 'Quintile 5' represents the least disadvantaged group of persons.

By definition, 20% of the Queensland population is within each quintile. In comparison, 13.3% of the population of SCA were in the most disadvantaged quintile; however, 37.9% of the population were within Quintile 2. As a result, over 50% of the population are within the two lowest quintiles. A similar proportion of the population of the HRA are within the lowest two quintiles, however there is a greater concentration of the population within the lowest quintile, at 26.4%. In a similar fashion, both the SCA

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and HRA have smaller proportions of the population within the highest two quintiles, although this is more pronounced in the HRA, with only 26.6%.

Figure 3-9 Socio-economic index for disadvantage – SCA and HRA



Source: OESR, 2013c

Housing

4.1 Residential housing

4.1.1 Dwelling type and structure

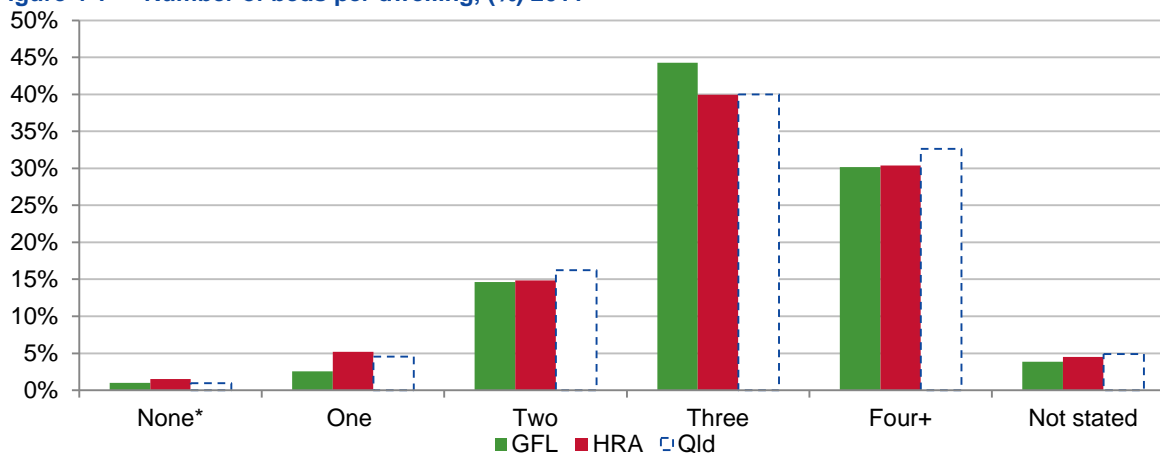
The dominant form of housing within the Scotia GFL and the HRA is separate houses (Table 4-1). The next most prominent form of dwelling in both areas is that of 'caravan, cabin or houseboat', followed by flats, which are represented well below the State average. In contrast, the number of beds per dwelling in both the Scotia GFL and the HRA generally conforms to the State distribution, although the Scotia GFL has a higher proportion of three bedroom dwellings, with a corresponding lower proportion of one bedroom dwellings, as shown in Figure 4-1.

Table 4-1 Dwelling structure – private dwellings (%), 2011

	GFL (%)	HRA (%)	Qld (%)
Separate house	90.7	87.8	75.8
Townhouse	1.0	2.0	8.4
Flat	3.6	4.9	13.3
Caravan, cabin, houseboat	4.3	4.5	2.0
Improvised dwelling	0.2	0.5	0.3
Attached residence	0.2	0.4	0.2

Source: ABS, 2012.

Figure 4-1 Number of beds per dwelling, (%) 2011



Source: ABS, 2012.

*Includes bedsitters

4.1.2 Dwelling occupancy

During the 2011 census, the Scotia GFL, SCA and HRA had rates of unoccupied dwellings that are considerably higher than the State average. In the case of the Scotia GFL, the level of unoccupied housing is almost three times that of the State. It may be that these low rates of occupancy are a result of the Scotia GFL covering agricultural holdings, where processes of agricultural change have resulted lower levels of employment for farm labourers who were formerly housed on properties. Despite the low rates of occupancy during the 2011 Census, the availability of housing was cited as an ongoing issue for residents at the time of consultation for the EIS, particularly in Wandoan.

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Low rates of occupancy in resource towns (such as Moranbah and Blackwater) may be the result of a significant number of dwellings being either leased or owned by resource companies and being temporarily unoccupied at the time of the Census. Lower levels of occupancy could also be the result of landlords setting very high rents in the hope of securing corporate tenants from the resources sector. Should the anticipated tenant not eventuate, the house may remain unoccupied for a longer period if potential tenants were forced to relocate. However, the location of dwellings on rural properties is more likely to be an influence on occupancy rates in the gas field locality. It may also be the case that some rural towns have a higher level of unoccupied house because of poor standards, rendering the house uninhabitable.

Table 4-2 Dwellings – occupied and unoccupied, 2011

Area	GFL	%	SCA	%	HRA	%	Qld	%
Occupied	906	72.8	7,255	83.0	17,129	83.9	1,547,303	90.3
Unoccupied	338	27.2	1,484	17.0	3,294	16.1	177,911	9.7
Total	1244		8,739		20,423		1,725,214	

Source: ABS, 2012.

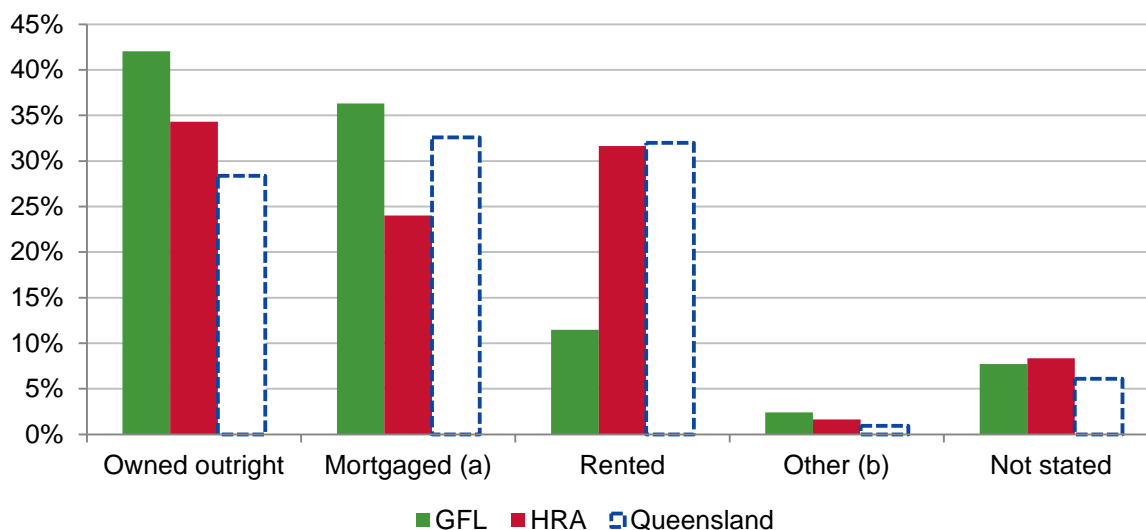
4.1.3 Ownership

The level of home ownership in the Scotia GFL at the time of the 2011 Census, either by outright ownership or through a mortgage was higher than both the HRA and the State (Figure 4-2). The adjunct to this is a low rate of house rental (10% or approximately one-third of the HRA and State levels). This is likely due to historically high levels of housing affordability in rural areas and regional towns, low levels of unemployment, low levels of population mobility, and a higher level of Scotia GFL residents living in housing on farming and grazing properties. While housing has a higher level of affordability, the declining population of rural towns has meant that selling houses has often been difficult, with sale proceeds not sufficient to purchase a replacement property in a regional centre, such as Toowoomba.

While overall rental levels are low, an examination of landlord type (Figure 4-3) indicates that the market in the Scotia GFL is small, with less than 10% renting through a real estate agent (compared to levels approaching 30% in the SCA and HRA). Around 40% of rental landlords are a 'person not in the same household', which is significantly higher than the SCA and HRA. This indicates a high level of local ownership of rental dwellings, possibly by rural property owners desirous of having a town base at some point in time. Approximately 25% of rental landlords are 'private employers', which likely due to persons living in housing on rural properties, where they are employed. The level of government employee housing (teachers, police, medical professionals) in the Scotia GFL is >7%, which is broadly similar to the SCA and HRA regions.

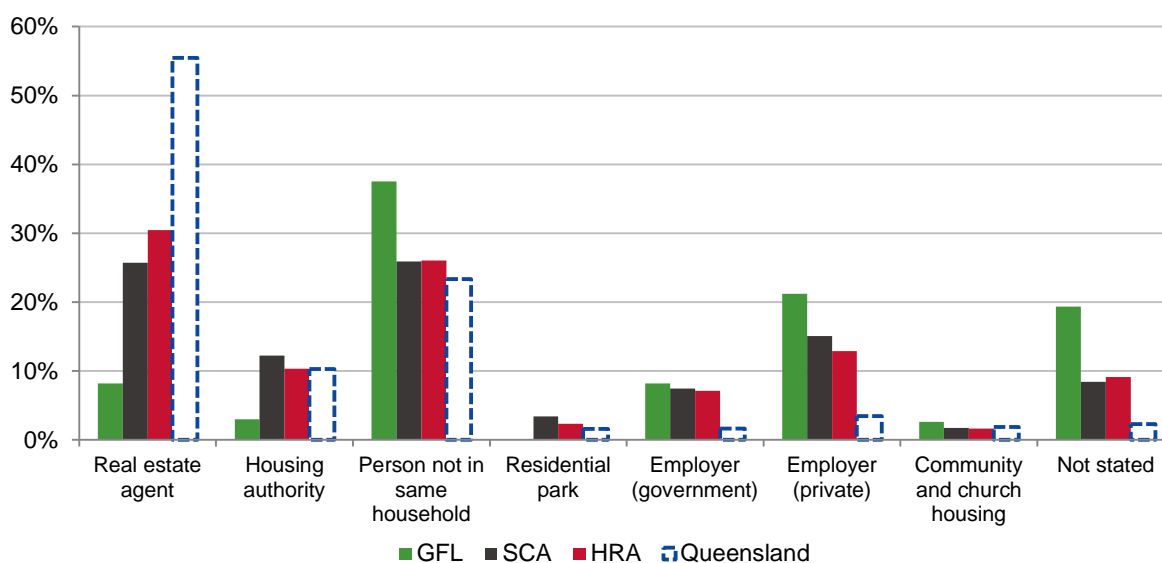
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Figure 4-2 Home tenure, 2011



Source: ABS, 2012.

Figure 4-3 Rental landlord type, 2011



Source: ABS, 2012.

4.1.4 Social housing

There is limited social housing in the Scotia GFL as shown in Table 4-3.

Table 4-3 Social housing

Postcode	Area	Government-managed	Non-government-managed	Total
4420	Taroom	2	4	6
4419	Wandoan	3	8	11

Source: Department of Housing and Public Works, 2013

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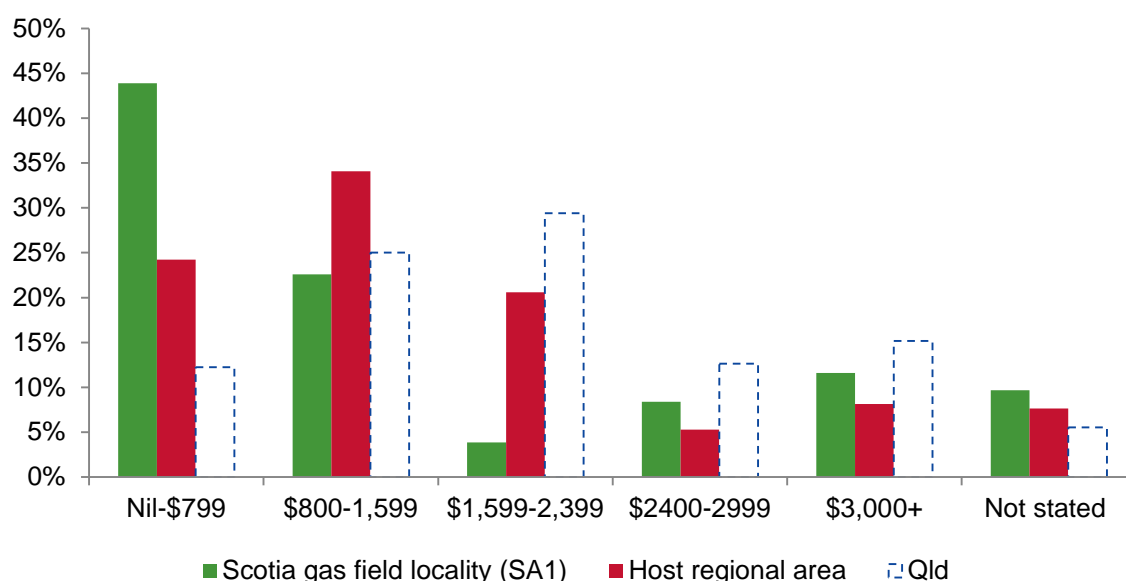
4.1.5 Housing costs

As at the 2011 Census, the Scotia GFL and the HRA both reported considerably lower mortgage and rental costs than the State, although this deviation from the State demographic profile is more pronounced in the case of the Scotia GFL. As shown in Figure 4-4 and Figure 4-5, the Scotia GFL has considerably lower reported housing costs than both the State and the HRA; this can be related to historically low housing prices and the lower mobility rates in rural towns. This effect is similarly reflected in rental costs, with most dwellings reporting very low costs when compared to the State.

The low cost of housing reported during the 2011 Census contrasts considerably with data gained through community consultation and other sources. For example, the cost of buying a house has increased considerably across the towns within the Scotia GFL, as shown in Table 4-4. While data from market sources should be treated with caution, especially considering the small number of transactions used to calculate a median in small towns such as Miles, Wandoan and Taroom, that the cost of houses for new home owners has grown considerably in the last four years.

Similarly, the weekly rental costs reported in the 2011 Census differ dramatically from those reported to the Rental Tenancy Authority, as shown in Table 4-5. As detailed, compared to the census data, where most households report weekly rental costs under \$175, most towns within the SCA report much higher median rental costs, with Wandoan significantly so at \$650 per week in March 2013.

Figure 4-4 Monthly mortgage costs, 2011



Source: ABS, 2012.

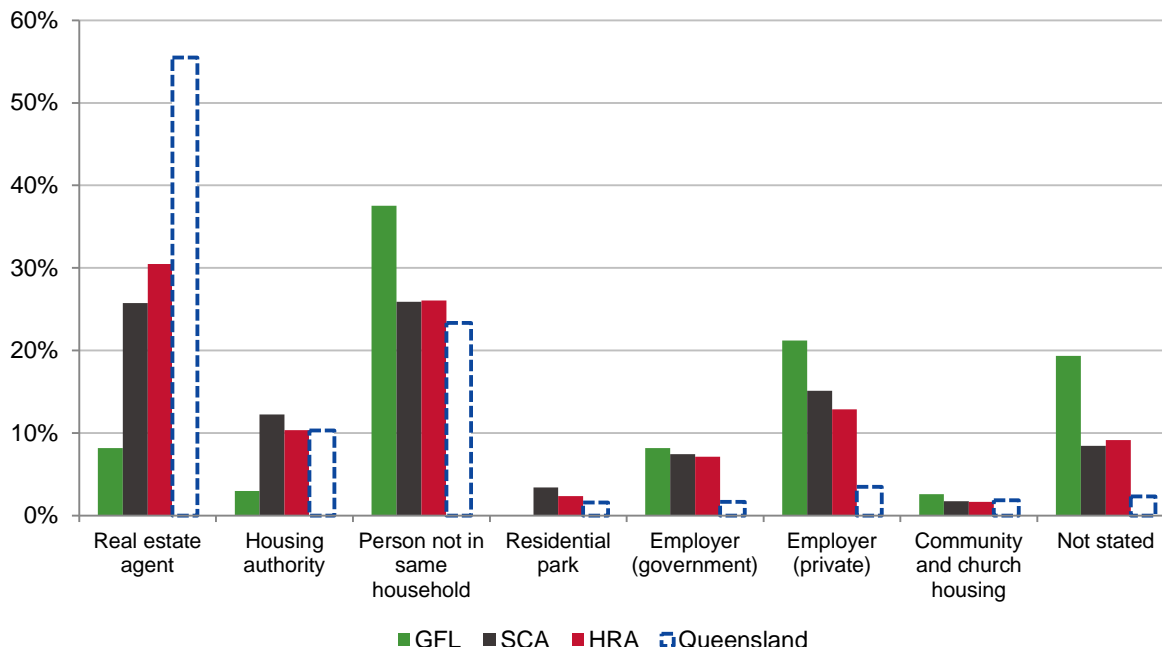
Table 4-4 Median house sale prices across the SCA

	Miles (\$)	Taroom (\$)	Wandoan (\$)	Biloela (\$)
2009	232,000	172,500	235,000	295,000
2010	280,000	215,000	258,000	288,000
2011	295,000	211,250	315,000	306,500
2012	348,000	220,000	362,500	285,000
2013	370,000	325,000	382,500	284,000

Source: PriceFinder, 2013

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Figure 4-5 Weekly rental costs, 2011



Source: ABS, 2012.

Table 4-5 Median weekly rental prices across the SCA, three bedroom home

Town/area	Mar-11		Mar-12		Mar-13	
	Rent (\$)	New bonds	Rent (\$)	New bonds	Rent (\$)	New bonds
Miles	300	8	270	7	400	8
Wandoan	n.a.	4	n.a.	2	650	11
Banana shire and surrounds	300	47	350	56	350	81

Source: Rental Tenancy Authority, 2013

4.1.6 Housing affordability

The cost of housing in the Scotia GFL, while still low in comparison to the State average, has been steadily increasing over time, particularly in Wandoan which has been subject to a higher level of investigation into potential mining development, as well as being in proximity to the construction activity of the QCLNG Project. Since 2009 the median price of a three bedroom house has risen by 88% in Taroom, and by 63% in Wandoan. Median rents have also increased over the last two years. Rental Tenancies Authority data indicates a 30% increase in Miles, and while no data is available for Wandoan, it could be expected that increases would be of a similar or larger order.

The increases in housing costs, considered together with household income, indicate the presence of housing affordability pressure on the Scotia GFL. While there are a number of different measures for understanding housing affordability dynamics, and all suffer from input data limitations, nonetheless they act as an indicator to changes occurring in the market. The former Urban Land Development Authority identified that housing is affordable if rental costs were no more than 30% of gross household income, or that mortgage costs were no more than 35% of gross household income. Table

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4-6 and Table 4-7 following show affordable price and rental benchmarks for each income quintile together with income distribution, price and rental data for Taroom and Wandoan.

Table 4-6 Taroom housing affordability

Max. affordable rental per week	Income distribution Taroom	Affordable house purchase price
More than \$750/week	\$2,500+/week(\$130,000+/year) 7.3% of total households	\$585,000+
\$750/week	\$1,500-\$2,499/week (\$78,000-\$130,000/year) 8.6% of total households	\$585,000
\$450/week	\$1,000-\$1,499/week (\$52,000-\$78,000/year) 17.5% of total households	\$351,000
\$300/week	\$600-\$999/week (\$31,200-\$52,000/year) 22.9% of total households	\$234,000
\$180/week	\$0-599/week (\$0-31,200/year) 32.3% of total households	\$140,000

Mar 2013
Median
Rental
Cost
\$350/week

2013 Median
House Price
\$325,000

Based on the figures above, between 60 to 70% of households in Taroom are susceptible to affordability pressures in terms of purchase of a median valued house, and around 60% of households are susceptible to affordability pressures in terms of rental of a median-rental house.

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Table 4-7 Wandoan housing affordability

Max. affordable rental per week	Income distribution Wandoan	Affordable house purchase price
More than \$750/ week	\$2,500+/week(\$130,000+/year) 4.6% of total households	\$585,000+
\$750/week	\$1,500-\$2,499/week (\$78,000-\$130,000/year) 14.6% of total households	\$585,000
\$450/week	\$1,000-\$1,499/week (\$52,000-\$78,000/year) 20.0% of total households	\$351,000
\$300/week	\$600-\$999/week (\$31,200-\$52,000/year) 18.5% of total households	\$234,000
\$180/week	\$0-599/week (\$0-31,200/year) 26.9% of total households	\$140,000

Mar 2013
Median
Rental Cost
\$650/week

2013 Median
House Price
\$382,500

Median Rental Cost = \$650 (RTA, March 2013)

Median House Price-2013 = \$382,500 (PriceFinder 2013)

Income distribution (ABS 2011 Census)

Median income = \$50,400

Affordable House Purchase Price (sourced from Santos GLNG Integrated Project Housing Strategy, Update No. 1 (2012))

Based on the figures above, between 65 to 70% of households (in mid-2013) in Wandoan are susceptible to affordability pressures in terms of purchase of a median valued house, and around 75% of households are susceptible to affordability pressures in terms of rental of a median-rental house. In September 2011 the WDRC Housing Affordability Strategy estimated that more than 70% of households were susceptible to purchase affordability pressures while more than 90% of households were susceptible to rental affordability pressures. Hence there would appear to be a slight improvement, though affordability pressures are still significant.

A further indicator of housing affordability is the house price to income ratio, which is the ratio of median house prices to median gross household income in a given geographic area. The ratio is used as a measure of trends in housing affordability over time. Table 4-8 provides an estimate of the price to income ratio for Taroom and Wandoan between 2009 and 2012 (based on estimates of Median house prices from Price Finder, and using household income estimates from the 2011 Census). While there has been a modest increase in the ratio in Taroom, there has been a significant increase in Wandoan over the three year period, indicating a growing barrier to home ownership in those towns.

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Table 4-8 House price to income ratio – Taroom and Wandoan

	Median House Price (three-bedroom)	Median Household Income (2011)	Price to Income Ratio
Taroom			
2009	172,500	41,200	4.2
2010	215,000	41,200	5.2
2011	211,250	41,200	5.1
2012	220,000	41,200	5.3
2013	325,000	41,200	7.9
Wandoan			
2009	235,000	50,400	4.7
2010	258,000	50,400	5.1
2011	315,000	50,400	6.3
2012	362,500	50,400	7.2
2013	382,500	50,400	7.6

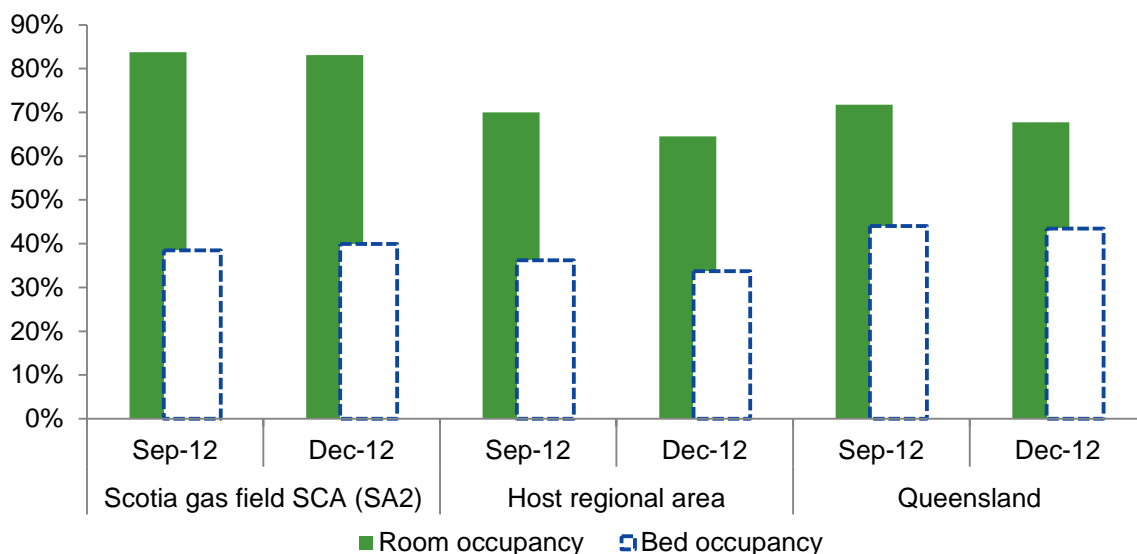
4.1.7 Short-term accommodation supply

Short term accommodation (hotels/motels) is important in regional areas due to the significant impact that extractive industry projects can have on its demand, particularly during the construction stage of a project. Data for the towns within the social catchment areas of Biloela and Miles-Wandoan are provided within Figure 4-6. No data was available for Banana, as it has likely been withdrawn from ABS publication to protect confidentiality, as there are only two establishments listed.

As shown in Figure 4-6, room occupancy rates are generally much higher than the State in the SCA, while the bed occupancy rate is lower. This suggests that visitors are single or two persons, occupying multiple bed rooms. That the SCA has higher occupancy rates than the State should be expected; both Biloela and Miles are significant transport stops, with Biloela on the intersection of the Dawson and Burnett highways and Miles located on the intersection of the Warrego and Leichardt highways. In addition, there is also a reasonable amount of construction development in the area of Miles, which generally increases occupancy rates.

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Figure 4-6 Short term accommodation supply



Source: ABS, 2013. Note: no data are available for Banana.

There are a number of short-term accommodation providers in Taroom, including the Cattle Camp Hotel (15 rooms), the Leichardt Hotel (20 rooms), the Dawson Valley Roadhouse and Country Rest Cabins, and the Bluenergy Tourist Village, currently undergoing a major expansion to provide 40 new powered sites and 65 residential sites. The former caravan park was acquired by the Bluenergy Group Limited in May 2013. Bluenergy is a substantial provider of modular mining accommodation, and is developing properties in Chinchilla and Miles as well. It will be well-positioned to provide accommodation to the pioneer workforces that will be required to construct GFD Project accommodation camps.

4.2 Serviced land availability

Land availability is a noted concern for a number of towns within the SCA of the Scotia gas field. Issues around the release of crown land have been established as community concerns for Wandoan for a number of years (KPMG, 2012). On the other hand, Miles had a reasonable number of lots available for development in 2012 as shown in Table 4-9. While data is only available at the shire level for the Banana local government area, media reports that major towns within the gas field SCA have considerable capacity for residential development (Gladstone Observer, 2013).

Table 4-9 Land availability

Town	Vacant residential lots	Residential (ha)	Rural-residential
Miles	354	80	0
Wandoan	17	6	0
Banana Shire	1,160	248	78

Source: KPMG, 2012

Community values and aspirations

5.1 Local governance and community planning

The Scotia gas field locality and the SCA around traverses two local government areas: that of Western Downs Regional Council (WDRC) and the Banana Shire Council.

WDRC	Banana Shire Council
<p>The WDRC was formed out of an amalgamation of six LGAs, including Dalby Town Council, Shire of Chinchilla, Shire of Murilla, Shire of Tara, Shire of Wambo and Division 2 of the Shire of Taroom. It covers an area of 38,039 square kilometres (km²), with a population of around 30,180. The region has a diverse economy, based on a strong and historically entrenched agricultural industry along with a booming energy resources sector. As a result, strong population growth is expected within the WDRC; key to planning for the council is managing the growth and associated prosperity while maintaining the rural character that attracts and retains many residents of the towns throughout the region.</p> <p>By and large, the towns within the gas field locality are predominantly rural or agricultural towns, with strong historical and local ties. Towns relevant to this assessment include:</p> <p>Miles</p> <p>Miles is a small country town and is well known for its feedlots, cotton, grain, and cattle production. It is expected to experience high growth as a multi-nodal transport hub, given its position on the Warrego and Leichhardt highways and the increasing use of these by energy resources projects.</p> <p>Wandoan</p> <p>Wandoan is a small country town that is known for beef, wheat, and sorghum production. The prospect of an open-cut coal mine being built close to the town has dramatically impacted the local community in recent years, whereby a number of key community members have left the town. This, followed by the uncertainty surrounding the project has led to disharmony within the community.</p>	<p>The Banana Shire Council was formed out of an amalgamation with Division 1 of the Taroom Shire Council and the existing Shire of Banana. It covers an area of 15,755.6 km² with a population of 15,593. The region has a strong and present association with agriculture, including beef and dairy production and a variety of crops including Lucerne and cotton. Coal and gold mining have also featured throughout the shire historically and presently; although certainly not to the extent of neighbouring LGAs. The sole town within the shire most likely to be impacted by the project is Taroom.</p> <p>Taroom.</p> <p>Taroom serves as one of the primary population centres within the Banana Shire. Despite this, Taroom is nevertheless a small town of around 600, whose residents are focused on the protection and growth of grazing and agricultural industries. Taroom is expected to become a major junction point for energy resources.</p>

Source: Banana Shire Council, 2011; Western Downs Regional Council, 2011

5 Community values and aspirations

Table 5-1 shows the rate charges for towns across the GFD Project development area for 2011/12 and 2012/13, indicating a rise of approximately 20% in the Scotia area (using Miles as a proxy for Wandoan). During the BSC 2008 Survey of Residents, approximately half of all the respondents expressed satisfaction with rate charges, while this figure reduced to around 40% in the rural areas beyond Biloela.

5 Community values and aspirations

Table 5-1 Local government rate charges

Council Name	Financial Year	Largest (population) major urban centres	Average residential valuation - \$	Total average rates and charges per annum - \$	Average discount per annum - \$	Net average rates and charges per annum - \$	% increase, 2011/12-2012/13
BSC	2012/13	Taroom	45,124	2,249	225	2,024	17%
	2011/12		48,246	1,930	193	1,737	
CHRC	2012/13	Springsure/Rolleston	94,037	3,278	400	2,878	14%
	2011/12		61,000	2,519		2,519	
WDRC	2012/13	Miles	95,470	1,910	191	1,719	26%
	2011/12		69,640	1,511	151	1,360	
MRC	2012/13	Roma	129,291	2,445	113	2,332	20%
	2011/12		105,100	2,057	110	1,947	
MRC	2012/13	Injune	53,011	1,873	56	1,818	12%
	2011/12		43,100	1,695	70	1,625	
MRC	2012/13	Wallumbilla, Yuleba	25,685	1,797	48	1,749	32%
	2011/12		16,600	1,367	46	1,321	

Source: Department of Local Government, Community Recovery and Resilience, 2013

5.2 Law and order

Table 5-2 shows the most recent statistics available for selected crimes within the towns that are either within or adjacent to the gas field locality. Caution in interpreting the data is required as:

- The occurrence per 100,000 does not include NRW or other non-residents (i.e. tourists), which may make it appear that there is a greater level of victimisation
- The resident populations of the towns considered are small, which results in dramatic increases and decreases in the calculated number of offences per 100,000
- The data below represents reported crime only, and the reporting rate for different offences can differ dramatically: "For example, approximately 95% of all motor vehicle theft is reported to police whilst only 33% of sexual offences are reported." (QPS, 2012).

Taken at face value, the statistics below demonstrate a general increase in reported crimes in the five years across each police district within the Scotia GFL. Across all areas, there has been a clear increase in good order offences. The Wandoan district has seen the largest increase over overall offences, with a dramatic increase in drug offences recorded over the reported period. Following this, Miles has also experienced an increased number of offences per 100,000, seeing a dramatic increase in good order and drug offences over the reporting period.

5 Community values and aspirations

Table 5-2 Offences per 100,000 people, 2006 to 2012

Miles	06/07	07/08	08/09	09/10	10/11	11/12	Growth between 2006/07 and 2011/12
	408	444	525	245	329	248	-7.9%
Sexual offences	82	565	121	-	41	41	-10.7%
Drug offences	326	242	686	2,578	617	1,532	29.4%
Good order offences	163	323	363	859	864	1,325	41.8%
Traffic offences	1,427	605	1,533	2,864	1,399	1,615	2.1%
Other Offences	5,137	3,025	5,125	11,088	5,802	8,364	8.5%
Total	7,542	5,204	8,354	17,635	9,053	13,126	9.7%

Wandoan	06/07	07/08	08/09	09/10	10/11	11/12	Growth between 2006/07 and 2011/12
Assault	177	182	473	296	-	213	3.1%
Sexual offences	-	273	95	99	-	-	NA
Drug offences	177	182	662	591	614	1,491	42.6%
Good order offences	89	-	284	-	205	213	15.7%
Traffic offences	532	91	-	394	205	213	-14.1%
Other offences	1,152	1,183	1,987	5,123	2,968	10,117	43.6%
Total	2,128	1,911	3,500	6,502	3,992	12,247	33.9%

Taroom	06/07	07/08	08/09	09/10	10/11	11/12	Growth between 2006/07 and 2011/12
Assault	-	80	81	245	-	83	NA
Sexual offences	-	80	81	82	-	83	NA
Drug offences	921	641	322	245	741	832	-1.7%
Good order offences	77	160	161	163	-	166	13.8%
Traffic offences	384	641	806	408	329	1,331	23.0%
Other offences	3,607	3,283	2,820	2,204	9,720	3,661	0.2%
Total	4,988	4,884	4,271	3,347	10,791	6,156	3.6%

Source: QPS, 2013

5.3 Attitudes to resource development

Communities in the Scotia GFL have generally exhibited a positive attitude to hosting resource development projects, though there have been evident strains in the Wandoan area which has been subject to a high level of speculative activity, and the deferral of some mining projects, resulting in little tangible gain to offset impacts on the community, particularly in terms of property purchase prices and rents. The area has seen gas exploration and development activity since the mid-1990s and production from the Peat and Scotia gas fields since the early 2000s. The Taroom Place Based Plan 2011-2021 indicates that *'In regards to proposed energy developments around Taroom and the Shire, every opportunity to maximise positives and mitigate negatives should be taken. Employment arrangements and opportunities, such as FIFO/DIDO, are in the best interests of all stakeholders. The community needs to be well informed to take advantage of these opportunities'*. This acceptance of resource development is made in the context of acknowledging that that long-term sustainable future remains in agriculture with a concurrent focus on the protection of grazing and cropping land.

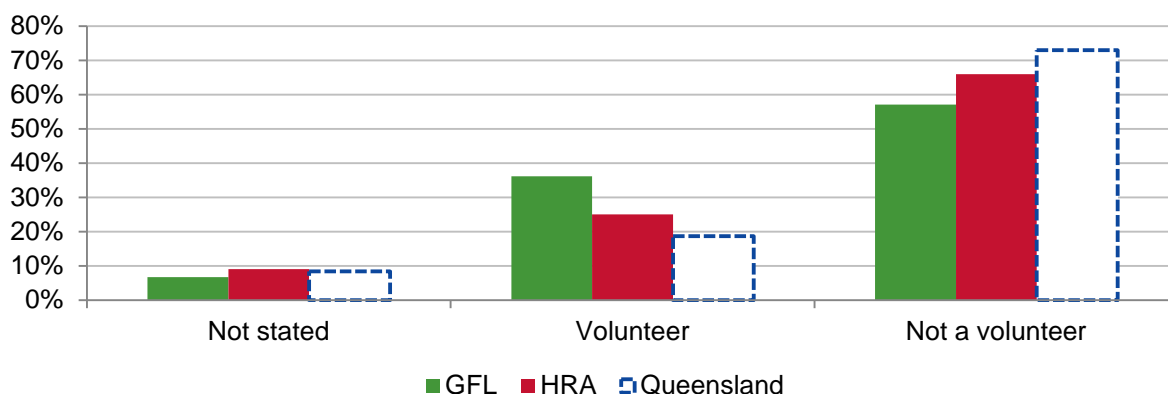
5 Community values and aspirations

5.4 Social fabric

Assessing the social fabric of a community is not a precise science as it often relies on the interpretation of subjective and disparate indicators. For this SIA, the focus has been placed on those indicators that relate to the community's ability to act collaboratively, such as volunteering rates, length of residence in the community, home ownership and a qualitative assessment of the strength of a sense of place and distinct identity.

As can be seen in Figure 5-1, both study areas have higher proportions of the population who state that they are a volunteer. In the case of the Scotia GFL, this portion of the population is nearing 35% , well above the State average of 19%. Regardless of the motivations or causes for increased volunteering rates (such as low governmental provision of services), it remains clear that these higher rates are likely to increase the ties and relationships between community members and presumably increase the social fabric of communities.

Figure 5-1 Volunteering rates, 2011



Source: ABS, 2012.

Similarly, home ownership is strongly correlated with greater levels of community involvement and community longevity through reduced mobility (Putnam, 2000; Winkler, 2010). As discussed in Section 4.1.3, home ownership, either outright or by mortgage is the predominant mode of home tenure in the Scotia GFL at 78% of households.

The BSC 2008 Survey of Residents sought information on a range of issues including community satisfaction. In the Rest of Shire sample (which includes the Scotia GFL) residents rated the friendliness of people, community safety, a good place to bring up children and rural life aspect both highly and significantly higher than residents in Biloela. When asked about the 'best thing about living in the area' community spirit rated highly. Trust in local government was not as high in the rest of the shire as it was in Biloela, however the survey was undertaken in the early period following the dissolution of the former Taroom Shire Council. When asked whether their local community had a distinct character, there was a strong positive response (around 80%) from the rest of the Shire including the Scotia GFL, however it was noted that respondents in the 18-24 age group were least likely to hold this sentiment.

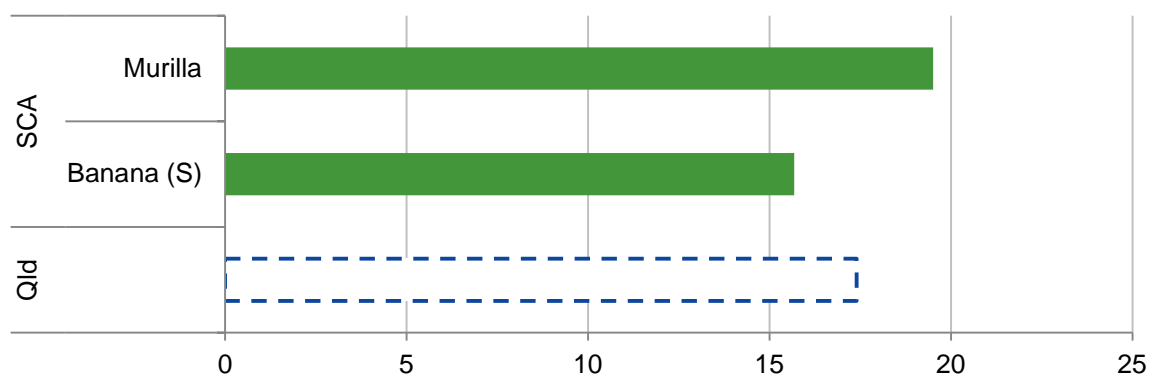
5 Community values and aspirations

5.5 Wellbeing (physical and mental health and child development)

The Public Health Information Development Unit (PHIDU) aggregates and publishes data on a range of health, wellbeing and socio-economic indicators annually. Data is presented either at the levels of statistical local area or at the expansive Medicare Local area, which is recognised to differ considerably from the gas field's SCA and HRA. As a result, data at the lower statistical local area, which were aligned with the SA2 areas using the ABS' standard correspondences, has been assessed (ABS, 2012).

Figure 5-2 indicates that residents of the Murilla SLA generally assessed themselves to have a lower levels of health than the State, while those in Banana stated they had a higher level of health. In the case of Murilla, this may be a reflection of the area having a larger proportion of 65+ than that of the State.

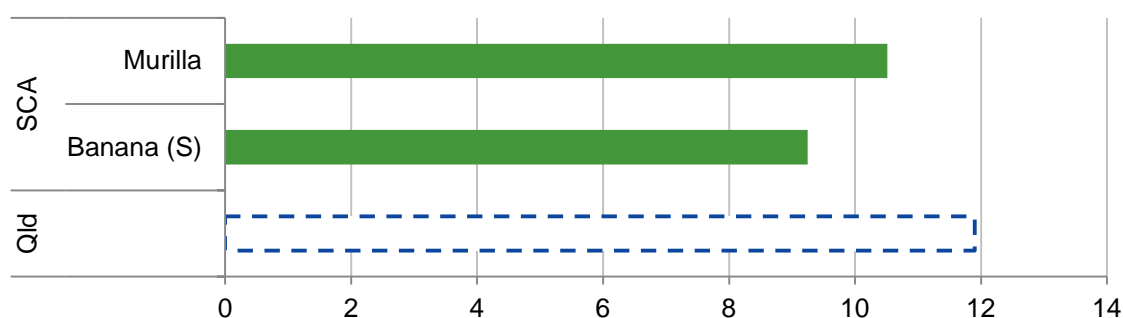
Figure 5-2 Self-assessed health status of fair/poor (modelled), per 100 people, 2011



Source: PHIDU, 2013

Figure 5-3 displays the reported level of psychological distress within the SCA during 2007/2008. As shown, the SLAs within the SCA have lower levels of distress than that of the State as a whole. While this data is not concurrent with rapid resource development (and therefore does not indicate whether this development has had an impact on the communities) it does indicate that prior to such development, the population had lower levels of distress than the State, which may in turn indicate a higher level of resilience.

Figure 5-3 High or very high level of psychological distress (modelled), per 100 people, 2007-2008



Source: PHIDU, 2013

5 Community values and aspirations

Table 5-3 shows the proportion of the population that stated they needed assistance with self-care, mobility or communication due to a long-term health condition or old age during the 2011 Census. Interestingly, despite the older profile of the Scotia GFL and HRA than the State (which we would expect to result in higher proportions of the population requiring assistance due to age-related conditions), the Scotia GFL and HRA generally follow the demographic trend set by the State.

Table 5-3 Need for assistance (disability)

	GFL	HRA	Queensland
Need for assistance	4.8	4.4	4.4
No need for assistance	90.8	88.2	89.6
Not stated	4.4	7.4	6.0

Source: ABS, 2013.

The Australian Early Development Index (AEDI) is a measure of how young children are developing in different communities. It involves teachers collecting information during the first year of formal full-time school to help create a snapshot of early childhood development in communities across Australia. It is a proxy that gives some insight into the wellbeing of children, often regarded as the most valuable resource of a community, and potentially the most vulnerable. The AEDI results allow communities to see how local children are doing relative to, or compared with other children in their state or territory and across Australia. In 2012 the AEDI was completed nationwide for the second time. Table 5-4 presents the results for the Taroom community (which includes Taroom and Wandoan). While there has been little change between 2009 and 2012, areas of potential concern include language and communication skills.

5 Community values and aspirations

Table 5-4 AEDI Community results - Taroom community 2012

Community		No of children surveyed	Proportion of children developmentally vulnerable %						
			Physical health and wellbeing	Social Competence	Emotional security	Language and cognitive skills (school-based)	Communication skills and general knowledge	Vulnerable on one or more domains of the AEDI	Vulnerable on two or more domains of the AEDI
Australia		289,973	9.3	9.3	7.6	6.8	9.0	22.0	10.8
Queensland		61,593	11.6	11.5	9.3	9.1	10.7	26.2	13.8
Taroom Community 2012		30	10.7	10.7	7.1	17.9	14.3	32.1	14.3
Taroom community 2009		39	15.8	15.8	10.5	13.2	13.2	28.9	18.4
Community difference 2009-2012			-5.1	-5.1	-3.4	4.7	1.1	3.2	-4.1
Critical Difference* (+/-)			10.9	7.3	8.6	8.0	9.6	12.7	9.2
Change in children's development			↑	↑	↑	↓	↓	↓	↑
Significant decrease in vulnerability	↑	Significant increase in vulnerability	↓	Decrease in vulnerability but not significant	↑	Increase in vulnerability but not significant	↓	No change in vulnerability	↔

Source: Murdoch Childrens Research Institute and Royal Children's Hospital Melbourne, 2013

* One method of assessing whether change in a community is significant is to see whether it is greater than a 'critical difference'. The critical difference is the minimum level of change required between the 2009 and 2012 AEDI for the results to be significant. This score is designed to provide communities with some guidance about interpreting whether the observed change is significant, but it should not be thought of as a hard and fast rule.

Social infrastructure

6.1 Educational facilities

6.1.1 Primary and secondary schools

There are three schools (two State and one private) located within the Scotia GFL, with the State schools providing primary to Year 10 education. The nearest high school to Year 12 is located in Miles which is within the SCA. Further afield within the SCA, Biloela has four State schools (including one high school) and two private schools.

Location	School	Level	Non-government
Taroom	Taroom State School	Combined	
	St Mary's Primary School	Primary	✓
Miles	Miles State High School	Secondary	
	Miles State School	Primary	
Wandoan	Wandoan State School	Combined	
Biloela	Biloela State High School	Secondary	
	Biloela State School	Primary	
	Mount Murchison State School	Primary	
	Prospect Creek State School	Primary	
	Redeemer Lutheran Primary School	Primary	✓
	St Joseph's Catholic School	Primary	✓

Figure 6-1 shows that school enrolment across the SCA between 2009 and 2012 has remained relatively stable. However, public schools have experienced a slight decline over the period, while private schools have experienced growth. This trend has been noted by education providers who have expressed concern around the future viability of some schools, particularly Wandoan State School. Further, stakeholders have reported that the reduction in public school enrolments has reduced the variety of programs and opportunities available to students. According to consultation undertaken for The Range EIS, there is a “funding and support gap for students requiring special education services (speech, disability, learning difficulties, gifted and talented students) in Wandoan and Miles (AEC Group, 2012).

Figure 6-1 School enrolment gas field locality and Biloela



Source: Department of Education and Training, 2013

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6.1.2 Tertiary and vocational education

There are no tertiary educational facilities located within either the Scotia GFL or SCA. The closest university is the University of Southern Queensland in Toowoomba. The distance of tertiary educational facilities from the Scotia GFL and SCA possibly contributes to the outmigration of youth discussed in Section 2. The *Western Downs 2050 Community Plan* highlights the need for further consultation around the lack of tertiary facilities in the region (Western Downs Regional Council, 2011).

Similarly, there are no vocational education institutions within the Scotia GFL. While the CQ TAFE has a campus located in Biloela, there appears to be limited courses available at the time of this impact assessment (Central Queensland Institute of TAFE, 2013). The closest institution to the Scotia GFL is the Chinchilla campus of the Southern Queensland Institute of TAFE. According to recent consultation for The Range EIS, the TAFE is experiencing increasing demand, which is attributed to student demand for qualifications that support employment in the mining industry (AEC Group, 2012).

6.2 Childcare facilities

Table 6-1 shows the spread of childcare facilities across the SCA. While the ratio of child care facilities shown in Table 6-2 shows that there are generally more facilities than children aged 0-4 years than in the State, Table 6-1 demonstrates that many of these facilities are outside of the GFL (i.e. in the Biloela SA2). Consultation undertaken in the Scotia GFL has consistently reported a perceived lack of child care facilities, which in turn impact on a family's income, particularly by preventing mothers from workforce participation (AEC Group, 2012; Western Downs Regional Council, 2011).

Table 6-1 Childcare facilities across the SCA

Area	Family day care	Kinder-garten	Long day care	School aged care	Limited hours care	Child care & family support	Total
Banana (SA2)	0	2	0	0	2	0	4
Biloela (SA2)	0	2	2	1	0	0	5
Miles – Wandoan (SA2)	1	2	1	1	0	0	5
SCA	1	6	3	2	2	0	14

Source: OESR, 2013.

Table 6-2 Ratio of child care facilities per 100 children aged 0-4 years

Scotia gas field	Arcadia gas field	Southern HRA	Qld
0.96	0.59	1.13	0.90

Source: OESR, 2013.

6.3 Health and community support

The Scotia GFL is serviced by a health service, which provides emergency medicine and outpatient services within Miles and Taroom. More locally to the Scotia GFL, the Wandoan Outpatients clinic provides a range of outreach medical services and operates via a visiting doctor. The closest hospital to the Scotia GFL is found within Biloela. The Biloela hospital, which is in a reported need of

6 Social infrastructure

considerable maintenance, provides a range of medical services, as listed within Table 6-3 (Central Telegraph, 2012).

Table 6-4 shows the annual admissions data for the Biloela Hospital between 2008-09 and 2010-11. Over this period, there was a gradual rise in emergency admissions, amounting to 4%. Concurrently, there was a dramatic reduction in 'other' admissions (which is all admissions that do not require medical attention with 24 hours) over the same period, amounting to -22% of the period.

Table 6-3 Hospitals and health services

Hospital/health service	Services
Miles health service	Accident and emergency, admissions and outpatient services
Taroom health service	Accident and emergency, admissions and outpatient services
Wandoan outpatients clinic	Doctors Outpatient Department (OPD) twice a week for one hour, Nursing OPD/Accident and Emergency, Pathology service for Private Pathology, Community Palliative Care and Domiciliary Nursing
Biloela hospital	Accident and emergency, admissions, obstetrics and outpatient services. 25 beds

Source: (Queensland Health, 2013)

Table 6-4 Admissions to Biloela Hospital, 2008-09 to 2010-11

Admissions	2008-9	2009-10	2010-11	08/09-10/11 % change
Emergency	853	880	915	4
Other	146	190	88	-22

Source:

6.4 Emergency services

Table 6-5 shows the number of police stations, ambulance stations and fire stations across the SCA. Aside from these public services, the SCA is also serviced by a number of voluntary and non-government organisations (NGO) that provide emergency services, as listed in Table 6-6.

Consultation revealed service concerns for both police and ambulance officers, which are considered to be a result of increasing workload due to the presence of construction camps within the Scotia GFL.

Table 6-5 Emergency services

Police stations (a)	Ambulance stations	Fire stations (b)
10	8	9

(a) Does not include Police Beats.(b) Does not include Rural Fire Brigade.

Source: OESR, 2013.

Table 6-6 Volunteer and NGO emergency services

Emergency air services	State emergency service (SES)	Rural fire brigade
Two emergency air services operate in the SCA: the Royal Flying Doctor Service and Queensland CareFlight	The SES is a volunteer based organisation that encourages and trains community members to assist themselves and others in times of need, particularly search,	Rural fire brigades support the Rural Fire Service Queensland in fire fighting and the planning and community education associated

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Emergency air services	State emergency service (SES)	Rural fire brigade
Group. The CareFlight Group has been contracted to provide a dedicated response for LNG industry incidents through a joint commitment by Arrow Energy, APLNG QGC and Santos GLNG.	rescue and emergency preparation, response and recovery operations. There are SES branches throughout the Scotia GFL and SCA, including Miles, Wandoan, Taroom and Biloela.	with rural fire management. The Scotia GFL and SCA are covered by the Queensland Fire and Rescue Services South Western Region's Area 5 (Roma), Area 3 (Dalby) and by the Central Region (Biloela).

6.5 Aged care

Aged care services provide a range of assistance and support services for the elderly population (65 years and above) depending on their needs. There are 16 facilities located throughout the SCA, providing 219 places, as shown within Table 6-7. Looking further afield to the HRA, there are 33 facilities providing a total of 598 places.

As can be seen in Table 6-7 the SCA and HRA have fewer beds per persons 65+ than the State as a whole. The low ratio was confirmed to be experienced as a shortage during consultation by service providers across the GFD Project area (consultation data).

Table 6-7 Aged care services, 2011

Aged care service providers	Number of places by care type				Total places	Population 65+	Beds per persons 65+
	Community care	Residential care	Transition care				
SCA	16	71	148	0	219	2,423	11.06
HRA	33	198	391	0	598	5,969	9.98
Queensland	1,048	10,906	33,362	588	44,856	577,785	12.88

Source: OESR, 2013. Data available at the SA2 level only. Data

6.6 Community services

A number of community support services operate throughout the SCA. These services are often concentrated in larger service centres (e.g. Biloela, Dalby) and delivered to smaller towns, such as those within the Scotia GFL via outreach services. Examples of these community services include:

- Alcohol and substance dependency services (e.g. Alcoholics Anonymous)
- Health and care services (e.g. Ability First Australia, Alzheimer's Australia, Anglicare, Blue Care, Disability Service Centres, Home and Community Care (HACC) Centres and Programs, Meals on Wheels, OzCare)
- Domestic violence and family counselling, advisory and support services (e.g. Centrecare, Central Highlands Family Support Association, Child Safety and Social Workers, Domestic Violence Service of Central Queensland, Neighbourhood Centres, Relationships Australia, Salvation Army)
- Homelessness support, housing assistance and crisis accommodation (e.g. Anglicare, Department of Communities, Centrelink, Salvation Army)
- Community advocacy, advisory and legal centre services
- Financial assistance
- Emergency relief and support (e.g. Lifeline).

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The Scotia GFL has a number of local community support services, including:

- The Murilla Community Centre (Miles) — family support worker, respite service, long day care centre, community development workers, a youth group, financial counselling, no interest loan schemes, a community bus and coordination of visiting services (optometrist, hearing care, job network providers, legal support)
- Meals on Wheels (Miles and Wandoan) — home based care and support
- Blue Care (Scotia GFL serviced by Chinchilla) — home based care and support.

Alcohol, tobacco and drug support services are provided through the Miles Health Service.

According to consultation undertaken for The Range EIS, the Murilla Community Centre, which is the primary provider of community services in the Scotia GFL, is perceived to be under pressure. This is perceived to be a result of an increased demand for housing support and associated services, which are in turn are a result of declining housing affordability (AEC Group, 2012).

6.7 Cultural and recreational facilities

Cultural and recreation facilities and activities are an often overlooked but integral part of communities. These facilities and the organised groups that use them are an important facilitator of social capital or community cohesion and can act to make a community liveable.

6.7.1 Cultural and arts facilities and groups

Table 6-8 shows the community and arts facilities within the Scotia GFL. These facilities are supported by a base of local arts and community groups, including:

- Taroom Historical Society
- Taroom Senior Citizens Club Inc
- Taroom Shire Landcare Group Inc
- Taroom Show Society
- Upper Dawson Branch Wildlife Protection Society (WPS) Queensland
- Taroom District Development Association Inc.
- Taroom Lions Club
- Taroom RSL
- Taroom Arts and Crafts group
- Taroom Leichardt Centre (proposed, see <http://www.banana.qld.gov.au/the-leichhardt-centre>)
- Miles and District Art Group
- Wandoan Craft Group
- Wandoan Creative Sewing
- Miles Academy of Dance
- Wandoan and District Regional Arts Development Fund
- Miles regional Arts Council
- Juandah Historical Society
- Miles Show Society
- Miles and District Historical Society.

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- There are also a number of events and festivals that occur within the Scotia GFL, including: Beef, Bells, and Bottle Tress Festival (every two years)
- Annual shows (Miles, Wandoan, Taroom)
- Country race meetings
- Condamine Rodeo and Campdraft
- Wandoan Silverspur Camp Draft
- Miles Kindy Bull and Barrel
- Wandoan Pony Club Rally
- History Day at the Miles Historical Village
- Dawson River Festival - Taroom
- Juandah Heritage Day
- Miles Country Music Spectacular
- World Tea Cosy Making Championships
- Murilla Community Centre Bookfest
- Jazz at Juandah
- Jazz in the Garden (every two years)
- Show Ball – Wandoan
- Lions Annual Christmas Carnival (Wandoan)
- Juandah Cancer Rodeo - Wandoan
- Wandoan Polo Cross Carnival
- Wandoan Show & St Paddy's Campdraft
- St Luke's Markets (Western Downs Regional Council, 2011).

Based on the findings of a recent survey, the Scotia GFL is reasonably well-resourced in terms of cultural and arts facilities and groups (Western Downs Regional Council, 2011).

Table 6-8 Cultural and arts facilities

Facility type	GFL
Library	3
Youth centre	0
Community centre	4
Community hall	14
Art centre	1
Museum	2

Source: Western Downs Regional Council, 2011, Taroom 2011-2021 Place Based Plan (Banana Shire Council)

6.7.2 Sports and recreational facilities and groups

According to the *Western Downs Community Plan 2050 – Regional Sport and Recreation Plan* (2011) the Miles/Wandoan district is considered well equipped in relation to sports and recreational facilities to cope with projected population increases. Facilities within the Scotia GFL include:

- Miles Tennis Club
- Miles Bowls Club
- Miles Racecourse
- Miles Golf Course
- Skate park
- Miles Aquatic Complex
- Centenary Oval (Miles)
- Wandoan Bowls Club

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- Wandoan Tennis Club
- Lindsay Williams Oval (Wandoan)
- Wandoan Gymnastics
- Wandoan Gun Club
- Wandoan Golf Club
- Wandoan Showgrounds
- Wandoan Swimming Pool (WDRC, 2011)
- Show Grounds and Sports & Recreation Complex
- Taroom Race Course
- Taroom Golf Course
- Taroom River Walk
- Taroom Bowls Club
- Taroom Swimming Pool

Although there is considerably 'built capital' available, the viability of sporting clubs is a concern in the Scotia GFL. During a 2011 survey in Western Downs, sporting clubs reported declining memberships in recent years, which is primarily attributed to shift-work practices, as outlined further in Table 6-9.

Table 6-9 Results of community consultation – sports and recreation planning

Miles	Wandoan
<ul style="list-style-type: none"> • Viability of clubs/organisations Finding the volunteer staff required to run organisations was increasingly difficult • Impact of mining boom Residents expect an increase in the use of town facilities • Possibility of using coal seam gas water to create a lagoon (etc.) for water sports 	<ul style="list-style-type: none"> • Viability of clubs/organisations Finding the volunteer staff required to run organisations was increasingly difficult.

Source: WDRC, 2011

The district has a wide number of sports and recreational clubs; which despite some obvious declines in membership, appear to be remaining active when the population of the towns is considered.

- Dawson Jockey Club Race
- St Patrick's Campdraft
- Taroom & District Fishing & Restocking Club Inc
- Taroom Amateur Swimming Club Assoc
- Taroom Bowls Club
- Taroom Golden Horseshoe Inc
- Taroom Golf Club
- Taroom Polocrosse
- Taroom Pony Club
- Taroom Rodeo Club
- Taroom Scout Group
- Taroom Tennis Club
- Taroom Wandoan Cricket Club
- Wandoan & District Pony Club Inc
- Wandoan Amateur Swimming Club Inc
- Wandoan Bowls Club Inc
- Wandoan Campdraft & Rodeo Assoc. Inc.
- Wandoan Darts Club
- Wandoan Diggers Race Club
- Wandoan Golf Club
- Wandoan Gun Club
- Wandoan Gymnastics Club Inc
- Wandoan Junior Rugby League Club
- Wandoan Polocrosse Club Inc
- Wandoan Show Society
- Wandoan Sport & Recreation Association
- Wandoan St Patricks Campdraft
- Wandoan Taroom Active Riders
- Wandoan Tennis Club Inc
- Wandoan Touch Football Association

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Appendix E Regional Indigenous community social baseline



Report

Indigenous social baseline

MAY 2014

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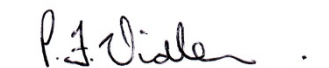
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Abbreviations

Abbreviations

Abbreviation	Description
DOGIT	Deed of Grant in Trust
I	Indigenous
NI	Non-Indigenous
OESR	Office of Economics and Statistics
CDEP	Community Development Employment Projects
IRSAD	Index of Relative Socio-Economic Advantage and Disadvantage
SA2	Census standard statistical area 2
SCA	Social catchment area
SEIFA	Socioeconomic Indexes for Areas
TAFE	Technical and Further Education

Introduction

This appendix provides a social profile overview of two Indigenous populations that are likely to be impacted by the GFD Project's activities: namely the Indigenous people who reside within the gas fields' social catchment area (SCA), predominantly in the towns, and the residents of Woorabinda, a Deed of Grant in Trust (DOGIT) community located to the northeast of the Arcadia gas field.

Indigenous Australians as a cultural group face significant socio-economic disadvantage when compared to non-Indigenous Australians. As a result, the development of the GFD Project may have a differential impact on this community, while their ability to engage in project-enabled opportunities may not be equivalent to the non-Indigenous population. Understanding the characteristics of this population will enable Santos GLNG to ensure that its Indigenous engagement programs are structured appropriately and targeted at areas of maximum need.

Woorabinda has been included in the assessment as:

- It is likely that some Woorabinda residents will have cultural heritage interests in land that will be impacted by the GFD Project. While management of these interests are accounted for in approved Cultural Heritage Management Plans, broader interests (such as in employment opportunities) may be included in Indigenous Land Use Agreements negotiated by Santos GLNG
- The residents of Woorabinda are arguably within the local employment pool for the GFD Project, based on their proximity to the Arcadia gas field.

Table 1-1 lists the standard geographical areas considered within the Indigenous baseline profile.

Table 1-1 Studied areas – statistical divisions

Woorabinda	Gas fields SCA
Woorabinda Shire – Shire, ABS	Central Highlands West SA2
	Roma SA2
	Roma Region SA2
	Miles/Wandoan SA2
	Banana SA2

Note: SA2 – Census standard statistical area 2

1.1 Overview

Historical legacy

European exploration of the area hosting the gas fields commenced in the early 1840s with expeditions by Ludwig Leichardt and later Major Thomas Mitchell in the Surat/Roma, Taroom and Carnarvon Gorge areas. This was followed in the 1850s by an era of pastoral expansion as settlers moved from what is now northern NSW seeking access to land and pastures, depicted by Mitchell in terms such as a 'champagne region' and 'mount abundance'. Significant conflict between the settlers and Aboriginal inhabitants over land use ensued for the next two decades, exacerbated by the introduction of the Native Mounted Police from the 1850s charged with 'dispersal' of Aboriginal groups wherever they were to be found, often resulting in wanton killings such as at Bendemere Station and Surat in the early 1850s. Large scale killings of settlers by Aboriginals occurred at Hornet Bank, west of Taroom and in the GFD Project area, in 1857 and at Cullin-la-Ringo, north of Springsure in 1861. These were followed by extensive and extended retribution raids by settlers and police that decimated the local Aboriginal populations in the surrounding areas.

1 Introduction

By the 1870s, the remaining Aboriginal population and society was severely fractured and relegated to the fringes of settlements and stations, and reliant on stock work for gaining access to sustaining rations. Following this, large sections of the population were forcibly removed by the government to reserves (such as Taroom, established in 1911, and Mitchell, established in 1936 and cancelled in 1955) where they were compelled to live with people from different language groups 'within a highly regulated and tightly controlled institutional environment'. The relatives and descendants of the settlement residents (the Taroom reserve was abandoned in 1927 when the residents were forced to relocate to the newly-established Woorabinda Aboriginal Reserve) have a strong association with those places, as well as an enduring connection to the land that belonged to their tribe in pre-contact times. These connections are recognised in the Indigenous Land Use Agreements and Cultural Heritage Management Plans that Santos GLNG has negotiated with the relevant groups.

Social profile and values

Indigenous residency today across the GFD Project area (Table 2-1) is characterised by population in townships (either at or above the level of Indigenous representation in the overall Queensland population), together with the DOGIT community of Woorabinda, established in 1927 as an Aboriginal Reserve, and granted a degree of autonomy with the issue of a deed of grant in trust for the land to the Woorabinda Community Council in 1986. The profile of the Indigenous population exhibits the following characteristics:

- Age profile

A young profile where youth below 20 years of age account for almost 50% of the total population, which indicates both high fertility and mortality

- Family composition

Within Woorabinda, single parents are the most common family type, followed by couples with children, whereas in the gas fields SCA, couples with children are the most common family type, followed by single parents.

- Population mobility

Woorabinda residents have extremely low levels of population mobility, indicating limited skills and employability together with a low level of personal resources. Within the gas fields SCA, Indigenous residents have a higher level of population mobility than the non-Indigenous population of the SCA, possibly indicating movement in search of employment, lower cost housing or the maintenance of family connections.

- Education

All Indigenous residents of the GFD Project area exhibit lower levels of educational attainment and post-school qualifications than the non-Indigenous population studied. Of those who have post-school qualifications, the majority have trade or Technical and Further Education (TAFE) level qualifications.

1 Introduction

- Employment

Woorabinda has extremely high levels of unemployment coupled with a considerable portion of the population who are engaged in Community Development Employment Projects (CDEP). In contrast, Indigenous residents of the gas fields SCA have high levels of unemployment when compared to the non-Indigenous population, though markedly lower levels of unemployment compared to Woorabinda where there is significantly less opportunity

- Occupation and industry

In Woorabinda there is a significant concentration of people working within the community/health services industry with associated occupations, and limited private sector employment, whereas within the gas fields SCA, employment within the mining industry is dominant with associated higher numbers of machinery operators and labourers

- Income

Indigenous people across the GFD Project area had lower incomes than non-Indigenous persons, with Indigenous residents of Woorabinda having the lowest levels of personal income.

- Housing

Indigenous persons across the GFD Project area had lower levels of home ownership than non-Indigenous people, with those renting having a high level of dependence on State and community housing providers. They were also living in dwellings subject to a higher incidence of over-crowding than non-Indigenous households, with significant overcrowding in Woorabinda where there is an almost total dependence on council-owned housing.

1.2 Sources

The primary source used for this appendix is the OESR's *Indigenous Regional Profiles*, which presents data from the 2011 Census. Additional sources are listed in Section 7.

Population and demographic profile

2.1 Historical trends and projections

Table 2-1 shows the Indigenous population, in numbers as well as a percentage of the total population for 2006 to 2011, for the SA2 areas that most closely approximate the gas field localities, as well as for Woorabinda Shire. The significant points from this table are that the Indigenous population is reasonably steady at around 1,700 persons, with the largest concentration outside of Woorabinda in the Roma Town area where Indigenous people are represented in the overall population at almost three times the rate of Indigenous representation in the Queensland population (9.5% and 3.6% respectively). Woorabinda has experienced fluctuations in its population over the last decade, although there have been minor growth spikes between 2006-2009 and 2010-2011. Despite this history, the OESR projects that Woorabinda will experience sustained population growth between 2011 and 2031 at slightly lower levels than the State as shown in Table 2-2. Projections of Indigenous population growth for the SA2 areas are not available, though they are expected to be modest based on the growth evident between 2006 and 2011.

Table 2-1 Indigenous population in the GFD Project area

SA2 area	2006		2007		2008		2009		2010		2011	
	No	%	No	%	No	%	No	%	No	%	No	%
Banana	339	3.5	336	3.6	329	3.6	329	3.6	331	3.7	341	3.9
Central Highlands - West	233	2.6	230	2.6	230	2.6	226	2.5	223	2.5	223	2.5
Miles - Wandoan	139	3.4	135	3.4	126	3.1	131	3.3	121	3.1	111	2.9
Roma	666	9.6	671	9.6	671	9.5	665	9.4	671	9.4	677	9.5
Roma Region	361	5.9	352	5.7	353	5.7	354	5.7	350	5.6	359	5.7
Woorabinda (S)	871	94.9	891	94.9	910	94.2	882	94.2	906	94.5	925	94.2
Grand Total	1,738		1,724		1,709		1,705		1,696		1,711	

Source: OESR, Population Estimates by Indigenous Status, SA2s, 2006 to 2011

Table 2-2 Population projections

	2011	2016	2021	2026	2031	2011-2031 % Ann growth
Woorabinda	976	1,065	1,152	1,246	1,357	1.95
Queensland	4,611,491	5,092,858	5,588,617	6,090,548	6,592,857	2.1

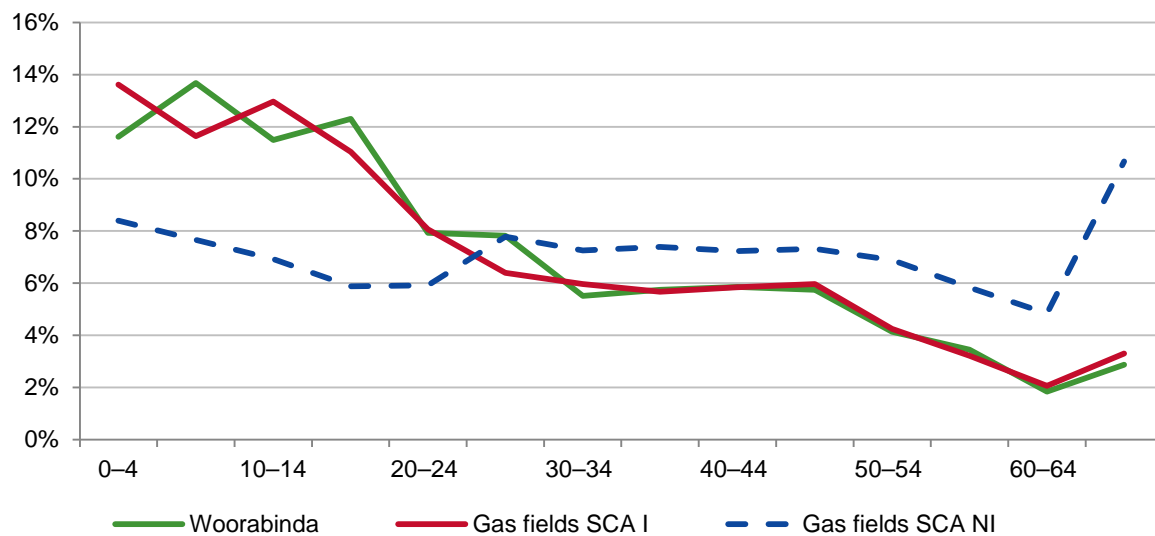
Source: OESR, 2012a, 2012b.

2 Population and demographic profile

2.2 Age profile

Figure 2-1 shows that the age profiles of both Woorabinda and the gas fields SCA Indigenous population are similar, though significantly different from the profile of the non-Indigenous population of the gas fields SCA. Both Indigenous areas have significantly higher levels in the younger age cohorts, where people below 20 account for almost 50% of the population. This dominance is likely to be a reflection of high fertility rates and poor health outcomes with an associated incidence of lower life expectancy in Indigenous communities.

Figure 2-1 Age profile, 2011



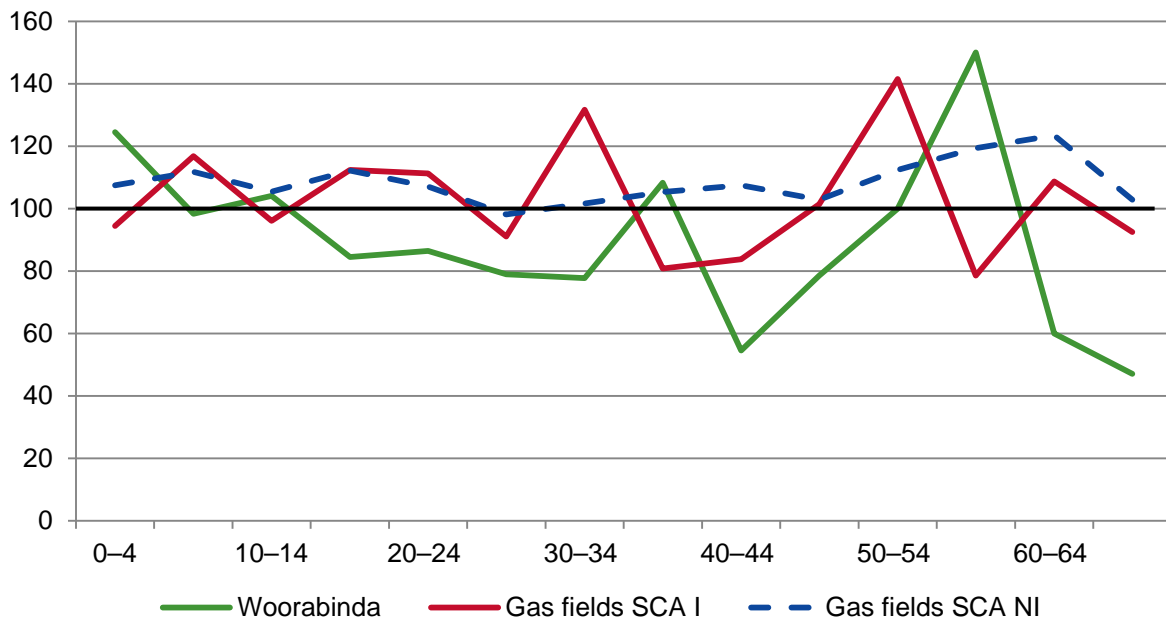
Source: OESR, 2013b. I: Indigenous. NI: non-indigenous

2.3 Gender

Error! Reference source not found. shows the sex ratio by age cohort for Woorabinda, and the Indigenous and non-indigenous SCA as at the 2011 Census. The sex ratio represents the number of males per 100 females in a population. In general, the sex ratio reduces markedly past age 65, due to the impact of higher male mortality in this population group. In regional areas, there is generally a sex ratio greater than 100, due to the presence of industries such as mining and agriculture, which are generally male dominated. Figure 2-2 indicates that in Woorabinda there are more females than males in all age cohorts up to age 55, with the exception of the 35-39 age cohort where numbers are approximately equal. For the 55-59 age cohort males outnumber females, however past age 60 the number of males in the population declines markedly. The Indigenous SCA generally follows the non-Indigenous SCA sex ratio, with the exception of a smaller male population within the 35-44 age cohort.

2 Population and demographic profile

Figure 2-2 Gender ratio



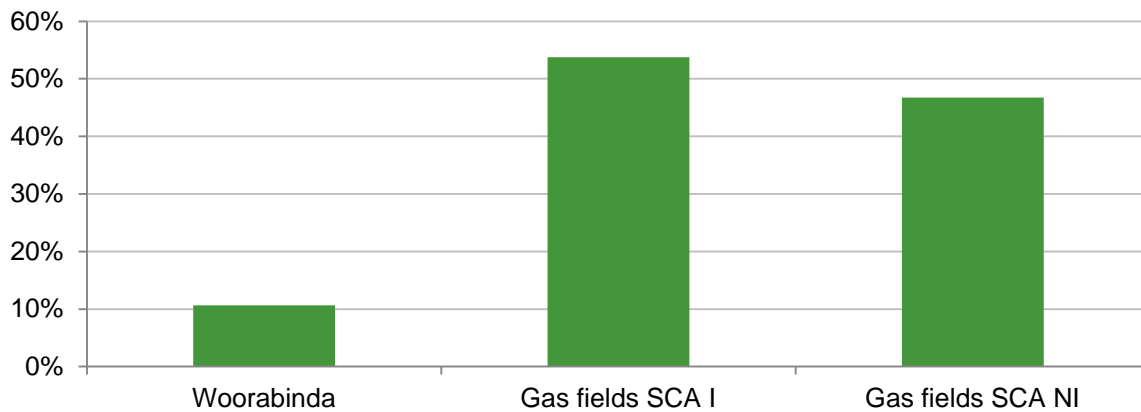
2.4 Population mobility

The stability of a population can indicate a range of factors: areas with high reported levels of population mobility will often offer high employment and educational opportunities, given that mobility is largely a youth driven phenomena. On the other hand, population with low levels of mobility can indicate higher levels of social capital, meaning that people have established ties to the place and community where they live.

Figure 2-3 measures population mobility according to whether or not residents stated that they had moved from their current address in the five years prior to the 2011 census. As shown, Woorabinda has an extremely low level of population mobility at 11%, meaning that 89% of people resided in the same home for both census periods. On the other hand, the Indigenous population of the gas fields SCA has a significantly higher level of population mobility, as shown. The low rate of mobility in Woorabinda versus the higher rate in the gas fields SCA is most likely a reflection of the lower employment and educational opportunities and attainment of Woorabinda residents, characteristic of DOGIT communities where there is limited commercial enterprise and an inability to own housing privately.

2 Population and demographic profile

Figure 2-3 Population mobility-different address five years ago-Woorabinda and gas fields SCA, 2011



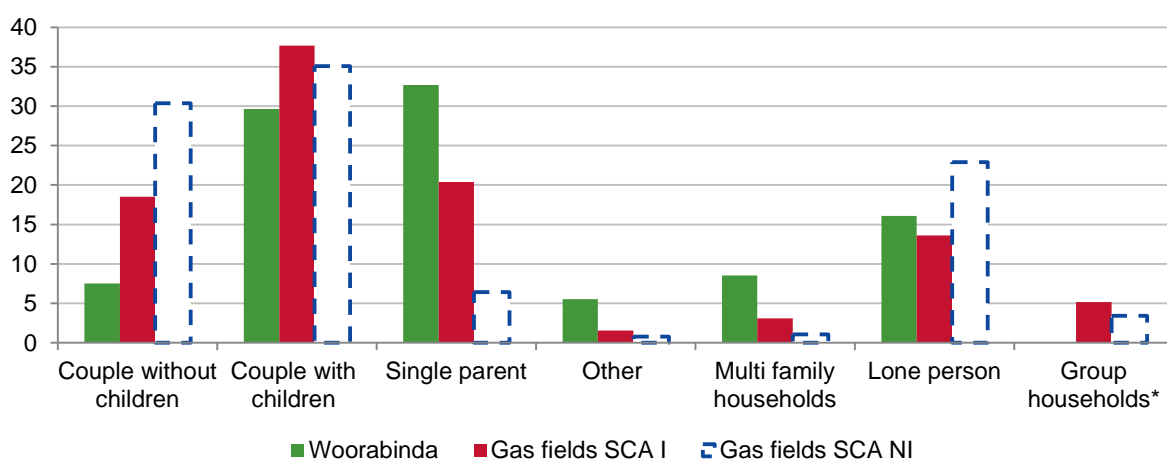
Source: OESR, 2013b

2.5 Household and family composition

Family composition demonstrates the typical living arrangements for families within the studied areas. As shown within Figure 2-4, both Indigenous communities differ from the non-Indigenous population within the gas fields SCA in the following ways:

- Both Woorabinda and the Indigenous population of the gas fields SCA are much more likely to have children, with around 60% of all households having children
- Both communities have a significant higher proportion of single parents raising children. This is particularly emphasised in Woorabinda, where 32% of households are single parents
- Both communities have more multi-family households than the non-Indigenous population. This is generally linked to higher incidences of over-crowding, which is discussed in Section 6: Housing.

Figure 2-4 Family composition, 2011



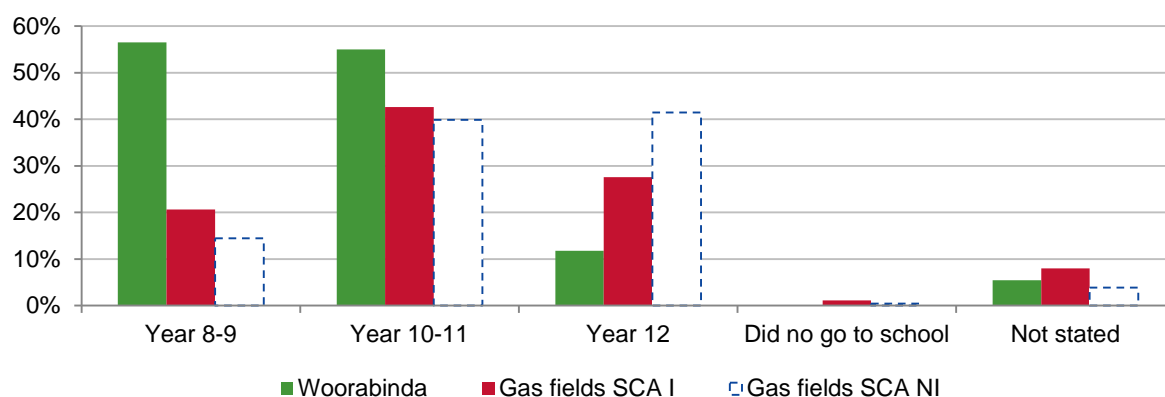
Source: OESR, 2013b

Educational attainment

3.1 Highest year of schooling

Both Indigenous populations have lower levels of school education attainment than the non-Indigenous population in the gas fields SCA. As shown in Figure 3-1, this is particularly pronounced for Woorabinda, where a large portion of the population only attended school up until either year 8 or 9. This level is lower in the case of the wider gas fields SCA Indigenous population, with around 70% of the population meeting a minimum of year 10 education. School attendance at the Woorabinda State School continues to trail the attendance rate of all Queensland State Schools (74% compared to 91%, respectively) (Department of Aboriginal and Torres Strait Islander and Multicultural Affairs, 2013).

Figure 3-1 High school education achievement, 2011

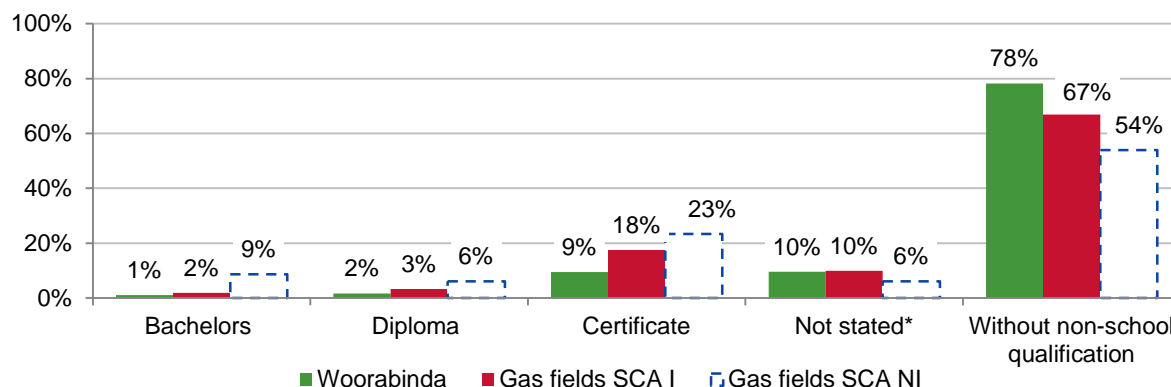


Source: OESR, 2013b

3.2 Post-school qualifications

Figure 3-2 shows the non-school qualifications of all areas assessed. As can be seen, certificate level qualifications are the most common across all areas. Overall, it can be seen that Indigenous peoples in both the gas fields SCA and Woorabinda have lower levels of post-school qualifications than their non-Indigenous counterparts, with this characteristic being more pronounced in Woorabinda.

Figure 3-2 Post-school qualifications, 2011



Source: OESR, 2013b

Lifestyle and well-being

4.1 Volunteering

Understanding the rate of participation in volunteering is important for two reasons. Firstly, service provider organisations rely on volunteer bases in order to provide essential community services. Volunteering also fulfils many important functions that directly affect the wellbeing and quality of people's lives in communities.

As shown in Table 4-1, residents of Woorabinda have a considerably high rate of volunteering, which is over double that of Indigenous residents throughout the wider gas fields SCA. While such high levels of volunteering are not uncommon in remote Indigenous communities, they are likely to be the result of a range of factors, some of which are negative, such as high levels of unemployment and under-resourcing of community service providers.

Table 4-1 Volunteers, (%) 2011

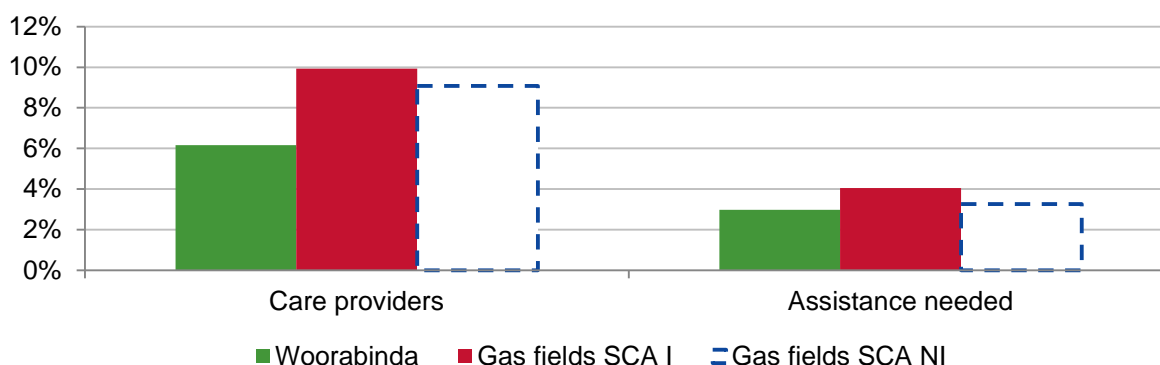
	Woorabinda	Gas fields SCA I	Gas fields SCA NI
Volunteer	49.09	14.88	28.43

Source: OESR, 2013b

4.2 Need for assistance and assistance provided

Figure 4-1 shows the proportion of the population who stated that they were either care providers or needed assistance at the time of the 2011 census. As shown, Woorabinda has lower levels of carers and persons who require assistance compared to the non-Indigenous population of the gas fields SCA. However the Indigenous population of the SCA have a slightly higher level of persons requiring assistance and care providers than the non-Indigenous population. These results may be a reflection of the health status of the Indigenous population, as well the employment status of Woorabinda residents (who may not regard themselves as care providers if they are unemployed and remaining at home).

Figure 4-1 Need for assistance and care providers, 2011



Source: OESR, 2013b

4.3 Health status

It is well established that Aboriginal and Torres Strait Islander peoples have much poorer health than other Australians. Indigenous people made up 3.1% of the Queensland population yet experienced 4.4% of Queensland's disease and injury burden in 2006. In addition, a higher proportion of the burden in Indigenous people was due to premature mortality than in the non-Indigenous population.

4 Lifestyle and well-being

The rate of burden from all causes among Indigenous Queenslanders was 2.3 times that of the non-Indigenous population and 2.2 times the total Queensland population. Among the ten leading broad cause groups in Queensland, diabetes was the cause with the largest differential – rates among Indigenous people were 4.8 times the non-Indigenous rates. The biggest potential gain in Indigenous burden can be achieved by addressing cardiovascular diseases, which were responsible for 27.2% of the total burden difference between Indigenous and non-Indigenous Queenslanders. Substantial gains can also be achieved by addressing diabetes and chronic respiratory disease burden, which were responsible for 15.6% and 10.8% of this gap respectively.

These general observations are likely to apply to the Indigenous population living in the GFD Project area, and in particular to the residents in Woorabinda who are over-represented in the socioeconomically disadvantaged quintile of the overall Indigenous population. While there is no location specific report on Indigenous health status for the GFD Project area, the major points from the Queensland Health report on the health status of Indigenous people in North Queensland (Qld Health et al, 2008) are likely to be relevant. These were:

- High rates of Indigenous women smoking during pregnancy (2.5 times the non-Indigenous rate)
- Indigenous perinatal mortality rates almost double the non-Indigenous rate
- Indigenous children (0-4 years) mortality rate almost double the non-Indigenous rate
- Leading causes of Indigenous death (5-24 year age group) were intentional self-harm by hanging and strangulation and suffocation, asthma and ischemic heart disease.

4.4 Law and order

Table 4-2 shows the most recent statistics available for selected crimes within Woorabinda. Caution in interpreting the data is required as:

- The occurrence per 100,000 does not include NRW or other non-residents (i.e. tourists), which may make it appear that there is a higher level of victimisation
- The resident population is small, which results in dramatic increases and decreases in the calculated number of offences per 100,000.

The data below represents reported crime only, and the reporting rate for different offences can differ dramatically: “For example, approximately 95% of all motor vehicle theft is reported to police whilst only 33% of sexual offences are reported.” (QPS, 2012). Taken at face value, the statistics below show high rates of offences within Woorabinda than in Queensland generally, however that must be seen in the context of the significantly poor socioeconomic conditions experienced by residents of Woorabinda.

There is limited publically available law and order data concerning the Indigenous SCA experience of crime. Despite this, it is reasonable to assume that Indigenous Australians in the SCA experience crime, both as victims and perpetrators, at a higher rate than their non-Indigenous counterparts, in line with state and national trends ((ABS, 2006; Australian Human Rights Commission, 2008).

Table 4-2 Offences per 100,000

Offences per 100,000 people	2006	2007	2008	2009	2010	2011
Assault	9,874	10,325	9,231	11,678	8,389	8,973
Drug offences	2,181	5,387	2,747	4,649	6,402	4,432
Good order offences	24,225	27,497	14,505	31,179	18,653	18,054

4 Lifestyle and well-being

Offences per 100,000 people	2006	2007	2008	2009	2010	2011
Liquor	8,611	9,652	11,868	25,510	19,647	18,270
Traffic	2,411	3,479	2,308	3,515	2,097	3,243
Other offences against the person	2,641	1,235	549	1,134	662	2,595
Other offences	34,902	38,159	23,626	31,406	11,921	15,892
Total	48,565	52,525	38,351	61,565	34,327	40,000

Socio-economic profile

5.1 Employment

Employment is an important social goal for all communities, and particularly for Indigenous communities that have been characterised by poor employment outcomes, and associated social dysfunction, for many years. It is significant that Indigenous Land Use Agreements for resource development projects usually include specific provisions related to employment and training for native title parties and local Indigenous people. The Australian Government, through its Indigenous Economic Development Strategy 2011–2018, and the Queensland Government's commitment to Closing the Gap, both recognise that 'Jobs are the pathway to greater economic participation, financial security and independence'.

Figure 5-1 shows the unemployment rate for Woorabinda and the GFD Project area derived from the 2011 census¹. As would be expected, the unemployment rate in Woorabinda is significantly higher than for Indigenous people in the GFD Project area towns (approximately 11%), with over 30% of people declaring that they were unemployed. This rises to 40% when including those who are employed through CDEP. The unemployment rate for non-Indigenous persons in the gas fields' area is considerably below State and national averages at around two percent. At a high level, this data demonstrates the relative disadvantage of Indigenous Australians in regards to access to employment and its positive social outcomes. Beyond this, we can also see that persons living in Woorabinda are considerably more disadvantaged than Indigenous Australians who reside throughout the gas fields SCA.

Table 5-1 and Table 5-3 disaggregate the data in Figure 5-1 to indicate differences in unemployment and labour force participation rates across the gas field areas, and to examine the rates in the 15-24 age group. These tables indicate that:

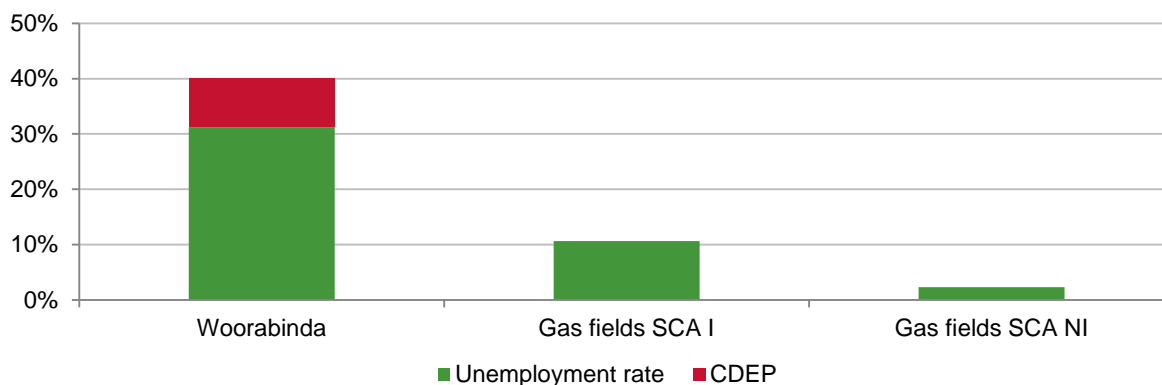
- Indigenous unemployment is three to seven times higher than non-indigenous unemployment, with the highest levels in the Miles to Roma area
- The Indigenous labour force participation rate is between 8 to 15 percentage points lower than the non-Indigenous labour force participation rate, and lowest in the Miles-Wandoan area and the area surrounding Roma town
- For the 15-24 age group (which indicates youth unemployment) unemployment is around two (Roma) to four times (Central Highlands west) the overall Indigenous unemployment rate, with the labour force participation rate being 5 to 15 percentage points lower for Indigenous persons.

A high level assessment (Table 5-2) of the Indigenous labour force split between Government and the private sector indicates that in the Arcadia area, excluding Emerald, the proportion employed by the private sector has increased significantly since 2006. This may be the result of resource company Indigenous employment policies, and would be significant as it would indicate that individual incomes would probably be higher in the private sector. The split appears to be little changed from 2006 in the Maranoa area.

¹ Generally, single point in time unemployment levels are a less reliable indicator of the employment data than time series data; however, time series data for the studied areas is unavailable

5 Socio-economic profile

Figure 5-1 GFD Project area unemployment, (%) 2011



Source: OESR, 2013b

Table 5-1 Indigenous unemployment and participation rates, 15-24 years, GFD Project SA2 areas

	Banana	Central Highlands West	Miles Wandoan	Roma	Roma Region
Persons: employed: total: Age 15-24 years (number)	23	10	11	66	30
Persons: unemployed: Age 15-24 years (number)	5	6	5	20	0
Persons: total: labour force: Age 15-24 years (number)	28	16	16	86	30
Persons: total: Age 15-24 years (number)	48	23	21	121	66
Unemployment % (Overall rate)	18% (6)	38% (9)	31% (12)	23% (12)	0% (12)
Labour force participation % (Overall rate)	58% (65)	70% (66)	76% (62)	71% (67)	45% (59)

Source: ABS, Census of Population and Housing, 2011, Indigenous Profile - I16.

Table 5-2 Labour force split - government and private sectors, 2006 and 2011

	Indigenous		Non-Indigenous	
	South	North	South	North
Government % 2006	19	16	15	12
Government % 2011	15	7	15	11
Private % 2006	70	73	82	84
Private % 2011	69	83	82	86

Source: OESR, 2013

5 Socio-economic profile

Table 5-3 Indigenous labour force characteristics - GFD Project SA2 areas

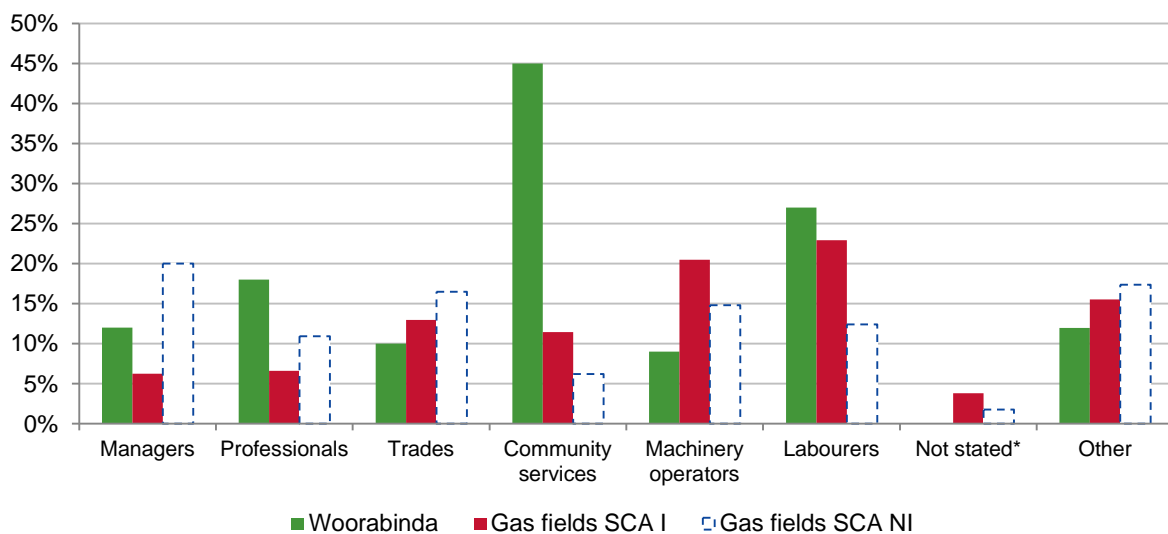
Region	Unemployment: Indigenous, persons (%)	Unemployment: non- Indigenous, persons (%)	Labour force participation: Indigenous, persons (%)	Labour force participation: non- Indigenous, persons (%)	Employment to population: Indigenous, persons (%)	Employment to population: non- Indigenous, persons (%)	Self employed: Indigenous, persons (number)	Self employed: non- Indigenous, persons (number)
SA2 Banana	6	2	65	73.6	61.2	72.1	3	478
SA2 Central Highlands West	8.9	2.5	65.8	71.2	60	69.4	0	362
SA2 Miles Wandoan	11.6	2	62.3	70.4	55.1	69	0	210
SA2 Roma	11.2	2.1	67.1	75.3	59.6	73.7	6	176
SA2 Roma Region	11.6	1.7	58.6	73.4	51.8	72.2	7	421

5.2 Occupation

Figure 5-2 shows the occupation levels across the studied areas as reported in the 2011 Census. Once again, the differences between the three areas are clear. The non-Indigenous population of the gas fields SCA has a generally diverse spread of occupations with the slight predominance of managers being a reflection of the number of self-employed farm managers in the region, given the areas association with agriculture.

The distribution across occupational categories is less diverse in the case of the Indigenous population of the gas field SCA, where machinery operators and labourers are predominant, with a much smaller representation of managers and professionals present. Woorabinda has a noticeable concentration of community and personal service providers, followed by labourers. The predominance of community service providers in Woorabinda reflects the almost total absence of a private sector, and the reliance on government funded social and municipal service provision.

Figure 5-2 Occupation, (%) 2011



Source: OESR, 2013b

5.3 Industry

Figure 5-3 shows the variations in industry of employment for people within all studied areas. The non-Indigenous population has representation across all industry categories, with a noted predominance in employment within the agricultural industry. The Indigenous population of the gas fields SCA is also generally employed across a range of industries, with a slight predominance of employment within the mining industry. In contrast, Woorabinda shows a dominance of employment within healthcare and social assistance and public administration and safety. As discussed within Section 5.2, the dominance in these areas is likely a result of employment in CDEP and the absence of a private sector producing goods to trade.

5 Socio-economic profile

Figure 5-3 Industry, (%) 2011



Source: OESR, 2013b

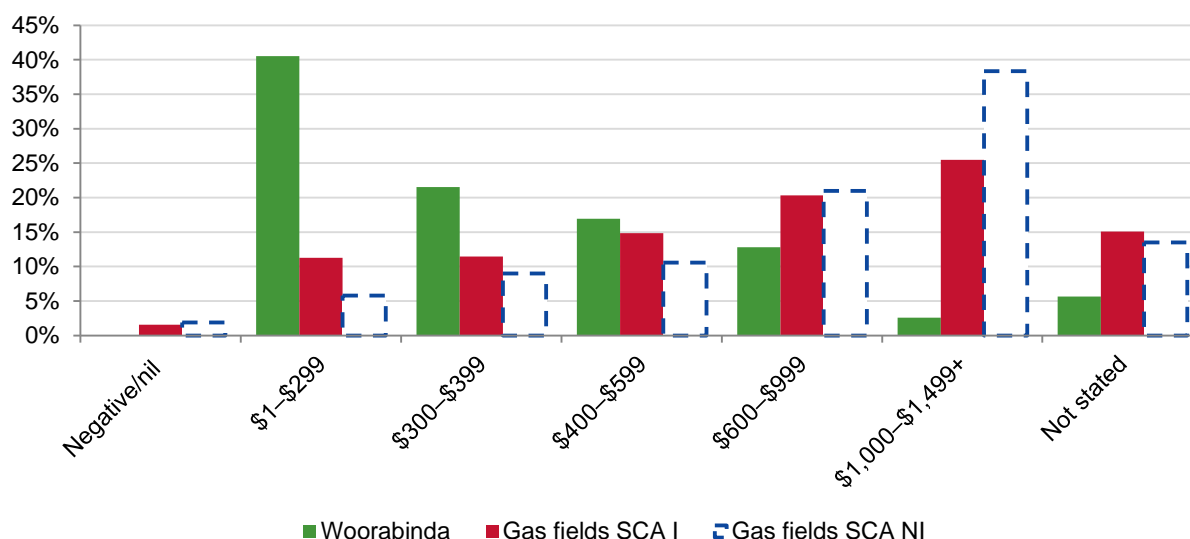
5.4 Income

As can be seen in Figure 5-4, residents of Woorabinda report considerably lower family incomes when compared both to Indigenous and non-Indigenous households within the gas fields SCA. Over 60% of households reported weekly income below \$400, with the vast majority of this proportion earning below \$300 a week. The low-income reported by most Woorabinda residents is reflective of the high levels of unemployment reported, with many within the community being reliant on governmental income support.

Further afield, it is clear that Indigenous households within the gas fields SCA earn far more than their counterparts in Woorabinda; although they earn less than non-Indigenous households. The differences between the three groups are largely a reflection of the educational and employment profiles of the three areas, discussed in Section 3 and Section 5 of this report.

5 Socio-economic profile

Figure 5-4 Weekly household income, 2011



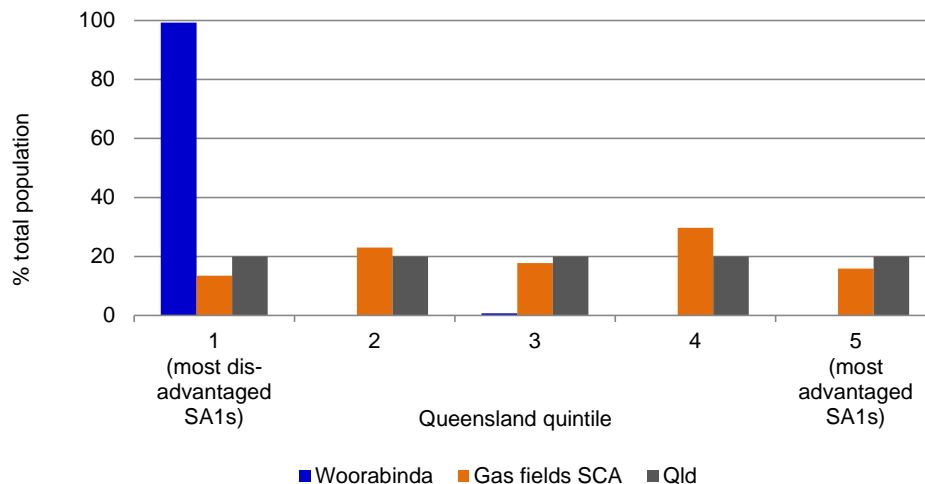
Source: OESR, 2013b

5.5 SEIFA

The ABS Socioeconomic Indexes for Areas (SEIFA) indicate the level of relative socioeconomic advantage and disadvantage within geographic areas (based on SA1s). For the purposes of SEIFA, socioeconomic advantage and disadvantage are defined broadly in terms of people's access to material and social resources, and their ability to participate in society. In order to capture this broad definition, data inputs to SEIFA include variables covering income, education, employment, occupation and housing.

The SEIFA Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD) is intended to provide a full-spectrum overview of socio-economic conditions in a given area. Based on the IRSAD, Figure 5-5 compares the prevalence of relative socio-economic advantage and disadvantage in Woorabinda and the Gas Fields SCA with those of Queensland (using IRSAD Queensland quintiles as a benchmark).

Figure 5-5 Index of relative socioeconomic advantage and disadvantage, 2011



Source: ABS, 2012

5 Socio-economic profile

The relative socioeconomic disadvantage of Woorabinda is clearly evident. Virtually all (99.3%) residents of Woorabinda live in areas that fall in the lowest quintile (Queensland). The remainder (less than one percent) are in the middle quintile. This indicates deep and pervasive disadvantage in the area. As explained elsewhere in this report, there are few jobs available, poor quality housing stock and little social infrastructure to enable community participation. While it is important to recognise the cultural determinants of this situation (for example, residents of Indigenous communities may be less likely to value conventional western modes of economic and social participation), this socioeconomic profile indicates a significant risk of poor social outcomes related to universal values such as health and education.

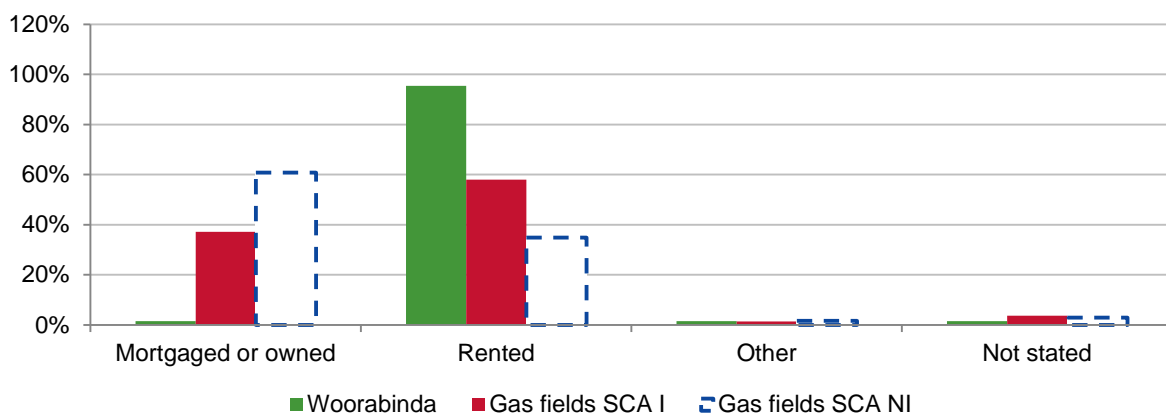
Housing

Figure 6-1 shows the primary tenure type for households across the studied areas. As shown, the most common form of tenure for both Indigenous populations studied is renting; with 95% of residents in Woorabinda and 58% of Indigenous residents in the gas fields SCA. In contrast, the most common form of tenure for non-Indigenous residents in the gas fields SCA is mortgaging or owning their own home.

The lower levels of home ownership for Indigenous peoples is concerning in that home ownership is generally associated with other positive social outcomes, such as health status. Home ownership is a means of wealth generation, not only for an individual, but as a way to produce intergenerational wealth. Beyond material wealth, home ownership is generally accepted to contribute to the stability and sustainability of communities – where higher levels of home ownership are strongly associated with lower crime rates, lower mobility and higher property values (McCabe, 2013).

The rental landlord type for the studied areas is shown in Figure 6-2, with the notable feature being the 87% of residents in Woorabinda renting from either the state or a community/church group. The dominance of assisted housing in Woorabinda is a result of a lack of private housing, which in turn is due to the tenure status of the land and the socio-economic deprivation, in particular low employment, of the area's residents. A clear differentiation exists between Woorabinda and Indigenous people living in the gas fields SCA, where a larger proportion of these people rent from the private market.

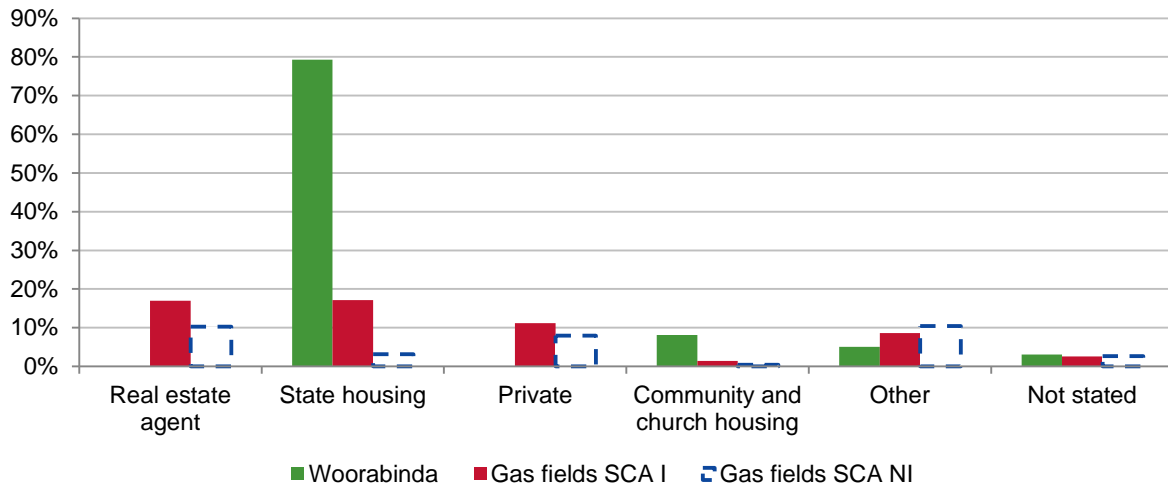
Figure 6-1 Primary tenure type (%), 2011



Source: ABS, 2012

6 Housing

Figure 6-2 Rental landlord type (%), 2011



Source: ABS, 2012

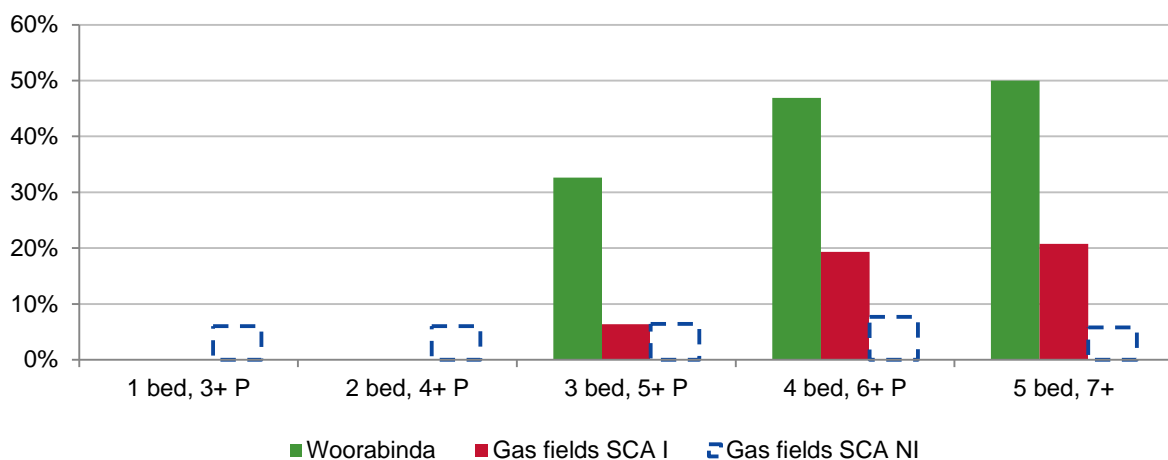
6.1 Overcrowding

Overcrowding is a widely recognised and persistent issue for Indigenous Australians and is a result of:

- Low socio-economic status of many Indigenous Australians making private housing unaffordable
- A persistent lack of social housing
- The design of housing being unsuitable for the larger extended families of Indigenous Australians, characterised by inter-generational cohabitation.

As seen in Figure 6-3, there is a much higher incidence of over-crowding in Woorabinda than for Indigenous and non-Indigenous peoples in the gas fields SCA. Under this measure, 37% of all households in Woorabinda are overcrowded, compared to 15% of households for Indigenous people in the gas fields SCA and 6% of households occupied by non-Indigenous peoples.

Figure 6-3 Overcrowding (%), 2011



Source: ABS, 2012

Social infrastructure

This section discusses the social infrastructure present within Woorabinda. In general, Indigenous people within the SCA would access the same social infrastructure as that of the non-indigenous population.

7.1 Health

Woorabinda's primary health facility is the Woorabinda Hospital, which provides accident and emergency services, admissions, aged care, outpatient services and self-service dialysis. The hospital is serviced by visiting specialists; however, residents of Woorabinda may be required to travel to Rockhampton for specialist services.

Table 7-2 shows the annual admissions data for Woorabinda between 2009-10 and 2011-12. Over this period, there was a noticeable increase in same presentations; however, overnight presentations remained stable.

Table 7-1 Hospital admissions, 2009-10 to 2011-12 – Woorabinda hospital

Year	Same day	Overnight
2011-12	198	164
2010-11	206	164
2009-10	155	163

Source: National Health Performance Agency, 2013

7.2 Emergency services

Table 7-2 shows the number of police stations, ambulance stations and fire stations in Woorabinda. Aside from these public services, the SCA is also serviced by a number of voluntary and non-government organisations (NGO) that provide emergency services, as listed in Table 7-3.

Table 7-2 Emergency services

Police stations(a)	Ambulance stations	Fire stations(b)
1	1	0

(a) Does not include Police Beats.(b) Does not include Rural Fire Brigade.
Source: OESR, 2013.

Table 7-3 Volunteer and NGO emergency services

Emergency air services	State emergency service (SES)	Rural fire brigade
Two emergency air services operate in the region: the Royal Flying Doctor Service and Queensland CareFlight Group.	The SES is a volunteer based organisation that encourages and trains community members to assist themselves and others in times of need, particularly search, rescue and emergency preparation, response and recovery operations. There is a SES branch present in Woorabinda.	Rural fire brigades support the Rural Fire Service Queensland in fire fighting and the planning and community education associated with rural fire management. Woorabinda is covered by the rural fire brigades located in Emerald.

7 Social infrastructure

7.3 Education

There are two schools present in Woorabinda, covering primary and high school education. School attendance and teacher retention are noted issues at both the primary and secondary level (ACARA, 2014). Both schools have established partnerships with universities and development organisations.

7.4 Childcare

There is one child care facility present in Woorabinda. As shown in Table 7-4, the ratio of child care facilities per 100 children 0-4 years is lower than the State average.

Table 7-4 Ratio of child care facilities per 100 children aged 0-4 years

Woorabinda	Qld
0.009	0.90

Source: OESR, 2013c

7.5 Aged care

Aged care services provide a range of assistance and support services for the elderly population (65 years and above) depending on their needs. There is one facility located in Woorabinda, providing 30 places. As can be seen in Table 7-5, Woorabinda has a higher number of persons per bed than the State.

Table 7-5 Aged care services, 2011

Aged care service providers		Number of operational places by care type				Population 65+	Persons per bed 65+
		Community care	Residential care	Transition care	Total places		
Woorabinda	1	6	24	0	30	29	1.03
Queensland	1,051	11,368	33,959	733	46,060	577,785	0.07

Source: OESR, 2013.

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