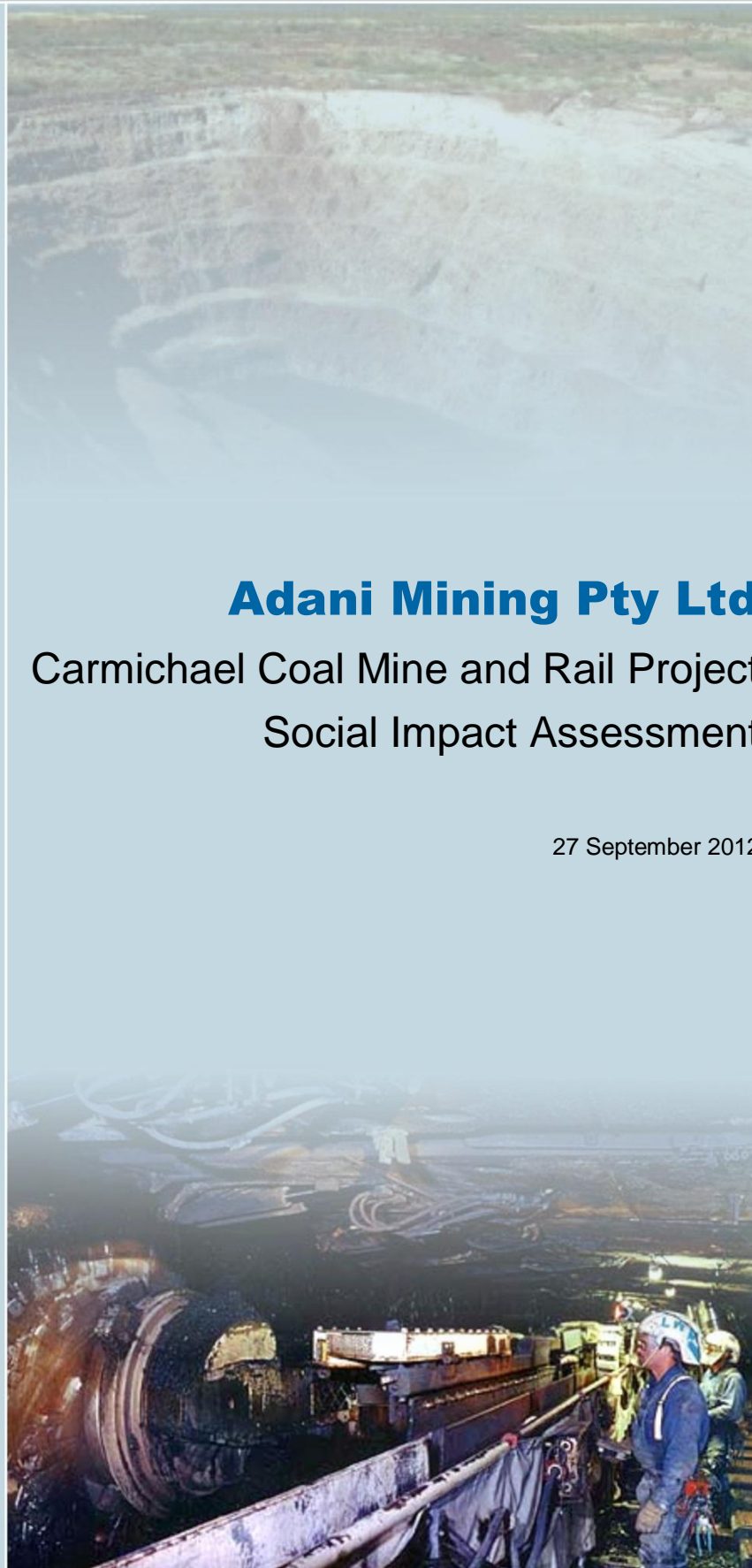




Adani Mining Pty Ltd

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Carmichael Coal Mine and Rail Project
Social Impact Assessment

27 September 2012



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Abbreviations and Glossary

Abbreviation	Term
ABS	Australian Bureau of Statistics
Adani	Adani Mining Pty Ltd
ATSI	Aboriginal and Torres Strait Islander
BIBO	Bus in/bus out
CCD	Census Collection District
CDEP	Community Development Employment Projects
CHMP	Cultural Heritage Management Plan
CHPP	Coal Handling Processing Plant
CHRC	Central Highlands Regional Council
CSQ	Construction Skills Queensland
CTRC	Charters Towers Regional Council
DEHP	Department of Environment and Heritage Protection
DIDO	Drive in/drive out
DSA	District Study Area
DSDIP	Department of State Development, Infrastructure and Planning
EIA	Environmental Impact Assessment
ERP	Estimated resident population
EMAs	Enterprise Migration Agreements
EMP	Environmental Management Plan
ESB	English Speaking Background
FIFO	Fly-In/Fly-Out
FTE	Full Time Equivalent
IRC	Isaac Regional Council
ha	Hectares
hrs	Hours
IAHT	Isaac Affordable Housing Trust
km	Kilometres
KPIs	Key Performance Indicators
LGA	Local Government Area
LSA	Local Study Area
MRC	Mackay Regional Council
MISC	Mining Industry Skills Centre
NESB	Non English Speaking Background
OESR	Office of Economic and Statistical Research
PHIDU	Public Health Information Development Unit
PIFU	Planning, Information and Forecasting Unit
QPS	Queensland Police Service
RFDS	Royal Flying Doctors Service
RSA	Regional Study Area
RTCA	Rio Tinto Coal Australia
SD	Statistical Division
SEIFA	Socio-economic Indexes for Areas
SEQ	South-east Queensland
SIA	Social Impact Assessment
SIAU	Social Impact Assessment Unit within the SDIP

Abbreviation	Term
SIMP	Social Impact Management Plan
SPQs	Single Persons Quarters
TCC	Townsville City Council
ToR	Terms of Reference
UDA	Urban Development Area
ULDA	Urban Land Development Authority
WRC	Whitsunday Regional Council

Executive Summary

A Social Impact Assessment (SIA) is the overarching framework that includes a process of identifying, analysing, managing and monitoring positive and negative impacts on people that may be intentionally or unintentionally caused by development. Its core purpose is to guide decision making in order to create sustainable socio-cultural, economic and biophysical environments (Vanclay, 2003). This SIA is prepared in accordance with the Terms of Reference (ToR) for the Project EIS, May 2011 as issued by the State of Queensland Coordinator-General. A summary of compliance with the Project ToR is provided in Table 1 -1. It is noted that the SIA addresses both the Mine and Rail components of the Project.

A robust methodology was employed to ensure the 'tactics and assumptions are clear, data collection and analysis is appropriate, and social equity considerations are accurately identified and described' (Queensland Government, 2010b). The methodology is informed by internationally accepted guidelines and principles, particularly the International Association for Impact Assessment (IAIA) Social Impact Assessment International Principles. This SIA has been undertaken in close consultation with Queensland Government Social Impact Assessment Unit (SIAU). When preparation of the SIA commenced, the SIAU was a unit of the then Department of Employment, Economic Development and Innovation (DEEDI). Under more recent machinery of government changes, the SIAU falls within the Department of State Development, Infrastructure and Planning (DSDIP). Queensland government publications were also used as a basis in writing this SIA and the Social Impact Management Plan (SIMP). The SIMP was developed following the Queensland Government publication Social impact assessment: Guideline to preparing a social impact management plan (released 2010).

The SIA outlines the following, as relevant to the Project:

- The social and cultural area of influence
- Community engagement with likely affected parties
- A social baseline study
- A workforce profile
- The potential impacts of the Project on the above
- Measures and strategies to mitigate the impacts of the Project on the above.

The Study Area for the SIA is defined as locations at which the construction, operation and decommissioning of the Project may have a social and cultural influence, at a scale that can be attributed to the Project. From an impact assessment point of view, in the Queensland context, social impacts may be said to occur in the immediate area of a Project, in the nearby communities/localities, in the regional centres closest to the project area and sometimes in the wider area of the State. Generally, the area of social and cultural influence is determined by the movement of project related people (workforce) as they travel around to the immediate project area, nearby localities and regional centres to access various services and facilities.

Consultation played a critical role in the SIA. The SIA consultations were closely integrated with the whole of EIS public consultation process and a SIA team member participated in relevant public consultation events. A number of milestone meetings were held with SIAU at each stage of the SIA process, in conjunction with regular progress meeting regarding the EIS as a whole. The outcomes of these meetings were then fed back in to the Project methodology and Project concept design. In addition, detailed consultation with local government was undertaken to identify relevant service providers, identify baseline conditions, potential impacts and opportunities for the various community groups in the regional study area and management

strategies and monitoring programs relevant for the region. Landholder case studies formed part of the agreed SIA methodology to engage with the affected landholders and include their feedback into developing the local baseline, impact identification and impact management at the local study area. All directly affected landholders were invited to participate in the case studies for the SIA. Most landholders considered that they were already providing a considerable amount of detailed information during the land negotiations with Adani and therefore only one landholder participated in the case study process. The potential impacts of the Project have been identified through SIA consultations, desktop review of literature, and information from discussions with landholders held by Adani personnel. The key potential impacts identified were:

- Impacts of existing mining
- Local economic impacts
- Housing and accommodation demand
- Roads, traffic and safety
- Landholder and amenity impacts
- The capacity of social services and infrastructure to deal with the development
- The potential to change the community values.

Strategies to respond to the potential impacts identified include:

- Project design
- Landholder agreements
- Stakeholder Engagement
 - Engagement Plan
 - Membership of the Clermont Preferred Futures Group
- Housing and Accommodation
- Workforce management
 - Workforce behaviour
 - Recruitment, education and training
 - Safety and wellbeing
- Local Industry Participation Plan
- Community health and safety
- Emergency services planning and consultation
- Community development initiatives.

Other technical study management plans that will also influence the management of potential social impacts are opportunities include:

- Environmental Management Plan (construction and operation)
- Cultural Heritage Management Plan
- Traffic Management Plan
- Emergency Response Plan.

A monitoring program will be developed in consultation with the key stakeholders during the finalisation of the SIMP; however the action plans outline preliminary performance and monitoring indicators for each of the mitigation strategies.

This report is subject to, and must be read in conjunction with, the limitations set out in section 2.11 and the assumptions and qualifications contained throughout the Report.

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1. Introduction

1.1 Project Overview

Adani Mining Pty Ltd (Adani) is proposing to develop a 60 million tonne (product) per annum (Mtpa) thermal coal mine in the north Galilee Basin approximately 160 kilometres (km) north-west of the town of Clermont, Central Queensland. All coal will be railed via a privately owned rail line connecting to the Goonyella rail system and shipped through coal terminal facilities at the Port of Abbot Point and/or the Port of Hay Point (Dudgeon Point expansion). The Carmichael Coal Mine and Rail Project (the Project) will have an operating life of approximately 90 years.

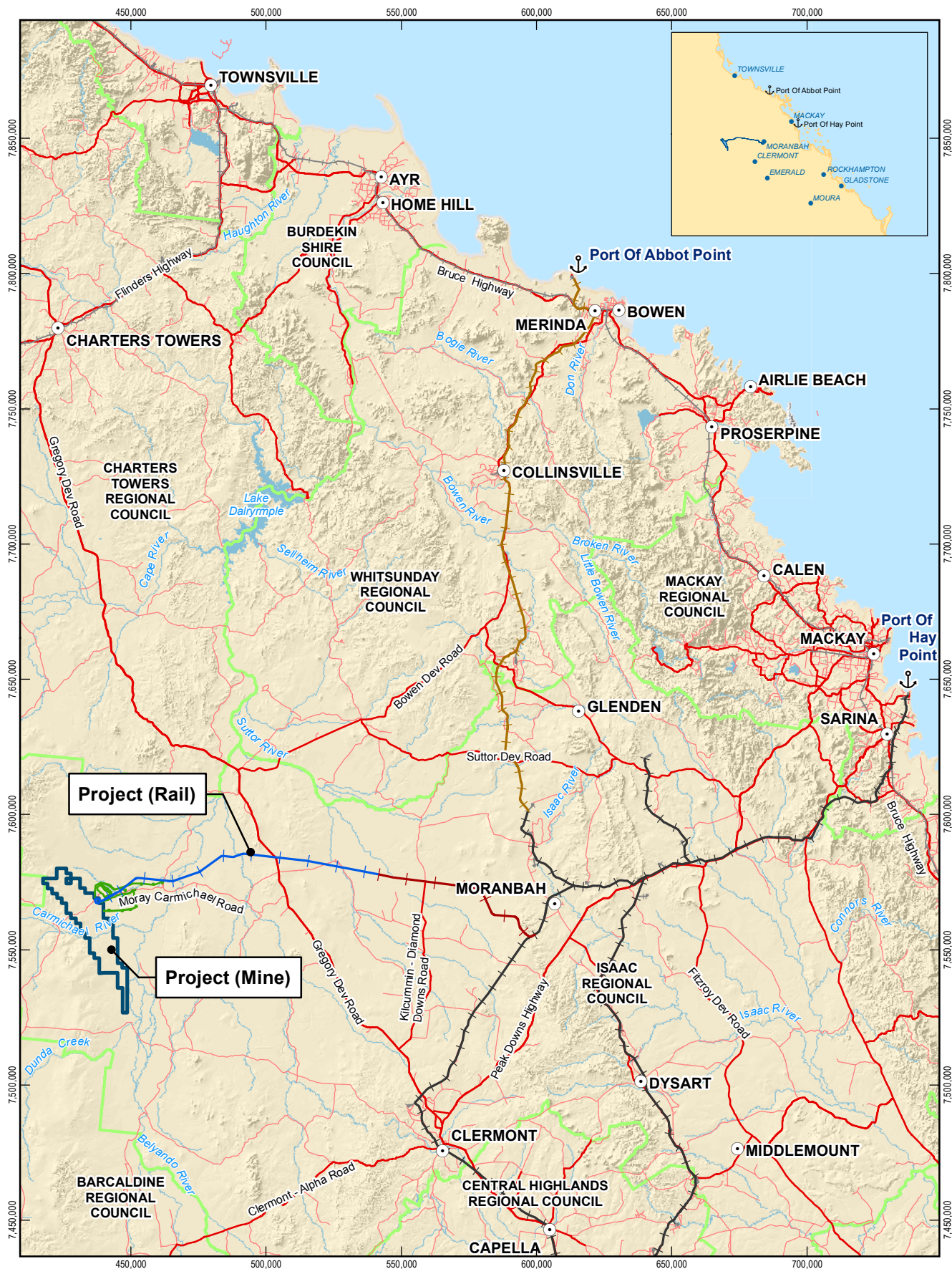
The Project comprises of two major components:

- The Project (Mine): a greenfield coal mine over EPC1690 and the eastern portion of EPC1080, which includes both open cut and underground mining, on mine infrastructure and associated mine processing facilities (the Mine) and the Mine (offsite) infrastructure including:
 - A workers accommodation village and associated facilities
 - A permanent airport site
 - Water supply infrastructure
- The Project (Rail): a greenfield rail line connecting the Mine to the existing Goonyella rail system to provide for the export of coal via the Port of Hay Point (Dudgeon Point expansion) and/or the Port of Abbot Point, including:
 - Rail (west): a 120 km dual gauge portion from the Mine site running west to east to Diamond Creek
 - Rail (east): a 69 km narrow gauge portion running east from Diamond Creek connecting to the Goonyella rail system south of Moranbah

The Project has been declared a 'significant project' under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) for which an Environmental Impact Statement (EIS) is required. The Project is also a 'controlled action' and requires assessment and approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Project EIS has been developed with the objective of avoiding or mitigating all potential adverse impacts to environmental, social and economic values and enhancing positive impacts. Detailed descriptions of the Project are provided in Volume 2 Section 2 Project Description (Mine) and Volume 3 Section 2 Project Description (Rail).

Figure 1-1 shows the Project location.



LEGEND

- | | | | |
|----------------------|-------------------------|----------------|------------------|
| ○ Town | — State Road | Project (Rail) | ■ Project (Mine) |
| ⚓ Major Port | — Local Road | — Rail (West) | ■ Mine (Offsite) |
| — Other Rail Network | — Watercourse | — Rail (East) | |
| — Goonyella System | — Local Government Area | | |
| — Newlands System | | | |

Based on or contains data provided by the State of QLD (DERM) [2010]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for marketing or be used in breach of the privacy laws.

1:2,000,000 (at A4)
0 10 20 30 40 50
Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55



adani

Adani Mining Pty Ltd
Carmichael Coal Mine and Rail Project

Project Location

Job Number	41-25215
Revision	L
Date	28-08-2012

Figure: 1-1

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Data Sources: © Commonwealth of Australia (Geoscience Australia); Town, Railways, Watercourses (2007); DERM: LGA, (2011), Hillshade (2009); DMR: State Roads (2008); Gassman/Hyder: Mine (Offsite) (2012); DME: EPC1690 (2010), EPC1080 (2011); Adani: Alignment Opt9 Rev3 (2012). Created by: BW, JVC

1.2 Aims and Objectives of the Social Impact Assessment

The aim of the Project Social Impact Assessment (SIA) is to:

- Identify and characterise the people and communities likely to be affected by the proposed development
- To understand existing socio-cultural conditions and dynamics from which to predict social impacts
- Obtain type and level of data and information to accurately respond to the Project EIS ToR
- Provide a practical basis on which to predict potential social impacts
- Identify and evaluate potential impacts on people and communities
- Identify mitigation measures to avoid or minimise potential adverse impacts and maximise benefits
- Develop a project specific Social Impact Management Plan (SIMP) including action plans to avoid or minimise potential adverse impacts and maximise benefits and a monitoring and reporting framework to validate the impact assessment and effectiveness of mitigation measures.

1.3 Scope of Reporting

This SIA is structured to present the following key components:

- The Project's social and cultural area of influence
- Community engagement with likely affected parties
- Social and socio-economic characteristics of communities within the social and cultural area of influence
- A workforce profile
- The potential social and socio-economic impacts of the Project on communities within the social and cultural area of influence
- Measures and strategies to mitigate the social impacts of the Project.

The SIA is prepared in accordance with Section 4 of the Project Terms of Reference (ToR), May 2011 as issued by the Queensland Coordinator-General. A summary of compliance with the ToR is provided in Table 1-1, with a detailed cross reference table included in Appendix A. It is noted that the SIA addresses both the Mine and Rail components of the Project. As such, a reference to the Project is to be taken as a reference to the whole project unless otherwise specified.

Social impact assessment is necessarily short term, as social impacts relate strongly to social and socioeconomic conditions and community concerns and aspirations at the time of the assessment. Community characteristics are very dynamic and even quite minor changes in any of these factors can affect the potential for impacts to occur and the magnitude of any actual impacts. Changes in Federal, State, regional and local policies and planning frameworks may also influence the context in which any SIA is undertaken.

Additionally, given that the Project has a 90 year life span, it can be expected that the manner in which the Project is undertaken will also change with time, as new mining and transportation technologies are identified, and also in response to demand for coal. Such changes will potentially alter the social impacts of the Project, for example changing the demand for

workforce, and worker skill requirements. As such, the SIA has assessed the potential social impacts of the Project for the initial 20 years, with an expectation that the SIMP will be periodically reviewed and at any one point in time have a 'life' of no less than 10 years. This will enable changes in mining practices, the global economy, local and regional communities, etc to be taken into consideration and for the Project to better respond to the social impacts and opportunities associated with these changes over time.

Table 1-1: Terms of Reference Cross Reference

Terms of Reference Requirement/Section Number	Section of this report
4.1.1 Social and Cultural Area	
Take into account the: <ul style="list-style-type: none"> Potential for social and cultural impacts to occur Location of other relevant proposals or projects Location and types of physical and social infrastructure Social values that might be affected by the project Indigenous social and cultural characteristics such as native title rights and interests and cultural heritage. 	Section 8
4.1.2 Community Engagement	
Detail the community engagement processes used to conduct open and transparent dialogue with stakeholders.	Section 2.10 Volume 1 Section 7, Volume 4 Appendix I
Prepare a community consultation report detailing outcomes of consultations with stakeholders.	Section 2.10 Volume 1 Section 7, Volume 4 Appendix I
4.1.3 Social Baseline Study	
Describe and analyse a range of demographic and social statistics relevant to the projects social and cultural area including: <ul style="list-style-type: none"> Major population trends Total population Estimates of population growth Family structures Age/gender distributions Education Health and wellbeing measures Cultural and ethnic characteristics Indigenous population including age and gender Income including personal and household Labour force by occupation and industry Housing costs Housing availability and affordability Disability prevalence Social and economic index for areas, index of disadvantage – score and relative ranking Crime, including domestic violence Any other indicators determined through community engagement process as relevant. 	Section 3 and Appendix C
Take into account social issues such as social infrastructure and settlement patterns.	Section 3 and Appendix C
Identity, values, lifestyles, vitality, characteristics and aspirations of communities in the social and cultural area, including Indigenous communities. Land use and land ownership patterns, including: <ul style="list-style-type: none"> Rural properties, farms, croplands and grazing areas The number of properties directly affected by the project The number of families directly and indirectly affected by the project 	Section 3 and Appendix C

Terms of Reference Requirement/Section Number	Section of this report
including Indigenous traditional owners and their families, property owners, and families of workers either living on the property or workers where the property is their primary employment.	
4.1.4 Workforce Profile	
Include a profile of the workforce:	Section 1
<ul style="list-style-type: none"> Number of personnel to be employed, skill base and likely sources Estimated number of people to be employed during construction and operation, and arrangements for transport to and from the project area Estimates according to occupational groupings and variations in the workforce numbers for the duration of the project and anticipated peaks in worker numbers during construction. 	
4.2 Potential Impacts	
Assess and describe the type, level and significance of social impacts (beneficial and adverse) on the local and cultural area.	Section 1
Describe and summarise outcomes of the community engagement process.	Section 1
Include data to enable affected local and state authorities to make informed decisions about the projects effect on their business and plan for the provision of social infrastructure.	Section 1
Address direct, indirect and secondary impacts from any existing projects and the proposed project, assessing the size, significance and likelihood of these impacts at the local and regional level. Consider:	Section 1
<ul style="list-style-type: none"> Key population/demographic shifts Needs of vulnerable groups Indigenous people including cultural property issues Local, regional, and state labour markets during the construction and operational phase with regard to the source of the workforce Proposed new skills and training related to the project, including the occupational skill groups required and potential skill shortages anticipated How much service revenue and work from the project would be likely to flow to the project's social and cultural area Impacts of construction and operational workforces, their families and associated contractors on housing and accommodation availability, land use and availability. 	
4.2.1 Mitigation Measures and Management Strategies	
For identified social impacts, mitigation strategies and measures should address:	Section 7
<ul style="list-style-type: none"> Recruitment and training, and labour market impacts 	Section 7.6
<ul style="list-style-type: none"> Worker accommodation requirements and impacts on housing affordability 	Section 7.5
<ul style="list-style-type: none"> Demographic changes in the profile of the region and the associated sufficiency of current social infrastructure to support community health, safety and wellbeing; education, employment and training, policing and emergency services 	Section 7
<ul style="list-style-type: none"> Adequate provision of education, training and employment opportunities for women, people with disabilities and Indigenous peoples 	Section 7.6
<ul style="list-style-type: none"> Collaborative stakeholder engagement strategies/partnership arrangements to develop and implement project benefit strategies and social impact mitigation measures. 	Section 7.4

1.4 Outline of Report

The report is structured as follows:

- Section 2 provides an overview of the SIA methodology
- Section 2.5.1 describes the regional, district, and local study areas
- Section 4 outlines the planning and policy context of the Project

- Section 5 provides a profile of the workforce required for construction and operation of the Project
- Section 6 describes the current impacts of mining and the potential impacts/opportunities of the Project
- Section 7 outlines the mitigation and management strategies
- Section 8 outlines the expected model for monitoring and reporting for the Project
- Section 9 contains the reference list for the SIA.

1.5 Relevant Policies, Standards and Guidelines

The SIA has been prepared in accordance with the ToR for the EIS, issued May 2011 (see Table 1-1). It seeks to address each of the considerations included in Section 4 (Social values and management of impacts) of the ToR across the Project.

The methodology for this SIA has been based on the International Association for Impact Assessment (IAIA), *International Principles for Social Impact Assessment* (Vanclay, 2003). See Section 2.2 for a description of these principles.

The SIMP was developed following the Queensland Department of Infrastructure and Planning (now State Development, Infrastructure and Planning) publication *Social impact assessment: Guideline to preparing a social impact management plan* (2010).

2. Social Impact Assessment Methodology

2.1 Introduction

Social Impact Assessment (SIA) is best understood as an overarching framework that includes a process of identifying, analysing, managing and monitoring positive and negative impacts on people that may be intentionally or unintentionally caused by developments. Its core purpose is to guide decision making in order to create sustainable socio-cultural, economic and biophysical environments (Vanclay, 2003). Assessment of social impacts is a complex and dynamic process involving a range of steps. It requires an understanding of the values, concerns, attitudes and aspirations of stakeholders and also the socio-economic and cultural conditions, trends and dynamics that characterise communities and their characteristics.

To capture the social impacts of large projects such as the one under consideration for this SIA, it is necessary to develop a robust methodology which provides clear assumptions, appropriate data collection and analysis, and accurately identifies and describes social equity considerations (Queensland Government, 2010b). In order for the SIA to perform the function of assisting in the decision making process for a new development in 2010, the Queensland Government developed a fact sheet which was used as a basis in writing this SIA and the SIMP. The SIA has also been informed by internationally accepted guidelines and principles.

This SIA was conducted in consultation with the SIAU. A number of milestone meetings were held with the SIAU at each stage of the SIA process, in conjunction with regular progress meetings regarding the EIS as a whole. The outcomes of these meetings were then fed back in to the Project methodology and report outcomes.

2.2 Guiding Principles of Social Impact Assessment

The IAIA *International Principles for Social Impact Assessment* provide the framework for the SIA methodology. These principles summarise the social intentions implied in landmark international agreements and declarations, such as the 1992 Rio Declaration on Environment and Development and 1986 Declaration of Right to Development. The following guiding principles from the IAIA have been utilised when identifying social impacts and management strategies:

- Precautionary Principle
- Uncertainty Principle
- Prevention Principle
- Protection and Promotion of Health and Safety.

2.2.1 Precautionary Principle

In order to protect the environment, a concept which includes people's way of life and the integrity of their communities, the precautionary approach shall be applied. Where there are threats or potential threats of serious social impact, lack of full certainty about those threats should not be used as a reason for approving the planned intervention or not requiring the implementation of mitigation measures and stringent monitoring.

2.2.2 Uncertainty Principle

It is recognised that our knowledge of the social world and of social processes is incomplete and because the social environment and the processes affecting it are changing constantly, and vary from place to place over time, our social knowledge can never be fully complete.

2.2.3 The Prevention Principle

It is preferable to prevent negative social impacts and ecological damage from happening than having to restore or rectify damage after the event.

2.2.4 The Protection and Promotion of Health and Safety

Health and safety of people and communities are paramount. All planned actions and interventions should be assessed for health impacts and accident risks, especially in terms of assessing and managing the risks from hazardous substances, technologies or processes, so that their harmful effects are minimised, including not bringing them into use or phasing them out as soon as possible. Health impacts cover the physical, mental and social wellbeing and safety of all people, paying particular attention to those groups of the population who are more vulnerable. This may include such groups as the economically deprived, indigenous groups, children and women, the elderly, the disabled, as well as to the population most exposed to risks from the planned intervention.

2.3 Stages in Social Impact Assessment

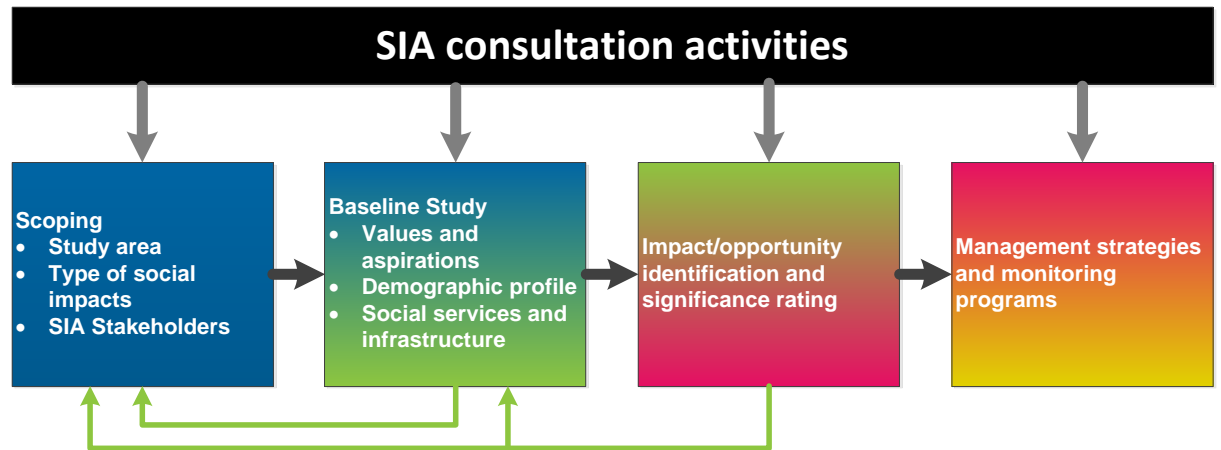
Table 2-1 and Figure 2-1 provide a summary of the main steps in the SIA methodology developed at the outset of the project.

Table 2-1: Summary of Stages and Tasks

Stage of SIA	Step	SIA Task
Scoping	1	Scoping exercise to understand the Project, identify the Study Area and SIA Stakeholders and initial identification of social issues and opportunities.
	2	Meeting with the Social Impact Assessment Unit (SIAU) to confirm the social and cultural area of influence and SIA methodology.
	3	Development of SIA report structure and indicators.
	4	Desktop research to respond to ToR and literature review.
Baseline	5	Consultation with Isaac Regional Council (IRC), Charters Towers Regional Council (CTRC), Townsville City Council (TCC), Mackay Regional Council (MRC), Central Highlands Regional Council (CHRC) and Whitsunday Regional Council (WRC) and service providers to identify baseline conditions.
	6	Meeting with the SIAU to provide SIA update and feedback on social baseline study (regional study area only).
	7	Literature review, gathering social statistics and data analysis, including demographic analysis.
Impact/Opportunity identification	8	Project description for the Project finalised.
	9	Consultation with IRC, CTCRC, BSC, TCC, MRC, WRC, CHRC and social infrastructure service providers to identify potential impacts and opportunities.
	10	Consultation with landholders as part of land negotiations.
	11	Meeting with the SIAU to provide SIA update and feedback on local study area (baseline, impacts/opportunities and management strategies) and regional study area (potential impacts and opportunities).

Stage of SIA	Step	SIA Task
Impact Management, Mitigation and Monitoring	12	Consultation with IRC, CTCR, BSC, TCC, MRC, WRC, CHRC and social infrastructure service providers to identify potential management strategies and monitoring programs.
SIA Report and draft SIMP	13	Develop draft SIA and draft SIMP Reports
	14	Meeting with SIAU to provide SIA update and provide feedback key findings of the SIA process. Present draft SIMP.
	15	Final SIA and SIMP presented to the Queensland State Government.

Figure 2-1: SIA Methodology



2.4 Data Sources and Type

A range of primary and secondary data sources were used to prepare the SIA. The SIA relied on both qualitative and quantitative information collected from the various sources. Literature sources were also used as essential references throughout the SIA process, informing the impact identification phase as well as the measures recommended to mitigate negative impacts. Table 2-2 presents an overview of data type and sources used for the SIA.

It should be noted that with data provided by the Office of Economic and Statistical Research (OESR) and the Australian Bureau of Statistics (ABS), there may be slight inconsistencies in data in some tables. For example, the sum of population of the local government areas may not be equivalent to the region. The OESR advises that this difference is likely due to introduced random error to preserve confidentiality of census information at a small scale. The OESR has adjusted cells to prevent confidential data being exposed and totals and sub-totals of individual tables have also been adjusted to ensure summing of data. Hence, the totals in different tables on similar topics, e.g. birthplace by region and birthplace by proficiency in English, may be slightly different.¹

¹ A fuller explanation can be found on the ABS website:
<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/2901.0Chapter38202011>

Table 2-2: Overview of Data Type and Sources Used in the SIA

Data Type	Data Source (Primary)	Data Source (Secondary)
Qualitative	Community information sessions Phone to Project 1800 number Discussions, feedback from landholders via Land Agents Meetings and discussions with traditional owners Service provider workshops Meetings with IRC, CTCR, CHRC, TCC, MRC, WRC Discussions with state agencies and service providers	Website and documents from Councils within the regional study area Information leaflets and reports provided by service providers
Quantitative	Community information sessions Calls to project 1800 phone line Discussions, feedback from landholders via Adani Engagement with traditional owners Service provider workshops and meetings Data from meetings with IRC, CTCR, CHRC, MRC, WRC, TCC, CTCR	Australian Bureau of Statistics (ABS) Queensland Treasury Office of Economic and Statistical Research (OESR) Public Health Information Development Unit Websites and documents from Councils within the regional study area Information leaflets and reports provided by service providers Various website including rpdata.com.au, realestate.com.au, etc

2.5 Scoping Stage

A scoping process was undertaken to gain an initial understanding of:

- The Project
- The geographical area likely to be impacted by the Project
- Who the 'community' is and who is likely to be impacted by the Project
- Potential social impacts and opportunities.

The scoping process assists in identifying the social and cultural area of influence and an initial list of SIA stakeholders. By identifying the potential social impacts and opportunities, the scoping process also allows the methodology and data sources to be targeted such that information necessary to understand and evaluate potential impacts is collected. For example, if one of the potential opportunities identified is employment, the baseline study can focus on labour force characteristics and skills and qualifications of individuals within the study areas.

2.5.1 Study Area

The Project comprises of two major components:

- The Project (Mine): the Mine and associated infrastructure and offsite infrastructure
- The Project (Rail): a rail line and associated infrastructure.

Detailed descriptions of the Project are provided in Volume 2, Section 2, Project Description (Mine) and Volume 3, Section 2, Project Description (Rail).

The Study Area for the SIA is defined as locations at which the construction, operation and decommissioning of the Project may have a social and cultural influence at a scale that can be

attributed to the Project. Social impacts are often not contained within the immediate area of the Project components. From an impact assessment point of view, in the Queensland context social impacts may be said to occur in the immediate area of a project, in the nearby communities/localities, in the regional centres closest to the project area and sometimes in the wider area of the State. Generally, the area of social and cultural influence is determined by the movement of project related people (workforce) as they travel around to the immediate project area, nearby localities and regional centres to access various services and facilities.

The Study Areas were confirmed after feedback on a draft SIA from State government in 2012 and have been discussed with the SIAU. The regional study area comprises the local government areas (LGAs) of Isaac, Charters Towers, Townsville, Whitsunday, Mackay, and Central Highlands. The district study area comprises Isaac Regional Council and Charters Towers Regional Council areas. Isaac Regional Council was formed during 2008 as a result of the amalgamation of Belyando, Broadsound and Nebo Shires. Charters Towers Regional Council was formed by the amalgamation of Charters Towers City and the Shire of Dalrymple in 2008. The local study area comprises the former Belyando Shire which includes the towns of Moranbah and Clermont, as well as those landholders directly affected by the mine and rail corridors.

2.5.2 Social and Cultural Area of Influence

The social and cultural area of influence was defined as part of the scoping process at the commencement of the Project, in accordance with the content outline in Section 4.1.1 of the ToR and in consultation with the SIAU. Table 2-3 outlines the background information for each of the ToR considerations.

Table 2-4 outlines the rationale for the social and cultural area of influence as per the ToR.

Table 2-3: Background Information for the Social and Cultural Area of Influence

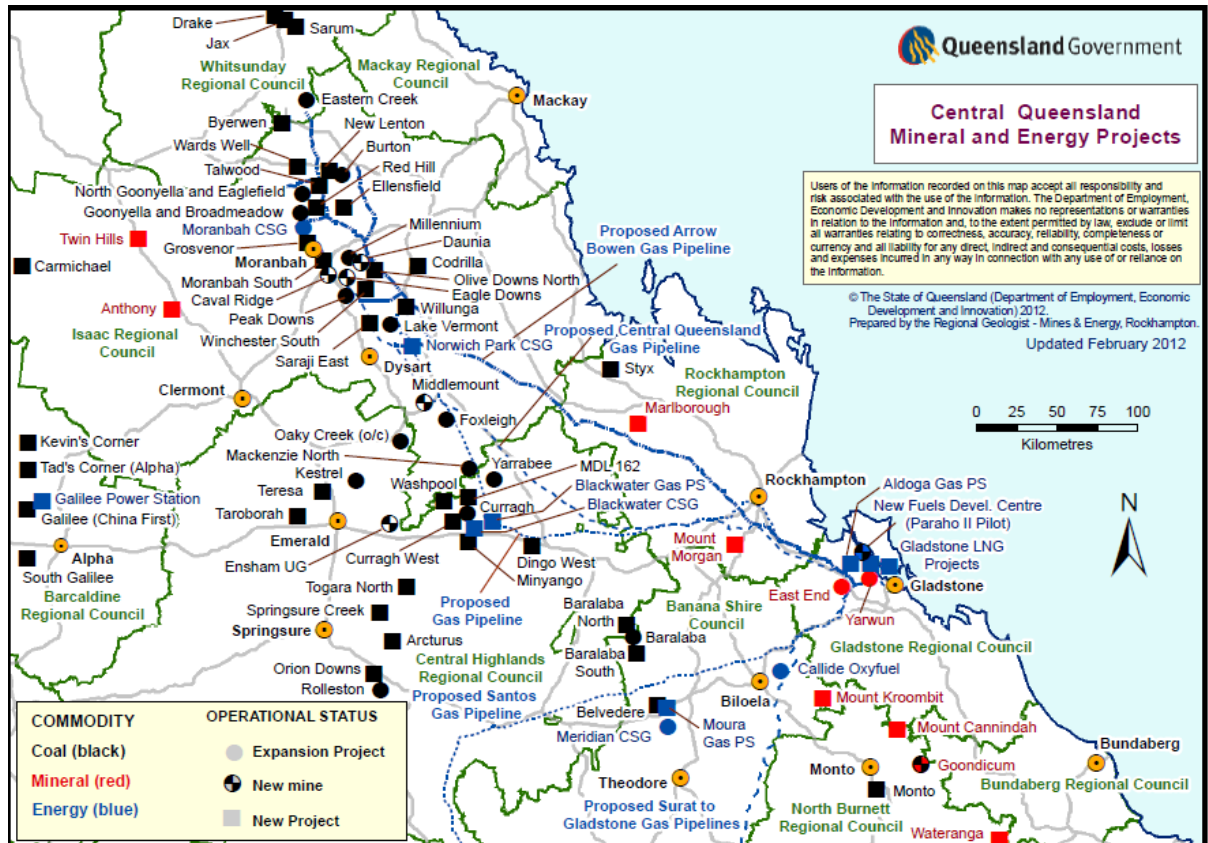
Consideration	Background
The potential for social impacts to occur at local, district, regional and state level.	Local Landholders with land adjoining or directly affected by the Project (Mine) and Project (Rail) will experience the majority of impacts associated with the project, along with the township of Clermont (~160 km south-east) and to a lesser extent Moranbah (~160 km east) which are both located in the former Belyando Shire. Clermont is the closest township to the Project (Mine) by road. The focus of the local study area is therefore the former Belyando Shire and directly affected landholders. Traditional owners were also included in the local study area to identify any potential impacts directly related to the country from the Project footprint. Note that the project traverses four ABS Census Collection Districts (CCDs), namely 3031602, 3031603, 3031604 and 3031504. As the geographical area of these CCDs is much larger than the project footprint, data for CCDs has not been presented.
	District The Mine site is predominantly within Isaac Regional Council area, with a small area within Charters Towers Region. The town of Charters Towers is approximately 3 hours drive from the Project (Mine) site and the Gregory Development Road as a significant transport corridor for the project (access to Townsville) runs through the region. The rail is wholly within Isaac Region. The Regional Study area for the Project comprises Isaac and Charters Towers regions.
	Regional This project is expected to have a measurable influence within a wide geographical area, and with transport links to Townsville and Mackay in particular. The regional study area comprises the LGAs of Isaac, Charters Towers, Townsville, Whitsunday, Mackay, and Central Highlands.

Consideration	Background
	<p>State</p> <p>Comparisons to Queensland as a whole data are included within the SIA.</p>
Location of other relevant proposals or projects	<p>There are a number of other state significant projects proposed in the district and region, including:</p> <ul style="list-style-type: none"> • Hancock Coal: approved Alpha Coal Mine and associated rail line (~100 km south of proposed Carmichael Mine) • Hancock Coal: Proposed Kevin's Corner (adjacent to the Alpha Coal Mine) • South Galilee Coal Project: South Galilee Coal Mine (15 km southwest of Alpha) • China First - formerly the Galilee Coal Northern Export Facility, (~80 km south of proposed Carmichael Mine) • Galilee Basin Power Station (~120 km south of proposed Carmichael Mine) This project is currently on hold • Central Queensland Integrated Rail Project • Goonyella to Abbott Point Rail (24 km north-west of Moranbah to Abbott Point) • BMA: BMA Bowen Basin Coal Growth (includes construction and expansion of three mines in the Bowen Basin near Moranbah and a new airport at Moranbah). <p>There are currently no resource projects operating in the Galilee Basin, however the Hancock/GVK Alpha Mine has received state and federal environmental approval. There are approximately 50 other resource-related projects in the neighbouring Bowen Basin (refer to Figure 2-2). The regional study area of Isaac Regional Council was considered where appropriate, given the number of proposed and operating projects which may influence the social impacts/opportunities of the Carmichael Project.</p>
Location and types of physical and social infrastructure, settlement and land use patterns	<p>The land use pattern in the area is dominated by agricultural use. Settlement is sparse, consisting mainly of isolated homesteads. There is a network of local roads and water courses in the vicinity of the Project (Mine) and along the Project (Rail) corridor. No electricity or telecommunication easements traverse the proposed Project area. No water or gas pipelines currently traverse the Project (Mine) and there are no proposed gas or water pipelines over the site.</p> <p>The project (Rail) corridor intersects the Gregory Developmental Road. The proposed rail line joins with the existing rail line southwest of Moranbah, and the north-south spur joins the Goonyella to Abbott Point line approximately 80 km north of Moranbah.</p> <p>The main towns likely to be impacted by the Project are Clermont and Moranbah.</p>
Social values that might be affected by the project	<p>The Isaac Regional Vision 2020 Community Plan (Isaac Regional Council, 2009) recognises a number of values pertaining to the region:</p> <ul style="list-style-type: none"> • Safety • Connectivity and community spirit • Active healthy outdoor lifestyle supported by sport and recreational facilities • Celebration of unique local/district/regional identity.
Indigenous social and cultural characteristics	<p>Based on initial searches of the native title register there are four separate native title claims registered, or in the process of being registered, in the region around the Project area, each from a different Indigenous group, being the:</p> <ul style="list-style-type: none"> • Wangan and Jagalingou People • Jangga People • Barada Barna People. • BBKY No. 4. <p>Any native title rights and interests will be considered through Indigenous Land Use Agreements (ILUA) and cultural heritage impacts will be considered through the Cultural Heritage Management Plans (CHMP).</p>

Table 2-4: Rationale for Social and Cultural Area of Influence

Consideration	Local		District		Region	State
	Landholders/ Traditional Owners	Former Belyando Shire	Isaac Regional Council	Charters Towers Regional Council	Charters Towers, Townsville, Isaac, Whitsunday, Mackay, Central Highlands Councils	Queensland
The potential for social impacts to occur at local, district, regional and state level	✓ Landholders and traditional owners directly impacted by mine and rail construction and operation	✓ Potentially impacted by mine workforce during construction and operation	✓ Directly impacted by use of community services and facilities	✓ Potentially impacted by workforce during construction and operation	✓ Potentially impacted by workforce, services provision and transport corridors during construction and operation	✓ Potentially impacted by workforce during construction and operation
Location of other relevant proposals or projects	✓ Potential cumulative impacts with other proposed rail lines should they proceed (Waratah Coals "Galilee Coal Project" and Hancock Coals' "Alpha Coal Project")	✓ Other proposed projects in the Galilee Basin and existing projects in the Bowen Basin	✓ Other proposed projects in the Galilee Basin and existing projects in the Bowen Basin	✓ Other proposed projects in the Charters Towers Regional area	✓ Other proposed projects in the wider regional area, especially in Isaac, Whitsunday, Mackay and Central Highlands	✓ Other proposed projects in Queensland
Social values that might be affected by the project	✓ Landholders and traditional owners affected by workforce presence, project construction and operation	✓ People living in the former Belyando Shire (FIFO and residents)	✓ People living in the Isaac Regional Council area (FIFO and residents)	✓ People living in the Charters Towers Regional Council area (FIFO and residents)	✓ People living in the wider regional area (both non-resident workers and residents)	
Indigenous social and cultural characteristics	✓ Social and cultural characteristics of the traditional owners	✓ Characteristics of the Indigenous people living in the former Belyando Shire	✓ Characteristics of the Indigenous people living in the Isaac Regional Council area	✓ Characteristics of the Indigenous people living in Charters Towers Regional Council area		

Figure 2-2: Resource Projects in Central Queensland



Source: http://mines.industry.qld.gov.au/assets/mines-pdf/CQ_mining_energy_projects_and_map_Feb2012.pdf
(downloaded 03-08-2012)

2.5.3 Literature Review

Desk based research was undertaken to provide background information for initial scoping of issues and to inform consultations with SIA stakeholders. This included a review of relevant regional and local plans, Queensland Government policies, research publications and other SIAs and similar studies undertaken for resource developments and associated infrastructure in Queensland and Australia. Table 2-5 provides the list of the key relevant studies consulted throughout the SIA process. Studies selected for inclusion were the ones that covered similar geography, subjects or that were particularly recognised for outstanding quality/innovation. In addition, several other information and data sources were referred to throughout the SIA process and are referenced where relevant. A comprehensive list of references is included in Section 9.

Table 2-5: Relevant Studies Consulted in Carmichael SIA Process

Study/SIA	Aspect of Project	Geographical Area
SIA Documents (alphabetical order)		
Hancock Prospecting Pty Ltd (2010), Alpha Coal Project, Social Impact Assessments (Mine and Rail)	Mine and Rail	Galilee Basin, Queensland
Queensland Rail (2005) Northern Missing Link Rail Project (Goonyella to Newlands), Social Impact Assessment	Rail	Bowen Basin, Queensland
Waratah Coal (2011) Galilee Coal Project, Social Impact Assessment (Mine and Rail)	Mine and Rail	Galilee Basin, Queensland

Study/SIA	Aspect of Project	Geographical Area
Studies/Reports (alphabetical order)		
Barclay, M and Pattenden, C (2007) "Retention of Women in the Minerals Industry" (in) Unearthing New Resources: attracting and retaining women in the Australian minerals industry	Retention of Women in the Minerals Industry	Australia
Beach, R. and Cliff, D. (2003) "Turnover and FIFO operations: some facts, opinions and theories" AusIMM Bulletin Sept/Oct 5:64-65	FIFO workforce	Australia
Bowen Basin Mayors Group (2006) The challenges of rapid growth and influencing state government: a presentation to key directors general	Rapid growth associated with resource development	Bowen Basin, Queensland
Central Queensland University (2003) Economic and social impacts of the Coppabella Mine on the Nebo Shire and the Mackay Region: Part II: Economic Impacts Study	Economic impacts	Bowen Basin, Queensland
Cooperative Research Centre (CRC) for Rail Innovation (2009) Paper 2: Assessment of social, economic and environmental impacts of transport modes	Rail	Australia
Di Milia, L. (2006) "Shift work, sleepiness and long distance driving" (in) Transportation Research Part F:278-285	Impacts of shift work	Australia
Di Milia, L. and Bowden, B. (2007) "Unanticipated safety outcomes: shift work and drive in, drive out workforce in Queensland's Bowen Basin" (in) Asia Pacific Journal of Human Resources 45(1):100-112	Impacts of shift work and rosters	Australia
Economic Associates (2010) Galilee Basin Economic and Social Impact Study Report, prepared for DEEDI	Variety	Galilee Basin, Queensland
Haslam McKenzie, F. (2007) Attracting and retaining skilled and professional staff in remote locations DKCRC Report 21, Desert Knowledge Cooperative Research Centre, Alice Springs	Retaining a workforce in remote locations	Australia
Hubinger, Parker and Clavarino (2002) "The intermittent husband: impact of home and away occupations on wives/partners" (in) Conference Proceedings of the Queensland Mining Industry Health and Safety Conference 2002	Impacts of shift work and rosters	Australia
Ivanova, G, Rolfe, J., Lockie, S. and Timmer, V. (2007) "Assessing social and economic impacts associated with changes in the coal mining industry in the Bowen Basin, Queensland, Australia" (in) Management of Environmental Quality: An International Journal 18(2):211-228	Social and economic impacts of coal mining	Bowen Basin, Queensland
Kaczmarek, E. A. and Sibbel, A. M. (2008) "The psychosocial well-being of children from Australian military and fly-in/fly-out (FIFO) mining families" (in) Community, Work and Family Vol. 11, no. 3, pp.297-312	FIFO workforce	Australia
Kemp, D. (2009) "Mining and community development: problems and possibilities of local-level practice" (in) Community Development Journal 1-21	Community development	Australia
Lockie et al (2009) "Coal mining and the resource community cycle: A longitudinal assessment of the social impacts of the Coppabella mine" (in) Environmental Impact Assessment Review 29:330-339	Coal mine	Bowen Basin, Queensland
Murray and Peetz (2008) The Big Shift: The gendered impact of twelve hour shifts on mining communities Paper presented at the International Sociological Association Conference, Barcelona, Spain	Impacts of shift work	Australia
Petkova et al (2009) "Mining developments and social impacts on communities: Bowen Basin case studies" (in) Rural Society 19(3):211-228	Social and economic impacts of coal mining	Bowen Basin, Queensland
Rolfe, J., Ivanova, G. and Lockie, S. (2006) Assessing the social and economic impacts of coal mining on communities in the Bowen Basin: summary and recommendations Research Report No.11 Australian Coal Association Research Program (ACARP)	Social and economic impacts of coal mining	Bowen Basin, Queensland

Study/SIA	Aspect of Project	Geographical Area
Rolfe et al (2007a) "Lessons from the social and economic impacts of the mining boom in the Bowen Basin 2004-2006" Australasian Journal of Regional Studies 13(2):134-153	Social and economic impacts of coal mining	Bowen Basin, Queensland
Storey, K. (2001) "Fly-in/fly-over: mining and regional development in Western Australia" (in) Australian Geographer 32(2):133-148	Community development	Australia
Other data		
Built on existing data and data generated from stakeholder consultation and Isaac Regional Council baseline studies (data gathered by and provided by IRC) This data has not been independently verified.	Coal mine and rail	Isaac Regional Council

2.6 Social Baseline Study

2.6.1 Overview

To address the requirements of the ToR, a targeted social baseline study of the people residing in the Project's social and cultural area of influence within the local and regional study areas was undertaken based on the indicators identified in Section 4.1.3 of the ToR. Refer to Section 3 and Appendix C for the social baseline. Baseline information for the local and regional study areas was compared to data for the state where it was available.

2.6.2 Regional and District Baselines

A combination of qualitative and quantitative information was used to develop the Regional and District baselines. Data and information was gathered from various primary and secondary sources, some of the key sources are listed below:

- Census data from ABS
- Updated to Census data through projections and estimates from the Office of Economic and Statistical Research (OESR)
- Other SIAs relevant to the study area
- Draft Mackay, Isaac and Whitsunday Regional Plan (2011 – 2031)
- Whitsunday, Hinterland and Mackay Regional Plan (2006 – 2026)
- Isaac Regional Council Community Plan
- Moranbah Urban Development Area Strategy
- Isaac, and Charters Towers Regional Council Websites
- Websites and publications of state agencies covering health, education, housing, communities and emergency services and Isaac and Charters Towers Council websites
- Real estate websites
- Media reports
- Planning schemes and DERM land use mapping
- Consultations with key stakeholders.

The regional and district baseline describes the following community characteristics and issues:

- Community settlement patterns

- Housing availability, affordability and costs
- Community values and aspirations
- Demographic characteristics, including
 - Total Population; population trends, growth and forecasts
 - FTE estimates (resident and non-resident population)
 - Age and gender profile
 - Family composition
 - Cultural and ethnic composition
 - Education profile, including school and vocational training enrolments
 - Employment and unemployment profile
 - Employment by industry and occupation profile
 - Income profile
 - Disability prevalence
 - Social and economic index of disadvantage.
- Safety profile (crime data)
- Social and community infrastructure, including:
 - Housing and accommodation services and facilities
 - Health services and facilities
 - Community support services
 - Education and training facilities
 - Transport services.
- Lifestyle and recreation.

The regional and district social baselines are presented in Section 3.5 and Appendix C.

2.6.3 Local Study Area Baseline

The area of the former Belyando Shire comprises the local study area as the mine site and a large proportion of the rail line is located in this area, along with both Clermont and Moranbah as the closest urban centres to the mine site.

As outlined in Section 2.3, the local baseline has been developed based upon the information gained by Adani during negotiations with landholders along with data relating to the former Belyando Shire. The local baseline is presented in Section 3.6 and Appendix C. The local baseline includes:

- Properties affected by the Project
- Families directly and indirectly affected by the project
- Land use and land ownership patterns.
- Demographic information for the former Belyando Shire.

2.7 Impact and Opportunity Identification

The conceptual framework developed by van Schooten *et al* (2003) for identifying social impacts was used for this SIA. This conceptual model was particularly chosen because it makes a clear distinction between social change processes and social impacts.

A social change process is described by van Schooten *et al* (2003) as being able to be measured objectively, independent of the local context. Social change processes are set in motion by project activities or policies and can lead to several iterations of change (first, second and third order changes) and each of these can lead to social impacts occurring. van Schooten *et al* (2003) explain that the ways in which social change processes are perceived, given meaning or valued, depend on the societal context in which various societal groups act. Some sectors of society, or groups in society, are able to adapt quickly and exploit the opportunities of a new situation. Others (for example various vulnerable groups) are less able to adapt and will bear most of the negative consequences of change. Therefore social impacts are implicitly context dependent.

A social impact is described by van Schooten *et al* (2003) as something that is actually experienced by humans in either a corporeal (physical) or cognitive (perceptual) sense and results directly from the social change processes that are invoked by a project (direct social impacts). It is important to note that in many cases, perceived impacts are as important as actual (measurable) impacts as people may modify their behaviours or experience discomfort simply because of a perceived impact. Indirect social impacts are a result of changes in the biophysical environment. To apply this framework:

- Population growth or the presence of construction and operation workers, are social change processes that may lead to 'first order' social impacts
- Economic development which increases the number of tourists in a particular area can influence land use and water quality, which in turn can have indirect social impacts through a reduction in agricultural production and, subsequently, on income level for smallholder farms is an example of second and third order social impacts.

Potential impacts and opportunities have been developed based on desktop research (including review of literature and published research), consultation with the IRC and CTRC, service providers and landholders, and the experience of the SIA team.

Potential impacts and opportunities have been allocated a significance using the significance tool described in Section 6.2.

2.8 Mitigation, Management and Monitoring

Once potential social impacts and opportunities were identified, appropriate management strategies and monitoring programs were developed. IRC, CTRC, TCC, WRC, MRC, CHRC, other stakeholders, service providers and landholders were involved in the development of management strategies and monitoring programs to ensure they are practicable for all parties including Adani, Councils, service providers, landholders and the community. Management strategies were developed to align with existing programs where appropriate. The monitoring program was also developed to align with existing programs in place for collecting social and socio-economic data.

2.9 Social Impact Management Plan

The SIMP was developed using as a guide, the Queensland Government publication *Social impact assessment: Guideline to preparing a social impact management plan* (released 2010). A SIMP establishes the roles and responsibilities of proponents, government, stakeholders and communities throughout the life of a project, in mitigating and managing social impacts and opportunities during construction, operation and the decommissioning of major resource development projects (Department of Infrastructure and Planning, 2010).

2.10 SIA Consultations

2.10.1 Overview of SIA Consultations

The SIA consultations were closely integrated with the whole of EIS public consultation process and a SIA team member participated in relevant public consultation events.

Table 2-6 outlines the various consultations that occurred throughout the EIS process, with particular reference to those that have contributed to the development of the SIA. For full details of the EIS public consultations refer to the Consultation Report in the EIS, Volume 4 Appendix I.

Table 2-6: Integration of SIA and the Whole of EIS Community Consultations

Timing	Component of EIS	Stakeholder	Purpose/Outcome
March 2011	EIS Public consultations	Government agencies	EIS Agency briefings
March 2011	EIS Public consultations	Community in the regional study area	Community information sessions (EIS commencement and Project introduction)
March 2011	SIA milestone meeting #1	SIAU	Confirmation of SIA scope, method and social and cultural area of influence
March 2011	SIA	IRC	Initial discussion on SIA methodology
June 2011	SIA Baseline study consultation	IRC	Meetings with IRC representatives and officers to collect, verify and interpret regional and district baseline data
June 2011	SIA Baseline study consultation	Service Providers and regional stakeholders (Clermont and Moranbah)	Focus Groups meetings to collect, verify and interpret regional and district baseline data
June 2011	SIA milestone meeting #2	SIAU	Meeting with SIAU for a progress update and outline initial findings of the regional baseline
August 2011	EIS public consultations	Community in the regional study area	Progress update on preliminary findings of EIS technical studies
November 2011	SIA Impact Identification and initial mitigation strategies consultation	IRC	Meetings with IRC representatives and officers in Moranbah and Clermont for impact identification in the regional and district study area
November 2011	SIA Impact Identification and initial mitigation strategies consultation	Service Providers and regional stakeholders (Clermont and Moranbah)	Focus Groups for impact identification in the regional study area and initial discussions regarding potential management and mitigation strategies
November 2011	SIA	Landholders	Landholder Case studies for baseline and impact identification in the local study area
December 2011	SIA	SIACAR Group	Presentation to the SIA Cross Agency Reference Group
December 2011 – August 2012	CHMP	Traditional Owners	SIA engagement with TO groups and representatives

Timing	Component of EIS	Stakeholder	Purpose/Outcome
February 2012	SIA (SIMP – management and monitoring)	IRC, CTRC	Meetings
July - August 2012	SIA (SIMP – management and monitoring)	Service Providers, stakeholders and Councils within the regional study area	Meetings in Townsville, Emerald, Clermont, Moranbah, Mackay, Charters Towers and Brisbane

2.10.2 Consultations with Regional Councils

Consultations with IRC, CTRC, TCC, MRC, WRC and CHRC were undertaken to identify:

- Baseline conditions (i.e. current demographic profile of various community groups), social issues and future plans prior to the Project)
- Potential impacts and opportunities for the various community groups in the regional study area
- Management strategies and monitoring programs relevant for the region.

More specific consultation with IRC was also undertaken to identify relevant service providers to be consulted during the SIA ongoing development of the project (refer to Section 2.10.3). The findings from the consultation with Councils have been integrated throughout the SIA and draft SIMP.

2.10.3 Consultations with Service Providers

Consultation with Councils and other stakeholders helped to identify relevant service providers to be included in the SIA. Detailed consultation has been undertaken with relevant service providers to identify:

- Baseline conditions (i.e. current situation, issues and capacities in the region prior to the Project)
- Potential impacts and opportunities on current service provision in the region
- Management strategies and monitoring programs to ensure services are not negatively impacted and enhanced where possible in the region.

The findings from these consultations have been used throughout the SIA and SIMP.

2.10.4 Landholders

Landholders were invited to participate in targeted SIA case studies, however as Adani had undertaken considerable engagement with landholders as part of land negotiations, most landholders noted that information relevant to the SIA had been provided during these consultations. While one landholder did participate in a case study, in order to retain data confidentiality, information from this case study has not been presented. Information relating to landholders has been gained through landholder negotiation discussions between landholders, their representatives and Adani.

2.10.5 Indigenous Consultation

Indigenous consultation for the project was undertaken by Environment Land Heritage (ELH) in collaboration with GHD. Where appropriate, indigenous and non-indigenous consultation activities were undertaken jointly. Information in this section has been sourced from the 2012 ELH Report (ELH, 2012). Engagement with all traditional owner groups is ongoing as part of

continuing to maintain relationships, as well as for the preparation of Indigenous Land Use Agreements (ILUA) and Cultural Heritage Management Plans (CHMP).

The Wangan and Jagalingou, Jangga and Barada Barna aboriginal groups have been identified as having an interest in the areas of land affected by the project.

Baseline consultations were undertaken with key Indigenous SIA stakeholders to supplement desktop analysis completed. The results of the consultations have been summarised under the following headings:

- Community values and aspirations
- Employment and training
- Housing and accommodation.

As at February 2012, one meeting and two phone interviews were held with Indigenous stakeholders from the following groups:

- Jangga Operations (Jangga People)
- Woora Consulting (Barada Barna People)
- The then DEEDI Indigenous Employment and Training Manager.

At the time, further follow-up discussions were planned with all Indigenous stakeholders. This will also involve the additional stakeholders identified as having an interest in Indigenous affairs including:

- Wangan and Jagalingou People Adani Project Coordinator
- Queensland Department of Communities, Aboriginal and Torres Strait Islander Services
- Commonwealth Department of Education, Employment and Workplace Relations
- Queensland Department of Education and Training
- Construction Skills Qld (CSQ)
- Mining Industry Skills Centre (MISC).

Outcomes from consultation to February 2012 have been incorporated into the relevant sections of this SIA.

2.10.6 Consultations with Internal Project Stakeholders

The SIA process was closely linked with the other EIS studies undertaken by GHD and other consultants. Internal stakeholders such as the Project design engineers were consulted to understand the project description. Other EIS technical study teams were consulted where relevant to understand and cross-reference their findings and impact management strategies. Adani's land agents and in-house legal counsel were consulted to supplement information to develop the local baseline and verify impacts and management strategies.

2.11 Assumptions and Limitations

It is acknowledged that the SIA has been developed based on certain assumptions and bounded by limitations which were outside the scope of influence of the SIA team. Some of the key assumptions and limitations are listed below:

- The relevant IAIA SIA principles have been adapted for this technical study, including the precautionary and uncertainty principle when predicting social impacts. Any predicted social impact may change as more information about the Project is known, and the

Project is being constructed and operated. Therefore actual social impacts of the Project were not known with certainty when writing this report. A monitoring program has been developed in order to provide information on whether potential social impacts actually occur or not

- Social impacts are highly contextual and the social impacts of a particular project may be influenced by a range of social, socio-economic and economic trends that are outside the control of the proponent. Additionally, Federal, State, Regional and local policy and planning frameworks may change considerably over time and this will necessarily affect the identification and management of social impacts. This introduces an unavoidable level of uncertainty into predictions of future impacts which necessitates ongoing monitoring and an adaptive management approach. This approach has been incorporated into the SIMP for this project. Additionally, the SIA only examined the first 20 years of the project, and provision is made for ongoing updating of the SIMP to reflect impacts and issues in changing social conditions
- The EIS Project Description has informed the development of the SIA methodology and findings of the impact/opportunity assessment. Project related developments outside the scope of the EIS Project Description have not been assessed in this SIA. This includes the construction of off-lease infrastructure such as quarries, etc
- Workforce numbers and characteristics of the workforce provided in Section 1 are based on estimates only and may change as the Project moves into detailed design phase and operations phase. Strategies for worker accommodation and transport may also change. This in turn may change the nature and extent of predicted social impacts
- Data contained in this report has been drawn from publicly available sources including data from the Australian Bureau of Statistics (ABS), Office of Economic and Statistical Research (OESR), strategic planning documents and policies, SIA key stakeholders, and specialist advice from Adani and the SIAU.
- A medical practitioner has not been contracted to undertake any medical or psychological testing as part of this study. Any reference to medical, health, wellbeing or psychological impacts are based on the self-diagnosis of the person providing the information

It is understood that unforeseeable activities may occur when the Project is being constructed and is in operation. A monitoring program has been developed in order to inform Adani and its social performance group on whether potential social impacts actually occur or not and to capture impacts that may occur as a result of unforeseeable activities or as a result of change in Project design (refer to Volume 1 Section 4 Social Impact Management Plan).

3. Social Baseline

3.1 Introduction

3.1.1 Purpose and Objectives

The purpose of the social baseline is to provide an understanding of existing conditions and characteristics of those communities identified in the study areas. This provides the basis for predicting the effects of social changes arising from the Project on the communities, in addition to providing a benchmark against which predicted future change can be measured. Key considerations include:

- Baseline indicators identified for this study are relevant to the key social issues/impacts that may be caused by the proposed project as identified in the scoping exercise, through stakeholder consultations and those that are specified in the Project ToR
- The baseline is created for a certain point in time in the life of the community – in this instance, the ‘planning phase’ is the reference point for assessment (just prior to the commencement of project construction). Where possible and deemed necessary, trends and patterns are taken into account.

3.1.2 Information Sources

The baseline has been compiled using publicly available quantitative data from ABS and the OESR, and complemented by qualitative information drawn from various strategic planning documents and policies including the Mackay, Isaac Whitsunday Regional Plan (MIWRP). This information has also been supplemented with information obtained during the stakeholder consultation process and consultation with the SIAU.

Where possible, reference has been made to 2011 Census data (ABS) to provide an up to date snapshot of demographic characteristics. The limitations of this data should be noted:

- ABS first release data for the 2011 Census is regarded as preliminary only
- The full Community Profile had not been released at the time of report preparation, therefore, 2006 Census data is referenced in some instances e.g. industry of employment
- Non-resident workers are not captured within ABS criteria as a ‘usual resident’ and therefore, are not included in Census counts of an area’s estimated resident population (ERP). Therefore, OESR’s ‘Bowen and Galilee Basins Population Report’ (2012) has been assessed for full time equivalent (FTE) population² estimates and projections of the non-resident workforce
- The assessment has been developed as a ‘snapshot’ in time in order to provide a baseline from which to assess the potential social impacts arising from the Project. Whilst every effort has been made to provide up to date and relevant data, communities are in a constant state of change and information gathered to prepare the social baseline can change over time.

² The full time equivalent (FTE) population of an area is calculated by adding the count of non-resident workers on-shift to the estimated resident population (ERP) (OESR, 2012)

3.2 Study Area Definition

The purpose of the social baseline is to provide an understanding of existing conditions and characteristics of those communities identified in the study area. As discussed in Section 2, several study areas have been considered in the Social Impact Assessment to reflect a hierarchy of source communities for the Carmichael Project. These are:

- Regional Study Area
- District Study Area
- Local Study Area.

The rationale for definition of study areas relative to the regional, district and local significance is discussed in Section 2.5.2. This chapter presents a consolidated social baseline of the regional, district and local study areas, and addresses 4.1 of the Project's ToR.

Reference should be made to Appendix C of this document which provides more detailed baseline data. Demographic analysis refers to resident populations unless otherwise stated for the non-resident workforce.

3.3 Community Attitudes to Mining

Based upon GHD's previous experience on SIA work undertaken within the Bowen and Galilee Basins and the outcomes of the consultation processes carried out to date, including discussions with property owners (as part of landholder negotiations) a range of attitudes to mining have been identified. For many property owners, attitudes towards mining projects are shaped by the potential environmental issues and impacts on ongoing use of the land associated with mining and rail development. Potential negative issues include:

- Air quality and dust emissions
- Potential flooding over lands
- Restriction of stock movements
- Impacts on drinking water supplies, water bores and groundwater
- Fire risk.

From discussions with Adani personnel, engaging in purposeful landholder negotiation and giving appropriate compensation has a positive impact on property owner attitudes towards the actual and perceived impacts of mining. Negative experiences of others may influence this and it is essential that property owners are aware of the project and involved early in the development process.

As discussed in section 1.1, mine development can deliver positive outcomes for local communities but can also have negative impacts. Many communities have clear aspirations as to how mining development should benefit their communities, and strong thoughts on what impacts are undesirable. Through SIA consultation the Clermont community in particular has indicated what the desired community outcomes are for their locality, including a local presence from the mining companies within the town and provision for workers to reside locally (ie 100 per cent FIFO/DIDO is not generally supported). However, it is also acknowledged that in some situations it may not be practicable to achieve these desired outcomes and in these situations it is desired that mining companies work with the local communities to develop agreed outcomes.

There is an underlying community attitude that mining royalties benefit south-east Queensland and not the regional areas from which the resource is being extracted and there is a desire amongst the local communities for the State Government to reinvest in the local communities,

especially in the areas of health, education and security (policing). The Queensland Government Royalties for the Region Program³ will enable local governments to secure additional royalty funding to improve infrastructure in areas impacted by mining activity. Applications for funding under this program open in September 2012 with the announcement of successful projects not expected until early 2013.

Indigenous engagement is considerably advanced for this project with Indigenous Land Use Agreements in place with the four traditional owner groups identified for the Project.

3.4 Social Baseline – Regional Study Area

The RSA is defined as the six Local Government Areas (LGAs) of:

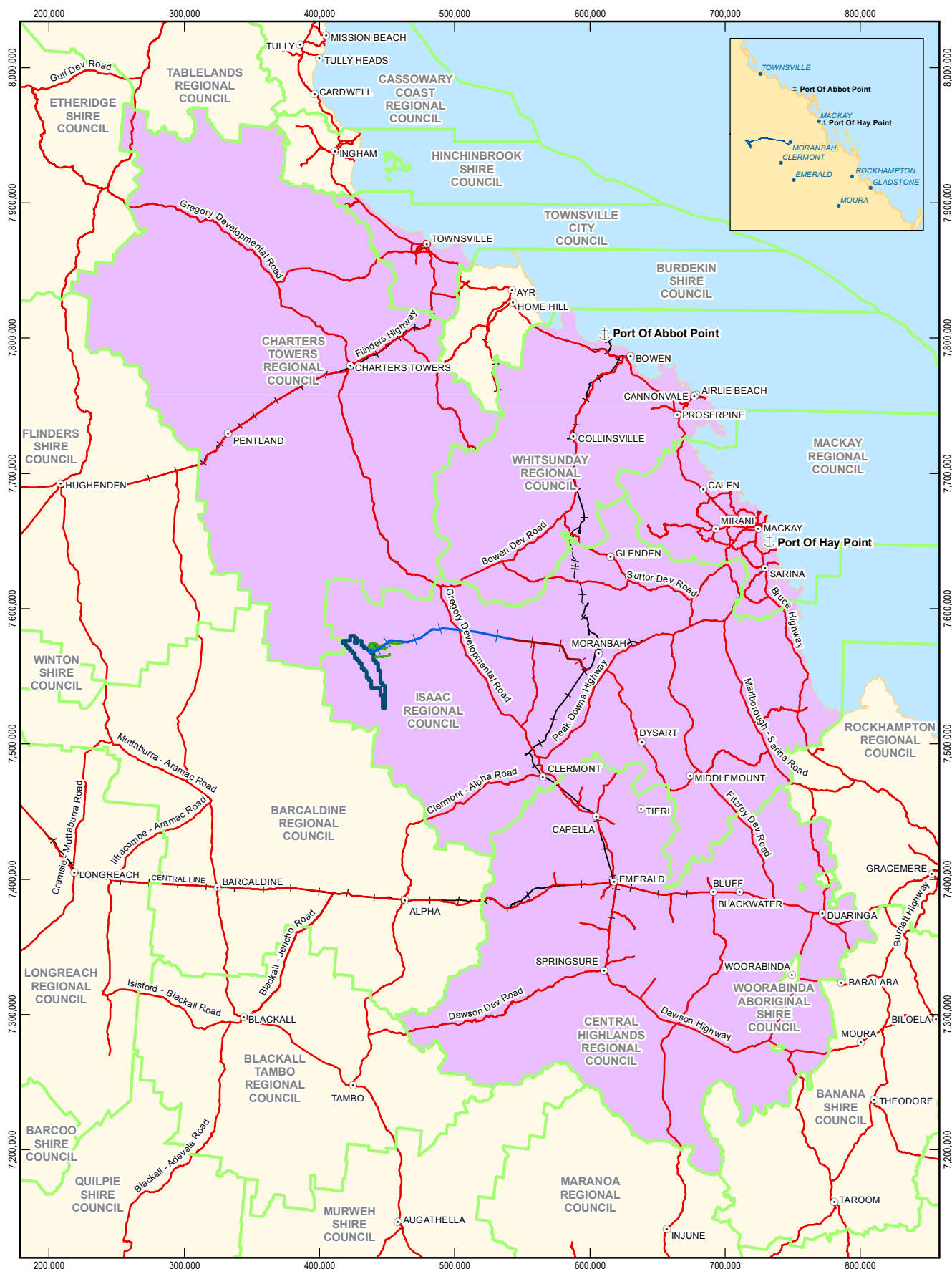
- Isaac Region
- Charters Towers Region
- Central Highlands Region
- Mackay Region
- Whitsunday Region
- Townsville City.

Figure 3-1 shows the extent of the RSA which covers an extensive area totalling 222,340 km². Key themes for consideration in the social baseline assessment for the regional study area are:

- Population
- Education, Employment and Training
- Housing and Accommodation
- Community Health, Wellbeing and Safety.

Reviewing the profiles for existing and future populations highlights issues, opportunities and challenges to be considered in the management of social impacts of the Carmichael Mine and Rail Project.

³Over the next four years, this Queensland Government program will invest \$495 million in new and improved community infrastructure, roads and floodplain security projects that benefit those who live, work and invest in our resource regions. In future years there will be an ongoing commitment of \$200 million each year. More information can be found at <http://www.dsdp.qld.gov.au/grants-and-funding/royalties-for-the-regions.html>



LEGEND

- ⚓ Major Port
- Key Centre / Locality
- State Road
- Existing Railway
- Local Government Area Boundary
- SIA Study Area (Regional)
- Rail (West)
- Rail (East)
- Project (Mine)
- Mine (Offsite)

Based on or contains data provided by the State of QLD (DERM) [2010]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for marketing or be used in breach of the privacy laws.

1:4,000,000 (at A4)
0 20 40 60 80 100
Kilometres
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55



Adani Mining Pty Ltd
Carmichael Coal Mine and Rail Project
Social Impact Assessment
Regional Study Area

Job Number 41-25215
Revision A
Date 18-09-2012

Figure: 3-1

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Data Source: GA: Key Centre / Locality (2007); DERM: LGA (2011); DMR: State Roads (2008); DME: EPC1690 (2010), EPC1080 (2011); Adani: Alignment Opt9 Rev3 (2012); Gassman/Hyder: Mine (Offsite) (2012). Created by: BW, MS

Table 3-1: Key Baseline Community Characteristics for Regional Study Area

Socio-economic Variable from ToR	Data Source	Regional Summary
Total population and Full-time equivalent (FTE) population	OESR, 2012 (b)	<ul style="list-style-type: none"> Estimated total population in 2011 of 413,786 persons, with an annual average growth rate of 2.5 per cent per annum (2006-2011).
Non-resident workers FTE Population	OESR, 2012(a)	<ul style="list-style-type: none"> 2011 FTE population and proportion of non-resident workers in the Bowen Basin = 20,520 (19 per cent). Number of non-residents living in RSA on a temporary basis is increasing due to mining industry growth and use FIFO and DIDO workforce.
Existing of anticipated major population trends and changes irrespective of project	OESR, 2012 (b)	<ul style="list-style-type: none"> Projected population of 641,101 persons by 2031 – an increase of 224,725 at a growth rate of 2.2 per cent per annum. (2011-2031). In terms of population distribution, the largest population bases will continue to be located in coastal urban regions (Townsville, Mackay, Whitsunday). Central Highlands Region will have highest percentage growth at 2.4 per cent, driven by resource sector activity in the Galilee Basin.
Household composition	ABS, 2012	<ul style="list-style-type: none"> Family households were the most common type in the RSA. Whitsunday and Charters Towers had large numbers of single/lone person households (about one quarter of the LGA total), compared to Queensland and other LGAs in the RSA.
Family structures	OESR, 2012 (b)	<ul style="list-style-type: none"> 98,514 families in the RSA in 2011, constituting 8.4 per cent of Queensland total. 'Couple families with children' are the dominant family type (45.3 per cent). Slightly lower representation of 'one-parent families than the state average'.
Age and gender distributions	OESR, 2012 (b)	<ul style="list-style-type: none"> Relatively young age profile with 66.6 per cent aged <45 compared to state average of 62.6 per cent High proportions of working age groups (15-64) in Whitsunday (72.2 per cent), Isaac (71.0 per cent) and Central Highlands (70.1 per cent), compared to the Queensland average. Pockets of older age groups (65+) in Charters Towers, Whitsunday and Mackay.
Education, including schooling levels	OESR, 2012 (b) OESR, 2011(b)	<ul style="list-style-type: none"> Lower level of educational attainment in the RSA. Schooling - 50.6 per cent completed Year 11 or 12 (or equivalent), compared to 55.3 per cent for Queensland. Post school qualifications – five of the six LGAs registered a lower proportion of persons with post school qualifications than Queensland. Whitsunday Region had a higher proportion compared to Queensland.
Measures of community safety, health and wellbeing	Public Health Information Development Unit (PHIDU) 2010	<ul style="list-style-type: none"> Higher rates of poor health and risk factors evident in parts of Charters Towers, Mackay and Whitsunday than in Queensland, reflecting older age groupings in these areas.

Socio-economic Variable from ToR	Data Source	Regional Summary
Cultural and ethnic characteristics Place of birth	OESR, 2012(b)	<ul style="list-style-type: none"> Less cultural diversity than Queensland. 12.3 per cent of RSA population were born overseas, compared to state average of 20.5 per cent. Whitsunday had highest proportion of persons born overseas (14.1 per cent), with lowest in Charters Towers (6.0 per cent) and Isaac (9.9 per cent)
Indigenous population including age and gender	OESR, 2012(b)	<ul style="list-style-type: none"> Relatively large Indigenous population at 5.1 per cent, compared to Queensland average of 3.6 per cent Highest ATSI representation in Charters Towers (7.9 per cent) and Townsville (6.1 per cent).
Income	OESR, 2012(b)	<ul style="list-style-type: none"> Fewer people in the <\$400/ week individual income category than Queensland, except for Charters Towers. Isaac and Central Highlands were 3 to 4 times higher than the state average in the >\$2,000/week income category, which is indicative of higher salaries in the mining sector.
Unemployment	OESR, 2012(b)	<ul style="list-style-type: none"> For March 2012 quarter unemployment was 4.9 per cent, compared with 5.5 per cent in Queensland. Unemployment rates are variable in the RSA ranging from 1.2 per cent in Isaac Region to 7.8 per cent in Charters Towers Region.
Labour force by occupation and industry	OESR, 2011(c)	<ul style="list-style-type: none"> In 2006, main industries of employment were Mining (14.8 per cent), Retail Trade (9.1 per cent), Construction (8.9 per cent) and Agriculture, Forestry and Fishing (8.5 per cent). Mining was the largest employer in Isaac, Central Highlands and Charters Towers Regions. Largest occupation categories were Technicians & Trades Workers (18.2 per cent) and Machinery Operators & Drivers (14.7 per cent).
Disability prevalence	OESR, 2012(b)	<ul style="list-style-type: none"> Proportion of persons in need of assistance with a profound or severe disability was less in RSA (at 3.6 per cent) in comparison to the state average of 4.4 per cent. At 5.8 per cent, Charters Towers was the only LGA higher than the state.
Socio and economic index	OESR, 2011(c)	<ul style="list-style-type: none"> Populations with higher SEIFA index indicating less relative disadvantage were Central Highlands and Isaac Regions. Charters Towers and Whitsunday registered the most disadvantage.
Crime	QPS, 2012	<ul style="list-style-type: none"> Most common crimes in the RSA - 'Other Offences', 'Offences Against Property', 'Other Theft (excl. Unlawful Entry)', and 'Traffic and Related Offences'. Incidence of crime is highest in Townsville City and lowest in Isaac Region (i.e. total number of reported offences).
Housing tenure type and landlord type for rental properties	OESR, 2012(b)	<ul style="list-style-type: none"> 25.9 per cent of the occupied private dwellings in the RSA were fully owned, 34.2 per cent were being purchased and 33.2 per cent were being rented. Very high rentals in Isaac and Central Highlands (60.8 per cent and 44.4 per cent respectively) given the mining presence in these communities.

Socio-economic Variable from ToR	Data Source	Regional Summary
Housing type	OESR, 2012(b)	<ul style="list-style-type: none"> About 130,200 occupied private dwellings in the RSA - 83.7 per cent separate houses; 5 per cent semi-detached houses; and 10 per cent apartments.
Housing costs	www.rpdata.com	<ul style="list-style-type: none"> Median prices vary across the region. Significant price spikes evident at the local level in Galilee and Bowen Basins, attributed to mining industry.
Housing availability	OESR, 2012(b)	<ul style="list-style-type: none"> In the 12 months to March 2012, there were 3,075 dwelling units in new residential buildings approved in the RSA. Temporary accommodation – major workers accommodation villages bed shortages in Moranbah and Clermont.

3.4.1 Population

Resident Population

In 2011, the RSA had a widely dispersed settlement pattern and an ERP of 413,786. The RSA has grown steadily from 2006 to 2011, increasing by about 48,000 at a rate of 2.5 per cent per annum and outpacing the Queensland average of 2.3 per cent. Townsville City experienced the most growth increasing by almost 25,000 persons.

Future forecasts suggest the RSA will reach a total resident population of 641,101 by 2031, representing an increase of almost 250,000 people over 20 years at an annual rate of 2.2 per cent (medium series).

Although recent growth in the major urban centres of Townsville and Mackay was high in terms of population count, the rate of growth will slow in future. In comparison, the Central Highlands and Isaac Regions are expected to experience the highest percentage growth at 2.4 per cent and 2.3 per cent respectively. This is undoubtedly to be driven by resource sector activity within the Galilee Basin.

Non-Resident Workforce

The number of non-resident workers living in RSA townships such as Moranbah, Collinsville, Dysart and Middlemount on a temporary basis is increasing due to the growth in the mining industry's use of fly-in-fly-out (FIFO) and drive-in-drive-out (DIDO) workforce. In 2011, the full time equivalent (FTE) population of non-resident workers in the Bowen Basin was 20,520 (19 per cent of the total population) (OESR, 2012a). Table 3-2 shows a breakdown of non-resident growth from 2006-2011. With the development of the Galilee Basin commencing, together with the population projections presented above, it is anticipated that the already high proportion of non-resident workers will substantially increase, particularly in Isaac and Central Highlands. An increase can also be expected in the Whitsunday Region through the expansion of activities at Abbott Point and new mining projects in the Northern Bowen Basin.

Table 3-2: Population Predictions – Non-resident Workers (2006-2011)

Area	Population prediction		Increase
	2006	2011	
Bowen Basin (total)	10,760	20,520	+ 9,760
Isaac	7,080	13,590	+6,510
Central Highlands	2,310	4,820	+2,520
Whitsunday - Bowen	220	720	+500

Source: OESR (2012a)

Age and Gender

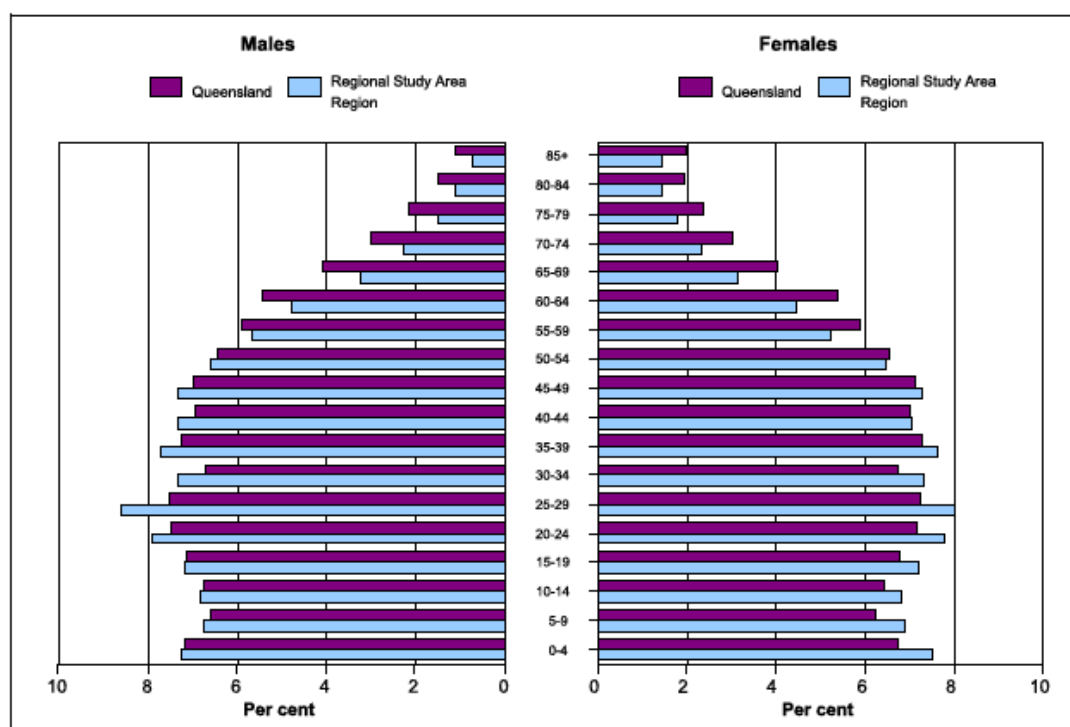
Although the RSA age and sex distribution is generally more youthful than the State average, there is diversity across age groups from infants and youths to adults and the elderly. About two-thirds of the RSA population is aged under 45. The highest representation of working age groups (15 to 64 years old) was recorded in Whitsunday (72.2 per cent), Isaac (71.0 per cent) and Central Highlands (70.1 per cent), reflecting expansion of the mining industry in these areas.

While older persons are generally under-represented in the RSA compared to Queensland, pockets of older age groups (aged 65 and over) were identified in Charters Towers, Whitsunday and Mackay.

The gender balance in the RSA is characterised by a higher proportion of males than females, at 52.5 percent and 47.5 percent respectively. Isaac and Central Highlands has the most males (56 percent and 54 percent respectively). In comparison, 49.5 percent of the Queensland population is male.

Figure 3-2 shows the population pyramid for the RSA and Queensland for 2010.

Figure 3-2: Population Pyramid for the Regional Study Area, 2010



Source: OESR, 2012(d).

Cultural and Ethnic Diversity

The RSA demonstrates less cultural and ethnic diversity than Queensland with 12.3 per cent of residents born overseas, compared to a state average of 20.5 per cent. Whitsunday had the highest proportion of persons born overseas (14.1 per cent), with the lowest recorded in Charters Towers (6.0 per cent) and Isaac (9.0 per cent).

The RSA has a relatively large Indigenous population at 5.1 per cent, compared with a Queensland average of 3.6 per cent. Charters Towers and Townsville have the highest representation at 7.9 per cent and 6.1 per cent respectively.

Families

There are almost 100,000 families in the RSA, constituting 8.4 per cent of the Queensland total. Family composition is generally consistent with the state, and is dominated by 'couples with children', followed by 'couple only' households. There is a slightly lower percentage of one-parent families in the RSA.

Population Mobility

Overall, there is a moderate level of mobility across the RSA with some variation between LGAs. Townsville City and Isaac Region appear to be more highly mobile, with over half their populations changing address during the five year inter-censal period.

Building on the summary above, together with the full baseline analysis in Appendix C and stakeholder consultations, the following population characteristics are relevant for the Project:

- **Future population growth in the Regional Study Area will vary across communities**
- **A number of communities will be affected by significant FTE population growth, particularly in the Central Highlands and Isaac Regions**
- **The future population can be expected to be more demographically diverse.**

3.4.2 Education, Employment and Training

Education

There are a wide range of educational institutions in the RSA from preparatory level through to tertiary education. In 2011, there were almost 200 schools in the RSA. Universities are located in major urban centres, and there are numerous TAFE campuses serving urban and regional catchments.

The educational profile for the RSA was slightly lower than Queensland with 50.6 per cent of persons over 15 years having completed Year 11 or 12 (or equivalent), compared to the State average of 55.3 per cent. Townsville had the highest levels of schooling and Charters Towers had the lowest. Furthermore, five of the six LGAs registered lower rates of post-school qualifications, Whitsunday being the exception.

Unemployment

The RSA registered an unemployment rate of 4.9 per cent for the March quarter of 2012, compared with 5.5 per cent in Queensland. Although unemployment is generally lower than the State average, there is considerable local variation with lows of 1.2 per cent in Isaac and 2.4 per cent in Central Highlands, to highs of 7.8 per cent in Charters Towers and 6.1 per cent in Whitsunday.

Industries of Employment

In 2006, the main industries of employment were Mining (14.8 per cent), Retail Trade (9.1 per cent), Construction (8.9 per cent) and Agriculture, Forestry and Fishing (8.5 per cent). Mining was the largest employer in the Isaac, Central Highlands and Charters Towers Regions. Largest occupation categories were Technicians & Trades Workers (18.2 per cent) and Machinery Operators & Drivers (14.7 per cent).

The following table provides a comparison with Queensland for industries of employment in the RSA.

Table 3-3: Employment by Industry in the Regional Study Area, 2006 (% of total workforce)

Industry	Central Highlands	Charters Towers	Isaac	Mackay	Townsville	Whitsunday	QLD
Agriculture, forestry and fishing	10.9	13.1	10.5	4.6	0.8	11	3.4
Mining	22.2	13.2	38.9	8.3	2.6	3.7	1.7
Manufacturing	4.3	4.4	2	9.9	8.2	6.2	9.9
Electricity, gas, water and waste services	0.5	0.6	0.5	0.9	1.4	0.8	1
Construction	11.4	5.3	6.4	10.1	9.9	10.1	9
Wholesale trade	7.9	1.5	2	4.6	3.2	2.6	1.9
Retail trade	2.8	10.8	7.1	11.4	11	11.6	11.6
Accommodation and food services	5.7	7.0	6.2	6.5	6.8	15.6	7
Transport, postal and warehousing	4.5	4.4	3.6	6.1	5.1	7.2	5.1
Information, media and telecommunications	0.5	0.6	0.2	0.8	1.6	0.6	1.4
Financial and insurance services	1.1	0.8	0.5	1.8	1.8	1.3	2.9
Rental, hiring and real estate services	1.4	1.0	1	1.9	1.8	2.2	2.1
Professional, scientific and technical services	3	1.9	1.3	4.4	4.3	3	5.6
Administrative and support services	2.1	1.6	2.2	2.2	2.8	3.3	3.1
Public administration and safety	4.3	5.8	2.8	4	12.6	3.3	6.7
Education and training	5.8	11.4	5.6	6.3	8	4.8	7.6
Health care and social assistance	4.3	10.3	3.6	8	10.9	6	10.2
Arts and recreational services	0.3	0.5	0.2	0.6	1.3	0.9	1.3
Other services	4.1	2.8	2.8	4.7	3.5	3	3.7

Source: ABS, 2006: B43

Income

There is diversity in income profiles across the RSA given the wide geographic area and workforce mix. Lower individual income levels and higher unemployment are focussed on Charters Towers. In contrast, personal incomes in Isaac and Central Highlands were medians three to four times higher, in the \$2,000/week income category, which is reflective of employment in the mining sector. Whitsunday had a high proportion of individual weekly incomes below \$1,000.

Building on the summary of education, employment and training trends above, the full baseline analysis (Appendix C) and stakeholder consultation findings, key considerations for the Project will be:

- Although existing unemployment in the Regional Study Area is generally low, there will be a need for additional workforce skilling and training opportunities which support mining sector growth and target source communities.
- High labour force participation and affluence are focussed on mining industry areas, whilst pockets of social disadvantage are evident in some parts of the Regional Study Area.

3.4.3 Housing and Accommodation

In 2011, there were about 130,200 occupied private dwellings in the RSA. The housing mix is characterised by more separate houses, with fewer semi-detached dwellings and apartments than the state average. In 2011, 25.9 per cent of the occupied private dwellings in the RSA were fully owned, 34.2 per cent were being purchased and 33.2 per cent were being rented.

Very high rental rates were clustered in Isaac and Central Highlands (60.8 per cent and 44.4 per cent respectively) given the mining presence in these communities. Overall, the RSA demonstrates a lower level of rental stress than Queensland. Mortgage stress is evident in parts of the Charters Towers and Whitsunday Regions.

In the 12 months to March 2012, there were 3,075 dwelling units in new residential buildings approved in the RSA. A consistent theme to emerge during SIA consultations at the sub-regional level was the capacity available for residential expansion and housing affordability in coastal regions, to support mining workforce growth and emerging FIFO hubs.

In terms of temporary accommodation, the Bowen Basin had a total capacity of 22,730 beds in workers accommodation villages in 2011-2012 – an increase of 4,940 beds from 2010-2011 with the largest number located in Isaac Region. Many hotels/motels are also subject to strong demand from the mining sector, reducing the capacity to cater for other visitors – the Bowen Basin recorded a 3 per cent room vacancy rate in 2011.

Regional housing and accommodation data highlight the following key considerations

- Housing and accommodation issues are more prevalent in areas already impacted by mining activity

3.4.4 Community Health, Wellbeing and Safety

Health and Wellbeing

The higher prevalence of poor health and health risk factors was aligned with older age groups in the Charters Towers, Whitsunday and Mackay Regions. The RSA had a lower proportion of people in need of assistance with a profound or severe disability (3.6 per cent) when compared to Queensland (4.4 per cent). At 5.8 per cent, Charters Towers Region was the only LGA in the RSA with a greater rate of need for assistance than the state average.

The Socio-Economic Indexes for Areas (SEIFA) is a summary measure of the social and economic conditions of geographic areas across Australia (OESR, 2012d). SEIFA comprises a number of indexes, which are generated at the time of the ABS Census.

Based on 2006 data, populations with higher SEIFA index indicating less relative disadvantage were Central Highlands and Isaac Regions. Charters Towers and Whitsunday registered the most disadvantage.

Crime and Safety

The incidence of crime was highest in Townsville and lowest in Isaac. The most common crimes in the RSA were Other Offences; Offences Against Property; Other Theft (excluding Unlawful Entry); and Traffic and Related Offences. There were lower rates of 'Offences Against the Person' and 'Offences Against Property' than the state averages. Although the rate of 'Drug Offences' was relatively low overall, this was more common in the urbanised regions of Townsville, Whitsunday and Mackay.

- **The primary consideration for community health, wellbeing and safety at a regional level will be provision of adequate and appropriately targeted services/ infrastructure to keep pace with actual population growth and change, and to meet the unique and evolving needs of communities in resource industry areas.**

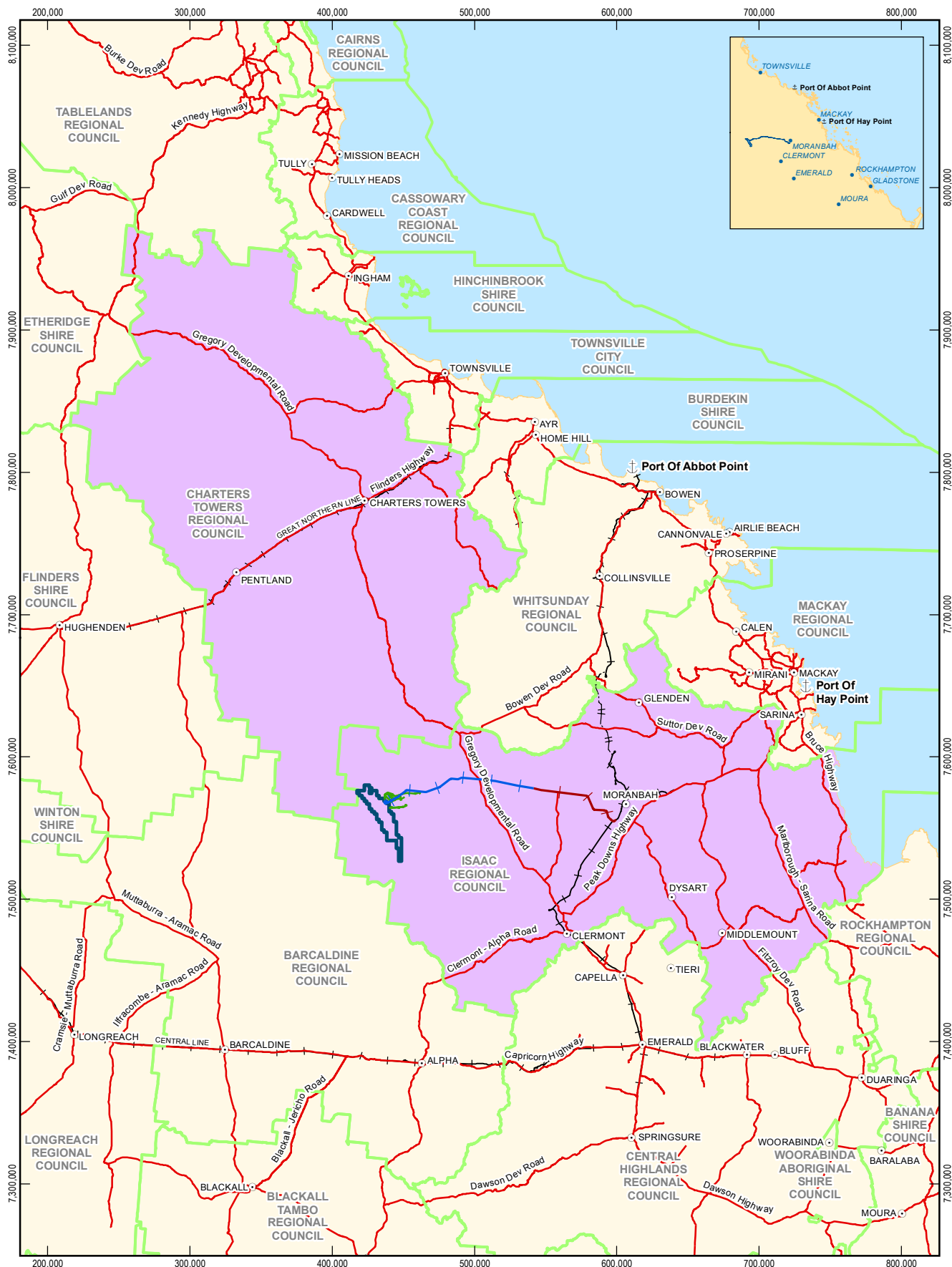
3.5 Social Baseline – District Study Area

This section presents the social baseline for the District Study Area (DSA). The DSA comprises the two LGAs of:

- Isaac Region
- Charters Towers Region.

Figure 3-3 shows the extent of the District Study Area which covers a total area of 127,228 km². The rationale for definition of the DSA is outlined in Section 1. The baseline assessment has been undertaken using publicly available quantitative data, and has been complemented by qualitative information drawn from various strategic planning documents and policies, as well as information obtained during the stakeholder consultation process.

A summary of major findings for the DSA is presented below, with the full baseline assessment provided in Appendix C.



LEGEND

- ⚓ Major Port
- Key Centre / Locality
- State Road
- Existing Railway
- Local Government Area Boundary
- SIA Study Area (District)
- Rail (West)
- Rail (East)
- Project (Mine)
- Mine (Offsite)

Based on or contains data provided by the State of QLD (DERM) [2010]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for marketing or be used in breach of the privacy laws.

1:3,800,000 (at A4)
0 25 50 75 100
Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55



Adani Mining Pty Ltd
Carmichael Coal Mine and Rail Project
Social Impact Assessment
District Study Area

Job Number 41-25215
Revision A
Date 18-09-2012

Figure: 3-3

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Data Source: GA: Key Centre / Locality (2007); DERM: LGA (2011); DMR: State Roads (2008); DME: EPC1690 (2010), EPC1080 (2011); Adani: Alignment Opt9 Rev3 (2012); Gassman/Hyder: Mine (Offsite) (2012). Created by: BW, CA

Table 3-4: Key Baseline Community Characteristics for District Study Area

Socio-economic Variable from ToR	Data Source	District Summary
Total population and FTE equivalent population	OESR, 2012 (b)	<ul style="list-style-type: none"> 2011 estimated total population = 35,934 with an annual average growth rate of 1.6 per cent per annum. (2006-2011).
Non-resident workers FTE Population	OESR, 2012(c)	<ul style="list-style-type: none"> 27 per cent of Isaac Region's total population are 'non-resident' (about 13,590 persons) – FTE population of 36,540 in 2011. Consultation with Clermont and Moranbah community suggests an expected future increase in non-resident workers due to mining activity. OESR forecasts increase of 5,700 additional non-resident workers in Isaac Region between 2011-2016.
Existing of anticipated major population trends and changes irrespective of project	OESR, 2012 (b)	<ul style="list-style-type: none"> DSA population estimated to reach 51,963 by 2031 – 15,707 additional residents at an average growth rate of 1.8 per cent per annum Focus of future population growth will be in the Isaac Region.
Household composition	ABS, 2012	<ul style="list-style-type: none"> Family households - 74.9 per cent; Single/lone person households – 22.0 per cent; Group households - 3.2 per cent.
Family structures	OESR, 2012 (b)	<ul style="list-style-type: none"> In 2011, 8,344 families in the DSA (about 5,300 in Isaac Region, and 3,000 in Charters Towers Region). 'Couple Families with Children' are the dominant family type. High representation of 'One Parent Families' in Charters Towers, compared with Isaac Region and Queensland average.
Age and gender distributions	OESR, 2012 (b)	<ul style="list-style-type: none"> Ratio of males/females is uneven, with higher proportion of men. District has a youthful age profile – 70 per cent of residents aged <45, compared to state average of 62.6 per cent. Children <15 years represent almost a quarter of the population. Charters Towers Region has an older profile, whilst Isaac Region has very few senior citizens aged 65 + (4.1 per cent).
Education, including schooling levels	OESR, 2012 (b)	<ul style="list-style-type: none"> Highest level of school completed (for persons aged 15+) = 1,814 'did not go to school, or Year 8 or below'; 8,533 'Year 9 or 10 or equivalent'; 11,772 (46.6 per cent) 'Year 11 or 12 or equivalent'. Isaac Region has a higher level of schooling than Charters Towers Region. Post-school qualifications in 2006 - 45.2 per cent of DSA, compared with the Queensland average of 50.4 per cent.
Measures of community safety, health and wellbeing	Public Health Information Development Unit (PHIDU) 2010	<ul style="list-style-type: none"> Self-assessment of health in former LGAs of Isaac Region was lower than the Queensland average. Former LGAs in Charters Towers Region had higher rates of people with a risk factor, self-assessment of poor health and psychological distress than Queensland.
Cultural and ethnic characteristics Place of birth	OESR, 2012(b)	<ul style="list-style-type: none"> Less cultural diversity than Queensland. 8.5 per cent of DSA population were born overseas, compared to 20.5 per cent in Queensland. Isaac had marginally higher

Socio-economic Variable from ToR	Data Source	District Summary
		representation of persons born overseas than Charters Towers (9.9 per cent and 6.0 per cent respectively).
Indigenous population including age and gender	OESR, 2012(b)	<ul style="list-style-type: none"> In 2011, 4.5 per cent of persons in the DSA identified as ATSI, compared to 3.6 per cent in Queensland.
Income	OESR, 2012(b)	<ul style="list-style-type: none"> 28.8 per cent of persons working in the Charters Towers and Isaac Regions earned <\$400/week compared with state average of 34.6 per cent. Lower individual incomes are focused on the Charters Towers Region. In contrast, Isaac Region had the highest proportion of persons earning >\$2,000/ week (23.1 per cent) compared with 5.5 per cent for Queensland.
Unemployment	OESR, 2012(b)	<ul style="list-style-type: none"> Unemployment rates are low in the DSA. For March 2012 quarter unemployment was 3.4 per cent, compared with 5.5 per cent in Queensland. Unemployment higher in Charters Towers at 7.8 per cent, in comparison to Isaac at 1.2 per cent.
Labour force by occupation and industry	OESR, 2011(b)	<ul style="list-style-type: none"> In 2006, Mining was largest industry of employment (30.6 per cent). Other key employers were Agriculture, Forestry and Fishing (11.3 per cent), Retail Trade (8.3 per cent), and Education and Training (7.5 per cent). Largest occupation categories were Machinery Operators and Drivers (20.9 per cent), Technicians and Trades Workers (18.2 per cent), Managers (13.9 per cent), and Labourers (13.7 per cent).
Disability prevalence	OESR, 2012(b)	<ul style="list-style-type: none"> Proportion of persons in need of assistance with a profound or severe disability was significantly less in Isaac Region than Charters Towers Region at 1.4 per cent and 5.8 per cent respectively. The Queensland average was 4.4 per cent.
Socio and economic index	OESR, 2011(b)	<ul style="list-style-type: none"> Charters Towers Region had a high number of people in the most disadvantaged quintile with 47.4 per cent, whereas Isaac had 5.1 per cent. High rates in Charters Towers may correspond to higher unemployment and lower incomes.
Crime	QPS, 2012	<ul style="list-style-type: none"> The most common crimes in the DSA were Offences Against Property; Other Offences; Other Theft (excl. Unlawful Entry); and Traffic and Related Offences. Crimes exceeding the state average were Traffic and Related Offences; Fraud; Weapons Act Offences; Breach Domestic VPO; and Stock Related Offences. The incidence of crime is higher in Charters Towers Region than Isaac Region.
Housing tenure type and landlord type for rental properties	OESR, 2012(a)	<ul style="list-style-type: none"> 26.8 per cent of occupied private dwellings in DSA were fully owned, 20.4 per cent were being purchased and 48.4 per cent were rented. Very high proportion of rentals in Isaac (60.8 per cent), which is common in mining industry areas, compared with 48.8 per cent in Queensland and 28.8 per cent in Charters Towers.
Housing type	OESR, 2012(a)	<ul style="list-style-type: none"> In the DSA there are 10,859 occupied private dwellings comprising separate houses (89.6 per cent), semi-detached houses (3.3 per cent), and apartments (2.9 per cent).
Housing costs	www.rpdata.com www.pricerfinder.co	<ul style="list-style-type: none"> Median house prices in the townships of Moranbah,

Socio-economic Variable from ToR	Data Source	District Summary
	m.au	<p>Clermont and Charters Towers have all experienced strong growth for the period 2001 to 2010.</p> <ul style="list-style-type: none"> Median house prices (May 2012) – Moranbah (\$699,000), Clermont (\$292,000), Charters Towers (\$237,000). In comparison, Queensland registered a median of \$396,000
Housing availability	OESR, 2012(a)	<ul style="list-style-type: none"> Housing stress and declining affordability evident in DSA, particularly Moranbah. In the 12 months to March 2012, there were 283 dwelling units in new residential buildings approved in the DSA.

3.5.1 Population

Resident Population

As shown in Table 3-5, in 2011, the DSA had an ERP of 35,934 comprising about 23,000 people (or 64 per cent) in Isaac and 13,000 (36 per cent) in Charters Towers Region. The DSAs resident population increased moderately by 2,666 between 2006 and 2011 at a rate of 1.6 per cent per annum compared to the state average of 2.3 per cent per annum. Isaac Region has a dispersed settlement pattern with 77 per cent of the population residing in the five largest townships as shown below. In contrast, Charters Towers' population is concentrated in one key centre.

Projected population growth will be solid over the next 20 years with almost 52,000 residents expected to be living in the DSA by 2031 which is an increase of about 15,700 persons. Isaac will accommodate most growth (87 per cent of the total), primarily in Moranbah due to the availability of employment opportunities and increased levels of services and infrastructure. This growth is being supported by declaration of the Moranbah Urban Development Area (UDA). Growth in Charters Towers will be more subdued (1,984 additional residents).

Table 3-5: District Study Area - Population by Locality

Locality	Population by Year (pr)		
	2001	2006	2011
Isaac Region			
Moranbah	6,338	7,607	8,934
Dysart	2,500	3,340	3,039
Middlemount	2,001	2,174	2,121
Clermont	2,006	1,976	2,263
Glenden	909	1,179	1,331
Nebo	206	298	396
Charters Towers Region			
Charters Towers	8,751	8,468	8,447
Ravenswood	246	203	203

pr = preliminary rebased

Source: OESR 2011(b) and 2012(c)

Non-Resident Workforce

The estimated number of non-resident workers on-shift in the Isaac Region grew from 7,080 in 2006 to 13,590 in 2011. In addition to 'usual residents' this equates to a FTE population of 36,540 i.e. 27 per cent of the total population are 'non-residents' who work in the area and live in the area temporarily while rostered on shift, but return to their usual place of residence when rostered off (OESR, 2012c).

Several smaller population centres in Isaac have a concentration of non-resident workers on-shift that exceeds permanent residents, notably Nebo, Coppabella, Glenden and Middlemount.

From discussions with stakeholders in Clermont and Moranbah, the community expects Isaac's non-resident population to increase substantially as a result of mining sector growth and have identified an escalating shortage in accommodation for non-resident workers in and around these towns. The OESR forecasts an increase of 5,700 additional workers in Isaac Region by 2016 (38 per cent of FTE population). The OESR non-resident data does not include Charters Towers Region. There is limited mining activity in Charters Towers.

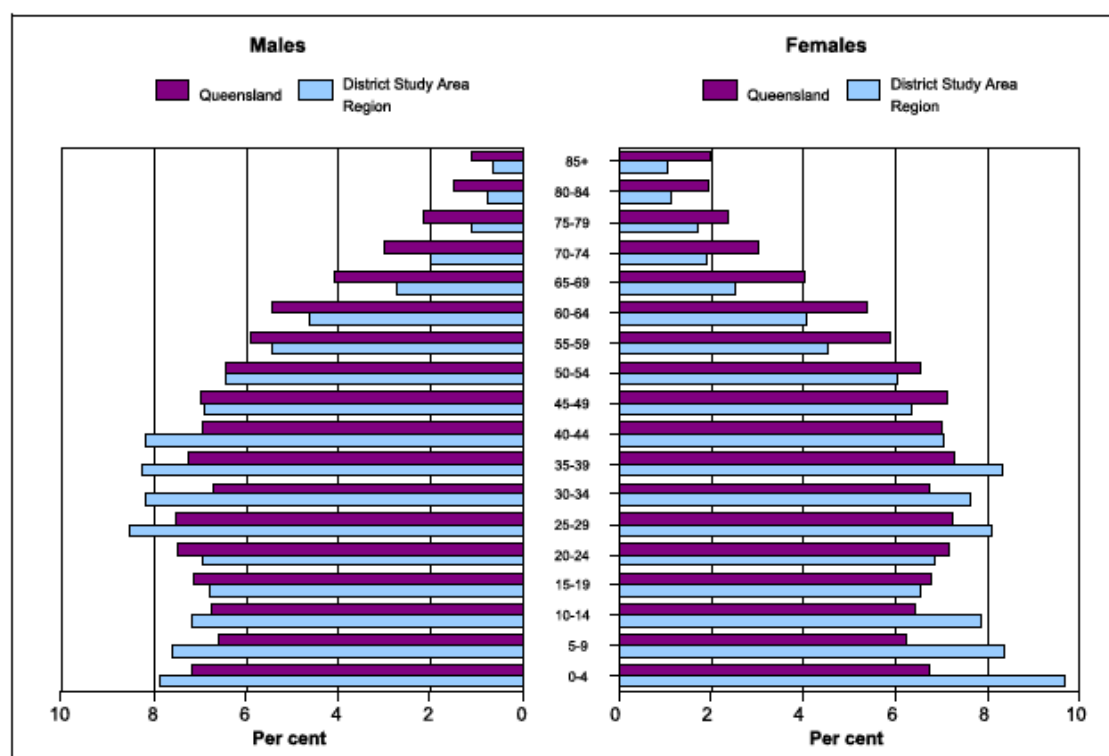
Age and Gender

The DSA is characterised by an uneven ratio of males to females with higher proportion of men, particularly in the working age groups. Overall, the District has a youthful profile with 70 per cent of residents aged under 45, compared to state average of 62.6 per cent. Children aged under 15 represent almost a quarter of the population.

Charters Towers Region has an older profile with 14.2 per cent of residents aged 65 or more, in comparison to the DSA (7.8 per cent) and Queensland (24.8 per cent). Significantly, Isaac Region has fewer senior citizens, with only 4.1 per cent in the 65+ age group.

Figure 3-2 shows the population pyramid for the DSA and Queensland for 2010.

Figure 3-4: Population Pyramid for the District Study Area, 2010



Source: OESR, 2012(c).

Cultural and Ethnic Diversity

The DSA has less cultural diversity than Queensland with only 8.5 per cent of residents born overseas, compared to 20.5 per cent across the state. Isaac had higher representation of overseas-born persons than Charters Towers (9.9 per cent and 6.0 per cent respectively). In 2011, 4.5 per cent of persons in the DSA identified as Aboriginal or Torres Strait Islander, which is marginally higher than the Queensland average of 3.6 per cent.

Families

In 2011, there were 8,344 families in the DSA with approximately 5,300 in Isaac and 3,000 in Charters Towers. 'Couple Families with Children' are the dominant family type. The percentage of 'One-parent families' in Charters Towers Region was almost double that of Isaac Region at 16.6 per cent and 8.4 per cent respectively. It is noted that 'singles' are not included in OESR family statistics.

Population Mobility

Almost half of the people in the DSA (49.0 per cent) resided at a different address within five years prior to the 2006 Census, which is higher than the Queensland rate (47.6 per cent). At the LGA level, slightly higher mobility is evident in Isaac Region (50.5 per cent). Greatest inflows to the District are from other locations within Australia. Overseas migration makes up a small proportion of the total at 2.0 per cent (based on 5 years) compared with a state average of 4.4 per cent.

Based on the summary of population characteristics above, the full baseline analysis (Appendix C) and stakeholder feedback, key considerations for the Project will be:

- **Effects of high population growth and associated change in mining areas need to be understood and managed to ensure quality social outcomes for existing and future communities**
- **The increasing concentration of non-residents workers in the DSA will need to be considered from a community development perspective to help strengthen social inclusion and identity. This is particularly important where small population bases are dominated by non-resident workers.**

3.5.2 Education, Employment and Training

Education

Overall, the DSA appears to have a lower level of educational attainment than the state. In terms of schooling, 46.6 per cent of the District population aged over 15 completed Year 11 or 12 (or equivalent), compared to the State average of 55.3 per cent. Isaac Region has a higher level of schooling than Charters Towers Region.

45.2 per cent of the DSA population had a post-school qualification, compared with 50.4 per cent in Queensland. Where the level of education was stated, a Certificate qualification was most common in the DSA at 62 per cent. The high proportion of people with Certificate, I, II, III and IV qualifications in Isaac Region reflects the prominence of mining and associated industries in the area.

Unemployment

The DSA displays high labour force participation with an unemployment rate of only 3.4 per cent in the March quarter of 2012, compared with 5.5 per cent in Queensland. Conditions vary at the LGA level, with a high of 7.8 per cent in Charters Towers and a low of 1.2 per cent in Isaac.

Industries of Employment

In 2006, Mining was largest industry of employment (30.6 per cent). Other key employers were Agriculture, Forestry and Fishing (11.3 per cent), Retail Trade (8.3 per cent), and Education and Training (7.5 per cent). Largest occupation categories were Machinery Operators and Drivers (20.9 per cent), Technicians and Trades Workers (18.2 per cent), Managers (13.9 per cent), and Labourers (13.7 per cent).

Income

2011 Census figures indicate higher individual income levels within the DSA compared to the state. This is particularly evident in the higher income bracket of \$2,000 or more per week with 16.4 per cent labour force participants in the DSA compared to 5.5 per cent in Queensland.

Differences between the two LGAs that make up the DSA are significant, with lower individual incomes focused on the Charters Towers Region, where 39.2 per cent of the workforce earns less than \$400 per week. In contrast, Isaac Region had a high percentage of individuals earning more than \$2,000 per week (23.1 per cent) compared with Queensland and Charters Towers (5.5 per cent and 4.5 per cent respectively).

Based on the district snapshot of education, employment and training above, the full social baseline (Appendix C) and feedback from SIA consultations, key considerations for the Project will be:

- **Incomes and unemployment conditions vary between LGAs within the District Study Area**
- **Isaac Region demonstrates higher rates of labour force participation and lower rates of unemployment**
- **As the income gap widens across the DSA, there is potential for increasing financial stress on lower income households not engaged in the mining industry**
- **Although the current workforce is well equipped to support mining and related industries, more skilling and training is needed to increase workforce capacity for existing and future projects in the DSA**
- **Access to vocational training and tertiary education is required for youth and adults across the district to improve their skills and qualifications for projects of this nature.**

3.5.3 Housing and Accommodation

In 2011, there were 10,858 occupied private dwellings within the DSA, of which 26.8 per cent were fully owned, 20.4 per cent were being purchased and 48.4 per cent were rented. There is a very high proportion of rentals in Isaac (60.8 per cent), which is common in mining industry areas, compared with 48.8 per cent in Queensland and 28.8 per cent in Charters Towers.

Housing stress and declining affordability is evident in DSA, particularly in Moranbah where median house prices were nearing \$700,000 in mid-2012. Charters Towers has not been affected by the same price spikes recording a median of \$237,000.

During the consultation process, stakeholders consistently expressed concerns about land, housing supply and housing diversity constraints in Moranbah and emerging shortfalls in Clermont, together with inflated local property values.

The proportion of dwellings in Charters Towers Region subject to rental stress was more than double that of Isaac Region, however both Charters Towers and Isaac Regions were lower than the Queensland average.

In terms of housing and accommodation at a district level, key considerations will be:

- The changing profile of household and accommodation types in the DSA
- Achieving long term housing affordability and choice for all sectors of the community.

3.5.4 Community Health, Wellbeing and Safety

Health and Wellbeing

Pockets of health-related social disadvantage are evident in the Charters Towers Region (resident population), which reflect higher unemployment, lower incomes and an older demographic.

Charters Towers Region had a larger proportion of people with a health risk factor (smoking, harmful use of alcohol or obesity), self-assessment of poor health and psychological distress than Queensland. It also had a high number of people in the most disadvantaged SEIFA quintile at 47.4 per cent, whereas Isaac had only 5.1 per cent.

Crime and Safety

The most common crimes in the DSA were Offences Against Property; Other Offences; Other Theft (excluding. Unlawful Entry); and Traffic and Related Offences.

Crimes exceeding the state average were Traffic and Related Offences; Fraud; Weapons Act Offences; Breach of Domestic Violence Protection Order (VPO); and Stock Related Offences. The incidence of crime is higher in Charters Towers Region than Isaac Region.

Based on the health and wellbeing snapshot above, the detailed analysis in Appendix C, and feedback from service agencies/providers in the district, key considerations for the Project are:

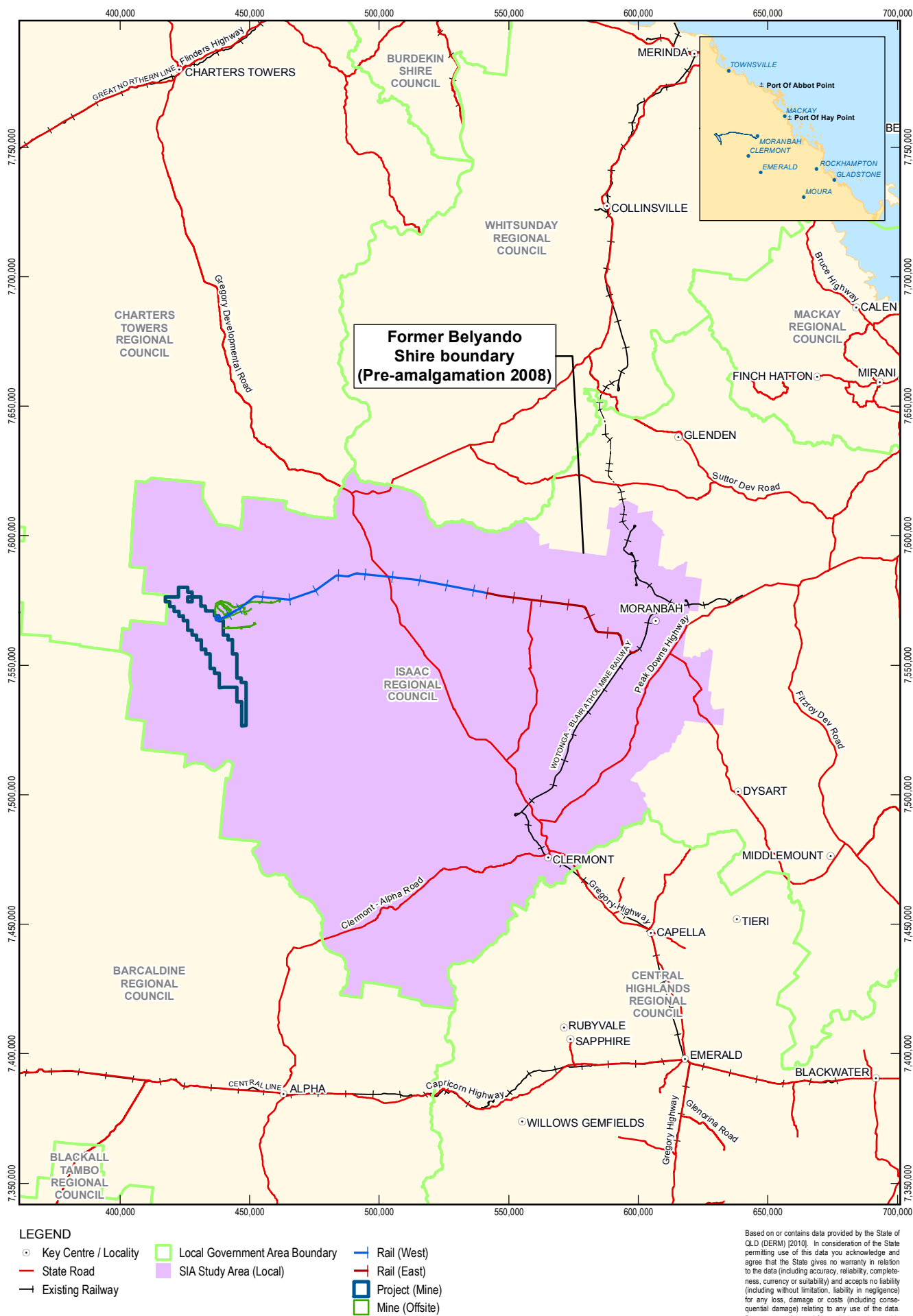
- The capacity of health and other social infrastructure in the district is being stretched with population and industry growth
- In the DSA, traditional population triggers/ thresholds for health and other social infrastructure provision may not be suitable to address the future needs of resident and non-resident communities in the Galilee and Bowen Basins.

3.6 Social Baseline – Local Study Area

This section presents the social baseline for the Local Study Area (LSA). The LSA for the Project is focussed on the:

- Former Belyando Shire which now forms the western portion of Isaac Region, and includes the key townships of Moranbah and Clermont (referenced by ABS as Isaac Regional – Belyando Statistical Local Area); and
- Landholders who may be directly impacted by the Project during construction and operation.

Figure 3-5 shows the extent of the LSA which covers a total area of 30,281 km². For the purpose of this analysis, the Belyando Statistical Local Area will be referred to as the 'Local Study Area' or 'Belyando Shire'. Information contained in this section is based on publicly available data and SIA consultation activities undertaken with key stakeholders. A summary of major findings for the LSA is presented in the following section, with the full baseline assessment provided in Appendix C.



1:2,000,000 (at A4)
0 10 20 30 40 50
Kilometres
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55



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Data Source: GA: Key Centre / Locality (2007); DERM: LGA (2011); DMR: State Roads (2008); DME: EPC1690 (2010), EPC1080 (2011); Adani: Alignment Opt9 Rev3 (2012); Gassman/Hyder: Mine (Offsite) (2012). Created by: BW, CA

Table 3-6: Key Baseline Community Characteristics for the Local Study Area

Socio-economic Variable from ToR	Data Source	Local Study Area Summary
Total population	OESR, 2012(a)	<ul style="list-style-type: none"> 2011 estimated population = 13,049 with an annual average growth rate of 3.2 per cent per annum (2006-2011).
Non-resident workers FTE population	OESR, 2012(b)	<ul style="list-style-type: none"> 2011 FTE population of Belyando Shire = 16,510. FTE population comprised 12,400 usual residents and 4,080 non-resident workers (28 per cent). 3,460 non-resident workers (87 per cent) were located in/near Moranbah, and 510 in Clermont.
Existing or anticipated major population trends and changes irrespective of project	OESR, 2011(d) OESR, 2012(b)	<ul style="list-style-type: none"> Total population estimated to reach approximately 19,613 by 2031, equating to an increase of almost 7,400 people over 20 years based on medium population projections (2011-2031).
Household composition	ABS, 2012	<ul style="list-style-type: none"> Belyando Shire has a high number of family households (78.0 per cent), followed by single/lone person households (18.1 per cent) and group households (3.9 per cent).
Family structures	OESR, 2012(a)	<ul style="list-style-type: none"> 3,061 families in the LSA with dominant type being 'couple family with children' (57.3 per cent), followed by 'couple only families' (32.7 per cent). 'One parent families' accounted for 9.1 per cent of the total, compared to the state average of 16.1 per cent.
Age and gender distributions	OESR, 2012(a)	<ul style="list-style-type: none"> Youthful profile with large representation of people in working age groups (25-44) at 36 per cent, exceeding with state average of 28 per cent. Very low representation in >65 age cohorts (3.9 per cent), compared with 13.1 per cent for Queensland. Gender – higher proportion of males (54.5 per cent) to females (45.5 per cent).
Education, including schooling levels	OESR, 2012(a) OESR, 2011(a) and (b)	<ul style="list-style-type: none"> Highest level of schooling in 2011 – 54.1 per cent of people aged >15 years had completed Year 11 or 12 (or equivalent). In contrast, 370 people (4.1 per cent) did not go to school, or Year 8 or below. Post-school qualifications in 2006 - 3,717 persons aged >15 had qualification (48.3 per cent). About one-third of them held a trade certificate, and 20 per cent had a bachelor degree (or higher).
Measures of community safety, health and wellbeing	Public Health Information Development Unit (PHIDU), 2010 OESR, 2011(a)	<ul style="list-style-type: none"> In comparison to Queensland, the LSA had lower rates of persons: <ul style="list-style-type: none"> Self-assessing themselves as having 'fair' or 'poor' health Having high or very high psychological distress levels With at least one of four health risk factors. In 2011, LSA had slightly higher rates of volunteerism than Queensland (21.2 per cent and 18.7 per cent respectively).

Socio-economic Variable from ToR	Data Source	Local Study Area Summary
Cultural and ethnic characteristics Place of birth	OESR, 2012(a)	<ul style="list-style-type: none"> LSA has less cultural diversity than Queensland. 10.1 per cent of LSA population born overseas, compared with state average of 20.5 per cent. 36.1 per cent of overseas born persons in Belyando Shire spoke a language other than English at home.
Place of residence	OESR, 2011(a)	<ul style="list-style-type: none"> In 2006, 52.1 per cent of the population were living at a different address 5 years earlier, compared with 47.6 per cent in Queensland.
Indigenous population including age and gender	OESR, 2012(a)	<ul style="list-style-type: none"> In 2011, 322 persons of ATSI origin (2.5 per cent of LSA population) compared with a state average of 3.6 per cent.
Income	OESR, 2012(a)	<ul style="list-style-type: none"> Gross individual weekly income is on average higher than the Queensland. 23.8 per cent of shire's workforce earning >\$2000 per week, which is more than four times higher the state average of 5.5 per cent. 23.1 per cent have a weekly income of less than \$400, compared with 34.6 per cent in Queensland.
Unemployment	OESR, 2012(a)	<ul style="list-style-type: none"> Low rates of unemployment in LSA at 1.3 per cent compared to state average of 5.5 per cent (March quarter 2012).
Labour force by occupation and industry	OESR, 2011(a)	<ul style="list-style-type: none"> In 2006, Mining was the largest industry of employment at 37.7 per cent, followed by Agriculture, Forestry and Fishing (9.0 per cent) and Retail Trade (7.7 per cent). Machinery operators and drivers were the largest occupation group (22.8 per cent), followed by Technicians and Trade Workers (21.5 per cent), and Managers (21.1 per cent).
Disability prevalence	OESR, 2012(a)	<ul style="list-style-type: none"> In 2011, 189 persons (1.5 per cent) identified in LSA as in 'need of assistance' with a profound or severe disability, compared with 4.4 per cent in the Regional Study Area and 3.6 per cent in Queensland.
Socio and economic index	OESR, 2011(a)	<ul style="list-style-type: none"> 4.7 per cent of persons are in the most disadvantaged quintile compared with 5.1 per cent in Isaac Region.
Crime	OESR, 2003(a) OESR, 2003(b)	<ul style="list-style-type: none"> Limited crime data is available at the LSA level. DSA – 'Top 5' crimes in 2010-11: 'Offences Against Property', 'Other Offences', 'Other Theft', 'Traffic and Related Offences' and 'Unlawful Entry'.
Housing tenure type and landlord type for rental properties	OESR, 2012(a)	<ul style="list-style-type: none"> In 2011, there were 3,829 occupied private dwellings in the LSA. High (and rising) rates of rental accommodation at 58.7 per cent, compared with state average of 33.2 per cent. One-fifth of occupied private dwellings were fully owned (20.1 per cent), compared with 29 per cent in Queensland.
Housing type	OESR, 2012(a)	<ul style="list-style-type: none"> Limited mix in housing type across the LSA. Separate houses account for 86 per cent of total occupied private dwellings, compared with 79 per cent in the state.

Socio-economic Variable from ToR	Data Source	Local Study Area Summary
Housing costs	OESR, 2011(a) ABS, 2006	<ul style="list-style-type: none"> ▶ In 2006, 72.6 per cent of weekly rents in LSA were \$0-\$139. This is compared to only 23.8 per cent in Queensland. ▶ 4.9 per cent of Queensland has monthly housing loan repayments of \$1-\$400 compared to 11.7 per cent in LSA.
Housing availability	OESR, 2012(a)	<ul style="list-style-type: none"> ▶ Moranbah has exhibited declining housing affordability and limited availability. In 2011, 163 residential dwelling units approved in LSA.

3.6.1 Population

Resident Population

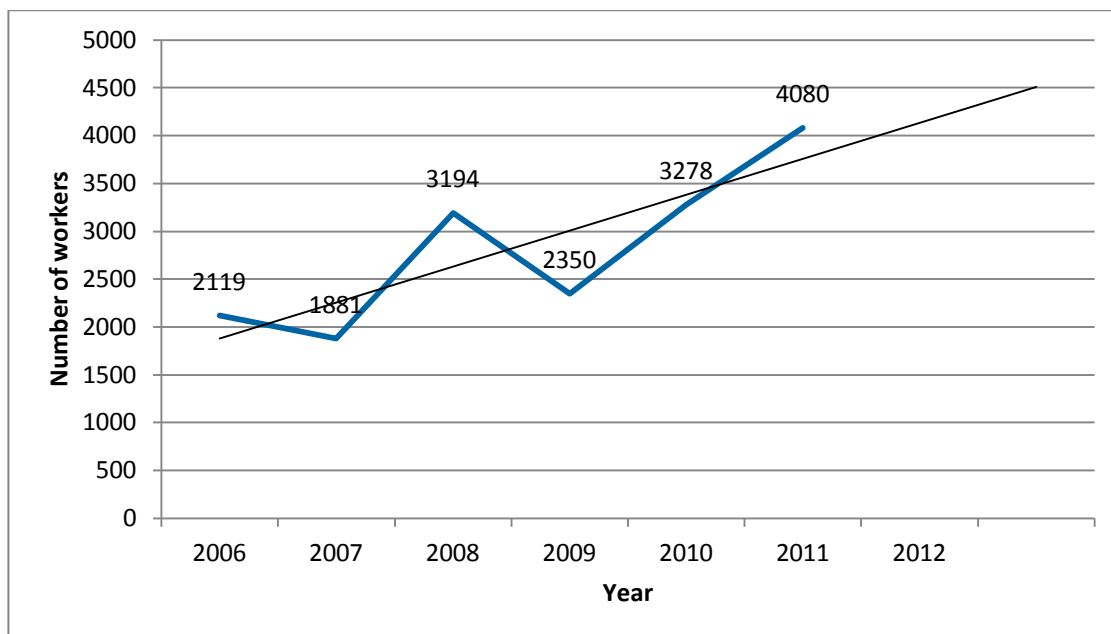
The two main centres of Clermont and Moranbah are quite distinct. Clermont has a long and proud history dating back to the 1800s, demonstrating a strong sense of identity and resilience, with a desire to maintain a diverse economic base, in order to support the town's long term future. Moranbah was established as a mining town in the early 1970s to support open cut operations at Peak Downs and Goonyella. In its early days, the town held over half of Belyando Shire's population when barely five years old.

Today, the former Belyando Shire has an ERP of 13,409 with an annual average growth of 3.2 per cent (2006-2011), with 68 per cent of the population residing in Moranbah and 17 per cent in Clermont. By 2031, the total population is estimated to reach 19,613, equating to an increase of almost 7,400 people over 20 years (medium series projections). Moranbah has been identified by government to absorb a majority of the LSAs future growth, including declaration of an Urban Development Area (UDA).

Non-Resident Workforce

In 2011, the FTE population estimate was 16,510 comprising 12,400 usual residents and 4,080 non-resident workers (28 per cent). 3,460 non-resident workers (87 per cent) were located in/near Moranbah, and 510 in Clermont. Figure 3-6 shows the fluctuation in the non-resident population in Belyando from June 2006 to 2011 using data from the OESR Bowen Basin Population Report (2011 and 2012), with a forecast trend line based upon that data. The trend line shows a continuing upward growth with an increase in non-resident population of around 250 per year.

Figure 3-6: Non-resident Population Trends

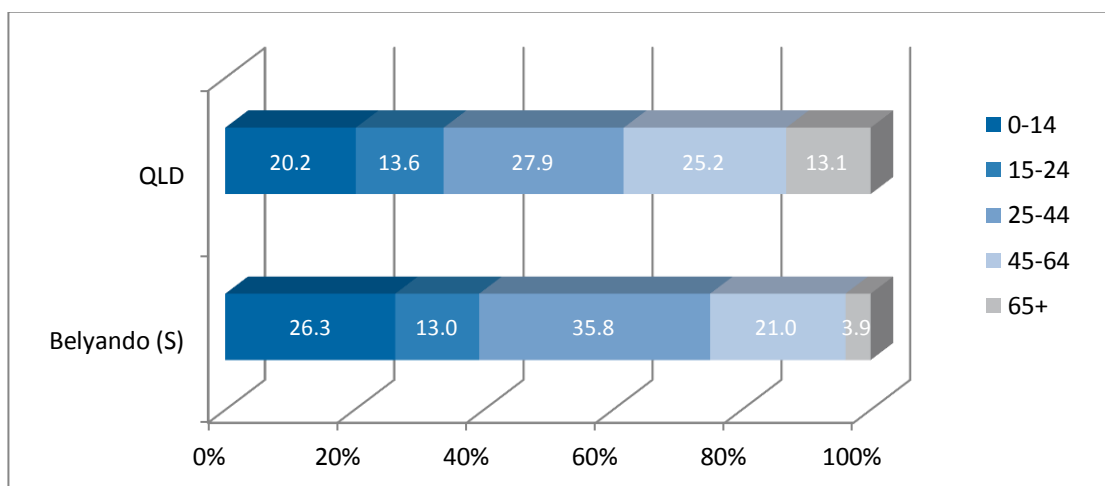


Source: OESR, 2011(a) and OESR, 2012(b)

Age and Gender

The LSA has a higher proportion of males (54.5 per cent) to females (45.5 per cent). Like the District, the LSA also has a youthful profile with a large representation of people aged 25 to 44 at 36 per cent, exceeding the state average of 28 per cent. The LSA has a very low representation of persons in the 65 and over age cohorts (3.9 per cent), compared with 13.1 per cent for Queensland. Figure 3-7 shows an age profile comparison for the former Belyando Shire and state.

Figure 3-7: Age composition of the Local Study Area



Note: This table is based on place of usual residence.
Source: ABS, 2012 (Basic Community Profile, 2011 Census)

Cultural and Ethnic Diversity

The LSA has significantly less cultural diversity than Queensland and the broader sub-region – the proportion of overseas-born people was half that of Queensland (10.1 per cent and 20.5 per cent respectively). Of the overseas-born people in Belyando Shire, 36.1 per cent spoke a language

other than English at home. Note that first release data for the 2011 Census did not include details of the top responses for specific languages spoken at home (other than English).

At the time of the 2011 Census there were 322 persons in Belyando Shire who stated they were of Aboriginal or Torres Strait Islander origin, comprising 2.5 per cent of the total population (compared with 3.6 per cent in Queensland).

Families

In 2011, there were 3,061 family households in the LSA, with dominant type being 'couple family with children' (57.3 per cent), followed by 'couple only families' (32.7 per cent). Interestingly, 'One parent families' accounted for only 9.1 per cent of the total, compared to the state average of 16.1 per cent.

Population Mobility

The LSA has a reasonably mobile population with over half (52.6 per cent) of persons living at a different address five years earlier, compared with 47.6 per cent in Queensland. Over 90 per cent of inflows to the LSA are from other locations within Australia. Overseas migration makes up a small proportion of the total (<5 per cent).

Based on the local population characteristics summarised above, full baseline analysis (Appendix C), and stakeholder feedback, the considerations for the Project are:

- **Population growth, change and migration in local townships will have implications for social cohesion and integration**
- **Although the population has a youthful age profile at present, the needs of an ageing population (and workforce) should be considered in long term planning and for the project's 90 year timeframe**
- **The changing profile of family and households in the LSA, particularly increasing numbers of single persons and households with no children.**

3.6.2 Education, Employment and Training

Education

The LSA has higher levels of educational attainment compared to the Regional and District Study Areas. In 2011, 54.1 per cent of LSA population (aged 15 years or more), had completed schooling to Year 11 or 12 (or equivalent). This is compared with 55.3 per cent in Queensland, 50.6 per cent in the RSA and 46.6 per cent in the DSA.

In terms of post-school qualifications, 2006 Census data shows that 48.3 per cent of persons aged 15 or more had a qualification. About one-third of these held a trade certificate, and 20 per cent had a bachelor degree (or higher).

Industries of Employment

In 2006, Mining was the largest industry of employment at 37.7 per cent, followed by Agriculture, Forestry and Fishing (9.0 per cent) and Retail Trade (7.7 per cent). Machinery Operators and Drivers were the largest occupation group (22.8 per cent) in the LSA, followed by Technicians and Trade Workers (21.5 per cent), and Managers (21.1 per cent). SIA consultation in Moranbah and Clermont indicated that local employers in non-mining sectors find it difficult to retain staff. Salaries do not match those of the mining industries and the cost of living is driven by demands from the mining sector. Tradespeople are particularly difficult to attract to non-mining jobs.

Unemployment

The LSA has extremely low rates of unemployment at 1.3 per cent, compared to the state average of 5.5 per cent for the March quarter of 2012.

Income

Gross individual weekly income is considerably higher than the Queensland average. In 2011, 23.8 per cent of the LSA population (aged 15 years and over) reported a gross individual weekly income of >\$2,000, such which is attributed to employment in the mining industry. This is more than four times higher than the state average of 5.5 per cent. 23.1 per cent of LSA residents have a weekly income of less than \$400, compared with 34.6 per cent in Queensland. According to Census data, most of the Indigenous workforce of the Bowen Basin received lower weekly gross incomes than the remainder of the population (Miles and Kinnear, 2008 cited in ELH, 2012).

The education, employment and training profiles presented above and in Appendix C, and stakeholder feedback (including indigenous representatives), highlight some important considerations for the Project:

- Population profiles suggest that non-resident workforces will be generally younger, more affluent and economically active
- Stakeholder feedback suggests there is a need to reduce obstacles for local people to gain employment in mining projects in the LSA
- It is desirable to develop strategies that will more directly engage the Indigenous community into the mainstream economy and the mining sector.

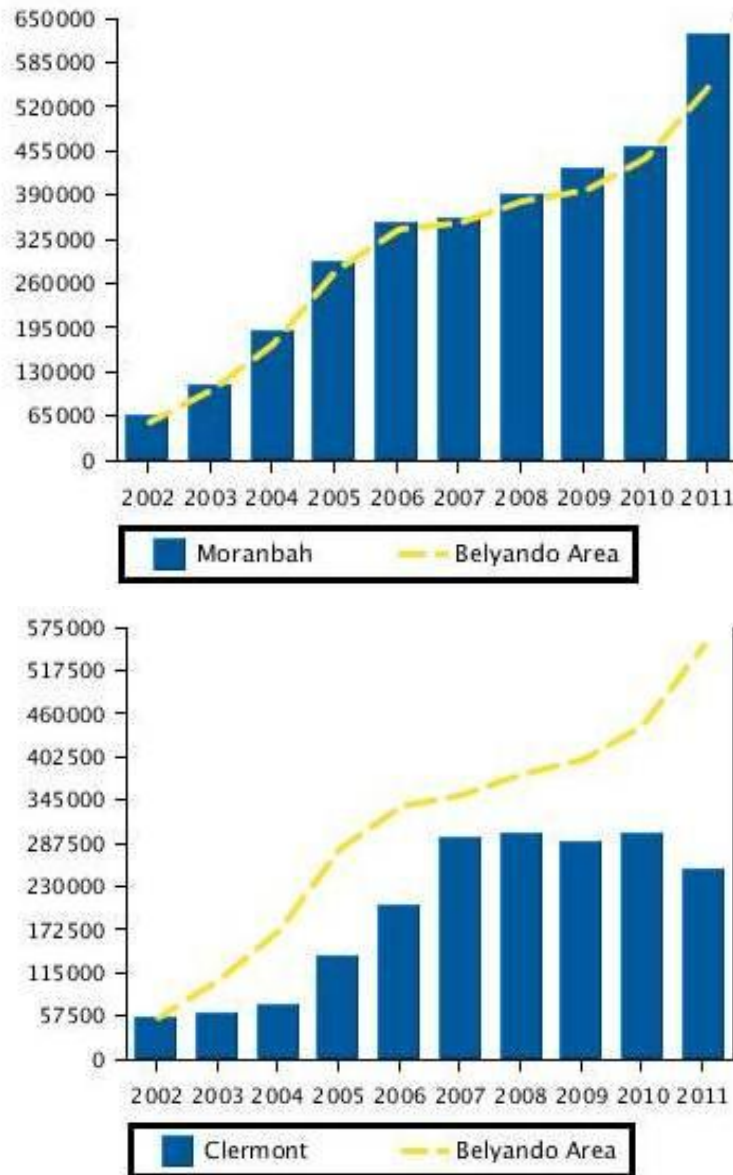
3.6.3 Housing and Accommodation

In 2011, there were 3,829 occupied private dwellings in the LSA. High (and rising) rates of rental accommodation are evident at 58.7 per cent, compared with state average of 33.2 per cent. One-fifth of occupied private dwellings were fully owned (20.1 per cent), compared with 29 per cent in Queensland. The LSA displays limited housing diversity when compared with other areas assessed - separate houses account for 86 per cent of total occupied private dwellings, compared with 79 per cent in the state.

As noted earlier, Moranbah's housing prices have experienced a rapid increase over the last decade from about \$65,000 in 2002 to almost \$650,000 in 2011, or expressed simply as ten times higher. Clermont has also shown a trend of steady increase before a general plateau emerged in 2007. However, increases in Clermont have not been at the same rate as Moranbah. The rise of median house prices in Moranbah and Clermont is shown in Figure 3.8 for the period 2002 to 2011.

The significant escalation of local property prices was a consistent theme during stakeholder consultations (anecdotally up to \$900,000 for standard house in Moranbah, with data showing median prices at \$699,000 in 2011. There is concern that local residents who are not employed by the mining sector are and will continue to be disadvantaged in accessing affordable housing. There is a feeling that people are being 'pushed out' of mining towns.

Figure 3-8: Median House Prices Moranbah and Clermont



Source: www.rpdata.com.au (July 2012)

As noted in the RSA summary, the Moranbah UDA will provide more affordable housing through the improved supply of residential land and a greater range of housing types to suit the needs of the community. Non-resident workers in Belyando Shire are primarily accommodated in workers accommodation villages (88.2 per cent), as well as caravan parks/other (9.6 per cent) and hotels/motels (7.6 per cent).

In terms of local housing and accommodation, the salient points are:

- The changing profile of household and accommodation types in the LSA, particularly increasing numbers of rental properties and workers accommodation villages
- Community aspirations for long term housing affordability (for rent and purchase) to support whole-of-community needs, including persons working in other industries
- Shortages of worker accommodation is emerging as an issue in Moranbah and Clermont
- Local demand for more choice in housing, land and tenure, to attract and maintain communities over time
- Effects of subsidised accommodation offered by some mining companies on housing prices and financial stress in other sectors of the community.

3.6.4 Community Health, Wellbeing and Safety

Health and Wellbeing

Overall, the LSA population demonstrated higher ratings of good health and wellbeing, and less social disadvantage, in comparison to regional and state averages, possibly reflecting the presence of a younger population, including mine workers who are generally a healthy population with low incidence of disability. Local health services in the LSA include general practitioners, community health, hospital and allied health professionals. More specialised medical services and facilities are located in major centres outside the LSA.

The limited capacity of local health and emergency services was a consistent theme during the consultation process. Stakeholders identified significant shortages in the local health sector and increasing demands of the 'hidden' non-resident population which is not fully considered in planning for medical services and infrastructure.

Crime and Safety

The Queensland Police Service (QPS) could not provide local area crime data at the time of report production. As noted, the most common crimes in the District Study Area for 2010-11 were 'Offences Against Property', 'Other Offences', 'Other Theft' and 'Traffic and Related Offences'. During the consultation phase some stakeholders expressed concerns about an increase of anti-social and criminal behaviour associated the increase of non-resident workers. SIA consultation with the QPS identified that current policing in the local area consists of "a small presence in Clermont" and it is noted that "existing resources are stretched". It is broadly expected there will be a need to provide expanded services into the Galilee Basin as mining continues to develop. The coverage of police telephone communications at the Project (Mine) site is "virtually non-existent" and would need to be extended into the Galilee Basin.

In terms of health, wellbeing and safety in the local area, key considerations will be:

- Existing health and medical services/ infrastructure are under pressure in the LSA
- Emergency services have very limited capacity to respond to a remote mine site from Clermont or Moranbah
- The low level of service for health and social infrastructure provision at the local level
- Concerns regarding anti-social behaviour and crime associated with non-resident workers.

3.6.5 Land Adjoining the Project (Mine and Rail)

Within the LSA, landholders with properties adjoining or directly affected by the proposed mine and rail line are likely to experience the most impacts associated with the project. Therefore, this area will require a particular focus for the local baseline.

The smallest geographic area of data collection by the ABS is the Census Collection District (CCD), and the Carmichael Project traverses four CCDs, namely:

- 3031602
- 3031603
- 3031604
- 3031504

As the geographic area of these CCDs is much larger than the project footprint, data for CCDs has not been presented.

It was intended to engage landholders directly and get their specific input to the local baseline for the Project, however despite many months of positive discussions with landholders, only one would commit to undertaking a case study. As a result, the local baseline has been developed at a higher geographic level (former Belyando Shire) and supplemented with information from negotiations between Adani representatives and landholders.

Traditional owners were also included in the LSA to identify any potential impacts directly related to the country from the Project footprint.

Land Use and Pastoral Farming Practices

Many of the properties affected by the Project are large landholdings, with the smaller landholdings tending to be within 50 km of Moranbah. The Project (Rail) alignment has been planned to follow property boundaries along these smaller landholdings as much as possible, significantly reducing the potential for adverse impacts, including land fragmentation.

Pastoral farming is undertaken across the Local Study Area with small areas of cropping to provide cattle fodder. Many properties comprise a mix of productive grazing land used for 'finishing' cattle prior to market sale, and less productive land used for general grazing.

Pastoral farming practices within Australia are generally similar between most areas, however within this area it is important to acknowledge there will be some specific practices which will be impacted and discussed further with each landholder on an individual basis. As negotiations with individual landholders progress, property management practices will be better understood.

Most properties are managed as single production units, some as part of a larger property network elsewhere in Queensland. There are however some properties that are managed as a single production unit for efficiency. These are generally contiguous properties owned by members of the same family.

Properties affected by the Project are predominantly classified as rural leasehold land used for the purposes of agricultural, grazing or pastoral activities. The Project (Rail) traverses 16 leasehold properties and 10 freehold properties and the Project (Mine) affects seven leasehold properties. Further information on these properties is included in Volume 4, Appendix M (Rail) and Volume 4, Appendix Z (Rail).

Occupied homesteads are present on many of the properties - very few are unoccupied. Those that are unoccupied tend to be the smaller units. In this situation, it is common for a farm manager or landholder to visit the property on a regular basis. Many of the directly affected properties are vast with cattle grazing spread across expansive areas. Therefore, helicopters are a vital service on many of the properties as mustering on horseback or quad bike would take a considerable amount of time.

The nature of heli-mustering requires pilots to navigate choppers at a very low altitude to direct stock in a desired direction. Many landholders contract these services out and they are undertaken by experienced pilots who specialise in heli-mustering. At present, there are at present very few aerial impediments to heli-mustering activities in the Local Study Area, such as transmission lines and communication towers.

Demographic Characteristics

A snapshot of the demographic profile for landholdings adjacent to the Project (mine and rail) has sourced from information compiled by Adani during landholder negotiations:

- The general age range of residents in the area is between 35 to 50 years old, including several households with young families and very few older persons
- Most residents are second or third generation landholders with very strong ties to the local area
- Older family members appear to move off the properties and into communities elsewhere in the region to be closer to community and social services, notably health care
- Of families with primary school aged children, most receive education at home through 'school of the air'. When children reach high school age, it is common for them to leave home and attend boarding school elsewhere. It is understood that for affected properties closer to Moranbah, children have a daily commute into town on the school bus
- Most of the properties have at least one additional non-family staff member who live permanently on site. Generally, only the larger properties have more than one permanent staff member residing there. Several of the smaller properties do not have resident staff, instead a family member or farm manager visit the property periodically from elsewhere
- During mustering, additional staff may be contracted to provide temporary assistance and are generally accommodated on the property for the duration of their work.

3.7 Current Labour Market and Skills

The rapid expansion of the mining, energy and resources industry is increasingly dependent on the continuous search for skilled and semi-skilled employees. Meeting labour source needs/gaps through rapid growth in non-resident workers housed in workers accommodation villages in settled

rural areas is presenting a new cultural challenge between regional communities and the mining sector.

The most recent data available investigating the labour market within the resources sector in particular is the National Resources Sector Employment Taskforce Final Report produced by the Commonwealth Government in 2010 (The Taskforce Report). This report has been used as the source for information regarding the labour market presented in the SIA and draft SIMP.

The Taskforce Report indicates that although it has become evident that there has been a change in the last three years in terms of available workforce supply, there are still a number of areas where it is expected there will be challenges in recruitment and attraction of the required workforce. Current industry data suggests that in the mining industry 22.9 per cent of all employees are aged 50 years or older representing a significant group of employees who will potentially leave the industry in the next 10 years. If the currently planned mine, ports, rail and resources infrastructure projects proceed in parallel with the coal seam methane to liquefied natural gas energy projects, it is suggested that major contractors will need to increase project staff and construction workers by 120 per cent to 23,660 in 2012–2013 (Commonwealth Government, 2012).

The Taskforce Report projected new jobs growth by occupation based on slow, moderate and rapid growth scenarios as shown in Table 3-7. Based on slow economic growth, this indicates a 157 per cent increase in demand for vocational occupation (technical skills) between 2010 and 2015. The Taskforce Report considers it likely there will be two to four new trains operating in Queensland by 2015, creating between 1,200 and 2,500 professional and trade jobs in operations. A similar percentage growth is predicted under a moderate growth scenario, and even higher growth (170 per cent) under a rapid economic growth scenario.

Table 3-7 shows that the supply of technicians and tradespeople in Queensland will grow by 8 per cent to 2015 under an average case scenario, and 26 per cent under a best case scenario, which is unlikely to be sufficient to meet demand. In Queensland, shortages will depend on the progress of CSG/LNG projects but are likely to include mining production managers, civil, electrical, mechanical, and petroleum engineers. There could also be shortages of fitters, electricians and electrical instrumentation workers, drillers and plant and machinery operators. Skills shortages will be more significant in regions where resources projects are concentrated (such as the Galilee Basin).

The Taskforce Reports notes that construction skills shortages in regional Queensland have been addressed by a FIFO/DIDO workforce for many years and anticipates that further growth in FIFO numbers seems likely with the expansion of resources sector activity. The use of FIFO has been facilitated by increases in flights from other centres, including direct flights from Brisbane into Central Queensland. However, there are other communities with above average unemployment rates, such as Cairns, where FIFO jobs can present important employment opportunities in both construction and operations of new resources developments.

Table 3-7: Projected Supply of Technicians and Tradespeople by State and Territory, 2010 to 2015

	2010	2015 best case scenario	2015 average case scenario	2015 worst case scenario
Queensland	337,400	424,625 +87,225 +26%	364,980 +27,580 +8%	304,420 -32,980 -10%
Australia	1,593,000	1,975,502	1,697,372	1,412,668

Source: Commonwealth Government, 2012

Table 3-8: New Jobs Growth by Occupation, Queensland, Projections to 2015(a)

Occupational Groups by Skills and Activities	Slow Economic Growth (4 Trains)			Moderate Economic Growth (6 Trains)			Rapid Economic Growth (8 Trains)		
	2010	2015	2020	2010	2015	2020	2010	2015	2020
Engineering (professional and para-professional skills)	205	340	373	341	580	630	374	715	756
Science (professional and para-professional skills)	73	68	75	109	103	113	124	133	149
Vocational Occupation (Technical Skills)	831	2,134	2,645	1,248	3,197	3,964	1,328	3,584	4,854
<i>comprising:</i>									
Drilling	476	990	990	715	1,484	1,484	741	1,820	1,953
Electrotechnology (Electrical)	35	146	232	53	218	347	61	253	447
Field Construction	24	44	44	36	66	66	43	88	88
Mechanical (Diesel Fitting)	75	201	274	113	301	410	128	309	482
Process Plant Operations	190	682	1,017	285	1,022	1,525	312	999	1,724
Water Management (Operations)	29	71	88	43	106	132	43	115	160
Vocational Occupation (Non technical Skills)	205	378	453	306	567	680	198	677	857
<i>comprising</i>									
Occupational Health and Safety	38	84	104	56	126	156	68	154	190
Cultural Heritage	67	85	80	100	127	100	82	169	162
Admin / Logistics / Transport / Warehouse	100	209	269	150	314	404	148	354	505
Unskilled Labour	67	134	147	100	200	222	115	253	284
Other	0	31	58	0	47	86	0	31	91
Compliance and Shutdown Teams	0	31	58	0	47	86	0	31	91
TOTAL	1,381	3,085	3,752	2,104	4,694	5,659	2,239	5,393	6,991

(a) This modelling assumes base employment of 1,000 people in all scenarios, that is, there were 1,000 people already employed in the industry in 2009.
Source: Commonwealth Government, 2012

3.8 Summary of Impacts of Existing Mining Activity

In order to consider the potential cumulative impacts of the Project, impacts of existing mining activity needs to be understood. There is very limited mining activity in the Galilee Basin at present and the main study undertaken in the Galilee Basin, The Galilee Basin Economic and Social Impact Study (Economic Associates, 2010) focussed on the impacts of four major projects proposed to the north-west and south-west of the township of Alpha. While the impacts identified in the study focus on Alpha, many of the impacts are also relevant to this Project and potential impacts on townships such as Clermont. More research has been undertaken in the Bowen Basin with its long history of mining. An understanding of social impacts of mining activity in the Bowen Basin is also of benefit in understanding potential impacts in the Galilee Basin

A detailed study undertaken by Petrovka *et al* (2009) revealed a number of positive and negative impacts associated with mine development in the Bowen Basin region. Positive impacts identified from the studies included:

- Relatively high incomes of people working in the mining industry and of business people servicing the mines
- More employment, business and training
- Population growth and diversification in communities
- Increased financial support in towns through substantial contributions by mining companies to community infrastructure development
- Infrastructure improvements such as roads and communications
- Town development through the renovation and building of housing by mining companies for their employees.

Negative impacts recognised in the study included:

- FIFO workforces and increased mobility of local residents resulting in economic stimulus flowing away from the communities in the immediate vicinity of the mine to other regional centres
- Housing shortages and increased housing prices can limit the positive economic flow on to communities and create pressure on non-mining businesses and local communities
- FIFO workforces can exacerbate or bring problems of fatigue, family isolation, community fragmentation and limit growth in school enrolments and community participation (despite population growth)
- Localised inflation leading to displacement of persons and businesses not benefiting from mining and related businesses
- Higher road trauma as a result of larger numbers of workers driving long distances between work rosters
- Mine workers 'moonlighting' on off-rosters (an issue raised by Isaac Regional Council). Problems arise for local businesses, such as electrical contractors, if mine workers offer similar services during their off-rosters at sub-commercial rates.

A number of proponents are currently undertaking feasibility studies and environmental and social impact assessments for developments within the Galilee Basin. The Galilee Basin Economic and Social Impact Study (Economic Associates, 2010) was developed as a preliminary baseline survey of the economic and social opportunities and impacts which may result from the proposed projects

in the basin. It raised many issues regarding the current social impacts resulting from mining operations in both the Galilee and Bowen basins.

Non-resident workers were identified by a number of stakeholders as presenting the greatest challenge with social impacts. SIA consultation indicated that Moranbah has experienced problems with the non-resident workforce, and perceptions are that various antisocial behaviours have increased in the host communities, particularly drug and alcohol abuse and creation of various 'good order' disruptions. Available crime statistics do not however support these claims.

Property prices and rent are also of concern and are particularly high in Moranbah due to the pressure of existing mining operations on housing affordability. Housing supply in the locality is also relatively low and new mining projects are apparently placing increasing pressure on near-capacity businesses with local businesses already finding it difficult to identify affordable residential accommodation for new employees. Discussions with Isaac Regional Council noted that BMA has implemented an initiative to put a maximum capped price for rental accommodation which has had positive feedback from Council and other local stakeholders. This initiative appears to have had an immediate impact with more rental properties available in Moranbah.

SIA consultation did not identify similar issues in Clermont, this was considered to be due to it not having a high proportion of non-resident workers, being a smaller centre, and having a strong agricultural connection. It is understood from SIA consultation that a number of workers at the Clermont Coal Mine have a desire to reside locally, and the recent residential development being undertaken in Clermont will provide this choice for workers.

Research of impacts in Clermont showed that mining companies are prepared to make contributions to community funds managed by groups or councils to improve community services and infrastructure. Annual contributions have been provided for improvement works in the town. Also, direct contributions have been made for specific projects and purposes (e.g. tree planting, water supplies and sporting events).

The cumulative effects of new and continuing mining projects have put increasing pressure on transport networks, emergency services and health care in the locality. Traffic is a particular issue for public safety.

There are a number of project proponents investigating the establishment of mines in the northern Galilee Basin, namely Vale, Macmines and Resolve. Hancock and Waratah are located further into the south Galilee with more influence on towns including Alpha and Emerald. Adani is discussing opportunities for joint infrastructure to address cumulative impacts of projects in the northern Galilee with some proponents. However, these discussions are voluntary and non-binding. Some proponents are not yet in a position to discuss their plans with Adani as they are still very much in the preliminary investigation and planning phase.

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4. Policy and Planning Context

4.1 Introduction

State and regional policies and plans provide important context to how potential social impacts may manifest, as well as setting out priorities and existing programs of action for the region that are critical in determining appropriate and effective management responses to potential social impacts.

The Queensland Government's Sustainable Resources Communities Policy identifies the need for improved linkages between regional planning and social impact assessment. This section seeks to address this policy statement by identifying relevant policy and planning frameworks and informing priorities for managing social impacts. This section outlines state (and Australian Government) policies and plans that provide important context for identifying potential social impacts and their management for this Project.

4.2 Queensland State Policies and Plans

4.2.1 Shaping Tomorrow's Queensland: A Response to the Queensland Growth Management Summit

The Shaping Tomorrow's Queensland (DIP 2009) strategy was developed following the Queensland Government Growth Management Summit in March 2010, which identified strategies for managing future growth in Queensland. This strategy includes an approach for strengthening regions, through the development of a Queensland Regionalisation Strategy to encourage population growth and economic development (including the creation of jobs) outside south-east Queensland and a regional first homeowners' grant of \$4,000 and the relocation of some government functions to regional areas.

4.2.2 Queensland Regionalisation Strategy

The Queensland Regionalisation Strategy (QRS) 2011 is part of the Queensland Government's overall planning framework for the state. It is intended to provide an overarching, state-wide context to inform government investment decisions to support the development of Queensland's regions. The QRS will guide and influence plans, services and infrastructure projects across government to support the outcomes of regionalisation.

The QRS contains 35 statewide actions aimed at supporting growth across the state. These actions will direct government effort and investments to where these will have the greatest impact and benefit (Queensland Government, 2011). The actions are focused around the four priority areas of infrastructure and services, people, business and partnerships.

While not placing any particular obligations on proponents, the strategy does highlight a number of areas relevant to projects taking place in remote and regional locations and it is important that project specific strategies are aligned with actions in the QRS whenever possible. Key actions included in the strategy to consider when developing social impact management strategies for the Project include:

- Encourage specialised university expertise based on regional industry strengths through centres of excellence
- Capitalise on opportunities and address issues associated with resource development workforces including FIFO and DIDO workforces in regional areas

- Prepare workforce development plans that respond to identified regional economic priorities. These plans will include skills development, attraction and retention, skilled migration and workforce participation strategies as required
- Collaborate with the federal government to ensure skilled migration programs are regionally appropriate
- Support the creation of transit oriented developments (TODs), diverse housing stock and affordable housing options to house the increasingly diverse Queensland community of the future and improve liveability in urban and regional environments
- Support Townsville to develop as a vibrant integrated metropolitan city, with strong inter-regional and international connections
- Strengthen regional communities by promoting the many benefits of working and living in regional Queensland (Queensland Government, 2011).

4.2.3 CoalPlan 2030

The Queensland CoalPlan document examines the potential growth for Queensland's coal industry and details infrastructure requirements to support the growing industry. CoalPlan 2030 identifies the higher costs of transport to port, the development of additional rail capacity that does not affect the use of existing infrastructure and difficult access to terminal capacity at existing or expanded coal ports as key challenges to mining and exporting coal from the Galilee basin. Other challenges identified for the Galilee Basin that have implications for potential social impacts or their management include the need to develop access to water and key water infrastructure and the need for additional electricity supplies to support mining.

4.2.4 Coal Infrastructure Program of Actions

In 2005, the Queensland Government, with the support of the Queensland Resources Council, developed the Coal Infrastructure Program of Actions (CIPA) (DIP 2009) to ensure that the infrastructure needs of the coal industry would continue to be met. The strategy addresses physical infrastructure needs as well as 'soft' infrastructure including skills and housing provision and recognising the vital role of social infrastructure in the sustainable growth of the coal industry.

An audit of the program in 2008 identified completed, committed and planned projects including \$20 million for skills programs and \$28.5 million for housing and planning, primarily for acquisition of houses and construction of new houses to provide additional social housing the Bowen Basin, Mackay/Whitsunday region and the Rockhampton/Livingstone area. Programs completed excluded the Galilee Basin.

The CIPA stipulates that the Queensland Government will continue to support sustainable development by (among other things):

- Continuing to provide additional social housing in coal mining regions
- Undertaking a range of planning studies to provide demographic and social data upon which government agencies can make informed and robust decisions in respect to the social infrastructure needs of coal mining communities
- Completing the Bowen Abbot Point Accommodation and Community Infrastructure Study which aims to ensure the supply of community infrastructure can meet population growth as a result of the potential industrial development in the region (Bowen).

4.2.5 Sustainable Resource Communities Policy

The Sustainable Resource Communities Policy (DIP 2008) requires Social Impact Assessments to be completed as part of the EIS process for mining and petroleum developments. It was developed to address as a response to the realisation that mining and petroleum developments can place significant pressures on social infrastructure, such as housing and community services and also create quality of life issues as well as a growing interest in the community and industry towards more social responsibility and social dimensions of sustainable development. The policy recognises that these issues are also often exacerbated cumulatively and regionally by multiple and overlapping proposals progressing concurrently and the policy provides some basis for requiring coordinated management of social impacts.

The policy requires a SIMP to be produced as part of the preparation of an EIS for major resource sector projects undergoing assessment under the Queensland SDPWO Act or Queensland Environmental Protection Act 1994. The SIMP is developed from the SIA and outlines agreed actions to address social impacts identified from the social impact assessment. Implementation of the Social Impact Management Plan then becomes a condition of approval for major resource projects.

A key aspect of the processes prescribed in the policy is wide consultation with various government agencies such that there can be a coordinated whole of government response to social impacts. The policy also promotes links between SIA and regional planning through existing groups such as Ministerial Regional Community Forums, Regional Managers' Coordination Networks and Regional Planning Advisory Committees and establishes Local Leadership Groups and Partnership Groups to facilitate whole of government coordination of responses to social impact management.

The Sustainable Resource Communities Policy is supported by a three-year \$100 million commitment by government to fund economic and social infrastructure projects in regional and rural communities in key mining areas.

4.2.6 Major Resource Projects Housing Policy

The Major Resource Projects Housing Policy (MRPHP) sets out the Government's requirements for the provision of housing to accommodate major project workforces and provide a framework within which housing for major new and expanded mining and petroleum development proposals can be considered.

The MRPHP covers major resource projects being assessed under the EIS provisions of the SDPWO Act. The policy provides guidance to stakeholders about how housing and accommodation issues should be assessed during the social impact assessment process, suggests stakeholder communication and engagement about these issues and drives the development of housing and accommodation strategies that support better social impact management.

4.2.7 Urban Development Areas

The Urban Development Areas (UDAs) facilitate the delivery of affordable housing, including facilitating the availability of land, the provision of infrastructure and greater diversity in housing, in priority greenfield areas, recognising that communities need to discuss what level and type of growth may be appropriate for their region.

The two closest UDAs to the Carmichael Coal project area are at Blackwater and Moranbah.

The Moranbah UDA was declared on 30 July 2010 and is a 1,218 hectare area comprising land within the existing Moranbah town and a large site to the west of Goonyella Road. It includes large

areas of vacant land, part of the golf course and a small amount of residential and industrial land. The development of this area aims to ease pressures on housing expected from growth in the resource sector by bringing land to the market quickly and delivering a diversity of housing to suit the needs of the growing Moranbah community. To allow further consideration for improved planning for accommodation villages, mining camp applications will not be considered within certain areas of the Moranbah UDA during the 12 months of the Interim Land Use Plan (ILUP).

Notwithstanding changes to the ULDA announced in July 2012, discussions with the ULDA confirmed that development in Moranbah will continue to be delivered in accordance with the currently agreed plan as construction contracts have been awarded.

For other developments the ULDA was undertaking regarding facilitating land availability and Development Approvals, the functions are being trialled for delegation to local government.

4.2.8 ClimateQ

The ClimateQ strategy builds on ClimateSmart 2050 and positions Queensland's coal and power generation industries for a low-carbon future, including outlining conditions for coal-fired power generation and links power generation with Queensland's commitment to carbon capture and storage. It provides a policy environment that support low-emission coal technologies.

4.2.9 Queensland Land Access Policy Framework

The Queensland Land Access Policy Framework aims to foster improved relationships between the agriculture and resource sectors. These laws came into effect from mid-December 2010 for the minerals and coal exploration sector and provide landowners with greater protection and security about their rights related to land access by resource companies. The framework also sets out a standard for conduct and compensation and provides landholders with a clear framework for negotiated compensation.

Resource companies must comply with the Land Access Code which includes guidelines and requirements relating to:

- Communication between parties and notice of entry and conduct of activities
- Orientation and induction training for people entering site
- Access points, road and tracks
- Treatment of livestock and property
- Pest management
- Camps
- Items brought onto property
- Gates, grids and fences.

The policy recognises that access to agricultural land for the purposes of exploration and related project development activities such as environmental surveys can cause a range of disruptions to agricultural activities as well as affecting the privacy and amenity of landholders. These disruptions can in turn can affect productivity and lead to additional costs for landholders. The policy also creates stronger compliance and enforcement powers for government where breaches occur.

This policy is an important recognition of the effects of development of resource projects on landholders and puts measures in place to minimise these impacts.

4.3 Local and Regional Policies and Plans

4.3.1 Mackay, Isaac and Whitsunday Regional Plan

The MIWRP has been prepared for the purposes of managing growth and change within the MIW region in the most sustainable manner (Queensland Government, 2012). This statutory plan is developed under the Sustainable Planning Act 2009 and provides a policy framework to guide decision making for managing the region's growth and management until 2031 (Queensland Government, 2012). The MIWRP must be considered in development and planning approvals under the Sustainable Planning Act 2009.

The MIWRP describes the region as a significant growth area, having the fastest growing economies in Queensland. These economies include mining, agriculture and tourism. Tourism activities are most dominant within the Whitsunday Regional Council, with key tourist and service centres of Airlie Beach and Cannonvale area providing access to the Whitsunday Islands. Due to the presence of the nation's largest coal deposit, Bowen Basin, coal mining is the major industry and largest employer in the region (Queensland Government, 2012). Sugar, horticulture and grazing industries are spread throughout the region.

The MIWRP aims to help the region meet the opportunities and challenges associated with population growth and change. It will plan for essential infrastructure services, particularly transport, and all forms of community requirements including accommodation, education, health and community and social services. The MIWRP will also identify land intended for future residential development, in the context of other environmental and industrial land use.

4.3.2 Regional Development Australia Mackay Whitsunday Regional Roadmap (2011)

Regional Development Australia (RDA) is an Australian Government initiative that brings together all levels of government to enhance the growth and development of Australia's regions. A national network of RDA committees has been established to achieve this objective. RDA in Queensland is a partnership between the Australian and Queensland Governments and involves a network of 12 RDA committees. The key functions of RDA Committees are to:

- Consult and engage with the community
- Inform regional planning
- Engage in whole of Government activities
- Provide advice on priorities for government funding to assist the region in maximising and leveraging government programs and funding opportunities
- Promote whole of government programs policies and initiatives
- Guide community and economic development.

The Mackay/Whitsunday RDA Committee supports the regional council areas of Mackay, Isaac and Whitsunday and has produced the first Regional Roadmap for the Mackay-Isaac-Whitsunday Region through research, consultation, engagement and listening to the community (Regional Development Australia, 2011). The Committee will conduct consultation processes annually to inform its actions in these roles.

In summary, the Mackay Whitsunday Regional Roadmap identifies the following challenges for the region:

- Infrastructure needs relating to water, sewerage, power, affordable housing and road infrastructure. This is exacerbated by government service provision and funding being

aligned to regional statistics that exclude transient workforce and visitors, who further increase the need for infrastructure and the geographic spread of population increasing the cost of services and infrastructure provision

- Securing and retaining skilled and semi-skilled staff
- Lack of tourism product outside the coastal Whitsundays
- Poor service standards
- Need for coordinated regional leadership and consistent boundaries across agencies
- Need for more services including child care, youth facilities and public transport system
- Over-reliance on bulk primary commodities such as sugar and heavily reliance on coal mining.
- Cumulative impacts of mining including the population growth impacts.

Projects that RDA Mackay Whitsunday is promoting include:

- Infrastructure to support growth
 - Clermont to Alpha Road (Councils, Mackay Whitsunday Regional Economic Development Corporation (MWREDC) Department of Transport and Main Roads)
 - Mackay by-pass ('ring road') (Mackay Regional Council, Department of Transport and Main Roads)
 - Telecommunications and high-speed broadband (MWREDC)
 - Multi-cargo port facility and SDA Abbot Point (North Queensland Bulk Ports Corporation, State Government, Whitsunday Regional Council, Enterprise Whitsundays).
- Economic diversification and value-adding to the region's industries (RDA Role)
- Tourism product development (RDA role)
- New and emerging industries (Possibilities include – Recycling, clean coal, bio fuels, knowledge precincts, innovation, financial services, food processing, marine industry support services, government administration and agencies)
- Sustainable resource communities – mining companies are considered to be the partners in addressing the pressures on infrastructure created by transient populations and supporting sustainable communities by contributing to the development of infrastructure and the conversion of FIFO to permanent residents within communities (as opposed to FIFO)
- Partnerships in regional planning
- Leadership development program
- Regionalisation/futures strategy for Mackay-Isaac-Whitsunday Region
- Strong and connected communities - reducing siloed approaches to addressing the issues of affordable housing, education, training, youth care and healthcare, we can achieve more for our communities
- Infrastructure to support communities – this includes roads, water, sewerage, coastal management, community services, affordable housing
- Places for people – such projects include: town centre revitalisations, entertainment precincts and exhibition areas, main street projects, community and sporting facilities, green spaces, parks and gardens

- Enhanced landscape sustainability — this includes: protecting bio-diversity, building the identity of communities, smarter use of limited resources such as water and energy, maintaining liveability factors, land-use planning and development aligned with community expectations.

4.3.3 Isaac Region 2020 Vision 2009-2019 (Community Plan)

The *Isaac Regional 2020 Vision* (Isaac Region Community Plan) is a long-term, strategic planning document prepared under the *Local Government Act 2009*. The Isaac Region Community Plan identifies values, existing assets and resources and prioritises opportunities and challenges the Isaac region community has identified as important. The following list is a sub-set of actions identified as priorities in the Isaac Region Community Plan to be considered when formulating social impact management strategies for the Project:

- Affordable and available housing
- Safe roads and transport (including signage, impact of heavy industry on Peak Downs Highway and other local roads)
- Maintaining a safe community, especially for children, youth and the aged
- Conserving natural environment and build places for recreation
- Fast tracking the development and implementation of Clean Coal Technology
- Minimising cumulative impacts of coal mining (including improved monitoring and management by proponents)
- Managing integration of FIFO workforce and camps into local communities or supporting local migration into the communities
- Integrating mine closure planning into decision making about community relations investments and implementation of social impact management strategies (to contribute to town sustainability when mining industry or project changes or is impacted by factors such as global markets)
- Provision of transport and power supply infrastructure.

4.3.4 Charters Towers Our Region Our Future 2035 (Community Plan)

The *Charters Towers Our Region Our Future 2035* (Charters Towers Community Plan) document represents the CTRC's vision for the Charters Towers community in accordance with the *Local Government Act 2009*. It addresses all areas of community life which affect the lifestyle of the Charters Towers regional population over time, with sustainability, health, economic development, education, safety and security as key focal areas. The community plan identifies the key issues and concerns of the Charters Towers regional community, regardless of which levels of the public, private or community sectors are ultimately responsible for delivering programs and services (CTRC, 2011).

The following list is a summary of the key opportunities identified in the Charters Towers Community Plan that may be relevant in formulating social impact management strategies:

- Provision of mining services and facilities
- Education, training and skills development through key projects such as the Dalrymple Trade Training Centre
- Airport development to stimulate increased business, passenger and regional access

- Integrated approach between government agencies and the private sector to encourage business to the region
- Providing safe and effective integrated network services and choices, comprising:
 - transport (road, rail and air services) and cycle and pedestrian infrastructure
 - essential services including water, sewerage, waste and communications
 - community and environmental services, facilities and resources.
- Developing highly skilled workforce and diverse population base which is seen as integral to the delivery of a truly integrated and sustainable future for the region
- Focusing on maximizing opportunities from the resource sector in the short- medium term and at the same time planning for continued economic growth beyond the resource boom is critical to delivering a vibrant, resilient and diversified economy
- Promoting and developing the region as a leading services and technology solutions provider, supported by a highly skilled and locally trained workforce, dedicated to research, development and innovation.

4.3.5 Tomorrow's Mackay – A vision for the community – Community Plan 2011 – 2031

The *Tomorrow's Mackay – A vision for the community 2011 – 2031* (Mackay Community Plan) document sets out a long term vision, together with actions and strategies to achieve the vision for the community. The plan was developed in accordance with the *Local Government Act 2009* and is focused on nine planning themes.

The Mackay Community Plan identifies a number of opportunities and strategies based on the nine planning themes to assist in achieving the community vision. Some key opportunities that were relevant to consider in developing the SIMP for the Project include:

- The importance of developing and maintaining strong relationships between major stakeholders in the economy
- Goal to be a region renowned as a leader in research and development, and skills and training attract and develop a skilled workforce by promoting the region as a lifestyle destination with quality education facilities
- Importance of all sectors of the community being informed and engaged and given the opportunity for their views to be considered in important decisions that affect them (MRC, 2011).

4.3.6 Central Highlands: Visions for Our Community, Our Region 2022

The *Central Highlands – Visions for Our Community, Our Region 2022* (Central Highlands Community Plan) document is a region-wide plan which sets out plans and goals for 13 communities within the Central Highlands region.

The Central Highlands Community Plan identifies priorities for each community to achieve the regional vision. Some key priorities identified for the Capella and Emerald communities that were relevant to consider in developing the SIMP for the Project include:

- Deliver appropriate regional education and training that is linked to business and industry development and employment
- Support regional business through networking, information and resource sharing
- Attract investment and develop business in the Capella community

- Plan, develop and expand facilities and infrastructure to meet current and future growth, especially transport systems and housing (CHRC, 2011).

4.3.7 Townsville Community Plan 2011 2021

The *Townsville Community Plan 2011 – 2021* has been prepared in line with the requirements of the *Local Government Act 2009* to establish goals and strategies for achieving the vision for Townsville by 2021. The following key goals were relevant to consider in developing the SIMP for the Project:

- Building a dynamic economy
- Promoting the city's role as the service centre for the greater North Queensland region
- Promoting a cost-competitive business environment and encouraging new investment
- Developing infrastructure that supports and stimulates economic development
- Supporting businesses and jobs for the benefit of Townsville and the region
- Proactively planning present and future transport linkages to ensure they allow efficient movement of people and products
- Ensuring that air, rail, road and sea transport movements are protected and enhanced (TCC, 2011).

4.3.8 Local Planning Schemes

Local government planning schemes provide the framework for assessing development, with a particular focus on land use planning and achieving desired outcomes at a local level. Table 4-1 lists the planning schemes applicable to each LGA within the Regional Study Area. Planning schemes in place relate to former local government areas prior to amalgamation of local governments into regional councils in 2008. The planning schemes identified were created under the *Integrated Planning Act 1997* and will remain effective under the *Sustainable Planning Act 2009* until new planning schemes are developed in accordance with the *Sustainable Planning Act 2009*.

Table 4-1: Local Government Planning Schemes

LGA	Planning Schemes
Isaac Regional Council	Belyando Shire Planning Scheme 2008 Broadsound Planning Scheme 2005 Nebo Shire Planning Scheme 2008
Charters Towers Regional Council	Charters Towers City Council Planning Scheme 2011 Dalrymple Shire Council planning Scheme 2008
Central Highlands Regional Council	Bauhinia Planning Scheme 2011 Duaranga Planning Scheme 2011 Emerald Planning Scheme 2011 Peak Downs Planning Scheme 2011
Mackay Regional Council	Mackay City Planning Scheme 2006 Mirani Shire Plan 2007 Sarina Shire Planning Scheme 2005
Townsville City Council	City of Thuringowa Planning Scheme 2003 Townsville City Plan 2005
Whitsunday Regional Council	Bowen Shire Planning Scheme 2006 Whitsunday Shire Planning Scheme 2009

The majority of Project-related activities will take place in the area covered by Belyando Planning Scheme, with some works taking place in Charters Towers planning scheme area. Note that activities authorised under a mining lease are not subject to local government planning approvals, however local planning schemes can still provide important information and context in relation to compatibility with adjacent land uses and desired outcomes for development.

4.3.9 Clermont Preferred Futures Project

This community economic development initiative is a joint project between IRC and Rio Tinto Coal Australia. The strategy aims to empower the local community and includes a jointly funded position to help implement the plan. The activity constitutes Rio's own managing of its relationship with the local community, maintaining its licence to operate and a belief that the success of the mine relies on a positive relationship with the community.

This document reflects the priorities identified by the IRC specifically in conjunction with activities of Rio Tinto Coal and is unique because of the proximity of Rio Tinto's operations to the town of Clermont. However, in the context of this SIA, this document provides an insight into the nature of the Clermont community (as a community in the district study area) and its desire for a dynamic and liveable community with a strong sense of self determination and self-reliance

"..Clermont's preferred future is one of a dynamic, vibrant and well-connected community of high liveability, demonstrated by a strong sense of self determination and self-reliance, and which is underpinned by a diverse and robust economy."

Actions and priorities include cultural history, education, tourism, aged and green facilities and programs. More detail about the nature of actions being implemented is required to determine its implications (if any) for the SIMP in terms of social impacts identified for the Project.

The relationship between this document and government-initiated plans and policies (eg the Isaac Region Community Plan) is not stipulated.

4.3.10 Isaac Affordable Housing Trust

The Isaac Affordable Housing Trust (IAHT) has been formed to allow access to affordable housing in the Isaac Region to persons who by age, employment, income or other disadvantage, who are unable to source and maintain medium to long term tenancies in rental accommodation in the Isaac Region.

The IAHT is a not-for-profit organisation run independent of the IRC. The IAHT has received land and monetary contributions from both Council and other organisations, including mining companies in the region, to develop affordable housing is in the process of developing additional accommodation in Clermont, Dysart and Nebo.

4.4 Conclusion

Policies and plans developed at various levels of government for Queensland, the RSA and DSA all reflect an identified need to manage the adverse effects of resource projects as well as maximising opportunities for local residents and build diverse, self-sufficient and resilient communities. In addition to imposing some formal compliance requirements on proponents of resource projects, these policies and plans provide important frameworks both for identifying and assessing impacts of projects, and developing management and mitigation strategies that are consistent with local and regional aspirations and initiatives.

The policies and plans discussed above provide the following linkages with the impact assessment and management for this Project:

- Infrastructure – Queensland Government, IRC and regional planning structures recognise the need for infrastructure to support growth and communities in this region. Infrastructure provision for resource projects needs to be efficient and not compromise end users
- Regionalisation – Queensland Government has a policy commitment to regionalisation and IRC and regional planning groups have expressed a preference for permanent residents compared with FIFO workforces
- Housing availability and affordability – The chosen workforce accommodation strategy will have implications for housing affordability and the impact assessment must consider impacts of a local workforce and use of a non-resident workforce. A range of initiatives are in place in relation to affordable housing, including UDA housing affordability programs in Moranbah and Blackwater and the IAHT. These provide a framework for mitigation and management of housing affordability issues.
- Economic Development – the councils within the RSA are committed to maximising opportunities with major industry sectors in their regions to attract investment and support local businesses to promote economic growth. There is also a significant focus across the LGAs on the delivery of education and training to develop a diverse and skilled workforce to service key industries within the region and facilitate sustainable economic growth. This links with studies highlighting potential shortages in key skill areas required for mining and construction projects (see also Section 3.7)
- Consultation – consultation supporting the SIA should take into account consultation processes running at the same time or in the recent past to support the development of the MIWRP, the Mackay Whitsunday Regional Roadmap and the Isaac Regional 2020 Vision. Opportunities to use information gathered through these processes or to dovetail consultation activities should be explored. Management strategies should be devised in consultation at least with Local Leadership Groups and the Queensland Partnership Group established under the SRC Policy. Plans and strategies in place highlight the need for consultation and information provision, but care may also be needed to avoid consultation fatigue among the public, and avoid creating additional workload for State and local government officers
- Land access and acquisition – should be consistent with Code of Conduct and compliance has implications for potential social impacts on individual landowners.

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5. Workforce Profile

5.1 Introduction

This section of the SIA report addresses Section 4.1.4 of the ToR. Details of the Project workforce are of particular relevance given the size of the Project and the remoteness of the Project (Mine) in particular. The information contained in this section forms the basis for assessment of potential impacts described in Section 1.

It should be noted that the Project is in its conceptual design stage, and while it is possible to predict the skills required in both construction and operation workforces, workforce requirements for both construction and operation are indicative only. Workforce numbers were developed to allow the SIA to take place at this early stage of the project. Changes in workforce requirements are not likely to affect the overall conclusions of this SIA, but the magnitude of some impacts may change with increases or decreases in workforce numbers.

Initiatives and strategies related to workforce management, including recruitment, education & training, and retention are outlined in Section 7.

5.2 Total Workforce

The total anticipated workforce for the Project in its initial years up until 2022 is shown in Figure 5-1 with the skills breakdown in Figure 5-2. It is expected that the Project will reach peak workforce in 2015 with approximately 3,700 workers and it should be noted that there is some overlap between construction workforce and operations workforce. There is also a small ongoing construction component of the workforce as there will be always be new infrastructure to be constructed as the Mine develops. The workforce drops significantly from 2015 – 2018 as the scale of construction activities reduces, particularly the rail construction.

The Mine is expected to reach full production of 60 Mtpa from 2022 onwards and, for the purposes of the SIA, it is assumed that workforce numbers will be relatively consistent after this time, at around 3,000 workers. As noted in Section 2.11, it is not considered valid to assess social impacts of workforce after this time due to likely changes in demographic and socio-economic characteristics of local and regional populations, as well as changes in government policies and planning frameworks.

More detailed workforce data is presented in Appendix D.

Figure 5-1: Total Anticipated Project Workforce

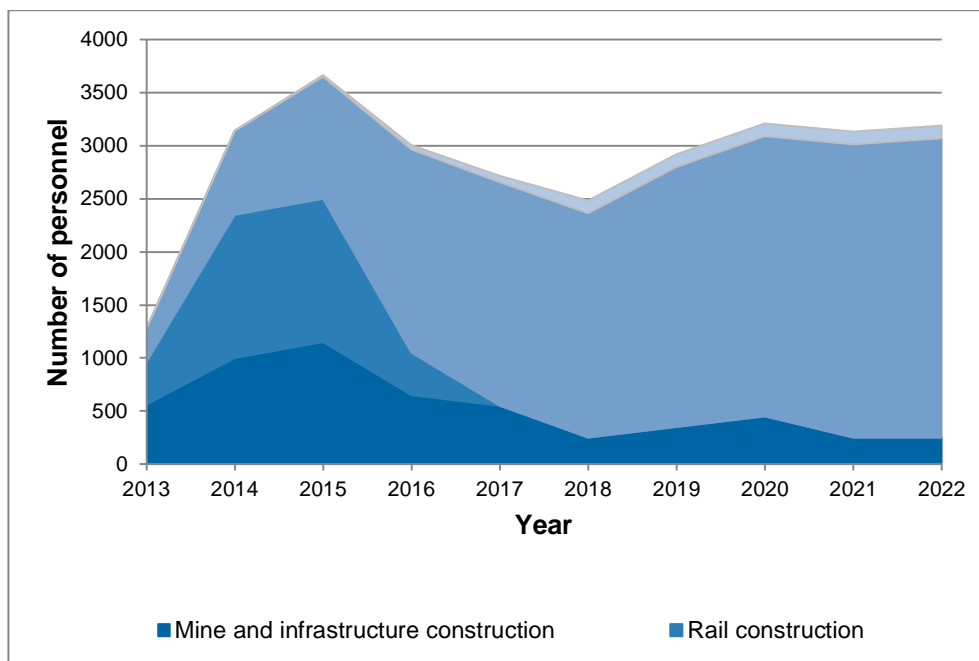
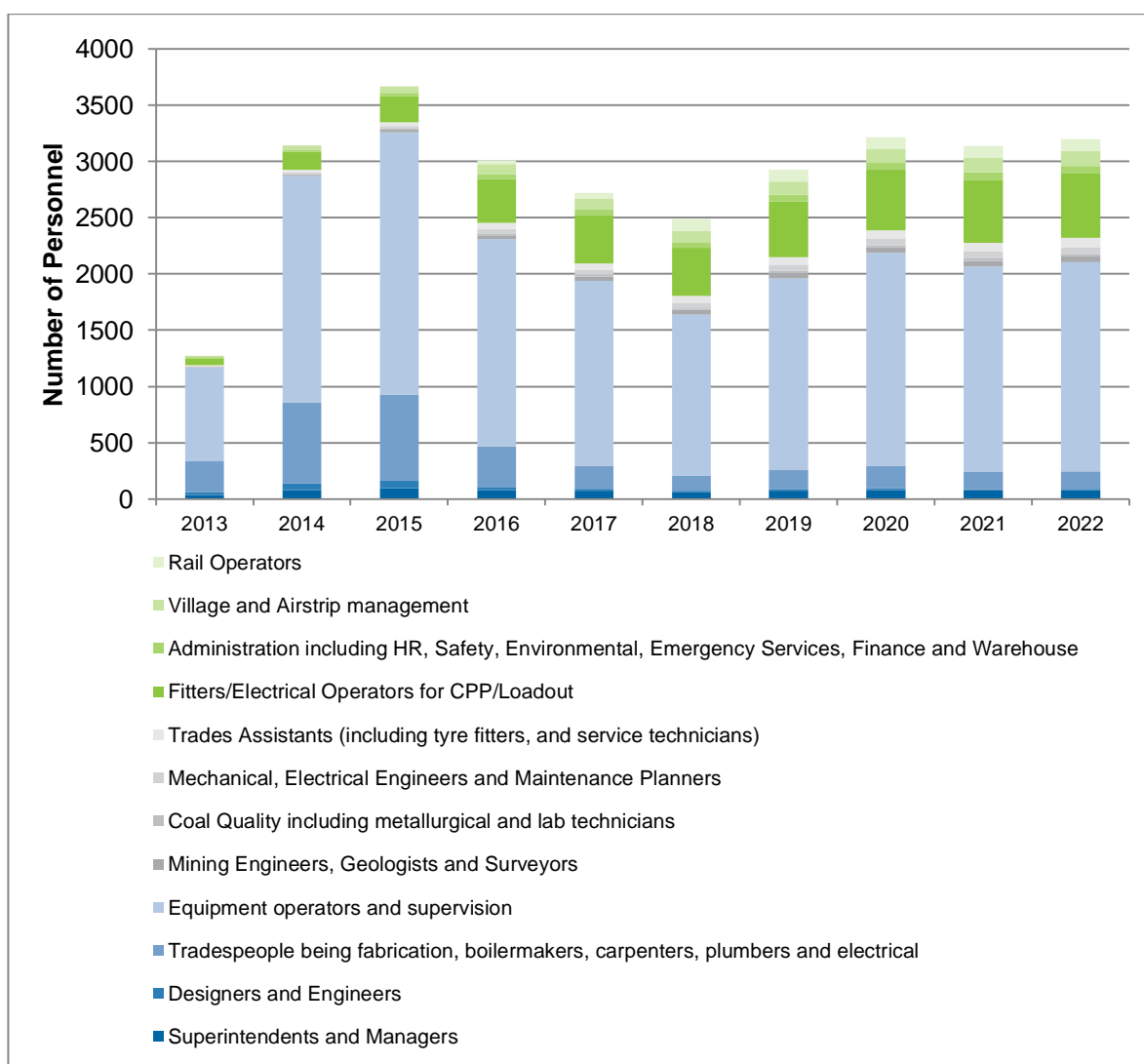


Figure 5-2: Project Total Workforce Skills



5.3 Carmichael Coal Mine

5.3.1 Construction Workforce

Construction of the Project is currently scheduled to commence in 2013/2014 following receipt of environmental approvals and any land acquisition processes. Initial construction activities will relate to off-site infrastructure such as road upgrades, the new airstrip and water storages and water supply pipelines and the workers accommodation village as well as on-lease infrastructure required to commence mining activities. Construction activities on-lease will then continue to develop infrastructure to meet requirements of the staged development of the Mine. There will be an overlap between construction and operational workforce at the Mine site for a period of years until all stages are constructed, and an ongoing requirement for a small construction workforce to construct infrastructure required as the Mine expands.

The construction phase for the Project (Mine) will include works such as construction of the open cut and underground mining operations, haul roads, train load out and coal handling processing plant (CHPP), conveyors, feeders, workshops, equipment storage, administration building, and other components within the mine infrastructure area.

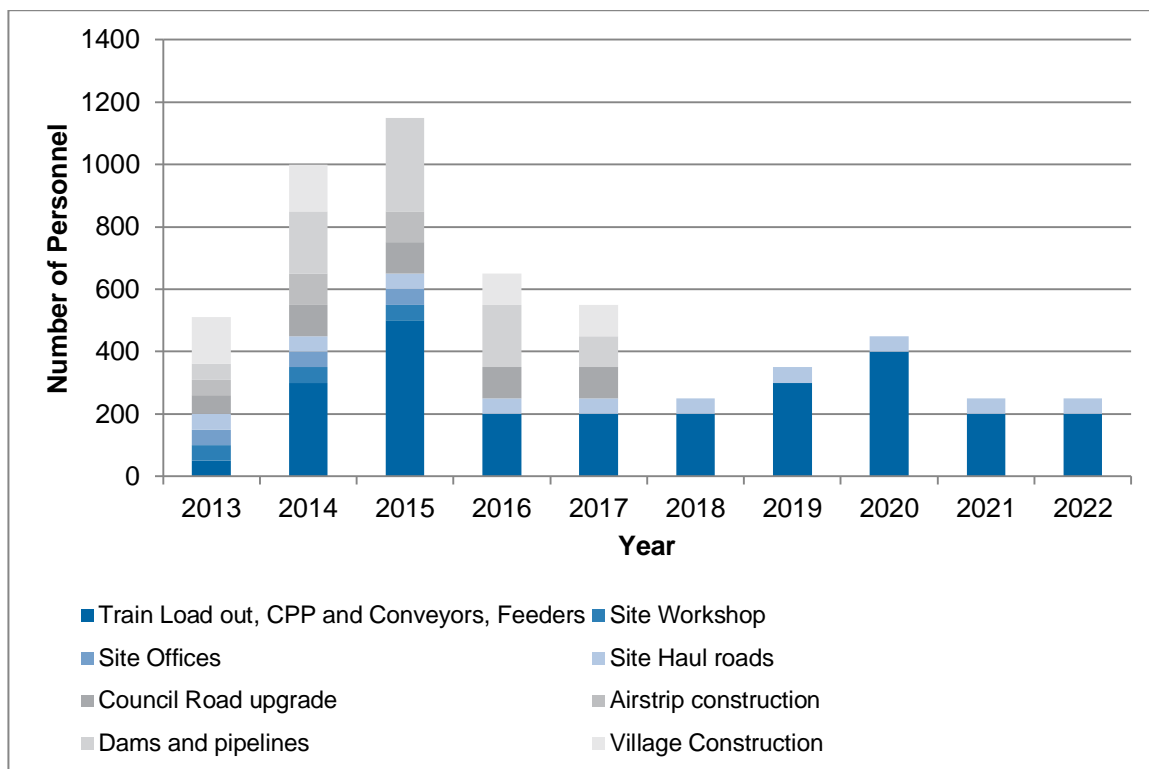
Construction Workforce Accommodation

Construction of the Project (Mine) workers accommodation village is anticipated to commence in 2013 so that the accommodation is available for construction workers. Until the Project (Mine) workers accommodation village is operational, the construction workforce will be based in the existing temporary workers accommodation currently on the Project (Mine) site.

Workforce Numbers

An initial workforce of 400 persons is anticipated to be onsite in January 2013 for the pre-construction phase. Figure 5-3 shows the workforce numbers for the construction period with details of the number of personnel required for each different component of construction (onsite and offsite infrastructure). As there is an overlap between construction and initial operation of the Project (Mine), total workforce for the period of 2013 through to full production at 2022 is shown.

Figure 5-3: Mine Construction Workforce by Year



Workforce Recruitment and Accommodation

During the construction phase, recruitment and management of the workforce will largely be the responsibility of contractors and subcontractors appointed to undertake various components of the project. As these contractors are not yet appointed, it is not possible to provide details on where workforce may be sourced.

Due to the remote location of the Project (Mine) site, it is expected that most construction workers will be on a fly in/fly out (FIFO) basis. Based on similar projects in Queensland, workers would be collected from one or more population centres on the east coast of Queensland and flown to the proposed airstrip adjacent to the proposed mine. Collection points may include South East Queensland, Rockhampton, Mackay, Whitsunday (Proserpine airport), Townsville and Cairns. This may mean that FIFO construction workers reside at this nominated point, or will travel from their place of residence, which could be anywhere in Australia, to this point to commence travel to the mine.

While it is not currently intended to recruit workers from overseas, it is likely that a small number of overseas workers will be required from time to time when particular specialist skills or experience not available in Australia are required, or to assist with installation or commissioning of plant or equipment manufactured overseas. This is likely to make up only a very small proportion of the overall workforce.

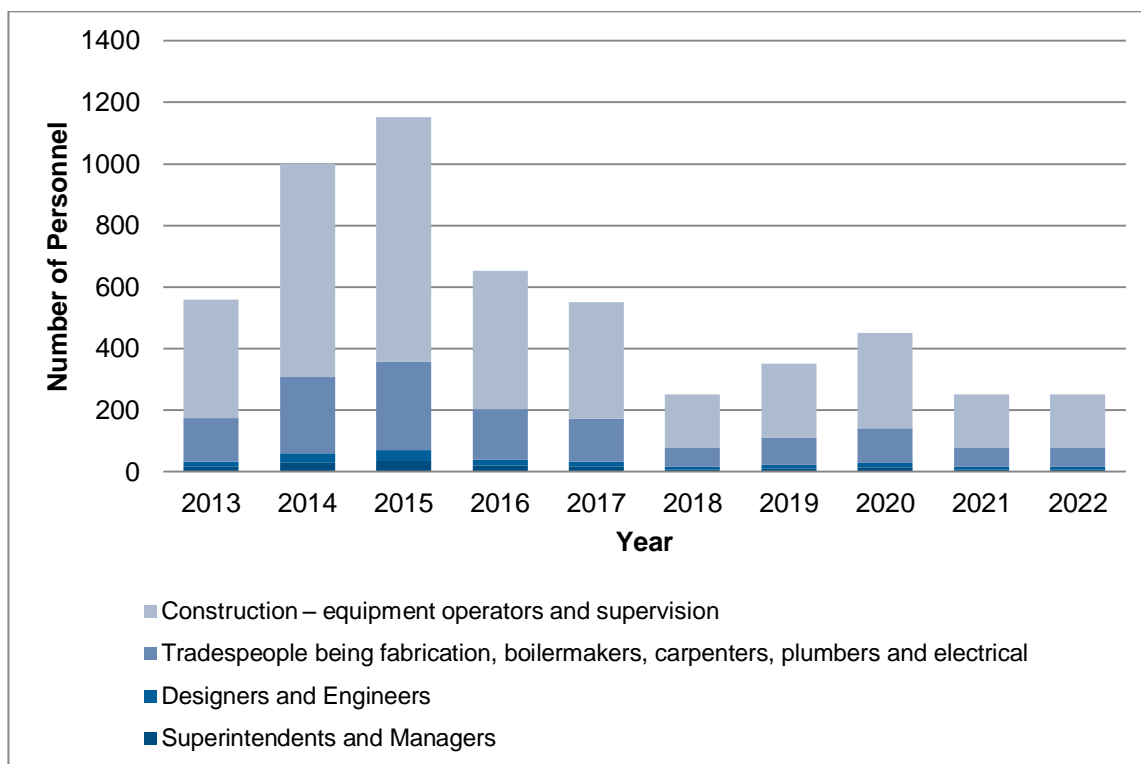
The remoteness of the site and short term nature of most construction work positions will tend to limit opportunities for and benefits of local recruitment during the construction phase. The distance from Clermont to the proposed mine by road is about 200km, with driving times varying depending on road conditions. Due to these distances, DIDO or BIBO on a shift basis (that is, where workers return to their usual place of residence after each shift) is unlikely to ever be considered feasible as the travel times would exacerbate risk of fatigue which can be a significant cause of workplace accidents and injuries. DIDO or BIBO on a roster basis (that is, where workers live at accommodation facilities for a set roster, then return to their place of residence once this roster is

complete) can be considered once a reliable, all weather access road is available, between the Gregory Developmental Road and the Project (Mine) site. Upgrades to the Moray-Carmichael Road will be undertaken in the construction stage in accordance with an agreement deed between Adani and IRC (signed in August 2012), to provide improved access.

Skills Base

Skills required for the construction of the Project (Mine) are shown in Figure 5-4. Construction operators and supervisors are the skills with the largest requirement followed by tradespeople.

Figure 5-4: Project (Mine) Construction Skill Requirements



5.3.2 Rosters

A number of roster configurations are currently under consideration for both construction and operation and are yet to be finalised. In any event, rosters will generally be at the discretion of contractors undertaking construction works. It is expected they will be consistent with current industry standards, with particular regard to managing fatigue of workers.

5.3.3 Training

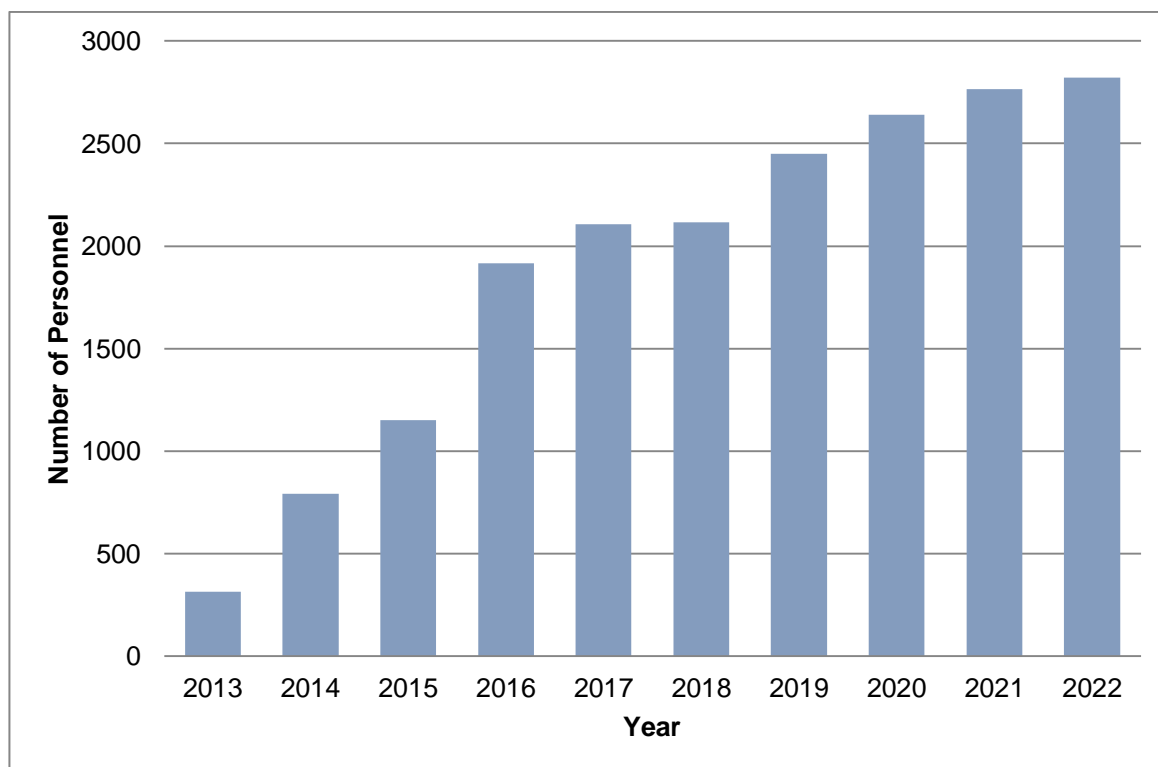
As most workers involved in the construction phase will be employed by contractors and subcontractors, training of workers will be the responsibility of these employers. Given current and predicted skill shortages in many areas of construction, most contractors already have training programs in place to address potential shortfalls. Notwithstanding this, Adani is developing a number of programs addressing workforce education and training. Further information on these is provided in section 7.6.3.

5.3.4 Workforce Numbers

The Project (Mine) total operational workforce, including underground and open cut operations, is expected to peak at 3,000 at full production in 2022. It is expected that the number will remain

above 2,000 when underground mining ceases production by 2067, but will gradually reduce as the production slows and the Project (Mine) ceases production.

Figure 5-5: Project (Mine) Total Operational Workforce



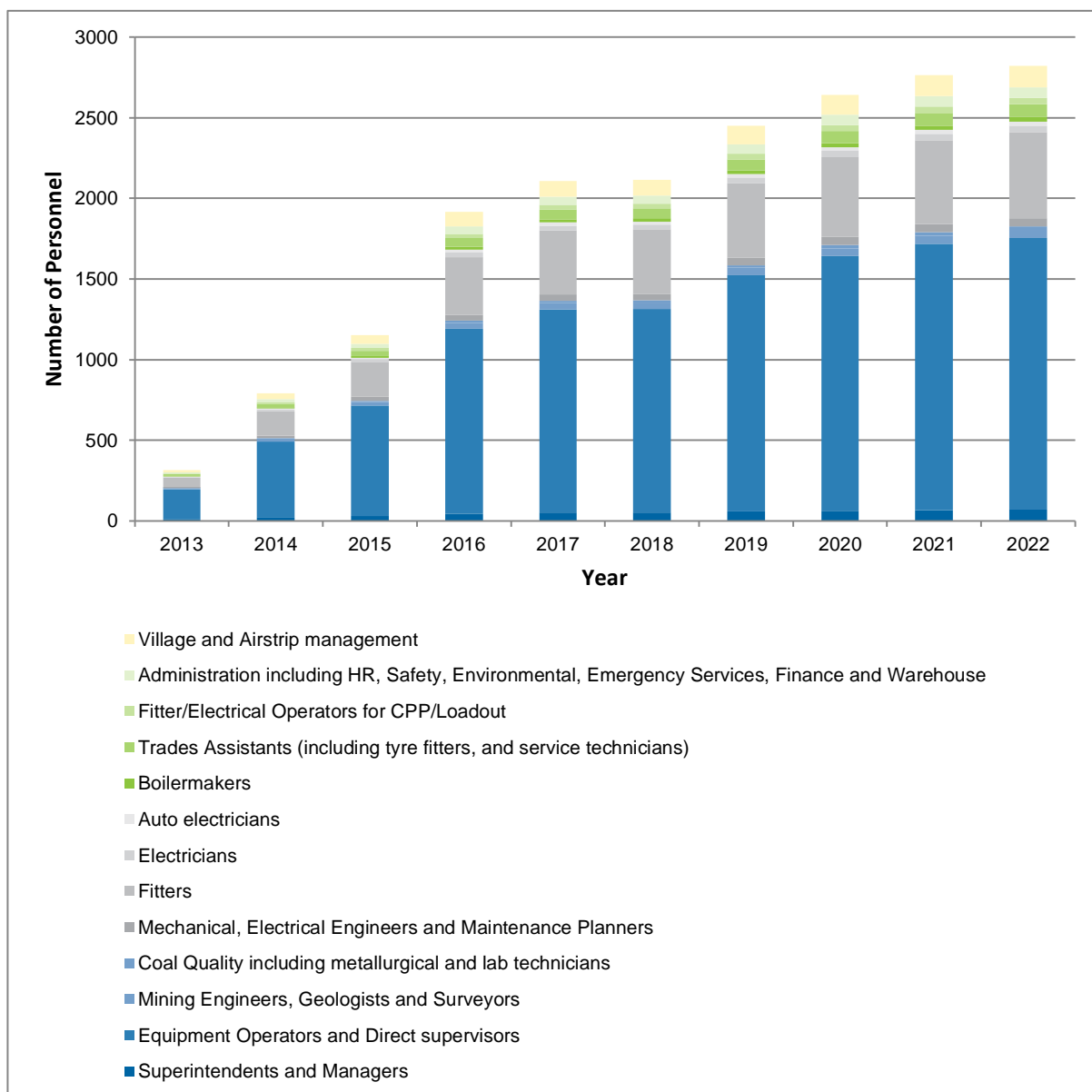
Skills Base

Operation of the Project (Mine) will require workers in the following categories:

- Open cut and underground mine operators including operation of excavators, dozers, drag lines and longwall mining equipment
- CHPP operators
- Tradespeople including diesel fitters and electrical tradespeople and mechanical fitters
- Technical services and support including: geological, engineering, health safety and environment services and laboratory and quality control.
- Machinery operation and maintenance workers
- Managers and production supervisors
- Administrative and support areas such as office staff, catering, cleaning and transportation.

The proportion of skills required for Project (Mine) operation is shown in Figure 5-6.

Figure 5-6: Project (Mine) Operation Skill Requirements



Source of Workers

Adani is committed to providing flexibility for its workforce such that workers from the district and regional study areas have access to employment opportunities. However, the proposed mine is more than 200 km by road from the nearest settlement of Clermont and over 300 km from the larger towns of Emerald to the south and Charters Towers to the north. Hence, any workers recruited from these towns would need to be recruited on a DIDO or BIBO basis whereby the worker resided in the workers accommodation village when on roster, returning home at the end of each roster. Fatigue requirements would preclude workers returning home after each shift.

It is expected that almost all workers will be recruited on a FIFO basis, flying in and out of one or more nominated collection points in population centres on the east coast of Queensland. This does not mean that workers will have their permanent residence at these locations. Workers may reside elsewhere in Queensland or Australia and travel independently to the nominated collection point, from where transportation to the proposed mine will be undertaken by Adani. Workers and their families may choose to relocate to the collection points, but this would be at the worker's discretion and not directed by Adani.

Adani will not preclude the potential for residents of the regional and district study areas to be employed on a bus in/bus out basis, also from centralised collection points such as Emerald, Clermont or Charters Towers. Such arrangements would be developed based on the interest of residents in the regional and district study areas.

Given the remoteness of the mine site from the nearest population centres, and the proposed travel arrangements, it is unlikely that people will relocate to the district in order to work at the proposed mine.

As stated earlier, DIDO or BIBO from the local community is unlikely to be feasible until such time road access between the Gregory Developmental Road and the Project (Mine) site is more resilient and to a standard that permits all weather access.

In terms of recruitment, the preference will be to source as many personnel from within Queensland and Australia first, including training programs to upskill those in the Australian labour market to meet the needs of the Project. Alternative sources of the required workforce, such as personnel from overseas, will be considered only where the Australian labour market cannot meet the needs of the Project and it is not possible to address shortages through training programs. It is not currently anticipated that any operational workforce requirements will be sourced from overseas.

Worker Accommodation Village and Airstrip

A worker accommodation village will be constructed approximately 15 km east of the Project (Mine) site with access from the Moray Carmichael Road. Once completed, the workers accommodation village will accommodate up to 3,000 rostered persons (2,000 beds) to fully meet the requirements of the operational workforce. The camp will be developed as a series of accommodation unit clusters to promote a community environment, with each cluster having access to its own recreation and other facilities. Further details of the workers accommodation village are included in Volume 2, Section 2, Project Description (Mine).

The accommodation village will include such facilities as:

- Single person rooms, with ensuite
- Gymnasium
- BBQ areas
- Medical centre with helicopter landing zone
- Training and meeting rooms
- Multi-use recreational courts
- Playing fields
- Wet mess
- Recreation room
- Suitable laundry facilities
- Shop/office.

An airstrip will be developed between the Project (Mine) accommodation village and the Project (Mine) site to meet the requirements of a FIFO workforce. It is anticipated that workers will travel from the workers accommodation village and temporary construction camps to the Project (Mine) and Project (Rail) sites via buses or 4WDs.

Rosters

As per the other components of the Project, rosters will be determined after further consultation and determination of personnel requirements.

Training

Adani is in the early stages of developing a workforce training and development policy and program for its Australian operations. As there are current and predicted skill shortages in engineering and technical disciplines required for mine operation, Adani is aware that a focussed training and development program will be required to sustain its workforce. Further information on Adani's proposed training and development programs is provided in Section 7.5.1.

5.4 Carmichael Rail Line

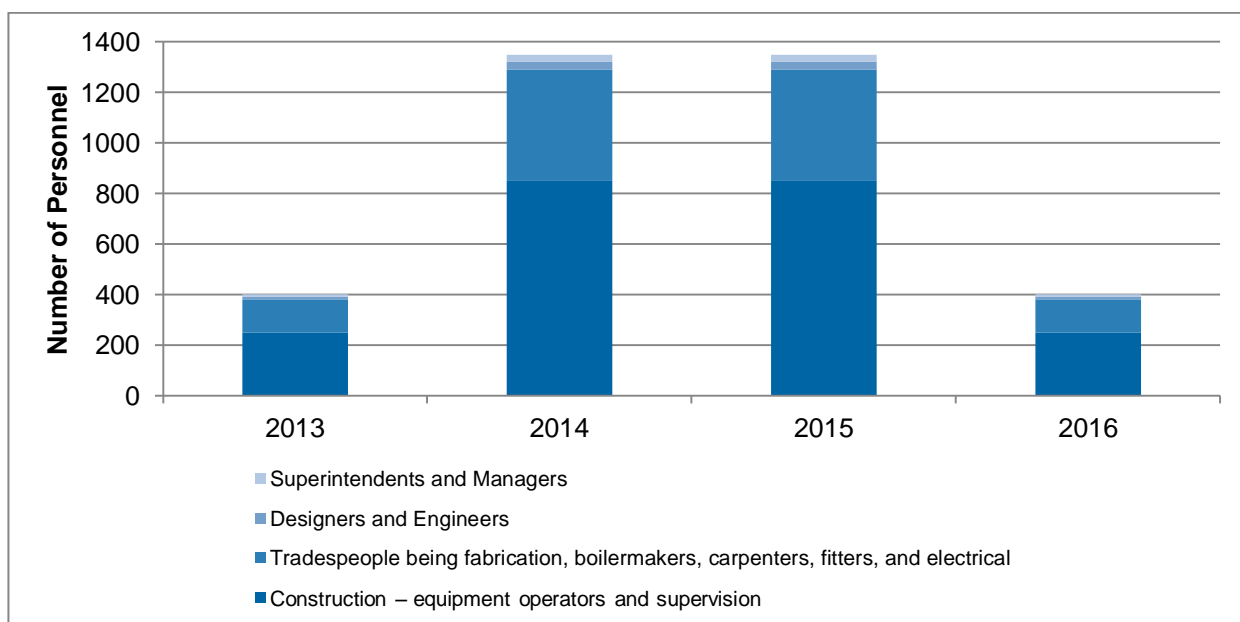
5.4.1 Construction Workforce

Workforce Requirements

Estimations for the construction workforce numbers are based on a benchmarking exercise undertaken by Aarvee Associates (2011) with previous similar projects to identify the likely level of construction workforce required for the Project (Rail). However, as discussed in Section 5.1, the project is at a conceptual stage, and hence workforce estimates are indicative only at this stage.

During construction a variety of skills will be required to complete the Project. This includes labourers, tradespeople, machinery operators, engineers, surveyors and site supervisors. The overall number of construction workers and range of skills required for the construction of the Project (Rail) are shown in Figure 5-7.

Figure 5-7: Project (Rail) Construction Skill Requirements



Origins of Construction Workforce

During the construction phase, recruitment and management of the workforce will largely be the responsibility of contractors and subcontractors appointed to construct the railway line and associated facilities. As these contractors are not yet appointed, it is not possible to provide details on where workforce may be sourced.

Due to the remote location of much of the proposed railway alignment, and the short term nature of construction activities at any one location, it is expected that most construction workers will be on a FIFO basis. Based on similar projects in Queensland, workers would be collected from one or more population centres on the east coast of Queensland and flown to the nearest airport and then transferred to temporary construction camps by bus. Collection points may include South East Queensland, Rockhampton, Mackay, Whitsunday (Proserpine airport), Townsville and Cairns. This may mean that FIFO construction workers reside at this nominated point, or will travel from their place of residence, which could be anywhere in Australia to this point to commence travel to the construction site.

Recruitment of workers from overseas is not expected as most skills required to construct the railway line are available within Australia. A small number of technical specialists may be required for short term assignments.

The remoteness of much of the alignment and short term nature of most construction work positions will tend to limit opportunities for and benefits of local recruitment during the construction phase. Due to large travel distances, particularly at the western end of the railway alignment, any workers recruited locally would most likely still be required to reside in the temporary construction camps when on roster as fatigue management requirements will probably prevent long drives at either end of a shift. Short term employment opportunities for local residents may include working in the camps as well as equipment operation and labour for construction of the railway line and bus drivers.

As construction work opportunities are short term, it is also unlikely that workers will relocate to the region with families.

Accommodation

Temporary construction camps (includes the workers accommodation village) will be developed to house construction workers for the Project (Rail) and at the western end of the alignment, rail construction workers will be housed at the mine workers accommodation village. The temporary construction camps will be relatively evenly spaced along the rail alignment approximately 60 km apart reducing the distance construction teams need to travel to a maximum of about 30 km from each camp to the furthest work point.

The temporary construction camps will be located as close to the proposed alignment as possible. A construction access road will be built along the proposed alignment and will provide access from the temporary camps to construction areas. Buses and four wheel drives will be used to transport workers from the temporary construction camps to the work areas for each shift.

Indicative locations for the temporary construction camps have been identified and are shown in Table 5-1 and Figure 5-8.

Table 5-1: Location and Capacity of Temporary Construction Camps

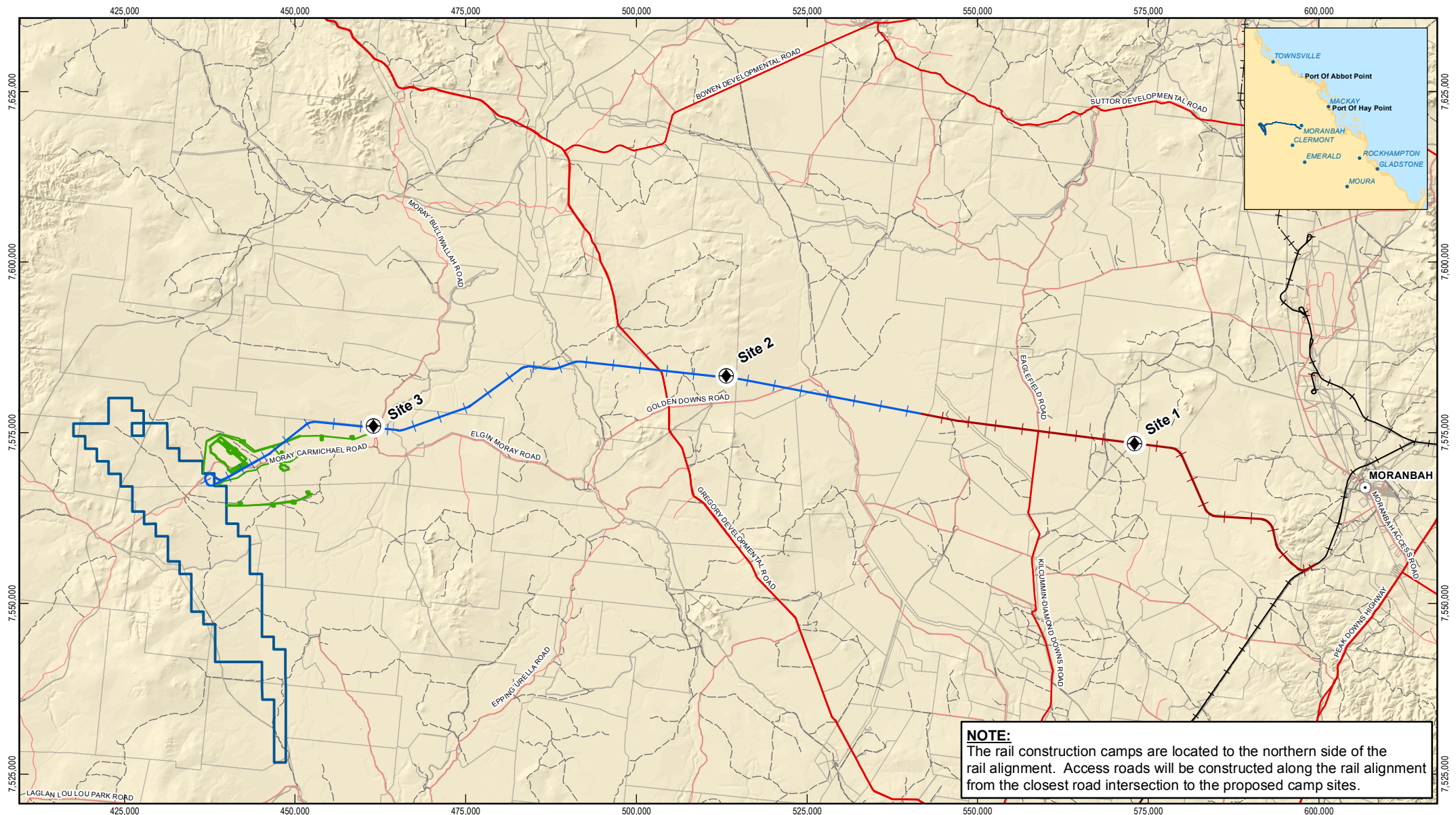
Camp	Location (east-west)	Capacity	Lot on Plan
1	Rail (East) (35.0 km)	400	Lot 7 on SP233102
2	Rail (west) (94.9 km)	400	Lot 10 on BL49
3	Rail (west) (151.9 km)	400	Lot 662 on PH1491
4	Rail (west)	400	Lot 662 on PH1491 (co-located with the Project (Mine) workers accommodation village on Moray Downs)

The final location of these temporary construction camps is still being determined through negotiations with landowners with considerations including:

- Existing infrastructure and particularly road access
- Serviceability and proximity to logistics routes
- Construction activities to be undertaken from the camp location and travel distances to more labour intensive aspects such as bridge construction.

Camps will also require the following services:

- Potable water
- Sewage and wastewater collection and treatment/disposal facilities
- Electricity
- Communications
- Laundry facilities
- Solid waste management.



0 5 10 15 20 25
Kilometres
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55



LEGEND

- Town
- ◆ Construction Camp
- Existing Railway
- State Road
- Local Road
- Track
- Rail (West)
- Rail (East)
- Mine (Onsite)
- Mine (Offsite)
- Cadastral Parcel



Adani Mining Pty Ltd
Carmichael Coal Mine and Rail Project
**Estimated Location of Rail
Temporary Construction Camps**

Job Number 41-25215
Revision D
Date 20-09-2012

Figure 5-8

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Level 4, 201 Charlotte St Brisbane QLD 4000 T +61 7 3316 3000 F +61 7 3316 3333 E bnemail@ghd.com W www.ghd.com

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Data source: DERM: DEM (2008), DCDB (2010), Physical Road Network (2011); DME: EPC1690 (2010), EPC1080 (2011); © Commonwealth of Australia (Geoscience Australia); Localities, Railways (2007);

Adani: Alignment Opt9 Rev3 (SP1&2) (2012), Construction Camps (2011); Gassman/Hyder: Mine (Offsite) (2012). Created by: BW, jvc

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Rosters

Rosters for rail construction are still being developed and a number of roster arrangements are being considered. Adani is seeking to implement rosters that facilitate strong productivity and a lifestyle balance that will appeal to potential employees.

Training

As most workers involved in the construction phase will be employed by contractors and subcontractors, training of workers will be the responsibility of these employers. Given current and predicted skill shortages in many areas of construction, most contractors already have training programs in place to address potential shortfalls.

5.4.2 Rail Operational Workforce

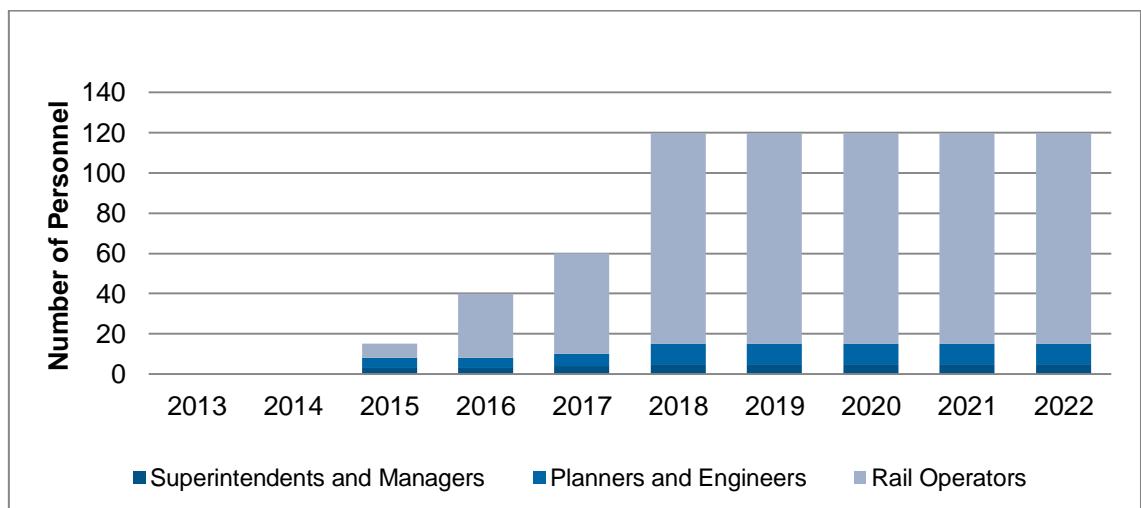
Construction of the rail line is expected to be complete in late 2016 with first coal and operational activities to then commence. The railway is anticipated to serve the Project for the life of the Project (Mine). The operational workforce will comprise personnel to operate the rail services and maintain the engines and rolling stock, rail lines and rail facilities. It is expected that maintenance activities will be undertaken by a specialist contractor with only train crew being employed by the Project (Mine).

The Project (Rail) will reach its peak 120 person operational workforce by 2018. It is anticipated that the majority of the operational rail personnel will be based at Bowen and Mackay and will work shifts.

Driver crews, consisting of a driver and co-driver will take empty trains from the East coast to the Project (Mine) where they will rest before returning to Dudgeon Point Coal Terminal or Abbot Point Coal Terminal with full trains. In any 24 hour cycle, three crews (six workers) will be required. Maintenance crews will be based at Mackay or Bowen with a smaller crew at the Mine site.

The estimates of the operational workforce and skills for the Project (Rail) are shown in Figure 5-9.

Figure 5-9: Project (Rail) Operational Workforce



Training

Adani is in the early stages of developing a workforce training and development policy and program for its Australian operations. As there are current and predicted skill shortages in engineering and technical disciplines required for mine operation, Adani is aware that a focussed training and development program will be required to sustain its workforce. Further information on Adani's proposed training and development programs is provided in Section 7.6.3.

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6. Potential Social Impacts and Opportunities

6.1 Introduction

This section addresses Part B, Section 4.2 of the ToR and assesses and describes the type, level and significance of the Project's potential social impacts - both beneficial and adverse - on the local and cultural area based upon the community engagement processes and the social baseline study.

Potential impacts have been identified through SIA consultations, desktop review of literature, and information from discussions with landholders held by Adani personnel. As outlined in Section 2.7, a social impact is described by van Schooten *et al* (2003) as something that is actually experienced by humans in either a corporeal (physical) or cognitive (perceptual) sense and results directly from the social change processes that are invoked by a project (direct social impacts). Indirect social impacts are a result of changes in the biophysical environment. Further discussion regarding the mitigation and management measures to reduce the impacts are discussed in Section 7.

6.2 Significance of Social Impacts

The significance of social impacts has been identified using a risk matrix as shown in Table 6-1 taking into consideration the likelihood and consequence of impacts, feedback from stakeholder groups, duration of the impact, spatial extent of the impact and stakeholder importance of the impact. The risk ratings are also based on experience from similar assessments. Appendix A provides more detail on the significance assessment methodology.

Social impacts and their significance were identified based on the Project information at the time of writing the SIA report and takes into consideration the information provided by landholders, feedback during the EIS public consultation process, regional councils and comparative studies.

Given the potential nature of social impacts during the construction and operational stage of the Project, GHD has adopted relevant International Principles for Social Impact Assessment developed by the International Association for Impact Assessment. This includes the precautionary and uncertainty principle when predicting social impacts. The predicted social impacts and their significance may change as more information about the Project is known (during detailed design, etc.) and the Project is being constructed and operated. Therefore actual social impacts of the Project cannot be known for certain when completing this SIA.

Table 6-1: Assessment of Likelihood and Consequence of Identified Social Impacts

Likelihood of social Impact	Consequence of Social Impact				
	1 = Insignificant	2 = Minor	3 = Moderate	4 = Major	5 = Extreme
6 = Almost Certain	Medium	Medium	High	Excessive	Excessive
5 = Very Likely	Low	Medium	High	High	Excessive
4 = Likely	Low	Low	Medium	High	Excessive
3 = Possible	Negligible	Low	Medium	High	High

Likelihood of	Consequence of Social Impact				
2 = Unlikely	Negligible	Low	Low	Medium	High
1 = Very Unlikely	Negligible	Negligible	Low	Medium	Medium

6.3 Housing and Accommodation Demand

6.3.1 Overview of Issues

A concern for the regional community is that the cumulative effects of mining development will exacerbate shortages in housing supply and decrease housing affordability. This leads to higher living costs for everyone, and particularly affects those not employed in the mining sector. The construction and operational workforce will be primarily FIFO with self-contained accommodation, with the potential for BIBO or DIDO depending on whether workers are recruited from regional communities.

These effects have been observed in locations such as Moranbah, where mining takes place in close proximity to the town. Housing prices and rental costs have increased as a result of demands from mining activity as discussed in Section 3 and Appendix C.

There is a strong desire from local communities to attract mine and rail and associated support industry workers and their families into the community. While SIA consultation indicated that land development in Clermont is slow, there has been considerable investment in residential development in the town with 80 townhouses, being the first stage of a multiple stage residential development in Clermont nearing completion. It is understood that all homes in stage 1 are sold, with 50 percent having been secured by Rio Tinto. As outlined in Section 4.3.10, Council is also progressing the development of affordable housing on an existing block in Clermont through the Isaac Affordable Housing Trust. It is intended that this development cater to retirees as well as individuals and families that meet the requirements of the National Rent Affordability Scheme⁴.

High costs of housing and rent has potential to disadvantage individuals and families not engaged in the mining sector which is resulting in a 'two-speed' economy. Consultation indicated that there are some concerns regarding lower income individuals and families leaving towns such as Moranbah.

6.3.2 Potential Impacts - Construction

As outlined in Section 1, construction workforces for both the mine and rail will be provided by contractors and subcontractors and will be on a FIFO basis, staying in purpose built workers accommodation facilities. There will be no requirement to house construction workers in existing accommodation in the region as the workers accommodation village and temporary construction camps will be provided for all workers.

The eastern end of the rail alignment is in closer proximity to larger settlements such as Moranbah, and there is potential for existing residents in these locations to be employed during construction. However these workers will already be living in the area and will not increase demand for accommodation. Given the short term nature of the construction activities and the requirement for workers to utilise the workers accommodation village and temporary construction camps when on-roster, it is not likely that significant numbers of workers will relocate their families to communities in the region such as Clermont or Moranbah.

⁴ Established in July 2008, this Australian Government scheme provides financial incentives for investors to purchase new affordable housing that must be rented at a minimum of 20% below the market rent. For more information - <http://www.communities.qld.gov.au/housing/housing-services/renting-in-the-private-market/national-rental-affordability-scheme>

As noted in Section 5.3, the Project (Mine) construction workforce is proposed to be FIFO, flown directly from a base, or bases, outside of the regional area to the Mine site. The workforce for two of the rail construction camps is also to be flown directly to the Mine site and bussed to camps. The workforce for the two eastern most camps is to be flown into Moranbah and bussed to the Mine site (refer Section 5.4). The location of the easternmost camp is to be either at, or just south of Moranbah. As outlined in Section 5.4 each camp will have a capacity of approximately 400 people.

Increased economic activity associated with the construction activities may attract some people to the area, for example to work in local businesses servicing construction activities. This may affect Clermont and Moranbah but is not likely to lead to population growth in excess of that already forecast for these towns, as forecasts undertaken by OESR factor in effects of construction projects. In the larger centres of Emerald, Charters Towers, Mackay and Bowen, additional residents would only be a very small proportion of existing population.

6.3.3 Potential Impacts – Operation

Mine

As outlined in Section 5 all mine workers will be employed on a FIFO basis and will be accommodated at the mine workers accommodation village. Due to travel distances, it is not proposed to accommodate FIFO workers in Clermont or other regional centres. As workers will be required to stay at the workers accommodation village while on roster and will not be permitted to travel home during shifts, it is unlikely there will be an incentive for workers to relocate their families to towns such as Clermont.

There may be potential in the future, once road infrastructure is improved, to operate BIBO from Clermont and other centres such as Emerald and Charters Towers if existing residents seek employment at the mine but due to travel distances, all workers will be required to live in the mine workers accommodation village when on roster, and will not be able to return home between shifts.

On this basis, it is unlikely that the direct mine workforce will create any additional population increase or pressure on housing in the district or region.

Increased economic activity associated with the proposed mine may create additional employment opportunities in local and regional businesses which provide support services to the proposed mine. Adani has already engaged some local businesses to provide goods and services to the Project, and it is expected that local businesses will continue to be engaged to provide goods and services during operation of the mine and rail, which may lead to an increased requirement for local business employees and consequently housing.

Adani is actively engaged with IRC and the community and will continue to work with IRC and the Clermont Preferred Futures group to address affordable housing within Clermont in accordance with current plans and strategies developed through the IAHT. For the larger population centres such as Emerald, Charters Towers and Mackay, any population increases associated with the proposed mine will be well within forecast population growth and not likely to cause any significant impacts on housing availability and affordability.

Rail

As the rail terminates at Abbot Point or Dudgeon Point, the majority of workers can be expected to be based out of Bowen or Mackay. Rail workers will work shifts, either driving trains or undertaking maintenance activities. Drivers will rest at the Mine workers accommodation village with some rail workers being able to return home between shifts. A small number of rail workers will be required

at the western end of the rail operation and will be on a FIFO basis, accommodated at the Mine workers accommodation village.

Bowen and Mackay are both large regional centres with significant labour forces and some labour requirements for the rail component of the project are likely to be met from this existing labour force. Some additional workers and families will potentially be attracted to Bowen or Mackay by employment opportunities but given that the total rail operational workforce is anticipated to be only 120 persons, this is not likely to lead to any significant population increase in proportion to the existing population of these regional centres. Population growth is not likely to exceed forecast growth, and increased pressure on housing availability and affordability is not expected.

6.3.4 Summary of Potential Impacts on Housing and Accommodation

Table 6-2 shows the potential impacts in housing and accommodation.

Table 6-2: Potential Impacts on Housing and Accommodation

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Mine						
Higher cost of living in Clermont as a result of higher housing prices, rental prices as workers in support industries seek to reside in the local community	Operation	Possible	Moderate	Medium	Local community	Negative

6.4 Workforce Management

6.4.1 Overview of Issues

SIA consultation identified that communities have concerns regarding the presence of non-resident workers. These workforces are predominantly male and stakeholders expressed some concerns regarding behaviour of non-resident workers in towns. As non-resident workers are only present while on roster, there are limited opportunities for integration with the local community and stakeholders raised concerns regarding differences between residents and non-resident workers in terms of aspirations, values and behaviour.

Available crime data does not point to higher incidence of crime in towns such as Moranbah where there is a very high proportion of non-resident workers, however anti-social behaviour and disturbances may not necessarily result in actual criminal charges and hence, statistics may not reveal the full extent of behavioural problems.

In contrast to these issues, stakeholders also noted that there are benefits in having non-resident workers visit towns, particularly in relation to expenditure at local businesses.

Another emerging issue relating to non-resident workforces is associated with effects on the families of these workers. The absence of one parent while on roster places additional pressure on the other parent who effectively becomes a sole parent during the worker's absence, and also means that the parent working remotely may miss a number of important family events such as birthdays and anniversaries. Parents working away from home may also find it difficult to adjust to the very contrasting environments of life in a workers accommodation village and life in the family home. Even where there are no children at home, the extended absence of one partner can also cause stress in adult relationships. Equally for singles, reintegrating with friends when off roster and back home can be difficult, particularly where social activities at the home base are organised around traditional weekends rather than rosters.

6.4.2 Potential Impacts

Local community Impacts

The workforce profile in Section 1 provides a description of the anticipated characteristics of the workforce, with more detailed numbers included in Appendix D. The data is based on a probable scenario and may be different when actual contracts are negotiated. Construction and operations workforce is proposed to be engaged on a 100 per cent FIFO basis, with limited or no opportunity for DIDO or BIBO as outlined in Section 1. It is not proposed to locate any workers in towns such as Clermont due to the travel distances and any workers recruited from Clermont or other regional centres will be required to stay at the workers accommodation village while on roster.

During operations, workers will generally not travel to the site in their own vehicles and, given that the nearest towns are several hundred kilometres by road from the proposed mine, workers are not expected to have the opportunity to travel to these towns while on roster. This is in contrast to towns such as Moranbah where workforce accommodation is often within or in close proximity to the town, allowing workers the opportunity to visit the town for groceries or socialising.

If workers are recruited from towns such as Clermont, Charters Towers or Emerald for example, these workers will return to these towns when off-roster. However, as these towns are the workers' home towns, the sorts of behavioural issues associated with non-resident workers are not likely to emerge.

During construction, some workers on the proposed rail line will be located at temporary construction camps closer to towns such as Clermont and Moranbah. Construction workers are also more likely to use their own vehicles to travel to the temporary construction camps, particularly where the workers have specialist tools and equipment to transport. Workers will therefore have some opportunity to visit these towns on rest days. Worker numbers at these temporary construction camps will be smaller than traditional mine operational workforces, and will not significantly increase the proportion of non-resident workers to residents. Nevertheless, there will be a need for construction contractors to develop and implement workforce behaviour management programs to:

- Educate workers on behavioural expectations, including in relation to the consumption of drugs and alcohol
- Provide for discipline of workers involved in anti-social behaviour or disturbances.

Overall, it is unlikely that there will be significant non-resident workforce presence in any of the towns in the DSA or RSA. Hence, impacts associated with behaviour of workers, and poor integration of workers into local communities are not expected. While adverse impacts on local communities are therefore not expected, the negative aspect of this is that there will be limited opportunity for workers to utilise local businesses. While this is unlikely to result in a downturn in local business, it will also not contribute to faster growth. Potential impacts associated with community values and changes are outlined in Section 6.9.

Family Stresses

While it is not possible or practical to relocate workers families to the mine site to keep families together, it is recognised that stress may occur in worker's families and some workers may also suffer from effects of isolation from social and support networks.

Adani is extremely aware of the potential impacts of a large FIFO workforce located a considerable distance from the nearest town and is developing workforce management plans which seek to address these issues, both for workers at the camp, and families. For the operational phase, it is recognised that health and safety encompasses the health and wellbeing of workers. Strategies

are outlined in Section 7.6.4 and will include programs in relation to individual health and wellbeing including management of medical conditions when away from home, maintenance of physical fitness, management of stress and isolation, healthy eating and alcohol consumption.

Other Workforce Issues

As employment in the mining sector tends to pay above the average wage, even relatively young people employed in the mining sector are earning high salaries. During consultation, some stakeholders noted that many young people employed in the mining sector appear to not have the skills to manage high incomes. As such, there is a perception that many young people employed in the mining sector are financially irresponsible or do not make sound financial decisions.

Table 6-3 identifies the impacts on workforce and families. Looking to the future Adani will need to develop new roles and ways of working to achieve sustainability. It is clear from the sector and supporting statistical data that there is a need to ensure that the workforce is more flexible.

Table 6-3: Potential Impacts on Workforce and families

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Mine						
Physical and mental health isolation, separation from families, etc)	Construction and Operation	Possible	Moderate	Medium	Workforce	Negative
Impacts on families in source communities through separation	Construction and Operation	Possible	Moderate	Medium	Workforce and families	Negative
Rail						
Physical and mental health isolation, separation from families, etc)	Construction and Operation	Possible	Moderate	Medium	Workforce	Negative
Impacts on families in source communities	Construction and Operation	Possible	Moderate	Medium	Workforce and families	Negative

6.5 Economic Growth and Regional Development

6.5.1 Overview of the Issues

Through SIA consultation stakeholders have identified that the proposed mine and rail project may give rise to economic and employment benefits. These can generally be classified into three areas:

- Provision of goods and services to the project from local businesses
- New employment opportunities, apprenticeships and training resulting in long term career pathways for residents of the local and district study areas and to a lesser extent, the regional study area
- Flow on benefits in terms of employment and business activity at a regional level from increased economic activity.

6.5.2 Opportunities for Local and Regional Businesses

The proposed mine and associated infrastructure will require a range of goods and services which will be supplied by contractors. Requirements during both construction and operations may include routine and non-routine maintenance of mine plant, civil and structural engineering works,

equipment and vehicles, supply of food and other consumables to the workers accommodation village, laundry services, transportation services and services associated with environmental monitoring and rehabilitation. Local and regional businesses may be able to supply some of these services.

Local individuals and businesses have expressed a desire to register their interest for the Carmichael Coal project in relation to employment and the supply of goods and services. Currently, there are a number of businesses within the Clermont locality that service the two existing coal mines in the area, as well as other projects in the region. The following businesses/activities occur in the Clermont locality and are currently involved with mining projects:

- Auto electrical services and mechanical workshop services
- Building construction
- Pipe supplies
- Concrete batching
- Plumbing services
- Electrical contracting
- Road construction and earth moving
- Food supplies
- Steel fabrication
- Fuel supplies transport – overnight and general freight
- Heavy diesel fitting
- Tyre repair services
- Industrial equipment hire
- Waste recycling (specialist services for mines).

Both Mackay and Bowen are large regional centres and as such, there are local businesses in operation which would be able to supply goods and services to the rail operations.

The extent to which local and regional businesses will be able to supply goods and services to the Project will depend on a number of factors including the ability of the business to meet demand. In stakeholder consultation, local businesses reported that they find it difficult to compete with mining jobs in terms of pay, and that attracting and retaining apprentices is also a problem as apprentices tend to move into the mining sector. Local businesses, and to a lesser extent regional businesses in Mackay and Bowen may therefore be limited in their ability to expand to meet increased demand from a new mine.

Local businesses are generally quite small in size, and while many will have the advantage of reduced costs due to proximity to the proposed mine and rail, some may also struggle to compete with larger business located in larger centres. A local industry participation plan is proposed to establish linkages between the project and local and regional businesses, and the project. Further information on the local industry participation plan is provided in Section 7.7.

6.5.3 Employment Opportunities in the Local And District Study Area

As outlined in Section 1, there is a considerable construction and operational workforce required for the project. Demographic analysis indicates that there are already a number of people in the LSA, DSA and RSA with suitable skills for working on construction and mining projects.

Unemployment is very low in the IRC LGA, and thus, there may not be a large pool of available workers. Unemployment is higher in the CTRC LGA.

Construction workforce for the mine and rail will generally be provided by contractors and subcontractors working on the construction project, and any opportunities for local employment is likely to be through these contractors and subcontractors. As construction work is temporary in nature, district residents looking for long term job opportunities would need to be prepared to move with the contractor to its next project, either on a permanent or FIFO basis. This may limit the attractiveness of construction work for local residents.

The workforce strategy for mine operation is based on recruiting workers from across Queensland and Australia on a FIFO basis. As noted in Section 1, until road infrastructure is improved, opportunities for residents from the DSA to gain employment at the proposed mine are likely to be limited. However, it is expected there will be a demand from local businesses to increase their workforce to meet the demands of the project. This will require additional apprentices, trainees and skilled staff. As noted previously, there are difficulties recruiting and retaining staff in areas other than the mining sector already and a cooperative approach to ensuring local businesses can meet the needs of the project will be required. SIA consultation identified that some Clermont businesses have workers on '457' sub-class visas⁵. Businesses have purchased houses and furnished them for overseas workers. It is understood that businesses have been using '457' workers for some years and it has been working very well. The opportunity to expand business and take on apprentices or trainees is welcomed by local business.

For the rail operation, employment opportunities will be much lower than for the mine, with around 120 workers required. Jobs will be centred on Bowen or Mackay and it is expected that workers for the rail operations will either be recruited locally or move to Bowen or Mackay. Rail operations work will involve shift work, but due to the proximity to major towns, workers will be able to return home between shifts and there will not be a requirement to be located in a workers accommodation village when on-roster.

6.5.4 Indigenous Employment and Business Opportunities

According to Lockie et al. (cited in ELH, 2012) economic development has had considerable negative impacts on traditional owners in the Bowen Basin region. Lockie et al also argue however, that the potential for improved outcomes for Indigenous people as a result of mining development is better than that which followed pastoral development which took place in an earlier era. Positive opportunities which have been identified during consultation with traditional owners groups include:

- A range of sustainable employment options for Indigenous people, not “just dump truck operators”. To make employment options sustainable, it was suggested that accommodation for families in the mining camps be provided to enable family units to remain together
- Increased employment opportunities within the 'local' area which may entice Indigenous people who are already working in the mining sector in Western Australia back to country enabling them to be closer to their families
- Bursaries/scholarships for indigenous trainees who attend TAFE, with payments linked to successful completion of courses
- Joint venture agreements with Adani or contractor to provide training in heavy machinery and equipment use.

⁵ The subclass 457 visa is for skilled workers from outside Australia who have been sponsored and nominated by a business to work in Australia on a temporary basis. A business can sponsor a skilled worker if they cannot find an appropriately skilled Australian citizen or permanent resident to fill a skilled position.

Accommodation was also raised as an issue through indigenous consultation, where differing opinions were expressed. The Jangga representatives prefer that Indigenous people be integrated with non-Indigenous people in the camps, while the Barada Barna representative preferred separate camps to mitigate currently experienced on-going problems with racism in large mining camps.

Adani has commenced engagement with traditional owners and Indigenous groups through the cultural heritage management plan and native title processes and through stakeholder consultation activities. Adani will continue to work with traditional owners and Indigenous groups to further develop and agree indigenous business and employment opportunities.

6.5.5 Flow-on Benefits to the Regional and State Economies

The Econsearch (2011) report which was undertaken at the ABS Mackay Statistical Division level states that for the construction and operation of the Project (Mine) and Project (Rail), direct and flow-on Gross Regional Produce (GRP) in the Mackay region are positive.

The Economic Assessment of the Project (refer EIS Volume 4 as Appendix H) states that the potential of the Project to produce significant positive impacts on the local and State economies is substantial. In order to ensure the range and extent of positive impacts can be achieved, a number of measures to mitigate negative impacts will need to be put in place, including strategies such as an increase in local participation of regional and Queensland based industry as well as encouraging the participation and up-skilling of disadvantaged groups such as indigenous communities. Such strategies will require assessment frameworks to be developed that should include a mix of project specific indicators as well as quantitative statistics well proven in tracking the success of strategies and policies.

6.5.6 Summary of Potential Impacts on the Local Economy

Table 6-4 shows the potential impacts on local economic growth and regional development.

Table 6-4: Impacts on Economic Growth and Regional Development

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Mine						
Employment, apprenticeships, training associated with local businesses to attract and retain people within the local community working for local businesses	Construction and operation	Possible	Major	High	Local community	Positive
Provision of goods and services to the project from local businesses in Clermont increasing the ability of local business to remain stable or grow	Construction and operation	Likely	Moderate	Medium	Local community	Positive
Providing employment and training opportunities for Indigenous people	Construction and operation	Possible	Moderate	Medium	Indigenous community	Positive
Difficulties with integration of indigenous people in accommodation villages.	Construction and operation	Possible	Moderate	Medium	Indigenous Community	Negative
Development of the local, district and parts of the wider regional area through Royalties for the Region	Operation	Very likely	Moderate	High	Local, parts of the district and parts of the regional	Positive

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
					community	
People move from being employed in local business into the mining sector reducing the ability of local business to meet demands for goods and services	Construction and operation	Possible	Moderate	Medium	Local community	Negative
Rail						
Employment, apprenticeships, training within local businesses in Clermont and Moranbah supplying the rail construction	Construction	Possible	Major	High	Local community	Positive
Provision of goods and services to the project from local businesses in Clermont increasing the ability of local business to remain stable or grow	Construction	Likely	Moderate	Medium	Local community	Positive
Providing employment and training opportunities for Indigenous people	Construction and operation	Possible	Moderate	Medium	Indigenous community	Positive
People move from being employed in local business to take advantage of potential higher paid construction work reducing the ability of local business to meet demands for goods and services	Construction	Possible	Moderate	Medium	Local community	Negative

6.6 Roads, Traffic and Road Safety

The Mine site is located just off the Moray Carmichael Road accessed via the Gregory Developmental Road. The Mine will generate an increase in vehicle traffic along the route with the transport of equipment and supplies from both the north (Townsville) and the south (Moranbah, Clermont, Mackay) particularly during construction. With the workforce being FIFO, traffic is expected to be predominantly generated by the transport of goods and services, with fewer personnel movements.

There will be a higher number of personnel movements by road during construction as people are transported via bus or 4WD to and from construction camps and construction locations. With much of the transport of equipment to site being via road, there is a high risk of damage to the road infrastructure, especially the local roads which are not designed for heavy and wide traffic. Disruption to traffic can be expected during construction as equipment and materials are transported to site, especially along the Gregory Developmental Road. Transport of materials associated with the rail construction will also have an impact on the road network with an increased number of heavy vehicles transporting equipment and supplies to various locations along the rail alignment. Increased pressure on Police for over-dimensional permitting and escort on roads is a concern for QPS.

The Gregory Developmental Road is a significant tourist route for the Isaac Region and an increase in heavy traffic will have an impact on tourists, especially 'grey nomads' towing trailers who are not used to encountering large, heavy and often wide vehicles on regional roads.

At this stage, DIDO options are not being considered for the Project (Mine). The risk of driver fatigue increases with people driving to and from site before and after rosters. Driver fatigue and speed have both been identified as issues by QPS during SIA consultation.

The rail line will also require the construction of level crossings along the route resulting in potential conflicts between rail and road traffic that will need to be managed by the installation of appropriate safety warning measures.

SIA consultation identified that during operation, the rail may result in delays to emergency services, school bus routes, stock movements (vehicle and foot), and local traffic at intersections that are not grade separated. The nature of the delay has been estimated in the EIS Transport Report (EIS Volume 3, Section 11). This report estimates a maximum of six vehicles will be impacted by train movement during the peak hour at grade crossings. These vehicles would be required to wait for a maximum of four minutes and 30 seconds.

A number of mitigation measures are proposed to manage roads, traffic and safety to be incorporated into traffic management plans for the project. Mitigation and management measures are outlined in Section 7.

Table 6-5 shows the impacts on roads, traffic and safety.

Table 6-5: Impacts on Roads, Traffic and Road Safety

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Mine						
Traffic disruption along the Gregory Developmental Road, Peak Downs Highway (from Mackay), and the Flinders Highway (from Townsville) during construction	Construction	Almost certain	Minor	Medium	Road users	Negative
Increased traffic during operation on the Gregory Developmental Road, including safety of tourist traffic not familiar with large heavy vehicles on narrow roads	Operation	Almost certain	Minor	Medium	Road users	Negative
Increased maintenance requirements on local and state roads as a result of mine construction and operation	Construction and operation	Possible	Moderate	Medium	Road users, IRC and Transport and Main Roads	Negative
Rail						
Traffic disruption along the Gregory Developmental Road, Peak Downs Highway (from Mackay), and the Flinders Highway (from Townsville) during construction	Construction	Almost certain	Minor	Medium	Road users	Negative
Delays to traffic, including emergency services as a result of level crossings along the rail corridor	Operation	Possible	Moderate	Medium	Road users	Negative

6.7 Landholder and Amenity Impacts

Land currently utilised for agricultural purposes will be converted to a mine site and railway line. Some landholders will have their property (or properties) split by the mine site and/or the railway

line. Adani is the leaseholder for the main property affected by the proposed mine and off-site infrastructure, Moray Downs.

This will create property management issues for landholders, particularly in relation to movement of stock and equipment across and between properties. Wait times for stock on foot or in trucks due to rail movements or project related road traffic may cause distress to cattle. Wait times will generally be in the order of five to ten minutes and hence not be long enough that cattle will lose condition. Time taken for landholders to complete tasks such as stock movement will potentially increase.

As the life of the project is 90 years, this effectively sterilises land within the project footprint. Further consultation will be undertaken with landholders as part of detailed land acquisition discussions to identify optimal locations for stock and occupational crossings of the railway line that minimise impacts on property management practices while also meeting safety requirements. Where possible, grade separation will be provided, otherwise, gates and fencing will be required to prevent interactions with trains.

The Project will also cause changes to the natural environment, as identified in other technical studies within the EIS, and changes to the landholders living environment may be experienced. Both construction and operation may give rise to noise and dust emissions and detailed assessments of these potential impacts have been undertaken for the mine and rail, and are presented in Volumes 2 and 3, Sections 7 (Air Quality) and 9 (Noise and Vibration) of the EIS. Landholders have raised concerns about health impacts of coal dust from trains. Noise and dust levels meet Queensland environmental protection objectives at the majority of residential locations and health impacts are therefore not expected. Coal dust management along the railway line will comply with standards set by QR Network in its Coal Dust Management Plan (QR Network, February 2010).

Cattle and other animals may be disturbed by noise and activity from construction and operation of the Project, particularly the rail project. However, observations indicate that cattle in paddocks bordered by rail lines or main roads appear to adapt to the disturbance.

Components of the mine and rail will also be visible from residences and from other locations on properties. A visual impact assessment has been undertaken and is presented in EIS Volume 4, Appendix K - Mine Landscape Visual Assessment, and Appendix X – Rail Landscape Visual Assessment. The assessment concluded that there were minimal impacts on visual amenity.

Processes relating to land access and land acquisition for major projects can be time consuming and stressful for landholders. This stress may cause or exacerbate personal and interpersonal issues and negative behaviours. While landholders will be compensated for loss of land and earnings, there may be a residual sense of loss associated with changes to the land. Adani will seek to minimise stress to landholders through its processes during land negotiations. Statutory requirements for land acquisition processes also allow landholders to access information requirements independently and get independent support from legal advisers, land valuers and other professionals during the process.

Issues associated with water ponding and flooding due to the rail formation impacting existing overland flow paths are also a concern for landholders. This issue is being addressed through detailed local flooding studies and adoption of design measures to convey flood flows through the rail line as outlined in EIS Volume 4 Appendix AB – Rail Hydrology Report and Appendix P – Mine Hydrology Report.

With the presence of trains, construction and rail maintenance workforce and vehicles on properties, landholders are concerned about an increased risk of fire. The consequences of fire can be extreme to families and businesses that rely upon their properties for their livelihoods.

Landholders may find themselves burdened with increased demands to respond to fires. Adani will adopt current industry standards in relation to minimising fire risk from rail construction and operation.

Table 6-6 shows the potential impacts on landholders and amenity.

Table 6-6: Potential Impacts on Landholders and Amenity

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Mine						
Changes to the living environment from increased noise and dust and reduced visual amenity	Construction and operation	Likely	Moderate	Medium	Landholders	Negative
Disruption to cattle operations and increased labour requirements	Construction and operation	Almost certain	Minor	Medium	Landholders	Negative
Rail						
Changes to the living environment from increased noise and dust and reduced visual amenity	Construction and operation	Likely	Moderate	Medium	Landholders	Negative
Changes to the natural environment from changes to overland flow paths with potential for increased ponding	Construction and operation	Very likely	Minor	Medium	Landholders	Negative
Disruption to cattle operations and increased labour requirements	Construction and operation	Almost certain	Minor	Medium	Landholders	Negative
Increased fire risk along the rail corridor	Construction and operation	Possible	Extreme	High	Landholders	Negative

6.8 Social Services and Infrastructure

6.8.1 Potential Demographic Changes

Major projects such as the Project can result in significant demographic changes due to influx of workers. Increased populations of resident and non-resident workers can place pressure on social and community services and infrastructure.

However, the workforce recruitment and accommodation strategy proposed by Adani will limit changes to populations in existing towns.

During both construction and operation, it is anticipated that the large majority of workers will be sourced on a FIFO basis, and, when on roster, will reside in a large permanent workers accommodation village at the proposed mine site and, during construction, temporary construction camps along the rail alignment. It is not intended to house any workers in existing housing or accommodation facilities in Clermont, Moranbah or other locations and an influx of workers and families is therefore not expected. Existing residents of the local and district study areas may be recruited by Adani or its contractors but this will not change the demographic profile of either the district or local study areas.

Approximately 120 rail operators are required and recruitment may include both recruitment from existing local population and relocation of workers from other locations. It is expected that rail operators will be based in the larger population centres of Mackay and Bowen. As the number of

workers required is small compared to the populations of Bowen and Mackay, it is unlikely to have a significant impact on the populations beyond that already factored into population forecasts.

The only other source of demographic change at a local and district level may arise from stimulation to the local and regional economy which in turn may lead local businesses to expand in order to be able to supply goods and services to the proposed mine and rail project. This may require recruitment from outside the local and district study areas and, in this case, it is likely that workers and families would relocate to the area. Associated population changes would be gradual and may not be discernible in larger centres of Emerald and Charters Towers.

6.8.2 Potential Impacts

Concerns were raised during SIA consultation regarding the current capacity of health and emergency services in the local and district study area. Pressures on telecommunications, particularly in Moranbah where there are existing problems accessing the internet at peak times, were also identified. Stresses placed on workers and their families as a result of FIFO can lead to an increased demand for social services, especially emergency (social) housing which is at present under considerable pressure in Moranbah in particular. SIA consultation noted that there have been instances where FIFO workers have had to be temporarily removed from camps as a result of anti-social behaviour which may be attributable to family stress. In this instance, local support services have provided assistance. Other government agencies and services such as education and police are also already reported to be under considerable stress in the local and district study area and stakeholders indicated that for some services, capacity does not seem to be expanding in response to an increase in mining activity across the region.

QPS has raised the issue of increased resourcing required for the management of incidents and emergencies on and off the proposed mine site and along the railway line. QPS indicated in July 2012 that Clermont has received additional Police resourcing in anticipation of mining activity in the wider area.

Non-resident workers tend to have a very low participation rates in community service organisations and sporting clubs as they are not present in the community when off-roster. Despite large apparent populations, communities can sometimes find it difficult to field a sporting team when many team members are 'on roster' and volunteer organisations find it difficult to provide services to the community. By not participating in these sorts of activities, non-resident workers can be disconnected from the community and are not seen to contribute to vibrancy and social sustainability within the community.

As identified in Sections 1, 6.3 and 6.4, the proposed workforce management and accommodation strategy for both the construction and operation phases of the mine and rail project will minimise presence of non-resident workers in existing communities. Distances from the mine and western end of the rail alignment, and the intention to fly workers directly to a purpose built airstrip near the proposed workers accommodation village will preclude workers being able to travel to Clermont or other local or regional centres to access community services and infrastructure.

The workers accommodation village at the mine site is intended to be relatively self-sufficient with regard to communications infrastructure, recreational facilities and medical services and there will be no or very limited demand on government or private sector services provided in Clermont or other population centres. Security services will be provided, but in the event that a serious crime is committed, local police will need to attend to undertake a formal investigation and, if appropriate, make arrest(s).

Construction camps for the rail construction will be temporary and have smaller capacity, as such, will not have the level of services proposed for the mine workers accommodation village. Further,

construction workers may be utilising their own vehicles to travel to the workers accommodation village and construction site, particularly where they have specialised tools and equipment. Hence, during the construction period, workers at the workers accommodation villages may access towns such as Moranbah and make use of services available in the towns. However, the number of workers present is relatively small and construction is short term in nature, and hence, exacerbation of existing issues in towns such as Moranbah is not expected.

Overall, the construction and operation activities are not expected to exacerbate existing issues in relation to social services and infrastructure.

An emergency management plan will be developed for all components of the project and this will include response to injuries and medical evacuations as well as fire response and response to road accidents. However, it is likely that local fire, police and ambulance services may also be required to respond, particularly to accidents on access roads, in the event of a suspected crime, and to large fires that extend beyond the project area.

Adani will consult further with emergency service providers during the pre-construction, construction and operation phases in relation to emergency management and response such that response can be coordinated and impacts on emergency service providers minimised. There may also be some opportunities for medical facilities at the mine site to be available to nearby residents, and for the airstrip to be utilised by others such as the in the event of emergencies requiring evacuation. Further detail regarding the provision of medical and other emergency services is included in Section 7.9.

Those employed directly by the mine and rail construction are not expected to increase the demand on social services during construction. Due to the remoteness of the mine site in particular, the management of workforce health and wellbeing is particularly important and personnel are expected to have access to counselling and support services at the accommodation facilities, rather than rely on service providers in Clermont or other population centres.

Some population growth may occur in Clermont and, to a lesser extent other communities in the local and district study area as a result of increased economic stimulation. Growth is likely to be gradual and within population growth forecasts developed by OESR as these growth forecasts factor in known major projects in the region. SIA consultation indicated that such population growth can have both positive and negative impacts. Stakeholders felt that an increased population base would increase the vibrancy and social sustainability of the town, and also provide increased participation in community and sporting activities. On the negative side, demand for social and community services and infrastructure would increase and may lead to pressure on these services.

Population growth involving relocation of workers and their families to take part in local businesses is not likely to cause the types of impacts seen in communities where there is an influx of non-resident workers. There would be an increased demand for community and social services and infrastructure but as changes would be gradual, it should be possible for this to be accommodated within normal planning processes for service provision.

The Clermont Preferred Futures Group is looking to understand the potential impacts of mining activity on the community and develop a plan to accommodate this while maintaining the community values and aspirations for the town. Adani will continue to work with the IRC and the Clermont Preferred Futures Group to monitor population and demographic changes in Clermont and the former Belyando Shire area and develop responses as required to address any emerging social issues.

As outlined in the Carmichael Rail Line Concept Design (Aarvee Associates, 2011) site communications during construction will be generally UHF/VHF radio while on site, with a mix of Next G, satellite and existing hard asset communication technology for the operation of site administration facilities within the camps. One or more of these technologies is expected to be implemented at each campsite to suit to conditions. SIA consultation raised concerns about the capacity of the existing 3G network and its ability to cater for an increased load.

Table 6-7 shows potential impacts on social services and infrastructure.

Table 6-7: Potential Impacts on Social Services and Infrastructure

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Mine						
Increased demands on emergency services, including police, as well as health and education services as a result of an increased population at the mine site	Construction and operation	Likely	Moderate	Medium	Government agencies and services	Negative
Increased demands on social services to respond to the needs of the FIFO population	Construction and operation	Possible	Moderate	Medium	Service providers in communities	Negative
Rail						
Increased demands on emergency services, including police, as well as health and education services as a result of populations in construction camps	Construction	Likely	Moderate	Medium	Government agencies and services	Negative
Increased demands on social services to respond to the needs of construction workers	Construction	Possible	Moderate	Medium	Service providers in communities	Negative

6.9 Community Values and Change

There is concern amongst landholders and the wider community regarding the behaviour of the non-resident workforce and their impact on the community. These concerns are most likely based on previous experiences, either of the individuals or of those in their social networks and are related to violence, anti-social behaviour, and drug and alcohol abuse and the safety issues posed to local communities. QPS has raised similar concerns with potential for an increase in rural crime, including illegal hunting, trespass, 4WD damage to properties, theft, and break-ins. A further concern of social support agencies is that accommodation camps have the potential to be isolated during the wet season and limit employees' access to services (if they are provided locally) which may cause anxiety and stress. QPS also identified the potential for the mine activity to increase undesirable activities such as gangs, prostitution and drug use.

Available crime statistics do not point to significantly higher crime levels in areas impacted by mining and non-resident workforces and it is not anticipated this will occur for this Project either, particularly given the proposed workforce accommodation strategy. However, it is also recognised that the presence of a largely male non-resident workforce can generally lead to a reduced sense of security and comfort for local residents, particularly women and older residents who may feel more vulnerable.

The mine site is relatively remote from local communities, along with several of the rail camps. Workers for the mine and two of the rail camps are to be flown directly from a FIFO base to the

mine site and bussed to the camps resulting in no opportunity for workers to enter local communities and engage in antisocial or criminal behaviour. All workers, including contractors will be required to abide with a Code of Conduct regarding behaviour.

Table 6-8 shows the potential impacts on community values and change.

Table 6-8: Potential Impacts on Community Values and Change

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Mine						
Increased crime and antisocial behaviour within the local communities from the FIFO workforce	Construction and operation	Unlikely	Moderate	Low	Local communities	Negative
Rail						
Increased crime and antisocial behaviour within the local communities from the construction workforce	Construction	Unlikely	Moderate	Low	Local communities	Negative

6.10 Summary of Potential Unmitigated Impacts

A summary of impacts and their significance rating is presented in Table 6-9. Residual impact levels after mitigation and management measures have been implemented are included in Section 7.

Table 6-9: Summary of Unmitigated Impacts and Significance Rating

Impact	Timing / Project Phase	Status of Impact	L/C Rating	Impacted Party
Housing and accommodation demand				
Mine				
Higher cost of living in Clermont as a result of higher housing prices, rental prices as workers in support industries seek to reside in the local community	Operation	Negative	Medium	Local community
Workforce Management				
Mine				
Physical and mental health (isolation, separation from families, etc)	Construction and operation	Negative	Medium	Workforce
Impacts on families in source communities through separation	Construction and operation	Negative	Medium	Workforce and families
Rail				
Physical and mental health (isolation, separation from families, etc)	Construction and operation	Negative	Medium	Workforce
Impacts on families in source communities	Construction and operation	Negative	Medium	Workforce and families
Economic growth and regional development				
Mine				
Employment, apprenticeships, training associated with local businesses to attract and retain people within the local community working for local businesses.	Construction and operation	Positive	High	Local community
Provision of goods and services to the project from local businesses in Clermont increasing the ability of local business to remain stable or grow	Construction and operation	Positive	Medium	Local community
Providing employment and training opportunities for Indigenous people	Construction and operation	Positive	Medium	Indigenous community
Difficulties with integration of indigenous people in accommodation villages.	Construction and operation	Negative	Medium	Indigenous Community
Development of the local, district and parts of the wider regional area through Royalties for the Region	Operation	Positive	High	Local, parts of the district and parts of the regional community
People move from being employed in local business into the mining sector reducing the ability of local business to meet demands for goods and services	Construction and operation	Negative	Medium	Local community
Rail				
Employment, apprenticeships, training within local businesses in Clermont and Moranbah supplying the rail construction	Construction	Positive	High	Local community

Impact	Timing / Project Phase	Status of Impact	L/C Rating	Impacted Party
Provision of goods and services to the project from local businesses in Clermont increasing the ability of local business to remain stable or grow	Construction	Positive	Medium	Local community
Providing employment and training opportunities for Indigenous people	Construction and operation	Positive	Medium	Indigenous community
People move from being employed in local business to take advantage of potential higher paid construction work reducing the ability of local business to meet demands for goods and services	Construction	Negative	Medium	Local community
Roads, traffic and safety				
Mine				
Traffic disruption along the Gregory Developmental Road and Flinders Highway (from Townsville), Peak Downs Highway (from Mackay), during construction	Construction	Negative	Medium	Road users
Increased traffic on the Gregory Developmental Road, including safety of tourist traffic not familiar with large heavy vehicles on narrow roads	Operation	Negative	Medium	Road users
Increased maintenance requirements on local and state roads as a result of mine construction and operation	Construction and operation	Negative	Medium	Road users, Council and Transport and Main Roads
Rail				
Traffic disruption along the Gregory Developmental Road and Flinders Highway (from Townsville), Peak Downs Highway (from Mackay), during construction	Construction	Negative	Medium	Road users
Delays to traffic, including emergency services as a result of level crossings along the rail corridor	Operation	Negative	Medium	Road users
Landholder and amenity				
Mine				
Changes to the living environment from increased noise and dust and reduced visual amenity	Construction and operation	Negative	Medium	Landholders
Disruption to cattle operations and increased labour requirements	Construction and operation	Negative	Medium	Landholders
Rail				
Changes to the living environment from increased noise and dust and reduced visual amenity	Construction and operation	Negative	Medium	Landholders
Changes to the natural environment from changes to overland flow paths with potential for increased ponding	Construction and operation	Negative	Medium	Landholders
Disruption to cattle operations and increased labour requirements	Construction and operation	Negative	Medium	Landholders
Increased fire risk along the rail corridor	Construction and operation	Negative	High	Landholders

Impact	Timing / Project Phase	Status of Impact	L/C Rating	Impacted Party
Social services and infrastructure				
Mine				
Increased demands on emergency services, including police, as well as health and education services as a result of an increased population at the mine site	Construction and operation	Negative	Medium	Government agencies and services
Increased demands on social services to respond to the needs of the FIFO population	Construction and operation	Negative	Medium	Service providers in the local and source communities
Rail				
Increased demands on emergency services, including police, as well as health and education services as a result of populations in construction camps	Construction	Negative	Medium	Government agencies and services
Increased demands on social services to respond to the needs of construction workers	Construction	Negative	Medium	Service providers in the local community as well as source communities
Community values and change				
Mine				
Increased crime and antisocial behaviour within the local communities from the FIFO workforce	Construction and operation	Negative	Low	Local communities
Rail				
Increased crime and antisocial behaviour within the local communities from the FIFO workforce	Construction	Negative	Low	Local communities

7. Mitigation and Management Strategies

7.1 Introduction

This section contains the details of the mitigation and management strategies to address potential impacts described in Section 1. Due to the long-term nature of the project and the uncertainty regarding technology in the future, economic decisions and other outside of Project influences, the mitigation measures developed have been considered for a 10-20 year life. Some will however provide more permanent benefits. As the mitigation measures and the SIMP do not correspond to the total anticipated life of the project, it is anticipated that the SIMP will be reviewed regularly through the life of the project to provide a 5 year management horizon.

In summary, strategies include:

- Project design
- Landholder agreements
- Stakeholder Engagement
 - Engagement Plan
 - Membership of the Clermont Preferred Futures Group
- Housing and Accommodation
- Workforce management
 - Workforce behaviour
 - Recruitment, education and training
 - Safety and wellbeing
- Local Industry Participation Plan
- Community health and safety
- Emergency services planning and consultation
- Community development initiatives

Other technical study management plans that will also influence the management of potential social impacts are opportunities include:

- Environmental Management Plan (construction and operation)
- Cultural Heritage Management Plan
- Traffic Management Plan
- Emergency Response Plan.

Table 7-1 provides a matrix indicating how the various management and mitigation strategies work to address the impacts.

Table 7-1: Impacts and Key Mitigations Matrix

Impacts	Mitigation Strategies										
	Project design	Landholder agreements and land management	Stakeholder Engagement	Housing and accommodation	Workforce management - behaviour	Workforce management – recruitment, education and training	Workforce Management Health, Safety and Wellbeing	Local Industry Participation Plan	Community health and safety	Emergency services planning and Consultation	Community Development
Housing and Accommodation											
Increased cost of housing			✓	✓				✓			✓
Workforce Management											
Physical and mental health isolation, separation from families, etc)						✓	✓				
Impacts on families in source communities							✓				
Economic Growth and Regional Development											
Employment, apprenticeships, training			✓			✓	✓	✓			
Local business supply of goods and services			✓	✓				✓			
Retention of staff in local businesses			✓				✓	✓			
Indigenous employment			✓			✓	✓	✓			✓
Community Health, Safety and Security											
Road, Traffic and Safety											
Traffic disruption during construction	✓	✓	✓						✓	✓	
Increased traffic during construction and operation	✓	✓	✓						✓	✓	
Increased maintenance requirements for roads	✓		✓								✓
Delays to emergency services at rail crossings	✓		✓						✓	✓	
Landholder and Amenity											
Increased noise and dust and reduced visual amenity	✓	✓	✓								
Changes to overland flow paths and increased flooding	✓	✓	✓								
Disruption to cattle operations and increased labour requirements	✓	✓	✓								

Impacts	Mitigation Strategies										
	Project design	Landholder agreements and land management	Stakeholder Engagement	Housing and accommodation	Workforce management - behaviour	Workforce management – recruitment, education and training	Workforce Management Health, Safety and Wellbeing	Local Industry Participation Plan	Community health and safety	Emergency services planning and Consultation	Community Development
Increased fire risk along the rail corridor	✓	✓	✓							✓	
Social Infrastructure and Services											
Increased demands on emergency services, health and education			✓				✓			✓	✓
Increased demands on social services			✓	✓			✓				✓
Community Values and Change											
Increased crime and antisocial behaviour			✓		✓						✓

7.2 Project Design

Impacts of the Project on landholders and the community have already been considered in project design and development to date. Design aspects incorporated to date include:

- Alignment of the rail corridor to follow property boundaries as far as practicable to reduce the impact on landholdings
- Alignment of the rail corridor to avoid dwellings, other farm buildings, stock yards and other farm infrastructure, wherever possible.
- Location of off-site mine infrastructure to minimise impacts on nearby homesteads
- Grade separation between rail and existing roads at major intersections:
 - Gregory Development Road
 - Kilcummin Diamond Downs Road
 - Amaroo Road
 - Avon Road
- Design of the railway line to manage stream and overland flows such that ponding and exacerbation of flooding is controlled
- Fencing of the alignment
- Installation of stock and occupational crossings (see also Section 7.4)
- Consistency with the approaches to rail dust issues set out in the QR Network Coal Dust Management Plan
- Upgrade of Carmichael Moray Road and intersection with Gregory Development Road.

As design progresses to detailed design, further opportunities to minimise project related impacts may include:

- Further optimisation of the rail alignment within the nominated corridor
- Location of construction camps and construction infrastructure

Adani is actively working with potentially affected landholders and IRC regarding the location of the construction camps to reduce the significance of the potential impacts. In some locations along the rail corridor there will be a need for additional construction infrastructure. Adani is working with landholders on the location of the laydown areas and concrete batching plants.
- Construction access routes to minimise impacts on local road users
- Road and intersection upgrades as required.

7.3 Landholder Agreements and Land Management

Adani is committed to resolving land access and land acquisition through amicable negotiation processes. A statutory process exists for this under the *Land Act 1994* and, depending on the final mechanism for establishing the corridor, the *State Development and Public Works Organisation Act 1971*. For the mine, the *Mineral Resources Act 1989* also sets out requirements in relation to the grant of the mining lease. As part of this negotiation:

- Landholders will be able to retain independent legal advisors and land valuation specialists

- Locations and design for stock and vehicle/equipment crossings of the rail line will be agreed based on minimising impacts on access to bisected properties and taking into account engineering design constraints
- A combination of in-kind and/or monetary compensation for land value and value of affected improvements will be agreed. Where the rail alignment renders portions of a property unfeasible for the current use, the compensation agreement will reflect this and may include measures to retain productivity
- Temporary access requirements and any laydown areas and associated compensation will be agreed
- Any access restrictions or critical timing issues will be resolved
- Ongoing management aspects during operation of the rail line will be documented. These matters will be covered on a case by case basis, and may include access for maintenance, management of coal dust, management of noise and visual impacts, agreements regarding purchase of water and minimisation of fire risk.

Negotiations in relation to land acquisition are advanced with most landholders, however as the agreements are private agreements between Adani and the landholder, details are not disclosed within the SIA.

Project design measures discussed in Section 1.1 will also address minimisation of impacts on landholders. Land access protocols are also a critical aspect of minimising impacts on landholders and maintaining good ongoing relationships.

In relation to the Mine, it should be noted that Adani is the leaseholder for the Moray Downs property, which underlies much of the proposed mining lease area and on which the off-site infrastructure is located.

An element of the Stakeholder Engagement Strategy will be ongoing relations with landholders, including mechanisms for complaints and inquiries.

7.4 Stakeholder Engagement Strategy

Engagement with stakeholders is an important component to managing and monitoring the potential social impacts and opportunities of the Project. Stakeholder consultations will continue throughout the Project. Outlined below is a framework which is being used to guide the development of the strategy.

7.4.1 Goal and Objectives

The development of the strategy will seek to achieve the following goal and objectives.

Goal

To establish and maintain a social licence to operate where the community respects and trusts Adani through:

- Building awareness, understanding, and acceptance of the project by community stakeholders
- Establishing and maintaining community partnerships that benefit a range of stakeholders
- Enhancing Adani's understanding of stakeholder needs, issues and expectations.

Objectives


- Identify and inform stakeholders about the project's scope, timing and potential impacts and benefits
- Engage stakeholders through a variety of channels and capture their concerns and opinions about the Project to inform the project team's decision making process
- Ensure early identification of potential stakeholder issues and implement timely and appropriate mitigation strategies
- Create awareness and acceptance of the project with stakeholders
- Manage land access and acquisition processes to minimise project delays
- Position Adani as a good corporate neighbour that values community input.

7.4.2 Communication and Engagement Approach

The communication and engagement approach has and will be guided by the core values and principles of the International Association for Public Participation (IAP2). From an engagement perspective, a core principle will be to clearly communicate the level of involvement stakeholders and the community will have in the various aspects of the project.

IAP2 has developed a spectrum to define the level of public participation as shown in Figure 7-1. In most cases the level of participation for this project is anticipated to be Inform and Consult, however it is expected that through memberships of groups such as the Clermont Preferred Futures Groups and others, that a level of Involve will be incorporated.

Figure 7-1: IAP2 Spectrum of engagement



	Inform	Consult	Involve	Collaborate	Empower
Public participation goal	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solutions.	To place final decision-making in the hands of the public.
Promise to the public	We will keep you informed.	We will keep you informed, listen to you and acknowledge concerns and aspirations and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
Example techniques	<ul style="list-style-type: none"> ■ Fact sheets ■ Website ■ Open houses 	<ul style="list-style-type: none"> ■ Public comment ■ Focus group ■ Surveys ■ Public meetings 	<ul style="list-style-type: none"> ■ Workshops ■ Deliberative polling 	<ul style="list-style-type: none"> ■ Citizen advisory committees ■ Consensus-building 	<ul style="list-style-type: none"> ■ Ballots ■ Citizen juries ■ Delegated decision ■ Referendum

Source: International Association for Public Participation (www.iap2.org)

7.4.3 Strategic Approach

The strategy will focus on developing and maintaining partnerships.

Relationships developed during the EIS will be further developed with a view of taking a partnership approach to many relationships. Adani is going to be a member of the Isaac and wider community for many years and will seeking to establish itself as a responsible corporate member of the community through a partnership approach. Adani is seeking membership of the Clermont Preferred Futures Group in line with IRC's preference for this group to represent the Northern Galilee Basin. Adani is also a member of the Whitsunday Industry Workforce Development (WIWD) Steering Group, which meets regularly. Adani is at present also exploring membership of a range of other groups within the wider region.

Engagement undertaken and relationships developed during the EIS stage of the project will continue and all conditions within the EIS approval will be incorporated into the strategy/plan.

Adani will work in partnership with affected landowners and develop individual communication approaches to suit both parties. All contact with landholders will be coordinated and a single point of contact for landholders will be provided. All communication with landholders, not already agreed, will be through that single contact.

Collaboration

Adani is actively in discussions with other mining proponents in the Galilee Basin to discuss potential for a coordinated approach to a range of infrastructure. These discussions are preliminary only and the outcome will depend upon the commercial decision of each of the proponents, however the relationships have been established and the discussions will continue.

7.4.4 Key principles of Engagement

The following key principles of engagement will be included in the strategy:

- Be accessible to stakeholders and the community
- Be responsive and provide information in a timely manner
- Be open and honest to develop trust and respect, communicate to the public what you are doing and where possible show them.

7.4.5 Communication Tools and Techniques

The following tools and techniques are to be considered, but not limited to, in the strategy:

- Membership of relevant community development groups (such as Clermont Preferred Futures Group)

The existing group established in Clermont that will provide the function of the northern Galilee consultative group for all mining proponents, existing miners and other key stakeholders. See also Section 7.12.

- Community Liaison

A full-time Community and Landholder Liaison role, based within the region.

- Visitor Centre/Shop front or virtual portal

A fixed presence in the regional area, possibly as space within an existing community premise where people can come to view more information about the project and at set times possibly meet with and speak to a representative. Alternatively, given distances between centres, a virtual portal to Adani and the Project may be more practical.

- 1800 enquiry line

A 1800 telephone number will be established by Adani for the duration of the Project.

- Stakeholder meetings and agency briefings
Face-to-face stakeholder meetings and agency briefings will be conducted as required.
- Notification letters
A range of notification letters will be prepared and distributed to stakeholders as required throughout the project.
- Email updates
Updates on the project's key milestones will be regularly emailed to key stakeholders.
- Stakeholder database
A consultation database will be maintained for the project.
- Records of contact
Records of contact will be prepared when meeting with or speaking to a stakeholder and entered into the consultation database.
- Protocol documents
A series of protocol documents will be prepared identifying Adani standards and guidelines relating to stakeholder interactions, land access and any other relevant issues as they arise. The purpose of these documents is to ensure a consistent, professional representation of Adani in the public arena and ensure staff are aware of what is and is not acceptable when on private property. These documents will be distributed to field staff and other relevant staff at tool box talks.
- Email enquiry address
An email enquiry address will be established for the duration of project.
- Reply paid postal address
A reply paid postal address will be established.
- Public displays
Public displays will be conducted as required.
- Presentations
Presentations will be provided to a range of key stakeholder groups at key milestones throughout the project, and on request when possible.
- Newsletters
Project newsletters will be developed on a regular basis. In addition to reporting on activities at the mine, upcoming events, etc, the newsletter can also provide a snapshot of KPIs as they relate to mine operation with the intention of providing up-to-date, realistic information on forecasts for mining operations, workforce (including contractors) and project changes.
- Fact sheets and posters
Project fact sheets and posters will be developed for key milestones.
- Website and text updates
Website text will be prepared for the project.
- Public notices
Public notices will be developed at key milestones.

- Frequently Asked Questions (FAQs)
An FAQ document will be prepared and uploaded to the website.

7.5 Housing and Accommodation

The proposed worker accommodation strategy set out in Section 6-2 for construction and operation minimises potential impacts on housing and accommodation in the region.

A Draft Integrated Housing Strategy has been developed and is appended to the SIMP. The accommodation strategy includes accommodation for workers within:

- Workers Accommodation Village at the mine site for mine construction and operation workforce
- Temporary construction camps along the rail alignment during construction.

Given the remote location of the project site it is anticipated that all of the project workforce while on roster will be accommodated in one of the above mentioned accommodation options and there will be no requirement to locate workers in existing housing or accommodation in regional communities.

At this stage, as no direct housing impacts on local communities are expected, Adani has not included any measures in relation to housing in nearby communities its Integrated Housing Strategy. Through membership of the Clermont Preferred Futures Group and the IAHT, Adani will assist in monitoring trends in population and housing in regional communities. If there is a clear correlation between the Project and housing stress, Adani will work with these groups to develop solutions. More information on community development initiatives is provided in Section 7.10.

7.6 Workforce Management

7.6.1 Overview

During mine and rail operations, Adani's approach to workforce management is three-pronged:

- Behaviour of the workforce in the accommodation facilities, while travelling between the point of origin and the workplace and when in local and regional communities will be managed through a code of conduct and ongoing awareness raising activities
- A recruitment, education and training plan will be developed and implemented to maximise training and development opportunities and provide a sustainable skilled workforce
- Worker health, safety and wellbeing will be addressed in the Workplace Health and Safety Plan.

Construction contractors and subcontractors will be required to put in place equivalent programs in relation to worker behaviour and management.

7.6.2 Workforce Behaviour

Adani will develop a code of conduct setting out its expectations for workforce and contractor behaviour during mine and rail operations. This will cover:

- Equal opportunity in the workplace
- Tolerance of and respect for race, gender, religious views, political views and sexual preferences
- Bullying, stalking or harassment

- General behaviour, including aggressive and threatening behaviour
- Behaviour when travelling between the place of residence and the workers accommodation village / temporary construction camps
- Use of facilities and services and respect for property of Adani and individuals
- Zero tolerance of alcohol when in the workplace
- Responsible consumption of alcohol
- Zero tolerance of illegal drugs in the workplace or accommodation village / temporary construction camps
- Possession of guns and other weapons
- Compliance with all Adani policies, for example, health, safety, environmental, cultural heritage and quality control.

The code of conduct will be explained to workers in inductions and there will be an ongoing program to maintain awareness of requirements and encourage worker commitment to establishing a positive culture at the mine and workers accommodation village / temporary construction camps. Employment agreements will include consequences for not following the code of conduct. Opportunity will also be given to workers to participate in reviews of the code of conduct and health, safety and wellbeing programs to emphasise the need for all parties to collaborate in this regard.

Contractors involved in the construction phase will also be required to manage workforce behaviour.

7.6.3 Recruitment, Education, and Training

The continued expansion of the mining, energy and resources industry is increasingly dependent on the continuous search for skilled and semi-skilled employees. Given identified skill shortages (refer section 6.4), recruitment, education and training programs are critical for:

- Maximising project benefits to the community, through employment and skills enhancement
- Ensuring a sustainable supply of well qualified and skilled workers.

Recruitment and management of the workforce during the construction phase will largely be the responsibility of contractors and subcontractors appointed to undertake various components of the project. The contracting strategy for the operation phase has not yet been developed, however if Adani is not directly responsible for recruitment and training, Adani will require contractors to have recruitment and training programs in place.

Given the rapidly changing nature of the labour force and market, and lag between this SIA and commencement of construction and operations, it is not appropriate to set employment and training related targets at this time. Adani will continue to work with key government agencies and training providers in the development of its workforce education and training program.

Adani's approach to employment, recruitment and training will focus on the following programs currently under development:

- Programs for recruitment of existing skilled workers from throughout Queensland and Australia
- A New Entrant Program, specifically designed for those with no prior experience in the mining industry

- A structured apprentice and trainee program to work with existing training providers to employ and train apprentices and trainees. The first stage of that plan has been implemented with Adani having made a commitment to commence with a total of 6 apprentices by early 2013. Two of these are to be trained through Whitsunday Industrial Workforce Development's "Unified to Qualified" program, and four through the "Busy at Work" program in Bowen which has an indigenous focus.

Given the remoteness of the site from training providers, there may also be potential to establish a training facility at the proposed mine, or in the vicinity, and discussions have taken place with a number of agencies that could contribute to such a facility. Some general strategies that Adani is developing to assist with retention of those new to mining and from groups more specifically women, indigenous and PWD, whom are traditionally under-represented in mining workforces may include:

- Mentoring programs to provide workplace support
- Enforcement of the code of conduct to create a culture of tolerance, fairness and equity at work and in the workers accommodation village
- Links with existing training providers and recruitment programs, including those with an indigenous focus
- Ongoing programs of on-the job training, skills development, graduate development program and career path development within the workforce.

Adani will continue to work collaboratively with government agencies and training organisations such as Skills Queensland, the Whitsunday Industry Workforce Development group (WIWD) and Clermont Preferred Futures to develop and finalise the recruitment, education and training component of the Workforce Management Plan. This will include consideration of maximising employment opportunities and improving skill levels in the community.

Adani has in place signed Cultural Heritage Management Plans (CHMPs) with the four traditional owner groups impacted by the Project, and is at present working to complete Indigenous Land Use Agreements (ILUAs) which will address, among other things, indigenous employment, education and training initiatives. Indigenous participation may be modelled on the Queensland Resources Council, Bowen Basin Indigenous Participation Partnership.

In addition, Central Queensland University (CQU) is presently looking at a dual-sector model through a proposed merger with Central QLD Institute of TAFE. This will be an amalgamation of TAFE and University and presents a possible opportunity for Adani to become involved in supporting the initiative of a tertiary provider that offers all types of post-school education - from certificates and diplomas to bachelor and post-graduate degrees. Adani is continuing to monitor progress in this regard and will be seeking to engage with CQU to discuss opportunities once further progress has been made.

7.6.4 Health Safety and Wellbeing

Adani will be subject to the health and safety requirements of the *Coal Mining (Safety and Health) Act 1999* and *Work Health and Safety Act 2011*. This will require development of comprehensive, risk based health and safety plans for the Mine and the off-site infrastructure. Health and safety plans will also be required for all aspects of construction.

For the operational phase, it is recognised that health and safety encompasses the health and wellbeing of workers. Accordingly, these plans will include:

- Requirements in relation to safe work practices and fitness for work (fatigue, drugs and alcohol)

- Induction, other training and awareness programs to maintain a strong focus on health and safety and a high level of awareness of responsibilities for health and safety
- Programs in relation to individual health and wellbeing including management of medical conditions when away from home, maintenance of physical fitness, management of stress and isolation, healthy eating and alcohol consumption
- Programs in relation to financial planning.

7.7 Local Industry Participation Plan

A Local Industry Participation Plan (LIPP) will be prepared in accordance with the Local Industry Policy – a fair go for local industry, updated October 2010 (LIP) and associated Guidelines. Adani will work with local Councils, the Clermont Preferred Futures Group, and local businesses in conjunction with the Queensland Government (Office of Advanced Manufacturing) and the Industry Capability Network (ICN) in developing the LIPP to provide robust, integrated and sustainable local business participation opportunities. The LIPP will integrate with the Recruitment and Training Program to provide businesses with the best opportunity possible to participate in the Project.

Local buying policy

To ensure the success of the Project in Australia, Adani understands and is committed to the engagement, advancement and development of both the industry and the people in the communities in which it works. To build on this commitment and to maximise local content, Adani is committed to procuring from Australian suppliers where possible and will endeavour to maximise local content on the Project where it is capable and competitive.

A number of suppliers in the local and wider region have already been engaged by Adani to provide goods and services. In order to continue to engage within the local and regional community, Adani has developed a local buying policy which is included as Appendix F. This policy will also be taken into consideration when developing the LIPP.

7.8 Community Health and Safety

The construction and operation of the Project (Rail) poses some risk to members of the community in terms of vehicle and person interactions with trains, either on private land or at road crossings (see Volume 2, Section 12). Where possible, this risk has been addressed through design, in particular:

- Fencing of the alignment wherever practicable
- Grade separation of crossings at all but minor intersections
- Provision of stock and occupational crossings in consultation with landholders
- Management of public stock routes where these cross the proposed alignment
- Adherence to Australian standards and all legislative requirements in relation to safe operation of the rail component.

A traffic management plan will also be required during rail construction as there will be increased numbers of light and heavy vehicles on a number of local roads and there may also be intermittent road closures or delays. An initial traffic assessment has been undertaken as part of the EIS (EIS Volume 2, Section 11 and Volume 3, Section 11), and will be further developed during the detailed design stage, in consultation with Queensland Department of Transport and Main Roads and relevant local governments.

During rail operation, passive and active controls will be in place to manage community interactions with trains in accordance with Australian Standards and legislative rail safety requirements.

A legislative requirement for the management of risk and rail transport operations is Railway Safety Accreditation as a Railway Infrastructure Manager and a Railway Operations Manager under the provisions of the Transport (Rail Safety) Act 2010 of Queensland. Adani was granted Railway Safety Accreditation on 31 July 2012. The issuing of this accreditation under the Act provides an assurance that Adani has the necessary competence and capacity to carry out particular railway operations safely.

Under the provisions of the Act and the granting of Railway Safety Accreditation, Adani must establish and maintain a comprehensive Safety Management System. The establishment and implementation of interrelated safety plans and programs provides the approach to the management of risks to safety arising from:

- Railway operations and management
- The existence of level crossings
- The operation of trains and on-track vehicles including those of third parties
- The carting of dangerous goods
- Security matters
- Emergencies and other occurrences
- Rail safety worker fitness and health including fatigue, drug and alcohol matters
- Asset management including rolling stock and infrastructure maintenance
- Design, construction and de-commissioning
- Rail safety worker competence and resource availability
- Interface management and coordination.

An assurance that Adani is maintaining its comprehensive Safety Management System is provided through regulatory scrutiny by the Queensland Rail Safety Regulator, Department of Transport and Main Roads. This scrutiny includes planned safety systems audits, occurrence investigation, monitoring of operations occurrence data and provision of annual Adani safety performance review and reporting.

During mine construction and operation, there is very limited potential for members of the community to come into contact with any hazards associated with the operation. Traffic on public roads remains the main risk to community safety. As for the rail construction, a traffic management plan will be developed for the construction and operation of the proposed mine.

In addition, Adani has already entered into a Deed of Agreement with IRC regarding the maintenance of the Gregory Developmental Road and this agreement is envisaged to remain in place for the life of the project. Maintenance works are already underway. The Deed also covers the upgrading of the Moray Carmichael Road as required.

Once more detailed and accurate operation traffic volumes are available, Adani will negotiate further road and intersection upgrades as required. However, the strategy of flying the majority of workers in to a dedicated airport at the off-site infrastructure will minimise the need to utilise local and regional roads.

There are three stock routes impacted by the rail corridor and Adani has signed an agreement with IRC, DTMR and the Department of Natural Resource and Mines regarding the management of 3

stock routes. Discussions are also taking place at present with landholders along one other stock route road with a view to having an agreement in place by the end of 2012.

7.9 Emergency Services Planning and Consultation

7.9.1 Mine

In accordance with the Qld Coal Mining Safety and Health Act and QLD Coal Mining Safety and Health Regulation, Adani must have Health and Safety Plans and Emergency Management Plans in place for all aspects of construction and operation of the proposed mine. Adani must also meet building regulations in relation to fire prevention and fire fighting equipment.

Given the remoteness of the mine site, and the nature of activities to take place, Adani will seek to be self sufficient in relation to:

- First aid, paramedic and basic medical services
- Fire fighting
- Security.

However, there will be instances where Adani will have to rely on emergency services providers, including where patients are required to be transported to a hospital or where a crime is suspected and police presence required.

The SIA has identified that emergency services are under some pressure in the region and that the large distances make it difficult for these services to perform their functions. Adani is therefore committed to working closely with emergency services in the development and implementation of emergency management plan and procedures. This will include:

- Initial and ongoing consultation with Queensland Ambulance Service, Queensland Fire and Rescue Service and Queensland Police Service in relation to emergency response planning
- Involvement of emergency services in the development of the site emergency management plan, including evacuation procedures, collaboration between site and emergency services personnel, patient transport and emergency response
- Provision of information regarding workforce size, activities being undertaken and emergency response services and facilities at the mine site
- Ongoing consultation and information updates
- Making resources available to emergency service providers when at the mine site, ranging from office space to use of equipment
- Registration of the proposed airstrip with the Royal Flying Doctor Service.

The SIMP will provide the framework for establishing, maintaining and monitoring this ongoing relationship.

The emergency management plan will include procedures in relation to determining whether injured or ill workers require hospital treatment and patient transport protocols.

Should injured or ill workers require hospital treatment, the destination hospital will depend on the nature of the injury or illness. It would be expected that this would occur on a cost recovery basis through compulsory workplace insurance cover schemes. As resources at Clermont hospital are limited, Adani will seek to enter into a memorandum of understanding with Queensland Health regarding instances where treatment at Clermont hospital is required.

7.9.2 Rail

In accordance with the Work Health and Safety and Transport (Rail Safety) legislations, Adani must have Health and Safety Plans and Emergency Management Plans in place for all aspects of rail construction and operation.

Adani will consult with emergency services providers regarding the development of these plans and ensure that emergency service providers have up to date information. This will be particularly important during construction where emergency services need to be aware of the location and timing of construction activities and in particular, road closures and delays.

During rail construction, Adani will seek regular interaction with emergency services within the region so that this information provision can be achieved. A lower level of interaction is likely to be required during operation, and will be combined with ongoing interaction for the mine.

7.10 Community Development

Adani recognises that:

- There is significant potential for the Project to provide benefits to the local and regional community, however this will require some targeted strategies and interaction with community representative bodies
- While the project is not predicted to have significant adverse impacts on the local and regional community, Adani must take responsibility for avoiding, minimising and mitigating adverse impacts that may emerge as part of its role as a corporate member of the community
- Proponents such as Adani has a responsibility to make positive contributions to the community in which they operate
- Proactive and positive community relations provide benefits for both Adani and the local and regional community.

In addition, Adani will develop a strategy whereby it can participate actively within the local and regional community. This strategy is likely to incorporate:

- Establishing a community fund providing financial support targeting community activities, capacity and services. The fund would support local events, programs, sponsorship, financial contributions, and scholarships through applications from the community. To date Adani has provided support to the Twin Hills races in 2011, and intends to continue to provide support to local community events. Adani will provide guidelines and criteria for the manner in which the funds will be allocated and the process by which applications can be made.
- Working collaboratively with IRC and other representative bodies, including the Clermont Preferred Futures Group or other groups that may evolve, to provide strategic direction and investment for whole community benefit. This investment will seek to build upon existing success and clearly understand infrastructure/service gaps and needs and respond accordingly. Potential investments may include preparation of community development plans for selected regional centres
- Working with Clermont Preferred Futures Group and IRC to track demographic changes and any related impacts on housing or services that may be attributable to the Carmichael Coal project. Where adverse impacts appear to have occurred, Adani will develop responses in collaboration with the relevant stakeholders. The SIMP also provides a mechanism for monitoring and reporting project related changes in the community.

7.11 Other Technical Study Management Strategies

There are other technical study management strategies which will address some of the potential social impacts during the construction and operation of the Project, these include:

- Environmental Management Plan
- Cultural Heritage Management Plan
- Traffic Management Plan
- Emergency Management Plan.

7.12 Residual Impact Rating

Following implementation of mitigation strategies outlined above, the likelihood and consequence rating for the potential impacts has been reassessed and is presented in Table 7-2.

Table 7-2: Summary of Mitigated Impacts and Significance Rating

Impact	Timing / Project Phase	Status of Impact	Unmitigated L/C Rating	Impacted Party	Mitigated L/C Rating
Housing and Accommodation					
Mine					
Higher cost of living in Clermont as a result of higher housing prices, rental prices as workers in support industries seek to reside in the local community	Construction and Operation	Negative	Medium	Local and district communities, and smaller centres in the regional area	Low
Workforce Management					
Mine					
Physical and mental health isolation, separation from families, etc)	Construction and Operation	Negative	Medium	Workforce	Low
Impacts on families in source communities through separation	Construction and Operation	Negative	Medium	Workforce and families	Low
Rail					
Physical and mental health isolation, separation from families, etc)	Construction and Operation	Negative	Medium	Workforce	Low
Impacts on families in source communities	Construction and Operation	Negative	Medium	Workforce and families	Low
Economic Growth and Regional Development					
Mine					
Employment, apprenticeships, training associated with local businesses to attract and retain people within the local community working for local businesses.	Construction and operation	Positive	High	Local community	High
Provision of goods and services to the project from local businesses in Clermont increasing the ability of local business to remain stable or grow	Construction and operation	Positive	Medium	Local community	Medium
Providing employment and training opportunities for Indigenous people	Construction and operation	Positive	Medium	Indigenous community	Medium
Development of the local, district and parts of the wider regional area through Royalties for the Region	Operation	Positive	High	Local, district and parts of the regional community	High
People move from being employed in local business into the mining sector reducing the ability of local business to meet demands for goods and services.	Construction and operation	Negative	Medium	Local community	Low

Impact	Timing / Project Phase	Status of Impact	Unmitigated L/C Rating	Impacted Party	Mitigated L/C Rating
Rail					
Employment, apprenticeships, training within local businesses in Clermont and Moranbah supplying the rail construction	Construction	Positive	High	Local community	High
Provision of goods and services to the project from local businesses in Clermont increasing the ability of local business to remain stable or grow	Construction	Positive	Medium	Local community	Medium
Providing employment and training opportunities for Indigenous people	Construction and operation	Positive	Medium	Indigenous community	Medium
People move from being employed in local business to take advantage of potential higher paid construction work reducing the ability of local business to meet demands for goods and services	Construction	Negative	Medium	Local community	Low (no DIDO)
Roads, Traffic and Safety					
Mine					
Traffic disruption along the Gregory Development Road and Flinders Highway (from Townsville), Peak Downs Highway (from Mackay), during construction	Construction	Negative	Medium	Road users	Medium
Increased traffic on the Gregory Development Road, including safety of tourist traffic not familiar with large heavy vehicles on narrow roads	Operation	Negative	Medium	Road users	Medium
Increased maintenance requirements on local and state roads as a result of mine construction and operation	Construction and operation	Negative	Medium	Road users, Council and Transport and Main Roads	Low
Rail					
Traffic disruption along the Gregory Development Road and Flinders Highway (from Townsville), Peak Downs Highway (from Mackay), during construction	Construction	Negative	Medium	Road users	Medium
Delays to traffic, including emergency services as a result of level crossings along the rail corridor	Operation	Negative	Medium	Road users	Low
Landholder and Amenity Impacts					
Mine					
Changes to the living environment from increased noise and dust and reduced visual amenity.	Construction and operation	Negative	Medium	Landholders	Low (bought property)
Disruption to cattle operations and increased labour requirements	Construction and operation	Negative	Medium	Landholders	Low (landholder agreements in place)

Impact	Timing / Project Phase	Status of Impact	Unmitigated L/C Rating	Impacted Party	Mitigated L/C Rating
Rail					
Changes to the living environment from increased noise and dust and reduced visual amenity	Construction and operation	Negative	Medium	Landholders	Low (design located away from homesteads)
Changes to the natural environment from changes to overland flow paths with potential for increased ponding	Construction and operation	Negative	Medium	Landholders	Low
Disruption to cattle operations and increased labour requirements.	Construction and operation	Negative	Medium	Landholders	Medium
Increased fire risk along the rail corridor.	Construction and operation	Negative	High	Landholders	Medium
Impacts on Social Services and Infrastructure					
Mine					
Increased demands on emergency services, including police, as well as health and education services as a result of an increased population at the mine site.	Construction and operation	Negative	Medium	Government agencies and services	Low
Increased demands on social services to respond to the needs of the FIFO population.	Construction and operation	Negative	Medium	Service providers in the local community as well as source communities	Low
Rail					
Increased demands on emergency services, including police, as well as health and education services as a result of populations in construction camps	Construction	Negative	Medium	Government agencies and services	Low
Increased demands on social services to respond to the needs of construction workers	Construction	Negative	Medium	Service providers in the local community as well as source communities	Low
Impacts on Community Values					
Mine					
Increased crime and antisocial behaviour within the local communities from the FIFO workforce.	Construction and operation	Negative	Low	Local communities	Low
Rail					
Increased crime and antisocial behaviour within the local communities from the FIFO workforce.	Construction	Negative	Low	Local communities	Low

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8. Monitoring and Reporting

A monitoring and reporting mechanism is critical to ensuring that the social impacts are identified and measured and the mitigations are implemented. A monitoring program will be developed in consultation with the key stakeholders during the finalisation of the SIMP; however the action plans outline preliminary performance and monitoring indicators for each of the mitigation strategies.

Further information regarding monitoring and reporting is included in the Draft SIMP (see Volume 1, Section 4 and Volume 4, Appendix G).

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⁶ Individual websites may have been accessed on multiple occasions. Dates of access are noted where data is presented in the SIA

Appendices

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Appendix A Terms of Reference Cross Reference

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Terms of Reference Requirement/Section Number	Section of this Report
Section 4.1 Description of existing social values	
The social impact assessment (SIA) should be conducted in consultation with the DEEDI Social Impact Assessment Unit. Consider matters such as the social and cultural area, community engagement, a social baseline study, a workforce profile, potential impacts and mitigation measures and management strategies.	Section 3 and Appendix C
Section 4.1.1 Social and cultural area	
<p>The SIA should define the project's social and cultural area of influence, including the local, district, regional and state level as relevant, taking into account the:</p> <ul style="list-style-type: none"> • potential for social and cultural impacts to occur • location of other relevant proposals or projects • location and types of physical and social infrastructure, settlement and land use patterns • social values that might be affected by the project (e.g. including integrity of social conditions, visual amenity and liveability, social harmony and wellbeing, and sense of community) • Indigenous social and cultural characteristics such as native title rights and interests and cultural heritage. 	Section 2.5.2
Section 4.1.2 Community engagement	
Consistent with national and international good practice, the proponent should engage at the earliest practical stage with likely affected parties to discuss and explain the project, and to identify and respond to issues and concerns regarding social impacts.	Section 2.10, Volume 1 Section 7, Volume 4 Appendix I
Detail the community engagement processes used to conduct open and transparent dialogue with stakeholders. This dialogue should include the project's planning and design stages and future operations including affected local and state authorities. Engagement processes will consider social and cultural factors, customs and values, and links between environmental, economic, and social impact issues. The Australian standard for consultation is the International Association for Public Participation's Public Participation Spectrum ⁷ .	Section 2.10, Volume 1 Section 7, Volume 4 Appendix I
Prepare a community consultation report detailing outcomes of consultations with stakeholders during the community engagement process.	Section 2.10, Volume 1 Section 7, Volume 4 Appendix I
Section 4.1.3 Social baseline study	
A targeted baseline study of the people residing in the project's social and cultural area is required to identify the project's critical social issues, potential adverse and positive social impacts, and strategies and measures developed to address the impacts. The social baseline study should be based on qualitative, quantitative, and participatory methods. It should be supplemented by community engagement processes, and reference relevant data contained in Local and State government publications, reports, plans, guidelines and documentation, including regional plans and, where available, community plans.	Section 3 and Appendix C
<p>The social baseline study should describe and analyse a range of demographic and social statistics determined relevant to the project's social and cultural area including:</p> <ul style="list-style-type: none"> • major population trends/changes that may be occurring irrespective of the project • total population (the total enumerated population for the social and 	Section 3 and Appendix C

⁷ Available online at <http://www.iap2.org.au/sitebuilder/resources/knowledge/asset/files/36/iap2spectrum.pdf>

Terms of Reference Requirement/Section Number	Section of this Report
<p>cultural area and the full-time equivalent transient population), 18 years and older</p> <ul style="list-style-type: none"> estimates of population growth and population forecasts resulting from the proposal family structures age and gender distributions education, including schooling levels health and wellbeing measures cultural and ethnic characteristics the Indigenous population including age and gender income including personal and household labour force by occupation and industry including occupational skill groups and potential skills shortages housing costs (monthly housing repayments (per cent of dwellings in each category), and weekly rent (per cent dwellings in each category), housing tenure type and landlord type, household and family type 	
<ul style="list-style-type: none"> housing availability and affordability: <ul style="list-style-type: none"> the rental market (size, vacancy rate, seasonal variations, weekly rent by percentage dwellings in each category) the availability and typical costs of housing for purchase monthly housing repayments by percentage dwellings in each category the availability of social housing disability prevalence the social and economic index for areas, index of disadvantage—score and relative ranking crime, including domestic violence any other indicators determined through the community engagement process as relevant. 	Section 3 and Appendix C
<p>The social baseline study should take account of current social issues such as:</p> <ul style="list-style-type: none"> the social infrastructure including community and civic facilities, services and networks (for definition see the South East Queensland Regional Plan 2005–2026 Implementation Guideline No.5)⁸ settlement patterns including the names, locations, size, history and cultural aspects of settlement in the social and cultural area the identity, values, lifestyles, vitality, characteristics and aspirations of communities in the social and cultural area, including Indigenous communities land use and land ownership patterns including: <ul style="list-style-type: none"> rural properties, farms, croplands and grazing areas including on-farm activities near the proposed activities the number of properties directly affected by the project the number of families directly and indirectly affected by the 	Section 3 and Appendix C

⁸ Department of Infrastructure, *South East Queensland Regional Plan 2005–2026: Implementation Guideline No. 5: Social impact assessment*, Department of Infrastructure, Brisbane, 2007, viewed 21 December 2010, www.dip.qld.gov.au/resources/guideline/Implementationguideline5.pdf

Terms of Reference Requirement/Section Number	Section of this Report
<p>project including Indigenous traditional owners and their families, property owners, and families of workers either living on the property or workers where the property is their primary employment</p> <ul style="list-style-type: none"> – use of the social and cultural area for forestry, fishing, recreation, business and industry, tourism, aquaculture, and Indigenous cultural use of flora and fauna. <p>This section should cross reference with Section 5.1.</p>	
Section 4.4 Workforce Profile	
<p>The SIA should include a profile of the workforce which describes the:</p> <ul style="list-style-type: none"> • number of personnel to be employed, the skills base of the required workforce and the likely sources (i.e. local, regional or overseas) for the workforce during the construction and operational phases for each component of the project • estimated number of people to be employed during construction and operation, and arrangements for their transport to and from the project areas, including proposed use of regional or charter air services • estimates should be provided according to occupational groupings and variations in the workforce numbers for the duration of the project and show anticipated peaks in worker numbers during the construction period. 	Section 1 and Appendix D of this report
<p>Provide an outline of recruitment schedules and policies for recruiting workers, addressing recruitment of local, non-local and overseas workers including Indigenous workers, people from culturally and linguistically diverse backgrounds and people with a disability.</p>	Section 7.6 of this report
<p>If worker accommodation villages are to be used to accommodate the workforce, provide details on the number, size, location (shown on a map), management, proximity to the construction site, and typical facilities for these sites for each phase of the project. Information should outline any local government or other regulatory approvals required for establishing and operating such camps, including building, health and safety and waste disposal purposes.</p>	Section 1 of this report
<p>Provide information on the location of other major projects or proposals under study within the social and cultural area, together with workforce numbers.</p>	Volume 1 Section 8
Section 4.2 Potential impacts	
<p>Assess and describe the type, level and significance of the project's social impacts (both beneficial and adverse) on the local and cultural area, based on outcomes of community engagement processes and the social baseline study.</p> <p>Furthermore:</p> <ul style="list-style-type: none"> • describe and summarise outcomes of community engagement processes including the likely response of the affected communities, including Indigenous people • include sufficient data to enable affected local and state authorities to make informed decisions about the project's effect on their business and plan for the provision of social infrastructure in the project's social and cultural area. If the project is likely to result in a significant increase in the population of the area, then the proponent should consult the relevant management units of the state authorities (including QPS) and summarise the results of 	Section 1

Terms of Reference Requirement/Section Number	Section of this Report
<p>the consultations</p> <ul style="list-style-type: none"> • address direct, indirect and secondary impacts from any existing projects and the proposed project, assessing the size, significance, and likelihood of these impacts at the local and regional level. 	
<p>Consider the following:</p> <ul style="list-style-type: none"> • key population/demographic shifts; disruptions to existing lifestyles, the health and social wellbeing of families and communities; social dysfunction including alcohol and drugs, crime, violence, and social or cultural disruption due to population influx • the needs of vulnerable groups including women, children and young people, the aged and people with a disability • Indigenous peoples including cultural property issues • local, regional and state labour markets during the construction and operational phases, with regard to the source of the workforce. Present this information according to occupational groupings of the workforce. Information is required as to whether the proponent, and/or contractors, is likely to employ locally or through other means and whether there are initiatives for local employment business opportunities and how these workforce strategies relate and align to state and Commonwealth resource work force planning, skill development and training strategies and policies • proposed new skills and training related to the project, including the occupational skill groups required and potential skill shortages anticipated • how much service revenue and work from the project would be likely to flow to the project's social and cultural area • impacts of construction and operational workforces, their families, and associated contractors on housing and accommodation availability and affordability, land use and land availability. The capability of the existing housing and rental accommodation, to meet any additional demands created by the project should be discussed including direct impacts on Indigenous people. 	Section 1
<p>Evaluate the potential cumulative social impacts resulting from the project including an estimation of the overall size, significance and likelihood of those impacts. In this context, 'cumulative impacts' is defined as the additional impacts on population, workforce, accommodation, housing, and use of community infrastructure and services, from the project, and other proposals for development projects in the area which are publicly known or communicated by DEEDI, if they overlap the proposed project in the same timeframe as its construction period.</p>	Volume 1 Section 8
<p>Section 4.2.1 Mitigation measures and management strategies</p>	
<p>For identified social impacts, social impact mitigation strategies and measures should be presented to address the:</p> <ul style="list-style-type: none"> • recruitment and training of the construction and operational workforces and the social and cultural implications this may have for the host community, including if any part of the workforce is sourced from outside the social and cultural area • Local labour market impacts. A local employment plan should be 	Section 0

Terms of Reference Requirement/Section Number	Section of this Report
<p>developed that describes:</p> <ul style="list-style-type: none"> – strategies to address anticipated skills shortages – employment initiatives and strategies to support local employment, including recruitment procedures for securing local employment and provisions for contractors – skills development and training opportunities, including apprenticeship programs and support programs targeted to local unemployed and vulnerable groups, including disadvantaged job-seekers, under-employed people – strategies which maximise employment opportunities for local participation and training and minimise impacts on other businesses and industry – plans, procedures and strategies for Indigenous employment – social inclusion strategies, where appropriate – cross-industry partnerships <ul style="list-style-type: none"> • Worker accommodation requirements and impacts on housing affordability and availability as a result of worker accommodation requirements. An Integrated Housing Strategy (the strategy) should be developed in collaboration and consultation with relevant local authorities and state government agencies. The strategy should describe: <ul style="list-style-type: none"> – projected size, nature and location of the workforce for the resource project (for both construction and operational phases) including the projected proportion of workers who will fly, drive or ferry in and out (FIFO or DIDO) – towns and cities in which FIFO or DIDO employees and their families are likely to be permanently residing – plans for accommodating the proportion of the workforce who will not readily access local accommodation 	
<ul style="list-style-type: none"> • If worker accommodation villages and permanent operational villages are being considered to accommodate the workforce, address the management of health and safety issues associated with these accommodation types in consultation with relevant local authorities and state government agencies • demographic changes in the profile of the region and the associated sufficiency of current social infrastructure to support community health, safety and wellbeing; education, employment and training; policing and emergency services • adequate provision of education, training and employment opportunities for women, people with a disability and Indigenous peoples • collaborative stakeholder engagement strategies/partnership arrangements to develop and implement project benefit strategies and social impact mitigation measures. 	
<p>Describe any stakeholder engagement processes regarding the development and acceptance of proposed mitigation strategies and measures, and how practical management and monitoring regimes are proposed to be implemented.</p>	<p>Section 2.7 and 2.10 of this report</p>

Terms of Reference Requirement/Section Number	Section of this Report
<p>Prepare a draft social impact management plan (SIMP) that promotes an active and ongoing role for impacted communities and local authorities through the project life cycle. The draft SIMP should be consistent with the Social Impact Assessment: guideline to preparing a social impact management plan (DIP 2010). The SIMP, which will be subject to external review, should focus on action plans to implement mitigation strategies and include performance measures against which annual progress can be reported and should cover:</p> <ul style="list-style-type: none"> • assignment of accountability and resources • updates on activities and commitments • mechanisms to respond to public enquiries and complaints • mechanisms to resolve disputes with stakeholders • periodic evaluation of the effectiveness of stakeholder engagement processes • practical mechanisms to monitor and adjust mitigation strategies and action plans 	Volume 4 Appendix G

Appendix B Significance Assessment Methodology

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Significance Assessment Methodology

A social impact significance matrix was employed as the main tool for assessing the significance of the potential social impacts. The matrix is a table which lists and describes the various impacts that have been identified as possibly resulting from the proposed project. The table does not weight impacts against each other, rather they are displayed and assessed individually, to paint a picture of the impacts and allow an overall discussion regarding the proposal. The purpose of the significance matrix is also to identify priority areas for mitigation and management actions.

It is acknowledged that assessing the significance of social impacts involves subjective judgements on behalf of the assessor (Stanley, Clouston and Binney 2004, Lawrence 2007). Social impacts are felt or experienced by stakeholders, and different stakeholders may therefore assign differing significances to the same impacts, depending on their particular situation. Two strategies have been used to manage and reduce the subjective nature of the assessment process:

- By clearly outlining the assessment processes, criteria and arguments the SIA team have used to assign significance a larger degree of transparency in the process is achieved.
- By basing the assessment on a variety of sources, including extensive consultation with directly impacted stakeholders, the robustness of the significance assessment is augmented.

All the data sources used throughout the previous steps in the SIA have been analysed to determine impact significance.

The completion of the social impact significance matrix involves the following components:

- Identification of impacted stakeholders
- Likelihood/consequence rating
- Status of impact
- Duration of impact
- Spatial extent of the impact
- Stakeholder importance.

The process of assessing the significance of the social impacts is undertaken for the current project design. Based on this, a social impact management plan is developed, involving impact mitigation and enhancement. A second assessment is then carried out taking proposed mitigation and enhancement measures into account, identifying whether there is a risk of a residual impact.

Significance Assessment Process

Step 1: Identification of Impacted Stakeholders

This considers the stakeholders likely to be impacted by the proposed project. The stakeholder groups are not ranked but used for descriptive purposes only. Each impact is linked to at least one stakeholder group.

Step 2: Stakeholder importance

The stakeholder importance describes how important an impact is to the affected stakeholders. Establishing the importance of an impact complements the significance determination as it

allows the affected stakeholders themselves to describe how important an impact is to them. A social impact identified as being non-significant by the SIA practitioner may be very important to the affected stakeholders, and vice versa.

Information regarding stakeholder importance has been gathered solely during consultation. Importance ratings are provided in Table 1.

Acceptability of the Social Impact

Rating	Proposed Description
High	A majority of the affected stakeholders have indicated that the social impact is very important to them.
Medium	Some stakeholders have indicated that the social impact is important to them, some have indicated it is of little importance.
Low	A majority of affected stakeholders have indicated that the impact is of little importance to them. Few stakeholders have indicated it is important.

Step 3: Likelihood/Consequence Rating

This step involves, first, assessing the likelihood that the impact will occur (refer to Table 2). Second, it involves assessing the consequence of each of the identified social impacts. The consequence refers to the consequence *on the impacted stakeholder*.

As the consequence refers to the consequence on the impacted stakeholder, it is not possible to provide an exhaustive definition for each rating and for all stakeholders. Rather the proposed descriptions consist of indicative criteria for a number of stakeholder groups.⁹ Table 3 and Table 4 show indicative criteria for assessing the consequences on the stakeholders.

The results are then combined into a likelihood/consequence matrix, assigning a significance rating to the social impact (refer to Table 5).

Descriptions of Likelihood

Likelihood	Description
Almost Certain	The identified social impact will occur (100 per cent)
Very likely	There is a 75 per cent certainty that the impact will occur
Likely	The identified social impact is likely to occur (60 per cent certain)
Possible	It is possible for the social impact to occur (40 per cent certain)
Unlikely	The identified social impact is unlikely to occur (25 per cent certain)
Very unlikely	It will be very unlikely for the social impact to occur (5 per cent certain)

Indicative Criteria for Negative Social Impacts Consequences

Rating	Indicative criteria
Extreme	Individuals and families: Death and serious injury, disability, personal bankruptcy, severe stress and mental illness, severance of strong connections to places and communities.
	Businesses: bankruptcy, close down of business.
	Communities: Tensions leading to widespread violence, rapid geographic change of

⁹ While every reasonable care has been taken to remain neutral, the indicative criteria are still likely to exhibit a bias related to the context in which they have been developed. It is important to remember that they constitute a professional judgement based on the experience of the SIA team. Groups of stakeholders may assign different ranks to the criteria identified.

Rating	Indicative criteria
Major	large proportion of local area, rapid large scale population changes such as relocation of majority of population, destruction of cultural objects of large significance.
	Project proponent: multiple fatalities caused by project, serious nation-wide impact to projects reputation, media coverage at the state level by more than one source.
	Individuals and families: Injury, serious illness, severe financial hardship, long term unemployment, severance of connections to places and communities, severe stress.
	Businesses: Severe financial hardship, large noticeable impact to business in terms of changing revenue, number of employees .
Moderate	Communities: Large scale social tensions, rapid geographic and social change to a significant proportion of area or population, rapid change to way of life or, profanation of important cultural objects and geographical areas.
	Project Proponent: Single fatality or permanent major disability of a member of the public or construction workforce, improvement or damage to the project's reputation at the local level, media coverage at the state level by one source or local level by more than one source. A proliferation of calls from dissatisfied or supportive stakeholders.
	Individuals and families: Recoverable but long term illness, severe nuisances and disruptions, short term financial hardship, short term unemployment, disruption to family life, stress.
	Businesses: Short term financial hardship, noticeable impacts to business in terms of changing revenue, number of employees.
Minor	Communities: localised or occasional social tension, geographic change to part of the area, social change to small proportion of community such as relocation of a minority of community, loss of some important areas/buildings such as parks and meeting places.
	Project proponent: Recoverable accidents, improvement or damage to the project's reputation, media coverage at the local level by more than one source, several calls from dissatisfied or supportive stakeholders.
	Individuals and families: Short term recoverable illness, manageable nuisances and disruptions, changing employment situations (but not deteriorating), easily manageable stress.
	Businesses: Changing but not deteriorating business conditions, practical challenges with minor financial implications.
Insignificant	Communities: Social tension between individual members of community, social or geographic change to small part of community.
	Project proponent: Incident leading to medical treatment, improvement or damage to the project's reputation within industry, media coverage at the local level, calls from a few dissatisfied or supportive stakeholders.
	Individuals and families: minor nuisance or disruptions, no accidents or illness.
	Businesses: Practical challenges, no financial implications.
	Communities: harmoniously managed social changes, localised (very small proportion of community) change to geographic or social set up.
	Project proponent: On site first aid incident, improvement or damage to the project's reputation, no media coverage, no calls from dissatisfied or supportive stakeholders.

Indicative Criteria for Positive Social Impacts Consequences

Rating	Indicative criteria
Extreme	Individuals and families: Significantly increased health and social and emotional wellbeing. Sustainable increase in economic prosperity, such as long term employment opportunities and career prospects to men and women. Significantly increased access to training and education. Significantly increased access to services.
	Businesses: Significantly increased business opportunities and profits for the long term.
	Communities: Significantly increased general community wellbeing. Significant and sustainable reduction in violence and crime, and positive changes to community aspirations. Recognition of, support for and long term preservation of cultural objects, artefacts and practices.

Rating	Indicative criteria
Major	Project proponent: Very strong and widespread community support for project. Sustained positive nationwide media coverage.
	Individuals and families: Increased health and social and emotional wellbeing. Widespread employment opportunities. Increased access to training and education.
	Businesses: Noticeable increase in business opportunities, increased profits.
	Communities: Strongly increased community wellbeing, significant reduction in crime and violence, positive changes to community aspirations. Recognition of and support for cultural practices, objects and artefacts.
	Project Proponent: Strong support for the project. Nationwide positive media coverage.
Moderate	Individuals and families: Increase to health and wellbeing for some individuals. Some employment, training and education opportunities.
	Businesses: Increased revenues and profits.
	Communities: Increased community wellbeing, reduction in crime and violence. Recognition of cultural practices, objects and artefacts.
	Project proponent: Some local support for the project, some local, regional and nationwide positive media coverage.
Minor	Individuals and families: Increased access to services, short term employment opportunities. Some training opportunities.
	Businesses: Business conditions changing slightly to the positive.
	Communities: Slightly increased community wellbeing.
	Project proponent: Occasional local and regional positive media coverage.
Insignificant	Individuals and families: Some short term employment opportunities. Health and social wellbeing virtually unchanged.
	Businesses: Practical benefits, no financial implications.
	Communities: Community wellbeing virtually unchanged. Some changes (not negative) to cultural practices, objects and artefacts.
	Project proponent: Localised neutral media coverage.

Assessment of likelihood and consequence of social impact

Likelihood of Social Impact	Consequence of Social Impact				
	Insignificant	Minor	Moderate	Major	Extreme
Almost Certain	Medium	Medium	High	Excessive	Excessive
Very Likely	Low	Medium	High	High	Excessive
Likely	Low	Low	Medium	High	Excessive
Possible	Negligible	Low	Medium	High	High
Unlikely	Negligible	Low	Low	Medium	High
Very Unlikely	Negligible	Negligible	Low	Medium	Medium

Step 4: Status of Impact

The status of the impact considers whether the impact is positive, negative or neutral. It is important to remember that the same impact can have a different status for different stakeholders.

Step 5: Duration

The duration of the impact refers to for how long the social impact will potentially occur, refer to Table 6.

Duration of the Social Impact

Rating	Description
Long	Lasting beyond the construction phase of the project (or operation/maintenance).
Medium	Lasting for the full duration of the construction phase of the project.
Short	Less than the full duration of the construction phase of the project.

Step 6: Spatial Extent

This considers the geographical scale of the proposed impact. The social impacts of the project may be felt within the physical extent of the project, or at the local, regional, or state/national level, refer to Table 7.

Spatial Extent of the Social Impact

Rating	Proposed Description
State/National	In all levels of study areas
Regional	In both the local and Regional Study Areas
Local	In the Local Study Area
Project footprint	Only within the physical footprint of the project

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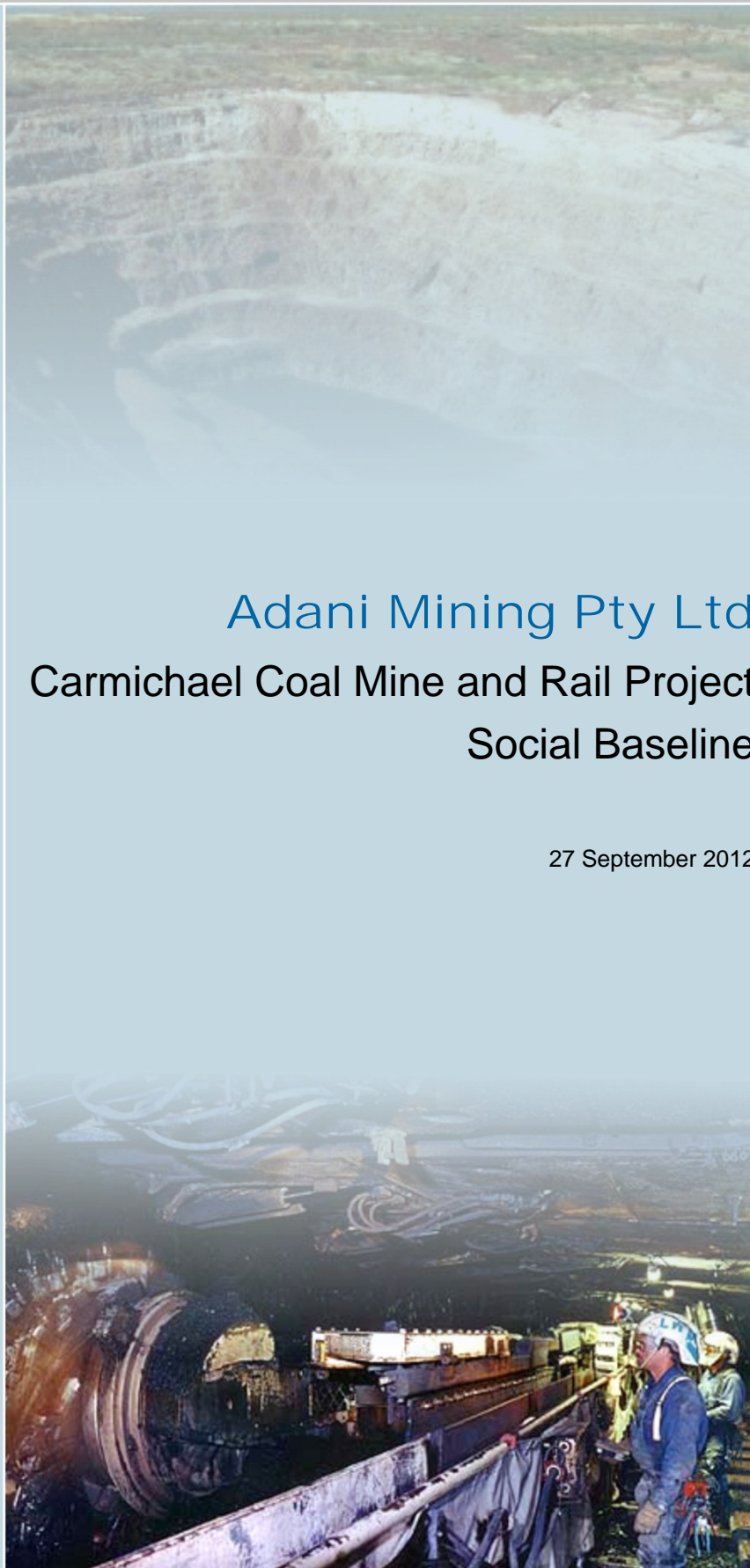
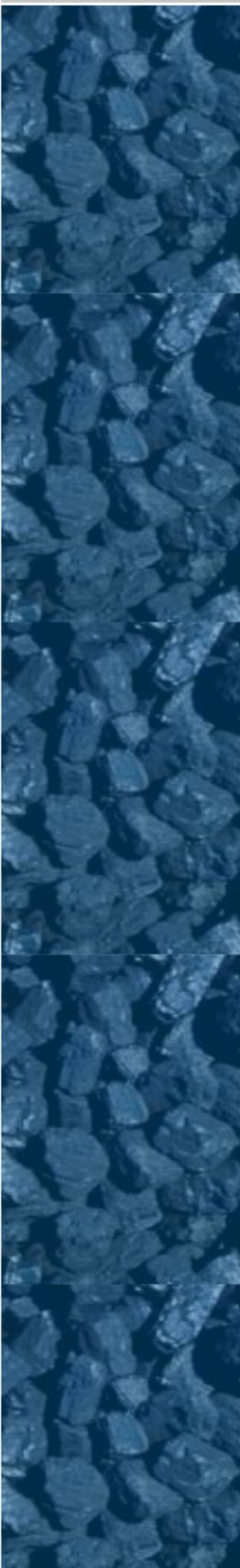
Appendix C Social Baseline

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Carmichael Coal Mine and Rail Project
Social Baseline

27 September 2012



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1. Introduction

1.1 Overview

To address the requirements of the ToR, a targeted social baseline study of the people residing in the Project's social and cultural area of influence (local and regional study areas) was undertaken based on the indicators identified in Section 4.1.3 of the ToR. Regional and District Baselines

A combination of qualitative and quantitative information was used to develop the Regional and District baselines. Data and information was gathered from various primary and secondary sources, some of the key sources are listed below:

- Census data from ABS
- Updated to Census data through projections and estimates from the Office of Economic and Statistical Research (OESR)
- Other SIAs relevant to the study area
- Draft Mackay, Isaac and Whitsunday Regional Plan (2011 – 2031)
- Whitsunday, Hinterland and Mackay Regional Plan (2006 – 2026)
- Isaac Regional Council Community Plan
- Moranbah Urban Development Area Strategy
- Isaac, and Charters Towers Regional Council Websites
- Websites and publications of state agencies covering health, education, housing, communities and emergency services and Isaac and Charters Towers Council websites
- Real estate websites
- Media reports
- Planning schemes and DERM land use mapping
- Consultations with key stakeholders.

The regional and district baseline describes the following community characteristics and issues:

- Community settlement patterns
- Housing availability, affordability and costs
- Community values and aspirations
- Demographic characteristics, including
 - Total Population; population trends, growth and forecasts
 - FTE estimates (resident and non-resident population)
 - Age and gender profile
 - Family composition
 - Cultural and ethnic composition
 - Education profile, including school and vocational training enrolments
 - Employment and unemployment profile
 - Employment by industry and occupation profile
 - Income profile

- Disability prevalence
 - Social and economic index of disadvantage.
- Safety profile (crime data)
- Social and community infrastructure, including:
 - Housing and accommodation services and facilities
 - Health services and facilities
 - Community support services
 - Education and training facilities
 - Transport services.
- Lifestyle and recreation.

The regional and district social baselines are presented in Section 1 and 1.

1.1.1 Local Study Area Baseline

The local baseline has been developed based upon the information gained by Adani during negotiations with landholders along with data relating to the former Belyando Shire. The local baseline is presented in Section 1. The local baseline includes:

- Number of properties affected by the Project
- Number of families directly and indirectly affected by the project
- Land use and land ownership patterns.
- Demographic information for the former Belyando Shire.

1.1.2 Study Area

The Project comprises of two major components:

- The Project (Mine): the Mine and associated infrastructure and offsite infrastructure
- The Project (Rail): a rail line and associated infrastructure.

Detailed descriptions of the Project are provided in Volume 2, Section 2, Project Description (Mine) and Volume 3, Section 2, Project Description (Rail).

The Study Area for the SIA is defined as locations to which the construction, operation and decommissioning of the Project may have a social and cultural influence at a scale that can be attributed to the Project. Social impacts are often not contained within the immediate area of the Project components. From an impact assessment point of view, in the Queensland context social impacts may be said to occur in the immediate area of a project, in the nearby communities/localities, in the regional centres closest to the project area and sometimes in the wider area of the State. Generally, the area of social and cultural influence is determined by the movement of project related people (workforce) as they travel around to the immediate project area, nearby localities and regional centres to access various services and facilities.

The Study Areas were confirmed after feedback on a draft SIA from state government in 2012 and have been discussed with the SIAU. The regional study area comprises the LGAs of Isaac, Charters Towers, Townsville, Whitsunday, Mackay, and Central Highlands. The district study area comprises Isaac Regional Council and Charters Towers Regional Council areas. Isaac Regional Council was formed during 2008 as a result of the amalgamation of Belyando, Broomsound and Nebo Shires. Charters Towers Regional Council was formed by the amalgamation of Charters Towers City and the Shire of Dalrymple in 2008. The local study area

comprises the former Belyando Shire which includes the towns of Moranbah and Clermont, as well as those landholders directly affected by the mine and rail corridors.

1.1.3 Social and Cultural Area of Influence

The social and cultural area of influence was defined as part of the scoping process at the commencement of the Project, in accordance with the content outline in Section 4.1.1 of the ToR. Table 1-1 outlines the background information per each of the ToR considerations.

Table 1-1: Background Information for the Social and Cultural Area of Influence

Consideration	Background
The potential for social impacts to occur at local, district, regional and state level.	<p>Local</p> <p>Landholders with land adjoining or directly affected by the Project (Mine) and Project (Rail) will experience the majority of impacts associated with the project, along with the township of Clermont (~160 km south-east) and to a lesser extent Moranbah (~160 km east) which are both located in the former Belyando Shire. Clermont is the closest township to the Project (Mine) by road. The focus of the local study area is therefore the former Belyando Shire and directly affected landholders.</p> <p>The project traverses four ABS Census Collection Districts (CCDs), namely 3031602, 3031603, 3031604 and 3031504. As the geographical area of these CCDs is much larger than the project footprint, data for CCDs has not been presented.</p> <p>It was originally intended that landholders would be directly engaged and obtain specific inputs to develop a local study area baseline for the project, however despite many months of positive discussions with landholders, only one would commit to undertaking a case study. As a result, the local baseline has been developed using information from landholder negotiations between Adani representatives and landholders.</p> <p>Traditional owners were also included in the local study area to identify any potential impacts directly related to the country from the Project footprint.</p> <p>District</p> <p>The Mine site is predominantly within Isaac Regional Council area, with a small area within Charters Towers Region. The town of Charters Towers is approximately 3 hours drive from the Project (Mine) site and the Gregory Development Road as a significant transport corridor for the project (access to Townsville) runs through the region. The rail is wholly within Isaac Region. The Regional Study area for the Project comprises Isaac and Charters Towers regions.</p> <p>Regional</p> <p>This project is expected to have a measurable influence within a wide geographical area, and with transport links to Townsville and Mackay in particular the regional study area comprises the LGAs of Isaac, Charters Towers, Townsville, Whitsunday, Mackay, and Central Highlands.</p> <p>State</p> <p>Comparisons to Queensland as a whole data are included within the SIA.</p>
Location of other relevant proposals or projects	<p>As at March 2011, there were a number of other state significant projects in the district and region, including:</p> <ul style="list-style-type: none"> • Hancock Coal: approved Alpha Coal Mine and associated rail line (~100 km south of proposed Carmichael Mine) • Hancock Coal: Proposed Kevin's Corner (adjacent to the Alpha Coal Mine) • South Galilee Coal Project: South Galilee Coal Mine (15 km southwest of Alpha) • China First - formerly the Galilee Coal Northern Export Facility, (~80 km south of proposed Carmichael Mine) • Galilee Basin Power Station (~120 km south of proposed Carmichael Mine) This project is currently on hold • Central Queensland Integrated Rail Project • Goonyella to Abbott Point Rail (24km north-west of Moranbah to Abbott Point) • BMA: BMA Bowen Basin Coal Growth (includes construction and expansion of three mines in the Bowen Basin near Moranbah and a new airport at Moranbah).

Consideration	Background
	There are currently no resource projects operating in the Galilee Basin, however the Hancock/GVK Alpha Mine has received approval. There are approximately 50 other resource-related projects in the neighbouring Bowen Basin. Given the number of proposed projects and operating projects, the opportunity for other projects to influence the social impacts/opportunities of the Carmichael Project, the regional study area of Isaac Regional Council was considered where appropriate.
Location and types of physical and social infrastructure, settlement and land use patterns	<p>The land use pattern in the area is dominated by agricultural use. Settlement is sparse, consisting mainly of isolated homesteads. There is a network of local roads and water courses in the vicinity of the Project (Mine) and along the Project (Rail) corridor. No electricity or telecommunication easements traverse the proposed Project area. A proposed Sunwater Moranbah to Alpha water pipeline will pass under the Project (Rail) alignment. No water or gas pipelines currently traverse the Project (Mine) and there are no proposed gas or water pipelines over the site.</p> <p>The project (Rail) corridor intersects the Gregory Developmental Road. The proposed rail line joins with the existing rail line southwest of Moranbah, and the north-south spur joins the Goonyella to Abbott Point line approximately 80 km north of Moranbah.</p> <p>The main towns likely to be impacted by the Project are Clermont and Moranbah.</p>
Social values that might be affected by the project	<p>The Isaac Regional Vision 2020 Community Plan (Isaac Regional Council, 2009) recognises a number of values pertaining to the region:</p> <ul style="list-style-type: none"> • Safety • Connectivity and community spirit • Active healthy outdoor lifestyle supported by sport and recreational facilities • Celebration of unique local/district/regional identity.
Indigenous social and cultural characteristics	<p>Based on initial searches of the native title register there are four separate native title claims registered, or in the process of being registered, in the region around the Project area, each from a different Indigenous group, being the:</p> <ul style="list-style-type: none"> • Wangan and Jagalingou People • Jangga People • Barada Barna People. • BBKY No. 4. <p>Any native title rights and interests will be considered through Indigenous Land Use Agreements (ILUA) and cultural heritage impacts will be considered through the Cultural Heritage Management Plans (CHMP).</p>

2. Regional Study Area

2.1 Introduction

This chapter addresses Section 4 of the ToR and presents social baseline for the Regional Area (RSA). The RSA is defined as the six Local Government Areas (LGAs) of:

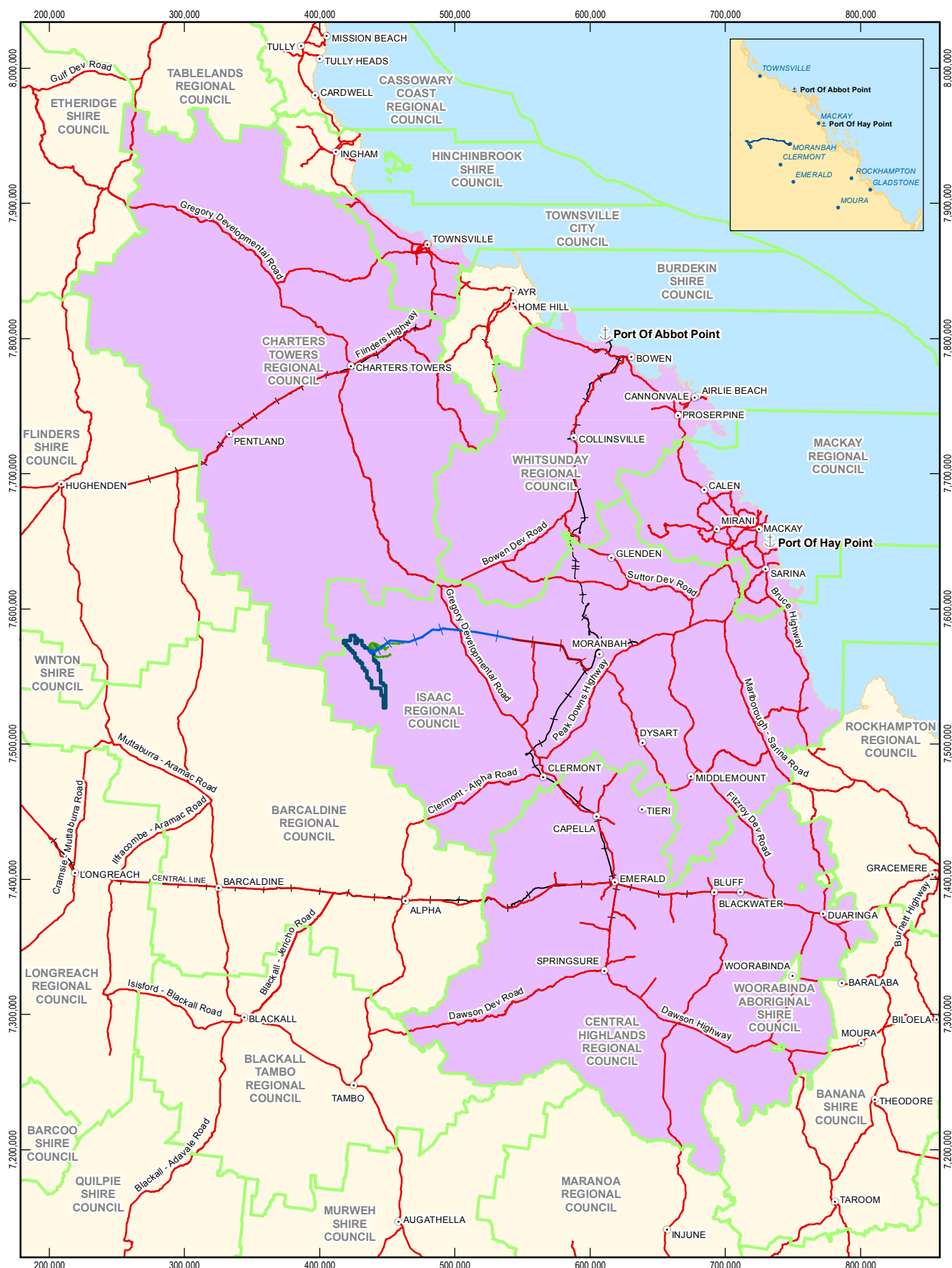
- Isaac Region
- Charters Towers Region
- Central Highlands Region
- Whitsunday Region
- Townsville City
- Mackay Region

The extent of the Regional Study Area is shown in Figure 2-1.

The rationale for definition of Study Area relative to the regional, district and local significance is outlined in Section 1.1.2. The baseline assessment has been undertaken using publicly available quantitative data, and has been complemented by qualitative information drawn from various strategic planning documents and policies, as well as information obtained during the stakeholder consultation process.

The purpose of the social baseline is to provide an understanding of existing conditions and characteristics of those communities identified in the study area. Key considerations include:

- Baseline indicators identified for this study are relevant to the key social issues/impacts that may be caused by the proposed project as identified in the scoping exercise, through stakeholder consultations and those that are specified in the Project's ToR.
- The baseline is created for a certain point in time in the life of the community – in this instance, the 'planning phase' is the reference point for assessment (just prior to the commencement of project construction). Where possible and deemed necessary, trends and patterns are taken into account.



LEGEND

- ⚓ Major Port
- Key Centre / Locality
- State Road
- Existing Railway
- Local Government Area Boundary
- SIA Study Area (Regional)
- Rail (West)
- Rail (East)
- Project (Mine)
- Mine (Offsite)

Based on or contains data provided by the State of QLD (DERM) [2010]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for marketing or be used in breach of the privacy laws.

1:4,000,000 (at A4)
0 20 40 60 80 100
Kilometres
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55



adani

Adani Mining Pty Ltd
Carmichael Coal Mine and Rail Project
Social Impact Assessment
Regional Study Area

Job Number 41-25215
Revision A
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Figure: 2-1

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Data Source: GA: Key Centre / Locality (2007); DERM: LGA (2011); DMR: State Roads (2008); DME: EPC1690 (2010), EPC1080 (2011); Adani: Alignment Opt9 Rev3 (2012); Gassman/Hyder: Mine (Offsite) (2012). Created by: BW, MS

2.2 Regional Summary

2.2.1 Overview of Demographics

Various data sources have been used to describe the demographics of the RSA, which are summarised in Table 2-1.

Where possible, reference has been made to 2011 Census data (ABS) to provide an up to date snapshot of demographic characteristics. The limitations of this data should be noted:

- ABS first release data for the 2011 Census is regarded as preliminary only
- The full Community Profile had not been released at the time of writing, therefore, the 2006 Census is referenced in some instances e.g. industry, mobility, Socio-Economic Indexes for Areas (SEIFA).
- The assessment has been developed as a 'snapshot' in time in order to provide a baseline from which to assess the potential social impacts arising from the Project. Whilst every effort has been made to provide up to date and relevant data, communities are in a constant state of change and information gathered to prepare the social baseline can change over time.

Table 2-1: Key Baseline Community Characteristics for the Regional Study Area

Socio-economic Variable from ToR	Data Source	Regional Summary
Total population and FTE equivalent population	OESR, 2012 (a)	Estimated total population in 2011 of 413,786 persons, with an annual average growth rate of 2.5 percent per annum. (2006-2011).
Non-resident workers Full-time equivalent Population (FTE)	OESR, 2012(a)	2011 FTE population and proportion of non-resident workers in the Bowen Basin = 20,520 (19 percent). Number of non-residents living in RSA on a temporary basis is increasing due to mining industry growth and use FIFO and DIDO workforce.
Existing of anticipated major population trends and changes irrespective of project	OESR, 2012 (d)	Projected population of 641,101 persons by 2031 – an increase of 224,725 at a growth rate of 2.2 percent per annum (2011-2031). In terms of population distribution, the largest population bases will continue to be located in coastal urban regions (Townsville, Mackay, and Whitsunday). Central Highlands Region will have highest percentage growth at 2.4 percent, driven by resource sector activity in the Galilee Basin.
Household composition	ABS, 2012	Family households were the most common type. Whitsunday and Charters Towers had large numbers of single/lone person households (about one quarter of the LGA total), compared to Queensland the other LGAs in the RSA.
Family structures	OESR, 2012 (d)	98,514 families in the RSA in 2011, constituting 8.4 percent of Queensland total. 'Couple families with children' are the dominant family type (45.3 percent). Slightly lower representation of 'one-parent families than the state average'.

Socio-economic Variable from ToR	Data Source	Regional Summary
Age and gender distributions	OESR, 2012 (d)	<p>Relatively young age profile with 66.6 percent aged <45 compared to state average of 62.6 percent</p> <p>High proportions of working age groups (15-64) in Whitsunday (72.2 percent), Isaac (71.0 percent) and Central Highlands (70.1 percent).</p> <p>Pockets of older age groups (65+) in Charters Towers, Whitsunday and Mackay.</p>
Education, including schooling levels	OESR, 2012 (d)	<p>Lower level of educational attainment in the RSA.</p> <p>Schooling - 50.6 percent completed Year 11 or 12 (or equivalent), compared to 55.3 percent for Queensland.</p> <p>Post school qualifications - five of the six LGAs registered a lower proportion of persons with post school qualifications than Queensland. Whitsunday Region had a higher proportion compared to Queensland.</p>
Measures of community safety, health and wellbeing	Public Health Information Development Unit (PHIDU) 2010	Higher rates of poor health and risk factors evident in parts of Charters Towers, Mackay and Whitsunday than Queensland, reflecting older age groupings in these areas.
Cultural and ethnic characteristics Place of birth	OESR, 2012 (d)	<p>Less cultural diversity than Queensland.</p> <p>12.3 percent of RSA population were born overseas, compared to state average of 20.5 percent. Whitsunday had highest proportion of persons born overseas (14.1 percent), with lowest in Charters Towers (6.0 percent) and Isaac (9.9 percent)</p>
Indigenous population including age and gender	OESR, 2012 (d)	<p>Relatively large Indigenous population at 5.1 percent, compared to Queensland average of 3.6 percent</p> <p>Highest ATSI representation in Charters Towers (7.9 percent) and Townsville (6.1 percent).</p>
Income	OESR, 2012 (d)	<p>Fewer people in the <\$400/ week individual income category than Queensland, except for of Charters Towers.</p> <p>Isaac and Central Highlands were 3 to 4 times higher than the state average in the >\$2,000/week income category, which is indicative of higher salaries in the mining sector.</p>
Unemployment	OESR, 2012 (d)	<p>For March 2012 quarter unemployment was 4.9 percent, compared with 5.5 percent in Queensland.</p> <p>Unemployment rates are variable in the RSA ranging from 1.2 percent in Isaac Region to 7.8 percent in Charters Towers Region.</p>
Labour force by occupation and industry	OESR, 2012 (a) OESR, 2012 (d)	<p>In 2006, main industries of employment were Mining (14.8 percent), Retail Trade (9.1 percent), Construction (8.9 percent) and Agriculture, Forestry and Fishing (8.5 percent).</p> <p>Mining was the largest employer in Isaac, Central Highlands and Charters Towers Regions.</p> <p>Largest occupation categories were Technicians & Trades Workers (18.2 percent) and Machinery Operators & Drivers (14.7 percent).</p>
Disability prevalence	OESR, 2012 (d)	Proportion of persons in need of assistance with a profound or severe disability was less in RSA (at 3.6 percent) in comparison to the state average of 4.4 percent. At 5.8 percent, Charters Towers was the only LGA higher than the state.

Socio-economic Variable from ToR	Data Source	Regional Summary
Socio and economic index	OESR, 2012 (d)	Populations with higher SEIFA index indicating less relative disadvantage were Central Highlands and Isaac Regions. Charters Towers and Whitsunday registered the most disadvantage.
Crime	QPS, 2012	Most common crimes in the RSA - 'Other Offences', 'Offences Against Property', 'Other Theft (excl. Unlawful Entry)', and 'Traffic and Related Offences'. Incidence of crime is highest in Townsville City and lowest in Isaac Region (i.e. total number of reported offences).
Housing tenure type and landlord type for rental properties	OESR, 2012 (d)	25.9 percent of the occupied private dwellings in the RSA were fully owned, 34.2 percent were being purchased and 33.2 percent were being rented. Very high rentals in Isaac and Central Highlands (60.8 percent and 44.4 percent respectively) given the mining presence in these communities.
Housing type	OESR, 2012 (d)	About 130,200 occupied private dwellings in the RSA - 83.7 percent separate houses; 5 percent semi-detached houses; and 10 percent apartments.
Housing costs	www.rpdata.com	Median prices vary across the region. Significant price spikes evident at the local level in Galilee and Bowen Basins, attributed to mining industry.
Housing availability	OESR, 2012 (d)	In the 12 months to March 2012, there were 3,075 dwelling units in new residential buildings approved in the RSA. Temporary accommodation – major WAV bed shortages in Moranbah and Clermont.

2.2.2 Community Characteristics

The RSA is shown covers an extensive area totalling 222,340 km² across six local government areas. Each region has different histories, settlement patterns and characteristics, as summarised below.

Table 2-2: Snapshot of Community Characteristics

LGA	Community Snapshot
Isaac Region	Isaac Region comprises the former LGAs of Belyando, Nebo and Broadsound Shires. It is a resource rich region with a long history in both agricultural and mining activities, as it contains a substantial portion of the Bowen Basin coal reserve.
Charters Towers Region	Charters Towers Region comprises the former LGAs of Charters Towers City and Dalrymple Shire. It comprises a predominantly rural area with the main town of Charters Towers, which supports the mining and beef industry sectors, and a growing horticultural industry in the south.
Central Highlands Region	The Central Highlands is located in Central Queensland and encompasses an area of about 60,000 km ² located near the Tropic of Capricorn covering a portion of the Bowen Basin coal resource. The Region was formed with the amalgamation of Bauhinia, Duaringa, Emerald and Peak Downs Shires. It has a dispersed population across a number of towns and rural settlement areas. Key centres include Emerald, Blackwater, Capella and Duaringa.

LGA	Community Snapshot
Mackay Region	Mackay Region was established by the amalgamation of Mackay City and Sarina Shire. The Mackay urban area an important regional service centre for Central Queensland region. Mackay Region has a number of smaller towns including Sarina, Mirani, Marian and Walkerston providing district and local services. The region's growth is focussed on the mining industry in the Bowen Basin, agribusiness, tourism, retail and an emerging marine sector. Mackay Region supports mining activities through major port facilities at Hay Point and Dalrymple Bay.
Whitsunday Region	Whitsunday Region is located on the Central Queensland coast, approximately 125 km north of Mackay. The natural assets of the Great Barrier Reef, tropical islands and National Parks make it one of Australia's premier tourist destinations. The Region includes the older centres of Bowen and Proserpine, the coastal urban strip, scattered coastal and rural settlements, west to Collinsville and the coal fields. It has a highly transient population associated with the region's tourism, mining and agricultural industries. The Whitsunday Region supports mining activities through major port facilities at Abbot Point near Bowen.
Townsville City	Townsville is a major regional service centre and is widely known as the capital of North Queensland. It provides a northern link for state and federal governments, business and the key industries of mining, commerce, retail, community and cultural services. The current LGA was established in 2008 with the amalgamation of the former Cities of Townsville and Thuringowa. The region encompasses a major urban coastal area, rural areas, mountain ranges, Magnetic Island a number of smaller islands (TCC, 2012).

Community Identity, Values and Lifestyle

Regional identity and aspirations are articulated in each Council's Community or Regional Plan. These documents are typically developed through an extensive consultation process to reflect community aspirations. A detailed analysis of existing community planning and policy frameworks, including regional values, is presented in Section 4 of this report.

Key Opportunities and Challenges

Table 2-3 sets out the opportunities and challenges facing the different LGAs in the Regional Study Area, based on a review of planning and policy documents, and stakeholder feedback during SIA consultation.

Table 2-3: Key Opportunities and Challenges

LGA	Opportunities and Challenges
Isaac Region	<p>Opportunities</p> <ul style="list-style-type: none"> • Resource sector expansion • Employment and training opportunities, particularly for younger people • Community development through the Moranbah Urban Development Area (UDA) • Expansion of air services <p>Challenges</p> <ul style="list-style-type: none"> • Shortages in temporary accommodation • Economic diversity to ensure long term viability beyond mining • Affordability of housing and services, particularly for those not in the mining sector. • Land availability for development (Moranbah and Clermont) • Addressing traffic safety issues on the Peak Downs Highway • Securing reliable and safe water supply for communities • Cumulative impacts of mining on communities and social infrastructure
Charters	Opportunities

LGA	Opportunities and Challenges
Towers Region	<ul style="list-style-type: none"> Regional community has a strong sense of pride and shared vision Ageing population as a foundation for local knowledge and experience in guiding community organisations A council that is representative of its people in urban and rural areas. Improvements to strategic planning and community consultation Support for service delivery by non-government organisations Employment and training opportunities Contribution to services for young people. <p>Challenges</p> <ul style="list-style-type: none"> Service provision to small communities across a large area. Managing cumulative impacts of mining on local communities. Diminished access to locally available natural resources for public works. Competing priorities and pressures of economic development, environmental protection and lifestyle preservation.
Central Highlands Region	<p>Opportunities</p> <ul style="list-style-type: none"> Strong community spirit, identity and social fabric Relaxed rural lifestyle, diverse and prospering economy Opportunities for social inclusion Securing regional investment for more economic diversity Improving regional road networks for the safe and efficient movement of people and freight <p>Challenges</p> <ul style="list-style-type: none"> Managing and responding to the effects of global economy Climate change Rapid population growth and imbalance in some areas Ageing population Affordability of land and housing Providing quality infrastructure to service regional needs
Mackay Region	<p>Opportunities</p> <ul style="list-style-type: none"> Develop and maintain strong relationships between major stakeholders in the economy Promoting the region as a lifestyle destination with quality education facilities All sectors of the community informed, engaged and the opportunity for their views to be considered in important decisions that affect them <p>Challenges</p> <ul style="list-style-type: none"> Loss of agricultural land Increasing employment opportunities to support the population Diversifying the region's economic base to ensure economic sustainability Providing a range of housing types including affordable and temporary housing options Ensuring goods and freight can be moved safely to and from the region Ensuring infrastructure is efficient and sustainable
Whitsunday Region	<p>Opportunities</p> <ul style="list-style-type: none"> High profile region Strong economic diversity Rich resource area New economic, social, tourism and cultural opportunities Industry attraction and support for growth <p>Challenges</p> <ul style="list-style-type: none"> Natural disasters

LGA	Opportunities and Challenges
	<ul style="list-style-type: none"> Community safety Isolation of some communities Ageing population Transient and non-resident population Shortfalls in some community facilities and services Infrastructure development, maintenance and asset replacement Limited capacity of community-based organisations
Townsville Region	<p>Opportunities</p> <ul style="list-style-type: none"> Strong economic base and growth Strong population growth Growing role of Townsville as a public and private sector regional service centre Economic diversification in mining, mineral processing, marine research, defence, education and tourism. <p>Challenges</p> <ul style="list-style-type: none"> Remoteness Social impacts arising from large transient workforce, growing defence presence and FIFO Affordable housing and market pressures Cultural diversity Population growth Need for revitalisation in some areas of Townsville to attract business investment in the region

2.3 Population

2.3.1 Resident Population and Projections

As at June 2011, the RSA had an estimated resident population (ERP) of 413,786, representing 8.9 percent of Queensland's total population (refer to Table 2-4). The RSA has grown steadily between 2006 and 2011, increasing by approximately 48,000 people at a growth rate of 2.5 percent p.a., outpacing the state average of 2.3 percent p.a.

Townsville Region had the largest population base of the six LGAs accounting for almost half of the total (46 percent), followed by Mackay Region (29 percent). Charters Towers Region had the smallest population base and experienced subdued growth between 2006 and 2011 at 1.3 percent p.a.

Table 2-4: Estimated Resident Population of Regional Study Area, 2011 (p)

Locality	2006	2011	Pop'n Change (2006-2011)	Average annual growth (% p.a.)
	- number -			2006-2011
Central Highlands (R)	28,256	31,784	3,528	2.4
Charters Towers (R)	12,155	12,978	823	1.3
Isaac (R)	21,113	22,956	1,843	1.7
Mackay (R)	107,332	121,072	13,740	2.4
Townsville (C)	165,278	189,931	24,653	2.8
Whitsunday (R)	31,355	35,065	3,710	2.3
Regional Study Area	365,489	413,786	48,297	2.5
Queensland	4,090,908	4,580,282	489,374	2.3

(a) Average annual growth rate

p = preliminary

Source: OESR, 2012(d)

Table 2-5 shows that solid growth in the RSA is expected to continue in future. Medium series projections forecast a total resident population of 641,101 by 2031 (an increase of 224,725 people) at a growth rate of 2.2 percent p.a., exceeding the state's average of 1.8 percent.

All six LGAs are expected to experience growth, with the highest increases in Townsville City (accounting for 46.1 percent of total growth), followed by Mackay Region (10.3 percent) and Whitsunday Region (8.6 percent). Isaac Region's population will increase by almost 14,000 people between 2011 and 2031 (at a rate of 2.3 percent p.a.) coinciding with continued expansion of the mining industry.

Although recent growth in Townsville and Mackay (as shown in Table 2-4) was high in terms of numbers, the rate of growth (percentage growth) will slow in future. In comparison, the Central Highlands and Isaac Regions are expected to experience the highest percentage growth at 2.4 percent and 2.3 percent respectively. This is undoubtedly to be driven by resource sector activity within the Galilee Basin.

Table 2-5: Population Projections for Regional Study Area 2011 – 2031
(medium series)

Locality	Projected Population as at 30 June (Number)					Ave. Annual Growth Rate 2011-2031 (%)
	2011	2016	2021	2026	2031	
Central Highlands (R)	31,861	36,256	40,880	45,685	50,742	2.4
Charters Towers (R)	12,979	13,627	14,063	14,521	14,963	0.7
Isaac (R)	23,277	28,266	31,418	34,270	37,000	2.3
Mackay (R)	121,397	138,348	156,117	172,604	187,367	2.2
Townsville (C)	191,119	216,524	241,684	268,330	295,578	2.2
Whitsunday (R)	35,743	40,618	46,008	50,928	55,451	2.2
Regional Study Area	416,376	473,639	530,170	586,338	641,101	2.2
Queensland	4,611,491	5,092,858	5,588,618	6,090,548	6,592,858	1.8
RSA as % of Qld	9.0	9.3	9.5	9.6	9.7	..

(a) Average annual growth rate

p = preliminary

Source: OESR, 2012(d)

2.3.2 Non-Resident Population

Analysis of the FTE populations for selected LGAs in the RSA from 2010-2011 shows that:

- Isaac Region had the largest proportion of non-resident workers (37 percent), being almost double that of the entire Bowen Basin in 2011 (19 percent).
- Both Central Highlands Region and Whitsunday Region – Bowen SLA registered lower proportions of non-resident workers at 13 percent and 5 percent respectively.

Table 2-6: FTE Populations for Selected LGA's and SLA's in the Bowen Basin, 2010-2011

LGA	Resident population (estimated)*	Total non-resident workers	FTE population estimate	Percentage of non-resident workers
Isaac (R)				
2010	22,590	9,900	32,490	30%
2011	22,960	13,590	36,540	37%
Change, 2010-11	370	3,690	4,060	..
Central Highlands (R)				
2010	31,020	3,230	34,250	9%
2011	31,780	4,830	36,620	13%
Change, 2010-11	760	1,610	2,370	..
Whitsunday (R) – Bowen SLA only**				
2010	14,360	480	14,840	3%
2011	14,520	720	15,230	5%
Change, 2010-11	150	240	390	..
Bowen Basin Total				
2010	83,540	14,610	98,150	15%
2011	84,850	20,520	105,370	19%
Change, 2010-11	1,310	5,910	7,220	..

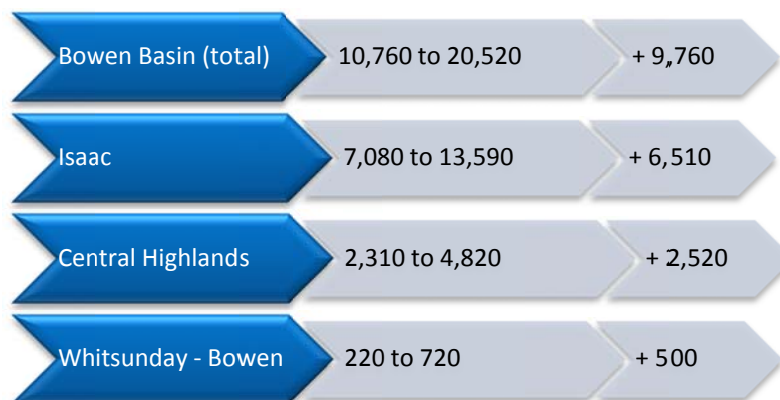
* 2011 preliminary ERP.

** Non-resident worker data for Whitsunday (R) for 2011 include Merinda, which was not included in previous years' collections.

Figures in this table have been rounded to the nearest 10; any internal discrepancies are due to rounding.

Source: OESR, 2012(a)

For the five year period 2006-2011, the total number of non-resident workers on-shift increased from:



With the development of the Galilee Basin commencing, together with the population projections presented earlier, it is anticipated that a high proportion of non-resident workers on shift will substantially increase in Isaac and Central Highlands in particular. An increase can also be expected in the Whitsunday Region through the expansion of activities at Abbott Point.

2.3.3 Age and Gender

The RSA's age and gender distribution differs from the Queensland profile as follows:

- The RSA population generally is more youthful with 66.6 percent of residents aged under 45, compared with a state average of 62.6 percent.

- There is a slightly higher proportion of infants and children aged under 15 (21 percent for the RSA and 20 percent for Queensland) and a lower representation of residents aged 65 or more at 9.5 percent, compared to 12.6 percent for Queensland.
- Persons of retirement age were most evident in the Charters Towers, Whitsunday and Mackay Regions. Isaac recorded the lowest proportion of persons aged 65 or more.
- There were slightly more people in the working age groups of 15 to 64 (69.4 percent of the RSA compared to 67.4 percent for Queensland). The highest proportions of working age groups were recorded in Whitsunday (72.2 percent), Isaac (71.0 percent) and Central Highlands (70.1 percent).

Feedback from stakeholders suggests that less people in the 65+ cohort is attributed to:

- Retirees leaving the region and settling in coastal areas closer to medical facilities; and
- A lack of residential aged care facilities within regional areas.

The gender balance in the RSA is characterised by a higher proportion of males than females, at 52.5% and 47.5% respectively. Isaac and Central Highlands had the most males (56% and 54% respectively). In comparison, 49.5% of the Queensland population is male.

Table 2-7 and Figure 2-2 provide a breakdown of RSA age and gender profile

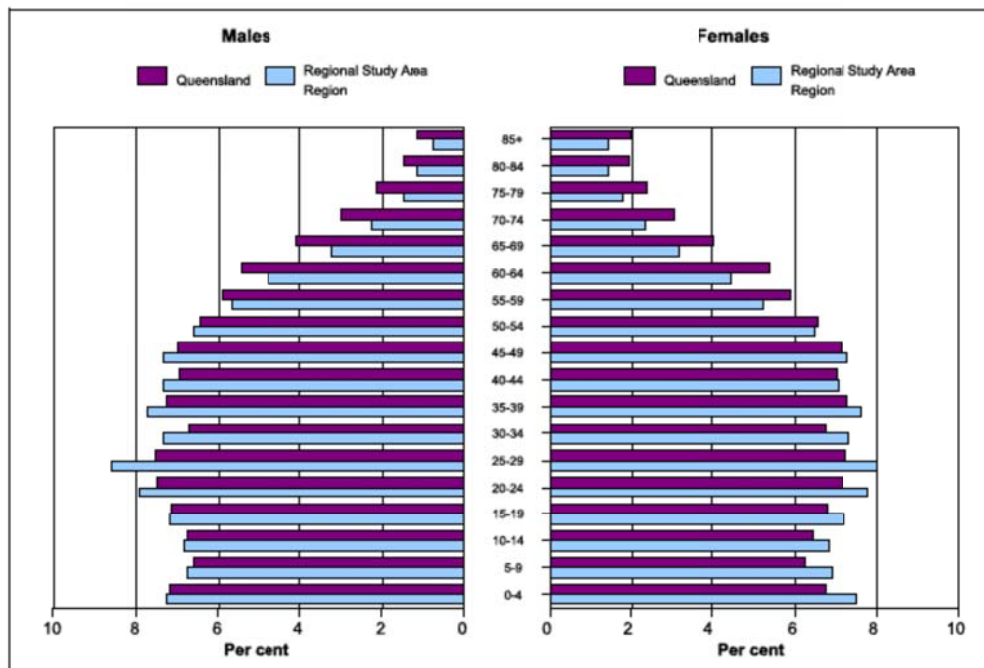
Table 2-7: Estimated Resident Population by Age in Regional Study Area, June 2010p

Locality	Population by Age									
	0–14		15–24		25–44		45–64		65+	
	number	%	number	%	number	%	number	%	number	%
Central Highlands	7,500	24.1	4,284	13.8	10,651	34.3	6,843	22.0	1,800	5.8
Charters Towers	2,943	22.9	1,866	14.5	3,033	23.6	3,168	24.7	1,827	14.2
Isaac	5,628	24.9	2,944	13.0	8,387	37.1	4,740	20.9	930	4.1
Mackay	25,032	21.1	16,110	13.6	34,957	29.4	30,208	25.4	12,535	10.5
Townsville	38,425	20.7	31,121	16.8	55,911	30.1	42,751	23.0	17,560	9.5
Whitsunday	5,876	16.9	4,739	13.6	10,926	31.4	9,458	27.2	3,766	10.8
Regional Study Area	85,404	21.0	61,064	15.0	123,865	30.5	97,168	23.9	38,418	9.5
Queensland	901,542	20.0	644,985	14.3	1,278,876	28.3	1,121,066	24.8	567,381	12.6
RSA as % of Qld	9.5	..	9.5	..	9.7	..	8.7	..	6.8	..

p = preliminary

Source: OESR, 2012(d)

Figure 2-2: Population Pyramid for Regional Study Area and Queensland (2010 p)



p = preliminary
Source: OESR, 2012(d)

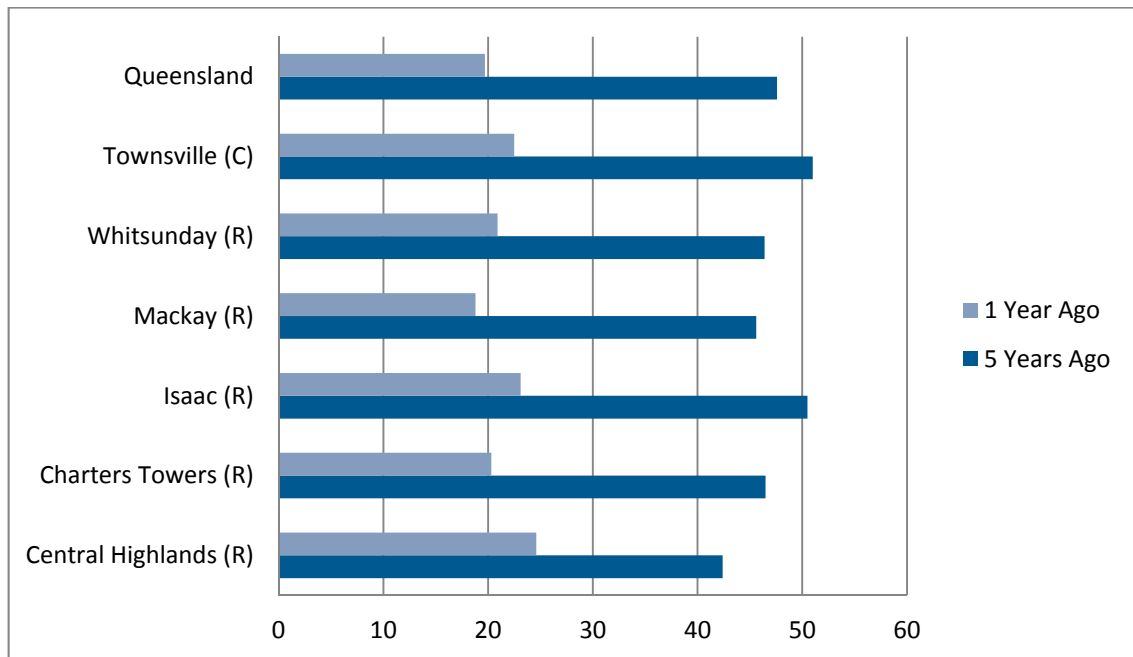
Each of the LGAs within the RSA had the following notable characteristics:

- Central Highlands Region had 24.1 percent of persons aged 0-14, 70.1 percent aged 15-64 (working age) and 5.8 percent aged 65 and over.
- Charters Towers Region had 22.9 percent of persons aged 0-14, 62.8 percent aged 15-64 (working age) and 14.2 percent aged 65 and over.
- Isaac Region had 24.9 percent of persons aged 0-14, 71.0 percent aged 15-64 (working age) and only 4.1 percent aged 65 and over.
- Mackay Region had 21.1 percent of persons aged 0-14, 68.4 percent aged 15-64 (working age) and 10.5 percent aged 65 and over.
- Townsville City had 20.7 percent of persons aged 0-14, 69.9 percent aged 15-64 (working age) and 9.5 percent aged 65 and over.
- Whitsunday Region had 16.9 percent of persons aged 0-14, 72.2 percent aged 15-64 (working age) and 10.8 percent aged 65 and over.

2.3.4 Mobility

Figure 2-3 presents the usual place of residence for the RSA population, at one and five years prior to the 2006 Census. In Queensland, 19.7 percent residents had a different address one year prior – all LGAs in the RSA recorded a higher level of population migration with the exception of Mackay Region at 18.8 percent. Central Highlands Region recorded the highest migration figure of 24.6 percent.

Figure 2-3: Proportion at Different Address 1 and 5 Years Ago, Regional Study Area, 2006 (a) (b)



(a) Based on place of usual residence.

(b) Based on persons aged one year and over.

(c) Includes persons who stated that they were usually resident at a different address but did not state that address.

(d) Includes persons who did not state whether they were usually resident at a different address.

Source: OESR, 2011(d)

About half of the residents in Townsville City and Isaac Region had a different address five years prior to the 2006 Census – Queensland recorded an average migration figure of 47.6 percent for the same survey period. All other LGAs in the RSA had a slightly lower level of migration than the state, with Isaac Region having the lowest at 42.4 percent.

2.3.5 Indigenous Population

The RSA has a relatively large Indigenous population, with 19,534 persons of Aboriginal or Torres Strait Islander descent at the time of the 2011 Census. This equates to 5.1 percent of the RSA population.

All LGA's except Isaac Region had an equivalent or higher Indigenous representation than the state average of 3.6 percent. Charters Towers Region had the largest at 7.9 percent, followed by Townsville City (6.1 percent) and Mackay Region (4.4 percent).

Table 2-8: Persons by Indigenous Status in Regional Study Area (a), 2011

Locality	Aboriginal	Torres Strait Islander	Both (b)	Total Indigenous	Indigenous proportion (%)	Non-Indigenous	Total persons (c)
Central Highlands	922	53	45	1,020	3.6	25,322	28,715
Charters Towers	855	22	55	962	7.9	10,448	12,169
Isaac	492	58	54	604	2.7	19,788	22,586
Mackay	2,907	1,303	702	4,912	4.4	101,061	112,797
Townsville	7,800	1,727	1,176	10,703	6.1	153,056	174,462
Whitsunday	1,068	125	140	1,333	4.2	26,821	31,427
Regional Study Area	14,074	3,288	2,172	19,534	5.1	336,496	382,156
Queensland	122,896	20,094	12,834	155,824	3.6	3,952,707	4,332,740
RSA as % of Qld	11.5	16.4	16.9	12.5	..	8.5	8.8

(a) = Based on place of usual residence

(b) = Applicable to persons who are of 'Both Aboriginal and Torres Strait Islander origin'

(c) = Includes Indigenous status not stated

Source: OESR, 2012(d)

2.3.6 Cultural and Ethnic Characteristics

Country of Birth

In 2011, there were 46,939 persons in the RSA who were born overseas equating to 12.3 percent of the total population, of which 3.2 percent were born in non-English speaking (NES) countries. In comparison, Queensland's average for persons born overseas was much higher at 20.5 percent (including 9.5 percent from NES backgrounds). 307,175 people (or 80.4 percent) in the RSA were Australian-born (refer to Table 2-9).

Whitsunday Region is characterised by the highest representation of persons born overseas (14.1 percent), followed by Townsville City (13.3 percent) and Mackay Region (11.7 percent). There were considerably less overseas-born people in Central Highlands, Charters Towers and Isaac Regions.

Table 2-9: Number of Persons by Birthplace in Regional Study Area, 2011(a)

Locality	Born in Australia		Born in ESB Countries (b)		Born in NESB Countries		Total born Overseas		Total persons (c)
	number	%	number	%	number	%	number	%	number
Central Highlands	23,139	80.6	1,980	6.9	1,140	4.0	3,120	10.9	28,715
Charters Towers	10,575	86.9	444	3.6	281	2.3	725	6.0	12,168
Isaac	18,060	80.0	1,416	6.3	816	3.6	2,232	9.9	22,588
Mackay	92,103	81.7	7,917	7.0	5,326	4.7	13,243	11.7	112,796
Townsville	139,831	80.1	12,557	7.2	10,624	6.1	23,181	13.3	174,462
Whitsunday	23,467	74.7	2,770	8.8	1,668	5.3	4,438	14.1	31,425
Regional Study Area	307,175	80.4	27,084	7.1	19,855	3.2	46,939	12.3	382,154
Queensland	3,192,115	73.7	478,290	11.0	410,346	9.5	888,636	20.5	4,332,738
RSA as % of Qld	9.6	..	5.7	..	4.8	..	5.3	..	8.8

(a) Based on usual place of residence

(b) Includes UK, Ireland, Canada, USA, South Africa and New Zealand

(c) Includes 'inadequately described', 'at sea', 'not elsewhere classified' and 'not stated responses'

Source: OESR, 2012(d)

Proficiency in Spoken English

As shown in Table 2-10, 14,646 persons in the RSA were born overseas who spoke a language other than English at home (31.2 percent of the overseas-born population), which is less than the State average where 36.0 percent.

Of those born overseas, who stated that they spoke a language other than English, 3.2 percent stated they spoke English either 'not well', or 'not at all', compared with 5.2 percent in Queensland.

In the RSA, Whitsunday Region had a higher number of overseas-born people who spoke English either 'not well or not at all' (5.28 percent), followed by Townsville Region (3.5 percent).

Table 2-10: Proficiency in English of Overseas Persons in Regional Study Area, 2011

Locality	Speaks English only		Speaks other language at home and speaks English						Persons born overseas (c)
			Very well or well		Not well or not at all		Total (b)		
	number	%	number	%	number	%	number	%	
Central Highlands	2114	67.8	921	29.5	73	2.3	1002	32.1	3119
Charters Towers	548	76.0	154	21.4	12	1.7	170	23.6	721
Isaac	1531	68.6	645	28.9	41	1.8	693	31.0	2,233
Mackay	9096	68.7	3753	28.3	324	2.4	4109	31.0	13247
Townsville	15589	67.3	6577	28.4	811	3.5	7514	32.4	23180
Whitsunday	3265	73.6	902	20.3	229	5.2	1158	26.1	4439
Regional Study Area	32143	68.5	12952	27.6	1490	3.2	14646	31.2	46939
Queensland	565,544	63.6	269,847	30.4	45,927	5.2	319,949	36.0	888,635
RSA as % of Qld	5.7	..	4.8	..	3.2	..	4.6	..	5.3

(a) Based on usual place of resident;

(b) includes proficiency in English not stated;

(c) excludes persons who did not state their country of birth.

Source: OESR, 2012(d)

2.3.7 Family Composition

Table 2-11 shows there were 98,514 families in the RSA in 2011, constituting 8.4 percent of all Queensland families. 'Couple families with children' are the dominant family type at 45.3 percent, being marginally higher than the state average of 42.8 percent.

The RSA had lower representations of 'Couple family with no children' at 38.8 percent (compared with 39.5 percent for Queensland) and 'One-parent families' at 14.5 percent, compared with the state average of 16.1 percent.

Table 2-11: Family Composition in the Regional Study Area (2011)

Locality	Couple Family with no Children (c)	Couple Family with Children (c)	One-parent Family	Total (d)	
				%	number
Central Highlands (R)	2,565	3,685	639	9.2	6,962
Charters Towers (R)	1,280	1,260	511	16.6	3,086
Isaac (R)	1,844	2,933	442	8.4	5,258
Mackay (R)	11,783	13,986	3,990	13.2	30,169

Locality	Couple Family with no Children (c)	Couple Family with Children (c)	One-parent Family	Total (d)	
	— number —			%	number
Townsville (R)	17,128	19,726	7,647	16.9	45,319
Whitsunday (R)	3,582	2,992	1,059	13.7	7,720
Regional Study Area	38,182	44,582	142,88	14.5	98,514
Queensland	453,102	4,491,200	184,547	16.1	1,148,179
RSA as % of Qld	8.4	9.1	7.7	..	8.6

(a) Based on place of usual residence

(b) Includes same-sex couple families

(c) Children are defined as children aged under 15 years of age or dependent students aged 15 to 24 years

(d) Includes other families

Source: OESR, 2012(d)

2.3.8 Household Structure

Family households were the most common type. Four of the LGAs had a higher proportion of family households than the state average, apart from Whitsunday and Charters Towers. In these LGAs a large number of single/lone person households were counted (about one quarter of the total).

Table 2-12: Household Structure in the Regional Study Area (2011)

Locality	Family Households (%)	Single or Lone Person Households (%)	Group Households (%)
Central Highlands (R)	76.3	19.6	4.2
Charters Towers (R)	72.1	25.0	2.9
Isaac (R)	77.6	18.9	3.5
Mackay (R)	76.3	20.1	3.6
Townsville (R)	72.7	22.0	5.3
Whitsunday (R)	70.1	24.9	5.0
Queensland	72.4	22.8	4.7

Source: ABS, 2012

2.4 Employment, Education and Training

2.4.1 Education

As at 30 June 2010, there were 192 schools (public and private) in the RSA (OESR, 2012).

In 2011, 145,682 people (50.6 percent) completed Year 11 or 12 (or equivalent) in the RSA, which is lower than the state average of 55.3 percent (Table 2-13). Levels of senior schooling are quite variable across the LGAs, with the highest in Townsville City (55.1 percent) and lowest in Charters Towers Region (40.1 percent).

Table 2-13: Highest Level of Schooling Completed in Regional Study Area, 2011

Locality	Did not go to school, or Year 8 or below	Year 9 or 10 or equivalent	Year 11 or 12 or equivalent	Total (c)	
	— number —			%	number
Central Highlands	1,088	7,016	10,383	49.8	2,0858
Charters Towers	1,080	3,275	3,570	40.1	8,904
Isaac	734	5,258	8,202	50.2	16,337
Mackay	6,468	30,674	39,777	46.6	85,354
Townsville	7,474	39,018	72,659	55.1	131,856
Whitsunday	1,762	8,556	11,091	44.6	24,866
Regional Study Area	18,606	93,797	145,682	50.6	288,175
Queensland	219,102	977,116	1,836,995	55.3	3,320,761
RSA as % of Qld	8.5	9.6	7.9	..	8.7

(a) Based on place of usual residence.

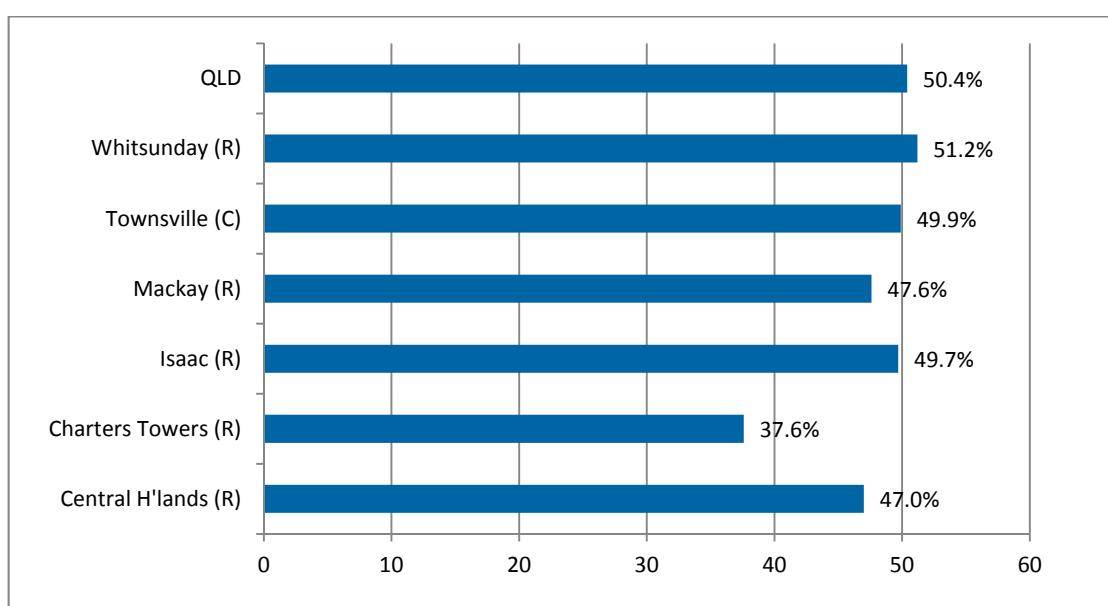
(b) Based on persons aged 15 years and over.

(c) Includes highest year of schooling not stated.

Source: OESR, 2012(d)

A lower level of educational attainment in the RSA is also evident in post-school qualifications – five of six LGAs registered a lower rate than the Queensland average of 50.4 percent, with the exception of Whitsunday at 51.2 percent. Charters Towers registered the lowest level at 37.6 percent.

Table 2-14: Post School Qualifications in Regional Study Area, 2006 (% aged 15+) (a) (b)



(a) Based on place of usual residence

(b) Persons aged 15 years and over

(c) Includes bachelor degree, graduate diploma, graduate certificate and postgraduate degree

(d) Includes Certificate, I, II, III and IV and Certificates not further defined responses

(e) Persons aged 15 years and over, includes 'inadequately described' and 'not stated' level of education responses

Source: OESR, 2012(d)

2.4.2 Labour Force, Unemployment and Income

Unemployment

During the March quarter of 2012, 11,669 persons were unemployed in the RSA at a rate of 4.9 percent, which was lower than the Queensland rate of 5.5 percent.

There is considerable variation in unemployment across the RSA, ranging from lows of 1.2 percent in Isaac Region and 2.4 percent in Central Highlands, to highs of 7.8 percent in Charters Towers and 6.1 percent in Whitsunday.

Table 2-15: Unemployment and Labour Force (a) in Regional Study Area, March Quarter 2012

Locality	Unemployed	Labour force	Unemployment rate
	— number —		%
Central Highlands (R)	457	19339	2.4
Charters Towers (R)	550	7,022	7.8
Isaac (R)	168	13,931	1.2
Mackay (R)	2738	66926	4.1
Townsville (C)	6533	109621	6.0
Whitsunday (R)	1223	20122	6.1
Regional Study Area	11,669	236,961	4.9
Queensland	136,900	2,479,000	5.5
RSA as % of Qld	8.5	9.6	..

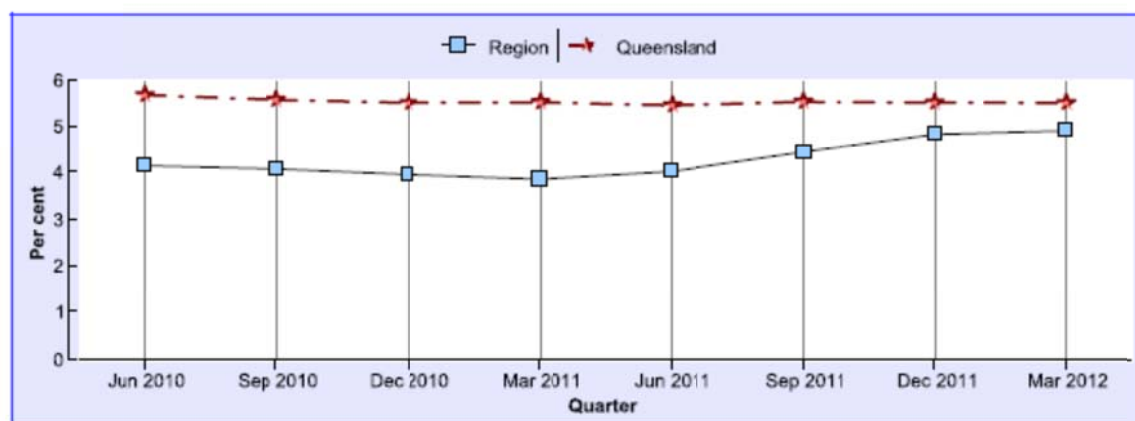
(a) Based on a 4-quarter smoothed series.

Note: Small Area Labour Force data have been generated from a Structure Preserving Estimation (SPREE) methodology using original, unadjusted ABS labour force estimates, ABS Census 2006 data and Centrelink Newstart and Youth Allowance (other). As such, these estimates can exhibit considerable variability and care should be taken when interpreting these values. In addition, these estimates are based on original data and have not been adjusted to account for seasonal or other variations and can thus exhibit irregular movements. Quarter-to-quarter comparisons may not be indicative of actual movements in the labour market. Year-on-year comparisons may therefore be appropriate. Note: Based on ABS, Australian Standard Geographic Classification (ASGC), July 2011. The sum of the LGAs may not be equivalent to the Regional Study Area.

Source: OESR, 2012(d)

Between the June quarter 2010 and the March quarter 2012, the unemployment rate in the RSA ranged between 3.9 percent (March quarter 2011) and 4.9 percent (March quarter 2012).

Figure 2-4: Unemployment Rate (a) in Regional Study Area and Queensland, June Quarter 2010 to March Quarter 2012



Source: OESR 2012(d)

Labour Force by Industry

In 2006, the main industries of employment for the RSA were Mining (averaging 14.8 percent of total labour force), Retail Trade (9.1 percent), Construction (8.9 percent) and Agriculture, Forestry and Fishing (8.5 percent).

Variation exists at the local level for industries of highest employment, as follows:

- Mining - Isaac, Central Highlands and Charters Towers Regions
- Retail trade - Mackay Region
- Public administration and safety – Townsville City
- Accommodation and food services – Whitsunday Region

Table 2-16: Employment by Industry in the Regional Study Area, 2006 (% of total workforce)

Industry	Central Highlands	Charters Towers	Isaac	Mackay	Townsville	Whitsunday	QLD
Agriculture, forestry and fishing	10.9	13.1	10.5	4.6	0.8	11	3.4
Mining	22.2	13.2	38.9	8.3	2.6	3.7	1.7
Manufacturing	4.3	4.4	2	9.9	8.2	6.2	9.9
Electricity, gas, water and waste services	0.5	0.6	0.5	0.9	1.4	0.8	1
Construction	11.4	5.3	6.4	10.1	9.9	10.1	9
Wholesale trade	7.9	1.5	2	4.6	3.2	2.6	1.9
Retail trade	2.8	10.8	7.1	11.4	11	11.6	11.6
Accommodation and food services	5.7	7.0	6.2	6.5	6.8	15.6	7
Transport, postal and warehousing	4.5	4.4	3.6	6.1	5.1	7.2	5.1
Information, media and telecommunications	0.5	0.6	0.2	0.8	1.6	0.6	1.4
Financial and insurance services	1.1	0.8	0.5	1.8	1.8	1.3	2.9
Rental, hiring and real estate services	1.4	1.0	1	1.9	1.8	2.2	2.1
Professional, scientific and technical services	3	1.9	1.3	4.4	4.3	3	5.6
Administrative and support services	2.1	1.6	2.2	2.2	2.8	3.3	3.1
Public administration and safety	4.3	5.8	2.8	4	12.6	3.3	6.7
Education and training	5.8	11.4	5.6	6.3	8	4.8	7.6
Health care and social assistance	4.3	10.3	3.6	8	10.9	6	10.2
Arts and recreational services	0.3	0.5	0.2	0.6	1.3	0.9	1.3
Other services	4.1	2.8	2.8	4.7	3.5	3	3.7

Source: ABS, 2006: B43

2.4.3 Employment by Occupation

In 2006, Technicians & Trades Workers were the largest occupation group representing 18.2 percent of the employed labour force, followed by Machinery Operators & Drivers (14.7 percent). Labourers were also present in the RSA in higher proportions compared to Queensland.

Table 2-17: Employment by Occupation in the Regional Study Area, 2006
(%)(a)(b)

Occupation	Central Highlands	Charters Towers	Isaac	Mackay	Townsville	Whitsunday	QLD
Managers	14.6	15.3	12.9	11.3	9.9	14.5	12.4
Professionals	9.9	12.4	9.9	12.2	16.2	10.1	17.1
Technicians and trades workers	20.9	14.5	20.1	20.2	17.0	16.7	15.4
Community and personal service workers	4.8	8.9	4.6	7.0	11.7	9.0	9.1
Clerical and administrative workers	9.9	9.1	8.3	13.2	14.7	10.4	14.8
Sales workers	5.9	7.8	5.2	9.4	9.9	9.5	10.4
Machinery operators and drivers	19.9	12.7	24.9	12.7	8.0	9.8	7.2
Labourers	12.3	6.7	12.3	12.2	10.9	18.1	11.9

(a) Employed persons aged 15 years and over.

(b) Occupation was coded to the ABS 2006 Australian and New Zealand Standard Classification of Occupations (ANZSCO). This has replaced the 1996 Australian Standard Classification of Occupations (ASCO) Second Edition.

(c) The ratio of the percentage for the region to the percentage for Queensland.

(d) Includes inadequately described and not stated responses.

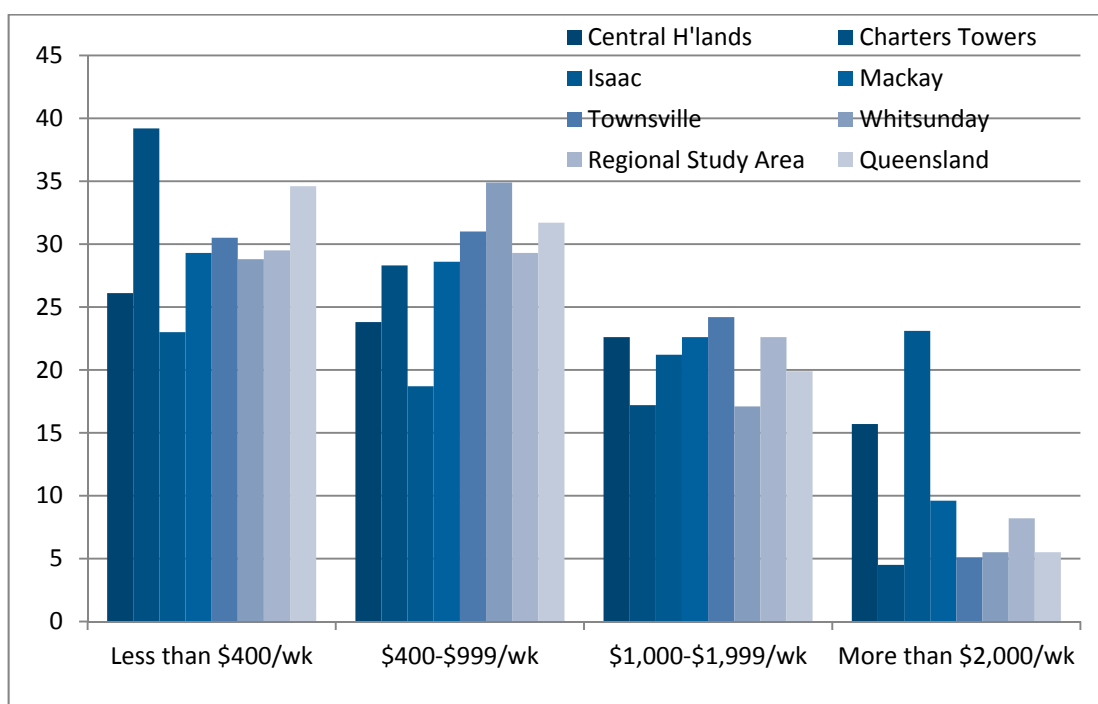
Source: OESR, 2012 (d)

2.4.4 Income

Figure 2-5 shows the total personal weekly income for people in the six LGAs in 2011, as well as averages for the RSA and Queensland. The income profile for the RSA is different when compared to the state:

- Averages for the \$400 per week income category were lower than the state average of 34.6 percent, with the exception of Charters Towers (29.2 percent).
- Both Charters Towers and Whitsunday had a high proportion of incomes below \$1,000 per week.
- Isaac and Central Highlands significantly exceeded the state average in the \$2,000 or more per week category (3-4 times higher), which may be attributed to the mining sector.

Figure 2-5: Total Individual Weekly Income in Regional Study Area by Local Government Area, 2011 (%)



Based on usual residents aged 15 and over.
Source: OESR, 2012 (d)

2.5 Housing and Accommodation

Housing Types

The RSA had about 130,200 occupied private dwellings at the time of the 2011 Census. When compared with Queensland, the RSA is characterised by:

- A higher proportion of separate houses (83.7 percent) than the state average (79 percent).
- Lower proportion of semi-detached dwellings (RSA - 5 percent; Queensland - 8 percent) and apartments (RSA - 10 percent and Queensland – 12 percent).

Table 2-18: Occupied Private Dwellings (a) by Structure/Type in Regional Study Area, 2011

Locality	Separate house	Semi-detached (b)	Apartment (c)	Total (d)	Separate houses as % of total
Central Highlands (R)	7,698	257	552	8,971	86%
Charters Towers (R)	2,862	42	136	4,207	92%
Isaac (R)	5,873	313	182	6,652	88%
Mackay (R)	32,841	1,913	2,968	38,561	85%
Townsville (C)	49,191	3,412	7,707	60,968	81%
Whitsunday (R)	8,172	601	1,556	10,850	75%
Regional Study Area	107,637	6,538	13,101	130,209	83%
Queensland	1,215,303	129,430	181,716	1,547,303	79%
RSA as % of Qld	8.9	5.1	7.2	8.4	..

(a) Excludes visitors only and other not classifiable households

(b) Includes row or terrace house, townhouse etc.

(c) Includes flat, unit or apartment.

(d) Includes other dwelling types and dwelling types not stated.
Source: OESR, 2012(d)

Home Ownership

In 2011, fully owned houses represented 25.9 percent of housing in the RSA which was lower than Queensland at 29.0 percent. Both the Isaac and Central Highlands had a very high proportion rental houses (60.8 percent and 44.4 percent respectively) as shown in Table 2-19 and Figure 2-6.

Table 2-19: Occupied Private Dwellings by Tenure Type in the Regional Study Area, 2011

Locality	Fully owned		Being purchased (a)		Rented (b)		Total (c)
	number	%	number	%	number	%	number
Central Highlands	1,995	22.2	2,630	29.3	3,986	44.4	8,969
Charters Towers	1,535	36.5	1,246	29.6	1,210	28.8	4,207
Isaac	1,389	20.9	974	14.6	4,041	60.8	6,651
Mackay	11,471	29.7	14,374	37.3	11,362	29.5	38,560
Townsville	14,134	23.2	22,083	36.2	22,752	37.3	60,969
Whitsunday	3,202	29.5	3,281	30.2	3,957	36.5	10,848
Regional Study Area	33,726	25.9	44,588	34.2	47,308	36.3	130,204
Queensland	448,617	29.0	533,868	34.5	513,415	33.2	1,547,303
RSA as % of Qld	7.5	..	8.4	..	9.2	..	8.4

(a) Excludes visitors only and other not classifiable households.

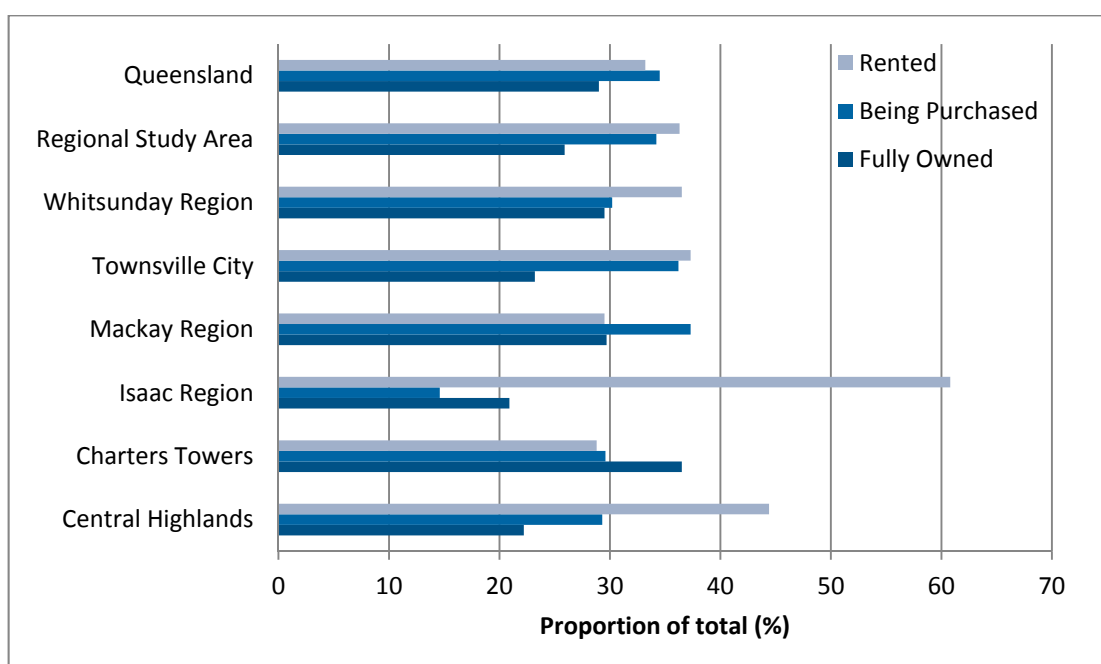
(b) Includes dwellings being purchased under a rent/buy scheme.

(c) Includes renting from a real estate agent, state or territory housing authority, renting from a person not in the same household, renting from cooperative/community/church group, other landlord type and landlord type not stated.

(d) Includes other tenure type and tenure type not stated.

Source: OESR, 2012 (d)

Figure 2-6: Tenure Type Comparison in by LGA and Queensland, 2011



Source: OESR, 2012 (d)

2.5.1 Housing Availability

Housing Availability

In the 12 months ending 31 March 2012, there were 3,075 dwelling units in new residential buildings approved in the RSA (Table 2-20), with Townsville City having the largest number.

These residential approvals were valued at almost \$795 million, or 12.3 percent of the Queensland total. The highest value was recorded in the coastal urban areas of Townsville City (43 percent) and Mackay Region (42 percent). In comparison, Central Highlands and Isaac represented 7 percent and 5 percent of the total value, with a majority of these approvals for building in Emerald, Moranbah and Clermont.

Table 2-20: Residential and Non-Residential Building Approvals in Regional Study Area (12 Months Ending 31 March 2012)

Locality	Dwelling units in new residential buildings (a)	Residential building value (a)	Total residential building value (b)	Total non-residential building value (b)	Total building value (b)	Proportion of total value that is residential (c)
	number	— \$'000 —				%
Central Highlands (R)	241	52,190	55,806	37,360	93,166	59.9
Charters Towers (R)	39	10,263	13,985	2,110	16,095	86.9
Isaac (R)	244	42,438	45,383	56,337	101,720	44.6
Mackay (R)	1176	330138	362348	195782	558130	64.9
Townsville (R)	1,301	338,767	402,809	515,416	918,225	43.9
Whitsunday (R)	74	20874	25,448	14,934	40,382	63.0
Regional Study Area	3,075	52,700	905,779	821,939	1,727,718	52.4
Queensland	26,388	6,436,635	7,740,571	5,620,949	13,361,520	57.9
RSA as % of Qld	11.7	12.3	11.7	14.6	12.9	..

(a) Excludes visitors only and other not classifiable households.

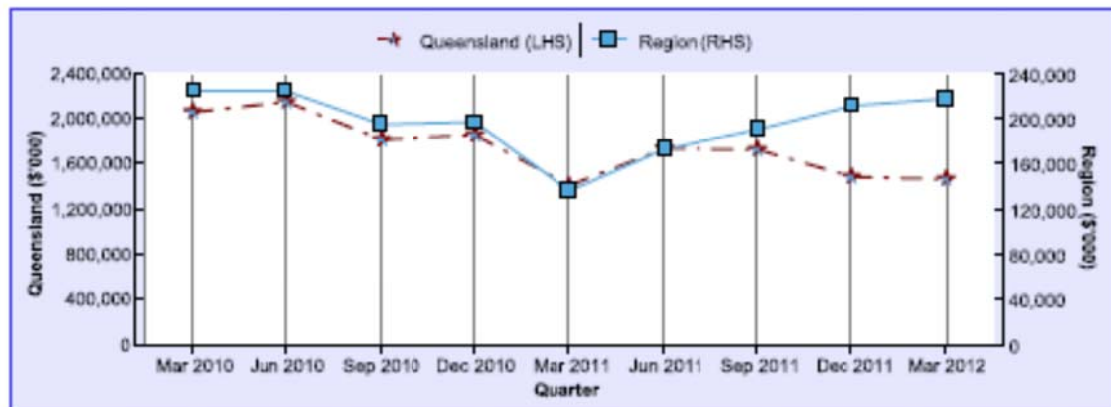
(b) Includes dwellings being purchased under a rent/buy scheme.

(c) Includes renting from a real estate agent, state or territory housing authority, renting from a person not in the same household, renting from cooperative/community/church group, other landlord type and landlord type not stated.

(d) Includes other tenure type and tenure type not stated.

Source: OESR, 2012(d)

Figure 2-7: Value of Residential Building Approvals (a) in Regional Study Area and Queensland, March quarter 2010 to March quarter 2012



(a) Excludes alterations, additions and conversions.
Source: OESR, 2012(d)

Housing and Rental Costs

An analysis of housing and rental costs for key urban centres/localities is presented in the District Study Area. For the RSA, a consistent theme to emerge during SIA consultations was the capacity for residential expansion and housing affordability in coastal urban regions, to support mining workforce growth in Central Queensland and emerging FIFO hubs.

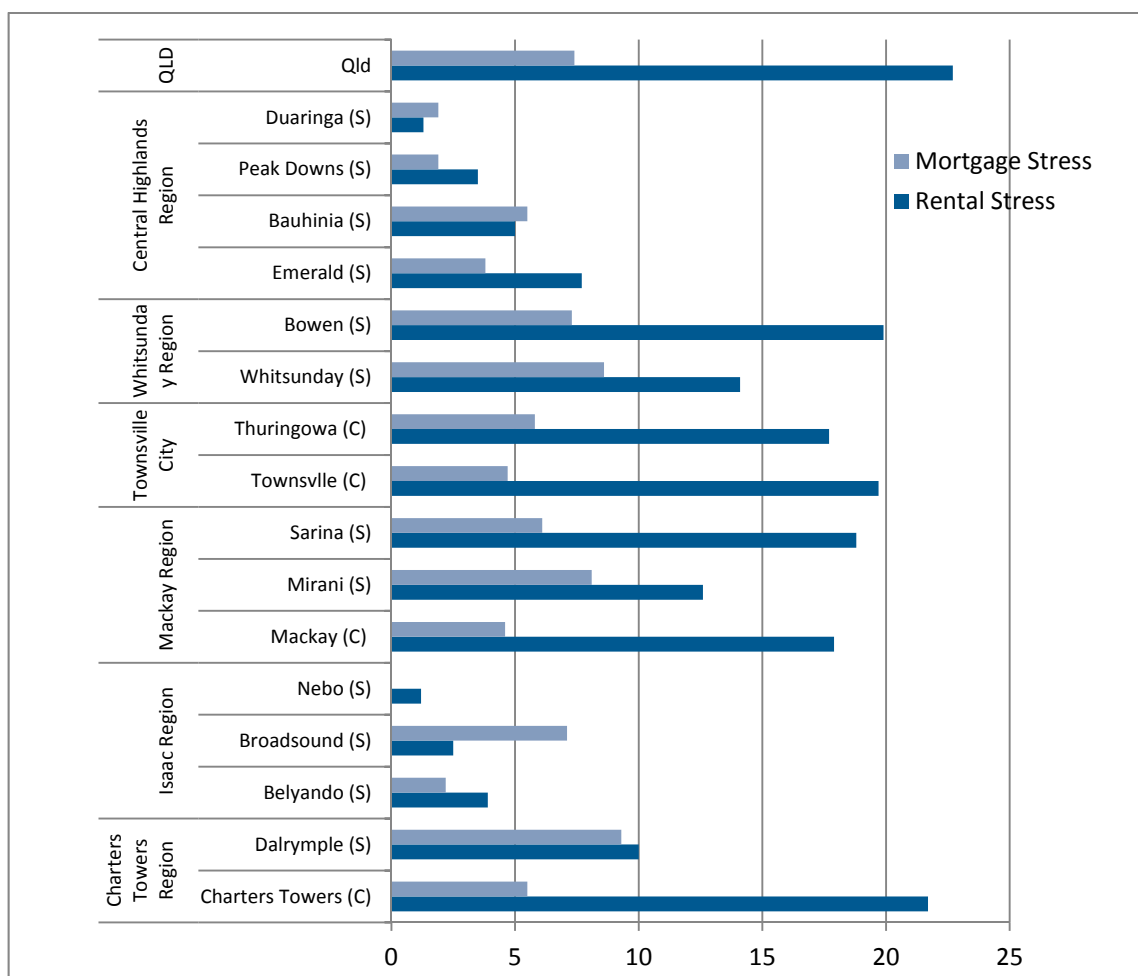
Mortgage and Rental Stress

Mortgage stress is defined by the PHIDU as "... households in bottom 40 percent of income distribution (with less than 80 percent of median income) spending more than 30 percent of income on mortgage repayments" and "includes households in bottom 40 percent of income distribution (with less than 80 percent of median income), spending more than 30 percent of income on rent".

Key observations of for mortgage and rental stress amongst low income households in the RSA are:

- Mortgage stress is most evident in the pre-amalgamation Shires of Dalrymple (Charters Towers Region), Whitsunday and Bowen (Whitsunday Region).
- Rental stress is most evident in the pre-amalgamation LGAs of Charters Towers City, Bowen Shire, Townsville City and Sarina Shire. Overall, the RSA demonstrates a lower level of rental stress than Queensland.

Figure 2-8: Housing Affordability Stress in the Regional Study Area, 2006 (%)



Includes households in bottom 40% of income distribution (with less than 80% of median income), spending more than 30% of income on rent / mortgage repayments

Source: PHIDU, 2010

Other Temporary Accommodation

According to OESR's *Bowen and Galilee Basins Population Report, 2011*, the Bowen Basin had a total capacity of 22,730 beds in Workers Accommodation Villages¹ – an increase of 4,940 additional beds since 2010, with the largest numbers of workers accommodation village beds located in Isaac Region.

The OESR Report notes that not all unoccupied rooms may be available for use by other guests, as some workers accommodation village operators hold rooms vacant for workers when off-shift, while other rooms are shared by different occupants between (known as 'motelling').

Due to the strong demand from resource industry workers, many hotels/motels in the Bowen Basin have limited capacity to cater for other visitors – 3 percent of rooms were vacant in 2011.

¹ In previous editions of the Bowen Basin report, workers accommodation villages were referred to as single person quarters (SPQs). Other terms for workers accommodation villages include temporary workers' accommodation, worker camps and dongas (OESR, 2012, p23).

Table 2-21: Worker accommodation village bed capacity and Non-Resident Workers on-shift counted in villages, Selected LGAs and SLAs, July 2011

LGA SLA	Total capacity (beds)	Non-resident workers on-shift counted in WAVs	Percentage of WAVs in Bowen Basin
Isaac (R)	15,590	12,540	68.6%
Belyando	4,590	3,380	20.2%
Broadsound	4,640	4,200	20.4%
Nebo	6,350	4,960	27.9%
Central Highlands (R)	5,070	3,640	22.3%
Emerald	1,160	720	5.1%
Whitsunday (R) – Bowen only	910	550	4.0%
Bowen Basin Total	22,730	17,690	-

Figures in this table have been rounded to the nearest 10; any internal discrepancies are due to rounding.
Source: OESR, 2012(a)

86 percent of the Bowen Basin's non-resident workers are accommodated in workers accommodation villages. Some variation in the accommodation mix exists at the SLA level, however, workers accommodation villages account for the highest proportion in each locality.

Table 2-22: Non-resident Workers on-shift by Accommodation Type for Selected LGAs and SLAs, July 2011

LGA	SLA	WAV	Hotel/Motel	Caravan Park/Other*	Total
		- number of non-resident workers on-shift -			
Isaac (R)		12,540	590	460	13,590
	Belyando	3,380	310	390	4,080
	Broadsound	4,200	160	0	4,360
	Nebo	4,960	120	70	5,150
Central Highlands (R)		3,640	1,000	190	4,830
	Emerald	720	560	140	1,420
	Whitsunday (R) – Bowen only	550	90	80	720
Bowen Basin Total		17,690	1,970	850	20,520

* Other includes private dwellings head-leased by companies and farm-stay accommodation if occupied by non-resident workers other than seasonal agricultural workers.

Figures in this table have been rounded to the nearest 10; any internal discrepancies are due to rounding.

Source: OESR, 2012 (a)

Late 2011 discussions with key stakeholders in Moranbah and Clermont indicated at that time there was a shortage of workers accommodation villages within both towns. At that time, both Rio Tinto and BMA were actively working with Isaac Regional Council and the ULDA to address this accommodation shortage. Within Clermont, Rio Tinto had secured most available accommodation for workers associated with development of the Clermont Mine, and BMA had secured most accommodation in Moranbah associated with current and imminent developments.

In July 2012 BMA's Caval Ridge workers accommodation village is currently under construction near Moranbah airport which will relieve pressure within Moranbah, and within Clermont additional temporary accommodation has been constructed and the first 80 homes within new residential development are nearing completion.

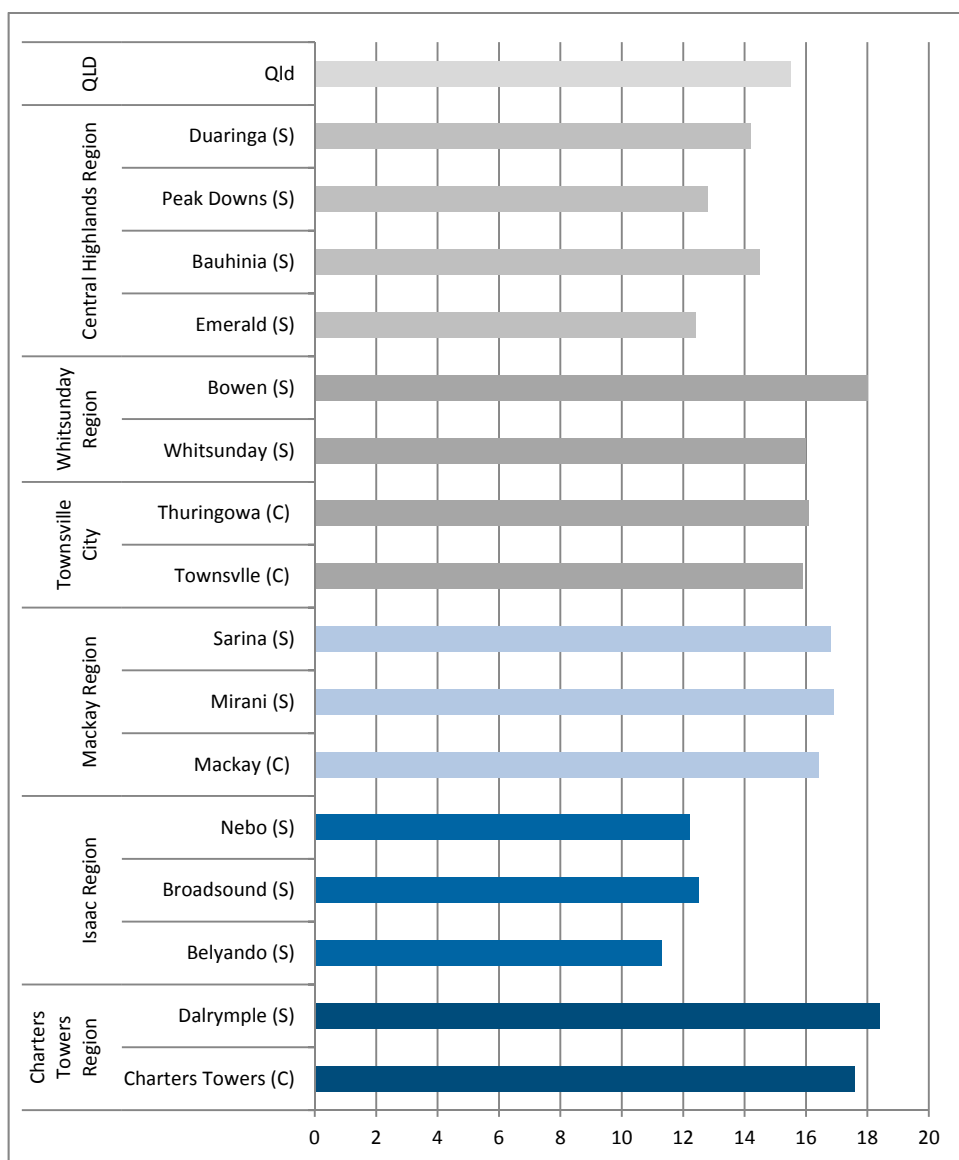
2.6 Community Health, Wellbeing and Safety

2.6.1 Health and Wellbeing

Data published as part of the National Health Atlas (PHIDU, 2010) provides information on self-assessed health. Key observations are outlined below (based on pre-amalgamated LGA boundaries):

- Fertility rate – higher in across most of the RSA with the exception of Townsville City and Whitsunday Shire.
- Assessment of poor health – higher rates than the Queensland average are evident in pre-amalgamation shires in Charters Towers Region and Mackay Regions, as well as Bowen Shire. This reflects the older age groups in these localities.
- Health risk factors – Highest rates of least one health risk factors (smoking, harmful use of alcohol or obesity) were in Charters Towers City, Dalrymple Shire, Whitsunday Shire and Townsville City.

Figure xx Fair or Poor Self-assessed Health – Pre-amalgamated LGAs, 2006



Note: Rates per 1000 people

Compiled by PHIDU using data estimated from the 2007-08 National Health Survey (NHS), ABS (unpublished); and ABS Estimated Resident Population, average of 30 June 2007 and 2008

Source: PHIDU, 2010

2.6.2 Crime

Crime data obtained from the Queensland Police Service (QPS) for LGAs in the Regional and District Study Areas is presented in the table below, and is compared with offence rates for Queensland.

Table 2-23: Crime Data for Regional and District Study Areas 2010/11 (Rate Per 100,000 Persons)

Reported Offences	Average Rate		QLD
	Regional Study Area	District Study Area	
Homicide (Murder)	1	-	1
Other Homicide	1	-	2
Assault	443	363	419
Sexual Offences	96	56	112
Robbery	16	10	39
Other Offences Against the Person	54	39	78
Offences Against the Person	611	467	651
Unlawful Entry	773	821	938
Arson	17	14	27
Other Property Damage	715	658	921
Unlawful Use of Motor Vehicle	130	84	212
Other Theft (excl. Unlawful Entry)	1,569	1,331	2,142
Fraud	360	426	363
Handling Stolen Goods	73	64	101
Offences Against Property	3,636	3,397	4,705
Drugs	864	521	941
Prostitution	1	-	4
Liquor (excl. Drunkenness)	251	105	154
Breach Domestic Violence Protection Order	263	277	222
Trespassing and Vagrancy	79	45	86
Weapons Act	105	131	75
Good Order	1,083	711	1,048
Stock Related	19	29	13
Traffic and Related	1,087	981	837
Miscellaneous	25	21	47
Other	3,776	2,818	3,425

This data are preliminary and may be subject to change.

Rates are expressed per 100,000 persons and are calculated based on the estimated residential population as at 30 June of each year.

Source: QPS, July 2012

The 2010/11 crime data shows a number of crimes in the RSA exceeding the Queensland average, notably:

- Traffic and Related Offences;
- Liquor (excl. Drunkenness)
- Breach Domestic Violence Protection Order (VPO);
- Good Order Offences; and
- Other Offences.

Other observations for the RSA are:

- The most common crimes were 'Other Offences', 'Offences Against Property', 'Other Theft (excl. Unlawful Entry)', and 'Traffic and Related Offences'.
- Marginally lower rates of 'Offences Against the Person' than the state.

- 'Offences Against Property' were considerably less than for Queensland, with rates in Central Highlands and Isaac Regions significantly lower.
- The incidence of crime is highest in Townsville City and lowest in Isaac Region (based on total number of reported offences).
- 'Drug Offences' are more evident in the larger urbanised regions of Townsville, Whitsunday and Mackay.

2.6.3 Disability Prevalence - Need for Assistance

Table 2-24 shows the number and percentage of persons in need of assistance in the RSA in 2011. 'In need of assistance' includes people with a profound disability or severe disability. People with profound or severe disability are defined as needing help or assistance in one or more of the three core activity areas of self-care, mobility and communication because of a disability, long term health condition (6 months or more) or old age.

The RSA had a lower proportion of people needing assistance (3.6 percent) when compared to Queensland (4.4 percent). At 5.8 percent, Charters Towers Region was the only LGA to possess a greater rate of need than the Queensland average.

Table 2-24: Persons in Need of Assistance - Regional Study Area, 2011

Locality	Need for Assistance		No Need for Assistance	Total (c)
	Number	%	- Number -	
Central Highlands (R)	636	2.2	25,617	28,715
Charters Towers (R)	705	5.8	10,605	12,169
Isaac (R)	316	1.4	19,987	22,589
Mackay (R)	4,120	3.7	101,402	112,797
Townsville (C)	6,778	3.9	155,315	174,461
Whitsunday (R)	1,207	3.8	26,778	31,426
Queensland	13,762	3.6	339,703	382,157
Regional Study Area	192,019	4.4	3,880,396	4,332,738
RSA as % of QLD	7.2	..	8.8	8.8

Based on place of usual residence.
Includes core activity need of assistance note stated.
Source: OESR, 2012(d)

2.6.4 Socio-Economic Index of Disadvantage

The Socio-Economic Indexes for Areas (SEIFA) is a summary measure of the social and economic conditions of geographic areas across Australia (OESR, 2012d). SEIFA comprises a number of indexes, which are generated at the time of the ABS Census.

In 2006, a Socio-Economic Index of Disadvantage (SEID) was produced, ranking geographical regions to reflect disadvantage of social and economic conditions. The index focuses on low-income earners, 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.

The table below shows the percentage of the population in each quintile (one-fifth or 20 percent of the population) according to the SEID for the RSA. Quintile 1 represents the most

disadvantaged groups of persons, while quintile 5 represents the least disadvantaged group of persons. By definition Queensland has 20 percent of the population in each quintile.

SIEFA results for 2011 are scheduled for release in 2013. Table 2-25 shows the SEID per quintile for LGAs in the RSA at the time of the 2006 Census.

Table 2-25: Social and Economic Index of Disadvantage for Regional Study Area (2006)

Locality	Quintile 1 (most disadvantaged)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (least disadvantaged)
	- Percentage of Population -				
Central Highlands (R)	8.5	14.1	22.8	35.1	19.6
Charters Towers (R)	47.4	30.6	21.3	0.7	0.0
Isaac (R)	5.1	7.1	24.5	46.0	17.3
Mackay (R)	14.9	23.4	25.8	25.1	10.9
Townsville (C)	15.2	26.8	21.8	15.3	21.0
Whitsunday (R)	27.8	29.9	24.4	13.0	4.9
Queensland	20.0	20.0	20.0	20.0	20.0

Source: OESR, 2012 (d)

In the RSA, both Central Highlands and Isaac have high proportions of population in quintile 5, with higher income rates likely to contribute to the population identified as being less disadvantaged than Queensland averages. Charters Towers and Whitsunday Regions registered the highest proportion of persons in quintile 1 (most disadvantaged).

2.6.5 Social Infrastructure

The *South East Queensland Plan 2005-2026* defines 'social infrastructure' as:

"... communities' facilities, services and networks which help individuals, families, groups and communities meet their social needs, maximise their potential for development and enhance community wellbeing. They include:

- Universal facilities and services such as education, training, health, open space, recreation and sport, safety and emergency services, religious, arts and cultural facilities and community meeting places.*
- Lifecycle-targeted facilities and services, such as those for children, young people and older people.*
- Targeted facilities and services for groups with special needs, such as families, people with a disability and Indigenous and culturally diverse people."*

Mackay and Townsville are the primary centres that service the higher level social infrastructure needs of the RSA.

Mackay is a principal centre in the MIW region and has a full range of community infrastructure and services including the base hospital (Queensland Government, 2011a). The Mackay Base hospital offers specialist services that are not provided in other townships, such as obstetrics and gynaecology, paediatrics, emergency medicine, orthopaedic surgery, anaesthetics, intensive care, coronary care, psychiatry, aged care; renal medicine, ophthalmology, palliative care, and day surgery (Queensland Health, 2011a).

The future provision of social infrastructure will be focused on the Mackay urban area and Sarina, with a mix of higher order community centres, aged care facilities, community health services, libraries, fire and rescue and state emergency services, housing support and youth services (Queensland Government, 2011a). These services have the potential to support smaller communities in the RSA, including Isaac and Whitsunday Regions.

Townsville is the other regional centre close to the study area. It is the major regional centre for North Queensland and provides a range of regional government services including health care and higher education services (Queensland Government, 2006). Townsville Hospital has a 460 bed capacity, and is the major tertiary referral hospital of the Northern Zone. The hospital offers a comprehensive range of services including acute medical, surgical, cardiothoracic surgery, neurosurgery, hyperbaric medicine as well as obstetrics, high risk pregnancy, general gynaecology, oncology services, haematology and bone marrow transplant, palliative care, level III intensive care services, rehabilitation, allied health and paediatric services. There is also a comprehensive mental health service in Townsville, which includes an Acute Mental Health Unit located adjacent to the main hospital complex and a Secure Mental Health Unit.

Townsville also offers an extensive range of education facilities including primary and secondary schools and tertiary and vocational education and is home to James Cook University. It is an important transport hub of the northern region with port, rail, airport and main highway (Bruce Highway and Flinders Highway) connections (Queensland Government, 2010d).

Observations for Isaac and Charters Towers are presented in the District Study Area.

Table 2-26: Summary of Social Infrastructure Provision in the Regional Study Area

Social Infrastructure	Summary of Provision
Central Highlands Region	
Education Facilities	<ul style="list-style-type: none"> • 28 Schools • Tertiary education includes a campus of the CQ University, TAFE College and the Australian Agricultural College.
Community, Cultural and Recreation Facilities	<ul style="list-style-type: none"> • Sport and recreation facilities. • National parks. • Community and cultural facilities include libraries, art galleries, picture theatres. Also, organisation of festivals such as the Central Highlands Multicultural Festival.
Health and Wellbeing	<ul style="list-style-type: none"> • 3 hospitals in key centres of Emerald, Blackwater and Springsure. Smaller communities are serviced by health clinics and visiting allied health professionals.
Other Major Facilities and Services	<ul style="list-style-type: none"> • Government agencies, local, district and town centre shopping. • Emergency services - 8 police stations, 5 fire stations, 10 ambulance stations • Airport - Council owns and operates the Emerald Airport which is located 6km south of the Emerald town centre, catering for commercial and charter flights.
Charters Towers Region	
Education Facilities	<ul style="list-style-type: none"> • 13 schools (including 5 boarding schools). • Tertiary education includes an Open Learning Centre and a Seismograph Station (Qld University), Barrier Reef Institute of TAFE – Charters Towers campus.
Community, Cultural and Recreation Facilities	<ul style="list-style-type: none"> • Sports fields and courts, golf club, public swimming pools, recreation parks, PCYC and indoor sports courts, library. • Charters Towers Regional Council has formed a partnership with the Museum of Tropical Queensland (MTQ) and developed the Community Pass Program and The World Theatre Gallery.
Health and Wellbeing	<ul style="list-style-type: none"> • 1 hospital. • Health services include the Charters Towers Health Centre, the Eventide Nursing Home and the Rehabilitation Unit (Charters Towers/Tertiary Mental Health Service).

Social Infrastructure	Summary of Provision
	<ul style="list-style-type: none"> Charters Towers Health Service is a 25-bed facility located in Charters Towers, Queensland, about 134km west of Townsville - services to the community include accident and emergency care, general in-patient medical, surgical, obstetric and paediatric services. Noted that Townsville is only one and a half hours drive away to access other specialist services.
Other Major Facilities and Services	<ul style="list-style-type: none"> Emergency services - 4 police stations, 4 ambulance stations and 1 fire station. Airport at Charters Towers. Government agencies, local, district and town centre shopping.
Isaac Region	
Education Facilities	<ul style="list-style-type: none"> 19 schools. Childcare and kindergarten facilities. Central Queensland Institute of TAFE – campuses at Moranbah and Clermont.
Community, Cultural and Recreation Facilities	<ul style="list-style-type: none"> Libraries – 8 branches at Carmila, Clermont, Dysart, Glenden, Middlemount, Moranbah, Nebo and St Lawrence. Well established sport, recreation and park facilities in key population centres. Art galleries, cultural centres and museums – Moranbah, Nebo, Clermont. Community halls and centres in most towns.
Health and Wellbeing	<ul style="list-style-type: none"> Public hospital in Moranbah – provides medical, surgical and respite care and specialist services, including maternity and psychiatric care. Glenden Community Health Centre – aged and disability service; family and child health service; and mental health. Middlemount Community Health – aged and disability service; family and child health service; and mental health. Clermont Multi-Purpose Health Service - radiography; aged and disability service; alcohol, tobacco and other drug services; and family and child health service; and mental health. Visiting medical specialists to the Region.
Other Major Facilities and Services	<ul style="list-style-type: none"> Emergency services – 8 police stations, 15 ambulance stations and 5 fire stations. Aerodrome at Clermont operated by IRC; and private aviation facilities at Dysart (BMA), Middlemount and Moranbah (BMA/BMC). Commercial air travel into Isaac Region is provided by Moranbah airport – also services charter flights for FIFO operations. To accommodate growth, BMA provided \$47M in funding to upgrade runway and build new terminal building. Taxi services in Moranbah and Clermont and coach services in Clermont, Moranbah and Nebo. Government agencies, local, district and town centre shopping.
Mackay Region	
Education Facilities	<ul style="list-style-type: none"> 55 schools Mackay Trade Training Centre Central Queensland Institute of TAFE and Axiom College. Central Queensland University.
Community, Cultural and Recreation Facilities	<ul style="list-style-type: none"> Libraries - 5 branches in Mackay, Sarina and Mirani and a mobile library service. Art galleries - Mackay and Sarina. Major indoor and outdoor sports facilities, parks and recreation, including Mackay Botanic Gardens, PCYC, skate parks and playgrounds, aquatic facilities including new Bluewater Lagoon development. Community centres and halls.
Health and Wellbeing	<ul style="list-style-type: none"> 5 hospitals including Mackay Base Hospital. Mackay Community Mental Health - support for persons with mental and health disorders Mackay Community Based Rehabilitation Services - occupational therapy, physiotherapists, speech pathology and medical officer.
Other major facilities and services	<ul style="list-style-type: none"> Government agencies, local, district and town centre shopping Emergency services – 10 police stations, 6 ambulance stations and 4 fire stations Domestic airport at Mackay.
Townsville Region	
Education Facilities	<ul style="list-style-type: none"> 58 schools James Cook University (JCU).

Social Infrastructure	Summary of Provision
	<ul style="list-style-type: none"> Barrier Reef Institute of TAFE (five campuses in Northern Queensland at Townsville, Burdekin, Charters Towers, Ingham and Pimlico).
Community, Cultural and Recreation Facilities	<ul style="list-style-type: none"> Libraries - 3 branches in Aitkenvale, Flinders Street and Thuringowa Central. Major sport and recreation venues, and parks network including The Strand and other popular foreshore precincts. Art galleries, cultural centres and museums - Riverway Arts Centre and the Townsville civic theatre. Community halls and centres.
Health and Wellbeing	<ul style="list-style-type: none"> Major health services available in Townsville - Outpatient Clinics, Primary Health and Ambulatory Care Services, Community Health Services, Women's and Children's Services, Health Services, Oral Health Services, Dental, Aged Care and Private Health Facilities in District. Townsville Hospital
Other major facilities and services	<ul style="list-style-type: none"> Government agencies, local, district and town centre shopping. Emergency services - 7 police stations, 4 ambulance stations and 5 fire stations Domestic airport at Townsville
Whitsunday Region	
Education Facilities	<ul style="list-style-type: none"> 16 schools Barrier Reef Institute of TAFE campuses in Bowen and Cannonvale providing tertiary training to mining and associated industries. No training institutions in Collinsville providing training relevant to workers in mining and construction areas, however, the high school does offer some courses in conjunction with TAFE.
Community, Cultural and Recreation Facilities	<ul style="list-style-type: none"> Libraries - 4 branches located at Cannonvale, Bowen, Collinsville and Proserpine. Well established sport, recreation and park facilities in key recreation centres. Community halls and centres. Proserpine Entertainment Centre
Health and Wellbeing	<ul style="list-style-type: none"> Public hospital facilities in Bowen, Proserpine and Collinsville Whitsunday Mental Health Service Whitsunday Community Health Campus Visiting medical specialists to the region. Various other medical, health, aged care, employment and disability support services and respite care.
Other major facilities and services	<ul style="list-style-type: none"> Government agencies, local, district and town centre shopping. Emergency services - 4 police stations, 5 ambulance stations and 4 fire stations Domestic airports at Proserpine and Hamilton Island. Smaller available facilities at Bowen and Collinsville.

3. District Study Area

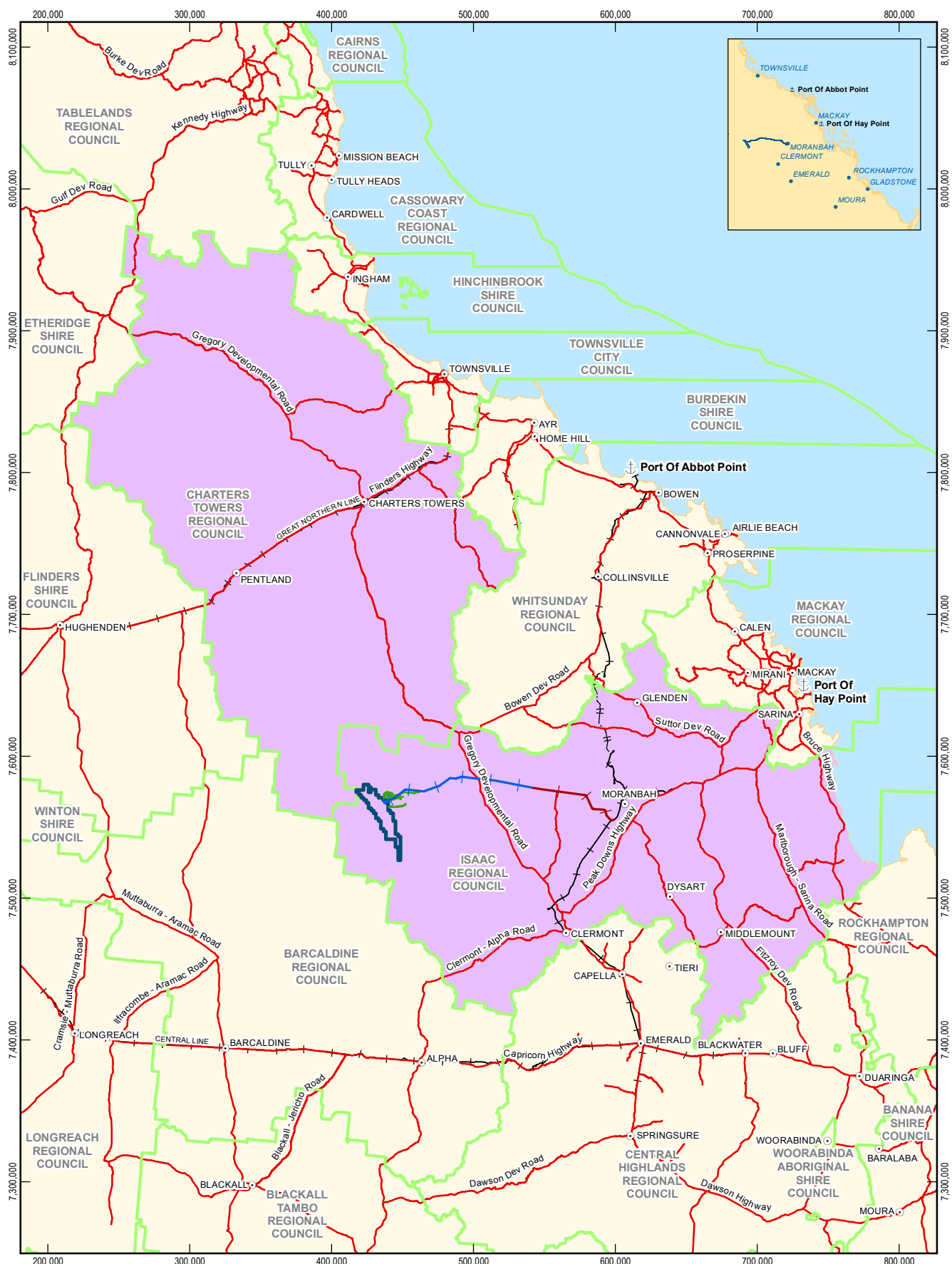
3.1 Introduction

This chapter addresses Section 4.1.3 of the ToR and presents social baseline for the District Study Area (DSA). The DSA comprises the two LGAs of:

- Isaac Region
- Charters Towers Region

The extent of the District Study Area is shown in Figure 3-1.

The rationale for definition of the DSA is outlined in Section 1.1.2. The baseline assessment has been undertaken using publicly available quantitative data, and has been complemented by qualitative information drawn from various strategic planning documents and policies, as well as information obtained during the stakeholder consultation process.



LEGEND

- ⚓ Major Port
- Key Centre / Locality
- State Road
- Existing Railway
- Local Government Area Boundary
- SIA Study Area (District)
- Rail (West)
- Rail (East)
- Project (Mine)
- Mine (Offsite)

Based on or contains data provided by the State of QLD (DERM) [2010]. In consideration of the State permitting use of this data you acknowledge and agree that the State gives no warranty in relation to the data (including accuracy, reliability, completeness, currency or suitability) and accepts no liability (including without limitation, liability in negligence) for any loss, damage or costs (including consequential damage) relating to any use of the data. Data must not be used for marketing or be used in breach of the privacy laws.

1:3,800,000 (at A4)

0 25 50 75 100

Kilometres

Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55



adani

Adani Mining Pty Ltd
Carmichael Coal Mine and Rail Project
Social Impact Assessment
District Study Area

Job Number 41-25215
Revision A
Date 18-09-2012

Figure: 3-1

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Data Source: GA: Key Centre / Locality (2007); DERM: LGA (2011); DMR: State Roads (2008); DME: EPC1690 (2010), EPC1080 (2011); Adani: Alignment Opt9 Rev3 (2012); Gassman/Hyder: Mine (Offsite) (2012). Created by: BW, CA

3.2 District Summary

3.2.1 Overview of Demographics

Table 3-1 provides a brief summary of the key demographics for the DSA, together with primary information sources.

Table 3-1: Key Baseline Community Characteristics for District Study Area

Socio-economic Variable from ToR	Data Source	District Summary
Total population and FTE equivalent population	OESR, 2012 (a)	2011 estimated total population = 35,934 with an annual average growth rate of 1.6 percent p.a.(2006-2011).
Non-resident workers Full-time equivalent Population (FTE)	OESR, 2012(c)	<p>27 percent of Isaac Region's total population are 'non-resident' (about 13,590 persons) – FTE population of 36,540 in 2011.</p> <p>Consultation with Clermont and Moranbah community suggests an expected future increase in non-resident workers due to mining activity.</p> <p>OESR forecasts increase of 5,700 additional non-resident workers in Isaac Region between 2011-2016.</p>
Existing of anticipated major population trends and changes irrespective of project	OESR, 2012 (c)	<p>DSA population estimated to reach 51,963 by 2031 – 15,707 additional residents at an average growth rate of 1.8 percent per annum.</p> <p>Focus of future population growth will be in the Isaac Region.</p>
Household composition	ABS, 2012	Family households - 74.9 percent; single/lone person households – 22.0 percent; Group households -3.2 percent.
Family structures	OESR, 2012 (c)	<p>In 2011, 8,344 families in the DSA (about 5,300 in Isaac Region, and 3,000 in Charters Towers Region).</p> <p>'Couple Families with Children' are the dominant family type. High representation of 'One Parent Families' in Charters Towers, compared with Isaac Region and Queensland average.</p>
Age and gender distributions	OESR, 2012 (c)	<p>Ratio of males/females is uneven, with higher proportion of men.</p> <p>District has a youthful age profile - 70 percent of residents aged <45, compared to state average of 62.6 percent. Children <15 years represent almost a quarter of the population.</p> <p>Charters Towers Region has an older profile, whilst Isaac Region has very few senior citizens aged 65 + (4.1 percent).</p>
Education, including schooling levels	OESR, 2012 (c)	<p>Highest level of school completed (for persons aged 15+) = 1,814 'did not go to school, or Year 8 or below'; 8,533 'Year 9 or 10 or equivalent'; 11,772 (46.6 percent) 'Year 11 or 12 or equivalent'.</p> <p>Isaac Region has a higher level of schooling than Charters Towers Region.</p>
	OESR, 2011(c)	Post-school qualifications in 2006 - 45.2 percent of DSA, compared with the Queensland average of 50.4 percent.
Measures of	Public Health	Self-assessment of health in former LGAs of Isaac Region

Socio-economic Variable from ToR	Data Source	District Summary
community safety, health and wellbeing	Information Development Unit (PHIDU) 2010	<p>was lower than the Queensland average.</p> <p>Former LGAs in Charters Towers Region had higher rates of people with a risk factor, self-assessment of poor health and psychological distress than Queensland.</p>
Cultural and ethnic characteristics Place of birth	OESR, 2012 (c)	<p>Less cultural diversity than Queensland. 8.5 percent of DSA population were born overseas, compared to 20.5 percent in Queensland. Isaac had marginally higher representation of persons born overseas than Charters Towers (9.9 percent and 6.0 percent respectively).</p>
Indigenous population including age and gender	OESR, 2012 (c)	<p>In 2011, 4.5 percent of persons in the DSA identified as ATSI, compared to 3.6 percent in Queensland.</p>
Income	OESR, 2012 (c)	<p>28.8 percent of persons working in the Charters Towers and Isaac Regions earned <\$400/week compared with state average of 34.6 percent.</p> <p>Lower individual incomes are focused on the Charters Towers Region. In contrast, Isaac Region had the highest proportion of persons earning >\$2,000/ week (23.1 percent) compared with 5.5 percent for Queensland.</p>
Unemployment	OESR, 2012 (c)	<p>Unemployment rates are low in the DSA. For March 2012 quarter unemployment was 3.4 percent, compared with 5.5 percent in Queensland. Unemployment higher in Charters Towers at 7.8 percent, in comparison to Isaac at 1.2 percent.</p>
Labour force by occupation and industry	OESR, 2012 (c)	<p>In 2006, Mining was largest industry of employment (30.6 percent). Other key employers were Agriculture, Forestry and Fishing (11.3 percent), Retail Trade (8.3 percent), and Education and Training (7.5 percent).</p> <p>Largest occupation categories were Machinery Operators and Drivers (20.9 percent), Technicians and Trades Workers (18.2 percent), Managers (13.9 percent), and Labourers (13.7 percent).</p>
Disability prevalence	OESR, 2012 (c)	<p>Proportion of persons in need of assistance with a profound or severe disability was significantly less in Isaac Region than Charters Towers Region at 1.4 percent and 5.8 percent respectively. The Queensland average was 4.4 percent.</p>
Socio and economic index	OESR, 2012 (c)	<p>Charters Towers Region had a high number of people in the most disadvantaged quintile with 47.4 percent, whereas Isaac had 5.1 percent. High rates in Charters Towers may correspond to a higher unemployment and lower incomes.</p>
Crime	QPS, 2012	<p>The most common crimes in the DSA were Offences Against Property; Other Offences; Other Theft (excl. Unlawful Entry); and Traffic and Related Offences.</p> <p>Crimes exceeding the state average were Traffic and Related Offences; Fraud; Weapons Act Offences; Breach Domestic VPO; and Stock Related Offences.</p> <p>The incidence of crime is higher in Charters Towers Region than Isaac Region.</p>
Housing tenure type and landlord type for rental properties	OESR, 2012 (c)	<p>26.8 percent of occupied private dwellings in DSA were fully owned, 20.4 percent were being purchased and 48.4 percent were rented.</p> <p>Very high proportion of rentals in Isaac (60.8 percent), which is common in mining industry areas, compared with 48.8 percent in Queensland and 28.8 percent in Charters</p>

Socio-economic Variable from ToR	Data Source	District Summary
		Towers.
Housing type	OESR, 2012 (c)	In the DSA there are 10,859 occupied private dwellings comprising separate houses (89.6 percent), semi-detached houses (3.3 percent), and apartments (2.9 percent).
Housing costs	www.rpdata.com www.pricefinder.com.au	Median house prices in the townships of Moranbah, Clermont and Charters Towers have all experienced strong growth for the period 2001 to 2010. Median house prices (May 2012) – Moranbah (\$699,000), Clermont (\$292,000), Charters Towers (\$237,000).
Housing availability	OESR, 2012 (c)	Housing stress and declining affordability evident in DSA, particularly Moranbah. In the 12 months to March 2012, there were 283 dwelling units in new residential buildings approved in the DSA.

3.2.2 Community Characteristics

Isaac Region

Belyando, Broadsound and Nebo Shires were amalgamated in 2008 to form the Isaac Region Local Government Area, named after the Isaac River.

Isaac Region covers a total area of 58,862 km² and is located south-west of Mackay. The former Broadsound Shire (18,546 km²) now forms the eastern portion of Isaac and the former Nebo Shire (10,035 km²) forms the northern/central portion. The former Belyando Shire has the largest area of the region to the west, and covers a total area of 30,281 km².

Isaac Region extends from the coast to Lakes Buchanan and Galilee, a distance of approximately 350 km. The southern limit of the municipality ends close to Blackwater and the northern limit extends beyond Glenden. Moranbah is the administrative centre of the Isaac Region and formally served the same function for the Belyando Shire's headquarters. Council also has several other customer service centres in the townships of Clermont, Dysart, Glenden, Middelmount, Nebo and St Lawrence.

Substantial open cut mining of the Blair Athol coal deposit commenced in the 1920s once rail infrastructure was constructed. As mining further developed in the region, mines in Dysart, Middelmount and Moranbah becoming far more extensive. A rail network was constructed for the purpose of carrying coal to the Hay Point terminal at Mackay. Another line was opened in 1971 from Hay Point to Goonyella. Further branches were added to the Gregory mines from 1972-1982.

The shires that now form the Isaac Region experienced significant population growth during the 1960s and 1970s with the exploration and mining of coal deposits.

In 1980 the Gregory mine was also linked to the central rail line to Rockhampton, and in 1983 further branches were added south to Blair Athol.

The townships of Dysart, Glenden, Middelmount and Moranbah became dormitory areas for the coal industry workforces. This has impacted the areas throughout their history in terms of population, employment, income, housing affordability and availability of and the pressure experienced by social services and infrastructure.

The following table shows the population of the five largest towns in the Isaac Region. Together they hold 77 percent of the Isaac Region's total population of 22,956 in 2011 (ERP).

Table 3-2: Estimated Resident Population of Key Centres in Isaac Region, 2001 - 2011 (pr)

Locality	Population by Year		
	2001	2006	2011
Moranbah	6,338	7,607	8,934
Dysart	2,500	3,340	3,039
Middlemount	2,001	2,174	2,121
Clermont	2,006	1,976	2,263
Glenden	909	1,179	1,331
Nebo	206	298	396

pr = preliminary rebased

Note: Data have been generated using a concordance between census collection districts (ASGC 2006) and urban centres and localities based on the 2006 Census.

Sources: 2001 and 2006 (OESR, 2011b); 2011 are preliminary rebased on results of the 2011 Census (OESR, 2012c)

Clermont is located 320 km west of Rockhampton and 100 km north of Emerald. The town was named after Clermont in France by pioneer pastoralist Oscar de Satgé. Gold was discovered at Clermont in the 1860s and until that time formed a remote area of the Peak Downs pastoral district. Early finds were alluvial deposits and were easily exploited by independent miners. The finds were situated near Diggers Lagoon. The township of Clermont was proclaimed in 1863. The population of the town fluctuated as a trust of other gold finds in the region and with the availability of water. The population was relatively stable by 1864 when publication of the Peak Downs Telegram and Queensland Mining Record at Clermont commenced.

In 1865 a hospital was opened in Clermont, followed by the establishment of a Catholic church in 1866 and a State primary school in 1867. The town become a local governing municipality in 1867. Pastoral and agricultural shows commenced in the district 1868.

Peak Downs Copper Company began mining a rich copper deposit just south of the town in 1863. The township of Copperfield was established around the mine. The smelters produced 17,000 tonnes of refined copper over a 15 year period. Copperfield became a separate council area in 1872. Several churches and other facilities were established in the town as well as a newspaper, the 'Copperfield Miner'. The estimated population of the area was 2,000 people. The population halved by the end of the decade, with the fall of copper prices in London. The slump was amplified by rising competition with mines at Cloncurry and Mount Perry. By the late 1890s mining was revived in the region, with the local school only closing in the 1940s.

Clermont's mining activity was more consistent than nearby Copperfield. The town was connected to Emerald by rail in 1884 and became the administrative centre for the Belyando local government division. By the mid 1880s, the town had a hospital, turf club, pastoral society as well as a coach depot. An indication of local confidence in the stability of the area was the establishment of the Clermont Club, who met regarding municipal issues and sporting events.

The local lagoon provided an important water source sustaining Clermont, but threatened the town, with major flooding events occurring in 1870, 1893, 1896 and 1916. The 1916 flood destroyed the town's business precinct and claimed 65 lives. The town was rebuilt on higher ground, south of the lagoon. A number of buildings that survived the flood were relocated to the new site.

In 1930 Clermont amalgamated with Belyando Shire. In the same year, an electricity generating plant was commissioned in the town. Water reticulation occurred in the town in 1957, a state high school was built in 1958, and the town continued to develop with the establishment of numerous other local services and facilities. Houses from Blair Athol were moved to Clermont in 1972 to allow for future open cuts. Clermont became its dormitory suburb with the return of larger scale mining to Blair Athol.

Moranbah is located 150 km south-west of Mackay. It has a population nearing 9,000 people and is predominantly a mining and rural township. The Utah Development Company commenced construction of the town in 1970. The name of the town was taken from the Moranbah Parish, and the existing pastoral station. The company planned a town with substantial amenities to govern under the Belyando Shire. The proposed town site was scrubland and the initial houses were built in cleared areas where dust and heat were a problem.

By 1971 a school and ambulance centre were established, followed by a hospital in 1974 when the population was nearing 3,000 people. The local state school opened in 1976 and the Catholic St Joseph's school shortly thereafter. The worker church was opened in 1979 after several years of shared use of the civic centre for worship. By the 1980s, the town was home to many people.

By the 1990s the landscape was a far more appealing one than the initial dusty cleared scrubland characteristic of the towns early days. Further town growth led to the opening of a second state primary school in 1991. The population grew by 1,000 people between 2001 and 2006 given the increased coal mining activity in the region. During this time, almost half the homes in Moranbah were tenanted, rather than owner-occupied. This rate of tenanted properties is double the Australian average. Wages were high during this time with the median weekly income per resident being \$948 in 2006, more than double the Australian median of \$466.

In terms of community facilities and lifestyle, Moranbah has a shopping centre, civic centre, several churches, sports facilities and parks. The town also has a Miners' and Workers' social club.

Charters Towers Region

Charters Towers City and Dalrymple Shire were amalgamated in 2008 to form Charters Towers Region. The region covers an area of 66,388 km², which is comparable in size to Tasmania.

Charters Towers City comprised only a small geographic area in comparison the Dalrymple Shire. The township of Charters Towers is the administrative centre of the Region. Other smaller settlements include the towns of Ravenswood, Greenvale, Pentland, Homestead, Mingela, Balfes Creek and Sellheim.

Table 3-3: Estimated Resident Population of Key Centres in Charters Towers Region, 2001 - 2011 (pr)

Locality	Population by Year		
	2001	2006	2011
Charters Towers	8,751	8,468	8,447
Ravenswood	246	203	203

pr = preliminary rebased

Note: Data have been generated using a concordance between census collection districts (ASGC 2006) and urban centres and localities based on the 2006 Census.

Sources: 2001 and 2006 (OESR, 2011b); 2011 are preliminary rebased on results of the 2011 Census (OESR, 2012c)

Charters Towers also includes Hervey's Range and Belyando Crossing. Rivers running through the Region constitute most of the watershed of the Burdekin River, which enters the Pacific Ocean near Ayr.

The eastern boundary of Charters Towers Region adjoins the coastal municipalities of Hinchinbrook Shire, Townsville City and Burdekin Shire, southwards from Ingham to Ayr and the western boundary connects with the Kennedy Developmental Road. The Burdekin River forms part of the Council's southern boundary.

The Valley of Lagoons is located to the north of the region, a beautiful landscape described by Ludwig Leichhardt on his expedition in the region in 1845. In 1863 the valley was taken up by George Elphinstone Dalrymple, in conjunction with Robert Herbert (among others) as a pastoral run. Dalrymple was a crown lands commissioner, and had also organised an expedition to explore the Burdekin watershed in 1859. The district was opened up in 1861 and a police camp was established on the Burdekin, approximately 40 km north of what was later to be known as Charters Towers. The camp and the district's first town was surveyed in 1864 and named Dalrymple in 1868.

Charters Towers township was established in 1872 to service the gold mining activities in the area and the Charters Towers Council was formed in 1877. In 1879 local government was formed and named after the first town and successful local explorer, Dalrymple. Ravenswood formed yet another separate local government division, but was amalgamated with Dalrymple Shire in 1929.

The region was established with the commencement of the pastoral activity. The cattle grazing industry struggled throughout the 1920s. A wartime meatworks at Pentland helped the industry, when quantity rather than quality was required. In the 1950s improved pastures, provision of supplementary feeding and better breeding contributed to operations in the region.

In 1949 the region was described in The Australian Blue Book . The entry for the region notes the vast grazing areas surrounding Charters Towers. Citrus fruit and tobacco growing areas are also mentioned, in addition to the various mining activities in the region.

The pastoral economy of the district diversified with gold discovery at Upper Cape River in 1866, followed by Ravenswood in 1869, one of the first mining activities in the region, then Charters Towers in 1872. This resulted in an increase in the population of the town. Gold production ended in Ravenswood in 1917 and in Charters Towers during the 1920s.

Areas of activity were serviced by railway lines from Townsville (1884), with the line to Ravenswood running until 1930, and the Charters Towers line undergoing extension inland to Hughenden and Mount Isa for both pastoral and mining industries.

Other shorter mining activities have occurred in the region, in addition to the major Charters Towers operations. Such operations include those at Sellheim and Mount Leyshon, and a nickel mine at Greenvale, which had a railway to Townsville (1974-97), and supplied a refinery at Yabulu.

During the late 1960s, high quality nickel laterite was discovered at Greenvale, which was a former copper mining town in the north-west. The State government and private sector built a railway line from Cobarra (north-west of Townsville) to a newly built Greenvale township. Crushed ore was transported to a processing plant in Townsville in 1974. Other more recent mining operations include Mount Leyshon gold mines, approximately 25 km south of Charters Towers and the Thalanga zinc, lead and copper mine, 65 km to the west of Charters Towers. Greenvale mine closed in 1992 and the railway was dismantled in 1997. The town was converted to a tourist site upon closure.

Council is today faced with substantial administrative challenges of planning and service delivery across widely dispersed population pattern, and some small population bases. The Charters Towers Region is also impacted upon by population changes that result from mining and other industrial areas (Charters Towers Regional Council, 2011).

A community profile included in the Charters Towers Youth Strategy (Charters Towers Regional Council, 2009), found that the region is characterised by:

- A high proportion of young people
- A high proportion of Indigenous persons under the age of 24 (Note: this differs from the 2006 census data which showed no significantly higher proportion of indigenous youth in the area)
- An expected significant growth period for the former Dalrymple area
- An ageing population in the Charters Towers Region
- A high reliance on private transport
- A prevalence of vocational occupations in the former Dalrymple area, while occupations classified as professional are more prevalent in Charters Towers
- A comparatively low educational attainment
- Many households in Dalrymple and Charters Towers being at risk of (or being impacted by) information isolation.

Major industries in the Charters Towers Region include mining, beef production, agriculture, tourism and education. As articulated in its Community Plan, it is Council's intention to support traditional industries and also encourage diversification.

3.2.3 Community Identity, Values and Aspirations

Table 3-4 presents a snapshot of community identity, values and aspirations for the DSA, based on a review of Council plans and policies, and SIA consultation.

Table 3-4: Identity, Values and Aspirations – District Study Area

Locality	Identity, Values and Aspirations
Isaac Region	<p>The following is a quote from the Isaac Regional Council 2020 Vision 2009-2019 (p. 6) which encapsulates the region's lifestyle:</p> <p><i>"Many of us, regardless of our age or location, enjoy living in the region because of the opportunities to spend time with family and develop strong and honest relationships with our neighbours and friends. We value the relative safety of where we live and believe our children are accepted and cared for. It is this connectivity and community spirit that many of us have identified as being essential to the quality of life in our smaller communities.</i></p> <p><i>As spending time outdoors and being active and healthy is part of our lifestyle we would welcome opportunities to connect with our family and friends in environmentally sustainable ways. We value safe and modern sporting facilities, well maintained recreational reserve amenities and extension to our current walking paths and footpaths. We believe the provision of social and educational programs for families, single people, children, young people and the aged will also assist us to connect to our families and communities.</i></p> <p><i>Many of us see our communities as unique and value occasions to celebrate who we are, what we have done and where we have come from. We value our talented local artists and their depiction of our lifestyles. The creation of an Isaac identity through arts, culture and heritage development will continue to unite us and draw recognition to our region."</i></p>

Locality	Identity, Values and Aspirations
Clermont	<p>The community of Clermont and identification of being from Clermont is larger than the geographical boundary of the town. It was explained in SIA consultations that the social community of Clermont ranges from 80 km to the south west along the Alpha to Clermont Road and 40 km to the south east along the Gregory Highway.</p> <p>People who identify as being from Clermont would like the town to grow in population and are pursuing this growth with a proactive business group. The focus of the growth is to encourage families to relocate to Clermont, which in turn will bring access to more community services.</p> <p>Discussions with stakeholders indicated that Clermont is predominantly an agricultural community, not a mining community and there is a need to retain that strong identity. It was noted that <1 percent of mining revenue comes into town whereas >85 percent of agricultural revenue is in town. Stakeholders also stressed that 'Clermont is a well-established and socially mature community' and 'Clermont is a town with mining, not a mining town'.</p> <p>In <i>Miles, Reark, Kinnear, Howkins and Springer</i> (2008), it was noted that a major contributing factor to the development of the Clermont Preferred Futures Project was the community's desire, throughout the process of increasing mining activity in the area, to retain their vibrant community, which benefits from 'a highly regarded lifestyle, sense of community wellbeing and good community cohesion'. This is to be achieved through developing a 'preferred future that will see growth and opportunity managed for the long term benefit of the region'.</p>
Moranbah	<p>A suitable management outcome statement for managing the impacts of mining at Moranbah has been identified by the State Government: 'Protecting social, economic, cultural and environmental values and economic growth for the State for future generations in meeting community and mining industry interests through the State and local governments, the mining industry and communities working collaboratively to support sustainable and vibrant communities and a productive mining industry'.</p> <p>The community of Moranbah identify that social infrastructure, community services, economic and employment opportunities, physical infrastructure, local leadership, amenity, environment and a strong community identity were all positive features of their community. They noted the pressure from social and economic changes associated with mining activities (Petrovka et al, 2007)</p> <p>Stakeholder discussions indicated that Moranbah identifies strongly as a mining town.</p>
Charters Towers Region	<p>The regional identity, values and future aspirations for Charters Towers are articulated in the 'Community Plan – Our Region – Our Future 2035'</p> <p><i>The Vision for our Region is that it is widely recognised and respected:</i></p> <ul style="list-style-type: none"> For its strength, resilience and ability to embrace change and overcome challenges to our long term health and wellbeing, prosperity and sustainability. As a place that our residents and visitors value and safeguard, and have the opportunity to exhibit community pride, responsibility and participation. For its insightful and astute community, economic and environmental development initiatives and achievements. For its contribution and overall value to the Queensland economy and environment. <p>The Charters Towers Youth Strategy Scoping report also notes that the Charters Towers Regional Council faces significant challenges, however as identified throughout the study "the spirit and determination held by the broader community to make Charters Towers a place that is committed to, supports and importantly celebrates young people is high".</p>

3.2.4 Key Opportunities and Challenges

Key opportunities and challenges for the Isaac and Charters Towers Region are outlined as part of the Regional Study Area.

3.3 Population

3.3.1 Resident Population

In 2011, the DSA had an ERP of 35,934 persons, representing 0.8 percent of the Queensland total (Table 3-5). The DSA's population increased by:

- 2,666 persons between 2006 and 2011 at a rate of 1.6 percent p.a., compared to the state average of 2.3 percent p.a.
- 535 persons between 2010 and 2011 at a rate of 1.5 percent p.a., compared to the state average of 1.7 percent p.a.

Between 2006 and 2011, Isaac Region experienced the most growth, increasing by 1,843 persons (69 percent of the DSA), compared with an increase of 823 in Charters Towers Region.

Table 3-5: Estimated Resident Population of District Study Area 2006, 2010 and 2011(p)

Locality	Estimated resident population as at 30 June			Average annual growth rate	
	2006	2010	2011p	2006-2011(a)	2010-2011p
	— number —			%	
Charters Towers (R)	12,155	12,813	12,978	1.3	1.3
Isaac (R)	21,113	22,586	22,956	1.7	1.6
District Study Area	33,268	35,399	35,934	1.6	1.5
Queensland	4,090,908	4,505,433	4,580,282	2.3	1.7
DSA as % of Qld	0.8	0.8	0.8

(a) Average annual growth rate

p = preliminary

Source: OESR, 2012(c)

3.3.2 Population Projections

Table 3-6 shows that the DSA is projected to reach a total resident population of 51,963 by 2031 at a growth rate of 1.8 percent p.a., which is consistent with the state average. The District's growth equates to 15,707 additional residents over 20 years.

The focus of future growth will be in Isaac Region, increasing by 13,723 persons between 2011 and 2031 (87 percent of the DSA) to reach 37,000 at a rate of 2.3 percent p.a., outpacing the state average of 1.8 percent p.a.

Future growth in Charters Towers Region will be subdued, with 1,984 additional residents by 2031 at 0.7 percent p.a, reaching a total population of about 15,000 by 2031.

Table 3-6: Population Projections for District Study Area 2011 – 2031
(medium series)

Locality	Projected Population as at 30 June (Number)					Ave. Annual Growth Rate 2011-2031 (%)
	2011	2016	2021	2026	2031	
Charters Towers (R)	12,979	13,627	14,063	14,521	14,963	0.7
Isaac (R)	23,277	28,266	31,418	34,270	37,000	2.3
District Study Area	36,256	41,893	45,481	48,791	51,963	1.8
Queensland	4,611,491	5,092,858	5,588,618	6,090,548	6,592,858	1.8
DSA as % of Qld	0.8	0.8	0.8	0.8	0.8	..

Source: OESR, 2012(c)

Identified Growth Areas

The *Mackay, Isaac and Whitsunday Regional Plan 2012* (MIWRP) was released by the Queensland Government in February 2012, and is the regional blueprint for planning and development in the MIW sub-region up to 2031.

It identifies a majority of Isaac Region's future population growth to be accommodated in Moranbah due to the availability of employment opportunities and increased levels of urban services and infrastructure.

An area south-west of Moranbah town centre was declared as an Urban Development Area (UDA) by the State Government's Urban Land Development Authority (ULDA) in 2011. With the assistance of the IRC, the ULDA has undertaken detailed planning to ensure that the town can accommodate the anticipated growth and coordinate the provision of appropriate infrastructure.

3.3.3 Non-resident population

Non-resident population data is derived from the *Bowen and Galilee Basins Population Report, 2011* (2012), an annual OESR survey of the Bowen Basin's non-resident worker population. Non-resident workers are not captured within ABS criteria as a 'usual resident' and therefore, are not included in Census counts of an area's ERP.

Non-resident workers typically commute long distances to work and live in the area temporarily while rostered on shift, but return to their place usual residence when rostered off. While non-resident workers are not counted in the permanent population, OESR notes that non-resident worker populations create additional demand for goods, services and infrastructure while living in the area which must be planned and provided for by government and the private sector.

The 2012 OESR Report presents FTE population estimates for the Bowen and Galilee Basins, together with FTE population projections and accommodation data. Within the Bowen Basin, the survey includes the Regions of Isaac, Central Highlands and Whitsunday (Bowen SLA only), as well as Banana Shire. It does not include data for other LGAs in the Carmichael Project's Study Area (i.e. Charters Towers Region, Townsville City, Mackay Region).

The estimated number of non-resident workers on-shift in the Bowen Basin grew from 14,610 in 2010 to 20,520 in 2011, equating to 5,910 additional people or 40 percent. OESR notes this is the largest single year increase since the survey commenced in 2006.

Analysis of non-resident populations for selected Statistical Local Areas (SLAs) and Urban Centres/Localities (UCLs) in Isaac Region from 2010-2011 shows that:

- Nebo SLA had the greatest concentration of non-resident workers on-shift (5,150 people, 63 percent), exceeding permanent residents (3,010 people, 37 percent).
- Broadsound SLA also had a high proportion of non-residents at 37 percent of the FTE population.
- Clermont and Moranbah UCLs had the highest percentage of non-resident workers at 29 percent and 20 percent respectively.

From discussions with stakeholders in Clermont and Moranbah, the community expects Isaac Region's non-resident population to increase substantially as a result of mining sector growth.

It is also noted that:

- Although not in the DSA, Collinsville SLA (Whitsunday Region) had a substantial non-resident workforce nearing one-quarter of the total population.
- Charters Towers Region was not included in the Bowen and Galilee Basins Population Report, 2011.

Table 3-7: FTE Populations for Selected SLAs and UCLs in the Bowen Basin, July 2011**

SLA	UCL	Resident population (estimated)*	Total non-resident workers	FTE population estimate	Percentage of non-resident workers
Isaac (R)					
	<i>Belyando</i>	12,400	4,080	16,510	28%
	<i>Moranbah</i>	2,000	510	2,510	20%
	<i>Clermont</i>	8,790	3,560	12,350	29%
	<i>SLA Remainder</i>	1,650	0	1,650	0%
	<i>Broadsound</i>	7,510	4,360	11,870	37%
	<i>Nebo</i>	3,010	5,150	8,160	63%
Central Highlands (R)					
	<i>Emerald</i>	18,410	1,420	19,830	7%
	<i>Emerald</i>	13,830	850	14,690	6%
	<i>SLA Remainder</i>	4,580	570	5,140	11%
Whitsunday (R) – Bowen SLA only**					
	<i>Bowen</i>	14,520	720	15,230	5%
	<i>Collinsville</i>	2,060	590	2,650	22%
	<i>SLA Remainder</i>	12,460	130	12,580	1%

* 2011 preliminary ERP.

** Non-resident worker data for Whitsunday (R) for 2011 include Merinda, which was not included in previous years' collections.

Figures in this table have been rounded to the nearest 10; any internal discrepancies are due to rounding.

Source: OESR, 2012 (a).

Place of Usual Residence

In 2011, place of usual residence data for the Bowen Basin's resource operation workforce, shows that:

- 47 percent worked and resided in the same LGA.
- 41 percent identified themselves as DIDO workers.
- 25 percent lived in Mackay - notably, a high number of these were DIDO workers living in Mackay and working in the Isaac or Whitsunday Regions.

- 12 percent identified themselves as FIFO workers, most of whom resided in South East Queensland, and Townsville/Cairns.
- Only 1 percent of the total workforce resides interstate or overseas.

Accommodation Types and Availability

In 2011, most of the Bowen Basin's non-resident workers are accommodated in worker accommodation villages at 86 percent. Some variation in the accommodation mix exists at the SLA level, however, workers accommodation villages account for the highest proportion in each locality.

Table 3-8: Non-resident Workers on-shift by Accommodation Type for Selected LGAs and SLAs, July 2011

LGA	Workers Accommodation Village	Hotel/Motel	Caravan Park/Other*	Total
	- number of non-resident workers on-shift -			
Isaac (R)	12,540	590	460	13,590
Belyando	3,380	310	390	4,080
Broadsound	4,200	160	0	4,360
Nebo	4,960	120	70	5,150
Central Highlands (R)	3,640	1,000	190	4,830
Emerald	720	560	140	1,420
Whitsunday (R) – Bowen only	550	90	80	720
Bowen Basin Total	17,690	1,970	850	20,520

* Other includes private dwellings head-leased by companies and farm-stay accommodation if occupied by non-resident workers other than seasonal agricultural workers.

Figures in this table have been rounded to the nearest 10; any internal discrepancies are due to rounding.

Source: OESR, 2012 (a).

2011 discussions with key stakeholders in Moranbah and Clermont indicated that there was a shortage of workers accommodation village within both towns. Within Clermont, Rio Tinto had secured most available temporary accommodation for workers associated with development of the Clermont Mine, and BMA had secured most accommodation in Moranbah associated with current and imminent developments. Through stakeholder discussions at that time it was indicated that both Rio Tinto and BMA were actively working with Isaac Regional Council and the ULDA to address this accommodation shortage.

Since then, BMA's Caval Ridge workers accommodation village has commenced construction and 80 new homes are nearing completion in Rio Tinto as Stage 1 of an approved multi-stage residential development. While temporary accommodation in both towns is still at capacity, current projects in construction will address this.

As shown in Table 3-9 the Bowen Basin had a total capacity of 22,730 beds in workers accommodation villages – an increase of 4,940 additional beds since 2010, with the largest numbers of workers accommodation village beds located in the Isaac Region.

The 2012 OESR Report notes that not all unoccupied rooms may be available for use by other guests, as some workers accommodation village operators hold rooms vacant for workers when off-shift, while other rooms are shared by different occupants between (known as 'motelling').

Due to the strong demand from resource industry workers, many hotels/ motels in the Bowen Basin have limited capacity to cater for other visitors – 3 percent of rooms were vacant in 2011.

Table 3-9: Workers Accommodation Bed Capacity and Non-Resident Workers on-shift Counted in villages, Selected LGAs and SLAs, July 2011

LGA SLA	Total capacity (beds)	Non-resident workers on-shift counted in Workers Accommodation Villages	Percentage of Workers Accommodation Villages in Bowen Basin
Isaac (R)	15,590	12,540	68.6%
Belyando	4,590	3,380	20.2%
Broadsound	4,640	4,200	20.4%
Nebo	6,350	4,960	27.9%
Central Highlands (R)	5,070	3,640	22.3%
Emerald	1,160	720	5.1%
Whitsunday (R) – Bowen only	910	550	4.0%
BOWEN BASIN TOTAL	22,730	17,690	-

Source: OESR, 2012(a)

Figures in this table have been rounded to the nearest 10; any internal discrepancies are due to rounding.

3.3.4 FTE Population Projections

Medium series FTE population projections for the Bowen Basin forecast continued solid growth up to the year 2016. Salient points are:

- Isaac Region – FTE population of 47,560 with non-resident workers accounting for 38 percent of the total (an increase of 5,700 workers between 2011 and 2016).
- Charters Towers Region – FTE population of 42,650 with non-resident workers accounting for 15 percent of the total (an increase of 1,570 workers between 2011 and 2016).
- Although Whitsunday Region is likely to experience smaller FTE population growth, temporary construction workforces for port and rail projects in Whitsunday (Bowen) are likely to see steep increases in the non-resident components of the LGAs FTE population.

Table 3-10: Projected FTE Population by Components for Selected LGAs (2011-2018, medium series)

	2011	2012	2013	2014	2015	2016	2017	2018
Central Highlands Region								
Est resident population	31,780	32,500	33,640	34,560	35,420	36,260	37,140	38,050
Non-resident workers on shift	4,830	5,020	5,350	6,480	6,230	6,400	6,010	5,880
FTE population	36,620	37,570	38,990	41,050	41,650	42,650	43,150	43,920
Isaac Region								
Est resident population	22,960	24,260	25,830	26,680	27,490	28,270	28,890	29,520
Non-resident workers on shift	13,590	14,860	16,730	16,730	17,600	19,290	18,650	17,970
FTE population	36,540	39,120	42,560	43,410	45,090	45,560	47,540	47,490

(a) Medium series resident population projections

(b) Medium series projection for non-resident workers on-shift. Represents an estimate of the cumulative non-resident worker population on-shift for the middle of the indicated year. Due to the volatile nature of the non-resident workforce numbers and the cumulative influences of several projects proceeding at the same time, temporary peaks and falls in project workforce may occur between estimates for successive years.

3.3.5 Age and Gender

The DSA has a youthful age profile with 70 percent of residents aged under 45, being significantly higher than the state average of 62.6 percent (refer to Table 3-11). Children aged under 15 represent almost a quarter of the DSA's population, compared to 20.0 percent for Queensland.

At the LGA level, Charters Towers Region has an older age profile with 14.2 percent of residents aged 65 or more, in comparison to the DSA (7.8 percent) and Queensland (24.8 percent).

Significantly, the Isaac Region has fewer senior citizens, with only 4.1 percent in the 65+ age cohort.

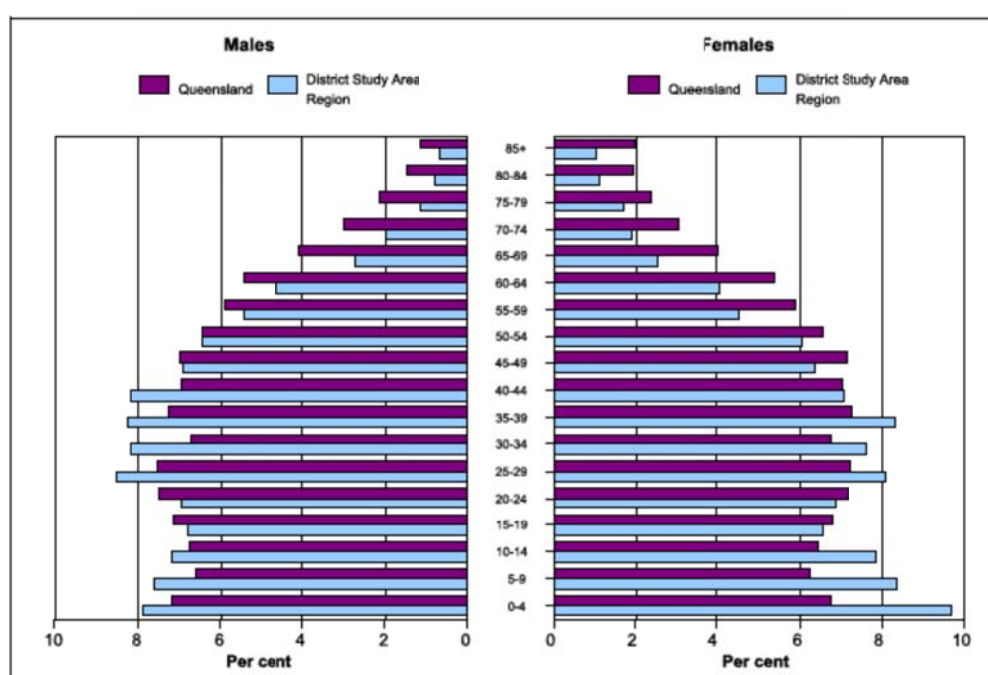
Table 3-11: Estimated Resident Population by Age in District Study Area, June 2010 p

Locality	Population by age									
	0–14		15–24		25–44		45–64		65+	
	number	%	number	%	number	%	number	%	number	%
Charters Towers	2,943	22.9	1,866	14.5	3,033	23.6	3,168	24.7	1,827	14.2
Isaac	5,628	24.9	2,944	13.0	8,387	37.1	4,740	20.9	930	4.1
District Study Area	8,571	24.2	4,810	13.6	11,420	32.2	7,908	22.3	2,757	7.8
Queensland	901,542	20.0	644,985	14.3	1,278,876	28.3	1,121,066	24.8	567,381	12.6
DSA as % of Qld	1.0	..	0.7	..	0.9	..	0.7	..	0.5	..

p = preliminary
Source: OESR, 2012(c)

As shown in Figure 3-2 there is an uneven ratio of males/females, which is attributed to the high proportion persons engaged in the mining sector.

Figure 3-2: Population Pyramid for District Study Area and Queensland (June 2010 p)



p = preliminary
Source: OESR, 2012(c)

3.3.6 Mobility

The DSA has a reasonably mobile population. Table 3-12 shows that 22.1 percent of people aged one year and over in the DSA had a different address from the previous year, compared to 19.7 percent in Queensland.

Almost half of people (49.0 percent) in the DSA had a different address within five years prior to the 2006 Census, which is higher than for Queensland at 47.6 percent. At the LGA level, higher levels of mobility are evident in Isaac Region, with 4,490 people (or 23.1 percent) living at a different address one year prior, and 50.5 percent five years prior. In comparison, Charters Towers Region registered figures of 20.3 percent and 46.5 percent respectively.

This figure shows the greatest inflows to the DSA from other locations within Australia. Overseas migration makes up a small proportion of the District total at 2.0 percent (based on 5 years) compared with a state average of 4.4 percent. Overseas migration is more evident in Isaac Region (443 people or 2.5 percent), than in Charters Towers Region (128 people or 1.2 percent).

Table 3-12: Place of Usual Residence 1 and 5 Years Ago for District Study Area, 2006 (a) (b)

Locality	Same address	Different address			Proportion with different address %	Total persons (d)
		Within Australia	Overseas	Total (c)		
Place of residence 1 year ago						
Charters Towers (R)	8,481	2,233	49	2,305	20.3	11,328
Isaac (R)	12,974	4,266	188	4,490	23.1	19,448
District Study Area	21,455	6,499	237	6,795	22.1	30,776

Locality	Same address	Different address			Proportion with different address %	Total persons (d)
		Within Australia	Overseas	Total (c)		
Queensland	2,855,736	693,143	57,580	759,134	19.7	3,851,522
% of Queensland	0.8	0.9	0.4	0.9		0.8
Place of residence 5 years ago						
Charters Towers (R)	5,053	4,770	128	4,970	46.5	10,682
Isaac (R)	6,828	8,520	443	9,065	50.5	17,934
District Study Area	11,881	13,290	571	14,035	49.0	28,616
Queensland	1,644,415	1,552,025	159,540	1,735,228	47.6	3,647,455
% of Queensland	0.7	0.9	0.4	0.8	. .	0.8

(a) Based on place of usual residence.

(b) Based on persons aged one year and over.

(c) Includes persons who stated that they were usually resident at a different address but did not state that address.

(d) Includes persons who did not state whether they were usually resident at a different address.

Source: OESR, 2011(b)

3.3.7 Indigenous Population

In 2011, 1,566 persons identified as being Indigenous of Aboriginal or Torres Strait Islander descent in the DSA, representing 4.5 percent of the total population (compared with 3.6 percent in Queensland).

As noted for the RSA, Charters Towers Region had the largest Indigenous population at 7.9 percent (962 persons) and Isaac Region had the smallest at only 2.7 percent (604 persons) – refer to Table 3-13.

Table 3-13: Persons by Indigenous Status in District Study Area (a), 2011

Locality	Aboriginal	Torres Strait Islander	Both (b)	Total Indigenous	Indigenous proportion (%)	Non-Indigenous	Total persons (c)
Charters Towers	855	22	55	962	7.9	10,448	12,169
Isaac	492	58	54	604	2.7	19,788	22,586
District Study Area	1,377	80	109	1,566	4.5	30,236	34,755
Queensland	122,896	20,094	12,834	155,824	3.6	3,952,707	4,332,740
DSA as % of Qld	1.1	0.4	0.8	1.0	. .	0.8	0.8

(a) = Based on place of usual residence

(b) = Applicable to persons who are of 'Both Aboriginal and Torres Strait Islander origin'

(c) = Includes Indigenous status not stated

Source: OESR, 2012 (c)

3.3.8 Cultural and Ethnic Characteristics

Country of Birth

The DSA is characterised by lower levels of cultural diversity than the RSA and state. In 2011, there were 2,957 persons in the DSA who were born overseas (8.5 percent of the total population), which is significantly lower than the Queensland average of 20.5 percent. Almost 29,000 people (82.4 percent) in the DSA were Australian-born (refer to Table 3-14).

Isaac Region is characterised by a marginally higher representation of persons born overseas, in comparison to Charters Towers Region (9.9 percent and 6.0 percent respectively).

Table 3-14: Number of Persons by Birthplace in District Study Area, 2011(a)

Locality	Born in Australia		Born in ESB Countries (b)		Born in NESB Countries		Total born Overseas		Total persons (c)
	number	%	number	%	number	%	number	%	number
Charters Towers	10,575	86.9	444	3.6	281	2.3	725	6.0	12,168
Isaac	18,060	80.0	1,416	6.3	816	3.6	2,232	9.9	22,588
District Study Area	28,635	82.4	1,860	5.4	1,097	3.2	2,957	8.5	34,756
Queensland	3,192,115	73.7	478,290	11.0	410,346	9.5	888,636	20.5	4,332,738
DSA as % of Qld	0.9	..	0.4	..	0.3	..	0.3	..	0.8

(a) Based on usual place of residence

(b) Includes UK, Ireland, Canada, USA, South Africa and New Zealand

(c) Includes 'inadequately described', 'at sea', 'not elsewhere classified' and 'not stated responses'

Source: OESR, 2012(c)

Proficiency in Spoken English

As shown in Table 3-15, 863 persons in the DSA were born overseas who spoke a language other than English at home (29.2 percent of the overseas-born population), which is less than the State average where 36.0 percent of the overseas-born population spoke a language other than English at home.

Of those born overseas, who stated that they spoke a language other than English, 53 people stated they spoke English either 'not well', or 'not at all' (1.8 percent of the DSA's overseas-born population), compared to 5.2 percent in Queensland.

Isaac Region had a higher number of overseas-born people who spoke English either 'not well' or 'not at all' (1.8 percent), followed by the Charters Towers Region (1.7 percent).

Table 3-15: Proficiency in English of Overseas Persons in District Study Area, 2011

Locality	Speaks English only		Speaks other language at home and speaks English						Persons born overseas (c)
			Very well or well		Not well or not at all		Total (b)		
	number	%	number	%	number	%	number	%	number
Charters Towers	548	76.0	154	21.4	12	1.7	170	23.6	721
Isaac	1,531	68.6	645	28.9	41	1.8	693	31.0	2,233
District Study Area	2,079	70.4	799	27.0	53	1.8	863	29.2	2,954
Queensland	565,544	63.6	269,847	30.4	45,927	5.2	319,949	36.0	888,635
DSA as % of Qld	0.4	..	0.3	..	0.1	..	0.3	..	0.3

(a) Based on usual place of resident;

(b) Includes proficiency in English not stated;

(c) Excludes persons who did not state their country of birth.

Source: OESR, 2012(c)

3.3.9 Family Composition

Table 3-16 shows that at the time of the 2011 Census, there were:

- A total of 8,344 families in the DSA, constituting less than 1 percent of all Queensland families.

- About 5,300 family households in Isaac Region and 3,000 in Charters Towers Region.
- 'Couple Families with Children' are the dominant family type in the DSA.
- There are about 1,000 'One-parent Families' representing 11.4 percent of the total, compared with the state average of 16.1 percent.
- The percentage of 'One-parent families' in Charters Towers Region (16.6 percent) was almost double that of Isaac Region (8.4 percent).

'Singles' are not included in the OESR data.

Table 3-16: Family Composition by LGA in District Study Area (2011)

Locality	Couple Family with no Children (c)	Couple Family with Children (c)	One-parent Family		Total (d)
	— number —			%	number
Charters Towers (R)	1,280	1,260	511	16.6	3,086
Isaac (R)	1,844	2,933	442	8.4	5,258
District Study Area	3,124	4,193	953	11.4	8,344
Queensland	453,102	4,491,102	184,547	16.1	1,148,179
DSA as % of Qld	0.7	0.9	0.5	..	0.7

(a) Based on place of usual residence

(b) Includes same-sex couple families

(c) Children are defined as children aged under 15 years of age or dependent students aged 15 to 24 years

(d) Includes other families

Source: OESR, 2012(c)

3.3.10 Household Structure

Overall, family households are the main type in the DSA and exceed the state average. Charters Towers has a lower number of family households, with more single person households. Isaac displays the opposite scenario. Group households are less common in the DSA.

Table 3-17: Household Structure in the District Study Area (2011)

Locality	Family Households (%)	Single or Lone Person Households (%)	Group Households (%)
Charters Towers (R)	72.1	25.0	2.9
Isaac (R)	77.6	18.9	3.5
District Study Area	74.9	22.0	3.2
Queensland	72.4	22.8	4.7

Source: ABS, 2012

3.4 Employment, Education and Training

3.4.1 Education

In 2011, the DSA had 11,772 persons aged 15 years and over whose highest level of school was Year 11 or 12 (or equivalent) – this equates to a district average of 46.6 percent, which is lower than the Queensland average of 55.3 percent (refer to Table 3-18).

At the LGA level, a higher level of schooling is evident in Isaac Region (50.2 percent) in comparison to Charters Towers Region, with less than half completing senior grades (40.1 percent).

Table 3-18: Highest Level of Schooling Completed, District Study Area, 2011

Locality	Did not go to school, or Year 8 or below	Year 9 or 10 or equivalent	Year 11 or 12 or equivalent	Total (c)	
				%	number
Central Highlands	1,088	7,016	10,383	49.8	2,0858
Charters Towers	1,080	3,275	3,570	40.1	8,904
Isaac	734	5,258	8,202	50.2	16,337
Mackay	6,468	30,674	39,777	46.6	85,354
Townsville	7,474	39,018	72,659	55.1	131,856
Whitsunday	1,762	8,556	11,091	44.6	24,866
Regional Study Area	18,606	93,797	145,682	50.6	288,175
Queensland	219,102	977,116	1,836,995	55.3	3,320,761
RSA as % of Qld	8.5	9.6	7.9	..	8.7

(a) Based on place of usual residence.

(b) Based on persons aged 15 years and over.

(c) Includes highest year of schooling not stated.

Source: OESR, 2012(c)

At the time of the 2006 Census, Charters Towers Region had a higher proportion of persons aged 15 to 19 (77 percent) who were earning and studying at the same time compared to Isaac Region at 74 percent (refer to Table 3-19).

Table 3-19: People Earning and Learning in the District Study Area, 2006

Locality	Learning or Earning ages 15 to 19	People aged 15 to 19	% Learning or Earning ages 15 to 19
Isaac Region	867	1,179	74%
Belyando (S)	519	672	77%
Broadsound (S)	260	368	71%
Nebo (S)	88	139	63%
Charters Towers Region	704	909	77%
Charters Towers (C)	545	700	78%
Dalrymple (S)	159	209	76%
Queensland	207,648	269,749	77%

Source: ABS Census 2006

Table 3-20 presents the post-school qualification for people in the DSA, at the time of the 2006 Census. Overall, the DSA appears to have a lower level of education than the state. Key observations are:

- 45.2 percent of the DSA population had a post-school qualification, compared with the Queensland average of 50.4 percent.
- Isaac Region had 49.7 percent
- Charters Towers Region had 37.6 percent

- Where the level of education was stated, a certificate qualification was most common in the DSA at 62 percent, followed by bachelor degree or higher (26 percent), and advanced diploma or diploma (12 percent).

The high proportion of people with Certificate, I, II, III and IV qualifications in Isaac Region is aligned with the prominence of mining and agricultural industries in the DSA.

Table 3-20: Post-school Qualifications in District Study Area, 2006 (a)(b)

Locality	Level of education			Persons with a qualification (e)		Total persons
	Bachelor degree or higher (c)	Advanced diploma or diploma	Certificate (d)			
	— number —			number	%	number
Charters Towers (R)	649	302	1,311	3,296	37.6	8,767
Isaac (R)	1,258	548	3,204	7,317	49.7	14,715
District Study Area	1,907	850	4,515	10,613	45.2	23,482
Queensland	405,904	204,039	554,243	1,560,868	50.4	3,097,996
DSA as % of Qld	0.5	0.4	0.8	0.7	..	0.8

(a) Based on place of usual residence

(b) Persons aged 15 years and over

(c) Includes bachelor degree, graduate diploma, graduate certificate and postgraduate degree

(d) Includes Certificate, I, II, III and IV and Certificates not further defined responses

(e) Persons aged 15 years and over, includes 'inadequately described' and 'not stated' level of education responses

Source: OESR, 2011(b)

3.4.2 Recruitment and Training

There are two employment services operating in the Isaac Region (both in Moranbah) and two in Charters Towers:

- Pioneer Employment Services, Moranbah
- Mine Assist, a labour hire contractor in Moranbah
- Jobfind Centre, Charters Towers
- Dalfin Employment Alliance, Charters Towers

There are also numerous agencies in the major urban centres of Townsville and Mackay, which have a service catchment extending to the DSA.

Central Queensland Institute of TAFE has several campuses, including sites at Clermont and Moranbah. Barrier Reef Institute of TAFE also has a Charters Towers campus. TAFE offers a range of courses specifically aligned with mining sector and other related industries.

Course offerings vary from campus to campus. Bowen campus includes several trade-related courses including automotive trades, boiler making, and fitting and turning. Charters Towers TAFE offers courses in hospitality, training and assessment, and access to work/training. Bowen TAFE also has an apprenticeship program.

While fees are payable for most courses at TAFE, these are government subsidised, and further discounts of up to 60 percent are provided for disadvantaged students including unemployed and students of Indigenous backgrounds. Where individuals are being trained as part of an overall employment program, employers will potentially meet the costs of training.

The websites for TAFE campuses in the DSA indicate places available for all courses.

3.4.3 Labour Force, Unemployment and Income

Unemployment

In March quarter of 2012, 718 people were unemployed within the DSA at a rate of 3.4 percent. This was lower than Queensland's rate of 5.5 percent. Unemployment was significantly higher in Charters Towers Region at 7.8 percent, in comparison to the Isaac Region at 1.2 percent.

Table 3-21: Unemployment and Labour Force (a) in District Study Area, March Quarter 2012

Locality	Unemployed	Labour force	Unemployment rate
	— number —		%
Charters Towers (R)	550	7,022	7.8
Isaac (R)	168	13,931	1.2
District Study Area	718	20,953	3.4
Queensland	136,900	2,479,000	5.5
DSA as % of Qld	0.5	0.8	. .

(a) Based on a 4-quarter smoothed series.

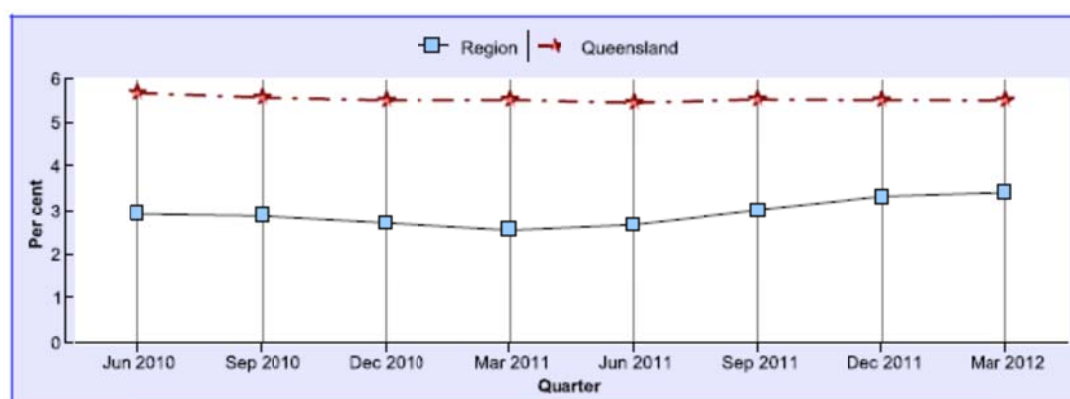
Note: Small Area Labour Force data have been generated from a Structure Preserving Estimation (SPREE) methodology using original, unadjusted ABS labour force estimates, ABS Census 2006 data and Centrelink Newstart and Youth Allowance (other). As such, these estimates can exhibit considerable variability and care should be taken when interpreting these values. In addition, these estimates are based on original data and have not been adjusted to account for seasonal or other variations and can thus exhibit irregular movements. Quarter-to-quarter comparisons may not be indicative of actual movements in the labour market. Year-on-year comparisons may therefore be appropriate.

Note: Based on ABS, Australian Standard Geographic Classification (ASGC), July 2011. The sum of the LGAs may not be equivalent to the Regional Study Area.

Source: OESR, 2012(c)

As shown in Figure 3-3, the DSA's unemployment rate has continued to rise since the March quarter 2011 (2.6 percent) to March quarter 2012 (3.4 percent).

Figure 3-3: Unemployment Rate (a) in District Study Area and Queensland, June Quarter 2010 to March Quarter 2012



Source: OESR, 2012(a)

Labour Force by Industry

Table 3-22 presents the industry of employment for people working in the Isaac and Charters Tower Regions in 2006.

Table 3-22: Employment by Industry Sector for the DSA and Queensland, 2006 (a) (b)

Industry Sector	Isaac and Charters Towers Regions		Queensland	
	Number	%	Number	%
Agriculture, forestry and fishing	1,698	11.3	61,735	3.4
Mining	4,603	30.6	30,721	1.7
Manufacturing	418	2.8	180,212	9.9
Electricity, gas, water and waste services	91	0.6	18,540	1.0
Construction	906	6.0	164,936	9.0
Wholesale trade	283	1.9	72,075	3.9
Retail trade	1,245	8.3	212,422	11.6
Accommodation and food services	962	6.4	127,631	7.0
Transport, postal and warehousing	585	3.9	92,614	5.1
Information, media and telecommunications	58	0.4	26,347	1.4
Financial and insurance services	99	0.7	52,035	2.9
Rental, hiring and real estate services	138	0.9	37,983	2.1
Professional, scientific and technical services	222	1.5	102,412	5.6
Administrative and support services	296	2.0	55,705	3.1
Public administration and safety	572	3.8	122,416	6.7
Education and training	1,120	7.5	139,090	7.6
Health care and social assistance	867	5.8	186,336	10.2
Arts and recreational services	42	0.3	24,625	1.3
Other services	421	2.8	68,361	3.7
Total (d)	15,025	100.0	1,824,996	100.0

(a) Employed persons aged 15 years and over.

(b) Industry of employment was coded to the ABS 2006 Australian and New Zealand Standard Industrial Classification (ANZSIC). This has replaced the 1993 ANZSIC edition.

(c) The ratio of the percentage for the region to the percentage for Queensland.

(d) Includes inadequately described and not stated responses.

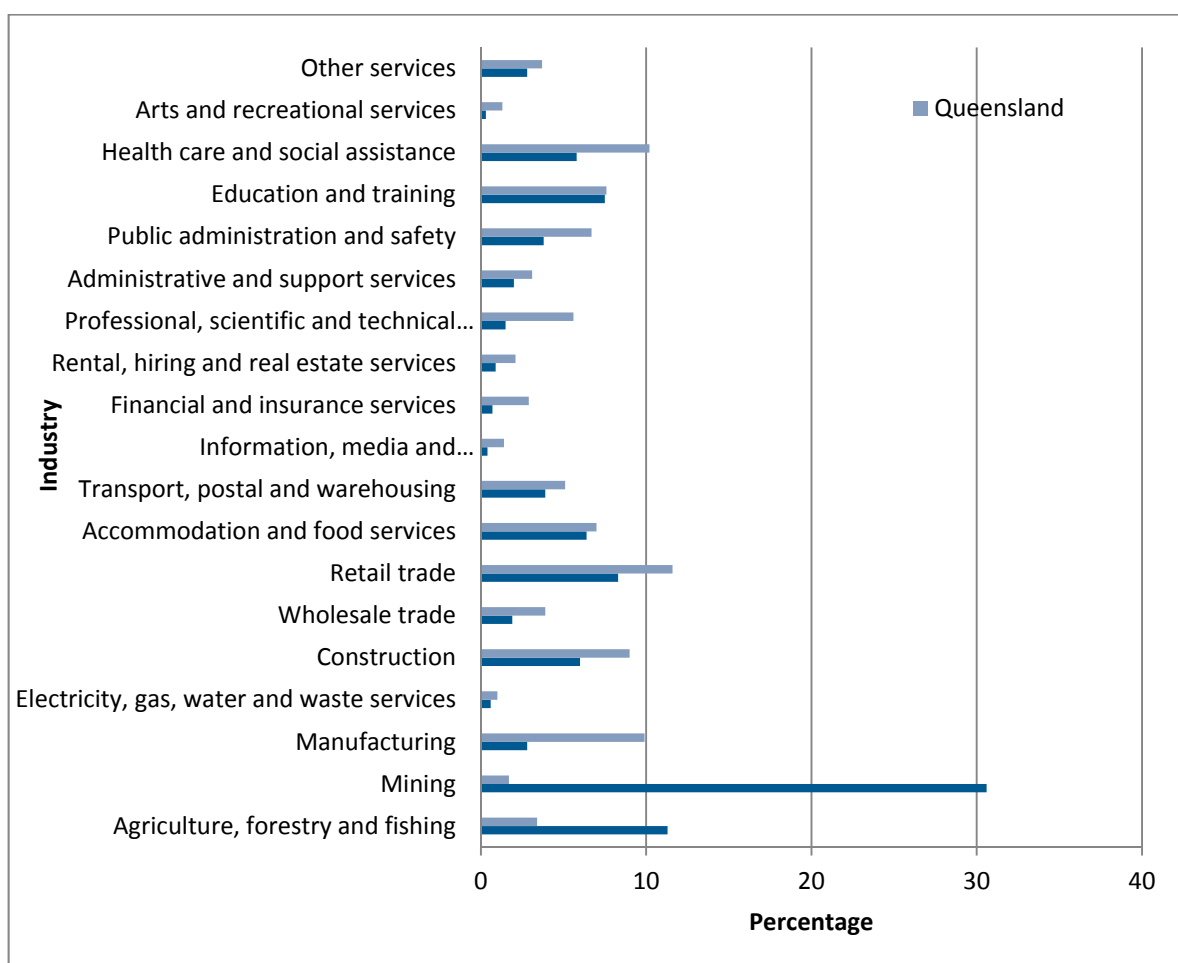
Source: OESR, 2011(c)

At the time of the 2006 Census, Mining was the largest industry of employment for the DSA usual residents, with 4,603 people or 30.6 percent of the District's employed labour force.

Other industries with high numbers of employed persons included Agriculture, Forestry and Fishing (11.3 percent), Retail Trade (8.3 percent), and Education and Training (7.5 percent).

The chart below shows the significant differences between the DSA and Queensland, for employment in the Mining sector, and to a lesser extent, Agriculture, Forestry and Fishing.

Figure 3-4: Industry of Employment for District Study Area and Queensland, 2006 (persons aged >15 years)



Source: OESR, 2011(b)

Employment by Occupation

Table 3-23 presents employment by occupation for the DSA and Queensland, based on 2006 ABS Census data.

Table 3-23: Employment by Occupation for District Study Area, 2006 (a) (b)

Occupation	District Study Area		Queensland	
	Number	%	Number	%
Managers	2,081	13.9	225,693	12.4
Professionals	1,615	10.8	312,865	17.1
Technicians and trades workers	2,734	18.2	280,342	15.4
Community and personal service workers	903	6.0	166,400	9.1
Clerical and administrative workers	1,289	8.6	269,198	14.8
Sales workers	899	6.0	189,038	10.4
Machinery operators and drivers	3,142	20.9	132,114	7.2
Labourers	2,052	13.7	217,251	11.9
Total (d)	15,017	100.0	1,824,996	--

(a) Employed persons aged 15 years and over.

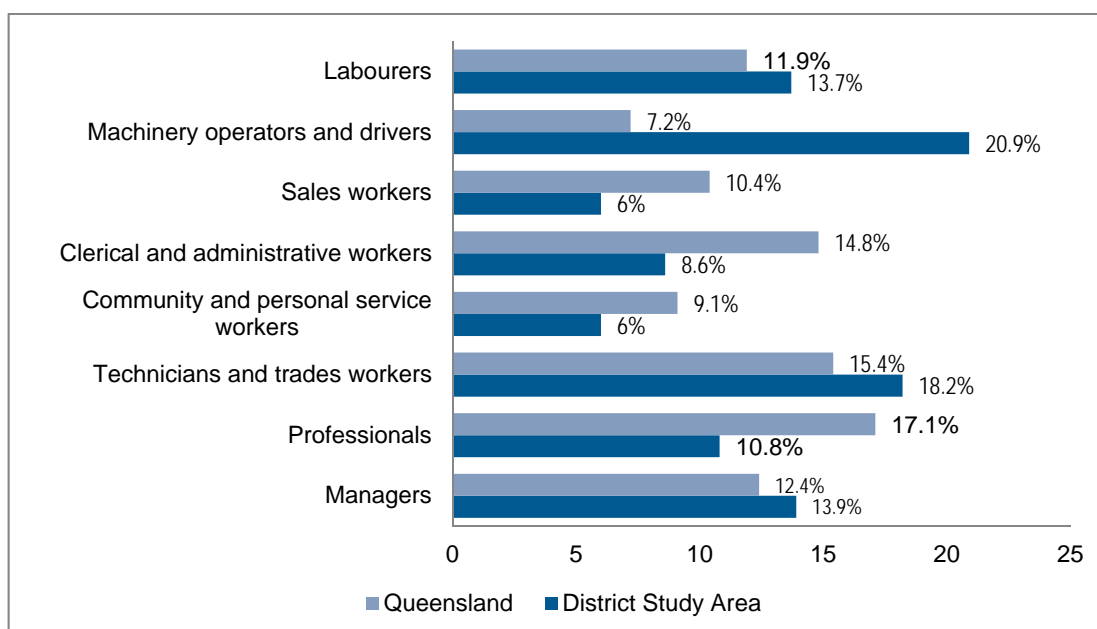
(b) Occupation was coded to the ABS 2006 Australian and New Zealand Standard Classification of Occupations (ANZSCO). This has replaced the 1996 Australian Standard Classification of Occupations (ASCO) Second Edition.
(c) The ratio of the percentage for the region to the percentage for Queensland.
(d) Includes inadequately described and not stated responses.
Source: OESR, 2011(b)

In 2006, the DSA's largest occupation categories were:

- Machinery Operators and Drivers (3,142 persons or 20.9 percent of the labour force);
- Technicians and Trades Workers (2,734 persons or 18.2 percent);
- Managers (2,081 persons or 13.9 percent); and
- Labourers (2,052 persons or 13.7 percent).

As shown in Figure 3-5, the DSA had higher proportions of persons employed in these four occupations than Queensland. This is reflective of the demand for these occupations in the mining industry.

Figure 3-5: Industry by Occupation (persons >15 years old) in District Study Area, 2006



Source: OESR, 2011(b)

3.4.4 Income

Table 3-24 sets out the gross individual income for persons aged 15 years and over in the DSA at the time of the 2011 Census. These figures indicate higher individual income levels within the DSA compared to state data. This is particularly evident in the higher income bracket of \$2,000 or more per week – 16.4 percent in the DSA compared to 5.5 percent in Queensland.

At the LGA level, lower individual incomes are focused on the Charters Towers Region, with 39.2 percent of the workforce earning less than \$400 per week (3,686 people). In contrast, averages for this income bracket in Isaac Region and Queensland were 29.4 percent and 39.7 percent respectively.

Table 3-24: Gross Individual Weekly Income for District Study Area, 2006 (a)
(b)

Locality	Persons earning less than \$400 per week		Persons earning \$400 to \$999 per week		Persons earning \$1,000 to \$1,999 per week		Persons earning \$2,000 or more per week		Total persons (c)
	number	%	number	%	number	%	number	%	number
Charters Towers (R)	3,686	39.2	2,655	28.3	1,614	17.2	427	4.5	9,397
Isaac (R)	3,882	23.0	3,153	18.7	3,580	21.2	3,895	23.1	16,878
District Study Area	7,568	28.8	5,808	22.1	5,194	19.8	4,322	16.4	26,275
Queensland	1,195,059	34.6	1,095,509	31.7	689,495	19.9	191,236	5.5	3,456,877
District as % of Qld	0.6	..	0.5	..	0.8	..	2.3	..	0.8

(a) Based on usual place of residence
(b) Based on persons aged 15 years and over
(c) Includes personal income not stated.
Source: OESR, 2012(c)

3.5 Housing and Accommodation

3.5.1 Housing types

As shown in Table 3-25 there were 10,859 occupied private dwellings within the DSA at the time of the 2011 Census. Of these dwellings, 9,735 or 89.6 percent were separate houses, 355 (3.3 percent) were semi-detached dwellings and 313 (2.9 percent) were apartments.

In the DSA, separate houses represented 89.6 percent of total occupied private dwellings, compared with 78.5 percent for Queensland.

Table 3-25: Occupied Private Dwellings (a) by Structure/Type in District Study Area, 2011

Locality	Separate house	Semi-detached (b)	Apartment (c)	Total (d)	Separate houses as % of total
Charters Towers (R)	2,862	42	136	4,207	92%
Isaac (R)	5,873	313	182	6,652	88%
District Study Area	9,735	355	318	10,859	90%
Queensland	1,215,303	129,430	181,716	1,547,303	79%
DSA as % of Qld	0.8	0.3	0.2	0.7	..

(a) Excludes visitors only and other not classifiable households
(b) Includes row or terrace house, townhouse etc.
(c) Includes flat, unit or apartment.
(d) Includes other dwelling types and dwelling types not stated.
Source: OESR, 2012(c)

Home Ownership

Based on 2011 Census data, there were 10,858 occupied private dwellings within the DSA (refer to Table 3-26). Of these dwellings, 26.8 percent were fully owned, 20.4 percent were being purchased and 48.4 percent were being rented.

Within the DSA, Charters Towers Region had a higher percentage of fully owned private dwellings at 36.5 percent, compared with only 20.9 percent in Isaac Region.

A very high number of occupied private dwellings are being rented in Isaac (60.8 percent), which is consistent with the provision of rental houses in mining industry areas. In comparison,

rentals account for 48.8 percent of dwellings in Queensland and only 28.8 percent in Charters Towers Region.

Table 3-26: Occupied Private Dwellings by Tenure Type in District Study Area, 2011

Locality	Fully owned		Being purchased (a)		Rented (b)		Total (c)
	number	%	number	%	number	%	number
Charters Towers (R)	1,535	36.5	1,246	29.6	1,210	28.8	4,207
Isaac (R)	1,389	20.9	974	14.6	4,041	60.8	6,651
District Study Area	2,924	26.9	2,220	20.4	5,251	48.4	10,858
Queensland	448,617	29.0	533,868	34.5	513,415	33.2	1,547,303
DSA as % of Qld	0.7	..	0.4	..	1.0	..	0.7

(a) Excludes visitors only and other not classifiable households.

(b) Includes dwellings being purchased under a rent/buy scheme.

(c) Includes renting from a real estate agent, state or territory housing authority, renting from a person not in the same household, renting from cooperative/community/church group, other landlord type and landlord type not stated.

(d) Includes other tenure type and tenure type not stated.

Source: OESR, 2012(c)

Feedback from stakeholders during the SIA consultation in 2011 highlighted land and housing supply constraints in Moranbah particularly and increasing shortfalls in Clermont, together with inflated local property values. Previous State Government research identified strong demand for residential land and supporting infrastructure in Moranbah, resulting from increased mining industry activity. Since then, planning by the ULDA in Moranbah and residential development in Clermont has begun to address this.

3.5.2 Housing Availability

According to Rolfe (2007(b), Moranbah is exhibiting housing stress and declining affordability, including limited availability of affordable housing for key workers such as retail staff. Currently, new housing in Moranbah is primarily three or four bedroom homes on large housing blocks. This lack of diversity means housing becomes less affordable, because all households - singles, couples and families - are catered for with a larger style of home.

Since the Rolfe report, the Moranbah Urban Development Area (UDA) was declared on 20 July 2010 by the Urban Land Development Authority (ULDA) (also refer to Section 4.5.5).

In the 12 months ending 31 March 2012, there were 283 dwelling units in new residential buildings approved in the DSA. These approvals were valued at \$52.7 million and accounted for 0.7 percent of the total value of Queensland's new residential approvals over the period.

The total value of non-residential building approvals in DSA in the 12 months ending 31 March 2012 was \$58.5 million. The largest value of non-residential approvals was recorded in Isaac Region (\$56.3 million), in comparison to only \$2.1 million in Charters Towers Region.

Table 3-27: Residential and Non-Residential Building Approvals in District Study Area (12 Months Ending 31 March 2012)

Locality	Dwelling units in new residential buildings (a)	Residential building value (a)	Total residential building value (b)	Total non-residential building value (b)	Total building value (b)	Proportion of total value that is residential (c)
	number	— \$'000 —				%
Charters Towers (R)	39	10,263	13,985	2,110	16,095	86.9
Isaac (R)	244	42,438	45,383	56,337	101,720	44.6
District Study Area	283	52,700	59,367	58,448	117,815	50.4
Queensland	26,388	6,436,635	7,740,571	,5620,949	13,361,520	57.9
DSA as % of Qld	1.1	0.8	0.8	1.0	0.9	..

(a) Excludes alterations, additions and conversions.

(b) Includes alterations, additions and conversions.

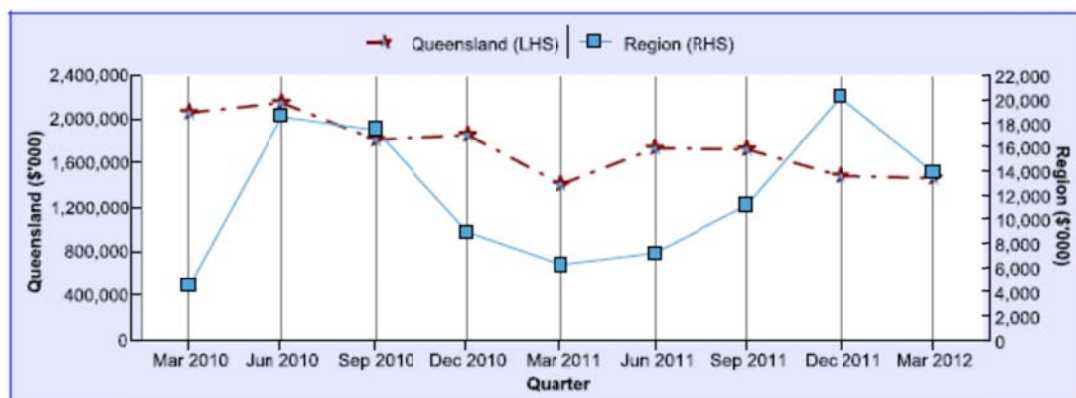
(c) Represents total residential building value as a proportion of total building value.

Source: OESR, 2012(c)

The value of residential building approvals in the DSA for the March quarter 2012 was \$14.0 million, compared with \$1,472.0 million in Queensland.

The DSA has displayed significant fluctuation in value of residential building approvals since 2010. Between the March quarter 2010 and the March quarter 2012, the value of new residential building approvals ranged between \$4.5 million (March quarter 2010) and \$20.2 million (December quarter 2011).

Figure 3-6: Value of Residential Building Approvals (a) in District Study Area and Queensland, March quarter 2010 to March quarter 2012



(a) Excludes alterations, additions and conversions.

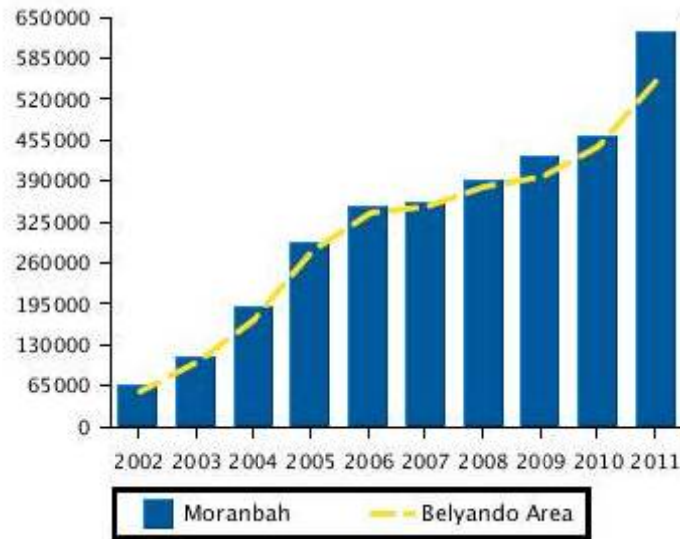
Source: OESR, 2012(c)

3.5.3 Housing and Rental Costs

As shown in Figure 3-7 the median house prices within the key townships of Moranbah, Clermont and Charters Towers have all experienced strong increases over the last decade, although with some softening for the period 2009 to 2010. Moranbah has experienced the highest growth in the DSA.

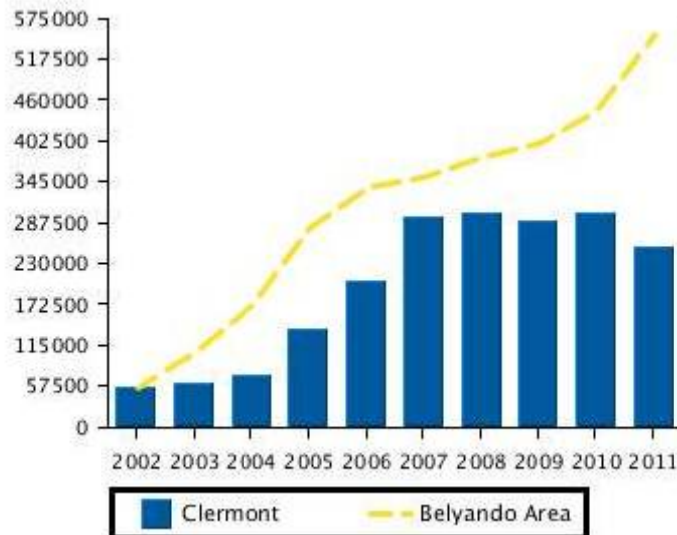
Figure 3-7: Median House Prices for Key Centres in District Study Area

Moranbah (2002-2011)



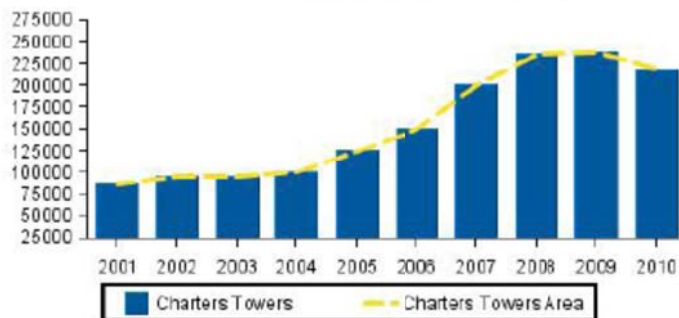
Source: www.rpdata.com.au (July 2012)

Clermont (2002-2011)



Source: www.rpdata.com.au (July 2012)

Charters Towers (2001-2010)



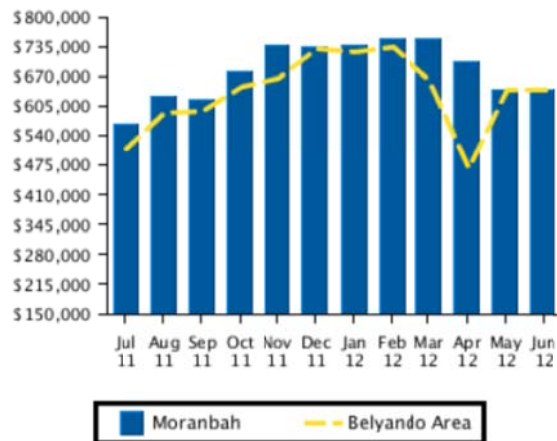
Source: www.rpdata.com.au (April 2011). Updated data for 2012 was not available at the time of writing.

Recent median house prices in Moranbah and Clermont show peaks nearing:

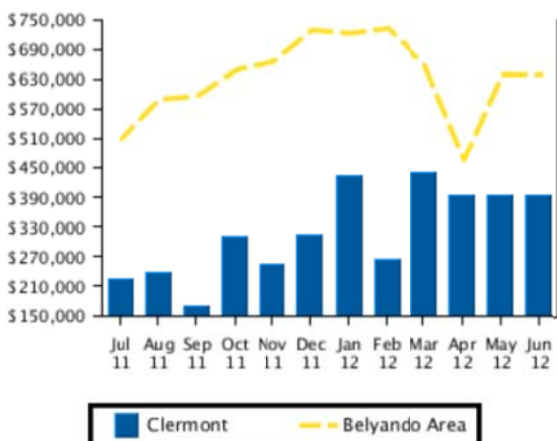
- \$750,000 in Moranbah (February 2012), which have stabilised around \$650,000 in June 2012.
- \$450,000 in Clermont (March 2012) which have flattened to about \$390,000 in June 2012.

Figure 3-8: Median House Prices for Moranbah and Clermont (July 2011 - June 2012)

Moranbah



Clermont



Source: www.rpdata.com.au (July 2012)

The housing market in Charters Towers has not been subject to price spikes, with the median house price at \$237,000 compared to the Queensland median of \$397,000 (12 months to May 2012)².

Table 3-28 provides information on available properties for sale and rent in the three centres based on a scan of www.realestate.com.au on 26 July 2012. GHD has relied on www.realestate.com.au for the different categorisation of properties ('house' or 'unit, townhouse,

² www.pricefinder.com.au (July 2012).

villa or apartment'). Not all properties listed for sale or for rent are usually advertised on www.realestate.com.au, so this information should be used as a guide only.

Table 3-28: Properties for Sale and Rent in Key Townships – District Study Area (July 2012)

Locality and Property Type	For Sale		For Rent	
	Number	Price Range	Number	Price Range (\$/wk)
Clermont				
House	34	\$325,000 - \$695,000	4	\$600-\$650
Unit, townhouse, villa or apartment	1	\$400,000	-	-
Moranbah				
House	163	\$374,100 - \$1,700,000	145	\$600 - \$3,500
Unit, townhouse, villa or apartment	20	\$393,000 - \$700,000	12	\$550 - \$1,800
Charters Towers				
House	382	\$95,000 - \$900,000	17	\$200 - \$420
Unit, townhouse, villa or apartment	6	\$159,500 - \$520,000	6	\$150 - \$270

Source: www.realestate.com.au (access 26-07-12)

This snapshot of properties for sale and rent in July 2012 indicates that:

Clermont

- The range of house prices was \$325,000 to \$695,000 and there were 34 houses for sale.
- There were four houses for rent with weekly rent ranging from \$600 to \$650.
- There was one unit for sale in at a price of \$400,000.

Moranbah

- 163 houses were listed for sale with prices ranging from \$374,100 to \$1.7 million.
- There were 145 houses for rent with weekly rent ranging from \$600 to \$3,500.
- 20 units, townhouses, villas or apartments were listed for sale in Moranbah, with prices ranging from \$393,000 to \$700,000. There were also 12 properties in this category for rent, ranging from \$550 to \$1,800 per week.

Charters Towers

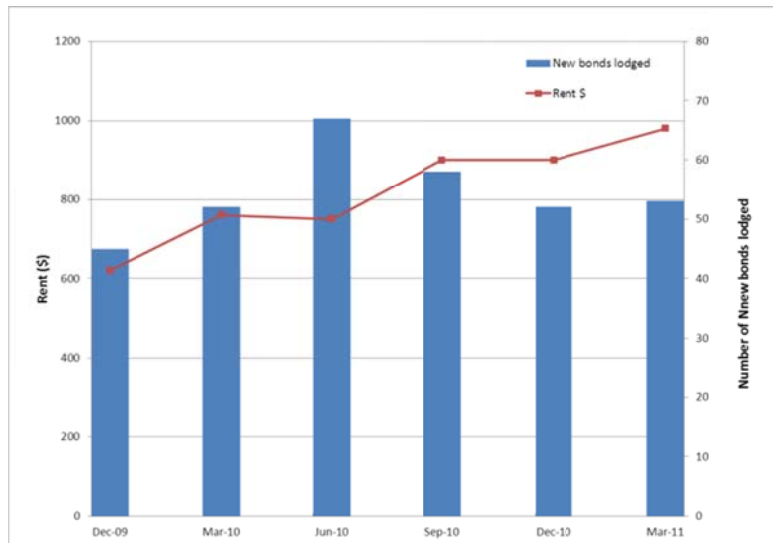
- 382 houses were listed for sale with prices ranging from \$95,000 to \$900,000.
- There were 17 houses for rent with weekly rent ranging from \$200 to \$420.
- Six units, townhouses, villas or apartments were listed for sale in Charters Towers, with prices ranging from \$159,500 to \$520,000. There were also six properties in this category for rent, ranging from \$150 to \$270 per week.

Further to the data above, Figure 3-9, Figure 3-10 and Figure 3-11 show the median rents from the December quarter of 2009 to the March quarter of 2011 for Isaac Region (including postcodes 4800, 4802, 4804 and 4805). These figures show a trend of increasing rental prices across all dwelling types.

The figures show a high demand for three bedroom houses with weekly rents ranging from \$400 to \$800, with demand peaking in March and June quarters of 2010, followed by demand for four bedroom houses with rents ranging from \$600 to \$1,000 per week, with high demand in June and December quarters of 2010 and March quarter of 2011.

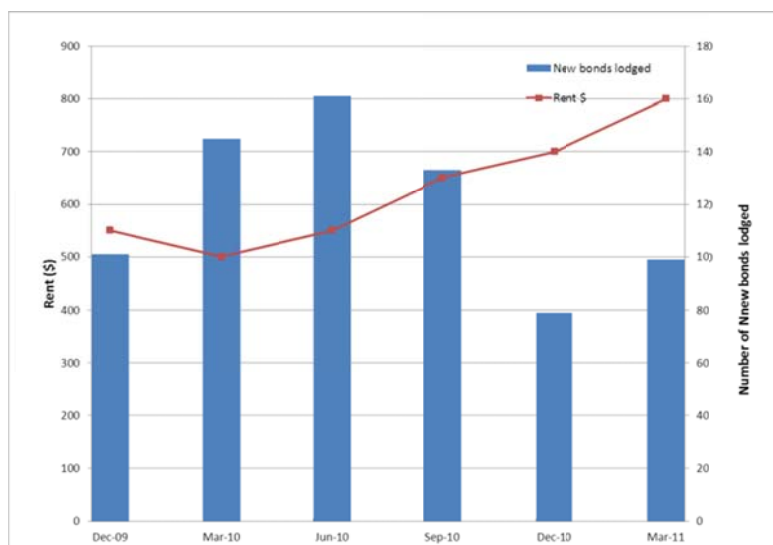
Rents for two and three bedroom apartments fluctuated significantly from \$250 to over \$1,000 per week. However, the demand for the two bedroom apartments was steady through the December 2009 to March 2011.

Figure 3-9: Weekly Rents and Value of Bonds Lodged, Four Bedroom Houses, Isaac Region



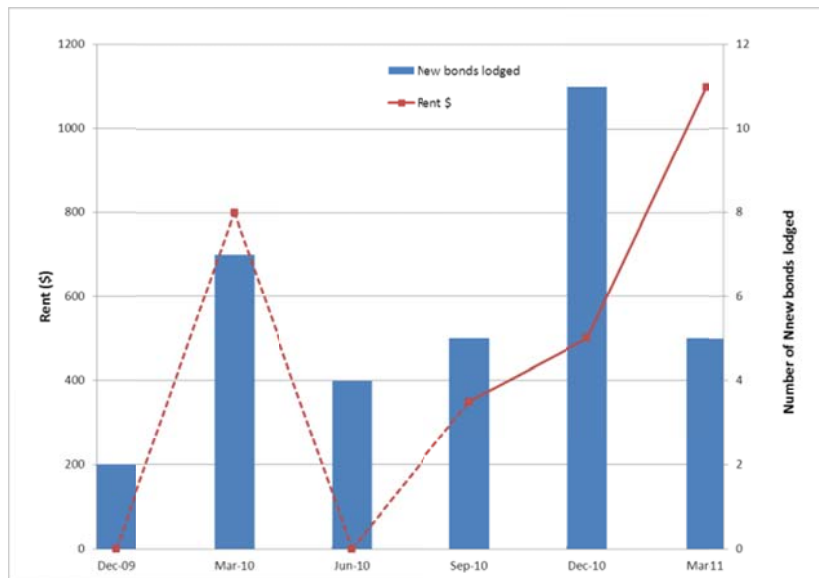
Source: Residential Tenancies Authority, Rental Bond Lodgements
Dashed lines and 0 values indicate where number of bonds lodged too small to show rental value

Figure 3-10: Weekly Rents and Value of Bonds Lodged, Three Bedroom Houses, Isaac Region



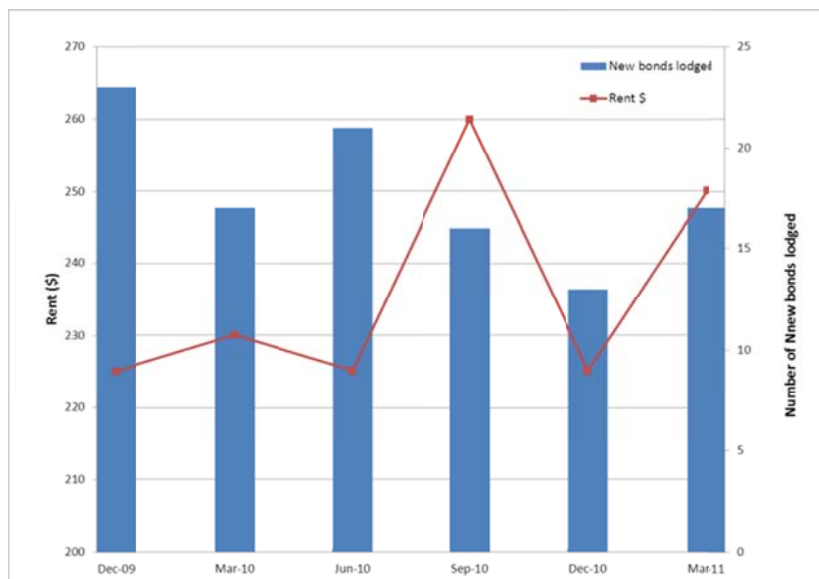
Source: Residential Tenancies Authority, Rental Bond Lodgements
Dashed lines and 0 values indicate where number of bonds lodged too small to show rental value

Figure 3-11: Weekly Rents and Value of Bonds Lodged, Three Bedroom Unit/Apartment, Isaac Region



Source: Residential Tenancies Authority, Rental Bond Lodgements
Dashed lines and 0 values indicate where number of bonds lodged too small to show rental value

Figure 3-12: Weekly Rents and Value of Bonds Lodged, Two Bedroom Unit/Apartment, Isaac



Source: Residential Tenancies Authority, Rental Bond Lodgements
Dashed lines and 0 values indicate where number of bonds lodged too small to show rental value

3.5.4 Mortgage and Rental Stress

Table 3-29 shows the indicators for mortgage and rental stress in the DSA, compared with results for Queensland.

The proportion of dwellings in Charters Towers Region subject to rental stress was more than double that of Isaac Region, however both Charters Towers and Isaac were lower than the Queensland average.

Table 3-29: Indicators of Housing Affordability Stress - District Study Area, 2006

Indicator	Charters Towers Region		Isaac Region		Queensland	
	#	%	#	%	#	%
Low income households with mortgage stress	76	6.7	29	3.0	35,146	7.4
Low income households with rental stress	237	19.4	97	3.0	102,879	22.7

Source: PHIDU, 2010

3.5.5 Social Housing

Table 3-30 shows the indicators for social housing in the DSA, with results for Queensland for comparative purposes. Overall, a lower percentage of households in Isaac received rent assistance from Centrelink compared to Queensland. Charters Towers was slightly higher than the state average.

Table 3-30: Indicators for Social Housing – District Study Area, 2006

Indicator	Charters Towers %	Isaac Region %	Queensland %
Households and dwellings receiving rent assistance from Centrelink	15	15.3	17.6
Dwellings rented from the government housing authority	3.6	1.2	3.4

Source: PHIDU, 2010

3.6 Community Health, Wellbeing and Safety

3.6.1 Health and Wellbeing

Selected health and wellbeing data for the pre-amalgamated LGAs are summarised in

Table 3-31. The fertility rate in all localities was higher than the Queensland average. This is evident from discussions with stakeholders in Moranbah in particular, where it is perceived that couples move into the area to have families while one parent works in the mining sector.

While self-assessment of poor health within former shires of Isaac Region was lower than the Queensland average, the rate of those with at least one of health risk factors of smoking, harmful use of alcohol or obesity was generally higher than the state. Both former LGAs in Charters Towers Region have the highest rate of people with a health risk factor, and higher than the Queensland average.

Table 3-31: Selected Health and Wellbeing Indicators for District Study Area (pre-amalgamation LGAs) and Queensland, 2007-2008

Selected Indicator	Charters Towers Region		Isaac Region			QLD
	Charters Towers (C)	Dalrymple (S)	Belyando (S)	Broad-sound (S)	Nebo (S)	
Total fertility rate (a)	2.34	2.46	2.34	2.49	2.66	1.9
Fair or poor self-assessed health (estimated) persons aged 15 years (b). Rate per 100	18	18	11	12	12	15.5
High or very high psychological distress levels persons aged 18 years and over (estimated) (c). Rate per 100	12.3	11.9	8.4	9.4	9.8	11.9
Persons 18 years and over with at least one of four of the following health risk factors –smoking, harmful use of alcohol, physical inactivity, obesity (estimated) (d). Rate per 100	67.8	65.1	57.1	59.7	62.4	58.3

(a) Total fertility rate represents the average number of children that a woman could expect to bear during her reproductive lifetime. It is calculated from the age of the female population, the number of births and the age of the mother at birth.

(b) Respondents in the 2004-2005 National Health Survey were asked to rate their health on a scale from 'excellent', through 'very good', 'good' and 'fair' to 'poor' health.

(c) The data was derived from the Kessler Psychological Distress Scale (K-10) – which is a scale of non-specific psychological distress based on 20 questions asked of respondents about negative emotional states in the 4 weeks prior to interview. 'High' and 'Very High' distress are the two highest levels of distress categories (or a total of four categories)

(d) This is based on self-reported data, reported to interviewers including respondents who reported that they had at least one of the following health risk factors – smoking, harmful use of alcohol, physical inactivity, and obesity.

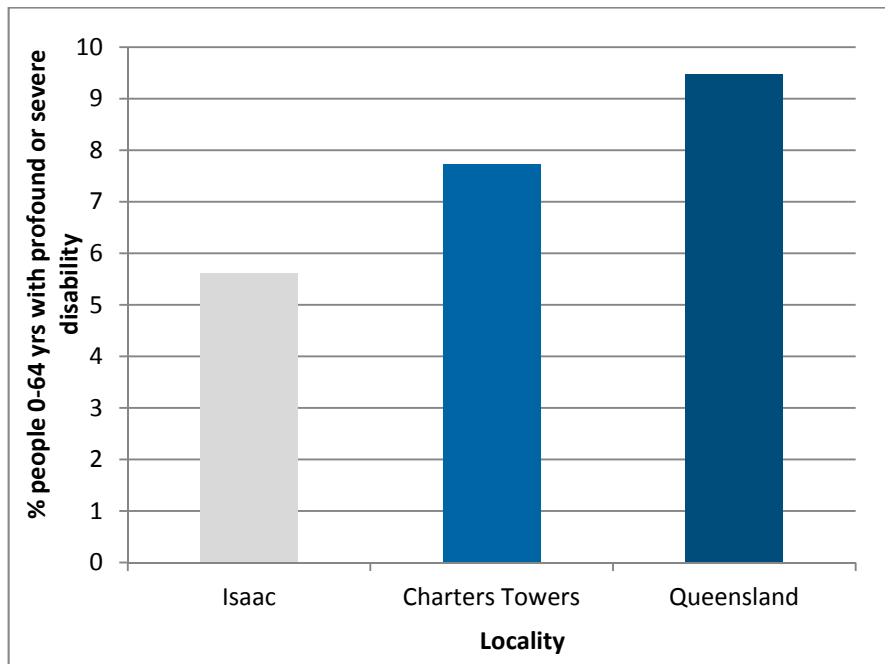
Source: PHIDU, 2010

3.6.2 Need for Assistance

Figure 3-13 shows the persons in need of assistance in the DSA (by LGA) in 2006. The proportion of persons in need of assistance with a profound or severe disability was less in the DSA when compared to Queensland.

Isaac Region registered a lower need for assistance than Charters Towers Region.

Figure 3-13: Persons in Need of Assistance in District Study Area and Queensland, 2006



Source: Public Health Information Development Unit (PHIDU), 2010

3.6.3 Crime

Crime data obtained from the Queensland Police Service (QPS) for LGA's in the Regional and District Study Areas is presented in Table 3-32, and is compared with offence rates for Queensland.

At the District level, crimes exceeding the Queensland average were:

- Traffic and Related Offences;
- Fraud;
- Weapons Act Offences;
- Breach Domestic VPO; and
- Stock Related Offences.

Other observations for the DSA are:

- The top five most common crimes occurring the DSA were 'Offences Against Property', 'Other Offences', 'Other Theft (excl. Unlawful Entry)', 'Traffic and Related Offences' and 'Unlawful Entry'.
- The incidence of crime is higher in Charters Towers Region than Isaac Region, particularly with higher rates of 'Unlawful Entry', 'Good Order Offences' and 'Offences Against Property'.
- Conversely, Isaac Region is characterised by higher rates of crime in 'Fraud', 'Drug Offences' and 'Traffic and Related Offences'.

Table 3-32: Crime Data for District Study Areas (Rate Per 100,000 Persons),
2010/2011

Reported Offences	Rate by Local Government Area						Average Rate District	QLD
	Mackay	Charters Towers	Isaac	Central H'lands	Whit-sunday	T'ville		
Homicide (Murder)	2	-	-	-	-	1	-	1
Other Homicide	6	-	-	-	-	1	-	2
Assault	331	460	265	467	547	589	363	419
Sexual Offences	130	55	57	77	106	153	56	112
Robbery	24	16	4	-	6	45	10	39
Other Offences Against the Person	31	47	31	51	69	95	39	78
Offences Against the Person	523	576	358	595	728	884	467	651
Unlawful Entry	636	1,200	442	560	621	1,176	821	938
Arson	12	23	4	13	26	24	14	27
Other Property Damage	671	834	482	631	641	1,031	658	921
Unlawful Use of Motor Vehicle	163	93	75	90	92	267	84	212
Other Theft (excl. Unlawful Entry)	1,571	1,340	1,321	1,007	1,611	2,561	1,331	2,142
Fraud	342	86	765	370	328	270	426	363
Handling Stolen Goods	77	62	66	74	49	107	64	101
Offences Against Property	3,473	3,638	3,155	2,745	3,368	5,435	3,397	4,705
Drugs	985	405	636	563	1,277	1,315	521	941
Prostitution	2	-	-	-	-	5	-	4
Liquor (excl. Drunkenness)	73	86	124	228	155	837	105	154
Breach Domestic Violence Protection Order	253	421	133	196	239	338	277	222
Trespassing and Vagrancy	94	62	27	64	115	111	45	86
Weapons Act	60	218	44	55	144	107	131	75
Good Order	861	997	424	747	1,645	1,824	711	1,048
Stock Related	13	39	18	39	6	1	29	13
Traffic and Related	831	888	1,074	1,255	1,510	961	981	837
Miscellaneous	31	23	18	10	14	53	21	47
Other	3,203	3,139	2,497	3,157	5,106	5,552	2,818	3,425

1. This data are preliminary and may be subject to change.

2. Rates are expressed per 100,000 persons and are calculated based on the estimated residential population as at 30 June of each year.

Source: QPS, July 2012

3.6.4 Socio-Economic Index of Disadvantage

Socio-Economic Indexes for Areas (SEIFA) is a summary measure of the social and economic conditions of geographic areas across Australia. In 2006, a Socio-Economic Index of Disadvantage (SEID) was produced, ranking geographical regions to reflect disadvantage of social and economic conditions.

SIEFA results for 2011 are scheduled for release in 2013. Table 3-33 shows the SEID per quintile for the Isaac and Charters Towers Regions at the time of the 2006 Census.

Table 3-33: Social and Economic Index of Disadvantage for District Study Area (2006)

LGA	Quintile 1 (most disadvantaged)	Quintile 2	Quintile 3	Quintile 4	Quintile 5 (least disadvantaged)
- Percentage of Population -					
Charters Towers (R)	47.4	30.6	21.3	0.7	0.0
Isaac (R)	5.1	7.1	24.5	46.0	17.3
Queensland	20.0	20.0	20.0	20.0	20.0

Source: OESR, 2011(b)

There is significant variation in results for the two LGAs:

- Charters Towers Region had 47.4 percent of the population in the lowest quintile (most disadvantaged) and 0 percent in the highest quintile (least disadvantaged).
- Isaac Region had only 5.1 percent of the population in the lowest quintile and 17.3 percent in the highest quintile.

3.6.5 Social Infrastructure

There is a wide range of social infrastructure provided in the DSA. Major facilities and services are summarised in

Table 3-34, based on a review of Council and Queensland Government plans, reports and websites.

Table 3-34: Summary of Social Infrastructure Provision in the District Study Area

Social Infrastructure	Summary of Provision
Isaac Region	
Education Facilities	<ul style="list-style-type: none"> • 19 schools. • Childcare and kindergarten facilities. • Central Queensland Institute of TAFE – campuses at Moranbah and Clermont.
Community, Cultural and Recreation Facilities	<ul style="list-style-type: none"> • Libraries – 8 branches at Carmila, Clermont, Dysart, Glenden, Middelmount, Moranbah, Nebo and St Lawrence. • Well established sport, recreation and park facilities in key population centres. • Art galleries, cultural centres and museums – Moranbah, Nebo, Clermont. • Community halls and centres in most towns.
Health and Wellbeing	<ul style="list-style-type: none"> • Public hospital in Moranbah – provides medical, surgical and respite care and specialist services, including maternity and psychiatric care. • Glenden Community Health Centre – aged and disability service; family and child health service; and mental health. • Middelmount Community Health – aged and disability service; family and child health service; and mental health. • Clermont Multi-Purpose Health Service - radiography; aged and disability service; alcohol, tobacco and other drug services; and family and child health service; and mental health. • Visiting medical specialists to the Region.
Other Major Facilities and Services	<ul style="list-style-type: none"> • Emergency services – 8 police stations, 15 ambulance stations and 5 fire stations. • Aerodrome at Clermont operated by IRC; and private aviation facilities at Dysart (BMA), Middelmount and Moranbah (BMA/BMC). • Commercial air travel into Isaac Region is provided by Moranbah airport – also services charter flights for FIFO operations. To accommodate growth,

Social Infrastructure	Summary of Provision
	<p>BMA provided \$47M in funding to upgrade runway and build new terminal building.</p> <ul style="list-style-type: none"> • Taxi services in Moranbah and Clermont and coach services in Clermont, Moranbah and Nebo. • Government agencies, local, district and town centre shopping.
Charters Towers Region	
Education Facilities	<ul style="list-style-type: none"> • 13 schools. • Tertiary education includes an Open Learning Centre and a Seismograph Station (Qld University), Barrier Reef Institute of TAFE – Charters Towers campus.
Community, Cultural and Recreation Facilities	<ul style="list-style-type: none"> • Sports fields and courts, golf club, public swimming pools, recreation parks, PCYC and indoor sports courts, library. • Charters Towers Regional Council has formed a partnership with the Museum of Tropical Queensland (MTQ) and developed the Community Pass Program. + The World Theatre Gallery.
Health and Wellbeing	<ul style="list-style-type: none"> • 1 hospital. • Health services include the Charters Towers Health Centre, the Eventide Nursing Home and the Rehabilitation Unit (Charters Towers/Tertiary Mental Health Service). • Charters Towers Health Service is a 25-bed facility located in Charters Towers, Queensland, about 134km west of Townsville - services to the community include accident and emergency care, general in-patient medical, surgical, obstetric and paediatric services.
Other Major Facilities and Services	<ul style="list-style-type: none"> • Emergency services - 4 police stations, 4 ambulance stations and 1 fire station. • Airport (CTRC). • Taxi services. • Government agencies, local, district and town centre shopping.

The *Mackay, Isaac and Whitsunday Regional Plan 2012* (MIWRP) recognises the link between growth in the mining sector and social sustainability of existing towns. The Regional Plan notes that:

“... managing the cumulative social and economic impacts from major mining and industrial projects is critical for the future of the Isaac Region. To enhance the liveability and attractiveness of living in resources communities, significant and timely investment in social and community infrastructure will be required.” (Queensland Government, 2011a)

The Regional Plan supports improved social infrastructure provision in Isaac Region, and associated investment in operational capacity, to service both the growing communities and additional demand arising from the non-resident population. The Plan also highlighted a need for:

- Upgrades to airports – Moranbah, Nebo, Middlemount and Dysart.
- Reliable telecommunication services to encourage social participation and inclusion, particularly across rural and remote communities. Access to the proposed National Broadband Network (NBN) will be an important opportunity to enhance communities' communication needs.

The Charters Towers Region has a well established cultural, health, education, sporting and recreational facilities. The region is well services for the general needs of the community as most services are centred in the Charters Towers township. Townsville is less than two hours' drive away for access specialist services and facilities.

4. Local Study Area

4.1 Introduction

This chapter addresses Section 4.1.3 of the ToR. The Local Study Area (LSA) for the Project is focussed on the:

- Former Belyando Shire which now forms the western portion of Isaac Region, and includes the key townships of Moranbah and Clermont (referenced by ABS as Isaac Regional – Belyando Statistical Local Area); and
- Landholders who may be directly impacted by the Project during construction and operation. The extent of the LSA is depicted in Figure 4-1.

For the purpose of this analysis, the Belyando Statistical Local Area will be referred to as the 'Local Study Area' or 'Belyando Shire'. Information contained in this section is based on publicly available data and SIA consultation activities undertaken with key stakeholders.

4.2 Local Summary

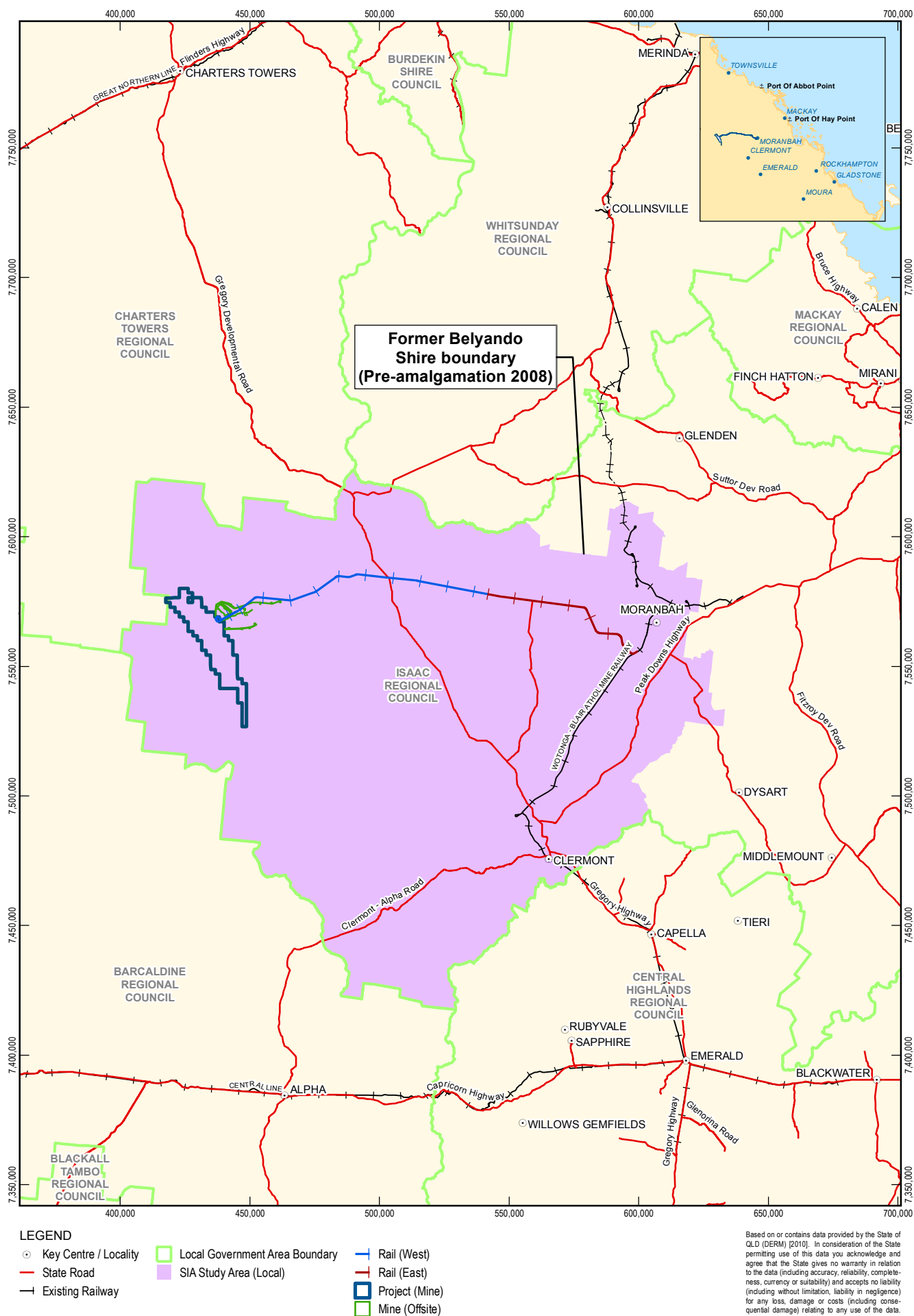
This section provides a summary of the LSA's key demographic characteristics, as well as its social and cultural values.

Table 4-1: Key Baseline Community Characteristics for the Local Study Area

Socio-economic Variable from ToR	Data Source	Local Study Area Summary
Total population	OESR, 2012(b)	2011 estimated population = 13,049 with an annual average growth rate of 3.2 percent p.a. (2006-2011).
Non-resident workers Full-time equivalent population	OESR, 2012(a)	2011 FTE population of Belyando Shire = 16,510. FTE population comprised 12,400 usual residents and 4,080 non-resident workers (28 percent). 3,460 non-resident workers (87 percent) were located in/near Moranbah, and 510 in Clermont.
Existing or anticipated major population trends and changes irrespective of project	OESR, 2011(c) OESR, 2012(b)	Total population estimated to reach approximately 19,613 by 2031, equating to an increase of almost 7,400 people over 20 years based on medium population projections (2011-2031).
Household composition	ABS, 2012	Belyando Shire has a high number of family households (78.0 percent), followed by single/lone person households (18.1 percent) and group households (3.9 percent).
Family structures	OESR, 2012(b)	3,061 families in the LSA with dominant type being 'couple family with children' (57.3 percent), followed by 'couple only families' (32.7 percent). 'One parent families' accounted for 9.1 percent of the total, compared to the state average of 16.1 percent.
Age and gender distributions	OESR, 2012(b)	Youthful profile with large representation of people in working age groups (25-44) at 36 percent, exceeding with state average of 28 percent. Very low representation in >65 age cohorts (3.9 percent), compared with 13.1 percent for Queensland. Gender – higher proportion of males (54.5 percent) to females (45.5 percent).
Education, including	OESR, 2012(b)	Highest level of schooling in 2011 – 54.1 percent of people aged >15 years had completed Year 11 or 12 (or equivalent).

Socio-economic Variable from ToR	Data Source	Local Study Area Summary
schooling levels	OESR, 2011(a) and (b)	<p>In contrast, 370 people (4.1 percent) did not go to school, or Year 8 or below.</p> <p>Post-school qualifications in 2006 - 3,717 persons aged >15 had qualification (48.3 percent). About one-third of them held a trade certificate, and 20 percent had a bachelor degree (or higher).</p>
Measures of community safety, health and wellbeing	Public Health Information Development Unit (PHIDU), 2010 OESR, 2011(a)	<p>In comparison to Queensland, the LSA had lower rates of persons:</p> <ul style="list-style-type: none"> Self-assessing themselves as having 'fair' or 'poor' health Having high or very high psychological distress levels With at least one of four health risk factors. <p>In 2011, LSA had slightly higher rates of volunteerism than Queensland (21.2 percent and 18.7 percent respectively).</p>
Cultural and ethnic characteristics Place of birth	OESR, 2012(b)	<p>LSA has less cultural diversity than Queensland. 10.1 percent of LSA population born overseas, compared with state average of 20.5 percent.</p> <p>36.1 percent of overseas born persons in Belyando Shire spoke a language other than English at home.</p>
Place of residence	OESR, 2011(a)	In 2006, 52.1 percent of the population were living at a different address 5 years earlier, compared with 47.6 percent in Queensland.
Indigenous population including age and gender	OESR, 2012(b)	In 2011, 322 persons of ATSI origin (2.5 percent of LSA population) compared with a state average of 3.6 percent.
Income	OESR, 2012(b)	<p>Gross individual weekly income is on average higher than the Queensland. 23.8 percent of shire's workforce earning >\$2000 per week, which is more than four times higher the state average of 5.5 percent.</p> <p>23.1 percent have a weekly income of less than \$400, compared with 34.6 percent in Queensland.</p>
Unemployment	OESR, 2012(b)	Low rates of unemployment in LSA at 1.3 percent compared to state average of 5.5 percent (March quarter 2012).
Labour force by occupation and industry	OESR, 2011(a)	<p>In 2006, Mining was the largest industry of employment at 37.7 percent, followed by Agriculture, Forestry and Fishing (9.0 percent) and Retail Trade (7.7 percent).</p> <p>Machinery operators and drivers were the largest occupation group (22.8 percent), followed by Technicians and Trade Workers (21.5 percent), and Managers (21.1 percent).</p>
Disability prevalence	OESR, 2012(a)	In 2011, 189 persons (1.5 percent) identified in LSA as in 'need of assistance' with a profound or severe disability, compared with 4.4 percent in the Regional Study Area and 3.6 percent in Queensland.
Socio and economic index	OESR, 2011(a)	4.7 percent of persons are in the most disadvantaged quintile compared with 5.1 percent in Isaac Region.
Crime	OESR, 2003(a) OESR, 2003(b)	<p>Limited crime data is available at the LSA level.</p> <p>DSA – 'Top 5' crimes in 2010-11: 'Offences Against Property', 'Other Offences', 'Other Theft', 'Traffic and Related Offences' and 'Unlawful Entry'.</p>
Housing tenure type and landlord type for rental properties	OESR, 2012(b)	<p>In 2011, there were 3,829 occupied private dwellings in the LSA.</p> <p>High (and rising) rates of rental accommodation at 58.7</p>

Socio-economic Variable from ToR	Data Source	Local Study Area Summary
		percent, compared with state average of 33.2 percent. One-fifth of occupied private dwellings were fully owned (20.1 percent), compared with 29 percent in Queensland.
Housing type	OESR, 2012(b)	Limited mix in housing type across the LSA. Separate houses account for 86 percent of total occupied private dwellings, compared with 79 percent in the state.
Housing costs	OESR, 2011(a) ABS, 2006	72.6 percent of weekly rents in LSA are \$0-\$139. This is compared to only 23.8 percent in Queensland. 4.9 percent of Queensland has monthly housing loan repayments of \$1-\$400 compared to 11.7 percent in LSA.
Housing availability	OESR, 2012(b)	Moranbah has exhibited declining housing affordability and limited availability. In 2011, 163 residential dwelling units approved in LSA.



1:2,000,000 (at A4)
0 10 20 30 40 50
Kilometres
Map Projection: Universal Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia (GDA)
Grid: Map Grid of Australia 1994, Zone 55



adani

Adani Mining Pty Ltd
Carmichael Coal Mine and Rail Project
Social Impact Assessment
Local Study Area

Job Number 41-25215
Revision A
Date 18-09-2012

Figure: 4-1

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Data Source: GA: Key Centre / Locality (2007); DERM: LGA (2011); DMR: State Roads (2008); DME: EPC1690 (2010), EPC1080 (2011); Adani: Alignment Opt9 Rev3 (2012); Gassman/Hyder: Mine (Offsite) (2012). Created by: BW, CA

4.2.1 Community Characteristics

Settlement Patterns and Community History³

The former Belyando Shire covers a total area of 30,281 km² and was amalgamated with Broadsound and Nebo Shires in 2008 to form the Isaac Region. Its western sector included the Drummond Range, scrubby woodlands and some undulating parts with grasslands suitable for grazing. The more productive eastern sector has better grazing land, merging with the Peak Downs district, and the former mining towns of Clermont and Copperfield (defunct) and the Blair Athol and Moranbah/Goonyella coal fields.

The shire was named after the Belyando River which rises to the shire's south at Alpha and enters the Burdekin system at Lake Dalrymple, west of Mackay. The river was named by the New South Wales Surveyor-General, Thomas Mitchell, in 1846, believing it to be an Aboriginal name (Mitchell's journal, 9 August 1846).

Local government in the district began with the town of Clermont (1865). The Belyando local government division began in 1879. Gold mining effectively petered out within two decades, and copper mining ebbed and flowed with overseas export prices and competition from rich fields at Cloncurry. The last large-scale mining and smelting was in the 1890s. Coal had been found at Blair Athol since the 1860s, but substantial mining was dependent on a railway link (1910), an extension of the Emerald to Clermont line (1884).

Open cut coal mining started in 1924, and coal was mined for railway locomotives and local consumption. Overseas export began after the oil crises of 1972. Blair Athol's ultimate coming of age coincided with the huge open cut operations at Peak Downs and Goonyella, from which the mining town of Moranbah arose. Built by Utah Development, it held over half the shire's population when barely five years old.

Cattle grazing was constant through the uneven periods of mining activity. Much of the grazing land had scattered Brigalow, an acacia which regrows as suckers if not cleanly ripped from the ground. Post-war mechanised clearing, the burning of windrows and sowing down with exotic pasture cleared the Brigalow and enabled intensified cattle grazing in the eastern part of the shire. Cereal growing also increased.

Activity of this scale was not feasible in the shire's west, dominated by the Drummond Range. Several parts of Range have been entered in the Register of the National Estate. These include the Epping Forrest National Park (home to the last known colony of Northern Hairy-nosed Wombats) and the Mazeppa National Park.

In 1993 Belyando Shire had over 280,000 beef cattle, a few hundred sheep and 63,000 ha of cereals.

Community Identity, Values and Aspirations

Coal deposits in the Clermont area were originally discovered on the site of the now named Blair Athol Mine in 1864, with mining commencing around 1890. It was not until the 1920s and the introduction of rail that open cut operations began. The current open cut operation started in 1984, and this activity resulted in rapid growth of the area and substantially influenced economic prosperity. As at 2008, the mining industry accounted for about 22 per cent of Clermont's workforce, largely represented by transient employees. Closure of the Blair Athol Mine therefore is considered by the community to have potential to impact upon the community. Conversely, the establishment of new operations at Clermont and in the vicinity has the potential to add pressure to existing social resources and facilities and provide opportunities for economic

³ Source: Queensland Places, 2001(b)

development. Therefore, the 'community of Clermont must seek to develop a future that adjusts to the closure of the Blair Athol Mine, capitalises on the growth that the new mine will bring and also consider a longer term post-mining future'.

A major contributing factor to the development of the Clermont Preferred Futures Project was the community's desire to retain their vibrant community, which benefits from 'a highly regarded lifestyle, sense of community wellbeing and good community cohesion'. This is to be achieved through developing a 'preferred future that will see growth and opportunity managed for the long term benefit of the region'.

Rio Tinto Coal Australia (RTCA) had a desire to integrate the Clermont Mine into the fabric of the community and invest strategically in the community to leave a legacy for the future. It was this situation that precipitated the Clermont Preferred Future project. The resulting Preferred Future Plan and Strategy were the products of a twelve-month initiative by the community and RTCA, under the leadership of the Council, and these are described in further detail below. It is the intention of the community, through the plan to 'proactively master their own destiny'.

For this Project, a series of stakeholder workshops were conducted at Clermont and Moranbah as part of the baseline assessment. In Clermont, the key issues identified revolved around emergency and health services, which are considered to be stretched to, and in some cases beyond, their limit. The difficulty of attracting new staff for emergency and health services, as well as other businesses and professions throughout the area was also a strong theme.

At Moranbah, key issues identified included the difficulty for businesses outside the mining industry to attract new staff, largely on the basis of the inability to match mining sector salaries. The limited accommodation available in the town and current shortage in crisis accommodation was also a key issue. Health care provision is considered to be under resourced and there is difficulty in catering for the township and people involved in mining operations.

4.3 Population

4.3.1 Current Resident Population

In June 2011, the estimated resident population of Belyando Shire was 13,049 persons (refer to Table 4-2). The average annual growth rate in the shire between 2006 and 2011 was 3.2 percent (about 1,900 additional people), compared with 1.8 percent for Queensland.

Table 4-2: Estimated Resident Population of Local Study Area (pr)

Locality	Estimated resident population as at 30 June			Average annual growth rate %	
	2006	2010 (pr)	2011 (pr)	2006–2011 (pr)	2010–2011 (pr)
Belyando (S)	11,149	12,601	13,049	3.2	3.6
Queensland	4,090,908	4,424,158	4,474,098	1.8	1.1
LSA as % of Qld	0.3	0.3	0.3

pr = preliminary rebased
Source: OESR, 2012(b)

4.3.2 Non-resident Population

According to OESR's *Bowen and Galilee Basins Population Report 2011* (2012), Belyando Shire had a FTE population of 16,510 people in July 2011. This comprised 12,400 usual

residents and 4,080 non-resident workers. As shown below, approximately 87 percent of Belyando Shire's non-resident worker population (3,560 people) were located in or near Moranbah, with the balance of 510 based in Clermont.

Table 4-3: FTE Population for Local Study Area and Selected Localities, July 2011**

SLA UCL	Resident population (estimated)	Number of non-resident workers	FTE population estimate	Percentage of non-resident workers
Belyando Shire	12,440	4,080	16,510	28%
<i>Clermont</i>	2,000	510	2,510	20%
<i>Moranbah</i>	8,790	3,560	12,350	29%
<i>SLA Remainder</i>	1,650	0	1650	0%

* 2011 preliminary ERP.

** Non-resident worker data for Whitsunday (R) for 2011 include Merinda, which was not included in previous years' collections.

Figures in this table have been rounded to the nearest 10; any internal discrepancies are due to rounding.

Source: OESR, 2012(a)

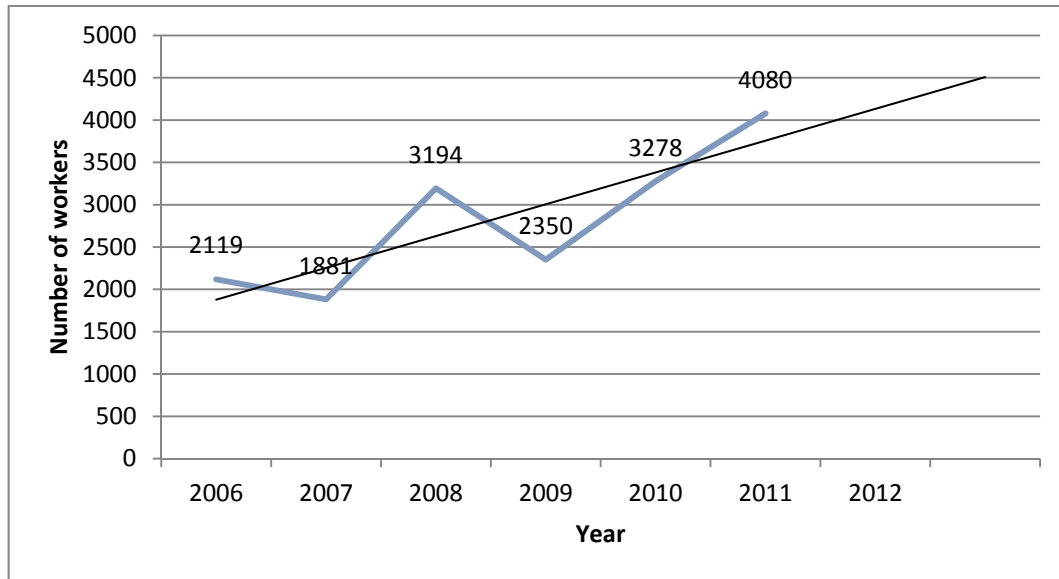
According to the OESR Report (2012), Belyando Shire's FTE population increased between 2006 and 2011. OESR data attributes the majority of the growth to a steady increase in the non-residential population, with a net increase of 800 in comparison to net growth in the resident population (estimated) over the same period of 448 people. Non-resident workers now make up around 29 percent of Belyando's FTE population based on 2011 data.

The 4,080 non-resident workers in Belyando Shire were accommodated in the following accommodation types:

- Workers' Accommodation Villages (WAVs): 3,380 (88.2 percent)
- Hotels/Motels: 310 (7.6 percent)
- Caravan Parks/Other: 390 (9.6 percent)

Figure 4-2 shows the fluctuation in the non-resident population in Belyando from June 2006 to 2011 using data from the OESR Bowen Basin Population Report (2011 and 2012), with a forecast trend line based upon that data. The trend line shows a continuing upward growth with an increase in non-resident population of around 250 per year.

Figure 4-2: Non-resident Workers in former Belyando Shire, June 2006 - 2011



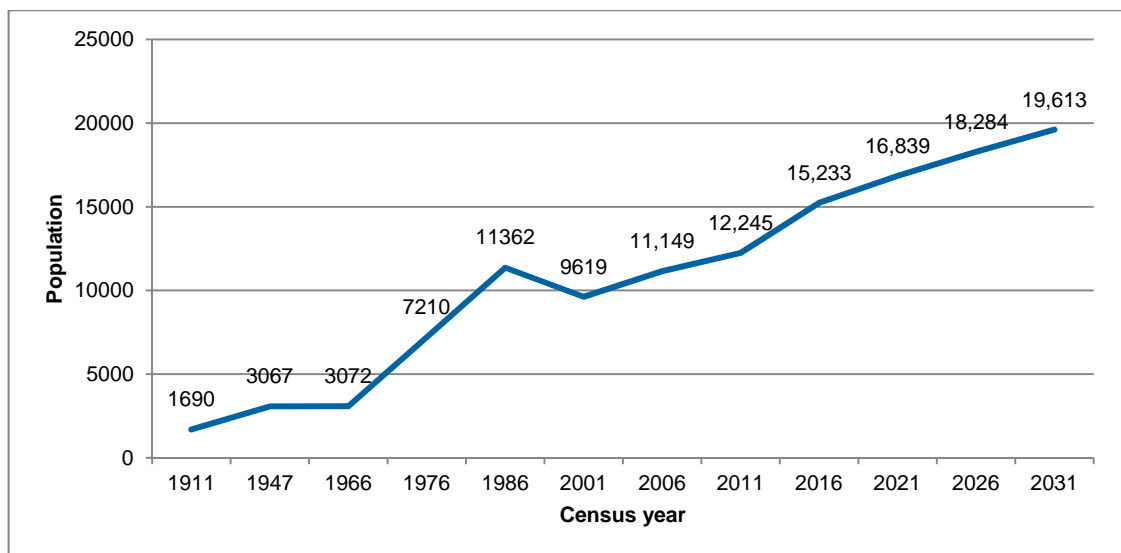
Source: OESR, 2011(d) and OESR, 2012(a)

4.3.3 Population Projections

As shown in Figure 4-3, the population of Belyando Shire has steadily increased over time.

Forecasts of future growth suggest an increase of 60 percent from 12,245 to 19,613 people between 2011 and 2031, at an annual average rate of 2.4 percent compared with 1.8 percent for Queensland (medium series).

Figure 4-3 : Historic Population Growth and Future Projections, Belyando Shire 2006 – 2031 (Medium Series)



Source: Queensland Places, 2011(b) for data up to 2001; OESR, 2012(b) for data 2006 onwards

The *Mackay Isaac and Whitsunday Regional Plan, 2012* (MIWRP) notes that much of the growth in Isaac Region will be accommodated in established centres like Moranbah and Clermont, to efficiently use existing infrastructure and services, reduce growth pressures on locations with important environmental values (e.g. GQAL) and due to the availability of employment opportunities.

It is intended that growth in Moranbah will be accommodated through further development in established urban areas (infill development) as well as suitable greenfield areas.

Parts of Moranbah have been declared as an Urban Development Area by the State Government leading to the Urban Land Development Authority, with the assistance of the Isaac Regional Council, undertaking detailed planning to ensure that the town can accommodate the anticipated growth and coordinate the provision of appropriate infrastructure.

Stakeholder discussions in 2011 indicated that in Clermont, the population has increased dramatically in terms of the number of contractors in town associated with activity at the Clermont mine increasing and the future planned closure of Blair Athol Mine. It was observed that the limited housing stock has had an influence on keeping the resident population down.

Consultation at Moranbah in 2011 suggested that while the 2006 Census indicated a population of approximately 6,000 persons, the real figure, including FIFO was estimated to be 27,000. This speculated figure is significantly more than OESR population projections. Regardless of its speculative nature, it does reinforce the importance to the community of understanding the number of people associated with mining. The need for future planning and potential for further stress on social and other infrastructure was a common issue expressed by most stakeholders.

4.3.4 Indigenous Population

Background

The Indigenous baseline has been undertaken by consultants Environment Land Heritage (ELH) and provides:

- An understanding of the existing social context for Indigenous people in the region, including the recognised traditional owners and those Indigenous people with native title claims currently under consideration living within and outside the region.
- Information on the key indigenous groups and organisations and their roles.

It is supplemented with ABS and OESR population data for the former Belyando Shire.

As outlined by ELH in their report of February 2012, the Indigenous SIA baseline analysis was undertaken with consideration given to:

- Cultural heritage and native title rights
- The Indigenous population including their age, gender, current employment, education and training
- The identity, values, lifestyles, vitality, characteristics and aspirations of Indigenous communities
- The number Indigenous traditional owners and their families directly and indirectly affected by the project
- Indigenous use of the social and cultural area for forestry, fishing, recreation, business and industry, tourism and cultural use of flora and fauna
- Recruitment of Indigenous workers
- Business and economic development opportunities for Indigenous people
- Other matters of interest to Indigenous people.

Indigenous baseline information has been integrated throughout the LSA analysis e.g. education, employment, income.

Demographic Characteristics

Key points as noted by the ELH research were:

- The Aboriginal community of the Bowen Basin resides predominantly in Rockhampton and within the Woorabinda Aboriginal Shire. A much smaller concentration is also located in the northern section of Mackay Region. Many of these people assert their aspirations to return to their traditional homelands (Miles and Kinnear, 2008, cited in ELH, 2012).
- The Fitzroy Basin Elders Committee, a group of senior members of Aboriginal groups from within the Fitzroy River catchment area provide some leadership in the Indigenous community of the Bowen Basin. The committee represents at least 12 traditional owner groups and has interests in the ongoing health of waterways in the area, good land and water management practices, and also the restoration of traditional knowledge (ELH, 2012).

As seen in Table 4-1, at the time of the 2011 Census there were 322 persons in the Belyando Shire who stated they were of Aboriginal or Torres Strait Islander origin, comprising 2.5 percent of the total population (compared with 3.6 percent in the State).

Table 4-4: Persons by Indigenous Status in Local Study Area, 2011

Locality	Aboriginal	Torres Strait Islander	Both (b)	Total Indigenous	Indigenous proportion	Non-Indigenous	Total persons (c)
Belyando (S)	260	34	28	322	2.5	11,447	12,687
Queensland	122,896	20,094	12,834	155,824	3.63	3,952,707	4,332,740
LSA as % of Qld	0.2	0.2	0.2	0.2	. .	0.3	0.3

(a) Based on usual place of residence;

(b) Applicable to persons who are of 'both Aboriginal and Torres Strait Islander origin';

(c) Includes Indigenous status not stated.

Source: OESR, 2012(b)

Further to the above, ABS data provides further detail of the Indigenous population by sex. Some minor variance between data sources (ABS and OESR) is noted for this analysis. As shown in the table below, of the 321 persons who stated they were of Aboriginal origin, there were 175 males (55 percent) and 146 females (45 percent).

Table 4-5: Indigenous Status by Sex for Local Study Area, 2011

Indigenous Status	Males	Females	Total Persons	Proportion of total persons (%)
	- number -			
Indigenous	175	146	321	2.5
Non-Indigenous	6,102	5,345	11,447	90.2
Indigenous status not stated	637	281	918	7.2
Total	6,914	5,772	12,686	100.0

Note: This table is based on place of usual residence.

Source: ABS, 2012 (Basic Community Profile, 2011 Census)

4.3.5 Population Mobility

2011 Census data for the place of usual residence (1 year and 5 years ago) is scheduled for release in October 2012. Therefore, 2006 data has been referenced and although outdated, suggested a trend of high population mobility in the former Belyando Shire.

At the time of the 2006 Census, 24.3 percent or 2,489 persons in Belyando Shire were living at a different address to that one year prior (compared to 19.7 percent in Queensland). There were 7,064 persons living at the same address in Belyando Shire a year earlier.

52.1 percent or 4,932 persons were living at a different address five years earlier, compared with 47.6 percent in Queensland. There were 3,769 persons living at the same address five years earlier in Belyando Shire.

Table 4-6: Place of Usual Residence 1 year and 5 years ago for Local Study Area, 2006 (a)(b)

Locality	Same address	Different address			Proportion with different address percent	Total persons (d)
		Within Australia	Overseas	Total (c)		
Place of residence 1 year ago						
Belyando (S)	7,064	2,372	100	2,489	24.3	10,254
District Study Area (Isaac and Charters Towers)	21,455	6,499	237	6,795	22.1	30,776
Queensland	2,855,736	693,143	57,580	759,134	19.7	3,851,522
LSA as % of QLD	0.2	0.3	0.2	0.3	..	0.3
Place of residence 5 years ago						
Belyando (S)	3,769	4,665	222	4,932	52.1	9,460
District Study Area (Isaac and Charters Towers)	11,881	13,290	571	14,035	49.0	28,616
Queensland	1,644,415	1,552,025	159,540	1,735,228	47.6	3,647,455
LSA as % of QLD	0.2	0.3	0.1	0.3	..	0.3

(a) Based on place of usual residence

(b) Based on persons aged one year and over

(c) Includes persons who stated that they were usually resident at a different address but did not state that address

(d) Includes persons who did not state whether they were usually resident at a different address.

Source: OESR, 2011(a); OESR, 2011(b)

4.3.6 Age and Gender

The table and figure below present the age profile for Belyando Shire at the time of the 2011 Census. In terms of gender, 54.5 percent of the shire's population was male and 45.5 percent was female.

When compared to the Queensland age profile, the LSA is characterised by:

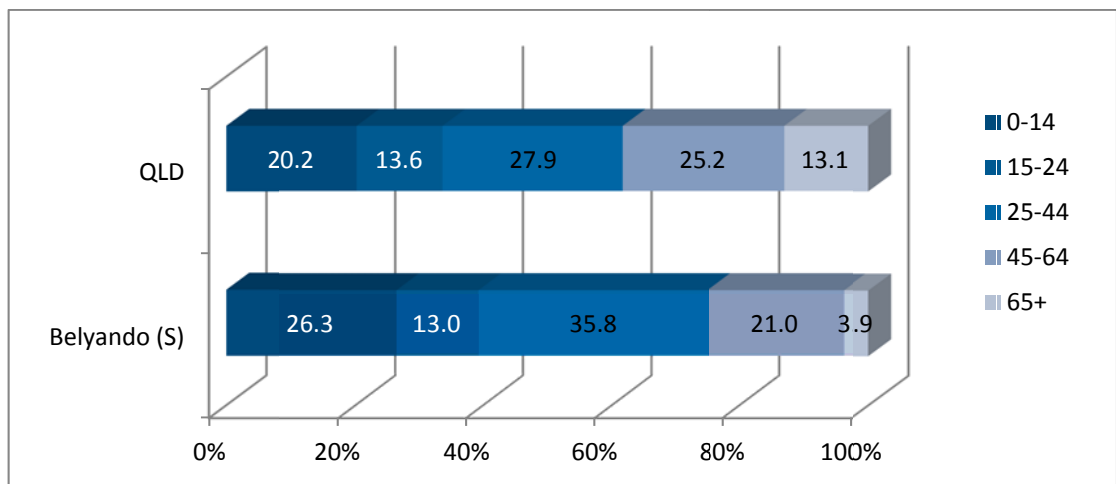
- Considerably higher proportion of persons in the 25 to 44 year cohorts (younger workforce age groups) at almost 36 percent, compared with 27.9 percent across Queensland.
- High representation of infants and school age children under 15 at 26.3 percent, compared with 20.2 percent for Queensland.
- A much lower representation of people aged 65 and over at 3.9 percent. The average for Queensland was more than three times the size at 13.1 percent

Table 4-7: Estimated Resident Population by Age for Local Study Area, 2011

Locality	Population by age									
	0–14		15–24		25–44		45–64		65+	
	number	%	number	%	number	%	number	%	number	%
Belyando (S)	3337	26.3	1654	13.0	4536	35.8	2669	21.0	489	3.9
Queensland	875,861	20.2	587,764	13.6	1,208,157	27.9	1,091,974	25.2	568,981	13.1

Note: This table is based on place of usual residence.
Source: ABS, 2012 (Basic Community Profile, 2011 Census)

Figure 4-4: Age Profile Comparison of Belyando Shire and Queensland (2011)



Note: This table is based on place of usual residence.
Source: ABS, 2012 (Basic Community Profile, 2011 Census)

4.3.7 Cultural and Ethnic Characteristics

Country of Birth

In 2011, 1,278 persons in the LSA stated they were born overseas, representing 10.1 percent of the total population and increasing from 7.3 percent at the time of the 2006 Census. In comparison, the state average for overseas born people was 20.5 percent in 2011, almost double that of Belyando Shire.

10,443 persons in the LSA stated they were Australian-born (82.3 percent), compared with a Queensland average of 73.7 percent.

Table 4-8: Number of Persons by Birthplace in Local Study Area, 2011

Locality	Born in Australia		Born in ESB Countries (b)		Born in NESB Countries		Total born Overseas		Total persons (c)
	number	%	number	%	number	%	number	%	number
Belyando (S)	10,443	82.3	788	6.2	490	3.9	1,278	10.1	12,686
Queensland	3,192,115	73.7	478,290	11.0	410,346	9.5	888,636	20.5	4,332,728
LSA as % of Qld	0.3	..	0.2	..	0.1	..	0.1	..	0.3

(a) Based on usual place of residence;
(b) Includes UK, Ireland, Canada, USA, South Africa and New Zealand;
(c) Includes 'inadequately described', 'at sea', 'not elsewhere classified' and 'not stated responses'
Source: OESR, 2012(b)

Proficiency in Spoken English

Table 4-9 shows that in Belyando Shire, there were 464 persons born overseas who spoke a language other than English at home, which comprised 36.1 percent of the overseas-born population (compared with 36 percent in Queensland). Of the 464 people, 31 stated that they spoke English 'not well or not at all', equating to 2.4 percent of the overseas-born population of Belyando (compared with 5.2 percent in Queensland).

First release data for the 2011 Census did not include details of the top responses for specific languages spoken at home (other than English).

Table 4-9: Proficiency in English of Overseas Persons in Local Study Area, 2011

Locality	Speaks English only		Speaks other language at home and speaks English				Total (b)		Persons born overseas (c)
	number	%	number	%	number	%	number	%	
Belyando (S)	814	63.4	427	33.3	31	2.4	464	36.1	1284
Queensland	565544	63.6	269847	30.4	45927	5.2	319949	36.0	888635
LSA as % of Qld	0.1	..	0.1	..	0.0	..	0.1	..	0.1

(a) Based on usual place of residence;

(b) Includes proficiency in English not stated;

(c) Excludes persons who did not state their country of birth.

Source: OESR, 2012(b)

4.3.8 Family Structures

Table 4-10 shows the composition of families in the LSA. At the time of the 2011 Census, there were 3,061 families in the shire. 'Couple family with children' was the dominant family type (57.3 percent), followed by 'Couple only' families (32.7 percent).

These figures suggest that the shire has a higher representation of family households with dependent children, in comparison to the state as a whole. 'One parent families' accounted for only 9.1 percent of families in the shire, which is significantly less than the state average of 16.1 percent

Table 4-10: Family Composition in Local Study Area, 2011

Locality	Couple family with no children (c)	Couple family with children (c)	One-parent family	Total (d)	
	— number —			%	number
Belyando (S)	1,002	1,754	280	9.1	3,061
Queensland	453,102	491,200	184,547	16.1	1,148,179
LSA as % of Qld	0.2	0.4	0.2	..	0.3

(a) Based on place of usual residence.

(b) Includes same-sex couple families.

(c) Children are defined as children under 15 years or dependent students aged 15 to 24 years

(d) Includes other families.

Source: OESR, 2012 (b)

4.3.9 Household Structure

Belyando Shire has a high percentage of family households at 78 percent in comparison to Queensland (72.4 percent). Representations of single person or group households were slightly lower than the state and average.

Table 4-11: Household Structure in the District Study Area (2011)

Locality	Family Households (%)	Single or Lone Person Households (%)	Group Households (%)
Belyando Shire	78.0	18.1	3.9
Isaac Region	77.6	18.9	3.5
District Study Area	74.9	22.0	3.2
Queensland	72.4	22.8	4.7

Source: ABS, 2012

4.4 Education, Employment and Training

4.4.1 Education

At the time of the 2011 Census, Belyando Shire had 4,888 persons (54.1 percent) aged 15 years or more, who had completed schooling to Year 11 or 12 (or equivalent). This was compared with 55.3 percent in Queensland. Refer to Table 4-12.

Table 4-12: Highest Level of Schooling Completed for Local Study Area, 2011

Locality	Did not go to school, or Year 8 or below	Year 9 or 10 or equivalent	Year 11 or 12 or equivalent	Total (c)	
	— number —			%	number
Belyando (S)	370	2,827	4,888	54.1	9,033
Queensland	219,102	977,116	1,836,995	55.3	3,320,761
LSA as % of Qld	0.2	0.3	0.3	. .	0.3

(a) Based on place of usual residents aged 15 years and over who are no longer attending primary or secondary school.

(b) Includes highest year of schooling not stated.

Source: OESR, 2012 (b)

Table 4-13 shows that Belyando Shire had a slightly higher proportion of people in the age group of 15-19 who were earning and learning in 2006, however this proportion was consistent with the State average of 77 percent.

Table 4-13: People Earning and Learning in Local Study Area, 2006

Locality	Learning or Earning ages 15 to 19	People aged 15 to 19	% Learning or Earning ages 15 to 19
Belyando (S)	519	672	77
District Study Area	1,571	2,088	75
Queensland	207,648	269,749	77

Source: ABS, 2006: B15; PHIDU, 2010

2006 Census data has been relied upon as a measure of post-school qualifications in Belyando Shire. As shown in Table 4-14, there were 3,717 persons aged 15 years and over with a qualification in the shire, accounting for 48.3 percent of the population in this age group. In comparison, the state average was slightly higher at 50.4 percent.

Of the population aged 15 years and over with a qualification in the shire, 20.2 percent had bachelor degree or higher (compared with 26.0 percent in Queensland), 8.3 percent had an advanced diploma or diploma (13.1 percent - Queensland), and 47.4 percent had a certificate (35.5 percent - Queensland).

Table 4-14: Post-school Qualifications in Local Study Area, 2006 (a)(b)

Locality	Level of education			Persons with a qualification (e)		Total persons
	Bachelor degree or higher (c)	Advanced diploma or diploma	Certificate (d)			
	— number —			number	%	number
Belyando (S)	750	310	1,763	3,717	48.3	7,703
District Study Area	1,907	850	4,515	10,613	45.2	23,482
Queensland	405,904	204,039	554,243	1,560,868	50.4	3,097,996
LSA as % of Qld	0.2	0.2	0.3	0.2	..	0.2

(a) Based on place of usual residence

(b) Persons aged 15 years and over

(c) Includes bachelor degree, graduate diploma, graduate certificate and postgraduate degree

(d) Includes Certificate, I, II, III and IV and Certificates not further defined responses

(e) Persons aged 15 years and over, includes 'inadequately described' and 'not stated' level of education responses

Source: OESR, 2011(a); OESR, 2011(b)

4.4.2 Indigenous Education

In 2008, schooling completion rates for the Indigenous population of the Bowen Basin were lower than the general population with a completion rate of 24.5 percent for Indigenous persons and 32.7 percent for non-indigenous persons (ABS 2008c cited in ELH, 2012). Furthermore, about 1 percent of all Indigenous persons in the Bowen Basin have not attended school at all, compared with only 0.3 percent for the Bowen Basin population generally (Miles and Kinnear, 2008 cited in ELH, 2012).

In 2006, over 15 percent of employed Indigenous males in the Bowen Basin worked in the construction sector, with a similar number working in manufacturing; mining accounts for further another 11 percent of the workforce (ABS 2008c) (Miles and Kinnear, 2008) (ELH, 2012).

Over one-fifth of Indigenous working females were employed in the health care and social assistance sector, with a further 14 percent in the accommodation and food services industries (Miles and Kinnear, 2008 cited in ELH, 2012).

Through SIA consultation with Indigenous groups conducted by ELH in 2012, it was identified that approximately 20 people from the Jangga people already have the required 'tickets' to work in the mining and construction sectors and that more were to undertake training in 2012 (approximately 20-50 people).

A number of those who already have their tickets are working in south east Queensland on residential constructions projects. A number of Jangga people who are already qualified to work in the mining sector had been targeted by Western Australian mining companies seeking to fulfil their Indigenous employment quotas. Those that had taken these Western Australian positions had found it difficult to adjust to living away from their family and community support networks and had felt 'out of place' in another group's traditional country.

Lack of drivers' licences and failure to complete school were seen to be major obstacles to increased participation of Indigenous people in the mining sector. The most difficult aspect of securing and retaining a drivers licence appears to be the lack of access people had to registered vehicles and licensed drivers to complete the required 100 hours supervised driving needed for a provisional licence. In the past a driving instructor had been employed to teach Indigenous people in the region but funding for that position had ceased and the instructor had relocated out of the area. The difficulties faced by Indigenous people seeking employment as they do not hold a driver's licence is also acknowledged by DEEDI (personal comment cited in ELH, 2012).

Barada Barna people (through Woorra Consulting) have an existing joint venture agreement with a construction company in Mackay to provide training for machinery operators. They are also receiving mentoring in administration processes.

4.4.3 Unemployment

In the March quarter 2012 a total of 102 persons (aged 15 years and over) in the Belyando Shire were unemployed (based on a smoothed series), at an unemployment rate of 1.3 percent. Like the District Study Area, Belyando has a significantly lower unemployment rate than Queensland at 5.5 percent.

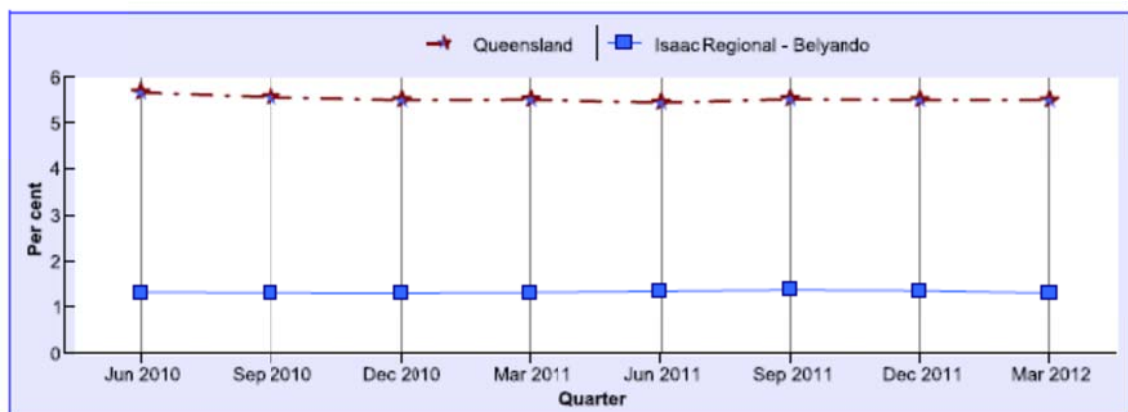
As shown in Figure 4-5, between the June quarter 2010 and the March quarter 2012, the unemployment rate in Belyando Shire was steady, ranging from 1.3 percent (December quarter 2010) and 1.4 percent (September quarter 2011). The substantially higher unemployment rate in Queensland also showed limited variation over this period, staying slightly under 6 percent.

Table 4-15: Unemployment and Labour Force (a) in the Local Study Area, March Quarter 2011

Locality	Unemployed	Labour force	Unemployment rate
	— number —		%
Belyando (S)	102	7683	1.3
District Study Area	718	20953	3.4
Queensland	136900	2479000	5.5
LSA (S) as % of Qld	0.1	0.3	..

Source: OESR, 2012(b)

Figure 4-5: Unemployment Rate (a) for the Local Study Area, June Quarter 2010 to March Quarter 2012



(a) Based on a 4-quarter smoothed series.

Source: OESR, 2012(b)

4.4.4 Labour Force by Industry

At the time of the 2006 Census, the shire's largest industry of employment by far was Mining, with a total of 2,119 persons or 37.7 percent of the area's total labour force. Agriculture, Forestry and Fishing (508 persons or 9.0 percent) and Retail Trade (436 persons or 7.7 percent) also employed a relatively high number of people. This data is graphically represented in Figure 4-6.

Table 4-16: Employment by Industry Sector for Local Study Area, 2006 (a) (b)

Industry Sector	Belyando (S)		District Study Area		Queensland	
	Number	%	Number	%	Number	%
Agriculture, forestry and fishing	508	9.0	1,698	11.3	61,735	3.4
Mining	2,119	37.7	4,603	30.6	30,721	1.7
Manufacturing	127	2.3	418	2.8	180,212	9.9
Electricity, gas, water and waste services	39	0.7	91	0.6	18,540	1.0
Construction	340	6.0	906	6.0	164,936	9.0
Wholesale trade	144	2.6	283	1.9	72,075	3.9
Retail trade	436	7.7	1,245	8.3	212,422	11.6
Accommodation and food services	339	6.0	962	6.4	127,631	7.0
Transport, postal and warehousing	196	3.5	585	3.9	92,614	5.1
Information, media and telecommunications	18	0.3	58	0.4	26,347	1.4
Financial and insurance services	35	0.6	99	0.7	52,035	2.9
Rental, hiring and real estate services	74	1.3	138	0.9	37,983	2.1
Professional, scientific and technical services	87	1.5	222	1.5	102,412	5.6
Administrative and support services	109	1.9	296	2.0	55,705	3.1
Public administration and safety	145	2.6	572	3.8	122,416	6.7
Education and training	312	5.5	1,120	7.5	139,090	7.6
Health care and social assistance	257	4.6	867	5.8	186,336	10.2
Arts and recreational services	18	0.3	42	0.3	24,625	1.3
Other services	187	3.3	421	2.8	68,361	3.7
Total (d)	5,627	100.0	15,025	100.0	1,824,996	100.0

(a) Employed persons aged 15 years and over.

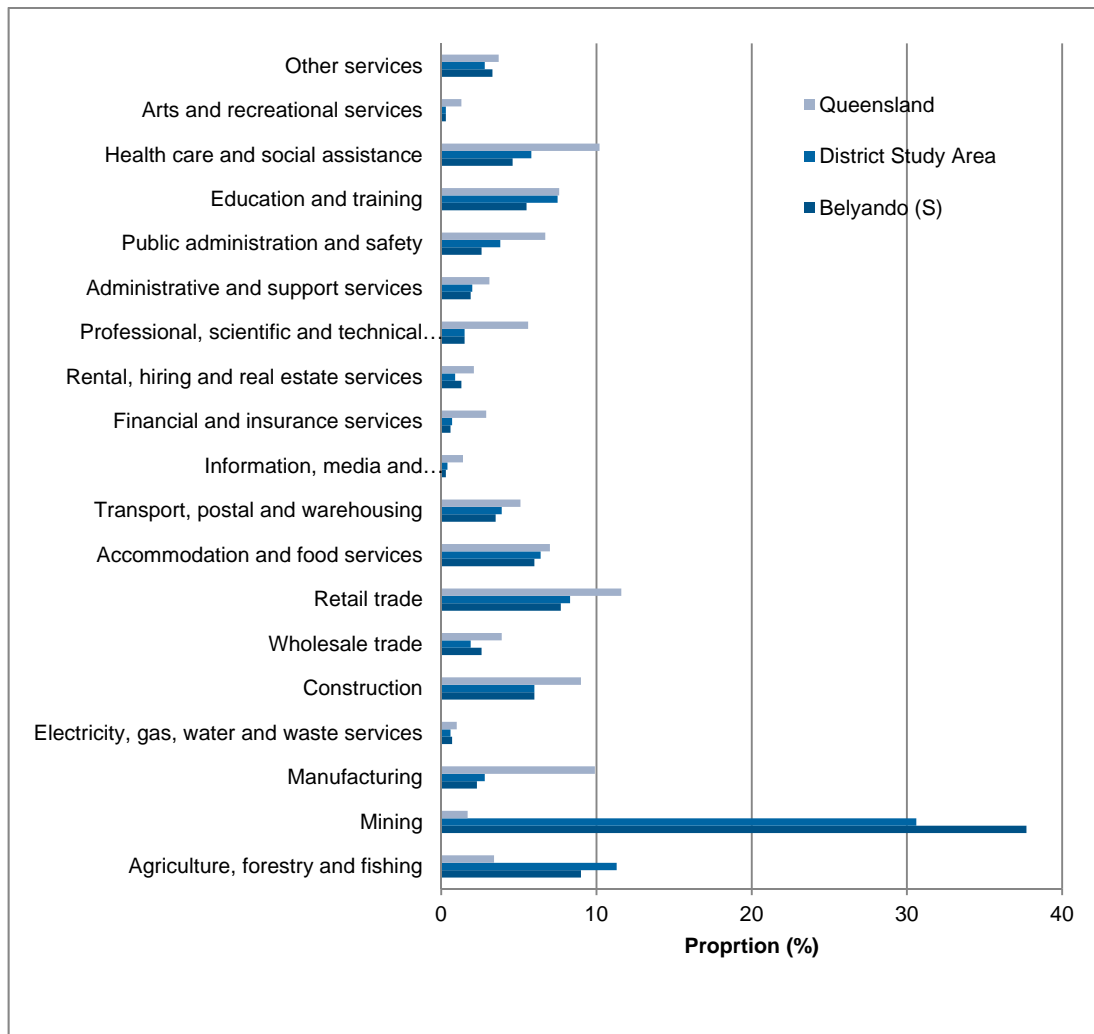
(b) Industry of employment was coded to the ABS 2006 Australian and New Zealand Standard Industrial Classification (ANZSIC). This has replaced the 1993 ANZSIC edition.

(c) The ratio of the percentage for the region to the percentage for Queensland.

(d) Includes inadequately described and not stated responses.

Source: OESR, 2011(a); OESR, 2011(b)

Figure 4-6: Employment by Industry for the Local Study Area, 2006



Source: OESR, 2011(a)

SIA consultation (2011) in Moranbah and Clermont indicated that local employers in non-mining sectors found it difficult to retain staff. Salaries do not match those of the mining industries and the cost of living is driven by demands from the mining sector. Strategies need to be implemented to support workforce retention in other sectors.

It was noted that competition for services between mines, agriculture and other industries also occurs. Mining and other large-scale activities have potential to monopolise resources such as trucking companies for long periods, making them unavailable to agricultural or other sectors.

Trades are particularly affected, impacting other industries as well as the community given that it is difficult to get trades persons to do small jobs at reasonable rates, affordable to community members and small business owners.

Feedback from stakeholders in mid 2012 revealed that some mining companies in the LSA are downsizing their workforce due to the current economic climate. This may result in a number of trained mine workers seeking alternative employment within the area, therefore, providing opportunities for Adani to potentially source a local 'mine ready' workforce.

4.4.5 Employment by Occupation

In 2006, Machinery Operators and Drivers were the largest occupation group of employment in Belyando Shire, representing or 22.8 percent of the local labour force (1,285 persons).

Technicians and Trades Workers represented 21.5 percent of the total (1,207 persons), followed by Managers at 12.1 percent (679 persons).

This data is summarised in Table 4-17 and Figure 4-7.

Table 4-17: Employment by Occupation for the Local Study Area, 2006 (a) (b)

Occupation	Belyando (S)		District Study Area		Queensland	
	Number	%	Number	%	Number	%
Managers	679	12.1	2,081	13.9	225,693	12.4
Professionals	620	11.0	1,615	10.8	312,865	17.1
Technicians and trades workers	1,207	21.5	2,734	18.2	280,342	15.4
Community and personal service workers	273	4.9	903	6.0	166,400	9.1
Clerical and administrative workers	483	8.6	1,289	8.6	269,198	14.8
Sales workers	333	5.9	899	6.0	189,038	10.4
Machinery operators and drivers	1,285	22.8	3,142	20.9	132,114	7.2
Labourers	636	11.3	2,052	13.7	217,251	11.9
Total (d)	5,627	100.0	15,017	100.0	1,824,996	--

(a) Employed persons aged 15 years and over.

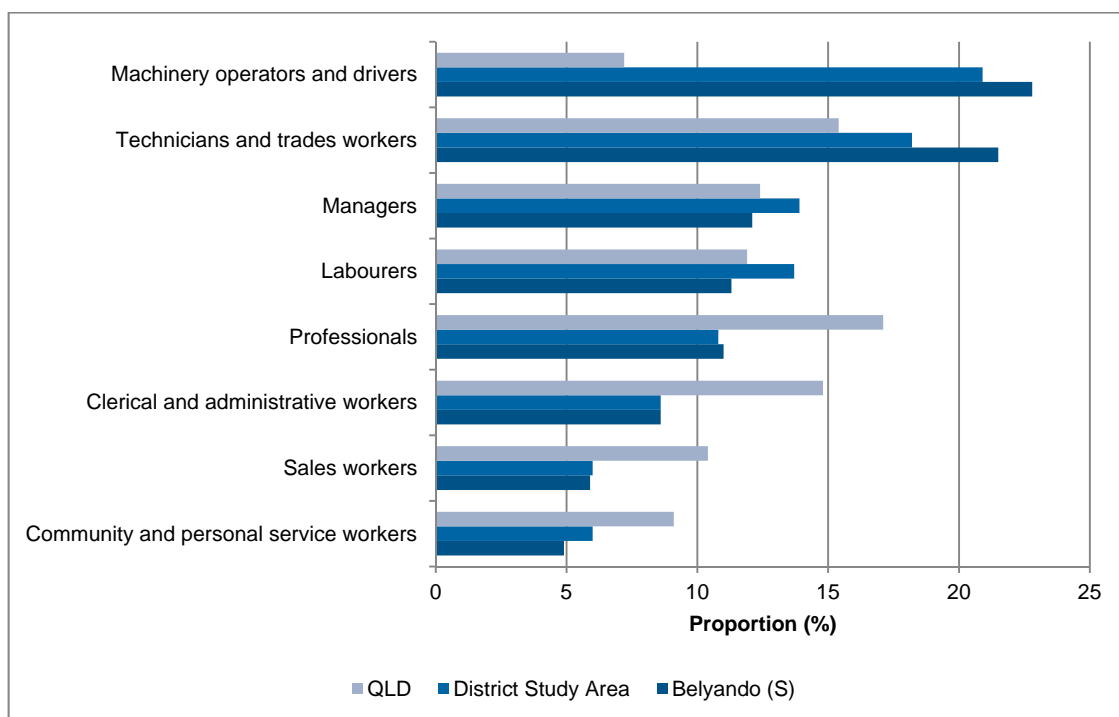
(b) Occupation was coded to the ABS 2006 Australian and New Zealand Standard Classification of Occupations (ANZSCO). This has replaced the 1996 Australian Standard Classification of Occupations (ASCO) Second Edition.

(c) The ratio of the percentage for the region to the percentage for Queensland.

(d) Includes inadequately described and not stated responses.

Source: OESR, 2011(a); OESR, 2011(b)

Figure 4-7: Proportion of Employment by Occupation in Local Study Area, 2006



Source: OESR, 2011(a); OESR, 2011(b)

There are two employment services active in the LSA, both in Moranbah:

- Pioneer Employment Services, Moranbah
- Mine Assist, a labour hire contractor in Moranbah.

There are also numerous recruitment agencies based in Townsville and Mackay.

The Central Queensland Institute of TAFE has local campuses in Clermont and Moranbah. TAFE offers relevant training in skills and competencies required for employment in the mining, and other industries. Training courses in various trades are offered as well as areas such as hospitality. Course offerings vary from campus to campus.

While fees are payable for most courses at TAFE, these are government subsidised, and further discounts of up to 60 percent are provided for potentially disadvantaged students including unemployed and students of ATSI backgrounds. Where individuals are being trained as part of an overall employment program, employers will potentially meet the costs of training.

The websites for the Central Queensland Institute of TAFE indicates places available for all courses.

4.4.6 Income

In 2011, there were 2,158 persons aged 15 years and over in the LSA with a gross individual weekly income of less than \$400 (23.1 percent of persons aged 15 years and over). This was lower than the Queensland average of 34.6 percent.

There were 2,226 persons (aged 15 years and over) in the shire who reported a gross individual weekly income of more than \$2,000 (23.8 percent), such being an indicator of affluence. This is more than four times higher than the state average of 5.5 percent.

Further to the above point, ABS data has shown that SLAs in the Isaac Region are amongst the top five localities (outside Brisbane Statistical Division) recording consistently high growth in wage and salary incomes.

Table 4-18: Gross Individual Weekly Income for the Local Study Area, 2011

Locality	Persons earning less than \$400 per week		Persons earning \$400 to \$999 per week		Persons earning \$1,000 to \$1,999 per week		Persons earning \$2,000 or more per week		Total persons (c)
	number	%	number	%	number	%	number	%	number
Belyando (S)	2,158	23.1	1,826	19.5	2,075	22.2	2,226	23.8	9,350
Queensland	1,195,059	34.6	1,095,509	31.7	6894,95	19.9	191,236	5.5	3,456,877
LSA as % of Qld	0.2	..	0.2	..	0.3	..	1.2	..	0.3

(a) Based on usual place of residence
(b) Based on persons aged 15 years and over
(c) Includes personal income not stated
Source: OESR, 2012 (b)

According to 2006 Census data, most of the Indigenous workforce of the Bowen Basin received lower weekly gross incomes than the remainder of the population (Miles and Kinnear, 2008 cited in ELH, 2012). In the young adult workforce (those aged between 15-24 years), nearly one-fifth obtained \$399/week or less. Furthermore, less than one quarter of the overall indigenous workforce obtained an income of more than \$600/week (Miles and Kinnear, 2008 cited in ELH, 2012).

For most Aboriginal communities, there is little economic prospect or real employment opportunity and many sit outside the mainstream economy. Employment in the mining sector is small and there is a need to develop strategies that will more directly engage the Indigenous community into the mainstream economy and the mining sector (Miles and Kinnear, 2008 cited in ELH, 2012).

4.5 Housing and Accommodation

4.5.1 Housing Affordability

As shown in the 2006 data below (Table 4-19), Belyando Shire demonstrated a lower proportion of low income households displaying mortgage or rental stress, compared to the Queensland average.

Table 4-19: Indicators of Housing Affordability Stress in Local Study Area, 2006

Indicator	Belyando (S)		Queensland	
	number	%	number	%
Low income households(a) with mortgage stress	16	2.2	35,146	7.4
Low income households(a) with rental stress	62	3.9	102,879	22.7

(a) Households in bottom 40% of income distribution
Source: OESR, 2011(a)

Table 4-20 shows the monthly housing loan repayments in Belyando Shire for 2006. Compared to weekly rents paid (shown in Table 4-19), this data is considered more representative of housing affordability as it is less likely to be influenced by the mining and resource sector employer-provided and subsidised housing.

Table 4-20: Monthly Housing Loan Repayment in the Former Belyando Shire, 2006

Locality	\$1 - \$400		\$400 - \$949		\$950 - 1,399		\$1,400 - \$1,999		\$2,000 - and over		Housing loan repayment not stated		Total
	#	%	#	%	#	%	#	%	#	%	#	%	#
Belyando (S)	86	11.7	161	22.0	132	18.0	152	20.8	98	13.4	103	14.1	732
Isaac Region	111	11.5	225	23.2	172	17.8	168	17.4	124	12.8	168	17.4	968
Queensland	20,888	4.9	98,772	23.1	105,111	24.5	91,943	21.4	77,384	18.0	34,417	8.1	428,515

Source: ABS, 2006: B33

Table 4-21: Weekly Rent Being Paid in the Former Belyando Shire, 2006

Locality	\$0 - \$139		\$140 - \$274		\$275 - \$549		\$550 and over		Rent not stated		Total
	#	%	#	%	#	%	#	%	#	%	#
Belyando (S)	1,077	72.62	159	10.72	63	4.25	99	6.68	85	5.73	1,483
Isaac Region	2,335	77.57	237	7.87	105	3.49	136	4.52	197	6.54	3,010
QLD	102,938	23.81	221,999	51.35	89,237	20.64	5,406	1.25	12,714	2.94	432,294

Source: ABS, 2006: B34

A much higher proportion of monthly housing loan repayment is approximately \$400 per month in Belyando Shire. Table 4-21 shows the number and proportion of occupied private dwellings being rented according to weekly rental value in 2006. Over 80 percent of weekly rents in Belyando Shire and Isaac Region are between \$0 - \$274 and less than 20 percent in the higher bracket of \$550 and above.

To assist in alleviating high rental costs in the local area, BMA has implemented an accommodation policy that caps rental payments for their workers. According to IRC, this recent stance against high rental prices has opened up the rental market and assisted in improving housing affordability within the LSA (July 2012).

As noted by ELH (2012), issues of poor housing affordability and availability in the Bowen and Galilee Basins make it difficult for Traditional Owners to return to their traditional country.

4.5.2 Housing Types

In 2011, there were 3,833 occupied private dwellings in Belyando Shire, of which 292 were separate houses, 259 were semi-detached and 94 were apartments.

Separate houses represented 86 percent of total occupied private dwellings in the LSA, compared with 79 percent in Queensland.

Table 4-22: Occupied Private Dwellings (a) by Dwelling Structure in Local Study Area, 2011

Locality	Separate house	Semi-detached (a)	Apartment (b)	Total (c)	Separate houses as % of total
Belyando (S)	3292	259	94	3833	86
Queensland	1215303	129430	181716	1547303	79
LSA as % of Qld	0.3	0.2	0.1	0.2	..

(a) Excludes visitors only and other not classifiable households.

(b) Includes row or terrace house, townhouse etc.

(c) Includes flat, unit or apartment.

(d) Includes other dwelling types and dwelling types not stated.

Source: OESR, 2012(b)

4.5.3 Home Ownership

In 2011, 20.1 percent of occupied private dwellings in the LSA were owned (20.1 percent), 18.4 percent were being purchased and 58.7 percent were rented.

Reflecting District trends, the proportion of rented properties in the LSA has risen significantly during the inter-censal period, from 45.2 percent in 2006.

Table 4-23: Occupied Private Dwellings (a) by Tenure Type in Local Study Area, 2011

Locality	Fully owned		Being purchased (a)		Rented (b)		Total (c)
	number	%	number	%	number	%	number
Belyando (S)	770	20.1	704	18.4	2248	58.7	3829
Queensland	448617	29.0	533868	34.5	513415	33.2	1547303
LSA as % of Qld	0.2	..	0.1	..	0.4	..	0.2

(a) Excludes visitors only and other not classifiable households

(b) Includes dwellings being purchased under a rent/buy scheme.

(c) Includes renting from a real estate agent, state or territory housing authority, renting from a person not in the same household, renting from cooperative/community/church group, other landlord type and landlord type not stated.

(d) Includes other tenure type and tenure type not stated.

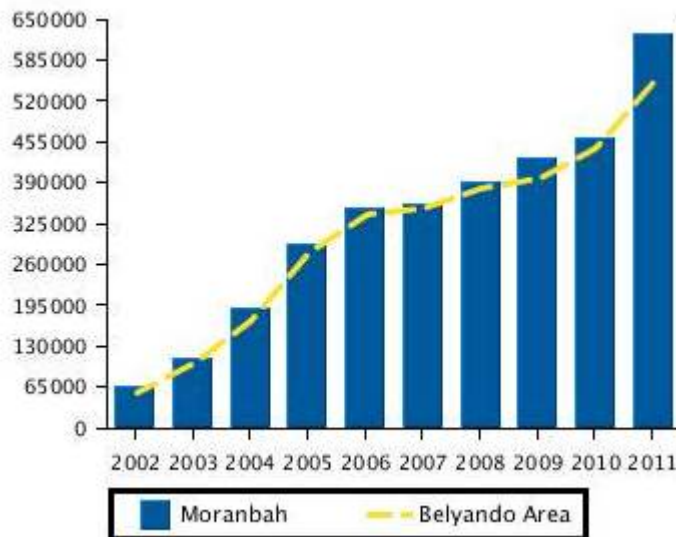
Source: OESR, 2012(b)

4.5.4 Housing and Rental Costs

Residential Property Prices

RP Data provides longer range tracking of the median property prices in Moranbah and Clermont from 2002 to 2011. The figure below shows housing prices have experienced a rapid increase in Moranbah over the last decade, from about \$65,000 in 2002 to almost \$650,000 in 2011, or expressed simply as ten times higher.

Figure 4-8: Median House Prices for Moranbah, 2002-2011

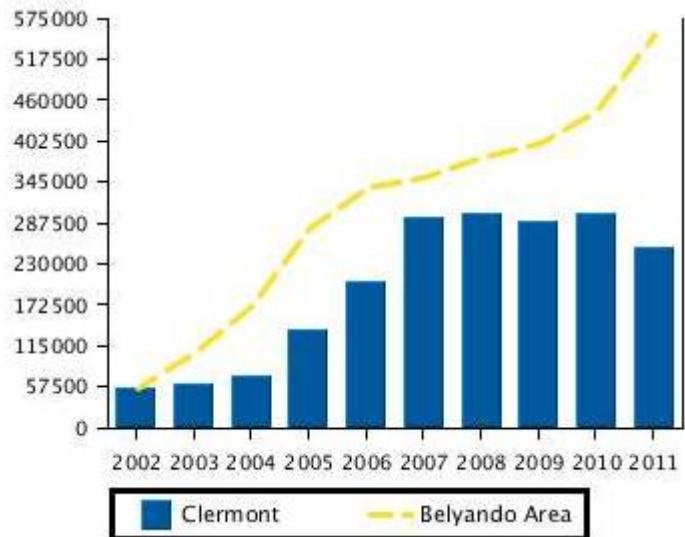


Source: www.rpdata.com.au (July 2012)

As shown in the Figure 4-9, Clermont has also shown a trend of steady increase before a general plateau emerged in 2007. However, increases in Clermont have not been at the same rate as Moranbah.

As noted by *Miles et al* (2008), it is apparent that median house prices have reduced local housing affordability.

Figure 4-9: Median House Prices for Clermont, 2002-2011



Source: www.rpdata.com.au (July 2012)

Reference should be made to the District Study Area which provides further analysis of current housing availability for purchase or rent.

Rental Costs and Housing Affordability

SIA consultation (2011) in Moranbah indicated that there are a high of number families (including single parent households) not involved in the mining industry who are struggling with housing affordability.

Stakeholder feedback indicated a significant escalation of property prices (anecdotally up to \$900,000 for a 3-4 bedroom house). There was concern that local residents who are not employed by mining sector would continue to be disadvantaged in accessing affordable housing and a feeling that people were being 'pushed out' of mining towns. This problem was amplified given the shortage of crisis and emergency accommodation.

SIA consultation undertaken in 2011 also indicated that rental prices continued to rise, suggesting a rise over the past few years resulting in rents being on average \$1,500 - \$2,000 per week. The inability to find affordable housing resulted in young people staying at home longer as they cannot afford to leave, or alternatively, leaving their local area altogether. While there was no data to support this being an issue unique to Moranbah and Clermont, anecdotal evidence suggests that the problem is more of an issue in these communities than in many others.

Stakeholders in the LSA maintain that inflation of housing prices and rental costs in the key centres of Moranbah and Clermont are due to the accommodation demands associated with the mining industry. This scenario was further exacerbated by the arrangement for some mining companies to subsidise employee housing costs.

Reflecting the comments above, declines in local housing affordability have been well documented in recent research and media. Some examples are provided below.

Moranbah mining town rents hit \$3400 a week

MORANBAH locals have already labelled rents in the coal-mining town as out of control but now houses cost more to rent than luxury beachfront properties.

The Courier Mail, 17 November 2011

Mining town our most expensive place

Townsville Bulletin, 4 June 2011

Moranbah's housing crisis coverage

Central Queensland News, 13 June 2012

Mine announcement sparks housing affordability fears

ABC, 10 January 2007

More recent SIA consultations (2012) revealed that BMA has implemented an accommodation policy and capped rental payments for their workers. According to Isaac Region Council, this recent stance against high rental prices has opened up the rental market and assisted in improving housing affordability within the LSA (July 2012).

To further assist in addressing the issue of affordable housing in the LSA, the Isaac Affordable Housing Trust (IAHT) has received land and monetary contributions from both Council and other organisations, including mining companies in the region, to develop affordable housing for low income workers and families. The IAHT is a not-for-profit organisation run independent of Council. The trust has delivered three affordable housing developments in Isaac Region and is in the process of developing additional accommodation in Clermont, Dysart and Nebo.

4.5.5 Housing Availability

SIA consultation highlighted land and housing supply constraints in Moranbah particularly and increasingly in Clermont, together with inflated local property values. Previous State Government research identified strong demand for residential land and supporting infrastructure in Moranbah, resulting from increased mining industry activity.

Moranbah

As noted in Section 3.5.2, an Urban Development Area (UDA) was declared in Moranbah in July 2010. The ULDA works with local and state government, community, landholders and the development industry to deliver commercially viable developments that include diverse, affordable, sustainable housing, using best-practice urban design.

The Moranbah UDA is 1,218 ha comprising a number of sites within Moranbah town and a large site to the west of Goonyella Road. The Moranbah UDA encompasses large areas of vacant land, part of the local golf course, and a small amount of residential and industrial land. The intent of the UDA is to assist in accommodating Moranbah as a thriving major regional activity centre which has a key role in supporting the expansion of the Bowen Basin resource industry. The UDA will provide more affordable housing through the improved supply of residential land and a greater range of housing types to suit the needs of the Moranbah community.

SIA consultation in 2011 in Clermont indicated that there are considerable problems associated with accommodation in the town in that housing is limited and prices are rising. It was emphasised that this issue impacts the general resident population, particularly the aging. This issue is also detrimental in attempts to attracting people to the area as permanent residents.

With limited accommodation, prices of housing are observed to be high and continuing to rise. At the time the workshops for this assessment were conducted (June 2011) there was only one house available to rent. It was noted during the workshop that RTCA is currently working with developers to establish housing, given that it is understood that up to 100 FIFO workers wish to live in Clermont.

It was noted that a housing development is currently underway at Clermont with Stage 1 of a multi-stage residential development nearing completion. Rio Tinto has committed to 50 percent, or 40 homes, as part of the Stage 1 development. It was noted in the SIA consultation that Dyno-Nobel has also built houses in Moranbah. It would be an expectation of the community that houses be made available for the new working population and FIFO and DIDO should be balanced with permanent population.

Building Approvals

Table 4-24 shows that in the 12 months ending 31 March 2012, there were 163 residential dwelling unit approvals in Belyando Shire, with a total value of \$29.5 million.

Between the March quarter 2010 and the March quarter 2012, the value of new residential building approvals in Belyando Shire ranged between \$0.3 million and \$11.1 million.

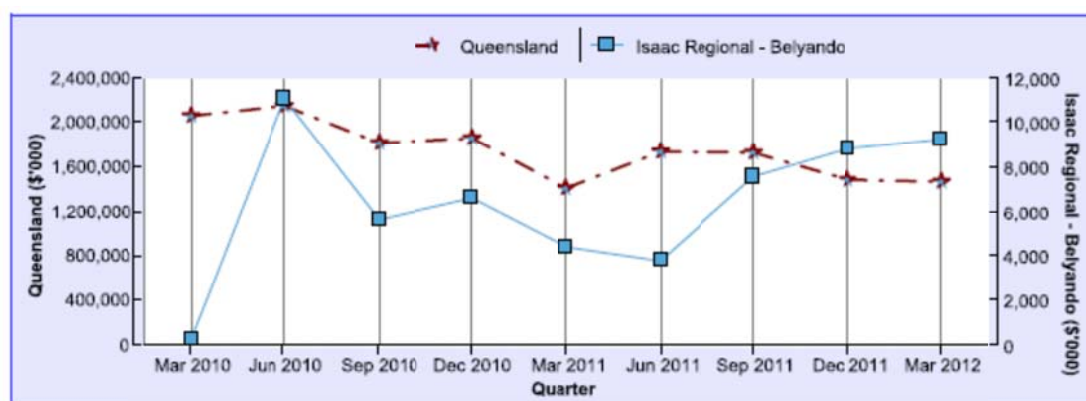
During SIA consultation (2012) with IRC Officers it was indicated that Council has identified sufficient residential zoned land to support future town expansion in Clermont, with a 15 year supply available. It was indicated that the new planning scheme will continue to support growth associated with regional industry.

Table 4-24: Residential and Non-Residential Building Approvals (12 Months Ending 31 March 2012)

Locality	Dwelling units in new residential buildings (a)	Residential building value (a)	Total residential building value (b)	Total non-residential building value (b)	Total building value (b)	Proportion of total value that is residential (c)
	number		— \$'000 —		%	
Belyando (S)	163	29,536	31,182	12,392	43,574	71.6
District Study Area	283	52,700	59,367	58,448	117,815	50.4
Queensland	26,388	6,436,35	7,740,571	5,620,949	13,361,520	57.9
LSA as % of Qld	0.6	0.5	0.4	0.2	0.3	..

Source: OESR, 2012(b)

Figure 4-10: Value of Residential Building Approvals in Local Study Area (a) and Queensland, March Quarter 2010 to March Quarter 2012



(a) Excludes alterations, additions and conversions
Source: OESR, 2012(b)

Social Housing

Table 4-25 shows the indicators for social housing in the former Belyando Shire, together with results for the District Study Area and Queensland for comparative purposes. Overall, a lower percentage of households in Belyando received rent assistance from Centrelink in comparison to the other District and State. However, a slightly higher proportion of dwellings are rented from the government housing agency.

During SIA consultation, stakeholders commented on the lack of emergency housing in Clermont, which is considered a significant social issue. The consultations revealed that if and when family relationships end, for example the partner working with the mines leaves or dies, the remaining family members must vacate the property, as the house is then required for other workers. This is a difficult situation for families and is amplified by the lack of alternative housing and/or emergency housing solutions.

Table 4-25: Indicators for Social Housing – Local Study Area (2006)

Indicator	Belyando (S)	District Study Area	Queensland
Households in dwellings receiving rent assistance from Centrelink	120	902	273,995
Total dwellings	3,278	9,952	1,391,654
Percentage of households in dwellings receiving rent assistance	3.7	9.1	20.0
Dwellings rented from the government housing authority	130	296	47,878
Total dwellings	4,028	10,703	1,391,632
Percentage of dwellings rented from the government housing authority	3.2	3.0	3.0

Source: PHIDU, 2010

4.6 Community Health, Wellbeing and Safety

4.6.1 Health and Wellbeing

Selected health and wellbeing data for the former Belyando Shire are presented in Table 4-26.

The fertility rate in Belyando is higher than the Queensland average. This was also reiterated by stakeholders during SIA consultation – they noted that Moranbah particularly is perceived as a place where couples settle to have families, whilst one parent works in the mining sector.

While the self-assessment of poor health within the former Belyando Shire is lower than Queensland as a whole, the rate of those with at least one of health risk factors of smoking, harmful use of alcohol or obesity is generally comparable to Queensland as a whole.

Table 4-26: Selected Health and Wellbeing Indicators

Selected Indicator (2007-08)	Belyando (S)	Queensland
Total fertility rate (a)	2.34	1.91
Fair or poor self-assessed health (estimated) persons aged 15 years (b). Rate per 100	11	15.51
High or very high psychological distress levels persons aged 18 years and over (estimated) (c). Rate per 100	8.4	11.9
Persons 18 years and over with at least one of four of the following health risk factors –smoking, harmful use of alcohol, physical inactivity, obesity (estimated) (d). Rate per 100	57.1	58.3

(a) Total fertility rate represents the average number of children that a woman could expect to bear during her reproductive lifetime. It is calculated from the age of the female population, the number of births and the age of the mother at birth.

(b) Respondents in the 2004-2005 National Health Survey were asked to rate their health on a scale from 'excellent', through 'very good', 'good' and 'fair' to 'poor' health.

(c) The data was derived from the Kessler Psychological Distress Scale (K-10) – which is a scale of non-specific psychological distress based on 20 questions asked of respondents about negative emotional states in the 4 weeks prior to interview. 'High' and 'Very High' distress are the two highest levels of distress categories (or a total of four categories).

(d) This is based on self-reported data, reported to interviewers including respondents who reported that they had at least one of the following health risk factors – smoking, harmful use of alcohol, physical inactivity, obesity.

Source: PHIDU, 2010

4.6.2 Disability Prevalence - Need for Assistance

Table 4-27 shows the 2011 count of persons with a profound or severe disability in the LSA, who are in need of assistance with self-care, mobility and/ or communication. These are compared with results for the District and Queensland.

At the time of the 2011 Census, there were 189 persons in need of assistance in Belyando Shire, representing 1.5 percent of the total population. It indicates that lower levels of assistance are needed within the local community when compared with the DSA and Queensland, registering averages of 3.6 percent and 4.4 percent respectively.

Table 4-27: Persons in Need of Assistance in Local Study Area, 2011

Locality	Need for assistance		No need for assistance	Total (b)
	Number	%		
Belyando (S)	189	1.4	9,533	10,455
District Study Area	13762	3.6	339703	382157
Queensland	192,019	4.0	3,880,396	4,332,738
LSA as % of Qld	0.1	..	0.3	0.3

(a) Based on place of usual residence.

(b) Includes core activity need of assistance not stated.

(c) 'In need of assistance' includes people with a profound disability or severe disability. People with profound or severe disability are defined as needing help or assistance in one or more of the three core activity areas of self-care, mobility and communication because of a disability, long term health condition (6 months or more), a disability (lasting 5 months or more) or old age.

Source: OESR, 2011(a); OESR, 2011(b)

Discussions with stakeholders during SIA consultation provided insight into some current observed health issues at Clermont. Salient points were:

- Drinking and alcohol related problems were identified as issues, noting that this can be a common issue within many townships and is not unique to Clermont.
- Drug abuse was not considered to be a problem in the area.
- Mental health issues are considered to be increasing. Provision of services to assist with mental health is a problem facing the community given that the nearest secure facility is located at Mackay. It was noted that there is a mental health facility located at Moranbah, but this is not secure (meaning people within the facility are able to come and go as they please).
- At Moranbah, a substantial health and safety concern was raised regarding DIDO arrangements. This is particularly the case with driver fatigue, together with concerns about safety after dark. It was acknowledged during SIA consultation (2011) that there is a high male population and there may be a perception by females that it is less safe walking in low light conditions.

4.6.3 Crime

Current crime data for the former Belyando Shire could not be extracted at SLA level from the QPS database. As noted in the District baseline, the top five most common crimes occurring the DSA in 2010/11 were 'Offences Against Property', 'Other Offences', 'Other Theft (excl. Unlawful Entry)', 'Traffic and Related Offences' and 'Unlawful Entry' (QPS, 2012).

In the absence of current data, reference is made to QPS statistics for Belyando and Nebo Shires (2002-2003), which provide some general insight to past crime trends, notably:

- Belyando and Nebo Shires had higher rates of 'offences against the person' than the state average.
- The incidence of 'offences against property' was less than that for Queensland.

Table 4-28: Criminal Offences by Type in Belyando and Nebo Shires (2002-03)

Locality	Offences against the person	Offences against property	Other offences
Belyando and Nebo	299	382	291
rate per 100,00 persons	2,343	3,168	2,419
Queensland	40,363	283,070	121,099
rate per 100,00 persons	1,110	7,787	3,331

Offences against the person includes homicide, serious assault, other assault, sexual offences, armed robbery, unarmed robbery, extortion, kidnapping etc, and other. Offences against property include unlawful entry with intent (dwelling, shop or other), arson, other property damage, motor vehicle theft, stealing (from dwelling, shop or other), fraud, handling stolen goods. Other offences include drug offences, prostitution offences, liquor (excluding drunkenness), good order offences, stock related offences.

Source: OESR, 2003(a); OESR, 2003(b)

SIA consultation (2011) with the QPS identified that current policing in the area consists of “a small presence in Clermont” and it is noted that “existing resources are stretched”. It is expected there will be a need to provide expanded services into the Galilee as mining continues to develop. The police communications at the Project (Mine) site are “virtually non-existent” and would need to be extended into the area.

Subsequent to this, QPS has advised they have provided additional policing in Clermont which has alleviated issues with stretched resources experienced in 2011.

4.6.4 Socio-Economic Index of Disadvantage

As noted previously, socio-economic Indexes for Areas (SEIFA) is a summary measure of the social and economic conditions of geographic areas across Australia. SEIFA comprises a number of indexes, which are generated at the time of the ABS Census of Population and Housing. On this scale, Quintile 1 refers to ‘most disadvantaged’ and quintile 5 the ‘least disadvantaged’.

In 2006, 4.7 percent of the population in Belyando Shire were in the most disadvantaged quintile, compared with the 20 percent average across Queensland and 5.1 percent at LGA level for the Isaac Region.

28.7 percent of the population of the LSA in the least disadvantaged quintile, again exceeding the state average.

Table 4-29: Social and Economic Index of Disadvantage

Locality	Quintile 1 % (most disadvantaged)	Quintile 2 %	Quintile 3 %	Quintile 4 %	Quintile 5 % (least disadvantaged)
Belyando (S)	4.7	2.5	27.5	36.6	28.7
District Study Area	20.8	15.8	23.3	29.2	10.9
Queensland	20.0	20.0	20.0	20.0	20.0

Source: OESR, 2011(a); OESR, 2011(b)

4.6.5 Social Infrastructure

Existing provision of social infrastructure in the LSA is summarised below.

Table 4-30: Provision of Social Infrastructure

Social Infrastructure Type	Existing Provision
Education and Childcare	As at 30 April 2011, Belyando Shire had five early childhood education and care services. The most common service were long day care services, (three services), followed by kindergarten services and school aged care services (one service).
Aged Care	Belyando Shire one aged-care service provider.
Community Services	At 30 June 2010, the following were available in Belyando Shire: <ul style="list-style-type: none"> • 2 police stations • 6 ambulance stations • 2 fire stations • 8 schools • 2 hospitals
Volunteers	At the time of the 2011 Census, Belyando Shire had 1,979 volunteers, representing 21.2 percent of the total persons aged 15 years and over. This was compared with 18.7 percent of persons aged 15 years and over in Queensland.

During SIA consultations (2011) in Moranbah and Clermont, the following key concerns and issues were expressed by stakeholders regarding social infrastructure provision and capacity:

- A new mining project could add pressure on a limited base of community infrastructure in the towns.
- Good communication and coordination between agencies/services providers and proponents is critical as part of project planning, to ensure that existing and future populations can be serviced appropriately, with limited impacts to the current resident community.

Stakeholders identified the following issues and needs for social infrastructure in Clermont:

- Temporary population increases and camp accommodation may place pressure on community services.
- A permanent town is preferable to a camp so that the population can be planned for and provided with appropriate and adequate social services given the project's very long term nature.
- Schools in Clermont are believed to have good capacity to cater for population increases.
- There is a lack of emergency housing in Clermont.
- Deficiencies in mental health services, with the closest facility (which is not secure) in Moranbah.
- Support for a medical centre (not just a doctor) to be established at the mine and/or mine village site to service the large workforce and ensure that pressure on town services does not occur.
- Essential infrastructure (such as the wastewater treatment plant) is believed to have some capacity for population increases.

Matters raised by stakeholders relating to social infrastructure provision in Moranbah were:

- Social services are funded based on a permanent population. Some services are already substantially underfunded given that the permanent population at Moranbah is half of total actual population when temporary workers are included.
- The local hospital has limited resources and is staffed by registered nurses, with doctors available on call only.
- There are two ambulance vehicles and teams, with one rostered on at a time. Limited resourcing sometimes results in the need for nurses to go on emergency responses, which impacts hospital resourcing.
- Responding to mine incidents takes (already limited) emergency services out of the community.
- People suggested that a medical centre should be provided for the new workforce (similar arrangement to Xstrata Mount Isa Mines).
- Mental health facilities at Moranbah are under pressure given they also service Dysart, Glenden and Clermont.
- Current communication infrastructure impacts emergency response coordination given the number of 'dead spots'.
- Public transport is currently stretched to capacity in the area.

4.7 Land Adjoining the Project (Mine and Rail)

Within the LSA, landholders with properties adjoining or directly affected by the proposed mine and rail line are likely to experience most of impacts associated with the project. Therefore, this area will require a particular focus for the local baseline.

The smallest geographic area of data collection by the ABS is Census Collection District (CCD), and the Carmichael Project traverses four CCDs, namely:

- 3031602
- 3031603
- 3031604
- 3031504.

As the geographic area of these CCDs is much larger than the project footprint, data for CCDs has not been presented.

It was intended to engage landholders directly and get their specific input to the local baseline for the Project, however despite many months of positive discussions with landholders, only one would commit to undertaking a case study. As a result, the local baseline has been developed at a higher geographic level (former Belyando Shire) and supplemented with information from negotiations between Adani representatives and landholders.

Traditional owners were also included in the LSA to identify any potential impacts directly related to the country from the Project footprint.

4.7.1 Land Use and Pastoral Farming Practices

Many of the properties affected by the Project are large landholdings, with the smaller landholdings tending to be within 50 km of Moranbah. The Project (Rail) alignment tends to follow property boundaries along these smaller landholdings significantly reducing the potential for adverse impacts, including land fragmentation.

Pastoral farming is undertaken across the Local Study Area with small areas of cropping to provide cattle fodder. Many properties comprise a mix of productive grazing land used for 'finishing' cattle prior to market sale, and less productive land used for general grazing.

Pastoral farming practices within Australia are generally similar between most areas, however within this area it is important to acknowledge there will be some specific practices which will be impacted and discussed further with each landholder on an individual basis. As negotiations with individual landholders progress, property management practices will be better understood.

Most properties are managed as single production units, some as part of a larger property network elsewhere in Queensland. There are however some properties that are managed as a single production unit for efficiency. These are generally contiguous properties owned by members of the same family.

Properties affected by the Project are predominantly classified as rural leasehold land used for the purposes of agricultural, grazing or pastoral activities. The Project (Rail) traverses 16 leasehold properties and 10 freehold properties and the Project (Mine) affects seven leasehold properties. Further information on these properties is included in Volume 4, Appendix M (Rail) and Volume 4, Appendix Z (Rail).

Occupied homesteads are present on many of the properties - very few are unoccupied. Those that are unoccupied tend to be the smaller units. In this situation, it is common for a farm manager or landholder to visit the property on a regular basis.

Many of the directly affected properties are vast with cattle grazing spread across expansive areas. Therefore, helicopters are a vital service on many of the properties as mustering on horseback or quad bike would take a considerable amount of time.

The nature of heli-mustering requires pilots to navigate choppers at a very low altitude to direct stock in a desired direction. Many landholders contract these services out and they are undertaken by experienced pilots who specialise in heli-mustering.

At present, there are at present very few aerial impediments to heli-mustering activities in the Local Study Area, such as transmission lines and communication towers.

4.7.2 Demographic Characteristics

A snapshot of the demographic profile for landholdings adjacent to the project (mine and rail) has sourced from information compiled by Adani during landholder negotiations:

- The general age range of residents in the area is between 35 to 50 years old, including several households with young families and very few older persons.
- Most residents are second or third generation landholders with very strong ties to the local area.
- Older family members appear to move off the properties and into communities elsewhere in the region to be closer to community and social services, notably health care.
- Of families with primary school aged children, most receive education at home through 'school of the air'. When children reach high school age, it is common for them to leave home and attend boarding school elsewhere. It is understood that for affected properties closer to Moranbah, children have a daily commute into town on the school bus.
- Most of the properties have at least one additional non-family staff member who live permanently on site. Generally, only the larger properties have more than one permanent staff member residing there. Several of the smaller properties do not have resident staff, instead a family member or farm manager visit the property periodically from elsewhere.

- During mustering, additional staff may be contracted to provide temporary assistance and are generally accommodated on the property for the duration of their work.

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⁴ Individual websites may have been accessed on multiple occasions. Dates of access are noted where data is presented in the SIA

www.ghd.com

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Appendix D Workforce Numbers

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Construction Phase Workforce Profile - Infrastructure

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Headcount	560	1000	1150	650	550	250	350	450	250	250
<i>comprised of:</i>										
Construction areas										
Train Load out, CPP and Conveyors, Feeders	50	300	500	200	200	200	300	400	200	200
Site Workshop	50	50	50							
Site Offices	50	50	50							
Site Haul roads	50	50	50	50	50	50	50	50	50	50
Council Road upgrade	60	100	100	100	100					
Airstrip construction	50	100	100							
Dams and pipelines	50	200	300	200	100					
Village Construction	150	150		100	100					
Occupation										
Superintendents and Managers	17	30	35	20	17	8	11	14	8	8
Designers and Engineers	17	30	35	20	17	8	11	14	8	8
Tradespeople being fabrication, boilermakers, carpenters, plumbers and electrical	140	250	288	163	138	63	88	113	63	63
Construction – equipment operators and supervision	386	690	794	449	380	173	242	311	173	173

Operational Phase Workforce Profile - Mine

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Headcount	315	793	1152	1916	2107	2115	2451	2641	2764	2821
<i>comprised of:</i>										
Occupation										
Superintendents and Managers	8	19	28	46	51	51	59	63	66	68
Equipment Operators and Direct supervisors	188	474	688	1145	1259	1263	1464	1578	1651	1685
Mining Engineers, Geologists and Surveyors	6	15	22	36	40	40	46	50	52	53
Coal Quality including metallurgical and lab technicians	2	6	8	14	15	15	17	19	20	20
Mechanical, Electrical Engineers and Maintenance Planners	6	15	22	36	40	40	46	50	52	53
Fitters	59	149	217	360	396	398	461	497	520	531
Electricians	4	11	16	27	30	30	35	37	39	40
Auto electricians	3	7	11	18	20	20	23	25	26	27
Boilermakers	3	7	11	18	20	20	23	25	26	27
Trades Assistants (including tyre fitters, and service technicians)	9	22	33	54	59	60	69	75	78	80
Fitter/Electrical Operators for CPP/Loadout	4	11	16	27	30	30	35	37	39	40
Administration including HR, Safety, Environmental, Emergency Services, Finance and Warehouse	7	19	27	45	50	50	58	62	65	66
Village and Airstrip management	15	37	54	90	99	99	115	124	130	133

Note that this also includes construction of pits, access roads into pits and other associated “construction” work, excluding permanent haul roads which are include in “Construction Phase Workforce Profile – Infrastructure”.

Construction Phase Workforce Profile - Rail

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Headcount	400	1350	1350	400	0	0	0	0	0	0
<i>comprised of:</i>										
Occupation	FTE	FTE	FTE	FTE	FTE	FTE	FTE	FTE	FTE	FTE
Superintendents and Managers	10	30	30	10						
Designers and Engineers	10	30	30	10						
Tradespeople being fabrication, boilermakers, carpenters, fitters, and electrical	130	440	440	130						
Construction – equipment operators and supervision	250	850	850	250						

Operational Phase Workforce Profile - Rail

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total Headcount	0	0	15	40	60	120	120	120	120	120
<i>comprised of:</i>										
Occupation	FTE	FTE	FTE	FTE	FTE	FTE	FTE	FTE	FTE	FTE
Superintendents and Managers			3	3	4	5	5	5	5	5
Planners and Engineers			5	5	6	10	10	10	10	10
Rail Operators			7	32	50	105	105	105	105	105

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Appendix E Stakeholder Correspondence

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PEOPLE. POTENTIAL. PROSPERITY.



Ms Julie Boucher
GHD
PO Box 930
Townsville QLD 4810

Dear Ms Boucher

I write this in response to a request by Adani Mining Pty Ltd to provide an outline of the relationship Skills Queensland has with the enterprise.

Skills Queensland has been working with Adani over the past year to explore options with regard to their workforce planning and development needs.

While Skills Queensland does not have specific funds available to support Adani we are committed to assist them in their efforts to address their workforce challenges. Skills Queensland is a statutory body established for the purpose of aligning Queensland's skills system with the priority needs of industry. These functions are predominantly strategic policy related though also involve assisting individual enterprises and industry sectors on specific arrangements.

Should you require any further information with respect to our relationship with Adani please don't hesitate to contact me on telephone: (07) 383 60077 or email: tim.maloney@skills.qld.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read "Tim Maloney", with a long horizontal flourish extending to the right.

TIM MALONEY
Director
Industry Engagement
Skills Queensland

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24/7/12.



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Appendix F Local Buy Policy

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Local Buying Policy

Adani is committed to procuring from Australian suppliers where possible and will endeavour to maximise local content on its Project where it is capable and competitive.

1. Objectives

To provide full, fair and reasonable opportunity for local industry to participate in Adani's Australian activities throughout our supply chain.

To support the Clermont, Queensland and Australian industry by procuring locally where possible, thereby building local capabilities.

To actively promote opportunities for Australian companies to supply goods and services to the Project via open channels of communication and transparent procurement practices.

2. Key Strategies

- To communicate openly with local industry regarding upcoming tender opportunities as early as possible
- To utilise the ICN Gateway to ensure widespread promotion of opportunities
- To work with industry associations and communities to improve local industry participation, capability and competitiveness
- To assist commercially viable and competitive local businesses to pre-qualify to provide goods and services for the Project
- To ensure that payment terms accommodate the needs of smaller businesses
- To include successful local suppliers in our internal supplier database
- To ensure that all suppliers have access to our Local Industry Participation Plan
- To require all suppliers, contractors and sub-contractors to adhere to the Local Buying Policy and the Local Industry Participation Plan, thereby improving outcomes across Adani's supply chain.

This policy will apply to all suppliers and contractors engaged by Adani and will be reviewed and amended as future projects are considered. Progress in terms of local industry engagement will be regularly reported, and depending on outcomes, the policy will be reviewed as necessary.

GHD

201 Charlotte Street Brisbane QLD 4000

GPO Box 668 Brisbane QLD 4001

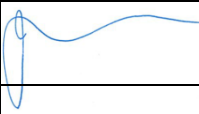

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